

Hradec Economic Days

Vol. 4(2)

Double-blind peer-reviewed proceedings part V.
of the International Scientific Conference
Hradec Economic Days 2014

February 4th and 5th, 2014
Hradec Králové, Czech Republic

Machalová-Štibranyiová * Maryniak * Matczak-Gotowski * Matkovčíková * Mikulecký-Lodhi-Vlček
Mirdala * Mls-Otčenášková * Mura-Machyniak * Mužáková-Kubová * Navrátilová-Pawliczek * Nowosielski
Olejniczak * Olejniczak-Bednarska Olejniczak * Olševičová-Cimler-Tomášková-Danielisová * Pechrová
Pelikán * Piasecki * Piecuch * Piterková-Rašovská * Piwowar-Sulej * Pokora * Poledníková * Závodný
Pospíšil * Potocki-Kachniarz-Piepiora * Przybyła * Przybyła Z.-Przybyła K.* Ptak * Puchalska
Regnerová O.-Regnerová M. * Rogala * Rojek Nowosielska * Rosenberg * Rusnáková-Harčariková * Slabá
Slavata-Janášová-Ardielli-Janáčková * Smalec * Smutka-Steininger * Smutný-Procházka-Vaculík * Smutný
Sołoma * Spuchláková * Staněk * Staničková-Melecký * Stodulny * Strýčková * Svobodová-Černá * Szyguła
A.* Szyguła J. * Šebestová * Šlaichová * Šorf * Špicar * Tóth-Mura * Václavínková-Kajzar * Wierzbinski
Wolak-Tuzimek * Žmija D. * Žmija K. * Machalová-Štibranyiová * Maryniak * Matczak-Gotowski
Matkovčíková * Mikulecký-Lodhi-Vlček * Mirdala * Mls-Otčenášková * Mura-Machyniak * Mužáková
Kubová * Navrátilová-Pawliczek * Nowosielski * Olejniczak * Olejniczak-Bednarska Olejniczak * Olševičová
Cimler-Tomášková-Danielisová * Pechrová * Pelikán * Piasecki * Piecuch * Piterková-Rašovská * Piwowar
Sulej * Pokora * Poledníková * Závodný Pospíšil * Potocki-Kachniarz-Piepiora * Przybyła * Przybyła Z.
Przybyła K.* Ptak * Puchalska-Surmacz * Regnerová O.-Regnerová M. * Rogala * Rojek Nowosielska
Rosenberg * Rusnáková-Harčariková * Slabá * Slavata-Janášová-Ardielli-Janáčková * Smalec * Smutka
Steininger * Smutný-Procházka-Vaculík * Smutný * Sołoma * Spuchláková * Staněk * Staničková-Melecký
Stodulny * Strýčková * Svobodová-Černá * Szyguła A.* Szyguła J. * Šebestová * Šlaichová * Šorf * Špicar
Tóth-Mura * Václavínková-Kajzar * Wierzbinski * Wolak-Tuzimek * Žmija D. * Žmija K. * Machalová
Štibranyiová * Maryniak * Matczak-Gotowski * Matkovčíková * Mikulecký-Lodhi-Vlček * Mirdala * Mls
Otčenášková * Mura-Machyniak * Mužáková-Kubová * Navrátilová-Pawliczek * Nowosielski * Olejniczak
Olejniczak-Bednarska Olejniczak * Olševičová-Cimler-Tomášková-Danielisová * Pechrová * Pelikán
Piasecki * Piecuch * Piterková-Rašovská * Piwowar-Sulej * Pokora * Poledníková * Závodný Pospíšil
Potocki-Kachniarz-Piepiora * Przybyła * Przybyła Z.-Przybyła K.* Ptak * Puchalska-Surmacz * Regnerová
O.-Regnerová M. * Rogala * Rojek Nowosielska * Rosenberg * Rusnáková-Harčariková * Slabá * Slavata
Janášová-Ardielli-Janáčková * Smalec * Smutka-Steininger * Smutný-Procházka-Vaculík * Smutný
Sołoma * Spuchláková * Staněk * Staničková-Melecký * Stodulny * Strýčková * Svobodová-Černá * Szyguła
A.* Szyguła J. * Šebestová * Šlaichová * Šorf * Špicar * Tóth-Mura * Václavínková-Kajzar * Wierzbinski
Wolak-Tuzimek * Žmija D. * Žmija K. * Machalová-Štibranyiová * Maryniak * Matczak-Gotowski



University of Hradec Králové
Faculty of Informatics and Management

Hradec Economic Days

Vol. 4(2)

Double-blind peer-reviewed proceedings part V.
of the international scientific conference
Hradec Economic Days 2014
Economic Development and Management of Regions

February 4th and 5th, 2014
Hradec Králové, Czech Republic

Edited by: Pavel Jedlička.

© 2014 Published by University of Hradec Králové. Proceedings are under the Creative Commons Attribution-NonCommercial 4.0 International License (CC-BY-NC).

ISSN 2464-6059 (Print)
ISSN 2464-6067 (Online)
ISBN 978-80-7435-370-3

Proceedings were not a subject of language check.

CONTENT

FOREWORD	7
REASONS FOR INTERVENTION OF THE CZECH NATIONAL BANK AND THE EVALUATION OF THE IMPACT ON THE INSURANCE MARKET Gabriela Machalová, Lenka Štibrányiová	9
THE INTEGRATION OF SOCIALLY RESPONSIBLE REPORTING WITH FINANCIAL REPORTING Anna Maryniak	17
POLISH PEOPLE'S FOREIGN TRAVEL EXPENSES IN 2000 – 2012 Andrzej Matczak, Rafał Gotowski	26
EFFECTIVE EMPLOYEE MOTIVATION IN THE WORKPLACE Natália Matkovčíková	33
THE ROLE OF INDIGENOUS KNOWLEDGE IN MODERN MANAGEMENT Peter Mikulecký, M. Saeed Lodhi, Pavel Vlček	39
FISCAL AND CURRENT ACCOUNT IMBALANCES Rajmund Mirdala	45
RISK-AFFINE WOMEN AND GAMBLING MEN: THE LECTURE FROM ST. PETERSBURG LOTTERY EXPERIMENT Karel Mls, Tereza Otčenášková	53
ETHICAL ASPECTS OF PUBLIC ADMINISTRATION Ladislav Mura, Ján Machyniak	59
ENVIRONMENTAL LIABILITY: APPLYING THE POLLUTER PAYS PRINCIPLE Karina Mužáková, Pavla Kubová	66
STRATEGIC PLANNING IN ENTERPRISES OF DIFFERENT SIZE – AN EMPIRICAL STUDY Daniela Navrátilová, Adam Pawliczek	76
QUALITY OF CONTROLLING PROCESS OUTPUTS IN THEORY AND PRACTICE Krzysztof Nowosielski	83
THE INFLUENCE OF THE EQUALISATION MECHANISM UNDER THE GENERAL SUBSIDY UPON THE FINANCIAL SITUATION OF COMMUNES AS EXEMPLIFIED BY THE URBAN COMMUNES OF LOWER SILESIA VOIVODESHIP – STUDY RESULTS Jarosław Olejniczak	91
CONSUMER BEHAVIOURS OF YOUNG POLES ON THE BANKING SERVICES MARKET – OWN STUDY RESULTS Jarosław Olejniczak, Dorota Bednarska-Olejniczak	105
MODEL OF CARRYING CAPACITY – SYSTEM DYNAMICS IN NETLOGO AND STELLA K. Olševičová, R. Cimler, H. Tomášková, A. Danielisová	117
THE IMPACTS OF THE EU'S SUBSIDIES ON THE PRODUCTION OF ORGANIC FARMS Marie Pechrová	124

ARC ROUTING PROBLEMS Jan Pelikán	131
PRESENT VALUE AS A TEMPORAL UTILITY OF WEALTH Krzysztof Piasecki	138
VARIOUS DIMENSIONS OF CONTEMPORARY ENTREPRENEURSHIP Teresa Piecuch	148
THE RISKINESS AND PROFITABILITY OF SLOVAK AGRICULTURE COMPANIES AND THEIR DETERMINANTS Andrea Piterková, Adriana Rašovská	155
MANAGEMENT BY PROJECTS - A CHALLENGE FOR PERSONNEL POLICY Katarzyna Piwowar-Sulej	162
RETHINKING LIQUIDITY RATIOS: THE CASE OF MANUFACTURING IN THE CZECH REPUBLIC Jindřich Pokora	169
USING AHP AND VIKOR METHOD TO EVALUATE THE REGIONAL DEVELOPMENT: CASE OF VISEGRAD FOUR Eva Poledníková	176
CHANGES IN ECONOMIC THINKING IN THE POSTMODERN ERA Jan Závodný Pospíšil	185
SUDETES – CROSS-BORDER REGION? Jacek Potocki, Marian Kachniarz, Zbigniew Piepiora	191
INFLUENCE OF AN ECONOMIC CRISIS ON FUNCTIONING OF SPECIAL ECONOMIC ZONES IN THE LOWER SILESIA Katarzyna Przybyła	201
TRANSFORMATION OF THE ECONOMIC BASE OF A TOWN - THE CASE STUDY OF JELENIA GORA Zbigniew Przybyła, Katarzyna Przybyła	208
SUBJECTIVE ASSESSMENT OF HEALTH IN THE CROSS-BORDER AREA – RESULTS OF THE SURVEY Michał Ptak	215
THE IMPORTANCE OF TRANSNATIONAL CORPORATIONS AND FDI IN REGIONAL DEVELOPMENT Katarzyna Puchalska, Tomasz Surmacz	221
MARKET WITH FOODS FOR SPECIFIC CUSTOMER GROUPS IN THE CZECH REPUBLIC Olga Regnerová, Marta Regnerová	232
THE UTILIZATION OF QUALITY OF LIFE MEASUREMENTS IN IDENTIFYING THE KEY PROBLEMS OF DEVELOPMENT Piotr Rogala	241
KEY FACTORS OF CORPORATE SOCIAL RESPONSIBILITY DEVELOPMENT Magdalena Rojek-Nowosielska	248
MINIMALISTIC SIMULATION OF POPULATION AGING'S FISCAL IMPLICATIONS AND THE ROLE OF PRODUCTIVITY OF LABOR Zdeněk Rosenberg	256

ECONOMIC ANALYSIS OF REVERSE BONUS CERTIFICATES (PART I)	
Martina Rusnáková, Monika Harčariková	263
ECONOMIC ANALYSIS OF REVERSE BONUS CERTIFICATES (PART II)	
Martina Rusnáková, Monika Harčariková	270
STAKEHOLDER ANALYSIS OF SMALL AND MEDIUM-SIZED ENTERPRISES	
Marie Slabá	277
LEVELS OF HOUSING CAPITALIZATION RATES IN OSTRAVA DISTRICTS	
David Slavata, Eva Janasová, Jiří Ardielli, Hana Janáčková	284
MANAGEMENT OF HUMAN CAPITAL IN LOCAL GOVERNMENT UNITS – SELECTED ASPECTS	
Agnieszka Smalec	295
RELATIONSHIP OF AGRICULTURAL SECTOR AND GOVERNMENT EXPENDITURES IN THE NEW EU COUNTRIES	
Luboš Smutka, Michal Steininger	302
DEVELOPING MANAGERIAL COMPETENCY MODEL	
Petr Smutný, Jakub Procházka, Martin Vaculík	309
ENVIRONMENT-DRIVEN MARKETING COMMUNICATION	
Zdeněk Smutný	316
PRIVATE EQUITY AND VENTURE CAPITAL MARKETS OF CENTRAL AND EASTERN EUROPE: INVESTMENT TRENDS AND DIVESTMENT ACTIVITY	
Andrzej Sołoma	323
MARKET FOR PASSENGER TRANSPORT SERVICES: BASIC FRAMEWORK FOR WELFARE ANALYSIS	
Rostislav Staněk	331
FACTORS DETERMINING DRIVING FORCES OF COMPETITIVENESS IN EU COUNTRIES	
Michaela Staníčková, Lukáš Melecký	338
ESTIMATING THE LEVEL OF UNSTABLE BANK DEPOSITS	
Przemysław Stodulny	349
CORPORATE INDEBTEDNESS: BANE OR BLESSING? EMPIRICAL EVIDENCE FROM THE CZECH REPUBLIC	
Lenka Strýčková	360
DEVELOPMENT OF SOCIAL NETWORKS FROM THE LOCAL AND GLOBAL PERSPECTIVE	
Libuše Svobodová, Miloslava Černá	370
METHODS OF CALCULATING CAPITAL REQUIREMENTS FOR FOREIGN EXCHANGE RISK IN POLISH COMMERCIAL BANKS	
Anita Szyguła	379
THE GAME OF TRUST AS APPLIED TO FOREIGN DIRECT INVESTMENTS	
Jakub Szyguła	387

SUSTAINABLE ENTREPRENEURSHIP IN SOCIAL AREA Jarmila Šebestová	394
QUALITY CONTROL SYSTEMS AND THEIR ROLE WITHIN INCREASING OF THE PROCESS PERFORMANCE Eva Šlaichová	401
SQUEEZING OUT MINORITY SHAREHOLDERS (NEW CZECH LEGISLATION VS. BRITISH SQUEEZE OUT RULES) Jiří Šorf	407
SYSTEM DYNAMICS MODEL OF A COURNOT OLIGOPOLY WITH TIME DELAYS Radim Špicar	416
SUPPORT FOR SMALL AND MEDIUM ENTERPRISES IN THE ECONOMIC CRISIS IN SELECTED EU COUNTRIES Zsuzsanna Tóth, Ladislav Mura	424
SUPPORT OF TOURISM IN MORAVIAN-SILESIA REGION Klára Václavíková, Patrik Kajzar	430
COMMUNICATION AND INFORMATION SHARING IN THE PROCESS OF CREATING MARKET ADVANTAGE AMONG SMALL AND MEDIUM ENTERPRISES COLLABORATION Bogdan Wierzbinski	437
CORPORATE SOCIAL RESPONSIBILITY AS A CONTEMPORARY CONCEPT OF BUSINESS MANAGEMENT Anna Wolak-Tuzimek	446
AN ANALYSIS OF THE SITUATION ON THE LABOUR MARKET IN RURAL AREAS IN POLAND Dariusz Żmija	454
THE USE OF EU FUNDS DEDICATED TO THE DEVELOPMENT OF ENTREPRENEURSHIP IN RURAL AREAS IN POLAND BASED ON THE MAŁOPOLSKIE PROVINCE Katarzyna Żmija	461

FOREWORD

The Faculty of Informatics and Management, University of Hradec Králové, The Department of Economics organised on 4. - 5. 2. 2014 12th international conference Hradecké ekonomické dny 2014 (Hradec Economic Days, HED 2014).

The aim and intention of the conference are to present the results of scientific research activities in the fields of economics, business economics and management, creating a platform for regular encounters of experts of related fields, strengthening relationships and research, establishing personal contacts so important for submission of joint research projects and creation of space for presentation and publication of young teachers. The HED 2014 conference meets all these requirements.

Five parts of the reviewed HED 2014 conference proceedings include 184 papers in Czech, Slovak and Polish, another part of the proceedings presents 116 papers in English. Most papers were registered in the section of Business economics and management and of Economy and Management of Enterprises and Regions.

The papers were divided thematically and discussed in eight sections.

1. Latest issues in the banking and financial markets
2. Regional development macroeconomic context
3. Tourism economics
4. Business economics and management
5. Economy and management of enterprises and regions
6. Ekonomia i zarządzanie regionów i przedsiębiorstw
7. Mathematical models in economics
8. Modern trends in management

I would like to thank all those who contributed to the preparation of the conference, members of the scientific, organisational and programme committee. Many thanks go to the reviewers and editor for the preparation and publication of the proceedings.

I believe that the Hradec Economic Days conference contributed to the exchange of professional knowledge, establishing and strengthening collegial relationships.

Significant achievement and appreciation for the Department of Economics, Department of management and the entire team was the inclusion of the Hradecké ekonomické dny conference proceedings of the years 2005-2011 **in the CPCI database** (Conference Proceedings Citation Index) on the Web of - Science. We will also strive to implement the HED 2014 conference proceedings in this database.

Hradec Králové of 13. 1. 2014
Ing. Jaroslava Dittrichová, Ph.D.
Head of the Department of Economics
Faculty of Informatics and Management
University Hradec Králové

REASONS FOR INTERVENTION OF THE CZECH NATIONAL BANK AND THE EVALUATION OF THE IMPACT ON THE INSURANCE MARKET

Gabriela Machalová, Lenka Štibrányiová

Technical University of Liberec

gabriela.machalova@tul.cz, lenka.stibranyiova@tul.cz

Key words:

monetary policy – exchange rate – interest rates – inflation – insurance market

Abstract:

To maintain price stability in the Czech Republic is in the hands of the Czech National Bank and it is the main objective of monetary policy. Given that the Czech National Bank implements its monetary policy under inflation targeting, the main objective is to maintain low and stable inflation not only with regard to the current period, but also with regard to the prognosis of future development. The current anti-inflationary tool for exposure of the domestic economy is weakening exchange rate so that the rate of the Czech crown against the euro near level 27 CZK /EUR, which helps to return earlier in headline inflation to 2% target even at zero interest rate restrictions.

Introduction

During the last two years the Czech Republic is in the recession, which negatively reflects on the increasing unemployment, a decline in revenues and consumption of households, and also decline in profits and investments of a companies. At the of the year 2012 the Czech National Bank (CNB) responded to this situation by reduction the interest rates to the lowest possible level – 0.05 %, this is the technical zero. The CNB is committed to that this situation will last as long as it will be necessary, with a goal of price stability and a stable progress of the Czech economy. Since the last quarter of the year 2012 the CNB also consider, if necessary, use the next monetary instrument – the exchange rate. The statement of the CNB of the readiness to use the exchange rate to weaken the Czech crown helped slightly slowly down a deflationary tendencies and the economy has recovered a little. However the recession and a decline in the labour

market wear off very slowly and their anti-inflationary impacts with declining prices of raw materials and energy lead to a further reduction of the inflation. It is expected that at the beginning of the year 2014 the inflation reaches 0 %, at the same time the price level will fall slightly. For this reason, the CNB decided to start using the exchange rate as a monetary policy instrument. The aim of this contribution is to analyze the current decision of the CNB and possible effects (positive and negative) on the financial market with a focus on the insurance market.

1. Monetary policy in the EU and in the Czech Republic

In today's globalizing world culminates the process of European integration, whose highest degree is an economic and monetary union. The main essence of the Economic and Monetary Union is the establishment of a single monetary policy (under which Member States fulfil the conditions for adopting the single currency, namely the euro), which is under the auspices of a single central bank - the European Central Bank. The condition for the involvement of Member States is to meet convergence criteria:

- the criterion on the price stability = average annual inflation must not exceed by more than 1.5 percentage points the average annual inflation rate of the three member states with the best values;
- the criterion on long-term interest rates = nominal long-term interest rate must not exceed by more than 2 percentage points average of the three best performing countries;
- the criterion on the sustainability of the government financial position
 - the share of government debt to GDP must not exceed 60 %,
 - the share of the budget deficit to GDP must be less than 3 %;
- the criterion on the exchange rate stability and participation in ERM II = at least two years remaining national currencies in ERM II;
- convergence in the legislative field. [8].

Monetary policy of the EU is currently characterized by asymmetric impacts that arise from the fact that within a single currency can be only one central bank and thus the single monetary policy. The Euro system may consider only the euro area as a whole, i.e., that in the euro area may be different economic situation in individual member countries, in particular we can talk about persistent inflation differentials. Possible

explanations may be: Balassa-Samuelson effect, improper initial conversion rates, autonomous pressure of wages and prices, errors in economic policy or asymmetric economic shocks. [2;410 - 412].

Czech Republic is currently obliged to take steps to be ready as soon as possible to join the Eurozone, although in the present is not met the criterion of the long-term sustainability of public finances, and the criterion on price stability (mainly due to increase in the lower VAT rate from 2012). Inflation target of the CNB since the beginning of 2010 was set at 2 %, which creates relatively good preconditions to fulfil the criterion on price stability. Evaluation of criterion on participation in the exchange rate mechanism is not yet possible because the Czech currency did not yet get involved into the system. On the contrary the criterion on long-term interest rates Czech Republic without any problems implemented and it is also expected in the future. The role of monetary policy is primarily to ensure price stability, which is an expression of responsibility of the CNB for sustainable economic development while accomplishing its objectives can use several monetary policy tools:

- Open market operations aimed at guiding the development of interest rates in the economy. The main monetary policy instrument is a two-week repo operation (2W repo rate 0.05 %)
- Automatic facilities, which serve to provide or store liquidity overnight, we can distinguish the deposit facility (discount rate = 0.05 %) and the marginal lending facility (Lombard rate = 0.25 %).
- Mandatory minimum reserves. [6].

With these tools the central bank can implement either expansive or restrictive monetary policy, but also neutral monetary policy. Monetary expansion is characterized by the fact that real money supply in the economy is growing faster than the demand for them; the monetary restriction is the opposite situation. [9;184].

2. The exchange rate as a current instrument of the monetary policy in the Czech Republic

The CNB is on the 7th November of the year 2013 decided that the current monetary policy instrument to use exchange rate rather than interest rates to meet the inflation target and decided to keep the exchange rate close to level 27 CZK/EUR, which

provoked a stormy wave of discussions and myths. This commitment is long-term, until the CNB does not obtain assurance that the decreased risk of undershooting the inflation target of 2 %. Using the exchange rate as a monetary policy instrument was recommended by the IMF (International Monetary Fund) as a tool against deflation risks. The CNB decided to use the exchange rate in the autumn of the year 2012, because interest rates have fallen to the level of technical zero, 0.05 %. Foreign exchange intervention carried out so that the central bank buys any amount of foreign currencies to weaken the Czech crown against the euro. The central bank as a monetary authority, may buy foreign currency in unlimited quantities, but the CNB decided to buy a foreign currency as long as it will be required to achieve the desired rate, thereby meeting the inflation target. At this time, we of course want to know how this will affect the negotiations of the CNB to the Czech economy and therefore companies and households. The following table shows the main positives and negatives of a weakening of the Czech crown against the euro. [3], [7].

TAB. 1: The main positives and negatives of weakening of the CZK / EUR

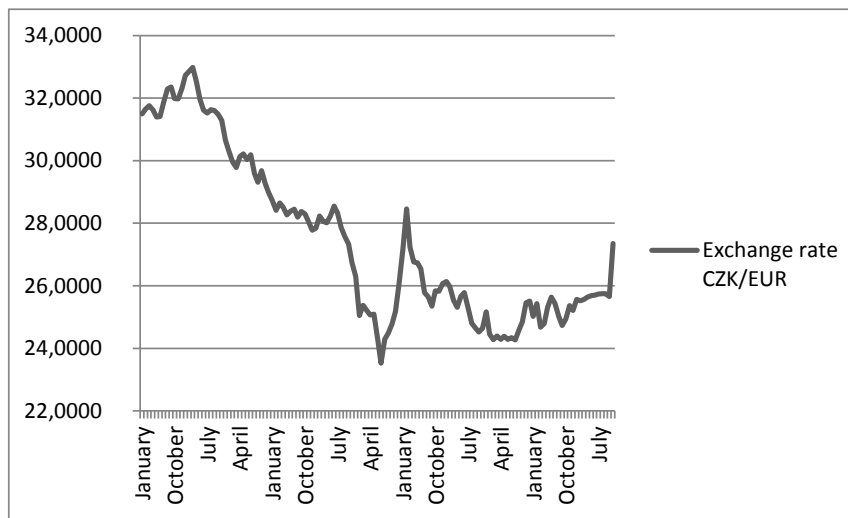
<i>POZITIVE</i>	<i>NEGATIVE</i>
increase exports	increase in import prices - reduced imports
increase the competitiveness and profitability of enterprises	increase in the domestic price level
willingness of firms to invest	lower purchasing power of households
employment and wage growth	exchange losses (for contracts that have a pre-fixed rate)
increase in the purchasing power of households	
foreign exchange gains (for contracts that have a pre-fixed rate)	

Source: [7], own processing

The weakening of the Czech crown against the euro, of course, will also influence the exchange rates against other currencies such as USD and more. Foreign exchange interventions, however, will take place mostly with euros. The following graph shows the progress of the exchange rate CZK/EUR in the last 10 years. The progress of the

exchange rate is relatively stable, the biggest drop of the exchange rate took place in the year 2008 due to the ongoing global financial crisis, in coming years the progress is again stable. Since November 2013 the rate will rise and stick to the surface about 27 CZK/EUR. In the Czech economy at this moment is guaranteed certainty regarding the future of the exchange rate of the Czech crown. [7], [8].

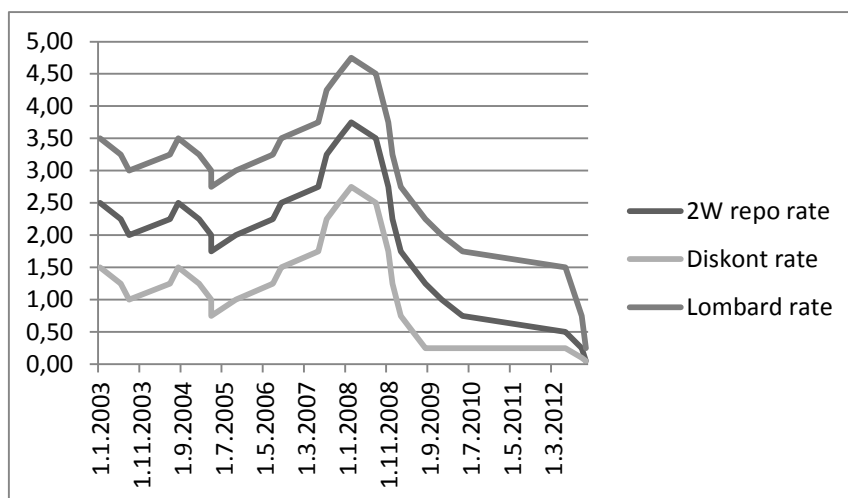
FIG. 1: The progress of the exchange rate from January 2003 to November 2013



Source: [5], own processing

The exchange rate was as a monetary policy instrument last used in the year 2002 due to the tightening of monetary conditions prevent and reduce the volatility of the exchange rate of the Czech crown and under conditions of non-zero (as is the case today) interest rates. Current foreign exchange interventions are performed solely for the purpose achieve the inflation target, a situation that interest rates are at their technical minimum, and therefore cannot be further reduced. Go back to using interest rates will be announced the decision of the Bank Board of the Czech National Bank. The Figure number 2 shows the progress of interest rates in the period 2003-2013, from the graph it is clear that by the end of the year 2012, interest rates fell almost to zero, and since this condition persists. [7].

FIG. 2: The progress of interests rates in the period 2003-2013



Source: [6], own processing

The current issue is also the fact that the exchange rate does not become the new target of monetary policy? No, it does not, the exchange rate is only used as a substitute for interest rates are currently so low that they cannot fulfil its function of monetary instruments. [4].

3. Effects of interventions of the CNB on insurance market

Given that the current foreign exchange intervention are carried out solely for the purpose of achieving the inflation target of 2 %, let's see what consequences can we assume for financial markets, namely for the insurance market. The issue of the impact and effects of deflation and high inflation on the insurance market is examined by K.C. Ahlgrim, S. P. D'Arcy [1]. Impact of inflation on insurance companies was also the subject of a study group Swiss Re [10].

Czech insurance market this year has stagnated, according to the latest data from the Czech Insurance Association is prescription of insurance comparable with the previous period, ie., that development follows the trend of previous years. What factors affect the insurance market and how the CNB's intervention reflected in the insurance market? On the insurance market acts internal and external factors and the external factors are macroeconomic variables such as the evolution of the size of gross domestic product, inflation rate and unemployment rate. It has already been stated that the intervention of CNB, i.e. due to the weakening of the exchange rate will pass the threat deflationary trap and will accelerate economic growth. It can be assumed that the expected positive

economic development will positively affect the annual growth in gross premiums written. While the rise in prices may sound like a negative effect, so the final effects of inflation may differ according to whether the change is expected or totally unexpected. In the present case, it is a completely planned inflation targeting. In the case of economic growth and lower unemployment increases the interest of insurance by individuals, the apparent increase in the demand for insurance life insurance.

Conclusion

If the Bank Board of the CNB decided to not use the exchange rate as a monetary policy instrument, might still be relatively stable exchange rate broke the Czech crown would become considerably stronger. It also recently intensified the decline in inflation expectations of businesses, households and financial markets. Previous efforts of the CNB to weaken the exchange rate and lower real interest rates, this could be reversed. This undesirable tightening of monetary policy by further heightening inflationary tendencies in the economy, it means that the beginning was hampered recovery and the improvement in the labour market, and the economy falling into another wave of recession and even deflation. Negative experiences with deflation in the last 20 years, have especially in Japan. According to the economic analysis of the CNB (Czech National Bank is in a community of other central banks perceived as a capacity in creation these analyses, forecasting and monetary policy in general), the deflation of an optimistic view may take 2-3 quarters, however, may be much worse. The CNB has therefore decided to take care of price stability, to eliminate the risk of deflation and decline of the economy into recession, and to ensure the rapid return of inflation to 2 %. The benefits of depreciation are primarily avert deflation trap and accelerate the economic growth. According to the CNB's forecast due to weaker expected growth rate of 2.1 %, for idle the CNB would have been much slower pace of growth by up to 1 %.

References:

- [1] AHLGRIM, K.C., D'ARCY S.P., *The Effect of Deflation or High Inflation on the Insurance Industry*. 2012. [cit. 2013-11-29]. Available from: <www.casact.org/research/NAACCRG/final_report.pdf>
- [2] BALDWIN, R., WYPLOSZ, CH. *Ekonomie evropské integrace*. 2. vyd. Praha: Grada Publishing, a. s., 2009, 480 s. ISBN 978-80.247-1807-1
- [3] ČNB. Důvody a přínosy oslabení koruny. 2013 [cit. 2013-11-25]. Available from: <http://www.cnb.cz/cs/faq/duvody_a_prinosy_oslabeni_koruny.html>
- [4] ČNB. Kurzový závazek aneb jako ČNB drží kurz u 27 Kč za euro. 2013[cit. 2013-11-23]. Available from: <http://www.cnb.cz/cs/faq/kurzovy_zavazek.html>
- [5] ČNB. Kurzy devizového trhu. 2013 [cit. 2013-11-23]. Available from: <http://www.cnb.cz/cs/financni_trhy/devizovy_trh/kurzy_devizoveho_trhu>
- [6] ČNB. *Měnová politika*. 2013[cit. 2013-11-22]. Available from: <http://www.cnb.cz/cs/menova_politika>
- [7] ČNB. Měnový kurz jako nástroj měn. pol. 2013[cit. 2013-11-25]. Available from: <http://www.cnb.cz/cs/faq/menovy_kurz_jako_nastroj_menove_politiky.html>
- [8] EUROSKOP. *Měnová politika*. 2013. [cit. 2013-11-23]. Available from: <<https://www.euroskop.cz/674/sekce/menova-politika/>>
- [9] KRAFT, J., BEDNÁŘOVÁ, P., KOCOUREK, A., *Ekonomie I*. 5.vyd. Liberec: Technická univerzita v Liberci, 2010, 203 s. ISBN 978-80-7372-652-2
- [10] Swiss Re. *The impact of inflation on insurers*. 2012. [cit. 2013-11-29]. Available from: < <http://www.swissre.com>>

THE INTEGRATION OF SOCIALLY RESPONSIBLE REPORTING WITH FINANCIAL REPORTING

Anna Maryniak

Poznań University of Economics

Anna.maryniak@ue.poznan.pl

Key words:

corporate social responsibility – financial reporting – accounting socially responsible

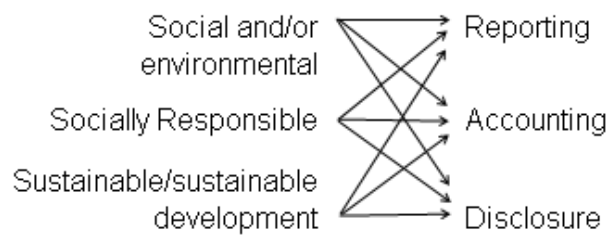
Abstract:

The integration of financial and non-financial data can contribute largely to the development of CSR idea, which overall aim is to keep social, economic and environmental balance. In this respect, the aim of the article is to present arguable issues in terms of the implementation of CSR activities within the above scope. On the basis of the critical analysis of the literature, the reference to designatum of names concerning socially responsible activities connected with accountancy issues has been established. In the further part of the article, we have pointed to available reporting methodologies which can be used for integrated reporting and we have presented the model reflecting the process of the development of integrated reporting. In the conclusion part, the results of the research concerning the matters in dispute during implementing socially responsible reporting have been presented.

Introduction

The relationship between Corporate Social Responsibility (CSR) with accountancy can be analyzed in two ways. Firstly, with the reference to the quality of the information presented in financial reporting. Secondly, with the reference to its scope. However, there is no full agreement, which of the names connecting the social responsibility with accountancy are excluding one of the above aspects. In the literature of the subject, the meaning scope of the names regarding the connection of accountancy with social responsibility is not unambiguous. A set of designata subordinated to certain names is diversified and is permanently indefinite. Among the range of terms created from joining multiple variants of constituents presented in Table 1, the relationship of substitution, subordination, superordination, excludability or crossing can be noticed.

TAB. 1: Constituents of names creating expressions used for describing the issues combining social responsibility and accountancy



Source: Own study based on bibliometric study of selected journals including: Business Strategy and the Environment, Accounting, Auditing & Accountability Journal, Journal of Accountancy, Journal of Sociology and Social Policy, Social Responsibility Journal, International Journal of Auditing, The British Accounting Review

Generally, it can be assumed that keeping accounts for the purpose of socially responsible actions is the element supporting the ideas of social responsibility promoted both by commercial and non-commercial entities. The most frequent discussions are in one of the most fundamental sections of accountancy – financial reporting.

The fact of keeping accounts itself, in a fair and honest way, is predetermined by law. From this point of view, one may refer to the necessity of keeping the accounts and making the entries in the accounts on the basis of financial reports in a responsible way.

1. Reporting of socially responsible activities

Currently, the increase of stakeholders' requirements, regarding CSR reporting and the increase of company's awareness when it comes to the benefits resulting from such type of reporting is visible. However, the reports presenting the socially responsible actions in Polish market conditions are still not commonly used.

The European Commission suggests increasing the requirements in the scope of presenting non-financial data [7]. Thus, the development of using standards with quantified and comparable data can be predicted, as well as the increase of the level of financial and non-financial data integration.

Historical, cultural and social differences between countries and world's regions determine various expectations in terms of reporting, thus the level of data integration is diversified. It can for instance:

- present socially responsible actions ad hoc, without systemic approach and irrespectively of the date of presented financial data,
- publish separate reports, informing about the socially responsible actions, basing (at least to some extent) on recognized methodologies,
- include information about CSR in annual reports or activity reports,
- present data regarding socially responsible actions in a way that it is integrated with financial accounting, reflecting cause-effect relationships, influencing the investment decisions and perception of the company by the stakeholders.

The example of radical approach in case of connecting the environmental reporting, is the common proposal of DVFA¹ and EFFAS². These organizations stress clearly that elaborated (as a result of their cooperation) the key performance indicators, being the alternative to Global Reporting Initiative – GRI (relating to reporting environmental, social and corporate governance issues) should be connected generally with generally binding reporting standards and should be presented in the annual report [1].

The sample model presenting the process of arriving at integrated reporting is presented in FIG. 1.

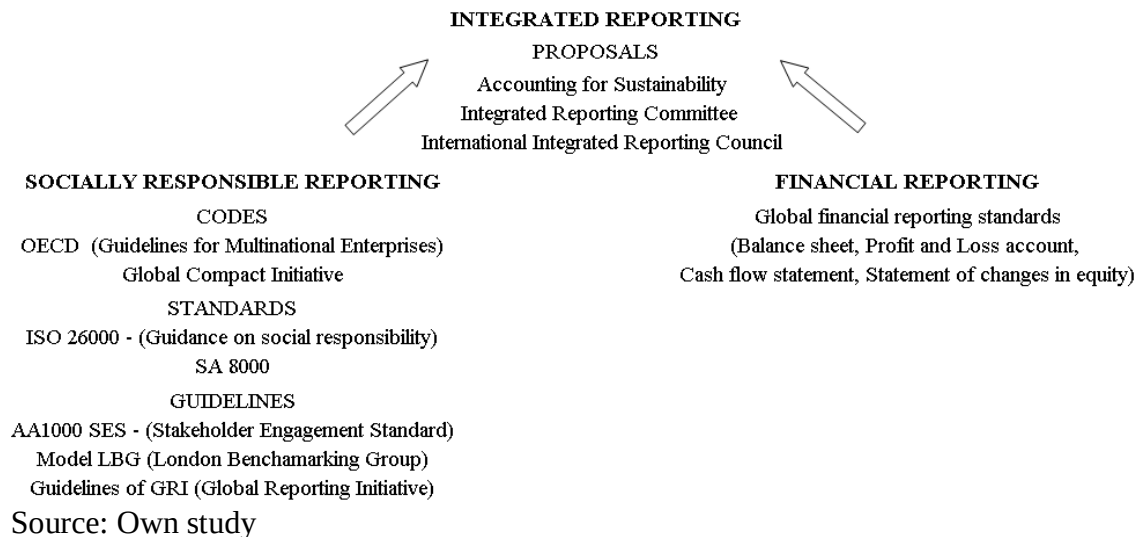
The first guidelines within the scope of integrated reporting, were published in 2007 and were included in the project “Accounting for Sustainability”. They gave the incentive to further proposals developed, among others by The International Integrated Reporting Council. Despite many benefits [3][10] connected with the implementation of integrated reporting, according to the data of CorporateRegister.com and the GRI statistics, still few of the economic operators uses it. One may hypothesize that one of the causes of the existing situation, is the lack of knowing the methodology, which in an indirect or in a direct way leads to integrated reporting and to benefits resulting from its

¹ DVFA (Deutsche Vereinigung für Finanzanalyse und Asset Management)

² EFFAS (European Federation of Financial Analysts Societies)

implementation. The confirmation of it, is numerous research concerning the scope of using standards and guidelines of CSR.

FIG. 1: The model reflecting the process of arriving at integrated reporting



Among the most important CSR standards of reporting, the previously mentioned GRI should be distinguished [2]. The central point of relevance in GRI guidelines are universal rules included in Global Compact (GC) [6], “therefore the two initiatives support each other and are integral platform of values, for organizations wanting to implement the policy of sustainable development in their business practice. Thanks to that, a lot of companies, release one report, which both communicates the progress in implementing GC rules and includes GRI indices”[9].

Currently, the work is proceeding over solving problems regarding the selection and including GRI indices to an integrated report and supporting them [4], also, over guidelines of ISO 26 000 (however, the latter doesn’t include a direct reference to the Frames of Integrated Reporting).

2. Debatable issues in the field of socially responsible activities

The exemplifications of the theoretical considerations are the research results, comprising the debatable issues within the scope of implementing socially responsible actions on various levels of reporting.³

As a result of the conducted research, the following conclusions were formulated:

- *reports concerning social responsibility should be reliable, but often they are not, since they don't include sensitive and uncomfortable data,
- *it is much debatable, if we should strive to keep comparability of data among the companies, because the resource potential, legal responsibilities and character of individual companies are different,
- *it is difficult to define the limit of validity of generating information in the triad of receivers: investor/shareholder – customer/public opinion – silent stakeholders,
- *requirements regarding the transparency of data, determining the strategy, mission etc. are opposite to the strategy based on surprising the competition, which guarantees elaborating the competitive advantage,
- *not every group of stakeholders is prepared to read the reports which include more and more information, especially non-financial,
- *international and global dimension of actions of many companies gives rise to the need of preparing the universal and simultaneously adequate reports to all culture conditions, in which the company operates, which is contradictory itself,
- * the lack of agreement on the justification of turning the retrospective accountancy into prospective accountancy discloses problematic areas in the process of creating the template of integrated reporting,
- *current proposals of standardized and harmonized reporting don't solve the problem of CSR lack in a supplier chain, which clearly show the scale of the problem,
- *there is a threat of repeating the standard practice of creative accountancy in creative reporting, so presenting the most positive picture of the company,

³ For the purpose of the article several unstructured in-depth interviews were conducted, which aim was to identify threats and problems resulting from the implementation of reporting concerning Corporate Social Responsibility, both on the level of separate, as well as integrated reports. The research was conducted both directly and by telephone. The respondents were people, who everyday deal with the preparation of financial reports and expert auditors. The study participants were people directly employed in companies, people providing outsourcing services, as well as people not related with any company (from legal reasons). The research was conducted in the last quarter of 2013.

- *risk connected with capital investments causes that every kind of reports are focused mainly on the primary stakeholder-investor, which causes problem connected with the obligation of safeguarding the impartiality in the process of providing the information,
- *the two quality features, classified as fundamental by IFSR, i.e. usefulness and relevance should be applied in socially responsible reporting, which is not noticeable in the current reporting,
- *cost limitations of information usefulness, especially with respect to small and medium enterprises clashes with the assumptions of socially responsible reporting, which scope suggests complying with the enriched quality features,
- *most of all, the weakest chain elements in all stakeholders' chain should participate in establishing the standards of reporting,
- *unified standards of socially responsible reporting lower the costs of actions in international markets, create the global language of messages, which are the source of competitive advantage and the response creating new market needs,

The conclusions presented might be inspirations to further research and reflections over the validity of ways of socially responsible action implementation.

Debatable is above all:

- *removing the limit of cost-effectiveness of integrated reporting implementation (i.e. the reports including not only the basic information regarding the financial actions of the company, but also integrated data, regarding the size and value of the realized socially responsible actions), especially when facing the strive to simplify and increase the transparency of data,
- *guidelines of possibilities and needs connected to the reporting of smaller businesses and designing for this range of recipients adequate instruments of social reporting.

Conclusion

Summing up the current research, it can be assumed that standardizing basic norms, guidelines and accountancy standards fosters standardizing CSR and it is, undoubtedly, only the beginning of the way of creating business reporting focused on social needs. The currently unified and standardized model of accountancy is a purely theoretical construct. Simultaneously, there is a visible tendency to reduce the role of the continental method (called also the transactional method), in which the information

resulting from profit and loss statement has a primary meaning, in favor of the value method, in which the mentioned information has a secondary meaning.

At the same time, as a result of the criticism of the financial reporting providing the retrospective data, the trust management paradigm is being displaced by valuation paradigm. It is, among others, required by the change of accountancy role, which is satisfying more and more needs of not only shareholders, but also other stakeholders interested in increasing the value of the company.

The currently discussed, new concepts of reporting, include the remarks regarding the extension of the information provided, especially the information relating to ecological and social responsibility, regulated not only by law.

The change in the approach to reporting, towards integrated reporting of social responsibility, being the response to appearing demand for economic, social and environmental information, both from the side of management and from the side of various groups of stakeholders, seems to be irreversible direction.

It is reasonable, however, to focus increasingly on instruments and ways of reporting dedicated to companies of smaller resource, turnover, and the level of employment, for which the social responsibility of business is very often connected with ethical and saving functions than with expenditures.

If we assume that social responsibility of businesses is „the responsibility of companies for its influence on the society” [5], and if the instrument of measuring the social responsibility is social responsibility accounting [8], it is difficult to question the role of accountancy in developing socially responsible actions.

Undoubtedly, the cost analysis, connected with jurisdiction of not complying with CSR issues, costs spent in the aware way on stakeholders and estimated benefits resulting from the implementation of CSR, gives the basis for making decisions in the scope of merits of the reports for the use of the company and external stakeholders.

References:

- [1] BURCKHARD, G., 2012, Diskurs. Soziale Indikatoren in Nachhaltigkeitsberichten. Freiwillig, verlässlich, gut?, November., Wyd. Abteilung Wirtschafts- und Sozialpolitik der Friedrich-Ebert-Stiftung, Bonn, s.16-17.
- [2] Global Reporting Initiative; G4 Sustainability Guidelines. Reporting Principles and Standard Disclosures; 2013; <https://www.globalreporting.org/resourcelibrary/GRIG4-Part1-Reporting-Principles-and-Standard-Disclosures.pdf>; (access on: 5.11.2013).
- [3] ECCLES R., CHENG, B., SALTZMAN D., *The Landscape of Integrated Reporting. Reflections and Next Steps*, 2010. Wyd. The President and Fellows of Harvard College Cambridge, Massachusetts, s.82-83.
- [4] HOHNEN, P., BLACKBURN, W., *GRI and ISO 26000: How to use the GRI Guidelines in conjunction with ISO 26000*, 2011, Wyd. GRI, Amsterdam,: <https://www.globalreporting.org/resourcelibrary/How-To-Use-the-GRI-Guidelines-In-Conjunction-With-ISO26000.pdf>; (access on: 5.11.2013).
- [5] Komisja Europejska, 2011, Komunikat Komisji Parlamentu Europejskiego, Rady, Europejskiego Komitetu Ekonomiczno-Społecznego i Komitetu Regionów. Odnowiona Strategia na lata 2011-2014 dotycząca społecznej odpowiedzialności przedsiębiorstw, Kom (2011) 681 wersja ostateczna, Bruksela, 25.10.2011, s.7. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0681:FIN:PL:PDF>, (access on: 7.11.2013).
- [6] *Making the connection: Using the GRI G3.1 Guidelines to Communicate Progress on The UN Global Compact Principles*, 2013, Wyd. United Nations Global Compact and the Stichting Global Reporting Initiative (GR), http://www.unglobalcompact.org/docs/communication_on_progress/Tools_and_Publications/Making_the_Connection_Final.PDF; (access on: 5.11.2013).
- [7] Proposal for a Directive of the European Parliament and of the Council, 2013, COM(2013) 207, European Commission, Strasbourg, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0207:FIN:EN:PDF>; (access on: 6.11.2013).
- [8] SAMELAK, J., 2013, *Zintegrowane sprawozdanie przedsiębiorstwa społecznie odpowiedzialnego*, Wyd. UE Poznań, Poznań, s.27.

- [9] SROKA, R., GRZYMISŁAWSKI A., KUSTRA, A., 2013, *Raportowanie danych pozafinansowych. Przewodnik dla przedsiębiorstw*, 2013, Ekspertyza przygotowana dla Ministerstwa Gospodarki przez Crido Business Consulting oraz Akademię Górniczo-Hutniczą, s. 39, http://www.mg.gov.pl/files/upload/7904/pmp_MG_raportowanie20zintegrowane_A4_EMISJA_press.pdf
- [10] *Towards integrated reporting. Communicating Value in the 21st Century*, 2011, Wyd. International Integrated Reporting Committee, s.20-23, http://theiirc.org/wp-content/uploads/2011/09/IR-Discussion-Paper-2011_spreads.pdf; (access on: 6.11.2013).

POLISH PEOPLE'S FOREIGN TRAVEL EXPENSES IN 2000 – 2012

Andrzej Matczak, Rafał Gotowski

University of Łódź, Kazimierz Wielki University

matczak@geo.uni.lodz.pl, rgotowski@wp.pl

Key words:

expenses – tourism – foreign travel – Poland

Abstract:

In the period of 2000 – 2012 one could observe an increasing trend in the foreign travel expenses paid by Polish people, both before and during journeys. In total, the expenses fluctuated between PLN 7.5 and 14.4 billion annually. The expenses paid before traveling made 46.1 – 57.5%, depending on the year, and contributed PLN 3.75 – 7.2 billion a year to national economy. Travel organisation, the purpose of travel and the tourists' financial situation were the key factors determining the amount of the expenses.

Introduction

It is traditionally believed that the positive economic impacts of tourism result from the arrivals of tourists who spend their money in tourist reception areas. So far, the fact that tourism is of much greater economic importance than that has been ignored. First of all, its positive economic impact on the tourism-generating areas has remained unnoticed. It was believed that tourism has only a negative influence, because money is taken out of a tourism-generating area and spent somewhere else. It was not until mass tourism had rapidly developed that made it clear how important and influential it is as regards the economic life of the countries which both, produce and receive tourists. Despite the fact that it makes the money flow abroad, the out-bound foreign tourism also boosts the economy of the country which produces the tourists. Tourism is a temporal and spatial phenomenon. It consists of several consecutive phases, defined by Wodejko [1] as: I - Preparation; II – Journey to the destination; III – Stay; IV – Journey back; V –

Summing up. Two of these phases (I and V) regard the area generating tourists, which is sufficient to show the importance of the issue.

So far, the impact of foreign travel on the economies of the countries which generate it has not been discussed at length. There is a clear lack of empirical studies dealing with this particular subject. In recent years, surveys concerning the tourist activity of household members in Poland have included the problem of foreign travel expenses (studies [2-5] by the Tourism Institute and the Central Statistical Office). However, the data which was obtained is insufficient to run a thorough analysis of this particular issue. The surveys conducted by the Tourism Institute [2,3] reveal only the general trends observed in recent years as regards the amount and ratio of foreign travel expenses paid before and during journeys. The studies conducted by the Central Statistical Office [4,5] do not offer even that.

Based on his own reflections, the available literature, as well as empirical studies materials (mainly provided by the Tourism Institute), the author has attempted to verify the positive economic impact of foreign travel in tourism-generating areas, using the example of Poland.

1. The advantages of foreign travel in tourism-generating areas

A tourist journey requires proper preparation, which takes place at the tourist's place of permanent residence. At this stage, it is necessary to obtain information about the chosen tourist destination, to buy suitable equipment, clothes and many other accessories needed during the journey and the stay. This requires spending substantial sums of money. The local market must of course provide such accessories. If they cannot be found on the local market, the tourist will buy them elsewhere (usually at the tourist reception place). Therefore, in order to supply the local market with the products and services needed to go on a tourist trip, new production should be started and/or the existing one should be enlarged, which requires investing. New jobs are created, employment grows, etc., at both the existing and the new companies and institutions. Tourism-generating areas must then have a good knowledge of the extent and content of the tourist demand, e.g. of how many people are planning to travel, where, in which season, etc. (marketing). Such knowledge allows for proper market supply. Participating in tourism requires money. Potential tourists must obtain necessary means

for their trips from their current incomes or, more often, from savings or extra work. This leads to a change in a potential tourist's consumption. Preparations for the journey, as well as the activity and expenditure in the tourism-generating areas boost their economies (e.g. the multiplier factor), which would never occur if it had not been for foreign travel.

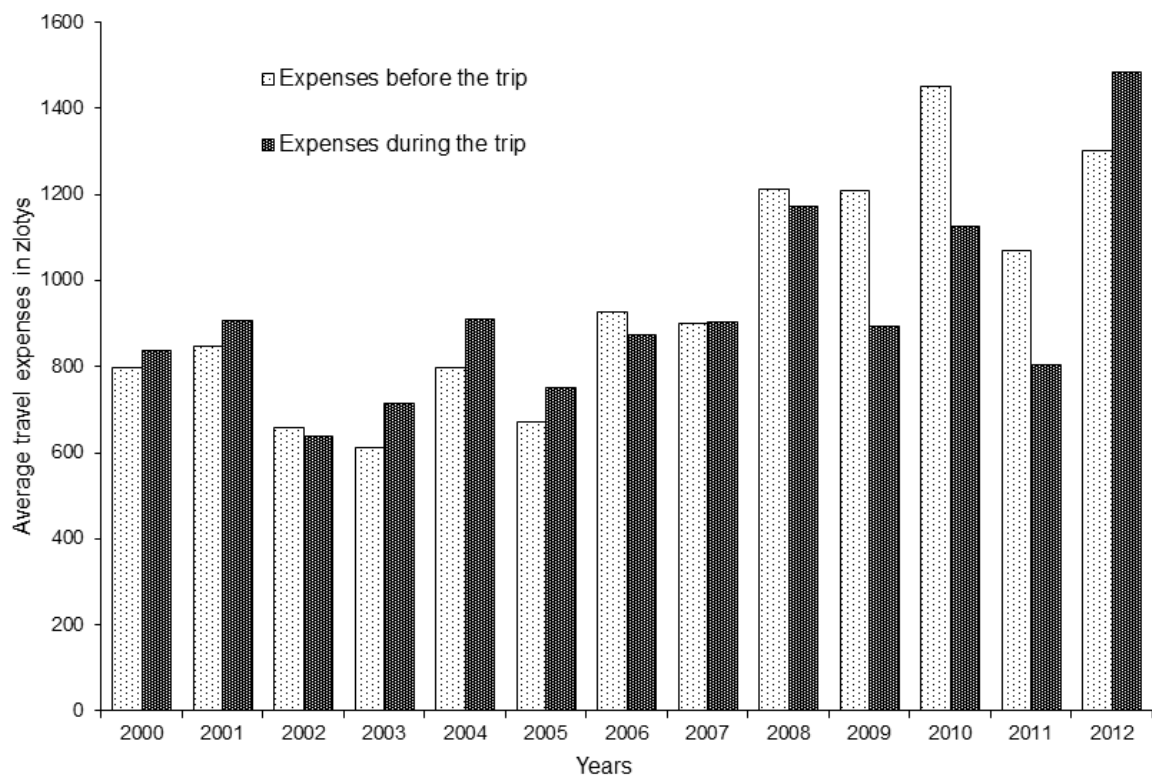
As it has been observed so far, the losses resulting from the outflow of money taken away by the tourists traveling to foreign tourist reception areas are compensated in the tourism-generating areas by the expenses paid before the trip. This economic mechanism, difficult to examine in detail, functions well in real-life economy.

2. The amount of Polish tourists' foreign travel expenses

The data concerning the number of long tourist trips made by Poles in 2000 – 2012 in Poland and abroad (provided by the Tourism Institute [2-5] and obtained from the statistical yearbooks and the Central Statistical Office materials) clearly points to their considerable changeability in individual years and to the decreasing trend. The foreign trips dynamics differed from that of domestic trips. The latter were on the decrease while the former – on the increase. Hence, Poles' total foreign travel expenses (including at least one overnight stay) in 2000-2012 were gradually growing. The results of some surveys conducted by the Tourism Institute [2,3] include the average amount spent on foreign travel and divided into the expenses paid before and during the trip. The percentage of the expenses paid before the trip, depending on the year, was 46.1 – 57.5% of the overall amount spent on the trip. It appears then that the expenses paid before the trip were approximately equal to those paid during the trip. According to the Tourism Institute, the expenses paid by Polish tourists while traveling abroad in 2000 - 2012 (including at least one overnight stay) fluctuated in individual years between PLN 7.5 to 14.4 billion annually. The expenses paid before traveling abroad came between PLN 3.75 and 7.2 billion annually, and supported national economy. Allowing for a slight inaccuracy of these figures, the economic impact of those expenses on national economy was significant.

In 2000 – 2012, the average expenses paid for a single trip abroad strongly fluctuated from year to year. However, they always showed an increasing trend. Nominal expenses doubled¹. Similar increasing trends were observed as regarded the average expenses paid before and during the trip (Fig.1). What is interesting, the growth of the expenses paid before the trip was steadier (they fluctuated less during the year) than the expenses paid during the trip abroad (a much higher amplitude of the fluctuations).

FIG. 1. Average expenses paid by Polish tourists before and during trips abroad in 2000 – 2012.



Source: based on [2,3].

¹ The increasing trend is expressed here in nominal prices. The real changeability of costs depends on inflation. In the studied period it was 41.5% in total.

3. The factors diversifying the amount of average foreign travel expenses paid by Polish tourists

The key factors diversifying the amount of foreign travel expenses included: travel organisation, the aims of travel, and the tourists' financial situation.

The largest expenses were recorded for trips organized by travel agencies. In 2000 – 2012, they increased from about 2000 to 4300 zlotys per trip. The expenses paid before the trip showed a similar increase dynamics, from 1340 to 2900 zlotys (a large cost of the package, where the majority of the amount spent went abroad to pay for accommodation, food, etc.). They were twice as large as the expenses paid during the trip abroad. The average expenses paid by tourists who organized the trip themselves were half that amount (with a slightly longer stay at the same time), and the expenses paid before the trip were not much smaller than those during the trip. In the case of a mixed method of organizing foreign travel, the average expenses came between the cost of buying a trip at a travel agency and the cost of organizing it individually. Here, the expenses before the trip were only slightly larger than those paid during the trip.

The amount of the foreign travel expenses depended on the aim of travel. Trips abroad made for tourist-recreational purposes only during the holiday time generated the highest costs. This seems to have been caused by the high number of packages bought at travel agencies, in which case the expenses before the trip are much higher than those during the trip. The cost of such a trip was gradually growing, from about 2000 to 3800 zlotys. The expenses paid before the trip was growing faster than those paid abroad. The average expenses paid for traveling abroad in order to visit family or friends were visibly lower (increasing from 1200 to 2100 zlotys), despite the fact that those stays were sometimes even a week longer than the trips made for tourist-recreational purposes. Slightly more money was spent during than before the trip. The smallest expenses were recorded for business trips, whose duration came between that of tourist-recreational trips and that of the trips made to visit family or friends. Their costs were highly changeable in individual years, and the expenses at the end of the studied period were nearly identical to the ones recorded at its beginning. As regards business trips, the expenses were much larger during a trip abroad than before it.

The tourists' financial situation had a significant influence on the average amount of foreign travel expenses. The largest amounts of money were spent by people declaring a good financial situation. The expenses paid by those tourists were gradually increasing and their growth rate was high (from 2200 to 3500 zlotys), despite considerable annual fluctuations. The ratio of the average amount of expenses before and during the trip was balanced, despite the fluctuations. Considerably less was spent on foreign travel by people who described their financial situation as average or bad. The growth rate of those expenses was also considerably lower. When the financial situation was described as average, the expenses paid before and during the trip were nearly identical. When it was described as bad, the expenses paid during the trip were initially slightly larger, and in recent years it has been the expenses paid before the trip that have been a little larger. Despite considerable annual fluctuations, a less favourable financial situation declared by the tourists caused a longer stay abroad.

Conclusions

In 2000 - 2012 an increasing trend was observed as regarded the foreign travel expenses paid by Poles, both before and during the trip. The total expenses amounted to PLN 7.5 – 14.4 billion annually. The percentage of expenses paid before the trip came between 46.1 and 57.5%, depending on the year. Those expenses supported national economy with the amount of PLN 3.75 – 7.2 billion a year. The amount was determined by the way the trip was organized, the purpose of travel, as well as the tourists' financial situation. The analyses confirm the assumption that the amounts of money taken abroad by traveling Poles are compensated in Poland with the tourists' expenses paid before the trips abroad. These expenses appear to be beneficial for national economy.

References:

- [1] WODEJKO, S. *Ekonomiczne zagadnienia turystyki*. 1 wyd. Warszawa, Prywatna Wyższa Szkoła Handlowa. 1997, ISBN 83-86919-23-X.
- [2] ŁACIAK, J. *Uczestnictwo Polaków w wyjazdach turystycznych w 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 roku*. Warszawa, Instytutu Turystyki. 2002 – 2012. Raporty roczne wykonane w ramach Programu Badań Statystycznych Statystyki Publicznej na 2001-2011. Temat nr. 1.30.06(081-102), Aktywność turystyczna Polaków. <<http://www.intur.com.pl>>
- [3] ŁACIAK, J. *Aktywność turystyczna mieszkańców Polski w wyjazdach turystycznych w 2012 roku*. Warszawa, Instytut Turystyki 2013. Raport w ramach Programu Badań Statystycznych Statystyki Publicznej na 2012. Temat nr. 1.30.06(102), Aktywność turystyczna Polaków. <<http://www.intur.com.pl>>
- [4] GUS, *Statystyczne Roczniki Turystyki z lat 2000 - 2012*, Warszawa, 2001-2013, ISBN 1425-8846, <<http://www.stat.gov.pl>>
- [5] GUS, *Turystyka i wypoczynek w gospodarstwach domowych w 2001 r., 2005 r., 2009 r.*, Warszawa, 2002, 2006, 2010, ISBN 978-83-7027-455-9. <<http://www.stat.gov.pl>>

EFFECTIVE EMPLOYEE MOTIVATION IN THE WOKRPLACE

Natália Matkovčíková

University of Economics in Bratislava

natalia.matkovcikova@gmail.com

Key words:

motivation – employee - theories of motivation - motivation strategies - effective motivation

Abstrakt:

Motivation plays an important role within an organization. Implementation one of many motivation theories is need to change the employee 's motivation behaviour. There is not one right motivation strategy and it should be the goal of the company to find what motivates its employees and play off that. Effective employee motivation in the workplace will lead to higher productivity within departments or the company overall, improve work quality as employees would feel as they are being valued for the job well done.

Introduction

Manager in the workplace should be able to motivate employees. This becomes complicated because some employee's do not have the incentive or commitment to get the job done properly. Motivation practices and theories are difficult subjects, as they are associated with many different philosophies. Motivation is not clearly understood and often poorly practiced. To understand motivation one must understand human nature itself. Understanding and appreciation of this is a prerequisite to effective employee motivation in the workplace.

1. Motivation theories

Motivation in the workplace is one of the main concerns that managers face when trying to boost their employees to work harder and do what is expected of them on a day-to-day basis. That motivates workers to work harder to meet individual needs and organizations to achieve goals. There are many theories of motivation accepted. Each motivation theory can be divided into two categories; content theories and process theories (Coulter M., Langton N. & Robbins S. T., 2007).

Content theories focus on what sorts of factors provide motivation and process theories attempt to explain how motivation and behavior are related. Each theory shows the differences that people have and how they can be applied to motivate the individual. Some of the most famous researchers include; Abraham Maslow (Hierarchy of needs), Douglas McGregor (Theory X and Theory Y), David McClelland (Achievement motivation) and Frederick Herzberg (Two-factor theory).

Abraham Maslow defines hierarchy of needs as shape of a pyramid with the largest, most fundamental levels of needs at the bottom and the need for self-actualization at the top (Goble, F., 1970). Maslow stated that a certain need "dominates" the human organism. Thus Maslow acknowledged the likelihood that the different levels of motivation could occur at any time in the human mind, but he focused on identifying the basic types of motivation and the order in which they should be met (Maslow, A., 1954). A business should therefore offer different incentives as reward to workers in order to help them fulfill each need and progress up the hierarchy. Managers should also recognize that not all workers are motivated by the same needs and do not all move up the hierarchy at the same pace.

Douglas McGregor's Theory X and Theory Y encompass a negative and positive view in assumption of human behaviour. Theory X manager assumes that an average person is a lazy person, who dislikes work and tends to avoid it. The Y Theory states that management assumes employees may be ambitious and self-motivated and exercise self-control. They believe that the satisfaction of doing a good job is a strong motivation. Theory Y managers are more likely than Theory X managers to develop the climate of trust with employees that are required for human resource development. This would include managers communicating openly with subordinates, minimizing the difference between superior-subordinate relationships, creating a comfortable environment in which subordinates can develop and use their abilities. This climate would be sharing of decision making so that subordinates have say in decisions that influence them (McGregor, D., 1960).

David McClelland defines achievement motivation as people possess and exhibit a combination of these characteristics. Some people exhibit a strong bias to a particular motivational need and this motivational or needs 'mix' consequently affects their behavior and working/managing style. McClelland suggested that a strong 'affiliation-motivation' undermines a manager's objectivity, because of their need to be liked, and that this affects a manager's decision-making capability. A strong 'authority-motivation' will produce a determined work ethic and commitment to the organization, and while people are attracted to the leadership role, they may not possess the required flexibility and people-centered skills.

McClelland argues that people with strong 'achievement motivation' make the best leaders, although there can be a tendency to demand too much of their staff in the belief that they are all similarly and highly achievement-focused and results driven, which of course most people are not. McClelland firmly believed that achievement-motivated people are generally the ones who make things happen and get results, and that this extends to getting results through the organization of other people and resources, although as stated earlier, they often demand too much of their staff because they prioritize achieving the goal above many varied interests and needs of their people (McClelland, D., 1978).

Frederick Herzberg research was influenced by an interview study to select potential candidates. He believes in a two-factor theory of motivation. He argues that there are certain factors that organization can introduce to motivate employees to work harder (Motivators). However, there are also factors which will dissatisfy an employee if absent, but these do not motivate employees (Hygiene factors). Motivators are related to the job, such as how much opportunity it gives for extra responsibility, recognition and promotion. Herzberg believes that management can motivate workers by giving them recognition for their achievements and career advancement. Hygiene factors are external factors like salary and work conditions. Management can punish workers by reducing salary or downgrading the work condition. They can reward workers by providing them as incentives (Herzberg F., 1968).

2. Motivation strategies

Effective motivation in the workplace is one of the most challenging and significant responsibilities for management in an organization. Managers need to persuade the employee to get them to want to do the task. Employees need to be intrinsically motivated to be engaged at work. The future success of a business is concluded on the ability of a manager to motivate employees to accomplish organizational objectives, by making certain the manager recognize, understand, and implement one of the motivation theories to change the motivation behavior. Companies should continually develop and implement different motivation strategies to find what appeals to the employees and what is effective for the workplace environment. To accomplish this task in an efficient and acceptable manner, employees are instrumental. The strategies that are put in place must be something that they want, need and have the will to work towards in order to keep employees engaged, interested, and driven (Connect Limited, 2008).

There is not one right motivation strategy and it should be the goal of the company to find what motivates its employees and play off that. If the strategies are not appropriate for the company or employees working for that company, they may run the risk of a lot of unhappy employees, who may not stay, or provide quality work. Money is not always the motivator. At some point, employees like to be honoured and recognized for their work. Non-monetary benefits are just as important as the monetary ones.

3. Effective employee motivation in the workplace

Motivation in a workplace may be achieved through numerous of factors. It is important that managers identify the level of need that each employee is in order to drive motivation towards success.

The method of increasing motivation by financial incentives is the most common in organizations where companies depend on level of productivity produced per day or per hours. This program is defined as a pay plan that bases a portion of an employee's pay on some individual and/or organizational measure of performance (Robins S. & Judge T. A., 2009). With this approach there is an incentive to produce more in order to gain more financial rewards. In addition, fringe benefits can be introduced instead of the increase in wages. This is employee's benefits which would be given to add value to their salaries such as health benefits, company cars, etc which sometimes may be more valued by employees than the increase in salaries. Another financial incentive that may be given is a shared of business profits for a certain period of time. This would motivate team spirit and employees would work harder to attain company's goals.

Non-Financial Incentives sometimes are not an effective method to increase motivation. This may work for short term periods but after a while employees may want other motivator's factors to make them feel appreciated and valuable within the organization. Some of the non-financial motivators that may be used in order to increase an employee's job satisfaction may be job enlargement, job rotation, job enrichment, job redesign and modifying for schedules through methods such as flex time.

Which approach is more effective for the company could be found out through a process called Employee Appraisal. After collecting the information through the employee appraisal, managers would need to identify which approach better fits the organization, if financial or not financial incentives motivate employees more. This well depends on employee's

preferences and motivating factors and the budget that the company is willing to make available for bonuses or to increase salaries.

Conclusion

Employees should be motivated by providing them rewards, improving their working conditions, employee recognition and among others. Individuals rewards as discussed may bring some negative implications as it creates unnecessary competition and it also lower cooperation between employees because employees will only do what needs to be done to get such reward in some instances. Small thoughtful changes of the organization's human resource design can help to improve employees' performance by simply redesigning jobs through statuary such as job rotation, job enlargement and job enrichment so employees can identify more with the company and understand the importance of tasks performed by the co-workers. Every manager should understand that motivation is a key concept that is essential for a healthy workplace environment and that managers manage but leaders inspire their subordinates. Highly motivated employees will lead to higher productivity within departments or the company overall, improve work quality as employees would feel as they are being valued for the job well done.

Acknowledgement:

The article is an output of scientific project VEGA č.1/0053/12 - Personálny marketing a personálny manažment v malých a stredných podnikoch v kontexte hospodárskych zmien.

References:

- [1] ANDREJČÁK, M. Úlohy personálneho manažéra v kontexte súčasných zmien. In: *Personálny marketing a personálny manažment v malých a stredných podnikoch v kontexte hospodárskych zmien* [vedecký zborník]. S. 43- 49. - Bratislava : Vydavateľstvo EKONÓM, 2012. ISBN 978-80-225-3568-7
- [2] COULTER, M., LANGTON, N. & ROBBINS, S.P. (2007). *Fundamentals of Management, Fifth Canadian Edition*. Don Mills, ON: Prentice Hall Canada. ISBN-13: 9780131757370. 448 p.
- [3] GERTLER, Ľ, A story of global financial deepening. In: *BIATEC : odborný bankový časopis*. Roč. 21, č. 1 (Január 2013), s. 14-20. - Bratislava : Národná banka Slovenska, 2013. ISSN 1335-0900
- [4] GOBLE, F. (1970). *The third force: The psychology of Abraham Maslow*. Richmond, CA: Maurice Bassett Publishing. ISBN 0-9760402-0-4.
- [5] HERZBERG, F. (1968). *One More Time: How Do You Motivate Employees?*. Harvard Business Review Reprint 87507. Dostupné na internete: <http://www.facilitif.eu/user_files/file/herzburg_article.pdf>.
- [6] MASLOW, A. (1954). *Motivation and personality*. New York, NY: Harper and Row.
- [7] MC GREGOR, D. (1960). *The Human Side of Enterprise*, New York, McGraw-Hill.
- [8] MC CLELLAND, D. (1978). *Managing motivation to expand human freedom*. American Psychologist. Vol 33(3), Mar 1978, 201-210.
- [9] ROBBINS S. P. & JUDGE T. A. (2009) *Organizational Behavior*. 12th ed. Upper Saddle River, New Jersey: Pearson Prentice Hall.
- [10] ROK CONNECT LIMITED. (2008). *Motivation in the Workplace*. Dostupné na internete: <<http://www.termpaperwarehouse.com/essay-on/Workplace-Motivation/80734>>

THE ROLE OF INDIGENOUS KNOWLEDGE IN MODERN MANAGEMENT

Peter Mikulecký, M. Saeed Lodhi, Pavel Vlček

University of Hradec Králové, COMSATS Institute of Information Technology,
Technical University of Ostrava

peter.mikulecky@uhk.cz, lodhi923@gmail.com, pavel.vlcek@vsb.cz

Key words:

indigenous knowledge – knowledge management – managerial approaches

Abstract:

Indigenous knowledge refers to a large body of knowledge and skills developed outside the formal educational system. They are usually embedded in culture of a particular community and unique to a given location. Their importance has been increased in a few last years when a number of authors had stressed their significance for development of particular, usually underdeveloped regions. There is a leading opinion that the proper management of this type of knowledge is still missing. In the paper we focus the attention on difference between scientific and indigenous knowledge and we bring some arguments in favour of indigenous knowledge exploitation in modern management.

Introduction

Indigenous knowledge refers to the large body of knowledge and skills that has been developed outside the formal educational system. It is embedded in culture of a community (indigenous community) living usually for ages in a particular location and it is unique to that location. Although many authors in the past wrote a lot about the importance of indigenous knowledge, the proper management of this kind of knowledge is still missing. We believe that it is possible to manage indigenous knowledge via an integration both scientific and indigenous knowledge, and that this integration can be utilized easily as one of modern managerial approaches. Such integration is vital for underdeveloped regions in developing countries, as indigenous knowledge seems to be essential for the food security and health of millions of people. In our paper we bring some arguments in favour of that, mainly using Pakistan as a supporting example.

1. Indigenous Communities and Indigenous Knowledge

The significance of indigenous knowledge and its management can be explained using Pakistan as an example. In Pakistan, about 66% people are living in rural areas, overall literacy rate is approximately 55% (even less for rural areas), and about 25% people are living below the poverty line. Due to varied climate Pakistan is quite rich in medicinal herbs scattered over a large parts of the country. That is the reason, why many indigenous communities living in different parts of the country are more and more indicating the importance of managing indigenous knowledge. Intelligent and sustainable use of land, water and soil without causing damage to the resilience and functioning of the surrounding ecosystem is what is required and expected by indigenous communities. Of course, this can be possible using appropriate management at local and also at national level. However, local knowledge is the basic component of any country's knowledge system, so the first step to mobilize such a capital must be in exploiting the local knowledge. Exchange within a community where providers and recipients speak the same language and share its underlying cultural concepts is much more easily accomplished than transferring tacit knowledge across cultures. Indigenous knowledge and appropriate techno blending is essential in a sense, that if people use their own locally generated knowledge to change, they improve their livelihood and provide opportunities for designing development projects. If serious consideration is given to indigenous knowledge management, it has the capability to provide practical tools for poverty alleviation, sustainable development and empowerment in general. For Pakistan, it is crucial to improve scientific as well as indigenous knowledge at the local level for monitoring and managing complex ecosystems, such as watersheds, forests, and seas, and for helping to predict (and thereby manage) the impact of climate change and the loss of biodiversity. Some examples can be found, e.g., in [2], [6], [9] or [10].

2. Western (Scientific) and Indigenous Knowledge

According to Briggs [1], western science and indigenous knowledge are too frequently represented as two different, competing knowledge systems, characterised by a binary divide. Western science is seen to be open, systematic and objective, dependent very much on being a detached centre of rationality and intelligence, whereas indigenous knowledge is seen to be closed, parochial, unintellectual, primitive and emotional [1].

Indigenous or local (traditional) knowledge refers to a complete body of knowledge, know-how and practices maintained and developed by people, generally in rural areas, who have extended histories of interaction with the natural environment. According to Flavier [3], indigenous knowledge is the information base for a society, which facilitates communication and decision making; it is dynamic and continuously influenced by internal creativity and experimentation as well as by contact with external systems. Indigenous knowledge is usually shared among local communities and transferred from one generation to the next, through oral traditions and storytelling and also local people often have a good understanding of how and why resources and the environment have changed over time (cf. also [6], [7], or [8]).

Indigenous knowledge consists of a wide range of knowledge that has largely remained hidden from the mainstream of education, innovation, industry and commerce. Its holders, as custodians thereof, have enormous potential for innovation and commercialization of indigenous knowledge. The existing knowledge about critical spheres such as health, agriculture and water management could be captured using a variety of existing means such as stories, songs and skits. These may be recorded using a variety of existing media such as paper, images, audio and video. Collect and record existing practices using 'low-tech' ICT without adding large, expensive infrastructure and is retained in the local language using local techniques for capturing it, indeed low-tech approach should be a starting point.

3. Indigenous Knowledge for Improving Rural Regions Management

Indigenous knowledge systems are typically human centered, very diverse, applying technology of local origin and it is developed after the years of experiences and experiments, trial and error and incremental refinement. For example, knowledge about the characteristics of a particular plant and its properties, the technology of its use, is what gives medicinal plants their social and economic value. Management of knowledge is important since to have knowledge is not sufficient but connecting knowledge with its application empirically or conceptually is essential. Indigenous knowledge generally provides a medium for connecting a way of knowing, a way of feeling and also a way of doing. It is necessary to integrate indigenous knowledge management with other knowledge management systems for achieving more benefits.

The focus on the role of knowledge in development processes is the result of understanding about the relationship between economic growth and the application of knowledge. Indigenous knowledge is an important resource in the development process of local communities. Sharing indigenous knowledge within and across communities can help to enhance cross-cultural understanding and to promote the cultural dimension of development. Indigenous knowledge is an important part of the lives of the poor while it is also an integral part of the local ecosystem.

Mwantimwa [11] paid attention to the fact that indigenous knowledge holders and innovators encourage economic self-sufficiency for indigenous people, and also provide incentives for the conservation and sustainable use of environment. Indigenous knowledge is important for both the local communities and the global community as it is based on exchange within a community and expresses human creativity; both individual and collective. Local knowledge is the knowledge held by individuals that comes from their own observations, experiences, beliefs or perceptions rather than from scientific research. According to [4] indigenous knowledge is capable of increasing production and real economic growth rate without further damaging the environment by better knowing, harvesting and using knowledge as a vital and competitive development resource. Significance of indigenous knowledge for Pakistan is more due to its large area with high mountains and varied climate. One paradigm is given in [12]. According to it, in Himalayan ranges (Pakistan) at least 70% of medicinal plants and animal species in the region consist of wild species, and 70-80% population depends on these traditional medicines for healthcare.

Of course, technology should be introduced nowadays where necessary, but in minimalistic ways, so as to add value to the traditional systems and make them more resilient in the face of new threats, such as those posed by climate change. Undoubtedly information and communication technologies can play major roles in improving the availability of indigenous knowledge systems and enhancing its blending with the modern scientific and technical knowledge. Therefore the application of ICTs is essential to stimulate the flow of indigenous knowledge and incorporation of modern scientific and technological understandings to traditional knowledge; it can enable indigenous communities to protect their unique cultures and knowledge.

Conclusions

Environmentally friendly technologies together with indigenous knowledge can be used for both conservation and sustainable use of the natural resources, as well as reducing poverty. We believe that indigenous knowledge and technical innovation are important parts of the lives of the poor and are the main asset to be invested in the struggle for survival, to produce food, to provide shelter and helps to shape local visions and perceptions of environment and society. Indigenous knowledge and techno blending practices to the local setting can help to improve agriculture production and sustainability of development assistance. Technologies should be used to collect, preserve and exchange indigenous knowledge in Pakistan and other developing countries, particularly in rural areas. Certainly there is also a strong need for incorporating indigenous knowledge into the local public administration practices in order to improve the public administration processes and make them more usable also for indigenous people in underdeveloped areas, see [5], [13] or [14].

Acknowledgments:

This research has been supported by the Czech Science Foundation project No. P403/10/1310 “SMEW: Smart Environment at Workplaces”.

References:

- [1] BRIGGS, J., The use of indigenous knowledge in development: problems and challenges. *Progress in Development Studies* 5, 2 (2005), pp. 99-114.
- [2] BUREŠ, V., BRUNET-THORTON, R., Cross-Cultural Management: Establishing a Czech Benchmark. *E+M Ekonomie a Management* 15, 3 (2012), pp. 46–61
- [3] FLAVIER, J.M. et. al., The Regional Program for the Promotion of Indigenous Knowledge in Asia. In: *The Cultural Dimension of Development: Indigenous Knowledge Systems*. Warren, DM, Slikkerveer, LJ. and Brokensha, D. (Eds), Intermediate Technologies, London, 1995
- [4] HAMEL, L.J., Knowledge Policies for Sustainable Development in Africa: Towards New Policy Initiatives. *World Review of Science, Technology, and Sustainable Development*. Vol. 2, No. 3-4, 2004, pp. 216-243

- [5] LODHI, M.S., MIKULECKÝ, P., Knowledge Management Implementation in Public Services. In: *Proc. of the International Conference on Communication and Management in Technological Innovation and Academic Globalization*. Athens: WSEAS Press, pp. 104-108, 2010.
- [6] LODHI, M.S., MIKULECKÝ, P., Vital Role of Indigenous Knowledge Management: Case of Pakistan. In: *Innovation Vision 2010: Sustainable Growth, Entrepreneurship, and Economic Development, Vols 1-4 (Soliman, K.S., Ed.)*, pp. 1843-1847, 2012.
- [7] LODHI, M.S., NASEEM, I., ALI, S. M., Implication of Indigenous Knowledge Management. *Science Series Data Report* Vol. 4, No. 9, pp. 82-92, 2012
- [8] MIKULECKÝ, P., Ambient Intelligence in Decision Support. In: *Proceedings of the 7th International Conference Strategic Management and Its Support by Information Systems (J. Kaluza, ed.)*, pp. 48-57, 2007.
- [9] MIKULECKÝ, P., PONCE, D., TOMAN, M., A knowledge-based decision support system for river basin management. In: *River Basin Management II, Progress in Water Resources, Vol. 7*, WIT Press, pp. 177-185, 2003.
- [10] MIKULECKÝ, P., PONCE, D., TOMAN, M., A knowledge-based solution for river water resources management. In: *Water Resources Management II, Progress in Water Resources, Vol. 8*, WIT Press, pp. 451-458, 2003.
- [11] MWANTIMWA, K., *The Relationship of Indigenous Knowledge and Technological Innovation to Poverty Alleviation in Tanzania*. Presented at the GLOBELICS 6th International Conference 2008, 22-24 September, Mexico City.
- [12] PIE, S.J., MANANDHAR, N.P., Sources of some local medicines in the Himalayan regions. *Himalayan Ecosys*, 1987, pp. 97-112
- [13] VLČEK, P., Data Boxes and the Document Management System in the Public Administration. In: *Proc. of the 9th International Conf. Strategic Management and Its Support by Information Systems (J. Kaluza et al., eds.)*, pp. 247-252, 2011.
- [14] VLČEK, P., Process Analysis as an Optimization Support in Public Administration. In: *Advances in Data Networks Communications Computers, Proceedings*, pp. 157-161, 2010.

FISCAL AND CURRENT ACCOUNT IMBALANCES

Rajmund Mirdala

Technical University of Košice

rajmund.mirdala@tuke.sk

Key words:

fiscal imbalances – current account adjustments – economic crisis – vector
autoregression – impulse-response function

Abstract:

Deficits in fiscal and current account balances in large number of countries reveal interesting implications of causal relationship between internal and external imbalances. Empirical evidence about occurrence of twin deficits or twin surpluses provides crucial information about validity of intertemporal approach. However, most recent dynamic cyclical changes during the crisis period revealed many questions about direct interconnection between macroeconomic performance and twin imbalances. In the paper we observe key features of twin imbalances in the European transition economies.

Introduction

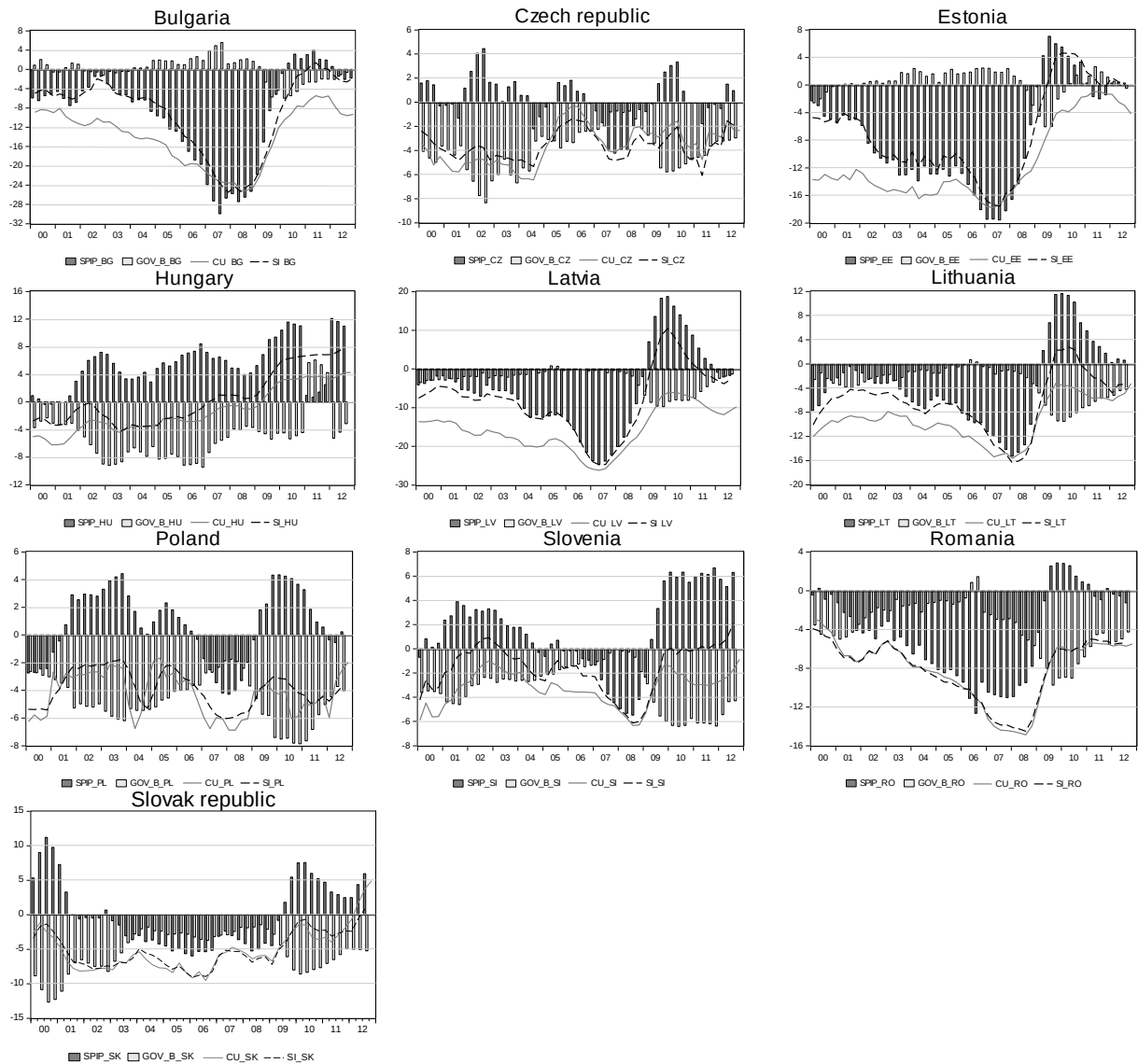
Origins and implications of twin deficits in many countries is in a center of rigorous empirical as well as theoretical investigation for decades. The reality of persisting fiscal and current account (CA) deficits became obvious in many advanced as well as advancing, emerging and low-income countries seemingly without a direct association with the phase of business cycle or trends in key fundamental indicators. In the paper we analyze effects of fiscal policies on CA in the European transition economies. Our main objective is to investigate causal relationship between fiscal policy discretionary changes and associated CA adjustments. We identify episodes of large CA and fiscal changes to provide an in-depth insight into frequency as well as parallel occurrence of deteriorations (improvements) in CA and fiscal stance of government budgets.

1. Overview of Main Trends in Fiscal and Current Account Imbalances

During the first decade since the initiation of the transition process at the beginning of the 1990s the European transition economies experienced periods of excessive CA deficits. In line with an intertemporal approach it is clear that observed CA imbalances reflected a negative trend in the investment-saving ratio. While CA adjustments revealed crucial and generally expected implications of the continuously rising international economic and financial integration of the European transition economies (increased indebtedness, lacking competitiveness, fiscal imbalances, foreign capital inflows, etc.), there seems to be still enough room to investigate partial effects of dynamic changes in the key CA determinants to observe associated CA adjustments.

Intertemporal approach clearly suggests that the CA imbalance originate in the corresponding savings-investments gap (Figure 1). Despite some differences, we have observed quite similar trend in the leading paths of CA and savings-investments (SI) gaps in all countries from the group. However, expenditure shifting effects associated with CA imbalances in each individual country do not seem to be determined solely by the internal imbalances between savings and investments. It seems that countries with rigid exchange rate arrangements (Bulgaria, Estonia, Latvia and Lithuania - the group of so-called “peggers”) experienced periods with generally higher discrepancies in GDP shares of both indicators though the leading paths of both indicators seem to be quite similar revealing some common patterns in the main trends. However, the beginning of the crisis period (2008-2009) clearly reduced differences in the shares. We suggest that an absence of the exchange rate flexibility and persisting real exchange rate appreciation contributed to the overall competitiveness deterioration and thus accelerated a negative trend in the CA imbalances even more than we would expect from SI gaps.

FIG. 1: Overview of Current Account and Private, Public and Overall Net Savings-Investments Positions (2000Q1-2012Q4)



Note: Endogenous variables: Private savings less private investments (SPI), primary balance (GOV_B), current account (CU) and overall savings less investments (SI) are expressed as percentage share in GDP.

Source: compiled by author based on data taken from IMF - IFS (September 2013)

Prudential fiscal discipline and excessive CA deficits in countries with rigid exchange rate regimes (this negative trend accelerated in the second half of the pre-crisis period) revealed significant imbalances between private savings and private investments. Fiscal discipline tightening together with exchange rate based anchoring provided a convenient vehicle for spreading internal imbalances in the private sector across the borders causing high CA deficits. In countries with flexible exchange rate arrangements (Czech

Republic, Hungary¹, Poland, Slovenia and Slovak republic - the group of so called “floaters”) the situation during the pre-crisis period seems to be quite different though not uniform. In the Czech Republic, Hungary, Poland and Slovenia persisting negative savings-investments imbalances originated in excessive fiscal deficits. The situation in Romania changed over time. The negative trend in savings-investments GDP shares initially originated in the fiscal imbalances though it was soon replaced by the private sector expansion. Similar scenario, though with higher initial fiscal deficits and less imbalanced growth of the private sector, was observed in the Slovak Republic.

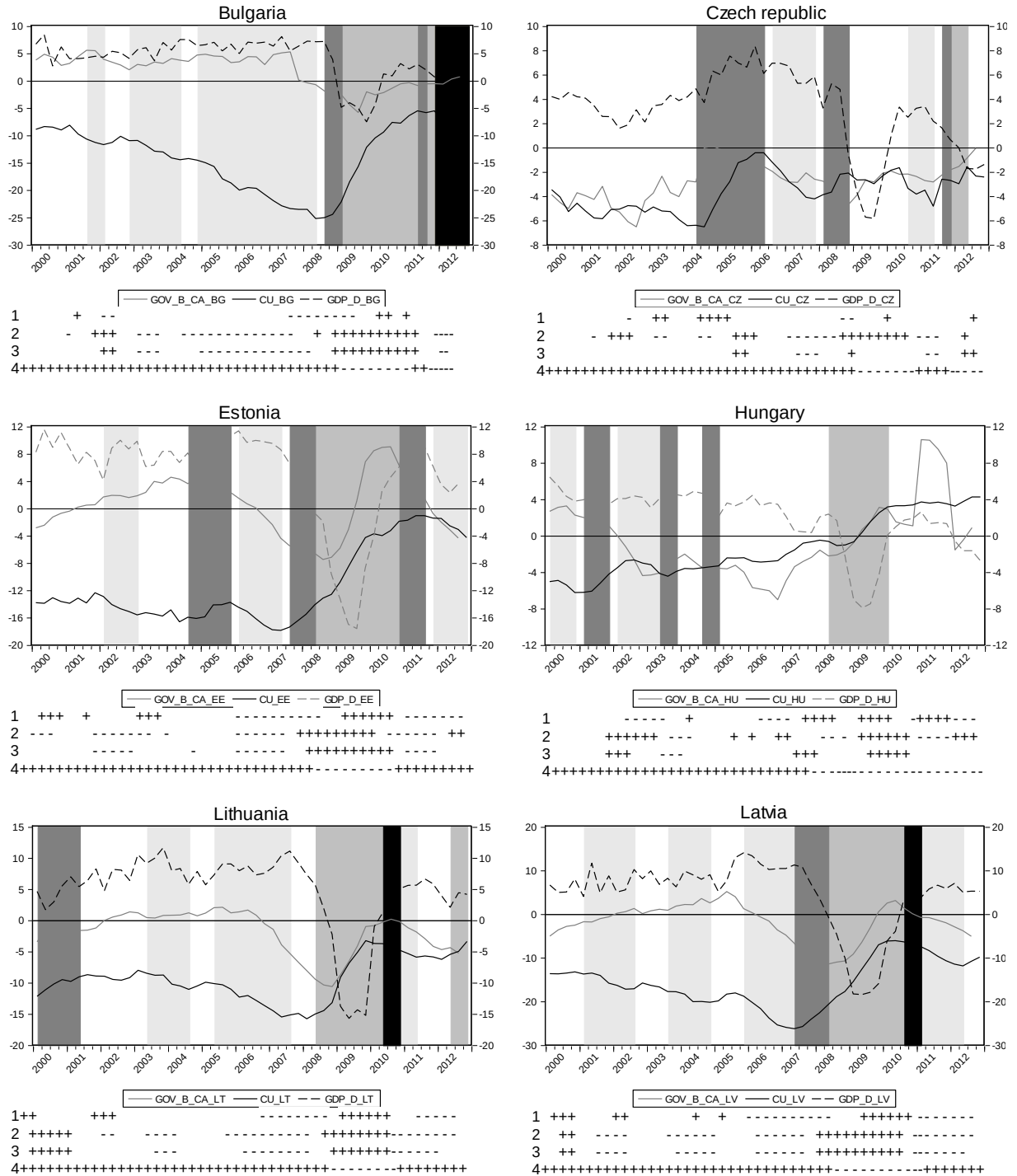
Crisis period significantly changed not only CA and savings-investments gaps leading paths but also relative contributions of public and private sectors to both internal and external imbalances. Even countries with prudential pre-crisis fiscal policies could not avoid the trend of significant divergence in public (deterioration) and private (large improvement) savings-investments gaps associated with significant improvement in the CA stance and overall SI balances.

2. Episodes of Large Current Account Changes

Individual countries from the group experienced several episodes of continuous current account adjustments that in total represent 66 episodes of which 35 refer to the current account improvement and 31 to the current account deterioration (Figure 2). We found that during more than 62 percent of episodes the current account adjustments did not interfere with the real output leading path (either positively or negatively).

¹ Hungarian forint operated during pre-crisis period in de facto fixed peg regime, but due to substantial range for fluctuations provided by wide horizontal bands it was included in the group of countries, so called “floaters”.

FIG. 2: Episodes of Large Current Account Changes (2000Q1-2012Q4)



parallel occurrence. While changes in public (CAPB²) and private (SPIP) savings-investments gap to GDP ratio generally corresponded with initiated large CA adjustments, in minor cases we have observed either contrary trend in both categories or magnitude of change did not meet a condition (1) to be considered as a large continuous change. SPIP episodes seem to be generally more frequent than CAPB episodes and thus provide more accurate interpretation of causal relationship between large and continuous CA changes and corresponding adjustments in SI balance. This investigation is even more relevant in countries with strong exchange rate anchor (in countries from the group of “peggers”) and more prudential fiscal policy. Lower occurrence of large changes in the fiscal stance in these countries during the pre-crisis period thus corresponds with our general expectations.

Conclusion

Occurrence of episodes of large CAPB changes seems to be uniformly distributed across the whole period. Durability of CAPB improvements is clearly higher in Baltic countries highlighting a commitment to conduct prudential fiscal policies necessary to maintain a sustainability of tough exchange rate regime. In countries with flexible exchange rate regimes (“floaters”) we observed some sort of alteration in episodes of CAPB improvement and deterioration in the medium term period. All countries (except for Hungary) experienced large deteriorating episode at the beginning of the crisis period followed by improving episode (except for Poland) with differing lag revealing a crucial need of a fiscal consolidation.

Acknowledgement:

This paper was written in connection with project VEGA no. 1/0892/13. Financial support from this Ministry of Education’s scheme is also gratefully acknowledged.

² While CAPB is not accurate measure for a calculation of overall net public (SI) position, it was employed in this section to reveal intertemporal effects of discrete changes in the fiscal policy stance.

References:

- [1] ABBAS, S.M. ALI, BOUHGA-HAGBE, J., FATÁS, A., MAURO, P., VELLOSO, R.C. (2011) Fiscal Policy and the Current Account, *IMF Economic Review* 59(4): 603-629
- [2] BUSSIÈRE, M., FRATZSCHER, M., MULLER, G.J. (2004) Current Account Dynamics in OECD and EU Acceding Countries - An Intertemporal Approach, [European Central Bank, *Working Paper*, No. 311/2004] Frankfurt, European Central Bank, 38 p
- [3] CORSETTI, G., GERNOT, J.M., (2006) Budget Deficits and Current Accounts: Openness and Fiscal Persistence, *Economic Policy*, 21(48): 597-638
- [4] FIDRMUC, J. (2002) *Twin Deficits: Implications of Current Account and Fiscal Imbalances for the Accession Countries, Focus on Transition*, 2: 72-83
- [5] HASSAN, M. (2004) Budget Deficits and the Current Account Balance: New Evidence from Panel Data, *Journal of Economics and Finance*, 28(1): 39-45
- [6] CHINN, M.D., PRASAD, E.S. (2003) Medium-term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration, *Journal of International Economics*, 59(1): 47-76
- [7] MIRDALA, R. (2013) Fiscal Imbalances and Current Account Adjustments in the European Transition Economies, *Journal of Applied Economic Sciences*, 8(3): 323-352
- [8] OBSTFELD, M., ROGOFF, K. (1995) The Intertemporal Approach to the Current Account, [National Bureau of Economic Research Working Paper No. 4893] New York, National Bureau of Economic Research, 75 p.

RISK-AFFINE WOMEN AND GAMBLING MEN: THE LECTURE FROM ST. PETERSBURG LOTTERY EXPERIMENT

Karel Mls, Tereza Otčenášková

University of HradecKrálové

karel.mls@uhk.cz, tereza.otcenaskova@uhk.cz

Key words:

correlation analysis – decision making under risk – Petersburg paradox – inquiry-based research

Abstract:

Decision-making processes are usually linked with a certain level of risk and uncertainty. Especially students focused on managerial specialisation should be able to tackle with these issues appropriately. Therefore, a research dedicated to St. Petersburg paradox experiment was conducted to reveal respondents' attitude towards risk. Moreover, gender and financial situation were examined as influential factors. Surprisingly, some of the results discuss different than expected approaches of male and female in relation to the perception of their financial situation.

Introduction

Kahneman and Tversky [6] noted that people are often risk averse for gains and risk seeking for losses. Whether people consider a consequence of their choice as a loss or as a gain is dependent on their point of reference. This reference point, which is often equivalent to the current wealth position, plays a key role in the choice theory.

1. St. Petersburg Paradox

The St. Petersburg paradox or St. Petersburg lottery (SPL) was first published by Nicolaus Bernoulli in 1713 [1]. He considered following game rules: A fair coin is tossed and if:

- (1) on heads, the lottery pays \$1, and the game ends. On tails, the coin is tossed again,
- (2) on heads, the lottery pays \$2, and the game ends. On tails, the coin is tossed again,
- ...

(n) on heads, the lottery pays $\$2^{n-1}$, and the game ends. On tails, the coin is tossed again.

...

In other words, the random number of coin tosses, n , follows a geometric distribution with parameter $1/2$, and the payouts increase exponentially with n .

The expected payout from this game is

$$\sum_{n=1}^{\infty} \left(\frac{1}{2}\right)^n 2^{n-1} = \left(\frac{1}{2} + \frac{1}{2} + \dots\right)$$

which is a diverging sum. A rational person, Bernoulli argued, should therefore be willing to pay any price for a ticket in this lottery. While the SPL in its original version offers an infinite expected value, people are found not to pay much more than \$25 for participating in the game [7]. This is inconsistent with standard expected value theory of rational decision making. Many authors were fascinated by the paradox and strived to find the explanation [2, 3, 5, 8]. On the other hand, many authors tried to utilize SPL approach to describe wide range of similar situations, e.g. [9], or scaling properties [10].

2. Research Methodology

The research question was to examine the attitude of respondents to risk taking in model decision making situation. The methodology included the inquiry-based research which was conducted among university students. The research sample comprised 100 university students, 64 men and 36 women. Their age was from 19 to 24. Most of them were students of the Faculty of Informatics and Management which links to the fact that they will be probably employed at the managerial positions in the future. This outlines the implication of this research showing the attitude of potential managers to the discussed issues which might also represent an opportunity or a threat to future companies and to the whole society.

Three versions of the SPL were considered:

Game 1 – „standard“ SPL,

Game 2 – one toss delay SPL (first toss without payment, then standard SPL),

Game 3 – two tosses delay SPL (first two tosses without payment, then standard SPL),
to study respondents sensitivity to different risk conditions.

3. Influential Factors

Various influential factors might be crucial and important in relation to the research outcomes. These include for example age, gender, attitude to risk, the extent of responsibility, experience with decision making or social status. Moreover, the work within a group might be also mentioned as one of the influential factors. The correlation analysis has been performed with the acquired data to unveil the most relevant factors. Subsequently, only gender and subjective evaluation of individual's financial situation are considered for the purposes of this research.

Results and Conclusions

Based on the results, the willingness to invest money decreases with rising risk of the game (Game 1 – Game 3, see Figure 1 and Figure 2). The graphs represent the averaged willingness to invest a certain amount of money (in Czech crowns on the vertical axis) in relation to gender and the attitude of respondents to their individual financial situation. The data linked with these issues were collected separately in two different questions. Considering the personal financial situation, the respondents expressed how they perceive their situation on the scale from 1 to 5 where 1 represents the worst situation and 5 the best one. The interesting finding has been revealed. Women that do not consider their financial situation as very good are willing to invest the highest amount, which is in good accordance with some prior research [4]. Women in this category risk much more than men in all the rounds. These results might be considered as quite surprising, because generally men are perceived as being more brave and risk-tempted. The results just confirm the fact that generalised assumptions are not always proved.

FIG. 1: Men and women willingness to pay for the three versions of the SPL

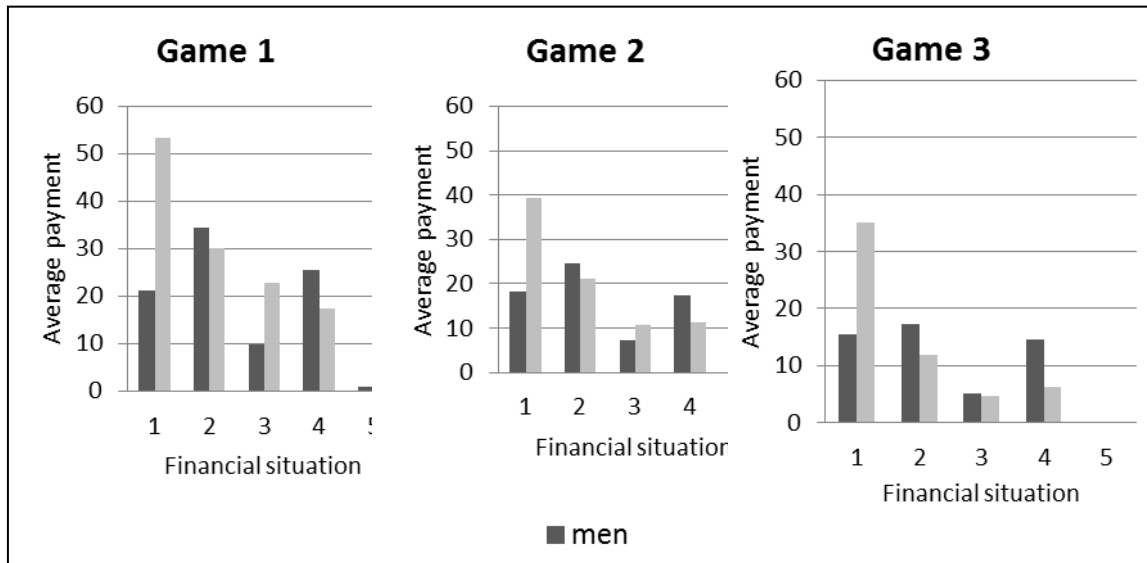
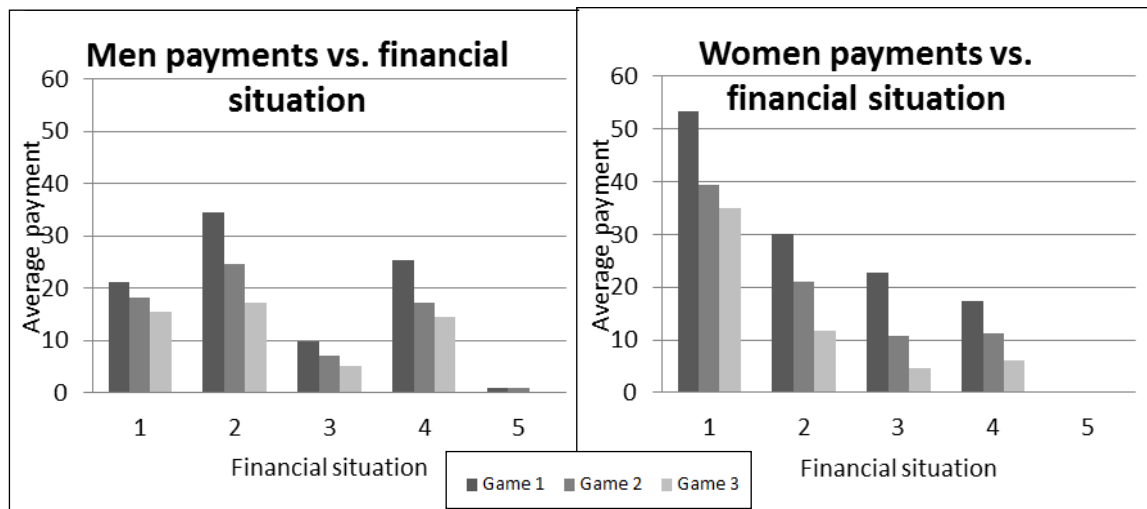


FIG. 2: Average payments for three SPL versions from the men a women perspective



Acknowledgement:

This research was partially supported by the project 1) “Application of Non-standard Optimization Methods in Economics and Management (ANOMEM)”, Grant Agency of

Excellence, University of Hradec Kralove, Faculty of Informatics and Management, No. 2214 and 2) „Development of Non-standard Optimization Methods and their Applications in Economy and Management“, Grant Agency of the Czech Republic, GA402/09/0405.

References:

- [1] BERNOULLI, D., translated by SOMMER, L., Exposition of a New Theory on the Measurement of Risk. *Econometrica (The Econometric Society)*, 1954, vol. 22, no. 1, pp. 22-36. JSTOR digital library, online, available from: <http://www.jstor.org/discover/10.2307/1909829?uid=3737856&uid=2&uid=4&sid=21103224498683>, accessed: December 16th 2013.
- [2] BLAVATKYY, P. R., Back to the St. Petersburg Paradox? *Management Science*, 2005, vol. 51, no. 4, pp. 677-678.
- [3] COX, J. C., SADIRAJ, V., VOGT, B., On the Empirical Relevance of St. Petersburg Lotteries. *Andrew Young School of Policy Studies Research Paper Series*, 2011, no. 11-04. Online, available from: <http://ssrn.com/abstract=1740724>, accessed: December 16th 2013.
- [4] FRANKEN, I. H. A., GEORGIEVA, I., MURIS, P., DIJKSTERHUIS, Ap., The rich get richer and the poor get poorer: On risk aversion in behavioral decision-making. *Judgment and Decision Making*, Vol. 1, No. 2, pp. 153–158.
- [5] HERTWIG, R., BARRON, G., WEBER, E.U., Decisions from Experience and the Effect of Rare Events in Risky Choice. *Psychological Science*, 2004, vol. 15, no. 8, pp. 534-539. Online, available from <http://pss.sagepub.com/content/15/8/534.short>, accessed: December 16th 2013.
- [6] KAHNEMAN, D., TVERSKY, A. Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), pp. 263-291.
- [7] KROLL, E. B., VOGT, B., The St. Petersburg Paradox despite Risk-seeking Preferences. An experimental study. *Beiträge zur Jahrestagung des Vereins für Socialpolitik 2010: Ökonomie der Familie - Session: Individual Decision Making under Risk and Uncertainty*, 2010, no. F15-V1.

- [8] MARTIN-LÖF, A., A Limit Theorem Which Clarifies the 'Petersburg Paradox'. *Journal of Applied Probability*, 1985, vol. 22, no. 3, pp. 634-643. Online, available from:
<http://www.jstor.org/discover/10.2307/3213866?uid=3737856&uid=2&uid=4&sid=21103193303183>, accessed: December 16th 2013.
- [9] NEČAS, J., Petrohradský paradox a rovná daň. *Katedra matematiky FIS VŠE Praha*, 2013. Online, available from:
http://jiri_necas.jetmouse.cz/matematika/matem_petrohr_rov_dan.htm, accessed: December 16th 2013.
- [10] SHLESINGER, M. F., ZASLAVSKI, G. M., KLAFTER, J., Strange kinetics. *Nature*, 1993, vol. 363, no. 31, pp. 31-37.

ETHICAL ASPECTS OF PUBLIC ADMINISTRATION

Ladislav Mura, Ján Machyniak

University of Ss. Cyril and Methodius in Trnava

ladislav.mura@gmail.com

Key words:

ethics – applied ethics – public administration – public policy

Abstract:

The questions of public authority and public administration are considerably wide-ranging and heavily discussed issues. It is being however mostly examined through the perspective of political science, law and economics. Contemporary development in central European space is characterized by the processes of structural reforms, efforts to increase the efficiency of public administration, and the public authority is determined by a strong public pressure demanding its transparent practice. Because of these reasons the ethical dimension of public authority and public administration is being brought to the fore. It's a quite new area of research in the field of applied ethics. The aim of this paper is to depict the ethical dimension of public administration and the ethical aspects of public authority. The further aim of this paper is to contribute to the discussion of applied ethics in public affairs.

Introduction

Public administration is most commonly studied from the perspective of political science, law and economics [4, 62]. The issue of public administration is quite interdisciplinary and spans into numerous areas. One of them is the ethical dimension, which is however not a commonly used approach in the study of public administration in Central Europe.

Modern ethical theory can be divided into two groups. Theoretical ethics which is also called philosophical ethics and applied ethics. Applied ethics include several ethical disciplines focused on practical issues of various social areas. Public administration ethics is therefore a discipline within applied ethics. Ethics in public administration are especially connected with the decision-making process [1, 113]. Each issue or situation

with an ethical dimension requires a choice between several possibilities. This choice is made by an individual or a public administration body. The improvement of ethical attitudes requires the harmonization of individual ethics with the ethics of the organization he/she is employed in and the ethics of society he/she lives in.

Ethics affects three areas of the decision-making process:

- Choice of legal stand: what is and what should be the law, and whether they want to obey it,
- Choice of moral stand: concerns the identification with general principles of morality
- Choice of interest preferences: relates to the decision of an individual, whether he/she will prefer his/hers personal interest over the public interest.

Results and Discussion

1. Applied ethics in Public Administration

As we already stated in the introduction to our paper, the ethical dimension of public administration is connected mainly to the decision-making process, which is affected by it in full range, i.e. from the decisions of politicians to decisions of officials. Each situation with the extent of ethics requires a choice between several possibilities in the decision-making process [6, 148]. The processes in public administration are often more bureaucratic, while evidence about details is present. Therefore, are the public administration bodies always under the pressure of society to provide their services in the highest possible standards. These standards include:

- Gratuitousness – those who possess public authority have to decide solely in the interest of public
- Integrity – those who possess public authority shall not develop liabilities binding them to individuals or organizations, whom might be able to influence their performance of official duties.
- Objectivity – in the exercise of public authority, holders of public offices have to decide accordingly to merits.
- Responsibility – those who possess public authority must be held accountable by the public.

- Openness – those who possess public authority must be as open as possible in the performance of their duties and decision-making process, i.e. transparency.
- Honesty – those who possess public authority are obliged to declare all their private interest.
- Leadership – those who possess public authority shall promote these standards with their leadership.

We can identify six levels of public administration officials' morality, which are tied to the fulfilment of ethical standards in the exercise of public authority as well as to the maintenance of public administration officials' moral norms. Each level of morality is bound to the implementation of certain branches of public authority. [3, 321] defines six morality levels of public administration officials in his article published in Public Administration review, which is issued by The American Society for Public Administration. The levels of morality include:

1. Decency in law-making and obeying law – on the basic level of morality it means mostly to deal with the temptation that comes with power, access to public sources and the possibility to break the promises and commitments given to the public after elections.
2. To manage the conflict between public and personal interest – the second level is related to the conflict of interests. The most common conflict of interests occurs when a person realizes that he/she can implement particular activities at the expense of their activities, because the mechanism which should indicate this state is not functioning.
3. To focus on civic service and procedural fairness – as the third level of public morals concerned with the quality of civic service. Many officials seem to not realize that the values and norms are not defined by their ideas of public service, but by their particular actions. To gain the trust of citizens, the officials should try to meet their demands and offer the best possible advice, even if it is contradictory to their own personal interest.
4. Ethics of democratic accountability - concerns not only the behaviour of officials, but also the contents of their activities. Control of the state apparatus is often complicated by the aversion to be checked by independent bodies which inform the public about the results. These shortcomings repeat themselves: national property is

being sold under its price, debts are not being recovered and government contracts lack exact time frames and signatures.

5. Ethics of public policy – the fifth level of public morality is represented by the ethics of public policy. Knowledge of human values should be present in the professional attitude of all public officials.

6. Ethics of compromise and social integration – is the sixth and highest level of public morality. It relates to the ability to make compromises and social integration. Ethical values apply on in the presence of management systems which do not tolerate and deviation of enacted norms. The ability to make ethical judgment should be possessed by each educated individual. In any case officials must avoid the abuse of their position for personal gains.

2. Resort and role of ethical principles in the decision-making process

Humanism is the most important resort. In practice it means to treat each employee as a being worthy of respect, in addition to the respect of fundamental human rights at the workplace. Accountability is an important resort while it carries the sense of responsibility into the exercise of public authority by public officials.

Ethics of responsibility: the consideration of consequences and assuming responsibility for decisions is a vital aspect of the decision-making process. In the terms of ethics it's crucial that a person subjects the consequences of his actions to moral judgment. Ethics of responsibility highlights the unwanted side effects of human action. These can be positive or negative.

Ethics of virtues are based on the fact that people make their decisions accordingly to their relatively stable attitudes and do not always start from scratch.

Representatives of public authority should follow following principles in decision-making process:

- To prefer public interest before the interests of the organization,
- To prefer the interests of organization before private interests,
- To seek truth in all cases of organizational and private actions

3. Institutionalization of ethics into the practice of Public Administration

Tool for the institutionalization of ethics into practice is the code of ethics. It represents an important tool for harmonizing the ethics of public servants with the generally accepted ethical norms and standards of conduct. Code of ethics can be described as a complex of various ethical principles and values. Government as well as the public demand the compliance of these principles and values in the processes of public administration. A common feature is the decision to implement a more general code of ethics that would cover the whole sphere of public administration. Codes may also act as a supportive factor for the growth of transparent functioning of public authorities. They are used In Western European countries as tools for creating training curriculum and training programs for different groups of employees in the public sector. Codes that define key ethical principles may directly build upon codes of ethics [5, 479] .

From the general perspective such a framework should be crated, that would enable the evaluation of acceptable behaviour of employees by their supervisors in the respective bureaus. This framework should also enable the evaluation of employees own ethical principles which he/she can compare with the code [2, 28].

- Common comprehensive code, which partial forms a legal act (usually it's the Public Service Act) passed by parliament, therefore its enforcement can be demanded.
- Common comprehensive Code of Conduct (Public administration code of ethics is approved by the government or other central government authority as a separate departmental document. It obliges the employees of the government branch to follow it, but does not possess the power of a legal act).
- Broader formulated a common code plays the role of an obligatory document - an ethical base for particular organizations or public authorities, on the basis of which they generate their own specific codes.
- Decentralized codes, developed and approved at the level of individual sector ministries or public administration bodies, which have the force of internal regulations. They are based on generally accepted values and principles defined in legal framework.

- Code of Ethics that summarizes the required methods, principles and standards of conduct that and is directly incorporated into a contract or an employment contract.

Conclusion

The outlined ideas clearly indicate that the position of ethics in the social sciences is justified. The contemporary state of society that is confronted with various events indicates that practical philosophy in the form of ethics is inevitable in dealing with arising situation. The submitted article is devoted to one discipline of applied ethics – ethics in public administration, which still belongs among young social sciences in Slovakia. We drafted out individual dimension of ethics in the sphere of public administration, and strongly related sphere of public policy. Our aim was to contribute to the theoretical elaboration of this young scientific discipline and to demonstrate the importance of ethics in public administration.

References:

- [1] BRUCE, W. Ethics and Public-Administration-Frederickson,HG. *Public Administrative Review*; 1995, vol. 55, no. 1, pp. 111-116 ISSN 1540-6210
- [2] OKCU, M. Public administration and ethics: Thinking administrative ethics or re-thinking modern public administration? *Amme Idaresi Dergisi*; 2008, vol. 41, no. 2, pp. 21-42 ISSN 1300-1795
- [3] PADDOCK, S. C. Ethics and Integrity in Public Administration: Concepts and Cases. *Public Administration Review*; 2011, vol. 71, no. 2, pp. 319-322 ISSN 1540-6210
- [4] SLEZIAK, J., 2012. *Komparácia územnej samosprávy Slovenskej republiky a Švédskeho kráľovstva*, Regionálna a komunálna samospráva: rok pred voľbami: zborník príspevkov z medzinárodnej vedeckej konferencie , Trnava; 2012, pp. 60-84 ISBN 978-80-8105-433-4

- [5] WALTON, J. R., STEARNS, J.M., CRESPIY, C.T. Integrating ethics into the public administration curriculum: A three-step process. *Journal of Policy Analysis and Management*; 1997, vol. 16, no. 3, pp. 470-483 ISSN 0276-8739
- [6] ZANETTI, L. A. Advancing praxis: Connecting critical theory with practice in public administration. *American Review of Public Administration*; 1997, vol. 27, no. 2, pp. 145-167 ISSN 0275-0740

ENVIRONMENTAL LIABILITY: APPLYING THE POLLUTER PAYS PRINCIPLE

Karina Mužáková, Pavla Kubová

Technical university of Liberec

karina.muzakova@tul.cz, pavla.kubova@tul.cz

Key words:

polluter pays principle – environmental damage – preventive measures – remedial measures – environmental risks

Abstract:

The importance of environmental insurance is strengthened by the introduction of the polluter pays principle. This principle is based on the efforts of the internalization of external costs, the corrective actions are performed by polluting operator. In the Czech Republic there are still developing insurance products that cover costs of environmental risks. Selected EU countries have decided to draft mandatory environmental insurance. State deprives part of responsibility for damage to the environment and thus directly delegates responsibility to the polluter and thus reduces its spending on remediation of such damage.

Introduction

Development of industrial activity over the last century has significantly signs on the quality of the environment. During the expansion of industrial areas of the formation of the accident, this fundamentally changes the environment in which we live. The development of the European and world community is linked to the process of globalization and industrial economy induces not only legal, but also moral responsibility. Czech environmental law is set in a global context and is influenced by international law through international conventions and European Union law. Polluter Pays Principle (PPP) has become an important component of environmental policy at both the national and international level since its adoption by the Organisation for Economic Cooperation and Development (OECD) in 1972

as one of the guiding principles of environmental policies. By Smets [6, 136] the PPP is recognized worldwide and is referred to in national legislation, as well as in many regional and international declarations and agreements. The Principle was introduced in 1987 in the Single European Act. In 1992 by the Maastricht Treaty was confirmed the adoption of this Principle by the twelve European Union Member States. Furthermore, this principle expanded in the EU Member States in the context of the new guidelines and measures. Among the most far-reaching measures include the introduction of liability for environmental damage and the adoption of Directive 2004/35/EC of the European Parliament and of the Council of 21st April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (hereinafter Directive 2004/35/EC) and its transposition into national legislation was in 2008. The importance of the impact of the introduction of PPP reports Tobey and Smets [7, 63], followed by the PPP with regard to dealing with asymmetric information (Wirl and Huber, [9, 69]). This paper compares the polluter pays principle with the PPP in a model of one-sided externalities and asymmetric information. Even allowing for mitigation of environmental impacts through arrangements and agreements, it will not result in perfect information social optimum. Finally, it is important to mention article Mamlyuk [2, 43] dealing with the critiques important conceptual and practical weaknesses of the PPP. The main objective of this article can sort in particular: clarification of the concept of ecological damage, in contrast to the concept of ecological detriment in the context of European environmental policy and also analysis of development of expenditures on environmental protection of public funds in the Czech Republic in years 1998 to 2010.

1. European environmental policy

The Single European Act of 1987 gave rise to a new environment chapter. There is an application of the principles of prevention, rational use of resources, repairing damage directly with the originator and the PPP. Lugano Convention on Civil Liability for damage caused by activities dangerous to the environment of the 1993 Council of Europe addressed comprehensively responsibility, without focusing on individual components of the environment. Responsibility relationship is based on an objective basis. Strict liability is liability, arises regardless of fault or absence

of liability as opposed to subjective responsibility. The document that follows the Lugano contract is the Green Paper of 1993.

Documents of the European Communities, which addresses the issue of liability is comprehensive, the Directive of the European Parliament and Council Directive 2004/35 EC on environmental liability with regard to the prevention and remedying of environmental damage. CEA (European Insurance Committee) approved the adoption mainly because the insurance market may partially cover losses caused by environmental damage. Environmental insurance can be divided according to the OECD methodology [5, 46]:

- liability for environmental damage to third parties EIL,
- insurance remediation costs,
- cleanup cost cap policy,
- liability insurance suppliers,
- insurance during the transport of hazardous substances,
- insurance landfill operators.

The above directive does not specify the obligation of the insurance. Some states have decided in their legislation to include environmental insurance is mandatory. In the Czech Republic the obligation of financial security (for certain activities) determined from the 1st January 2013. However, there are choices of other alternative financial security products such as bank guarantees [8, 28].

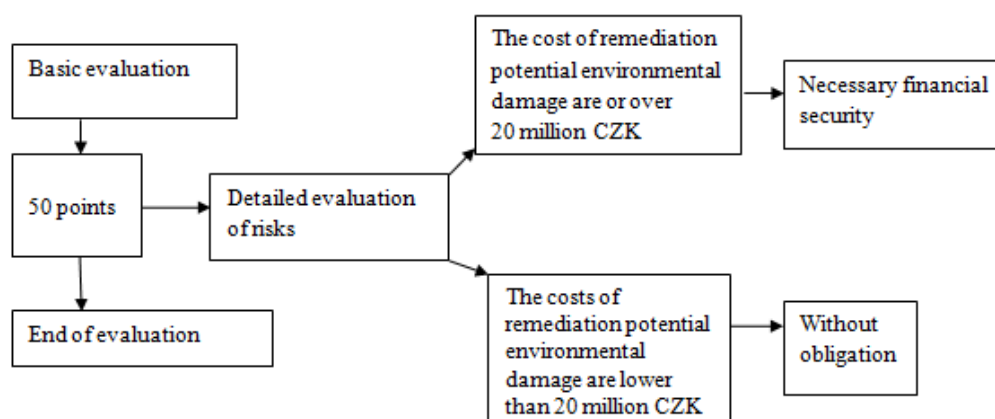
1.1 Legislation environmental protection in Czech Republic

In the Czech Republic entered into force of Directive 2004/35 EC on 22nd April 2008 as Act No. 167/2008 Coll., The prevention of environmental damage and correction. At this moment, the Czech Republic is in process of the second stage of significant changes. By the 1st of January 2013 are the undertakings required to secure financial security for environmental damage. The law provides that in the event of imminent environmental damage, the company is required to take the necessary preventive measures. In the case of environmental damage, subject has to take all corrective measures to eliminate the consequences and restore the environment to its original state. Act 167/2008 Coll. introduces the principles of international and European law on the protection of the environment, the PPP. The purpose is to transfer the blame for environmental damage to the subject that caused the damage (or is responsible

for it). The Act also provides for strict liability rules. An operator who uses the environment is not responsible for any damage caused by them, but also the risk of environmental damage (regardless of whether the damage caused) – This rule applies to operations listed in Annex 1 of Act No. 167/2008 Coll. The list is very extensive and covers several other laws. Includes activities such as the operation of a device subject to an integrated permit, operation of facilities for the use, disposal, collection and purchase of waste or wastewater discharge to surface water, groundwater etc.

The Czech Republic is an important change concerning financial security and the method of assessing the risk of environmental damage. Paragraph 14 of Act No. 167/2008 Coll. provides that financial security is required to ensure the operator, based on the evaluation of ecological risks may cause ecological harm at which the recovery will require higher costs than CZK 20 million. Evaluation of the risk of environmental damage is concerned with Government Regulation No. 295/2011 Coll. Regulation are laid down two degrees of risk analysis: basic and detailed. Operators are required to perform basic risk assessment under the terms of the regulation. If the basic evaluation operator reaches more than 50 points, he is forced to carry out a detailed risk assessment. See Figure 1.

FIG. 1: The process of risk assessment from Government Regulation No. 295/2011 Coll



Source: own elaboration according to Government Regulation No. 295/2011 Coll

When compared to the traditional concept of damage and damage to the environment, which is a term of Directive 2004/35/EC, there are some basic differences. First we find already in the sources of law. Damage occurs as a result of the infringement,

the ecological damage is a result of the unlawful conduct and the law. As a result, damages are paid actual damages and loss of earnings, the environmental damage is a result of the loss or weakening of the ecosystem. Another major difference between the two concepts we summarized in Table 1.

TAB. 1: Ecological damage versus ecological detriment

Ecological Damage	Ecological Detriment
Liability for environmental damage	Liability for detriment of environment
Private sector	Public sector
The actual amount of damage and loss of profit is paid	A system of primary, complementary and compensatory remedies is using
Damaged is owner	Damaged id state
Prefers to financial compensation	Prefers the restoration to good condition
Not required special purpose funds from compensation	Everything is bound to restore the original condition
Objects of protection are physical components of the environment that are the subject of property rights	The object of protection of all environmental components are considered as a public good
Damage to non-production functions are not considered property damage, compensation for them cannot be granted	Damage to non-production functions of the environment must be restored to their original condition or offered compensation
Determined in civil proceedings	Determined in administrative proceedings
Initiation control by damaged	Initiation of proceedings by a state government or on the initiative of the natural or legal persons

Source: Marsh [3, 3]

These differences are proof that classic liability does not pass a sufficient legal instrument for the protection of the environment.

2. Material and Methods

Data analyzed in this part of the article will be taken from Ministry of the Environment of the Czech Republic (Statistical Environmental Yearbook of the Czech Republic 2006) and from CENIA (Statistical Environmental Yearbook of the Czech Republic 2011).

TAB. 2: Development of Expenditures for Protection of the Environment from Central Sources in years from 1998 to 2010

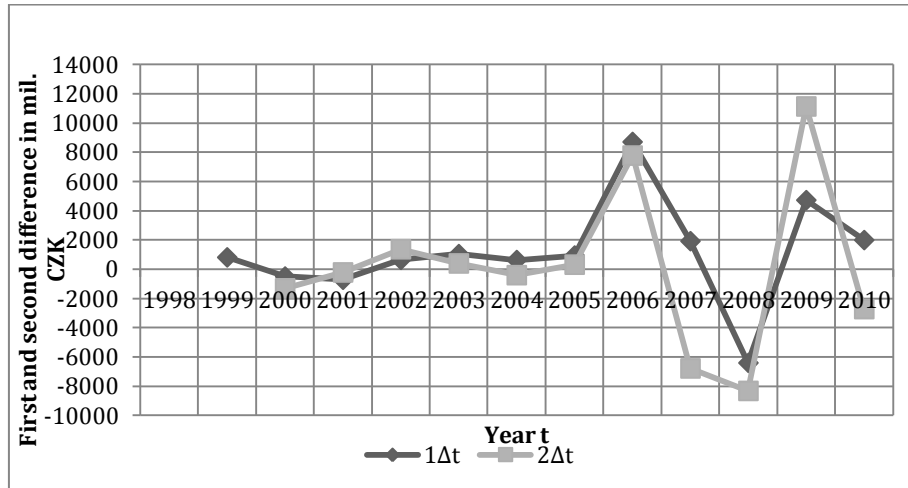
Year (t)	Source of expenditures			
	State budget (in mil. CZK, current prices)	State funds (in mil. CZK, current prices)	NPF (in mil. CZK, current prices)	Total (in mil. CZK, current prices)
1998	4 732.4	2 278.4	2 174.0	9 184.8
1999	5 540.2	2 609.7	1 768.0	9 917.9
2000	5 038.4	2 884.4	2 143.0	10 065.8
2001	4 313.7	3 711.3	2 727.4	10 752.4
2002	4 954.8	4 131.8	3 230.0	12 316.6
2003	5 988.2	4 722.6	2 587.3	13 298.1
2004	6 613.8	4 203.2	3 563.3	14 380.3
2005	7 547.5	3 448.2	6 022.0	17 017.7
2006	16 252.8	2 406.0	5 172.0	23 830.8
2007	18 169.1	1 700.0	6 325.0	26 194.1
2008	11 759.2	2 049.8	5 728.0	19 537.0
2009	16 481.6	2 068.7	8 466.4	27 016.7
2010	18 473.3	4 444.7	5 921.1	28 839.1

Source: own elaboration according to [1] and [4]

The National Property Fund (NPF) of the Czech Republic was abolished by Act No. 178/2005 Coll. as of 1st January 2006. Both its competencies and the resources used to rehabilitate old ecological burdens are now administered by the Ministry of Finance in addition to state budget.

The most important source of funding in terms of volume of funds is the state budget. The state budget also provides grants, repayable borrowings (interest free loans) and guarantees on commercial loans. Structure of expenditure on environmental protection is responding to its structure issued by the Ministry of Finance. Another source of public expenditure in environmental protection is expenditure of state funds. In pursuing these costs is the most important State Environmental Fund, which was established in 1991 (sources of income include income taxes for pollution and depletion of natural resources and the revenues of fines). Another source is already canceled the National Property Fund of the Czech Republic. It is included among public budgets. On the 1st of January 2006, Act No. 178/2005 Coll. canceled. Resources and skills NPF spent on removal of old environmental damage now manages the Ministry of Finance [1]. Development of values of first and second difference of state budget shows a decrease in spending from the state budget in 2008 precisely because of the exclusion of European subsidies. In 2009, the value of spending increases again almost on the level of 2006. In 2010, the value of spending varies from 2007 to about 300 million CZK. The increase in expenses in 2006 and 2007 resulted from the inclusion of European funds. In percentage terms, the largest decline observed parameter values recorded in 2008 by more than 35% over 2007. The largest increase observed values was recorded in 2006 by more than 115% and then in 2009 by more than 40% over 2008. The increase in financial resources in 2006 and 2007 compared to 2005 resulted from the inclusion of European fund resources. Evolution of the values of the first and second differential is illustrated in Figure 2.

FIG. 2: **Development of values of first and second difference of state budget expenditure on environmental protection (from data of years from 1998–2010)**



Source: own elaboration

3. Results and Discussion

Increase awareness and public interest in environmental issues led to legislative changes at the global level. Insurance risk to the environment is one of the fastest growing insurance sectors in Europe, which largely contributed also ELD. At a conceptual level, it is discussed whether the traditional liability system adequately reflects the specifics environmental damage. It includes for example the fact that objective of the limitation period for reimbursement as general liability for damage is because of the nature of environmental damage prohibitively short.

Arguments against the compulsory insurance are usually based on the fact that insurance experience in the environmental insurance is still in its early stages of development and there is no standard base cover, which would be acceptable to all insurance companies. In many countries this insurance product offered to a sufficient extent. On the other hand, it is obvious that it is difficult to force insurance companies to offer insurance product for which lack or even minimal experience with the calculated risk. The introduction of financial security, however, insurers can take it as a great opportunity to succeed in the growing premium segment. Commercial insurance is therefore an important element of alternative security liability from environmental pollution. The country has a wide variety of approaches. Several

years will show consequences of the introduction the PPP for expenses from the state budget, which were analyzed in this paper.

Conclusion

New regulations and laws need to bring to market new solutions, because there are differences between environmental damage and traditional liability damage. By using insurance it must ensure not only the transfer of risk, which is also very important, but also the full cost of any damage. This is a potential cost to society, but also about its reputation in the context of environmental management, which falls into CSR, corporate social responsibility. From this survey, it is expected that the development of not only the insurance market will help ensure the financial obligation pursuant to Act No. 167/2008 Coll. As a result of mandatory financial security insurance automatically creates demand for such insurance. The risks are specific and address the individual insurance agreements with clients using clauses. Current liability insurance for businesses may offer any insurance, liability insurance for environmental damage insurance does not offer nearly as much. It has to do with the specifics of which I mentioned above. Any changes mean for insurance companies and finding new processes and procedures for claims settlement. The range of potential environmental damage is very diverse. For example the explosion or release of hazardous substances has consequences to the environmental contamination. Besides this, there is also a considerable number of a claim that cannot be quantified and cannot insure or entity.

References:

- [1] CENIA. 2011. Statistická ročenka životního prostředí České republiky 2011. [online]. [cit. 2013-05-12]. Available from WWW: <<http://www.cenia.cz/rocenka2011/index.htm>>
- [2] MAMLYUK, B. N. 2010. Analyzing the Polluter Pays Principle Through Law and Economics
- [3] Marsh. 2011. Marsh Newsletter, Ekologická újma
- [4] MZP. 2006. Statistická ročenka životního prostředí České republiky 2006. [online]. [cit. 2013-05-10]. Available from WWW: <http://www.mzp.cz/www/dav.nsf/rocenka_06/06_obsah.htm>
- [5] OECD: Environmental Risks and Insurance No. 6: A comparative analysis of the role of insurance in the management of environment-related risks, OECD 2003, ISBN: 92-64-10550-6
- [6] SMETS, H. 1994. The Polluter Pays Principle in the Early 1990s, in L. Campiglio et al. (Eds.), The Environment after Rio: International Law and Economics 131, 137-41
- [7] TOBEY, J. A., SMETS, H. 1996. The Polluter-Pays Principle in the Context of Agriculture and the Environment. The World Economy. vol. 19. Issue 1. pp. 63-87. DOI: 10.1111/j.1467-9701.1996.tb00664.x
- [8] VÁVROVÁ, E. Pojistný obzor: Časopis českého pojišťovnictví. Environmentální pojištění: Jak evropské země chrání životní prostředí. 2012
- [9] WIRL, F., HUBER, C. 1998. The Polluter Pays versus the Pollutee Pays Principle under Asymmetric Information

STRATEGIC PLANNING IN ENTERPRISES OF DIFFERENT SIZE – AN EMPIRICAL STUDY

Daniela Navrátilová, Adam Pawliczek

Moravian University College Olomouc

daniela.navratilova@mvso.cz, pawliad@seznam.cz

Key words:

strategic plan – strategy – management – enterprise – SME

Abstract:

The presented paper discusses the issues of practice and attitude of different size enterprises to strategic planning. There are presented characteristics of capabilities, limitations and differences in the approach to creation and complexity of primary strategic document in relation to enterprise's number of employees and its turnover. Contribution includes results of an original research survey describing thoroughness of specific sized groups of Czech and Slovak enterprises concerning their strategic plan. The study also brings an introduction with theoretical analysis, discussion, and brief conclusions concerning discovered findings.

Introduction

The current environment, where the companies of different size and sectors operate, in literature is often described as an increasingly dynamic, turbulent, and unpredictable. Especially in conditions defined that way, the existence of the basic long-term goals and adoption of courses of action appears to be of absolute necessity to guarantee the success of any business. We are talking about strategy, strategic planning and strategic tools. Without accepting this requirement companies only react to incentives instead of actively creating them. [1].

Academics define an immense number of models, methods, tools, techniques or approaches, which are available to support the process of strategic management. However, nearly all of these theories focus only on the large companies. The focus on strategic management tools accustomed by the small and medium, even by micro firms, in theoretical papers is strongly missing. Only several empirical studies have

attempted to identify the characteristics of SMEs from the view point of strategic management. Conclusions from these studies are unequivocal: in the sphere of application of the principles of strategic management there are significant differences between large and medium, small or micro firms. Smaller firms have their own unique characteristics that distinguish them from larger firms [2], [8].

While large companies can invest into new technologies and equipment, provide training to their employees, and gain big shares on new markets, this is rarely the case of small companies. On the other hand, larger firms tend to create a bureaucracy that is unfavourable to an atmosphere encouraging creativity and they tend to be less flexible than smaller firms. While the larger firms have the benefit of more resources and systems, the smaller firms have the advantage of individualism. Also the decision-making process is simpler in smaller than in larger firms [7].

In this paper, attention is focused on the most essential instrument used in the process of strategic planning – primary strategic document. Strategic planning can be defined as the process that is undertaken in a company to develop strategies contributing to performance and driving the organization towards its vision of the future [9]. Key aspects of the strategic document are long-term organizational objectives, the use of planning tools, and frequent updating of plans [3].

The following empirical studies discovered interesting findings in relation to the size of the firm. As Hartz and Kanji emphasize, smaller firms have short lines of communication and flexibility in relation to the implementation of new management philosophy and approach. This leads to the fact, that there is direct relationship between the size of the firm and the existence of the strategic document in its written form. Smaller firms put higher emphasis on operational planning, intuitional or informal planning activities, and short-term goals. They also pay only a little attention to environmental scanning, if any [3]. As size of the firm increases from micro to large, companies put greater emphasis on strategic planning-related issues and activities. While large companies understand the need for formal, written, long-term planning, smaller firms do not necessarily undertake planning to the same depth and with the same importance and understanding given to strategic planning [2]. The typical business plan from a small firm more favours a complexity of tactical activities than an actual strategy. Even if the small firms refer to it as strategic planning, they are in fact more

concerned with short-term objectives, which according to theoretical papers resembles operational planning [8]. The number of strategic planning tools used by the management of small firms is very low. Hussey identified nearly sixty different strategic management tools and techniques [5]. But as the surveys [2] discovered, only two or three strategic techniques were used by small firms in practice. Employed most often of the tools among small firms is the SWOT analysis followed by financial ratio analysis and budgeting. The SWOT analysis is the dominant tool used by companies of any size. While large companies use the SWOT analysis as an overall list of strengths, weaknesses, opportunities and threats based on an immense number of previously accomplished separate analyses of the internal and external environments, the smaller firms use this same analysis only as the document for the communication with external partners such as banks, potential investors etc. [8].

The mentioned above professional literature findings reflect an important observation – the absence of strategic thinking among the top managers of smaller firms [2]. All cited results are identical in the fact that the level of commitment to the strategic planning process in small firms is critical. Temtime explain this discovery by the fact that “an increase in size means an increase in resources, investment and expertise, which will directly affect the planning behavior of firms” [10].

1. Original research methodology

Company research “Adaptability of entrepreneurship” (second round) was realized during the spring 2012. Total number of 722 companies active in Czech and Slovak Republic between 2009 and 2011 were subject of interest (SMEs are creating 89 % of sample group in accordance with number of employees’ criterion). Interview protocol included controlled dialogue of a questioner with an enterprise owner, an executive manager or a top manager, so the collected data have the character of an experts’ guess opinion. Initial sample size 722 companies were filtered and reduced to 677 credible items (group of all firms).

Following questions/criteria were evaluated in the presented paper:

- A7: Average number of employees in determined period.
- A8: Average annual turnover (revenue) in the years 2009-2011.
- B1: What form of strategic document – business plan has the company got?

Generally we can divide companies (including both SMEs and large firms) in terms of business strategy development into three categories:

1.1. Companies that have a well-planned and detailed written primary strategic document. This document deals with important areas of enterprise organization such as human resources, market analyses and marketing goals, product development and innovation, technologies of production and services, logistics, quality and environment, budgeting, financing and payback, time schedule, risk evaluation, etc. Detailed strategic document should have utilized modern management methods and techniques as PEST, Porter five forces, marketing mix, SWOT and others. It covers the future period of at least three years and is often compared with real situation and updated.

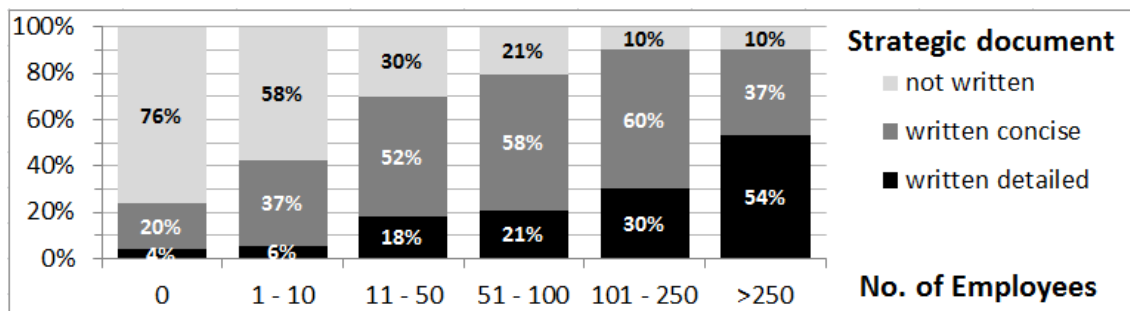
1.2. Companies that have a strategic document drawn up in some written but concise form, with insufficient details in all important chapters. Many enterprises briefly address just a mission and vision, and some partial strategic issues, such as production, marketing or finances; however other important chapters stay unelaborated. Such document often serves as business plan for obtaining subsidies or loans, but hardly satisfies internal strategic function.

1.3. Companies that have no written strategic document. It is never clear if the strategy is kept in mind of top management (e.g. alone self-employed entrepreneurs), some pieces are subject of company culture or does not exist at all.

2. Research results and discussion

This chapter presents graphical results of earlier described research concerning practice of respondent group of Czech and Slovak enterprises concerning thoroughness of strategic planning. Following charts depict percentage of different form of the strategic document from the point of view of its completeness in relation to enterprise size according two criteria – number of employees and average annual turnover.

FIG. 1: Size of enterprises by number of employees and form of primary strategic document

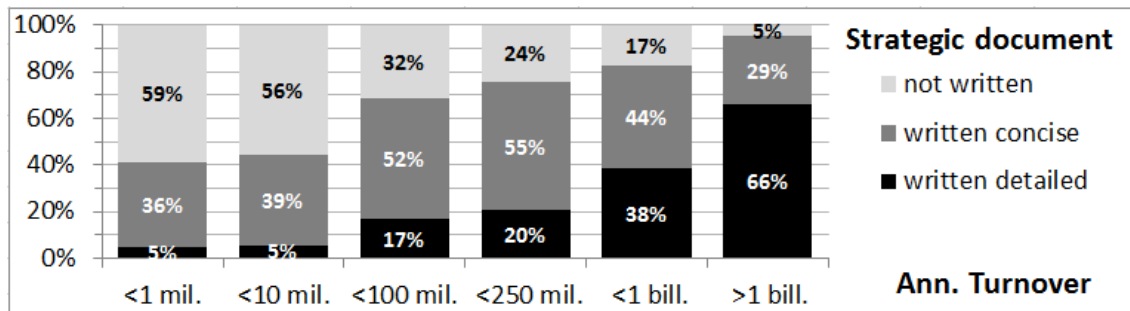


Source: own processing by authors

Figure 1 clearly shows increasing percentage rate of a written strategic document with the size of enterprise and vice versa decreasing number of a not written (not existing) strategic document. We can see that 76 % of self-employed entrepreneurs (without employees) and 58 % of micro enterprises (up to 10 employees) have no written business plan; in other hand 54 % of big enterprises (over 250 employees) have detailed written strategic document. 52 % of small (11 to 50) and 58 to 60 % of medium (51 to 250) enterprises prefer to prepare concise written strategic document (business plan).

Figure 2 confirms and fortifies a trend visible on the previous figure 1. 56 to 59 % of micro enterprises with a turnover of less than 10 million CZK (~ 366 000 EUR) do not have any written strategic document at all. 52 to 55 % of micro/small enterprises with a turnover of 10 to 250 million CZK (~ 9 million EUR) prepare concise written strategic document while 44 % of small/medium-sized enterprises with a turnover of 250 million to 1 billion CZK (~ 37 million EUR) have only concise a written strategic document too. Urgency of detailed written strategic document grows in medium/big enterprises generating annual turnover over 1 billion CZK, where 66 % of them have one like that.

FIG. 2: **Size of enterprises by average annual turnover (CZK) and form of primary strategic document**



Source: own processing by authors

Conclusions

Considering the presented research findings, we can fully agree with scientific literature, especially with Hartz [3], Frost [2], Stonehouse [8] and Temtime [10], also in Czech and Slovak conditions. Big enterprises are more likely to have detailed (or vast majority at least concise) written strategic document, while micro enterprises have rather no written strategic document at all. Most of small and medium sized enterprises tend to have drawn concise strategic document (business plan). We can also confirm very limited utilization of management methods in strategic planning of micro and SMEs we have detected in related analyses and published earlier.

Focusing on the managers' skills and knowledge, the low level of adoption of the strategic management principles arise out of lack of managerial skills, depth and personal lack and inefficiency use of time. Further, unfortunately, the managers of small firms often miss formal business education.

Acknowledgement:

Research presented in the paper was realized with the support of the Student Grant System, Silesian University in Opava, grant number: SGS/9/2012.

References:

- [1] DRUCKER, P. D. *Efektivní vedoucí. 2. vyd.* Praha: Management Press, 2008, 205 pp. ISBN 978-80-7261-189-8
- [2] FROST, F. A., The use of strategic tools by small and medium-sized enterprises: an Australasian study. *Strategic Change*, 2003, vol. 12, no. 1, pp. 49-62, ISSN 1099-1697
- [3] HARTZ, O., KANJI, G. K. Development of strategies for total quality management in large industrial companies and small and medium enterprises. *Journal of Total Quality Management*, 1998, vol. 9, no. 4/5, pp. 112-15, ISSN 0954-478X
- [4] HODGETTS, R. M., KURATKO, F. *Effective Small Business Management. 7th ed.* Fort Worth: Harcourt College Publishers, 2001, 752 pp. ISBN 978-0-470-00343-5
- [5] HUSSEY, D. E., Glossary of techniques for strategic analysis. *Strategic Change*, 1997, vol. 6, no. 2, pp. 97-115, ISSN 1099-1697
- [6] KRAUS, S., Strategic planning in smaller enterprises – new empirical findings. *Management Research News*, 2006, vol. 29, no. 6, pp. 334-344, ISSN 0140-9174
- [7] LAFORET, S. Size, strategic, and market orientation effects on innovation. *Journal of Business Research*, 2008, vol. 61, no. 7, pp. 753-764, ISSN 0148-2963
- [8] STONEHOUSE, G., PEMBERTON, J., Strategic planning in SMEs – some empirical findings. *Management Decision*, 2002, vol. 40, no. 9, pp. 853-861, ISSN 0025-1747
- [9] TAPINOS, E., DYSON, R. G., MEADOWS, M, The impact of performance measurement in strategic planning. *International Journal of Productivity and Performance Management*, 2005, vol. 54, no. 5/6, pp. 370-384, ISSN 1741-0401
- [10] TEMTIME, Z. T., The moderating impacts of business planning and firm size on total quality management practices. *The TQM Magazine*, 2003, vol. 15, no. 1, p. 57, ISSN 0954-478X

QUALITY OF CONTROLLING PROCESS OUTPUTS IN THEORY AND PRACTICE*

Krzysztof Nowosielski

Wroclaw University of Economics

krzysztof.nowosielski@ue.wroc.pl

Key words:

outputs of controlling processes – quality – assessment – improvement

Abstract:

Controlling is a modern management concept supporting planning and control functions in the management system. The reliability of information provided by controllers are of vital importance for the success of this concept. The article sheds light on the gist of controlling process quality outputs both, from the theoretical perspective and based on author's own empirical research. It also explains the influence of controlling quality outputs on the management processes and overall performance of a company.

Introduction

In the controlling related literature, besides the typical publication describing the institutional or instrumental issues, the problems of its functioning in a company are raised¹. Among other things, the publications discussing the issue of controlling quality can also be included to the group dealing with that topic. For instance, in his works, T. Hess, points to the influence of the quality of information provided by the controlling on the proper functioning of the management system [3, p.1]. On the other hand, A. S. Künneth suggests that it is possible to avoid problems in management when controlling provides useful information (which stands for high quality information) prior to the occurrence of business risks [4, p.209-210]. J.Weber devotes a lot of his articles to controllers' work reliability, the credibility of their reports as well as their adjustment to the informational requirements of the managers². The significance of

* The project is funded by the Polish National Science Centre

¹ See for example W.Becker, K.Benz 1996 [1]; L.Goretzki, J.Weber 2012 [2]

² For example see [5, p.25-26].

these issues is strengthened also by the fact that, in 2009, the German Institute for Standardisation DIN introduced a document describing controlling quality standards (document DIN SPEC 1086). The creation of this document was initiated by the International Group of Controllers ICV (Internationaler Controllerverein), which comprises both, the representatives of the world of business and the world of science. Despite the fact that the scientific researches focusing on the quality of results of controlling constitute only a small fraction of the literature, they still shed new light on the concept of management. These researches indicate that the controlling processes outputs (such as e.g. budgets, management reports) are not free from faults, which ought to force the decision-makers to implement appropriate corrective actions. These observations find confirmation in the author's own research.

The aim of the article is to indicate the importance of the issues connected with the quality of the controlling processes outputs as well as their influence on the management processes. The theoretical analysis was enriched with the results of empirical researches conducted by author between 2012 and 2013 among companies operating on the territory of Poland.

The article is divided into an introduction, three main points and a summary. Firstly, the controlling processes outputs are defined and their relation to the management processes is described. Next, the focus shifts to the notion of quality relating it to the previously defined controlling outputs. In the end, the results of empirical researches concerning the topic are discussed.

1. The controlling processes outputs

In this article, controlling is defined as a set of processes supporting the management of a company³. Process approach to controlling is currently widely discussed in the literature. The element especially worth mentioning here is the model of controlling processes developed by experts from the International Group of Controllers IGC/ICV. The model presents list of processes related with controlling including e.g.: strategic

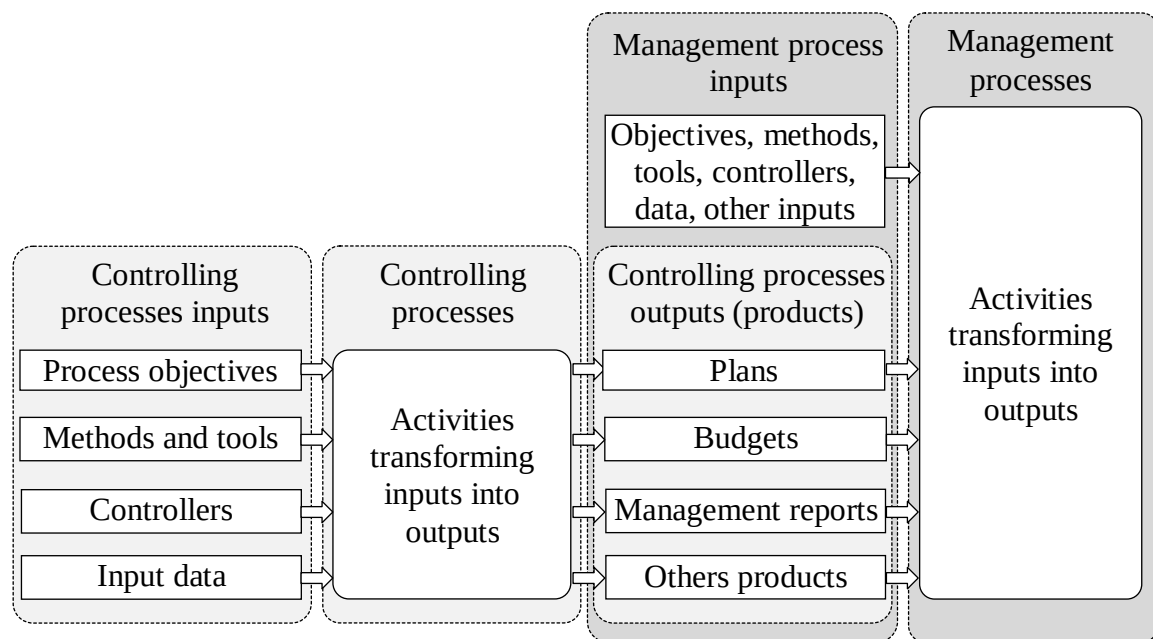
³ The author is aware of the diversity of approaches to the role of controller in the enterprise, which present him as business partner with supporting role to the managers or as just a decision-maker. For example see L.Goretzki, J.Weber 2012 [2], J.Webers [5], document DIN SPEC 1086

planning, operational planning, budgeting, forecasting, cost evaluation and management reporting [6]. Each of these processes can be considered from the perspective of⁴:

- inputs, which can include: aims of the processes, input data (such as e.g. accounting and financial system data or normative database), controllers, methods and tools, including e.g. planning methods, budgeting, cost evaluation and IT systems supporting controlling processes,
- activities performed in them, defined as a set of activities transforming inputs into outputs,
- outputs (products of controlling) defined as the results of the controlling processes, including e.g. reports, budgets or even services such as financial data presentation or budgeting process coordination. It's worth mentioning, that these results constitute management processes inputs.

Figure 1 depicts the idea of process approach to the issue of controlling.

FIG. 1: Controlling process with exemplary results (controlling products)



Source: Author's elaboration

⁴ Compare with the ISO 9000 norm

2. The essence of quality of controlling process outputs

The term “quality” is a commonly used word in the management related literature. Not only has it a long history but also it is universal. The notions concerning quality put stress on its quantifying character, which determines the level of fulfilment of specific requirements [7, p.36]. According to ISO 9000:2000 norm, quality stands for the level to which a set of inherent features fulfils specific requirements⁵. These requirements constitute a type of specific master model, which enables the quantification of quality measurement results of a given object and, in turn, the performance an assessment. Similarly, in the praxeology, quality is understood as a sum of characteristics of a product or of an action leading to the product, most often combined with an assessment given through the prism of some ideal or objectively existing product or action master model [9, p.92].

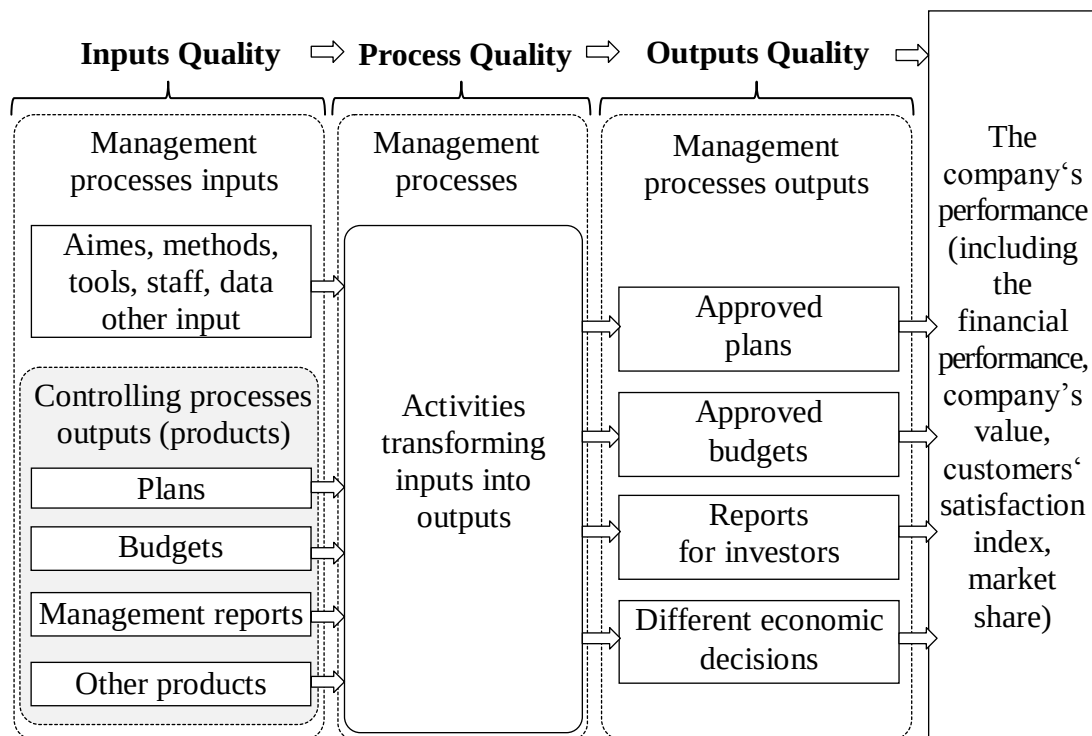
By defining the concept of controlling quality, it is worth to relate to the content of the DIN SPEC 1086 standard mentioned above, which, admittedly, does not constitute a scientific study, but nevertheless, was created with the active participation of the representatives of the scientific community. The document points out the necessity to fulfil the needs and expectations of the management when it comes to management data. It also indicates basic principles which should be implemented in controlling in order to obtain high quality controlling results. These rules are: transparency, authenticity and probity (veracity), credibility and consequence in action. The aforementioned standard does not, however, define the notion of controlling quality precisely. In the context of the authors’ premises, it constitutes a set of good practices rather than detailed guidelines and definitions.

The article assumes that the quality of controlling results expresses the level in which the values of immanent characteristics of these results fulfil specific requirements. These requirements can be objectivised and expressed in the form of norms, regulations, standards and master models [10, p.348]. In this case the measurement of controlling results quality can be expressed in terms of e.g. competence, topicality or credibility of the data found in the management reports or the timeliness of their delivery to the management. The requirements can also be understood as managers’ (the recipients of controlling results) needs (requirements) specified subjectively. In such case, the quality

⁵ See also R.Kolman [8, s.28]

of controlling results can be equated with the level of managers' contentment resulting, for example, from substantive tailoring of the results (their form and content) to the decisional needs, or the way of presenting and explaining the information contained in the reports [10, p.348]. Figure 2 depicts the ideological way of relating the quality of controlling results with the performance of a company.

FIG. 2: The relation between the quality of controlling processes outputs and performance of a company



Source: Author's elaboration

It is worth mentioning that the requirements put forward for the controlling processes results are translatable to actions performed in controlling processes and further to requirements put forward for elements constituting these processes' inputs.

3. The assessment of controlling results quality in company practice

In order to learn about the methods of assessment and improvement of controlling in company practice, between 2012 and 2013, the author of this article conducted a survey research among companies operating on the territory of Poland. The criterion for subject admission to the research was their declaration of implementing controlling understood

as management supporting process. The questionnaire was filled out by 82 business entities representatives. The surveyed subjects represented a variety of business sectors, company sizes and had various level of experience in employing the concept of controlling. Medium-size and large companies with a yearly turnover exceeding €50mln and hiring more than 250 employees constituted about 40% of the survey business entities. Close to 50% of them declared having used controlling for a period of 5 years or more, and 35% for a period of over 10 years. Due to such a small group and diversity of the respondents no general conclusions were drawn. The material gathered was used mainly for the initial identification of the phenomena taking place in the area of controlling in business practice.

The conducted research indicates that the assessment of controlling results⁶ is present in the surveyed companies. Most respondents confirmed performing assessments and introducing changes in the area of controlling. Over a half of the subjects had performed assessment of the quality of products provided by controlling, taking into consideration e.g. the credibility of data contained in the reports or the timeliness of its delivery to management. The assessment was, in most cases, of informal nature, which means, that they were not conducted according to any specific procedure or process of assessment. Detailed results of the research are presented in TAB. 1.

TAB. 1: The percentage of answers concerning the assessment of controlling results quality

Assessed report characteristics The manner of performing assessment of reports provided by controlling	report completeness	Credibility of reported data	report usefulness	timeliness of report delivery	the duration of report preparation
assessment is performed formally	23%	22%	13%	37%	10%
assessment is performed informally	36%	40%	38%	26%	28%
no such assessment is done	22%	17%	23%	19%	37%
no answer for the question	19%	21%	26%	18%	25%
TOTAL	100%	100%	100%	100%	100%

Source: Author's elaboration

⁶ In the questionnaire, the management reports provided by controllers were used as examples of controlling processes results

More than fifty per cent of the surveyed companies had used the assessment results to improve controlling processes, including e.g. controlling objectives, controller's tasks, methods, tools, reports, etc. Nearly a half of the companies had introduced changes in the functional and instrumental areas of controlling and more than 60% of the subjects considered it of vital importance to implement changes improving the results of controlling (e.g. reports or budgets) in the future. For one in three business entities the assessment results constituted the basis for rewarding controlling staff with bonuses. In one in ten surveyed companies the controlling budget was dependent on these results.

Summary

Controlling processes results can be treated similarly to any other product that has a creator and a recipient. Such a product can, and even should, undergo quality assessment, which will examine the level to which it meets the requirements put forward. The results of such an assessment can be used as a valuable source of information in the process of improvement of both, the products themselves and the processes in which they are created, but also to influence the output resources, such as financial data or controlling staff. The qualities of this data, as well as the level of controllers' competence, influence the effectiveness of controlling processes and the quality of their results. In the light of the conducted empirical research it can be concluded that the assessment and improvement of controlling results quality do take place in business practice. It is, however, hard to ascertain the regularity of their occurrence as the dominant code of conduct is of informal and interim nature.

The above consideration does not exhaust the topic of the quality of controlling processes results. It can, however, constitute the starting point for a further discussion concerning the measurement and assessment of the benefits coming from the implementation of not only controlling but also other modern management concepts.

Bibliography:

- [1] BECKER, W., BENZ, K., *Erggebnisse einer empirischen Untersuchung zur Effizienz des Controlling*, 1996, Bamberger Betriebswirtschaftliche Beiträge, Bamberg
- [2] GORETZKI, L., WEBER, J., Die Zukunft des Business Partners – Ergebnisse einer empirischen Studie zur Zukunft des Controllings, nr 56/2012, Controlling & Management
- [3] HESS, T., *Controlling und Datenqualität*, nr 53/2009, Controlling & Management
- [4] KUNNETH, A. S., Zukunftsorientierte Steuerung – Wie Controller die Zukunft mitgestalten können, 55. Jg. 2011, Controlling & Management
- [5] WEBER, J., *The development of controller tasks: explaining the nature of controllership and its changes*, 22/2011, Journal of Management Control
- [6] *Controlling Process Model. A Guideline for Describing and Designing Controlling Processes*, 2012, red. Horváth & Partner, wyd. International Group of Controlling, Haufe Verlag
- [7] LISIECKA, K., *Kreowanie jakości. Uwarunkowania-strategie-techniki*, 2002, Wydawnictwo Akademii Ekonomicznej we Katowicach, Katowice
- [8] KOLMAN, R., *Kwalitologia*, 2009, Wiedza o różnych dziedzinach jakości, Wydawnictwo Placet, Warszawa
- [9] PSZCZOŁOWSKI, T., *Mała encyklopedia prakseologii i teorii organizacji*, 1978, Zakład Narodowy im. Ossolińskich – Wydawnictwo, Wrocław
- [10] NOWOSIELSKI, K., *Koszty jakości controllingu*, W: Orientacja na wyniki – modele, metody i dobre praktyki, red. Borys T., Rogala P., 2012, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu nr 264, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław

THE INFLUENCE OF THE EQUALISATION MECHANISM UNDER THE GENERAL SUBSIDY UPON THE FINANCIAL SITUATION OF COMMUNES AS EXEMPLIFIED BY THE URBAN COMMUNES OF LOWER SILESIA VOIVODESHIP – STUDY RESULTS

Jarosław Olejniczak

Wrocław University of Economics

jaroslaw.olejniczak@ue.wroc.pl

Key words:

equalization – local government budget – urban communes

Abstract:

The main objective of this paper was to conduct the analysis and the assessment of the significance of a equalisation and balancing part of the general subsidy for the urban communes of Lower Silesia voivodeship. As it is proved in this paper, the construction of the five of seven budget indicators proposed by the Ministry of Finances takes under consideration in terms of its contents the values of the above-mentioned transfers. Therefore, for the better understanding the importance of the subsidy redistribution mechanism, it was necessary to reduce the calculation elements of the indicators by their value. In the majority of cases omitting the subsidy in the calculation resulted in the deterioration of the budgetary indicators in the majority of communes. Up to 30% communes were reacting strongly to introducing changes.

Introduction

A debate devoted to the further developments of the horizontal equalisation mechanism between the territorial self-governmental authorities has become significantly more important during the current economic crisis. The reason for that fact is that the crisis revealed the essential faults of the 'Robin Hood tax' solutions. As it can be noticed, the formula of deferred means redistributions makes, on the one hand, self-governmental authorities having a weak financial potential receive increased financial means with a delay, whereas self-governmental authorities being the net payers under the equalisation mechanism are in danger of the significant reduction of their financial means in spite of

decrease in their incomes. As the main objectives of this paper, the following ones have been adopted: first of all, the analysis of the developments (in the years 2010-2012) of the essential budgetary indicators describing the financial management of the urban communes of Lower Silesia voivodeship; second of all, the analysis of the influence of the equalisation mechanism being part of the general subsidy upon the formation of the above-mentioned indicators. The results of the analysis will be constituted by answer to the question, whether, in the case of the urban communes in this study, the equalisation mechanism inherent to the general subsidy exerts influence upon their financial management. Indirectly, it will constitute an answer to the question concerning the necessity and usefulness of the existence of the horizontal redistribution mechanism in urban communes.

The objective and study method

The essential objective of this paper is finding an answer to the question, whether in the case of the urban communes of Lower Silesia voivodeship horizontal redistribution mechanism constitutes a significant support for their financial management. Therefore, to answer the above question, it will be important, first of all, to conduct the analysis of the development of basic budgetary indicators describing financial management the urban communes of Lower Silesia voivodeship in the years 2010-2012; second of all, it is important to analyse the influence of the equalisation mechanism being part of the general subsidy upon the formation of the above-mentioned indicators. The result of the above-mentioned analyses will be an answer to the question, whether in the case of the urban the communes included in the study, the equalisation mechanism inherent to the general subsidy exerts a significant influence upon their financial management. Indirectly, it will constitute an answer to the question concerning the necessity and usefulness of the existence of the horizontal redistribution mechanism in urban communes.

In the study, the data of the Ministry of Finances concerning the value of separate budgetary indicators achieved by the communes included in the study in the years 2010-2012, and also the data of the Regional Chamber of Clearing in Wrocław concerning the value and structure of the revenues of those very units [3].

The study procedure will encompass the analysis of the horizontal redistribution scale in the urban communes of Lower Silesia voivodeship, the analysis of the financial situation of the communes in the years 2010-2012, using the databases of the Ministry of Finances, and also the comparative analysis of initial indicators and the corrected indicators obtained as a result of excluding income streams resulting from the equalisation mechanism.

Essential theoretical issues

A. The subsidy supplementation mechanism of the revenues of communes in Poland.

In the year 2004, a new Act on the Revenues of the Units of Territorial Self-government [1], due to substantial differences in the revenues of communes, introduced a complex equalisation system, intended to provide the protection of the units of self-government having a low income potential. This system is composed of, first and foremost, equalisation part of the subsidy, and also of balancing part. The existing differences in revenues are subject to the progressive equalisation mechanism. The equalisation part of the general subsidy for communes is composed of a basic amount and a supplementing amount. In the scope of the basic amount, it is important to determine the value of basic tax revenues per capita in accordance with the act. In the following years, changes in the equalisation scale were occurring, and, ultimately, as a result of statutory regulations, since 2008, the equalisation scale was further developed, which is illustrated by Table 1. The other element of the equalisation part, a supplementing amount, is received by the communes with a lower population density than the country's average for Poland. This amount is calculated by multiplying 17% of G_g , the number of the inhabitants of a commune, and also the indicator being the quotient of the difference between the average population density in Poland ($ZalKraj$) and the population density in the commune ($ZalGmi$) and the average population density in Poland. The possibility of obtaining the above-mentioned supplementing amount is limited – it cannot be received by the communes for which the revenue indicator G is higher than 150% of G_g in Poland. In such a situation, the supplementing amount, calculated in the above-mentioned way, increases balancing part of the general subsidy for communes.

TAB. 1: Construction of the equalisation element of the general subsidy for communes

Equalisation part ➤ basic amount ➤ supplementing amount	Calculation: basic amount - dependent upon the income tax of a commune, not taking under consideration tax rebates and exemptions – progressive equalisation		
	Relation of G to Gg		Basic amount of equalisation part of the general subsidy for a commune
	from	Up to (and including)	
	0%Gg	40%Gg	number of inhabitants* {0.99*(0.4*Gg – G)+ 0.4197*Gg}
	40%Gg	75%Gg	number of inhabitants* {0.83*(0.75*Gg – G)+ 0.1292*Gg}
	75%Gg	92%Gg	number of inhabitants* {0.76*(0.92*Gg – G)}
❖ Calculation: supplementing amount (U) – upon the basis of the population density index (lower than the country's average), and also limit 150%Gg $U = 0.17 * Gg * Lm * \frac{ZalKraj - ZalGmi}{ZalKraj}$			

Source: own elaboration

equalise possible differences in revenues, in connection with introducing changes to the system of financing their tasks. Balancing part of the general subsidy is divided between the communes, taking under consideration the criteria concerning the expenses of urban, rural and urban-rural communes to provide subsidized accommodation, and also revenues from their share in natural persons income tax, and also the revenues of rural communes and the urban-rural ones from agricultural tax and also forest tax.

B. Budgetary indicators used for the assessment of the financial condition of communes.

In order to make it possible to conduct the comparison of financial situation of the units of territorial self-government, the Ministry of Finances presents a set of indicators calculated for the units of territorial self-government every year [2]. The three basic groups of indicators have been proposed: budgetary, per capita and also for liabilities in accordance to debt titles. The group of budgetary indicators includes seven indicators, describing mainly the general structure (current, on property and proprietary) of

revenues and expenses. The indicators per capita make it possible, in turn, to achieve the comparability of communes having different numbers of inhabitants. They encompass only five categories. The last group of indicators is connected with the sphere of the self-governmental debt, and include nine indicators. They mainly illustrate the scale of debt, and also the possibilities of incurring further liabilities by communes. Among the budgetary indicators analysed in this paper, we include, first of all, the indicator

Ce_1 – expressing the share of current yields in total revenues.

$$C_{e1} = \frac{Cy}{Tr} (1)$$

where

Tr – total revenues,

Cy – current yields (*revenues not belonging to the category of proprietary revenues*).

C_{e1} shows what part of total revenues is constituted by current yields. It should be pointed out that it is nothing else, but the level of current yields that the scale and the scope of the tasks performed by a commune depends. The reason for that fact is the general principle set forth in The Act on Public Finances, namely that the current expenses of a commune should not exceed the level of its current yields. The act stipulates that so-called operational deficit is not permitted under the act in question. Correction by the size of equalization elements of the subsidy (S) makes it possible to answer the question, concerning the impact of the subsidy mechanism upon the level of revenues – to what degree, equalisation and balancing part of the subsidy exert influence upon increasing the possibilities of financing current expenses in the communes included in the study. The corrected C_{e1} will, therefore, have the following value:

$$C_{e1s} = \frac{Cy-S}{Tr-S} (2)$$

Another indicator proposed by the Ministry of Finances is Ce_2 – expressing the share of proprietary revenues in total revenues. It shows what part of the total revenues (Tr) is constituted by proprietary revenues (Pr), which means, therefore, revenues excluding, among others, subsidies and grants. Amounts contributing to the budgets of communes from the two parts of the subsidy discussed before may significantly ‘deteriorate’ the state of the revenue independence of communes, and the reason for that fact is that they exert influence upon increase in the level of revenue in general. Separating the subsidies

from the total amount of revenues should make it possible to achieve the better comparability of financial data between communes and their actual level of self-financing.

$$C_{e2} = \frac{Pr}{Tr} (3)$$

The corrected indicator will, in turn, have the following form

$$C_{e2s} = \frac{Pr}{Tr-S} (4)$$

Another discussed indicator is Ce3 – reflecting the share of operating surplus in total revenues. Operating surplus is the positive result of comparing current yields (Cy) with current expenses (Ce).

$$C_{e3} = \frac{Cy-Ce}{Tr} (5)$$

Operating surplus indicates the potential abilities and possibilities of a unit of territorial self-government in terms of meeting its liabilities, and also of financing investment expenses. The share of operating surplus in total revenues (Ce3) determines the degree to which a unit could incur new liabilities in relation to the actual revenues. The higher the value of this indicator is, the greater the possibilities of investment, or the possibility of increasing current expenses is. The negative value of this indicator shows that a unit of territorial self-government does not generate operating surplus. Correcting this indicator by the value of equalisation and balancing part will make this indicator show the actual ability of a commune in terms of meeting its liabilities. The modified equation will, therefore, be as follows:

$$C_{e3s} = \frac{Cy - Ce - S}{Tr - S} (6)$$

Another one of the analysed indicators is Ce6. It reflects the share of and income from property sale (Ps) in total revenues. The higher value of this indicator in comparison with the previous one (Ce3) proves that a commune, apart from generating a positive result, has also obtained additional revenues from property sale. In turn, the negative value of this indicator shows that a unit of territorial self-government does not generate operating surplus, and possible revenues from property sale do not suffice for covering operational deficit. This indicator may be expressed in the following form:

$$C_{e6} = \frac{Cy - Ce + Ps}{Tr} (7)$$

In turn, the corrected indicator will have the following form:

$$C_{e6s} = \frac{Cy - Ce + Pr - S}{Tr - S} (8)$$

The last one of indicators is so-called self-financing indicator (Ce7), being the proportion of the sum of operating surplus and property revenues (Pr) to expenses on property (Pe). The value of it shows the degree to which a commune finances its investments with the use of its own means. The higher this proportion is, the smaller the risk of losing financial liquidity in connection with the excessive debt service costs, however, the high value of it may also prove a low level of the implemented investments in proportion to its own possibilities. It may be expressed in the following way:

$$C_{e7} = \frac{Cy - Ce + Pr}{Pe} (9)$$

In turn, after correcting by the value of equalisation and balancing part of the subsidy, it will have the following form:

$$C_{e7s} = \frac{Cy - Ce + Pr - S}{Pe} (10)$$

Study results

The analysis of the influence of the equalisation mechanism upon budgetary indicators in the case of the urban communes of Lower Silesia voivodeship ought to be commenced with the analysis of the sizes of relevant transfers between the state budget and the budgets of communes. Among the urban communes, included in the study, the dominating ones are those being the beneficiaries of the equalization system. The scale of received subsidies is mainly dependent upon the number of inhabitants; therefore, in spite of the fact that the city of Wałbrzych receives more than 8 million PLN as equalisation part, it amounts to less than 70 PLN for one inhabitant due to this transfer. The largest beneficiaries of this system, both in terms of total amounts, and per capita, include the cities/towns of: Bielawa, Boguszów-Gorce, Chojnów, Nowa Ruda, Kamienna Góra, and also Piława Górna. On average, the equalisation part amounts to between 150 and nearly 400 PLN per capita there.

In total, it can be pointed out here that usually about 20 of 33 the communes included in the study are the beneficiaries of the equalization system. Simultaneously, only two or three of these communes contribute to the state budget by means of the 'Robin hood tax'. The remaining ten of the communes do not receive cash flows under the

equalisation part of a subsidy. Balancing part of subsidy is received, in turn, usually by 22 to 24 of the urban communes of Lower Silesia voivodeship. Therefore, upon the

TAB. 2: The value of equalisation and balancing part of the general subsidy for the communes included in the study, and also the value of Ce1 and changes after its correction expressed in percentage points

Name JST	Subsidy						Ce1					
	equalisation in thousands PLN			balancing in thousands PLN			indicator %%			Changes after correction pp		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
BIELAWA	8448	9897	9020	416	490	478	86,8	88,4	90,0	-12,05	-12,57	-11,31
BOGUSZÓW-GORCE	5874	6257	6232	168	249	321	89,4	95,0	85,0	-16,82	-18,06	-15,46
BOLESŁAWIEC	0	0	0	112	239	306	79,4	77,5	88,6	-0,09	-0,18	-0,24
CHOJNÓW	3564	3551	3271	155	181	213	89,1	89,0	91,7	-11,68	-10,59	-9,74
DUSZNIKI-ZDRÓJ	283	0	0	101	134	174	83,5	70,8	79,2	-2,4	-0,68	-0,96
DZIERŻONIÓW	1661	2730	627	521	332	316	87,0	89,7	85,0	-2,42	-3,56	-0,89
GŁOGÓW	-17	0	0	810	456	476	89,3	92,4	93,8	-0,36	-0,19	-0,17
JAWOR	2357	3012	2823	236	207	247	89,0	90,0	95,1	-4,45	-5,39	-5,06
JEDLINA-ZDRÓJ	1259	1127	1190	0	0	0	79,0	77,3	74,7	-9,27	-7,58	-6,98
KAMIENNA GÓRA	3442	3643	2637	0	98	62	91,3	85,2	90,7	-7,73	-7,65	-5,53
KARPACZ	-142	-189	-52	91	94	110	50,7	72,1	69,2	0,17	0,35	-0,15
KŁODZKO	551	1158	247	79	42	0	85,5	86,1	81,0	-0,88	-1,39	-0,3
KOWARY	1543	1106	1820	114	211	289	93,4	92,5	90,9	-7,55	-5,46	-7,16
KUDOWA-ZDRÓJ	1697	1405	1361	194	225	212	71,2	74,8	84,1	-6,4	-5,44	-5,34
LUBAŃ	1048	615	156	615	625	598	87,6	88,9	87,7	-2,91	-2,06	-1,29
LUBIN	0	0	-193	0	0	0	98,3	94,4	94,2	0	0	0,06
NOWA RUDA	5174	5381	5382	349	328	325	83,5	75,8	92,5	-11,47	-10,53	-11,96
OLEŚNICA	0	735	0	82	76	135	84,8	92,0	87,6	-0,08	-0,7	-0,12
OLAWA	0	0	0	28	48	12	86,8	88,8	89,6	-0,03	-0,05	-0,01
PIECHOWICE	0	0	0	0	0	0	94,5	91,8	89,9	0	0	0
PIESZYCE	2718	2654	2753	14	16	0	80,8	89,6	95,1	-16,14	-16,31	-17,02
PIŁAWA GÓRNA	2385	2261	872	0	0	0	93,1	93,4	96,4	-14,04	-14,57	-6,42
POLANICA-ZDRÓJ	0	0	0	126	94	46	55,1	72,2	86,1	-0,43	-0,38	-0,18
SZCZAWNO-ZDRÓJ	0	0	0	35	45	8	54,3	95,3	93,3	-0,14	-0,26	-0,04
SZKLARSKA PORĘBA	353	348	358	14	0	0	67,6	80,7	75,7	-1,6	-0,71	-1,26
ŚWIDNICA	0	0	0	0	0	0	88,5	87,4	88,6	0	0	0
ŚWIEBODZICE	874	504	353	0	0	0	91,6	84,3	81,8	-1,54	-0,77	-0,47
ŚWIERADÓW-ZDRÓJ	0	0	0	112	117	83	75,4	70,0	70,0	-0,5	-0,5	-0,31
WAŁBRZYCH	8015	4812	5532	3331	3626	3765	92,9	91,9	88,0	-3,95	-2,64	-2,65
WOJCIESZÓW	1142	976	893	3	0	0	63,5	68,9	87,6	-7,89	-6,46	-6,59
ZAWIDÓW	658	708	765	0	0	0	84,8	74,8	92,8	-5,71	-5,18	-7,31
ZGORZELEC	0	0	0	129	171	157	93,5	87,9	81,3	-0,2	-0,23	-0,17
ZŁOTORYJA	1747	1997	1958	268	283	313	85,7	83,2	92,2	-5,09	-4,97	-5,51

Source: Own calculations based on [2] and [3]

basis of the initial analysis of the value of transfers included in the study, it may be stated that the value of them is strongly differentiated on the territory of the voivodeship.

Another stage of the analysis is examining the influence of studied transfers upon the value of the separate budgetary indicators. The indicator of the proportion of current yields to total revenues in cities and towns in the study was at the level similar to that of the country's average. The correction of this indicator by the value of subsidy element of revenue supplementing shows that in the majority of cities and towns, as a result of giving up on the equalisation mechanism, their ability in terms of achieving current balance would follow (in nearly all of the communes). Usually, ten of the 33 communes included in the study would experience a decrease in Ce1 by more than one point, whereas this fall would not exceed 3.09 (this would be the case in Wojcieszów commune). In the four or five of the communes (depending upon the year), the indicator would not be changed, in turn, only in one commune (Karpacz) the current indicator would have shown an insignificant increase by less than a percentage point. That shows, on the one hand, the significant importance of the equalisation mechanism for one-third of the communes included in the study – and the reason for that fact is that the subsidy substantially increases the possible level of current expenses. On the other hand, changes to the indicator by fractions of a percentage point in the case of relatively large group of the communes mean that in their case it does not exert a significant influence upon the possibility of performing their tasks by them. It should be pointed out that it is also in the case of communes contributing financial means under the 'Robin Hood tax', the significance of these amounts in the context of the maximum level of current expenses is negligible.

As it was already mentioned before, in order to make the picture of the level of the financial independence of communes more reliable, it is necessary to correct Ce2 (share of proprietary in total revenues), using the amounts of equalisation and balancing part of the subsidy. A meter constructed this way, will make it possible to determine the actual financial independence of communes, being such a controversial criteria in the course of constructing the equalisation mechanism. Needless to say, it should be pointed out that it is also educational part of the general subsidy that is a factor introducing 'information noises', however, this is a system-guaranteed pool of means, calculated educational

tasks, having no equalization-related character. In the units of territorial self-government in the study, the indication of proprietary revenues were at a very varied

TAB. 3. The value of C_{e2} and C_{e3} and change after correcting them

Name JST	C_{e2}						C_{e3}					
	Indicator %%			Changes after correction pp			Indicator %%			Changes after correction pp		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
BIELAWA	46,3	48,6	49,1	5,57	6,35	5,78	-0,1	3,7	4,0	-12,05	-12,57	-11,31
BOGUSZÓW-GORCE	46,0	48,4	42,8	7,84	9,39	6,89	1,3	7,0	3,9	-16,82	-18,06	-15,46
BOLESŁAWIEC	62,6	65,6	66,1	0,06	0,12	0,17	4,4	2,8	5,9	-0,09	-0,18	-0,24
CHOJNÓW	44,9	42,6	45,8	5,62	5	4,8	6,5	9,8	7,2	-11,68	-10,59	-9,74
DUSZNIKI-ZDRÓJ	57,7	69,7	63,2	-1,25	0,47	0,6	2,6	-0,9	0,0	-2,4	-0,68	-0,96
DZIERŻONIÓW	57,5	55,1	57,8	1,43	2	0,54	2,5	1,9	5,5	-2,42	-3,56	-0,89
GŁOGÓW	69,2	71,9	73,9	0,27	0,16	0,15	8,6	11,4	17,6	-0,36	-0,19	-0,17
JAWOR	54,4	57,3	61,4	2,5	3,17	3,28	3,0	2,6	5,3	-4,45	-5,39	-5,06
JEDLINA-ZDRÓJ	43,5	40,2	42,8	3,76	3,09	3,12	-0,4	1,2	4,2	-9,27	-7,58	-6,98
KAMIENNA GÓRA	55,7	59,4	58,9	4,3	4,54	3,29	-0,1	0,0	1,2	-7,73	-7,65	-5,53
KARPACZ	84,9	67,8	73,9	-0,13	-0,23	0,12	-13,5	-1,7	8,2	0,17	0,35	-0,15
KŁODZKO	60,8	61,8	64,8	0,51	0,89	0,19	-6,5	3,6	-0,7	-0,88	-1,39	-0,3
KOWARY	52,8	46,8	48,8	3,86	2,46	3,98	-3,3	-3,7	5,1	-7,55	-5,46	-7,16
KUDOWA-ZDRÓJ	47,6	48,5	54,7	0,94	2,73	2,89	-0,4	3,1	-1,0	-6,4	-5,44	-5,34
LUBAŃ	68,3	68,0	60,3	2,02	1,47	0,79	1,5	4,9	2,2	-2,91	-2,06	-1,29
LUBIN	74,7	69,1	67,9	0	0	-0,05	8,7	9,0	11,9	0	0	0,06
NOWA RUDA	51,2	46,4	50,8	5,86	4,96	6,3	-0,3	1,4	3,6	-11,47	-10,53	-11,96
OLEŚNICA	60,9	66,5	62,4	0,05	0,56	0,08	12,9	16,8	12,0	-0,08	-0,7	-0,12
OLAWA	68,3	69,8	68,4	0,02	0,04	0,01	8,3	7,6	9,3	-0,03	-0,05	-0,01
PIECHOWICE	54,6	59,7	63,8	0	0	0	-4,1	-6,6	3,0	0	0	0
PIESZYCE	38,1	39,8	45,0	5,84	6,35	7,58	-5,1	-2,3	-1,0	-16,14	-16,31	-17,02
PILAŃSKA GÓRKA	48,0	49,0	50,4	7,65	7,59	3,27	11,8	6,0	1,1	-14,04	-14,57	-6,42
POLANICA-ZDRÓJ	42,3	51,8	66,8	-1,69	0,2	0,13	-1,8	0,1	7,4	-0,43	-0,38	-0,18
SZCZAWNO-ZDRÓJ	73,9	73,7	75,6	-1,47	0,17	0,03	-18,8	-11,2	-3,2	-0,14	-0,26	-0,04
SZKLAŃSKA PORĘBA	72,5	69,0	72,9	0,99	0,88	0,89	-17,3	-4,3	-2,7	-1,6	-0,71	-1,26
ŚWIDNICA	64,7	64,5	64,0	0	0	0	0,4	6,8	5,2	0	0	0
ŚWIEBODZICE	67,4	66,2	72,3	1,07	0,54	0,36	3,1	5,7	6,8	-1,54	-0,77	-0,47
ŚWIERADÓW-ZDRÓJ	52,0	50,1	54,9	-3,24	0,25	0,17	1,4	-1,1	1,2	-0,5	-0,5	-0,31
WALBRZYCH	61,6	63,7	60,7	2,33	1,69	1,63	-4,5	0,5	1,2	-3,95	-2,64	-2,65
WOJCIESZÓW	29,8	30,6	40,9	2,52	2,01	2,81	6,9	1,2	4,0	-7,89	-6,46	-6,59
ZAWIDÓW	47,5	50,2	46,4	2,76	2,67	3,56	1,7	2,6	4,6	-5,71	-5,18	-7,31
ZGORZELEC	63,1	65,2	61,4	0,12	0,15	0,1	-4,9	0,0	2,0	-0,2	-0,23	-0,17
ZŁOTORYJA	55,9	55,0	62,3	2,69	2,69	3,45	-5,8	-1,6	0,6	-5,09	-4,97	-5,51

Source: Own calculations based on [2] and [3]

level, and their deviations from the country's average for urban communes reached +/- 20 percentage points. Corrected C_{e2} were still characterized by a substantial

differentiation of extreme values, however, the value of standard deviation of the value of Ce2 for populations to the level of 1.1 and 1.6 in following years. A significant influence upon the low values of Ce2s is that of the already-mentioned educational part of the general subsidy. However, in spite of all, it is still noticeable that including equalisation and balancing part to Ce2 makes it more varied, 'artificially' deteriorating the reception of the financial condition of self-governmental authorities, taking advantage of these sources to a greater degree (greater standard deviation of population).

From the point of view of the financial independence of a commune, it is necessary to determine the potential of a given unit in terms of incurring liabilities. Ce3, measuring the share of operating surplus in total revenues, determines nothing else, but the degree to which a unit might incur more liabilities in relation to its actual revenues. On the other hand, it indicates the potential investment abilities and possibilities of a unit of territorial self-government. Moreover, this indicator determines the possibilities of a commune in terms of incurring new liabilities in relation to actual revenues. The higher the value of this indicator is, the greater investment possibilities, or the possibility of increasing current expenses. The negative value of the indicator shows that a commune does generate operating surplus, which means that current yields do not suffice for covering its current expenses. Correcting this indicator by the value of equalisation and balancing part resulted, in extreme cases, decrease in the indicator expressed in a two-digit figure, to use as an example Pieszyce (17.02 percentage point). That would mean that this commune would have Ce3 at the level of -18%. A similar situation would be seen in the communes: Boguszów-Gorce, Bielawa and Nowa Ruda. It should be pointed out that, in the case of this indicator, a significant influence of equalisation and balancing part upon the financial management of communes is visible, and the reason for that fact is that 18 of 33 communes included in the study would report the negative value of Ce3, whereas only five of them would report such a value in the case of Ce3. The opposite would be the case for some of communes contributing means to the state budget by means of the 'Robin hood tax'. Here, increase in Ce3 would reach no more than 1-2 percentage points only. It means that these contributions do not constitute for the communes included in the study ('affluent ones') a significant factor limiting their potential in terms of incurring liabilities.

TAB. 4: Value of C_{e6} and C_{e7} and changes after correcting

Name JST	C_{e6}						C_{e7}					
	Indicator %%			Changes after correction pp			Indicator %%			Changes after correction pp		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
BIELAWA	6,5	7,4	7,5	-5,99	-2,68	-10,9	41,1	64,5	84,0	-29,96	-33,5	-27,51
BOGUSZÓW-GORCE	11,0	10,7	6,2	-21,65	-18,29	-15,09	48,9	61,8	173,3	-76,55	-201,82	-341,61
BOLESŁAWIEC	12,7	8,8	12,3	-1,49	7,65	-0,22	49,8	121,9	76,1	-0,09	0,19	-0,27
CHOJNÓW	20,5	11,6	10,0	-23,78	-7,27	-9,44	59,6	106,3	103,9	-24,92	7,31	6,81
DUSZNIKI-ZDRÓJ	14,7	4,2	3,6	-6,86	25,08	-0,92	66,9	99,2	108,9	-3,04	-0,02	0,46
DZIERŻONIÓW	9,5	5,3	16,3	-5,63	-2,54	-0,78	78,0	51,4	83,2	-3,05	-8,42	-0,66
GŁOGÓW	12,3	13,9	20,0	-0,7	0,77	-0,16	72,2	107,6	119,4	-0,41	0,09	0,2
JAWOR	8,3	5,3	7,2	4,26	5,43	-4,96	44,4	92,3	158,6	-8,96	-4,81	217,77
JEDLINA-ZDRÓJ	6,7	3,8	9,0	-11,24	-6,02	-6,62	59,0	60,7	95,3	-13,1	-8,68	-1,31
KAMIENNA GÓRA	10,3	5,2	6,1	-11,16	-0,19	-5,26	50,1	87,2	110,1	-36,03	-9,18	12,62
KARPACZ	-2,3	3,7	11,1	30,01	6,1	-0,15	89,1	96,9	134,9	0,04	0,04	0,2
KŁODZKO	-0,3	7,7	12,5	0,88	4,49	-0,26	27,3	96,6	287,5	-2,08	-0,29	9,05
KOWARY	5,7	-2,6	8,4	-11,34	-4,06	-6,9	15,4	14,5	127,3	-40,14	-19,81	50,01
KUDOWA-ZDRÓJ	9,0	9,1	2,4	-10,86	-7,13	-5,17	71,1	75,0	116,0	-5,1	-4,1	10,25
LUBAŃ	5,8	7,4	4,4	14,91	14,54	-1,26	73,4	124,5	100,0	-4,73	4,83	0
LUBIN	12,3	10,0	12,4	1,87	5,68	0,06	29,1	59,4	157,4	0	0	-0,34
NOWA RUDA	7,2	6,1	6,8	-8,47	-8,25	-11,55	55,7	153,6	187,3	-24,24	73,28	-187,33
OLEŚNICA	23,3	20,0	15,2	-9,5	-2,38	-0,11	74,6	86,4	89,5	-0,06	-0,41	-0,05
OLAWA	16,3	14,1	13,5	-4,46	-2,51	-0,01	73,6	76,3	86,4	-0,03	-0,06	-0,01
PIECHOWICE	1,9	-4,5	5,2	-3,18	2,43	0	12,6	256,8	94,8	0	0	0
PIESZYCE	1,1	2,3	2,5	-15,81	-19,09	-16,42	45,0	71,2	53,6	-40,83	167,45	94,01
PILAŃSKA GÓRKA	13,4	8,9	2,3	-8,99	-13,21	-6,34	68,5	119,6	32,8	-31,88	-91,63	-49,36
POLANICA-ZDRÓJ	3,7	3,8	14,6	-2,4	1,16	-0,17	73,2	66,3	196,5	-0,19	-0,3	1,8
SZCZAWNO-ZDRÓJ	12,1	-8,6	3,4	-26,46	4,28	-0,04	80,9	-37,7	52,8	-0,07	-1,86	-0,28
SZKLARSKA PORĘBA	6,5	6,4	12,9	-22,88	-3,98	-1,07	75,2	68,7	80,8	-1,78	-0,95	-0,91
ŚWIDNICA	9,4	12,3	9,9	-1,62	3,85	0	42,4	66,9	104,0	0	0	0
ŚWIEBODZICE	12,0	14,3	21,8	0,27	-1,85	-0,39	48,3	100,2	182,3	-3,64	0,01	3,13
ŚWIERADÓW-ZDRÓJ	11,7	5,3	13,1	-1,39	2,13	-0,27	56,6	59,8	129,2	-0,48	-0,41	0,38
WAŁBRZYCH	0,5	3,1	4,7	-2,11	1,43	-2,56	19,4	70,0	60,0	-29,62	-8	-5,37
WOJCIESZÓW	8,5	1,8	5,3	-3,01	3,11	-6,5	90,9	57,3	117,9	-1,77	-5,22	15,31
ZAWIDÓW	5,5	3,6	5,5	3,84	12,48	-7,24	38,0	137,4	235,5	-8,7	12,47	-459,26
ZGORZELEC	-0,9	1,2	10,7	0,27	9,28	-0,15	10,1	35,2	117,4	-1,04	-0,43	0,17
ZŁOTORYJA	7,2	4,1	6,9	-13,15	-5,78	-5,16	41,3	99,1	90,3	-16,75	-0,39	-12,56

Source: Own calculations based on [2] and [3]

Another one of the analysed indicators is C_{e6} . Correcting this indicator by the value of the subsidy shows, similarly to what was the case before, the significance of analysed components of the subsidy for balancing the budget of a commune. In the majority of the communes included in the study the values of C_{e6} s were negative, whereas, in the year 2012, as many as 30 of 33 communes recorded such a situation. It may prove the

deteriorating financial condition of the urban communes of Lower Silesia voivodeship. One should pay attention to the fact that the largest increase in Ce6 was recorded by Karpacz (by as many as 30 percentage points in the year 2010. This indicator is, however, very susceptible to disturbances resulting from irregularly happening processes of property sale by communes.

The last one of the indicators, the self-financing indicator after correcting by the value of equalisation and balancing part, shows the actual level of self-financing. This indicator, both before and after correcting, shows a substantial changeability in the period being studied. Correcting by the values of subsidy elements made this indicator deteriorate or improve by even as many as several hundred percentage points. It should be emphasized that this indicator seems to be incomparable in the perspective of a few years due to the changeability of structure and the scope of investment, and, what follows, it is difficult to assess the influence of the subsidy upon its level.

Summary

The main objective of this paper was to conduct the analysis and the assessment of the significance of an equalisation and balancing part of the general subsidy for the urban communes of Lower Silesia voivodeship. As it is proved in this paper, the construction of the five of seven indicators budget proposed by the Ministry of Finances for the assessment of the financial situation of communes takes under consideration in terms of its contents the values of the above-mentioned transfers. Therefore, for the better understanding the importance of the subsidy redistribution mechanism, it was necessary to reduce the calculation elements of the indicators by their value. As it might have been expected, in the majority of cases omitting the subsidy in the calculation resulted in the deterioration of the budgetary indicators in the majority of communes. Usually, up to 30% communes were reacting strongly to introducing changes, whereas the largest increases and falls were recorded in the case of Ce7.

To sum up, it may be stated that the communes may be divided into three basic groups: first of all, the communes strongly dependent upon equalisation mechanism, in the case of which the equalisation mechanism improves the indicators (except for Ce2), second of all, the communes in which this mechanism does not exert a significant influence upon the value of the indicators and, what follows, upon their financial management,

and also the communes in which, as a result of contributing to the state budget, the budgetary indicators were reduced (except for Ce2) – different to the remaining communes. In turn, what still remains to be determined, is the assessment of the necessity of using the equalisation mechanism in relation to such a large number of communes. The reason for that fact is that one can observe that for a significant majority of the communes included in the study, equalisation and balancing part of the subsidy do constitutes a significant contribution to the budget of a commune.

References:

- [1] *Act on the Revenues of the Units of Territorial Self-government*
Dz.U.2010.10.86
- [2] http://www.finanse.mf.gov.pl/documents/766655/5185482/Wska%C5%BCniki+_2010-2012_wstep.pdf
- [3] Regional Chamber of Clearing in Wrocław www.wroclaw.rio.gov.pl

CONSUMER BEHAVIOURS OF YOUNG POLES ON THE BANKING SERVICES MARKET – OWN STUDY RESULTS

Jarosław Olejniczak, Dorota Bednarska-Olejniczak

Wrocław School of Banking

jaroslaw.olejniczak@wsb.wroclaw.pl, dorota.olejniczak@wsb.wroclaw.pl

Key words:

Young consumers – banking services market – consumer behaviours

Abstract:

Growing significance of young consumer's segment for banks increases interest in the recognition of their expectations and consumer behaviours. They were analysed in this paper. This article presents both the changing behaviour of young Polish consumer over the past two decades, and characterizes the specificity of subsequent stages of the decision making process related to choosing and purchasing banking services by young people.

Introduction

The segment of young people seems to be important and promising for banks nowadays, both due to larger financial assets at their disposal, than it used to be before 1989, and due to the opportunity to acquire loyal and satisfied customers for the future. Therefore it is becoming significant to recognize factors which affect the behaviour of young consumers on the banking services market, as well as to analyse the decision making processes related to using these services. The aim of this paper is presenting the specificity of consumer behaviours of young bank clients.

1. Aim and research methodology

The paper is based on the results of a survey conducted among students of the Wrocław School of Banking from October to November 2013. The aim of the conducted research was to analyse consumer behaviours of young people on the banking services market. Taking the research objective into consideration, the authors sought answers to the following research questions: 1) What are the characteristic features of young bank

clients nowadays? To what extent and how have they changed over the past two decades?, 2) Why do young people start using bank services? Which benefits do they find sufficiently significant to purchase bank products? Why some young people do not use bank services at all?, 3) Where do young people look for information about banks and their offers? Which sources do they find more important and credible than the others?, 4) Which factors affect the choice of a given bank and its offer and in what way?, 5) How loyal are young clients to the banks whose services they use? How eager are they to recommend these services to their family and friends? The conducted survey allowed gathering sufficient data to investigate the aforementioned study areas. This method was featured by high response rate and quick gathering of data. The study population included stationary and extramural students aged 19-26 years. The vast majority were women (78%). The respondents' income was an important aspect in the light of the research objective. Most respondents (nearly 35%) earned 1000 – 2000 PLN per month (net value), 28% declared they did not have any income, and 27% declared they earned less than 1000 PLN per month. 93% of the study population used banking services. It has to be noted that the group of young people aged less than 19 years was intentionally excluded from this research project, since the specificity of different life stages in both groups (below and above 19 years if age) would require to conduct separate research. Due to the purposive sampling and its limited numeracy, it was a pilot research project focused on indicating trends, which could become the subject of large-scale representative research. The study population included 140 stationary and extramural students, with 106 respondents meeting the age criterion.

2. Analysis of evolution of young consumers' behaviours based on the literature of the subject

Young people are nowadays a very attractive and growing segment of consumer goods market. Their current position and future potential make them desirable clients for e.g. banks. The past two decades changed consumer behaviours of youth to such an extent that they have become subject of many research projects and analyses. A review entitled 'The young 2011', issued by the Prime Ministry, clarifies the nature of those changes¹.

¹ In the aforementioned review, the 'young consumers' category refers to both parent-dependent teenagers with limited decision making power, and young adults, who have their own income and run *their own households*.

The first period of market economy in Poland was featured by limited market activity of young people, low purchasing power (a small number of young people was working and earning money, they received pocket money very rarely), making decisions by parents (the young optionally initiated the purchase and advised), and the market offer was limited and not directed to the youth. With time, parents' decisiveness was decreasing, and the youth's susceptibility to the increasingly expansive advertising was growing, and its initiative-advisory role in the purchasing process was strengthening. Young people's expectations were growing simultaneously to the level of education and gathered experience. Their behaviour on the market was becoming more mature and they were increasingly well-educated. In the second decade of the transformation period, consumer behaviours of the youth changed significantly – e.g. the number of young consumers with their own financial resources tripled (to 78%). Their role in deciding upon and financing shopping was increasing, attitudes to advertising became more demanding and critical, and purchasing criteria turned into more rational ones. According to Krystyna Szafraniec, currently the youth is an active, creative, open-minded and increasingly well-off group of consumers, which results from not only a larger amount of pocket money (currently a lot of young people receive it – 69% from rich families and 43% from families with average or bad financial situation), but also from more and more popular undertaking a temporary job; one fourth of young Poles have their own bank account, and 45% would like to have it [5, p.229]. The selected aspects of the evolution of young consumers' behaviours after 1989 were presented in table 1.

Greater financial independence of young people, broader knowledge and market experience make their customer decisions more and more independent – including those referring to the banking services market.

Market activities of young people are conditioned by many factors, both economic and non-economic. Ewa Kieźel indicates two categories of young people's behaviour determinants – factors characterising a young customer (age) and his family (number of members, division of roles, gender), and apart from that independent factors (economic determinants – e.g. price, income, and non-economic determinants – e.g. a social group and reference group)[4, p.47]. Determinants of young customers' behaviours on the

TAB. 1: Selected aspects of the evolution of young consumers' behaviours after 1989

	Beginning of transformation	After 10 years	After 20 years
Financial resources	- pocket money was rather small and unpopular - paid work, mostly in the summer (11/15-year-olds 11.5%; 16/19-year-olds 5%)	The number of youth having their own money tripled (78%). Their sources: - pocket money (59%) - additional money for everyday spending (40%) and planned shopping (36%) - own income	Similar diversity of sources, but money received more often and in larger amounts, although dependent on parents' financial condition – amounts from 30 PLN (17%) to more than 130 PLN (25%)
Decisiveness (role in shopping)	- participation in shopping, beginning of initiating and advising in some areas - independent shopping or shopping with friends – rare	- broadening of shopping assortment for home and family under the impact of the young - greater role in initiating, advising, deciding and financing shopping	- increasing decisiveness in home shopping in various areas - independent shopping for own self more and more popular (clothes, shoes, cosmetics)
Shopping criteria	- price important only when own money was spent - packaging - brand, manufacturer had no impact - gathering information before shopping was unpopular	- product directed to the young - high quality - modern solutions - latest craze, fashion - aesthetical outlook - recognized brand	- role of the brand and rational arguments increased, based on knowledge and experience - choice of white brand products more popular among poor youth - everyone prefers high-tech branded products
Source of information about the product	- no habit to gather information about products before shopping	- searching for information about products before purchasing them – much more popular (mostly in a shop – 67%, from friends – 53%, z TV – 41%)	- TV commercials – 68% - Internet – 53% - friends – 49% - leaflets, pamphlets, catalogues – 30% - bargains – 20%

Source: [5, p.228]

consumer goods market were the subject of research conducted by e.g. Joanna Kicińska. The author differentiated the following tendencies[1, p.93]: a) market behaviours of young customers are significantly conditioned by psychological-social factors, b) age is a very important factor, which conditions the independence of teenage purchasers concerning market processes; age affects mostly their market activity and the capital they own, c) young people trust their parents the most, but also equally often base on their friends' opinions when making market choices, d) youth and children most often make decisions independently, but due to their little market experience they eagerly

refer to information and advices of other people, e) children can make responsible choices, which bring them satisfaction in the long run.

Studies on young customers of banking services, the so called 'Generation Y', were conducted in 2008 by the Deloitte Group[3, p.22-24]. The term 'Generation Y' refers to people aged 15 to 25 years, forming a generation whose active and non-conformist lifestyle has a significant impact on their expectations concerning banking services. This generation comprises mobile people, who are trend setters and use the Internet and mobile phone intensively. They start using banking services quite early and require a high standard of service and fully integrated distribution channels[3, p.22]. As the Deloitte Group reported, between 2005 and 2007 the share of the Generation Y in the overall number of bank accounts opened in Poland was approximately 50 – 73%; customers from this sector put more than 18 billion PLN of their income in banks per annum.

3. Decision making process of young customers using bank services – results of own study

The analysis of customers' behaviours requires investigating, how they make decisions related to purchasing a product. Philip Kotler presents a model of customer decision making process, which consists of the following stages[2, p.288-289]: 1. need recognition, 2. information search, 3. evaluation of alternatives, 4. purchase / decision making, 5. post-purchase behaviours. Studies on the decisive process of young people on the banking services market conducted by the authors focused on the analysis of the above steps. The research project included both individuals using banking services (the vast majority – 93%), and those not being bank customers. The first group was dominated by respondents who had used bank services for 2-3 years (nearly half of the study population) and 4 – 5 years (27%). It means that the majority of respondents have some experience related to using bank services, and their purchase process – due to the specificity of bank offers (consumption spread out in time) – is long-term. Meanwhile, the offer they use is dominated by two kinds of services: checking and saving accounts, used by 81% of the respondents, and debit cards, used by 87% of the respondents. Saving accounts were ranked as the third most popular bank product, with more than 24% of respondents. Other bank products and services were less popular (deposits – 12%, credit cards – 11%, loans – 5%).

The first step, i.e. need recognition, is realising by a customer that he lacks something and there is a discrepancy between what he has and what he would like to have. A gap between the current and ideal state of affairs may become – with sufficient motivation – a reason to undertake purchase actions. In case of bank services, at this stage a customer recognizes some benefits he could acquire using the bank's offer. Meanwhile, this stage includes factors, which may facilitate experiencing the lack of bank services, i.e. those which make a customer start using the bank's offer. Direct studies brought a conclusion that during the first stage of the decision making process, young people who are currently bank customers, indicate the following reasons for which they started using bank services: the possibility to use a debit or credit card (57%), simplified shopping online (52%), taking up a job and the need to have a bank account (41%), the opportunity to receive money from family in an easier way (35%), having savings worth keeping in a bank (30%), safety of savings deposited in a bank (26%) and greater control over expenditure (26%). As we can see, the respondents focus on the benefits related to comfort offered by bank services, in case of making payments and receiving money, and related to safety of possessed financial resources.

The second phase of the purchase process is searching for information about bank offers. Customers, who experience some financial needs, wonder what could satisfy them. In this phase they seek and gather information about bank services and products which could satisfy their needs. There can be many sources of information – both mass media (press, radio, TV, Internet, cinema, radio, billboards etc.) and informal channels (family, friends, other customers, shop assistants etc.). These sources have a different meaning and credibility for customers. In the conducted research, the respondents acquired information about banks and their offer mostly from bank websites, advertisements, from friends, bank employees and financial websites. Social networking sites and Internet forums turned out to be quite rarely used sources of information. Taking into consideration the significance of sources of information about bank products and services, the respondents rated bank websites as the most important (average assessment 3.8 out of 5 points), and right after that information from their families (3.78). Other important sources of information included data provided by bank employees (3.57) and published on Internet websites (3.56). The respondents found information presented in advertisements (2.21) and TV programs (2.32) the least

important. Meanwhile, credibility of information was assessed similarly – websites were ranked on average as 3.92, followed by information from bank employees (3.71), and followed by information from the family (3.7). Advertisements (2.31) and TV programs (2.44) were assessed as the least credible by the respondents. Internet forums and social networking sites did not gain the respondents' trust either, which is the reason of the average assessment of their importance and credibility – 2.8 and 2.75 respectively.

The third phase of the purchase process is the evaluation of alternatives. Its subject is ways of satisfying the need, available both physically and financially. In case of financial services, many offers are compared in terms of many features. It is due to the sensation of high risk experienced by the customer in relation to the purchase, and the will to minimise the risk by doing one's best to make the choice rational and thought over. The immaterial and hence abstract for customers nature of financial services is also significant – before using them, it is hard to imagine their final form and quality. Due to this the choosing process is based on the calculation of potential benefits and losses resulting from accepting some offers and rejecting the others. The conducted research was aimed at determining, which factors and to what extent have an impact on choosing one concrete bank and its offer by each respondent. The group of individuals, who are not bank customers currently, was asked to answer hypothetically. The selected factors were mostly material – all respondents indicated free bank accounts, more than a half of them – free cash machines(see table 2). Other factors they found important included: convenient location of bank branches, functional electronic banking system, satisfying profits from invested funds. The group of individuals who use bank services pointed out primarily to economic factors – with free bank accounts ranked as the first one (78%) and free cash machines at the second place (56%). Other factors were also assessed similarly, as in the first group: functional electronic banking system on the third place (53%), followed by convenient location of bank branches (31%). The significance of these two factors seems to result from the 'bricks and clicks' service model, which young people prefer, i.e. when information about products are searched for in the Internet, yet handling financial matters in a conveniently located bank branch is equally important. Satisfying profits from invested funds are an important factor in this group only for 6% of the respondents. There is also a significant difference in terms

of the possibility to adjust the offer and service conditions to the customer's individual situation – this factor was mentioned as significant by more than 17% of the respondents using bank services and by nobody from the group with no bank clients. In both groups advertisements and information derived from them were not important as a factor determining the choice of a bank – indicated by only 4% of bank customers and nobody from the group with no bank clients.

TAB. 2: Main factors and their impact on choosing one concrete bank and its offer by no bank clients and bank clients

	Bank clients	No bank clients
Free bank accounts	77,78%	100,00%
Free cash machines	55,56%	57,14%
Advertisements and information derived from them	4,04%	0,00%
Promotional activities of the bank	9,09%	14,29%
Satisfying profits from invested funds.	6,06%	28,57%
Functional electronic banking system	52,53%	28,57%
Knowledgeable and understanding customer needs staff	3,03%	14,29%
Convenient location of bank branches	31,31%	28,57%
Convenient hours of work of bank branches	6,06%	14,29%
Possibility to adjust the offer and service conditions	14,14%	0,00%
Clear offer and cooperation rules	17,17%	14,29%

Source:

The fourth phase of the purchase process was making a purchase decision. Making a purchase decision by a customer means making a choice and is the final act ending the valuation process. It can be a fully independent decision, or the one made under the influence of other people's opinions and suggestions. In case of financial services, it could be assumed that the will to minimise the risk will make young people follow the advice of individuals having more experience in using bank services. However, the study results reveal quite contradictory facts – more than a half of the respondents chose their banks independently, and only 25% were influenced by their parents. A little more than 13% of the respondents were inspired by their friends. Other influence groups (siblings, husband/wife, bank employees, other people using bank services) were of little significance. The final purchase of financial services is not the last phase of the purchase process, though. Every bank finds customer behaviours following the purchase of financial services extremely significant. **They form the fifth, last phase of the**

purchase process. This step includes actions undertaken by the customer after the purchase, which result from satisfaction or dissatisfaction he experiences. If the product does not meet the customer's expectations, he is dissatisfied (upset, disappointed), when it does – the customer is satisfied, if it exceeds them – he is deeply delighted. Satisfaction or discontent experienced by the customer with a bank product or service yields certain marketing consequences: positive, e.g. passing on positive information about the bank and its offer, purchasing the product or service once again, purchasing other products or services of the bank, loyalty to the bank; negative – e.g. passing on negative information about the bank and its offer, complaining, or even resigning from bank products/services. In case of bank services, the characteristic phenomenon is a steadily decreasing number of customers, who are totally loyal and stick to only one bank. The conducted study was meant to verify whether this rule is also characteristic of the young customers' segment. To achieve this objective, the respondents were asked about the number of banks whose services they use and factors which would make them change a bank. More than 65% of the respondents use the services of only one bank, 31% - of two banks, and only 2% - of three banks. It could confirm high loyalty of the young customers. However, taking into account the fact that the vast majority of them (67%) declares that a better financial offer of a different bank could make them change their financial services provider, the assumption about loyalty seems to be far-fetched. The low loyalty is also confirmed by the fact that 54% of the respondents indicated that worse financial conditions offered by their current bank would be a sufficient reason to choose the offer of another bank. The strong bond between loyalty and customer satisfaction inclines to check, what the respondents' satisfaction with bank services is, with such limited loyalty. Despite low loyalty, most respondents declared they were satisfied with bank services (altogether more than 90%, with 21% very satisfied and 72% quite satisfied). Satisfaction with bank services is accompanied by a high tendency of the respondents to recommend bank products and services. More than 28% of the respondents would definitely recommend their bank to their family and friends, and 58% would probably do that. Only 4% of the respondents would not recommend the services of their bank. The study also verified the earlier inclination of the respondents to change banks – they were asked, whether in the past they had resigned from the services of one bank and chose another. 24% of the surveyed answered positively to that

question, 77% did not change a bank. It could imply that the respondents are not eager to experiment and check the offer of the competitors. However, the time-consuming and mundane process of resigning from bank services and choosing another offer is worth bearing in mind.

The main results of the study, which characterise the behaviours of young bank customers in subsequent phases of the purchase process, were presented in the table 3.

TAB. 3: The scheme of the decision making process of young customers on the bank products and services market

PROCESS PHASE	CHARACTERISTICS
Recognizing the problem / experiencing a need	The main reasons of starting to use banking services: - an opportunity to use a debit or credit card - easier online shopping - taking up a job and the necessity to have a bank account - an opportunity to receive money from the family more easily - having savings worth keeping in a bank
Searching for information	Using the Internet to find information as often, as traditional sources. Information obtained in banks assessed as more reliable than information contained in advertisements, TV, press or Internet forums.
Evaluating the alternatives	Factors affecting the bank choice: - a free bank account - free cash machines - functional electronic banking system (including Internet) - convenient location of bank branches. Information contained in advertisements is of little importance both for the respondents using bank services, and for those not using them.
Purchase decision	A tendency to choose the bank independently. Parents are the most powerful influence group.
Post-purchase behaviours	- Relatively low level of loyalty - High level of satisfaction with bank services - Readiness to recommend bank products and services

Source: own work

As it was mentioned before, the study population included individuals using bank services and not using them. The study included e.g. the recognition of the reasons of not using bank services by young people and determining the factors which would make them change their mind. Three groups of reasons for not using bank services were differentiated: firstly – rational reasons, e.g. no long-term job, receiving money only in cash and no savings; secondly – not understanding the role of banks, i.e. the respondents' conviction that it is easier to control cash and that they own too little amount of money to open a bank account; thirdly – emotional reasons: mistrusting banks, using a bank account of a family member or a friend. The obtained results reveal the lack of trust to banks and the preference to use a bank account of a family member

or a friend. Rational reasons were found to be the most frequent reason for not using bank services, especially the lack of savings worth keeping in a bank. What is interesting, emotional reasons have no impact on the respondents' decisions. The detailed results were presented in the table 4. Apart from the three reason groups indicated above, the questionnaire also investigated whether the respondents experienced the need to use bank services. Nearly 43% of the respondents claimed that they did not experience such a need and hence did not use bank services.

TAB. 4: Reasons for not using bank services by young people

Reasons	Answers (in %)
No need	43
RATIONAL REASONS	
No long-term job	29
No savings	43
Receiving only cash	29
MISUNDERSTANDING THE ROLE OF BANKS	
Having too little money to open a bank account	14
Cash guarantees greater control over expenditure	29
EMOTIONAL REASONS	
Lack of trust to banks	0
Possibility to use the bank account of a family member/friend	0

Source: own calculations

The respondents indicated three situations, when asked about the envisaged reason for starting to use bank services and products: taking up a long-term job and the necessity to have a bank account then (57%), receiving regular scholarship (43%), finding it easier to shop online (also 43%). Apart from that, the respondents indicated also the following reasons: the opportunity to use a debit/credit card (29%), the necessity to take a loan or mortgage in a bank (14%) and having greater control over expenditure (14%). As we can see, the main reason for starting to use bank services is taking up a job and having stable income.

The results presented above refer only to students. It is worth noting that the group of young people is more diverse in terms of age (includes also children, school pupils and young, financial independent adults), which can affect further differentiation of customer behaviours significantly. An in-depth analysis of the specificity of customer behaviours can support e.g. a better adjustment of bank marketing activities to the specificity of this market, and hence increase the transaction-specific and cumulative satisfaction of young customers.

Conclusion

Young people use bank services more and more eagerly. The reasons include: making payments more easily (by debit or credit cards), and the necessity to have a bank account to receive a scholarship or salary. Young people look for information about banks and their offer on bank websites and in advertisements. Another source of information is their friends, bank employees and financial websites. The factors, which condition the choice of one concrete bank, include opinions of friends and family, economic factors (free bank accounts and cash machines), functional online banking and convenient location of bank branches. The above conclusions were drawn on the basis of the conducted surveys, whose results were presented in this paper. It is also worth bearing in mind that young customers are now entering the phase in life, when on the one hand their income increases, and on the other hand new financial needs emerge, related to e.g. buying a car, the first flat or allocating extra funds. Banks which create offers tailored to young people's needs can in this way acquire satisfied customers, who will remain loyal also later on, when they enter the next phase in their life.

References:

- [1] KICIŃSKA, J. *Psychologiczno-społeczne determinanty zachowań młodych nabywców na rynku dóbr konsumpcyjnych*, Journal of Agribusiness and Rural Development , no. 4(14) 2009, p. 93
- [2] KOTLER, PH., ARMSTRONG, G., SAUNDERS, J., WONG, V. *Marketing, podręcznik europejski*, PWE, Warsaw 2002, p. 288-289
- [3] PIETKUN, P. *Nasi rówieśnicy*, w: Gazeta Bankowa, no. 46 of 17.11.2008 r., p. 22
- [4] *Racjonalność konsumpcji i zachowań konsumentów*, ed. KIEŻEL E., PWE, Warszawa 2004, p. 47
- [5] SZAFRANIEC, K. *Młodzi 2011*, Issued by the Prime Ministry, Warszawa 2011, p. 228

MODEL OF CARRYING CAPACITY – SYSTEM DYNAMICS IN NETLOGO AND STELLA

Kamila Olševičová, Richard Cimler, Hana Tomášková, Alžběta Danielisová

University of Hradec Králové

Institute of Archaeology of Academy of Sciences of the Czech Republic

kamila.olsevicova@uhk.cz; richard.cimler@uhk.cz; hana.tomaskova@uhk.cz;

danielisova@arup.cas.cz

Key words:

carrying capacity model – NetLogo – social simulation – Stella – system dynamics

Abstract:

We compare implementations of system dynamics of Celtic settlement using two tools – NetLogo and Stella. The objective of the model is to catch the relations among the population growth, the production growth and the land use with respect to agricultural strategies. Our main objective is to better understand the Celtic society and economy and its sudden collapse. More broadly we are interested in the applicability of multi-method simulation (agent-based approach enhanced with system dynamics and process modelling) in archaeological research.

Introduction

Our objective is to explore the complexity of the society in late Iron Age in central Europe where fortified agglomerations – the oppida – came into picture. They appeared as a part of an economically advanced environment, together with a distinctive intensification of settlement patterns. Archaeological record shows that dynamics of their occupation includes fast growth and then even more rapid decline: the population density peaked within ca. 70 years, and then, within two generations it decreased extensively.

Causes for gradual trend of depopulation can be seen in both endogenous and exogenous factors (organizational and political, environmental or ecological). Computational simulation can help us to get insight into the causes of the collapse. Our previous research was focused mainly on the agent-based simulations; see e.g. our

NetLogo [1] *model of population dynamics* [2] or *model of agricultural strategies* [3]. The simulation of synthetic population (size, structure and subsistence needs) was accompanied with the model of agricultural practices with the aim of investigating the sustainability of the long-term means of production and means of subsistence.

Up-to-date simulation software such as AnyLogic [4] supports the multi-method simulations combining agent-based approach with system dynamics model and discrete event model. Each of the three methodologies assumes certain level of abstraction and quantification, namely in case of complex models of economies. We built two models of the carrying capacity of the Celtic settlement to learn more about the benefits and limits of system dynamics modelling. The first model was implemented using System Dynamics Modeler in NetLogo, the second was created using Stella software [5]. The models are presented in the rest of the paper.

1. System Dynamics Modelling with NetLogo and Stella

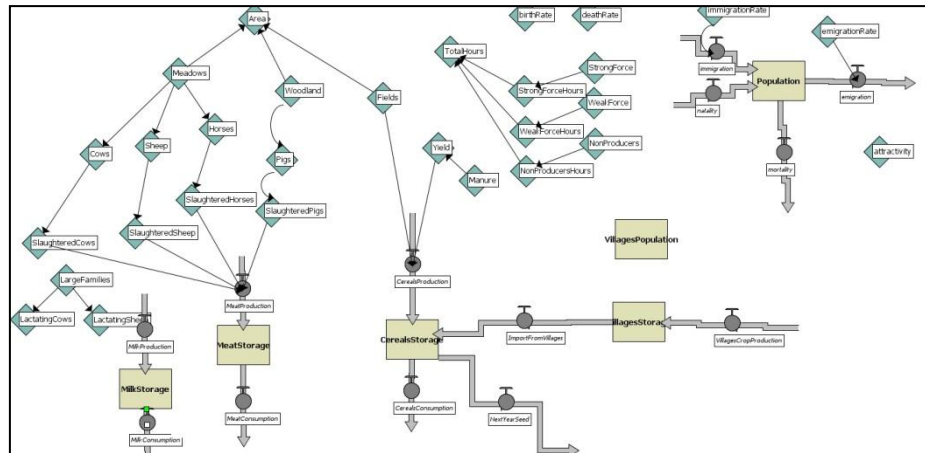
With the agent-based approach the behaviour and interactions of individual agents are defined. The system dynamics model catches how populations behave as a whole. Both NetLogo and Stella provide intuitive icon-based graphical interfaces for creating the diagram that defines populations and how they affect each other (Fig. 1, 2). In NetLogo, its System Dynamics Modeler directly generates the appropriate NetLogo code (global variables, procedures and reporters). The diagram is composed of four types of elements:

- *stock* accumulates or drains,
- *flow* defines and controls stock's input/output,
- *variable* is a value (a constant or an equation that depends on other variables),
- *link* transmits a number from a variable or a stock into a stock or a flow.

Similarly, Stella provides four types elements:

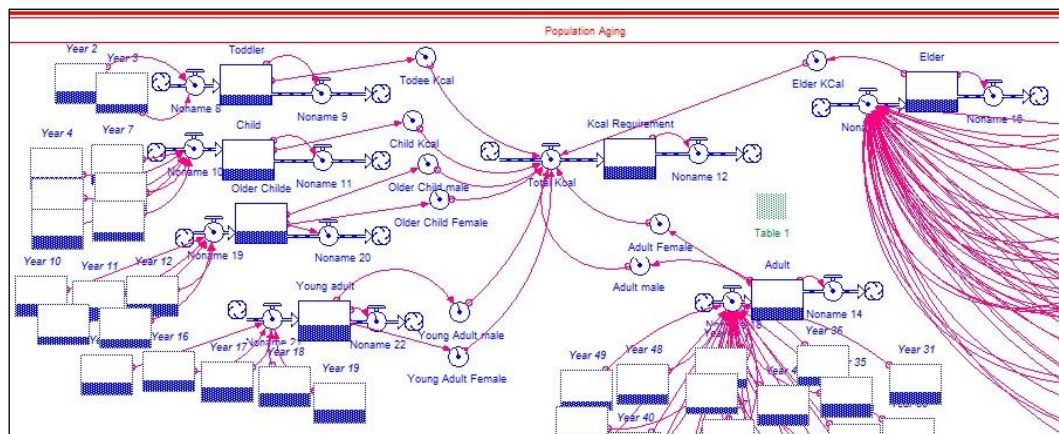
- *stock* and *flow* do not differ from corresponding NetLogo elements,
- *converter* manipulates inputs into outputs (holds values for constants, defines external inputs to the model, calculates algebraic relationships, serves as the repository for graphical functions),
- *connector* passes information between pairs of elements.

FIG. 1: Part of the diagram in NetLogo



Source: authors

FIG. 2: Part of the diagram in Stella



Source: authors

2. The carrying capacity models

The population of the Celtic settlement increases from 600 up to 2000 inhabitants during 120 years. The population growth parameters (birth-rates, mortality and migration) are specified by domain experts. The total carrying capacity of the settlement depends mainly on the available strong workforce and available arable land. The amount of strong workforce is defined by the number of adult men between 15 and 45 years capable of hard agricultural work. The area of fields differs for intensive and extensive agricultural strategy which operates with fallow. About 70% of the population consumption is covered by cereals; further 20% diet consists of animal proteins (beef,

pork, lamb and horse meat and milk). The proportions of herds are given: large family of approx. 20 people cared about 2 cows, 2 sheep, 3 pigs and 1 horse. Animals require food from meadows and woodland and provide manure. With manure the crop grows from 500-1500 kg/ha up to 1500-3000kg/ha. The food production is restricted by constraints such as maximum of slaughtered cattle or approx. cereal losses during the winter. Food energy tables are used for mapping amount of wheat and milk on the consumption of each age group from toddlers to elderly. The map of the initial proportion of arable land, woodland and meadows is given as well as rules expressing the spreading of fields and the process of deforestation.

The system dynamics models are created as follows.

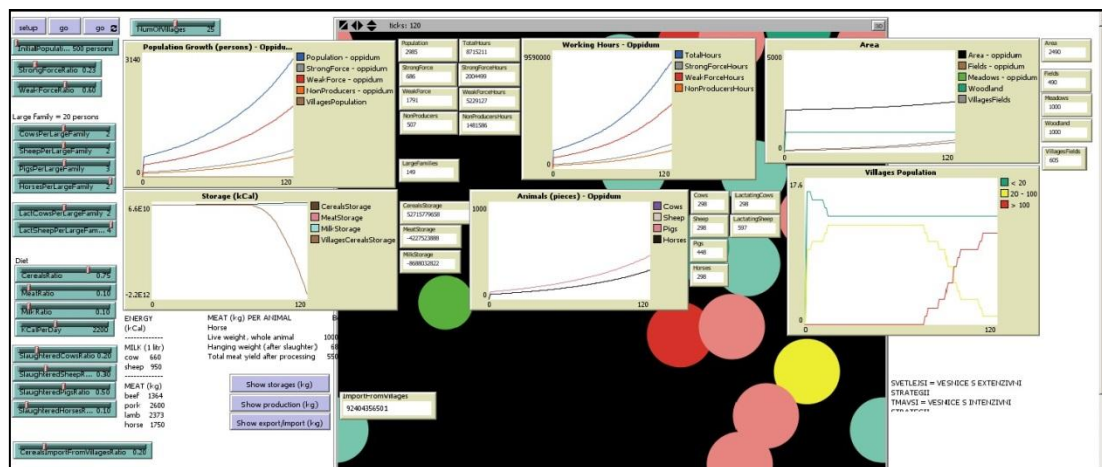
- The stock of the human population is modified by birth- and immigration-inflows and death- and emigration- outflows.
- The stocks of animals' population are modified by birth-inflows and slaughter-outflows.
- The stock of food contains calories from all sources of food. The stock of cereals is decomposed into three sub-stocks of one, two and three years old storages. The oldest storage is consumed with the highest priority while part of the newest crop is used as seed for the next season.
- The stock of arable land defines the current area of fields and together with the stock of woodland area and the stock of grasslands gives the total land use.

FIG. 3: Population growth graph in Stella



Source: authors

FIG. 4: Interface of NetLogo model



Source: authors

Conclusion

We intended to demonstrate the ability to move from a static data set (archaeological and environmental records) to dynamic modelling that incorporates feedback mechanisms and nonlinear responses to a wide range of input data. This approach can help to analyse past socio-economic processes, determine possible crisis factors and understand ecological and cultural changes.

Results obtained with the system dynamics simulation of carrying capacity of late Iron Age oppida show limits of the sustainable economy practiced by a constantly growing population under particular environmental settings. The immediate or gradual impact of the success rate in the food production and its potential influences on the social processes including the oppida abandonment can be also addressed.

In NetLogo, the system dynamics can be enriched with the agent-based component (for example of the interface, see fig. 4). The system dynamics model of the settlement population and food production will be extended with the agent-based model of villages in the hinterland. Villages with its individual characteristics will be represented by agents and organized in the network. This is the way how to simulate the supplier-customer relationships and to experiment with hypotheses about the level of self-sufficiency and the likely share of importing food and exporting craft products.

Stella software does not allow us to continue with modelling individuals. The model is limited in several aspects, e.g. the graph cannot contain more than 5 lines (fig. 3). The main advantage of Stella is that it helps us to check the consistency of the model and to ensure the model outputs do not depend on the implementation tool.

Acknowledgement:

The research described was supported by grant GACR-405/12/0926 Social modeling as a tool for understanding Celtic society and cultural changes at the end of the Iron Age and the project No. CZ.1.07/2.2.00/28.0327 Innovation and support of doctoral study program (INDOP), financed from EU and Czech Republic funds.

References:

- [1] NetLogo homepage. [online] <http://ccl.northwestern.edu/netlogo/> 2013
- [2] OLŠEVIČOVÁ, K., CIMLER, R., MACHÁLEK, T. (2012) Agent-based Model of Celtic Population Growth: NetLogo and Python. In: N.T. Nguyen et al. (Eds.) *Advanced Methods for Computational Collective Intelligence, Studies in Computational Intelligence* 457, Springer-Verlag Berlin Heidelberg 2013, pp. 135-143.
- [3] MACHÁLEK, T., CIMLER, R., OLŠEVIČOVÁ, K., DANIELISOVÁ, A. (2013) Fuzzy Methods in Land Use Modeling for Archaeology. In: *Proc. of 31st International Conference on Mathematical Methods in Economics 2013*, Jihlava, part II, pp. 552-557.
- [4] AnyLogic homepage [online] <http://www.anylogic.com/> 2013
- [5] Stella homepage. [online] <http://www.iseesystems.com/software/Education/StellaSoftware.aspx> 2013

THE IMPACTS OF THE EU'S SUBSIDIES ON THE PRODUCTION OF ORGANIC FARMS

Marie Pechrová

Czech University of Life Sciences Prague

pechrova@pef.czu.cz

Key words:

organic farming – direct payments – decoupling – fixed and random effect model

Abstract:

The aim of this paper is to estimate the production function of the organic farms in the CR and assess to what extent EU's agricultural subsidies influence the production. Based on the results of Hausmann test and Wald test for groupwise heteroskedasticity, fixed effect model with robust standard errors was estimated to assess the impact of subsidies on production. SAPS and other subsidies mildly decrease the production. However, agri-environmental payments from RDP and HRDP, LFA payments, and subsidies from RDP tend to increase the production. Hence, despite that McSharry's and Fishler's reform decoupled the subsidies from the production, there is still a weak link.

Introduction

Common Agricultural Policy (CAP) was founded at the beginning of the European Communities in 1950s. It supported the incomes of agricultural holdings and stabilized the production. However, the guarantee prices and payments linked to the production lead soon to the overproduction. Therefore, in the 1980s and 1990s, decoupled payments were proposed. Decoupling started with McSharry's reform in 1992, which introduced direct payments: Single Area Payment Scheme (SAPS), Separate Sugar Payment and Separate Tomato Payment. Nevertheless, some researchers (e.g. [1]), still considered direct payments not fully decoupled. A change came with Fishler's reform in 2003: "The breaking point is represented by the switch to decoupled payments as the main support measure, a change that started in 1992 with the McSharry reform and reversed the logic itself of public support in agriculture." [3] The regulation 1782/2003 introduced the detachment of payments from specific crops (previously area-based) and

their “consolidation” into the Single Payment Scheme [6]. After the enlargement of the EU, the new countries had the possibility to keep SAPS payments and to add to SAPS state financial support (top-up payments). Both were the case in the Czech Republic. The impact of decoupling on Greek cotton production was investigated by Katranidis and Katakou [4]. They simulated the effects under four alternative policy scenarios: the CAP practiced until 2005, the Mid Term Review regime, a fully decoupled policy regime and a free trade / no policy scenario. Their “results indicate that cotton production gradually decreases as more decoupled policies are adopted. Moreover, the fully decoupled payment is found to be non-production neutral since it indirectly affects producers’ decisions through the wealth effect” [4]. The impact of decoupling on farming in Ireland was assessed by Breen et al. [2]. They concluded that “significant restructuring is likely to occur at the farm level as a result of decoupling.” Offermann et al. [7] examined the development of the role of government support in the financial situation of organic farms in Western and Eastern European countries. Their results show that “direct payments play an important role in the financial viability of organic farms...” [7]

1. Methodology

The aim of the paper is to assess the impact of EU agricultural subsidies on the production. We utilized panel data observed for Czech organic farms during 2005–2012. The sources of data were Albertina database and State Agricultural Interventional Fund (SAIF).

Explained variable (production y_{it}) was represented by the sales of own products and services and change of the stock of own activity by i^{th} farm in time t . It was deflated by the price index of agricultural producers (2005 = 100). Explanatory variables included material, capital, labor, land and subsidies. Material ($x_{1,it}$) consisted of consumed material and energy and capital ($x_{2,it}$) of long-term assets. Both were deflated by the industrial producers’ price index (2005 = 100). Labor ($x_{3,it}$) was calculated as the ratio of personal costs and average wages in agriculture in particular region. The acreage of farmland ($x_{4,it}$) was corrected to take into account land quality in particular region. We examined three groups of subsidies: $x_{5,it}$ – direct payments (SAPS and top-up); $x_{6,it}$ – Less Favourable Areas payments (LFA), agri-environmental measures (AEM) from

Horizontal Rural Development Programme (HRDP) and Rural Development Programme (RDP), and other investment subsidies from RDP, $x_{7,it}$ – other subsidies from European Agricultural Guarantee Fund and Common Market Organization.

Fixed Effect Model (FEM) and Random Effect Model (REM) were constructed and tested. In FEM, the farm-specific dummy variables or the farm-specific constants are introduced to account for individual characteristics that may influence the production such as the management and sowing method. One way to estimate FEM is by using dummy variables for each farm. Also time effect can be included into model by adding dummy for each year. Both models were elaborated and tested if they were appropriate. Another way of a FEM estimation is equivalent to previous, but use farm-specific intercepts (1).

$$y_{it} = \alpha_i + \beta_k X_{k,it} + u_{it} \quad (1.)$$

where α_i ($i = 1 \dots N$) is farm-specific intercept, y_{it} is a vector of dependent variable – production, β_0 is the constant (intercept), $X_{k,it}$ ($k = 1 \dots p$) is a matrix of explanatory variables, p is the total number of explanatory variables in a model, and u_{it} stays for error. The interpretation of β_{ki} coefficients is that for a given farm as explanatory variable varies across time by one unit, production increases or decreases by β units.

Wald F-test (F test) was used to test whether there is fixed effect for each farm present. The goodness of fit was assessed by coefficient of multinomial determination (R^2). Statistical significance of the estimated parameters was tested by t-test. Coefficient of intraclass correlation (ρ) reveals how much of the total variance is given by the differences across panel. Finally, the model was tested by Wald test for the heteroskedasticity. Due to the presence of it, FEM was re-estimated using robust standard errors.

If time-invariant characteristics unique to the farm have significant influence on the production, REM is more appropriate. Therefore, it was also estimated by equation (2).

$$y_{it} = \alpha + \beta_k X_{k,it} + u_{it} + \varepsilon_{it}, \quad (2.)$$

where α is the common intercept, u_{it} stays for between-entity error and ε_{it} for within-entity error. Breusch-Pagan Lagrange multiplier test tested if there is random effect present.

To decide between FEM and REM a Hausmann test was used. Only the results of suitable model were discussed. The calculations were done in software Stata, version 11.2.

2. Results

There were 50 organic farms in a sample with 292 observation (the minimum observation was 1, maximum 8, and average 5.8 for one farm). FEM and REM models were estimated.

FIG. 1: Fixed-effects (within) regression model, command: `xtreg`, option: `fe robust`

corr(u_i, xb) = -0.0251			F(7,49)		=	2464.00
			Prob > F		=	0.0000
(Std. Err. adjusted for 50 clusters in ico)						
y	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
x1	1.265289	.0164266	77.03	0.000	1.232278	1.298299
x2	.1807118	.1314893	1.37	0.176	-.0835259	.4449496
x3	83.63557	51.92728	1.61	0.114	-20.7162	187.9873
x4	26.3893	273.9241	0.10	0.924	-524.0818	576.8604
x5	-.0003373	.0009683	-0.35	0.729	-.0022833	.0016086
x6	.00032	.0001596	2.01	0.050	-6.71e-07	.0006407
x7	-.0000945	.0001942	-0.49	0.629	-.0004847	.0002957
_cons	7403.488	79972.84	0.09	0.927	-153308	168114.9
sigma_u	123510.35					
sigma_e	27421.836					
rho	.95302254	(fraction of variance due to u_i)				

Source: Own calculation in Stata 11.2 based on data from Albertina database and SAIF

FEM was calculated using within estimator (command `xtreg` and `areg` in Stata). The only difference in estimating the model by those two commands is in value of R^2 , which is incorrect using `xtreg`. `areg` reports correct value of 96.81 %. The conformity with data is relatively high. Post-estimation analysis, particularly modified Wald test, revealed the presence of heteroskedasticity. The p-value ($\text{Prob} > \chi^2 = 0.0000$) rejected the null hypothesis. Therefore, robust estimation of the parameters was done (Fig. 1). The robust standard errors were higher. Hence, according to the t-test there were more statistically significant variables – not only for material, but also for RDP subsidies.

In FEM, the errors u_i were correlated with the explanatory variables ($\text{corr}(u_i, Xb) = -0.0251$). The F-test ($\text{Prob} > F = 0.0000$) denied the hypothesis that all coefficients were jointly equal to zero. R^2 was statistically significant as same as the model as a whole. 95.30 % ($\rho = 0.9530$) of the variance is due to differences across panel.

FIG. 2: Random effect GLS regression model, command: `xtreg`, option: `re robust`

corr(u_i, x) = 0 (assumed)			wald chi2(7) = 17082.75		Prob > chi2 = 0.0000	
(Std. Err. adjusted for 50 clusters in ico)						
y	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
x1	1.261475	.0160073	78.81	0.000	1.230101	1.292849
x2	.1600419	.1359795	1.18	0.239	-.106473	.4265568
x3	78.48044	52.5473	1.49	0.135	-24.51037	181.4712
x4	20.61615	28.67506	0.72	0.472	-35.58595	76.81824
x5	-.0004023	.0009395	-0.43	0.669	-.0022437	.0014391
x6	.0003002	.000152	1.97	0.048	2.22e-06	.0005982
x7	-.0001472	.0001743	-0.84	0.398	-.0004888	.0001945
_cons	10780.24	14595.29	0.74	0.460	-17826	39386.49
sigma_u	130288.77					
sigma_e	27421.836					
rho	.95758154	(fraction of variance due to u_i)				

Source: Own calculation in Stata 11.2 based on data from Albertina database and SAIF

REM was estimated already with robust standard errors using General Least Squares (GLS) regression (Fig. 2). It assumes that random errors are uncorrelated with the regressors ($\text{corr}(u_i, X) = 0$). P-value for F test (Wald χ^2) with 7 degrees of freedom is lower than 0.05. Hence, all the coefficients in the model are not jointly equal to zero and model is statistically significant. According to the results of t-test, only parameters for material and RDP subsidies are statistically significant. R^2 is statistically significant as same as the model as a whole. 95.76 % ($\rho = 0.9576$) of the variance is due to the differences across panel. We performed Breusch and Pagan Lagrangian multiplier test for random effects in a model. The $\text{Prob} > \chi^2$ was lower than $\alpha = 0.05$, hence, we rejected a null hypothesis. There was also a random effect present.

Both, FEM and REM resulted to be statistically significant. Therefore, a Hausmann test was used to test which model is appropriate. The $\text{Prob} > \chi^2 = 0.9501$ is higher than $\alpha = 0.05$, therefore we cannot reject the null hypothesis. Farms' errors (u_i) are correlated with the regressors, which is the assumption of a FEM. FEM is more appropriate to

model the relation between production and production factors and subsidies of the organic farm.

3. Discussion

Only the regression coefficients of the FEM (Fig. 1) are interpreted as this model proved to be suitable. The signs for parameters of majority of explanatory variables are positive suggesting that increase of material (x_1) and capital (x_2) by 1 thousand, labour (x_3) by 1 employee, land by 1 ha (x_4) brings the increase of the production by 1.27, 0.18, 83.64 and 26.39 thousand CZK resp. Direct payments (x_5) and other subsidies (x_7) slightly decrease the amount of production. This is desirable as those subsidies were decoupled from the production and should not have significant influence on it. Only subsidies from RDP (x_6) mildly increase the production (their increase by 1 CZK brings the increase of by 3.2 CZK).

Conclusion

The aim of the article was to assess the impact of EU agricultural subsidies on production of organic farms. McSharry's reform in 1992 and Fishler's reform in 2003 decoupled the direct payments from production. Therefore, we verified if this is true also for subsidies for organic farms in the Czech Republic. A linear production function was estimated using FEM and REM based on panel data of 50 organic farms between 2005–2012. The increase of material, capital, labour and land, increase the amount of production. SAPS and other subsidies mildly decrease the production. Hence, the decoupling of the direct payments had desirable effect. On the other hand, agri-environmental payments from RDP and HRDP, LFA payments, and other subsidies from RDP tend to increase the production. It might be due to the fact that RDP includes also investment subsidies for farms' modernization which can lead to higher output.

Acknowledgements:

The paper is supported from internal grant No. 11110/1312/3160 of the IGA, FEM, CULS.

References:

- [1] BEARD, N., SWINBANK, A., Decoupled payments to facilitate CAP reform. *Food Policy*, 2001, vol. 26, no. 2001, pp. 121–145, ISSN 0306-9192.
- [2] BREEN, J.P., C. HENNESSY, T. C., THORNE, F. S., The effect of decoupling on the decision to produce: An Irish case study. *Food Policy*, 2005, vol. 30, no. 2005, pp. 129–144, ISSN 0306-9192.
- [3] CISILINO, F. et al., The effects of decoupling on the COP sector in Italy: an ex-post performance analysis. *PAGRI*, 2012, vol. 2, no. 2012, pp. 47–63.
- [4] KATRANIDIS S. D., KOTAKOU, C. A., Are CAP Decoupling Policies Really Production Neutral? *12th Congress of the European Association of Agricultural Economists – EAAE 2008*, 2008, vol. 12, no. 2008, pp. 1–8.
- [5] OFFERMANN F., NIEBERG, H., ZANDER K., Dependency of organic farms on direct payments in selected EU member states: Today and tomorrow. *Food Policy*, vol. 34, no. 2009, pp. 273–279, ISSN 0306-9192.
- [6] VIAGGIA, D., RAGGIB, M., GOMEZ Y PALOMA, S., Farm-household investment behaviour and the CAP decoupling: Methodological issues in assessing policy impacts. *Journal of Policy Modeling*, 2011, vol. 33, no. 2011, pp. 127–145. ISSN 0161-8938.

ARC ROUTING PROBLEMS

Jan Pelikán

University of Economics, Prague

pelikán@vse.cz

Key words:

graph theory – postman problem – integer programming

Abstract:

This paper addresses the problem of providing services or goods to the edges of the graph which model the roads or paths of the communication network. The task is then the problem of searching for a closed path which contains either all edges or a set of desired edges, where the length of the path is minimized. A generalization is the postman problem with a number of modifications: rural postman problem, windy postman problem, capacitated postman problem. These tasks have a number of practical applications, such as the optimization of municipal waste collection, route optimization problem for cleaning city streets, reading energy meters, delivery of mail, school bus routes. This article outlines the tasks, models and solution methods.

Introduction

Methods of graph theory are used for modelling and solving logistical problems. Travelling salesman problem and vehicle routing problem solve the distribution of goods from a depot to the points of a communication network based on the demand for goods in these points. The goal is the minimization of transportation costs. A graph is the model of the communication network, one node of the graph is the depot and the other points of the communication network are nodes of the graph. The edges of the graph are connections between points of the network or the shortest paths between two points of the network. This paper addresses the problem of providing services or goods to the edges of the graph which model the roads or paths of the communication network. The task is then the problem of searching for a closed path which contains either all edges or a set of desired edges, where the length of the path is minimized. The oldest and best-known problem of this type is searching for an Euler closed path in the

graph. A generalization is the postman problem with a number of modifications: rural postman problem, windy postman problem, capacitated postman problem. These tasks have a number of practical applications, such as the optimization of municipal waste collection, route optimization problem for cleaning city streets, reading energy meters, delivery of mail, school bus routes. This article outlines the tasks, models and solution methods and is based on the artical [1] [2].

1. Euler's problem and postman problem

The problem of route optimization in a communication network is modeled as a graph $G = \{V, E\}$, where V is the set of nodes and $E = E_1 \cup E_2$ is the set of edges. E_1 is the set of undirected edges and E_2 is the set of oriented edges of graph G . Graph G can contain only undirected edges or only oriented edges. If the graph contains both types of edges, it is a mixed graph. Matrix C contains the numbers c_{ij} , representing the edges cost, or the length of the shortest path between two nodes i and j .

The case of undirected graph G .

For an undirected graph G Euler's problem is the search for an Euler cycle, a cycle that contains every edge exactly once. In the case where the degree of nodes of a connected graph is even for all nodes an Euler cycle exists and can be found by End - pairing algorithm. Otherwise, the problem is generalized as the postman problem, in which each edge may lie on the cycle several times, but in this case we are looking for a cycle with minimal cost. The postman problem is solved by looking for the perfect pairing with minimal cost in the graph $G' = \{V', E'\}$, where V' is the set of nodes of odd degree in graph G and edges E' represent the length of the shortest path in graph G between pairs of nodes of V' due to the cost matrix C . The edges forming the optimal pairing E'' and the edges of the original graph E are used to obtain the solution of the postman problem as an Euler cycle in graph $G'' = \{V, E \cup E''\}$, which then can be found by End - pairing algorithm. The method of finding the optimal pairing is polynomial, so the postman problem is polynomially solvable for an undirected graph. An exception is the case of non symmetric matrix C , in this case the postman problem is NP difficult.

The case of directed graph G .

In this case the existence of an oriented Euler cycle is ensured if the graph is strongly connected and indegree equals outdegree at each node of the graph. An Euler oriented cycle can then be found using End - pairing algorithm. If the condition of existence of an oriented Euler cycle is not met there exist nodes $V_1 \subset V$ in which the difference between outdegree and indegree is positive and $V_2 \subset V$ for which this difference is negative. Similarly as for an undirected graph the condition for the existence of an Euler cycle is fulfilled by doubling some edges of the graph. These additional edges are obtained by the solution of the auxiliary transportation problem, in which nodes of V_2 play the role of suppliers and nodes of V_1 the role of customers. Supplier capacity is the difference between indegree and outdegree of the node from V_2 , customer demand is the difference between outdegree and indegree of the node from V_1 . The cost of the i -th supplier to the j -th customer is given by the length of the shortest path from the i -th node to the j -th node of the graph. This problem is also polynomially solvable.

Mixed postman problem

Consider the graph $G = \{ V, E \}$, where V is the set of graph nodes and $E = E_1 \cup E_2$ is the set of edges, where the non-empty set E_1 contains undirected edges and E_2 is the non-empty set of oriented edges of G . Then the necessary and sufficient conditions for the existence of an Euler cycle are:

- a) Each node is associated with an even number of edges (count both oriented and non-oriented)
- b) For each subset of nodes $S \subset V$ applies : the difference of oriented edges between S and $V-S$ and between $V-S$ and S is less than or equal to the number of undirected edges between S and $V-S$.

If these conditions are met, then an orientation of edges from E_1 has to be determined in such a way that condition b) is met. These oriented edges along with edges of E_2 satisfy the condition that indegree of each node equals outdegree and an oriented Euler cycle can be found by End - pairing method. To determine the orientation of edges E_1 the

maximal flow problem is solved, the flow equation in flow problem ensures that the indegree of each node equals the outdegree.

If conditions a) and b) are not met, then we are dealing with a mixed postman problem, which is NP - hard. As for an undirected graph the condition for the existence of an Euler cycle can be fulfilled by doubling some edges of the graph. These additional edges we get as the solution of the integer programming model where the variables of the model are integer and denote the number of passes through each edge of graph G . The model also ensures the existence of an oriented Euler cycle, which is again found by using the End- pairing algorithm. In addition heuristic methods can be used for solving mixed postman problem.

2. Rural postman problem

In this modification of the postman problem the edges E of graph $G = \{V, E\}$ are divided into obligatory edges $R \subset E$ and other edges and the goal is to find the cycle with minimum cost including all mandatory edges. The solution is therefore a cycle which includes all of the edges of R and also some of the edges of $E-R$. The sum of costs of the "optional" edges must be minimal. The rural postman problem for both undirected and directed graphs is NP-hard.

The case of an undirected graph

Consider the graph $G = \{V, E\}$ and denote a subset of nodes $V' \subset V$, where V' contains only nodes incident with edges of R . If the graph $G_R = \{V', R\}$ is continuous the problem is converted to the postman problem for which there exists a polynomial method of solution.

If $G_R = \{V', R\}$ is not continuous, first the graph $G' = \{V', E'\}$ is created, where the set of edges E' contains all edges of R along with artificial edges representing the shortest path in graph G between nodes of V' . As the graph $G_R = \{V', R\}$ is not connected, its connected components $G_1, G_2, \dots, G_p$ can be found, where

$G_k = \{V_k, E(V_k)\}$, $V_k \subset V'$ and $E(V_k) = \{(i, j) \in R, i, j \in V_k\}$. It is then

sufficient to ensure that all nodes are even and that edges exist between components. If we denote as x_{ij} the number of replicas of edge $(i, j) \in R$ and the number of replicas of edge $(i, j) \in E'-R$ as y_{ij} the even degree of all nodes is ensured by equation

$\sum_{(i,j) \in E} x_{ij} + y_{ij} = z_i \quad i \in V'$, where $z_i \geq 0$ is an integer. For edges $(i, j) \in R$ evidently it must

be true that $x_{ij} \geq 1$. The connectivity of the graph consisting of edges defined by variables x_{ij} and y_{ij} is achieved by ensuring that there is at least one edge between the components of graph GR . Ensuring this the number of these constraints depends on the number of components p (in terms of number of subsets of P numbers, i.e. $2p$). Values x_{ij} and y_{ij} must also minimize the cost function where c'_{ij} is the length of the shortest path between nodes i and j in graph G .

In addition to optimization models heuristic methods exist for the rural postman problem. The solution of the Frederikson method is formed by the edges $R \cup T \cup M$, where T consists of the edges of a minimum spanning tree between components G_k (components are nodes, edges are those edges of E' that connect different components). M is a subset of edges of E' which ensure the even degree of nodes with regard to the previously selected edges $R \cup T$. It is therefore an odd degree node pairing with minimal cost.

The case of a directed graph

As in the case of an undirected graph, first graph $G' = \{V', E'\}$ is created and similarly the strongly connected components $G_1, G_2, \dots, G_p$ with regard to the set of edges R . Variables x_{ij} and y_{ij} mean the number of replicas of oriented edges of R and $E' - R$. Mandatory edges are provided by inequalities $x_{ij} \geq 1 \quad (i, j) \in R$. Equations

$$\sum_{(i,j) \in E'} x_{ij} + y_{ij} = \sum_{(j,k) \in E'} x_{jk} + y_{jk} \quad j \in V'$$

ensure that the number of incoming edges is equal to the number of outgoing edges on each node. Strong connectivity of the solution x_{ij} and y_{ij} is ensured similarly as for the undirected graph.

It is also possible to define a heuristic solution which consists of the set of edges R , the set of edges of T obtained as the shortest spanning arborescence and the edges of M are obtained as the solution to the transport problem with suppliers and customers formed by the nodes of V' for which the number of incoming and outgoing edges is not equal.

3. Capacitated postman problem

The capacitated postman problem on undirected graph $G = \{V, E\}$ is associated with applications in which a service is provided on selected edges $R \subset E$ where the size of

the demand for this service is a given number $q_{ij} > 0$, $(i, j) \in R$. This service is provided by K vehicles with capacity $V > 0$. The vehicles are located in the depot, which is at node 1. The goal is to ensure this service with minimal cost associated with the edges which vehicles will pass through, where these costs on each edge are given by the number c_{ij} , $(i, j) \in E$. This problem is NP hard. The optimization model contains binary variables x_{ijk} , where a value of 1 means that the k -th vehicle passes through edge (i, j) in the direction from node i to node j . Another binary variable y_{ijk} is equal to 1 if the vehicle provides service of size q_{ij} to edge (i, j) . Then $x_{ijk} \geq y_{ijk}$ applies for the edges $(i, j) \in R$. The service on edge $(i, j) \in R$ may be provided only once, so it must be true that $\sum_k (y_{ijk} + y_{jik}) = 1$ $(i, j) \in R$. The inequality

$$\sum_{(i,j) \in R} q_{ij} y_{ijk} \leq L, \quad k = 1, 2, \dots, K$$

ensures not exceeding the capacity limitation of the k -th

vehicle. Equation $\sum_{i,j,k} x_{ijk} + y_{ijk} = \sum_{(j,k) \in E'} x_{ij} + y_{ij} \quad j \in V$ corresponds to the condition that

if the k -th vehicle arrives at node j , then it must also depart from that node. It is also necessary to prevent any line of the k -th vehicle that does not contain node 1 (depot), which is ensured by the condition $\sum_{i \in S} \sum_{j \notin S} x_{ijk} \geq 1$, for $k = 1, 2, \dots, K$, $S \neq \emptyset$, $S \subset V - \{1\}$.

Another method of solving the capacitated postman problem is to transform this problem to the vehicle routing problem on graph [4]. In addition to optimization methods heuristic methods can also be used, such as [3].

Conclusion

The article gives an overview of the various modification of the postman problem including description of the optimization methods or mathematical model. In the case of NP hard problems, however, use these methods limited to small graph. For large problems then it requires the use of heuristics.

Acknowledgements:

This research was supported by the Czech Science Foundation, grant No. P403/12/1947 and by the project F4/11/2013 founded by the Internal Grant Agency of the University of Economics Prague.

References:

- [1] EISELT, H. A., GENDREAU, M. AND LAPORTE, G. : Arc routing problems, Part I: The chinese postman problem. *Operations Research*. Vol. 43, No. 2, 1995, pp. 231-242.
- [2] EISELT, H. A., GENDREAU, M. AND LAPORTE, G. : Arc routing problems, Part II: The rural postman problem. *Operations Research*. Vol. 43, No. 3, 1995, pp. 399-414.
- [3] FÁBRY, J., PELIKÁN, J.. Capacitated Postman Problem. Jihlava 11.09.2013 – 13.09.2013. In: *Mathematical Methods in Economics 2013 [CD-ROM]*. Jihlava : College of Polytechnics Jihlava, 2013, s. 153–158. ISBN 978-80-87035-76-4.
- [4] LONGO, H., POGGI de Aragao, M. V. S. and UCHOA, E. : Solving capacitated arc routing problems using a transformation to the CVRP. *Computers and Operations Research*, Vol. 33, No. 6, 2006, pp. 1823-1837.

PRESENT VALUE AS A TEMPORAL UTILITY OF WEALTH

Krzysztof Piasecki

Poznań University of Economics

k.piasecki@ue.poznan.pl

Key words:

present value – risk aversion – the First Gossen's Law

Abstract:

The main aim of this study was to verify that the economically justified non-additive present value function exists. This study carried out assuming fulfilment of the diminishing marginal wealth utility law. Two constant risk aversion coefficient cases were considered. Here were taken into account the absolute coefficient and the relative coefficient. Two different models of discounting functions were obtained as a result of these studies. The formal influence of behavioural factors on the discount was pointed out.

Introduction

The current equivalent value of payments available in a fixed point in time is called the present value (PV for short) of the payment. PV is one of the basic financial arithmetic tools used for dynamic assessment of the money value. The starting point for the financial arithmetic development was the interest theory. Further development of the financial arithmetic theoretical foundations has resulted in the formulation by Peccati [4] axioms of the financial arithmetic theory. This axiomatic approach allowed for systematization and simplification the collection of financial arithmetic calculation procedures.

However, such proceedings did not explain the phenomenon of growing the money value. This explanation was obtained by showing that any payment PV is identical with the utility of the financial flow representing this payment [5]. This statement fully explains the essence of the PV notion. In addition, due to this fact, the First Gossen's Law informing about the diminishing marginal utility of wealth can be applied for the dynamic assessment of the money value.

For a fixed value payment the PV notion is reduced to the temporal utility notion considered by many researchers. Multithreaded results of studies on the temporal utility were competently discussed in [2]. Among other things, there are pointed out that all discussed discounting models can be represented as the product of the discounted payment and the discount factor dependent on the payment time only. This means that the PV relationship on the interaction of payment value and payment time is omitted in these models. When PV is defined as a linear function of the payment values then the effect of diminishing marginal utility of wealth cannot merge. Additionally, in this situation, any PV can be treated as an additive function of the payment value, which corresponds to one condition of the Peccati's definition [4]. However, in general, these objections are contrary to the finance practice.

The main aim this paper is to show that there exist PV functions satisfying the conditions:

- PV variability is fully justified by economic reasons,
- PV is not an additive function of payment value,
- PV satisfies the condition determined by the First Gossen's Law.

1. Axiomatic approach to present value

Each available at a fixed time point payment can be described as a financial flow.

Let be given the set of time moments $\{0\} \subset \Theta \subseteq \mathbb{R}_0^+$. In the particular case it may be the set of capitalization moments or non-negative time half-line. Each financial flow is described by the pair $(t, C) \in \Phi = \Theta \times \mathbb{R}$, where $t \in \Theta$ represents flow moment and $C \in \mathbb{R}$ describes the nominal value of the flow. The set Φ is called the payments set. In addition, by the symbol $\Phi^+ = \Theta \times \mathbb{R}^+$ we denote the receivables set. Peccati [2] has defined PV, as any function $PV: \Phi \rightarrow \mathbb{R}$ satisfying the conditions:

$$\forall_{C \in \mathbb{R}}: PV(0, C) = C, \quad (1)$$

$$\forall_{(t_1, C), (t_2, C) \in \Phi^+}: t_1 > t_2 \Rightarrow PV(t_1, C) < PV(t_2, C), \quad (2)$$

$$\forall_{(t, C_1), (t, C_2) \in \Phi}: PV(t, C_1 + C_2) = PV(t, C_1) + PV(t, C_2). \quad (3)$$

Each PV satisfying the conditions (1), (2), (3) can be expressed by means of the identity

$$PV(t, C) = C \cdot v(t), \quad (4)$$

where discounting factor $v: \Theta \rightarrow [0; 1]$ is decreasing function additionally fulfilling the condition

$$v(0) = 1. \quad (5)$$

On the other hand, each function PV in the form (4) satisfies the conditions (1), (2) and (3). All of this means that any PV determined using the temporal utility [2] fulfills conditions of the Peccati's definition.

In [4] was shown that under definite boundary condition cash flow PV is equal to the cash flow. This allows to define PV as any function $PV: \Phi \rightarrow \mathbb{R}$ satisfying the conditions (1), (2) and

$$\forall_{(t, C_1), (t, C_2) \in \Phi: \quad C_1 > C_2 \Rightarrow PV(t, C_1) > PV(t, C_2). \quad (6)$$

$$\forall_{(t, C) \in \Phi: \quad PV(t, -C) = -PV(t, C). \quad (7)$$

The above PV definition is a generalization of the Peccati's definition. Let us note that due (7) we have

$$\forall_{t \in \Theta: \quad PV(t, 0) = 0. \quad (8)$$

All our further discussion will be focused on PV defined as a function satisfying conditions (1), (2), (6) and (7). Crucial problem here is statement whether there is such PV which does not fulfill the condition (3).

For PV identified with the cash flow utility we can take into account the following additional conditions:

- the First Gossen's Law i.e. the effect of diminishing marginal utility of wealth

$$\forall_{(t, C_1), (t, C_2) \in \Phi^+ \quad \forall_{\alpha \in [0; 1]:} \\ \alpha \cdot PV(t, C_1) + (1 - \alpha)PV(t, C_2) \leq PV(t, \alpha C_1 + (1 - \alpha)C_2) \quad (9)$$

- the diversification effect

$$\forall_{(t, C_1), (t, C_2) \in \Phi: \quad PV(t, C_1 + C_2) \leq PV(t, C_1) + PV(t, C_2). \quad (10)$$

The First Gossen's Law is a sufficient condition for the diversification effect. In this situation we additionally assume that considered PV satisfies the condition (9). This assumptions is well justified by theory and practice of economics. About the investor taking into account the condition (9), we say that he can disclose risk aversion. Range of this aversion disclosure is still limited because of from the condition (1), we obtain

$$\forall_{C_1, C_2 \in \mathbb{R}^+} \forall_{\alpha \in [0;1]}: \alpha \cdot PV(0, C_1) + (1 - \alpha)PV(0, C_2) = PV(0, \alpha C_1 + (1 - \alpha)C_2) \quad (11)$$

Let us note, that in agree with (4), for all fixed time moment $t \in \Theta$, each fulfilling the conditions (1), (2), (3) function $PV(t, \cdot): \mathbb{R}^+ \rightarrow \mathbb{R}$ has the partial derivatives

$$PV'_C = \frac{\partial PV}{\partial C} \quad \text{i} \quad PV''_C = \frac{\partial^2 PV}{\partial C^2} \quad (12)$$

This observation will use, as an additional condition imposed on PV defined as any function satisfying the conditions (1), (2), (6) and (7). In addition, in the next sections of this paper we limit our discussion to the case $\Theta = \mathbb{R}_0^+$.

2. Present value and absolute risk aversion coefficient

Risk aversion assessment can be done with absolute coefficient $\alpha(\cdot)$ of risk aversion [1], [6]. Here we will consider the case when the risk aversion coefficient does not depend on the nominal value of assessed payments. In this situation, we will present the coefficient of risk aversion as a function of the payment time $\alpha: \mathbb{R}_0^+ \rightarrow \mathbb{R}_0^+$ determined by the identity

$$\alpha(t) = -\frac{PV''_C(t, C)}{PV'_C(t, C)}. \quad (13)$$

Due the condition (11) we have

$$\alpha(0) = 0. \quad (14)$$

Moreover, we can assume that risk aversion increases gradually with delaying the payment time. The formal expression of this assumption is the assumption that risk aversion coefficient is a continuous increasing function of payment time.

For each $t \in \mathbb{R}^+$ any solution of differential equation (13) is given as follows

$$PV(t, C) = \frac{-A}{\alpha(t)} e^{-\alpha(t)C} + B. \quad (15)$$

It is easy to show that for each $A \in \mathbb{R}^+$ the above function $PV: \mathbb{R}^+ \times \mathbb{R}^+ \rightarrow \mathbb{R}$ satisfies the definitional condition (6). Moreover, for any $t \in \mathbb{R}^+$ the function $PV(t, \cdot)$ has right-sided limit at $C = 0$. Thus, using the substitution

$$PV(t, 0) = \lim_{C \rightarrow 0^+} PV(t, C) = \frac{-A}{\alpha(t)} + B, \quad (16)$$

we can extend the function $PV(\cdot, \cdot)$ domain to the Cartesian product $\mathbb{R}^+ \times \mathbb{R}_0^+$. On the other side, directly from (8) we obtain

$$0 = PV(t, 0) = \frac{-A}{\alpha(t)} + B. \quad (17)$$

Thus, we have

$$PV(t, C) = \frac{A}{\alpha(t)} (1 - e^{-\alpha(t)C}). \quad (18)$$

Using elementary differential calculus methods we can show that for any $A, C \in \mathbb{R}^+$ the function $PV(\cdot, C)$ determined by (18) decreases with the increasing of the risk aversion coefficient $\alpha(\cdot)$. In this situation, when risk aversion coefficient is increasing function of payment time then the function $PV(\cdot, \cdot)$ satisfies the definitional condition (2). For any $C \in \mathbb{R}_0^+$, the function $PV(\cdot, C)$ has the right-sided limit at $t = 0$. We have here

$$\begin{aligned} \lim_{t \rightarrow 0^+} PV(t, C) &= \lim_{t \rightarrow 0^+} \frac{A}{\alpha(t)} (1 - e^{-\alpha(t)C}) = \lim_{\alpha \rightarrow 0^+} \frac{A}{\alpha} (1 - e^{-\alpha C}) = A \\ &\cdot C \lim_{\alpha \rightarrow 0^+} e^{-\alpha C} = A \cdot C \end{aligned}$$

Thus, using the substitution

$$PV(0, C) = \lim_{t \rightarrow 0^+} PV(t, C), \quad (19)$$

we can extend the function $PV(\cdot, \cdot)$ domain to the Cartesian product $\mathbb{R}_0^+ \times \mathbb{R}_0^+$. Then, due the condition (1) we obtain

$$PV(t, C) = \frac{1}{\alpha(t)} (1 - e^{-\alpha(t)C}) = \frac{\text{sign}(C)}{\alpha(t)} (1 - e^{-\alpha(t)|C|}). \quad (20)$$

In the last step we extend the function $PV(\cdot, \cdot)$ domain to the Cartesian product $\mathbb{R}_0^+ \times \mathbb{R}$. We use here the definitional condition (7). For any pair $(t, C) \in \mathbb{R}_0^+ \times \mathbb{R}^-$ we have

$$PV(t, C) = -PV(t, -C) = \frac{-1}{\alpha(t)} (1 - e^{\alpha(t)C}) = \frac{\text{sign}(C)}{\alpha(t)} (1 - e^{-\alpha(t)|C|}). \quad (21)$$

Finally, we define the function $PV: \mathbb{R}_0^+ \times \mathbb{R} \rightarrow \mathbb{R}$ by means of the identity

$$PV(t, C) = \frac{\text{sign}(C)}{\alpha(t)} (1 - e^{-\alpha(t)|C|}). \quad (22)$$

There are shown that this function satisfies the definitional conditions (1), (2) and (7), and for any triple $(t, C_1, C_2) \in \mathbb{R}_0^+ \times \mathbb{R}_0^+ \times \mathbb{R}_0^+$ it satisfies the condition (6). Due (8) and (22), for any $(t, C_1, C_2) \in \mathbb{R}_0^+ \times \mathbb{R}^- \times \mathbb{R}^+$ we have

$$PV(t, C_1) < 0 = PV(t, 0) < PV(t, C_2). \quad (23)$$

We have shown that the condition (6) is fulfilled for any $(t, C_1, C_2) \in \mathbb{R}_0^+ \times \mathbb{R}_0^- \times \mathbb{R}_0^+$. At the end, let us consider the case of any triple $(t, C_1, C_2) \in \mathbb{R}_0^+ \times \mathbb{R}^- \times \mathbb{R}^-$. For $C_1 < C_2 < 0$ we have

$$PV(t, C_1) = \frac{1}{\alpha(t)} (e^{\alpha(t)C_1} - 1) < \frac{1}{\alpha(t)} (e^{\alpha(t)C_2} - 1) = PV(t, C_2). \quad (24)$$

In summary, we have shown that determined (22) function $PV(\cdot, \cdot)$ is an example of function satisfying the conditions (1), (2), (6) and (7) of the PV axiomatic definition.

3. Present value and relative risk aversion coefficient

The investor taking into account the condition (9) can disclose risk aversion. In this chapter, we will additionally assume that the investor discloses risk aversion only in an environment of high valued receivables. This implies the existence of receivables value $C^* \in \mathbb{R}^+$ such, that:

- below this value the investor demonstrates a lack of risk aversion,
- below this value the investor demonstrates a risk aversion.

Risk aversion assessment can be done also with relative coefficient of risk aversion $\hat{\beta}: \mathbb{R}_0^+ \times (\mathbb{R}^+ / \{C^*\}) \rightarrow [0; 1)$ [3] determined by the identity

$$\hat{\beta}(t, C) = -C \cdot \frac{PV_C''(t, C)}{PV_C'(t, C)}. \quad (25)$$

Due the condition (11) we have

$$\hat{\beta}(0, C) = 0. \quad (26)$$

For the same reasons as in the previous chapter, we assume that, if risk aversion is disclosed then the relative coefficient of risk aversion is a continuous increasing function of the payment time. Thus, we can write

$$\hat{\beta}(t, C) = \begin{cases} 0 & C \in (0, C^*) \\ \beta(t) & C \in (C^*, +\infty) \end{cases} \quad (27)$$

where $\beta: \mathbb{R}_0^+ \rightarrow [0; 1)$ is a continuous increasing function of the payment time.

For any pair $(t, C) \in \mathbb{R}_0^+ \times (0, C^*)$ the differential equation (25) takes the form

$$0 = -C \cdot \frac{PV_C''(t, C)}{PV_C'(t, C)}. \quad (28)$$

For each $t \in \mathbb{R}^+$ any solution of differential equation (28) is given as follows

$$PV(t, C) = A(t) \cdot C + B(t). \quad (29)$$

It is easy to show that for each $A(t) \in \mathbb{R}^+$ the above function $PV: \mathbb{R}_0^+ \times (0, C^*) \rightarrow \mathbb{R}$ satisfies the definitional condition (6). Moreover, for any $t \in \mathbb{R}_0^+$ the functions $PV(t, \cdot)$ has right-sided limit at $C = 0$. Thus, using the substitution

$$PV(t, 0) = \lim_{C \rightarrow 0^+} PV(t, C) = B(t), \quad (30)$$

we can extend the function $PV(\cdot, \cdot)$ domain to the Cartesian product $\mathbb{R}_0^+ \times [0, C^*)$. On the other hand, directly from (8) we get

$$0 = PV(t, 0) = B(t). \quad (31)$$

Therefore, we have

$$PV(t, C) = A(t) \cdot C. \quad (32)$$

From the condition (1) we get here

$$A(0) = 1. \quad (33)$$

Comparison of (32) with (2) and (33) shows that the function $A: \mathbb{R}_0^+ \rightarrow [0; 1]$ is decreasing. According to (4), this means that

$$A(t) = v(t), \quad (34)$$

where $v: \mathbb{R}_0^+ \rightarrow [0; 1]$ is any discount factor determining the function $PV(\cdot, \cdot)$ fulfilling the conditions (1), (2) and (3) of the Peccati's definition. In particular case this discount factor may be one of temporal utilities described in [2].

Due continuity of PV function, we can extend the function $PV(\cdot, \cdot)$ domain to the Cartesian product $\mathbb{R}_0^+ \times [0, C^*]$. Finally, the function $PV: \mathbb{R}_0^+ \times [0, C^*] \rightarrow \mathbb{R}$ is given by the identity

$$PV(t, C) = C \cdot v(t). \quad (35)$$

For any pair $(t, C) \in \mathbb{R}^+ \times (C^*, +\infty)$ the differential equation (25) takes the form

$$\beta(t) = -C \cdot \frac{PV_C''(t, C)}{PV_C'(t, C)}. \quad (36)$$

For each $t \in \mathbb{R}^+$ any solution of differential equation (36) is given as follows

$$PV(t, C) = \frac{D(t)}{1-\beta(t)} C^{1-\beta(t)} + E(t). \quad (37)$$

It is easy to show that for any $D(t) \in \mathbb{R}^+$ the above function $PV: \mathbb{R}^+ \times (C^*, +\infty) \rightarrow \mathbb{R}$ satisfies the definitional condition (6). Moreover, for each $t \in \mathbb{R}^+$ the partial derivatives (12) existence necessary condition implies the following relationships

$$C^* \cdot v(t) = \lim_{C \rightarrow (C^*)^-} PV(t, C) = \lim_{C \rightarrow (C^*)^+} PV(t, C) = \frac{D(t)}{1-\beta(t)} \cdot (C^*)^{1-\beta(t)} + E(t) \quad (38)$$

$$v(t) = \lim_{C \rightarrow (C^*)^-} PV_C'(t, C) = \lim_{C \rightarrow (C^*)^+} PV_C'(t, C) = D(t) \cdot (C^*)^{-\beta(t)}. \quad (39)$$

We treat the conjunction of conditions (38) and (39) as equations system with unknowns $D(t)$ and $E(t)$. This system has the unique solution

$$D(t) = (C^*)^{\beta(t)} \cdot v(t), \quad (40)$$

$$E(t) = -C^* \cdot v(t) \cdot \frac{\beta(t)}{1-\beta(t)}. \quad (41)$$

Thus, we have

$$PV(t, C) = C^* \cdot v(t) \cdot \frac{\left(\frac{C}{C^*}\right)^{1-\beta(t)} - \beta(t)}{1-\beta(t)}. \quad (42)$$

Directly from z (5), (26) and (42) we get (1). Thus, the function defined by the identity (42) satisfies the definitional condition (1). This allows us to extend the function $PV(\cdot, \cdot)$ domain to the Cartesian product $\mathbb{R}_0^+ \times (C^*, +\infty)$. Using elementary differential calculus methods we can show that for the function $PV(\cdot, C)$ determined by (42) decreases with the increasing of the risk aversion relative coefficient $\beta(\cdot)$. In this situation, when risk aversion relative coefficient is increasing function of payment time then the function $PV(\cdot, \cdot)$ satisfies the definitional condition (2).

Comparing together (35) and (42) we define the function $PV: \mathbb{R}_0^+ \times \mathbb{R}_0^+ \rightarrow \mathbb{R}$ given by the identity

$$PV(t, C) = \begin{cases} C \cdot v(t) & C \in [0, C^*] \\ C^* \cdot v(t) \cdot \frac{\left(\frac{C}{C^*}\right)^{1-\beta(t)} - \beta(t)}{1-\beta(t)} & C \in (C^*, +\infty) \end{cases}. \quad (43)$$

In the last step using the definitional condition (7) we extend the function $PV(\cdot, \cdot)$ domain to the Cartesian product $\mathbb{R}_0^+ \times \mathbb{R}$. The function $PV: \mathbb{R}_0^+ \times \mathbb{R} \rightarrow \mathbb{R}$ is then determined by the identity

$$PV(t, C) = \begin{cases} C \cdot v(t) & C \in [-C^*, C^*] \\ C \cdot v(t) \cdot \frac{\left(\frac{C^*}{|C|}\right)^{\beta(t)} - \frac{C^*}{|C|} \beta(t)}{1-\beta(t)} & C \in (-\infty, -C^*) \cup (C^*, +\infty) \end{cases}. \quad (44)$$

In summary, we have shown that determined (44) function $PV(\cdot, \cdot)$ is an example of function satisfying the conditions (1), (2), (6) and (7) of the PV axiomatic definition.

Conclusions

Determined by (22) or (44) functions $PV: \mathbb{R}_0^+ \times \mathbb{R}_0^+ \rightarrow \mathbb{R}$ are not linear functions of payment value $C \in \mathbb{R}$. It implies that these functions do not fulfill the condition (3) of the Peccati's definition. The significance of generalization PV definition to axiomatic one [5] was showed in this way.

Each of the proposed above the function $PV(\cdot, \cdot)$ satisfies the First Gossen's Law. Therefore, each this $PV(\cdot, \cdot)$ is not additive function of payment value. Variability of each this $PV(\cdot, \cdot)$ depends only on risk aversion coefficient variability and discount factor variability. Each of these characteristics is an element of economic environment description. In this situation we can say that variability of proposed here PV is fully justified by economic reasons. All this shows that the main goal of this research work was realized.

Each of the risk aversion factors describes the behavioural aspects of financial management. The discount factor is the image of the capital appreciation process. The capital appreciation process depends on the objective fundamental properties of the financial market, and it may depend on various behavioural factors.

Variability of the function $PV(\cdot, \cdot)$ as described in the Chapter 2, depends only on the absolute risk aversion coefficient. It means that we can determine PV using only behavioural premises.

Variability of the function $PV(\cdot, \cdot)$ as described in the Chapter 3, simultaneously depends on the relative risk aversion coefficient and the given discount factor. It means that we can determine PV using on the interaction of fundamental and behavioral factors.

Acknowledgement:

The project was financed by funds of National Science Center - Poland granted on the basis the decision number DEC-2012/05/B/HS4/03543

References:

- [1] ARROW, K., J. *Essays in the Theory of Risk Bearing*, North-Holland, Amsterdam, 1971, ISBN 0-7204-3047-X.
- [2] DOYLE, J., R. *Survey of time preference, delay discounting model*, Judgment and Decision Making, 2013 Vol. 8 No. 2, pp 116-135 ISSN: 1930-2975
- [3] DE FINETTI, B. *Sulla preferibilit *, Giornale degli Economisti 11, 1952, pp 685-709. ISSN: 0017-0097
- [4] PECCATI, L. *Su di una caratterizzazione del principio del criterio dell'attualizzazione*, Studium Parmense, Parma, 1972. ISBN X-XXXX-XXXX-X
- [5] PIASECKI, K. *Basis of financial arithmetic from the viewpoint of the utility theory*, Operations Research and Decisions 2012, 2012/3, ss. 37-53 ISSN 2081-8858
- [6] PRATT, J., W. *Risk aversion in the small and in the large*, Econometrica 1964 vol. 132, pp 122-136 ISSN: 1468-0262

VARIOUS DIMENSIONS OF CONTEMPORARY ENTREPRENEURSHIP

Teresa Piecuch

Rzeszow University of Technology

tpiecuch@prz.edu.pl

Key words:

entrepreneurship – corporate entrepreneurship – regional entrepreneurship – international entrepreneurship

Abstract:

Entrepreneurship plays an important role in contemporary economic processes. It is a factor in development of individuals, enterprises, regions, and whole economies. It is confirmed, among others, by a vast variety of its forms and types. The study discusses only the ones that the author finds worth characterising, which result from the complexity of the world in which we are to function – live, achieve our career ambitions, conduct business activity, and which constitute very interesting, new developing areas of scientific research.

Introduction

We live in a time when entrepreneurship is commonly believed to be a key value not only in professional life. It is a kind of phenomenon – a value itself, which conditions the development, in which a chance for various participants of market gambling can be seen. In Contemporary economic processes, entrepreneurship is not only desired, but, in fact, it is necessary for proper functioning of various spheres of life and human activity. M. Bratnicki [2] describes its significance in the following way – we entered the era, in which entrepreneurship is not a king, but a dictator. Therefore, it is valuable to discover various dimensions of contemporary entrepreneurship, which constitute the subject of consideration of the study.

Corporate entrepreneurship

Corporate entrepreneurship (internal entrepreneurship, intrapreneurship) is a new, still incompletely structuralised area of research¹. It's a complex, multidimensional phenomenon. Generally, it means "...the development of new business ideas and opportunities within large, established corporation"[10]. W. P. Gath, A. Ginsberg, G. Pinchot perceive it as doing new things, going beyond traditional practices in search for possibilities of action. It is also a process, in which individuals, within the scope of an existing, large structure of an organisation, have a possibility of to act entrepreneurially, despite the resources possessed in a given moment[4].

Corporation management requires procedures, bureaucracy, which impose some order. Owing to them, it is easier to manage even an extremely large, developed unit. On the other hand, it is vital to leave some discretion to the employees in order to encourage them to show entrepreneurial initiative.

Ch. Stopford and J. Baden-Fuller distinguish three basic types of phenomena corporate entrepreneurship is composed of. These are [9]:

- creating new economic units within existing corporations; it comprises also corporate venturing,
- transformation or regeneration of already existing organisations by means of introducing various innovations, including new methods of solving old (familiar) problems,
- difficult to develop, path-breaking, unique innovations (M. Tushman and E. Romanelli refer to them as „frame-breaking” and „discontinuous changes”) that alter the principles of competition in economy.

R. C. Wolcott and R. and M. J. Lippitz suggest that companies have four ways of creating entrepreneurial businesses within large organizations. Each approach provides

¹ The concept creators are Gifford and Elizabeth Pinchot (1979). On the basis of observations of large corporations' functioning in the USA, they inferred that as the enterprise expands, the innovation and flexibility decelerate due to the company's dimension and the achieved success. Such enterprises become fossilised, and the managers who make decisions are separated from the employees, who have a certain problem solving knowledge. Despite the fact that these companies had sufficient resources, they were restricted to development by the bureaucratic structure that precludes effective actions in quickly changing surroundings. It was necessary to create conditions that would give the employed the chance to act like an entrepreneur. G. and E. Pinchot proved that entrepreneurship development in large enterprises is possible. They postulated the necessity of popularisation of atmosphere favourable to creative thinking, in such a way that the enterprises would be able to adapt to the changing outside conditions, in order to response to the signals coming from the market at the right time: [7].

certain benefits and raises specific challenges. It allows formulating four interesting models of corporate entrepreneurship [11]:

- opportunist model – the company does not assume development in its structures of entrepreneurial behaviours, but a series of various conditions, arising opportunities, or even the necessity determines such activities;
- advocate model – the company supports the development of entrepreneurial behaviours within its structures, though the capital for financing certain ventures is raised by the undertaking units themselves;
- enabler model – the company supports entrepreneurship, provides funds for projects of such types;
- producer model – the company establishes a wide range of services within the scope of active support for introducing new, innovative solutions in the company, and encouragement to entrepreneurial employees to show initiative.

Concluding, it has to be stated that the scientists describing corporate entrepreneurship, in spite of the variety of definitions of this process, are unanimous that this is “...enterprise capability to create value for enterprise's customers and owners”[10]. It plays a crucial role in the contemporary economic processes. It helps even very large, developed enterprises obtain and hold appropriate competitive position in a certain area of the market.

Regional entrepreneurship

Regional entrepreneurship is also a new category in the literature, which concerns entrepreneurship. It can be understood as an entrepreneurial activity of firms functioning in a certain area. It is also the activity of the regional authorities that contribute to the improvement of regional competitiveness and investment attractiveness. “A particular dimension of regional entrepreneurship is also the activity of non-economic organisations and institutions (...), which form so-called social economy of the region” [1]. A. Klasik claims that an entrepreneurial region is the one in which[1]:

- there are driving forces of entrepreneurship, including among others: high public and private expenditure on the research and development activity, numerous firms of new technologies, decent education of the inhabitants, etc.;

- entrepreneurial activity of the citizens is above the average level;
- local authority introduces entrepreneurial strategy of development and uses a wide range of instruments that support it.

Despite the fact that the concept of regional entrepreneurship is fairly new, the process can be investigated from the viewpoint of [1]:

- resources – in which the evaluated subject is the potential of the region, including the number and activity of the entrepreneurs who conduct business activities in this area; the quality of the infrastructure of business environment, diversity and availability of instruments supporting entrepreneurship; the quality of social capital; entrepreneurial culture; the whole of economic, social, legal, political conditions favourable to entrepreneurial behaviours;
- factors – in which the determinant of whether the region is defined as entrepreneurial is its ability of taking advantage of certain endo- and exogenous factors in order to improve the quality of life of the residents, and to attain better competitive position; the subject under evaluation in this case is among others: activity and entrepreneurship of the local authority, local policy priorities².

A great role in regional entrepreneurship development play local authorities, which, owing to various decisions and legal regulations, can create more convenient conditions for the development of entrepreneurial activity of particular individuals. A matter of importance are also expenditure instruments (e.g. system of tax reliefs and exemptions, deferment, remission, and arranging installments for taxes and payments) used by communities to encourage entities to establish business activities [6]. New investments in communes within this group are also significant. When properly directed, they increase investment attractiveness of the community; they can also stimulate entrepreneurial behaviours of the members of local society³

² In the literature, with reference to this approach, also the term “administrative entrepreneurship” is used.

³ A similar role play the information and promotion instruments. Lack of information concerning the conditions of conducting a business activity in a local area, economic partners, companies rendering business services – is considered a significant barrier for the development of local entrepreneurship. And vice versa – regions that pay more attention to instruments of such type – can expect greater development of entrepreneurial initiatives: [6].

International entrepreneurship

International entrepreneurship is also counted as a current type of entrepreneurship. For many entrepreneurs it is a kind of “leverage of new possibilities, accelerated development” [3]. It is mainly the effect of globalisation process, with which a number of threats is related, but which provide such chances, that enables, for instance, internationalisation of enterprises’ activity. It creates completely different opportunities for dynamic, creative entrepreneurs, who, taking advantage of them, resolve to expand their activity even to very distant geographic markets. Owing to this, international entrepreneurship can develop so dynamically.

International entrepreneurship can be understood as “...a combination of innovative, proactive, risk-oriented behaviours that cross states borders and orientate themselves towards creation of values in organisations”[8]. It results from gradual expansion of the activity conducted by entrepreneurs, who resolve (recognising such opportunities) to satisfy the needs of the clients in various (geographically distant) markets. Hence, it is “...the recognition and taking advantage of opportunities in the international arena” [12], “the process of creative discovering and seizing opportunities outside the home market in order to gain competitive advantage” [8], and earn greater profits. The definitions of international entrepreneurship indicate that in this term [8]:

- the emphasis is put on the process of seizing and creating entrepreneurial chances (opportunities),
- the creation of new organisations is allowed (though it is not a necessary condition),
- the stress is placed on entrepreneurial activity outside the borders of a particular country.

As it was mentioned above, international entrepreneurship is, among others, an effect of globalisation and internationalisation of economy. An entrepreneur engages in this kind of activity if they perceive that it may generate greater profits, or that the costs of conducting an enterprise in a foreign market, considering the national production capacity, are lower. It occurs when an entrepreneur:

- gains competitive advantage in the home market,

- perceives certain advantages of their company, and the goods they offer, which can get customers in the international arena, and which will become a source of additional profits,
- notices that the resources they have (financial, human and others) make them possible (without detriment to the current activity) to undertake an activity in a different market (e.g. to start or intensify export activity, establish a branch).

The factor that determines the location of a company in a certain country is a complex of location advantages, which takes the form of “a bunch of values” (assets), namely: economic, geographical, social, cultural, and political. It concerns specific, structural conditions and features of particular national economies, whose attractiveness distinguish them from the others, from the viewpoint of the business of a certain entrepreneur. These conditions and features influence an entrepreneur to develop their company abroad – to become an international entrepreneur.

Conclusion

The purpose of the study was to present selected forms of contemporary entrepreneurship. Despite the wide range of types of this process available in the literature, the space limit of the article allows us to mention only some of them. The author’s intention was to inspire the readers to acquaint themselves with other types of entrepreneurship, proposed by J. Cieřlik [5] – social, high-tech, second chance, knowledge-based, intellectual, immigrant, dynamic, dependent, public, hybrid; entrepreneurship of the unemployed; in the sector of culture; and in grey area.

References:

- [1] *Aspekty i przejawy przedsiębiorczości regionalnej w Polsce* (Aspects and signs of regional entrepreneurship in Poland), pod red. A. Richert – Kaźmierskiej, Wyd. Wydziału Zarządzania i Ekonomii Politechniki Gdańskiej, Gdańsk 2012, s. 8-9, 119. ISBN 978-83-62197-76-7
- [2] BRATNICKI, M. *Przedsiębiorczość i przedsiębiorcy współczesnych organizacji* (Entrepreneurship and entrepreneurs of contemporary organisations), Wyd. AE w Katowicach, Katowice 2004, s. 14. ISBN 8372-4619-02, 9788-3724-61902

- [3] Przedsiębiorczość międzynarodowa [online] URL:
<http://cieslik.edu.pl/s/p/artykuly/85/85/Rozdzia%C5%82%2010.pdf>
- [4] TURRÓ, A. *Organizational resources and intrapreneurial activities: a cross-country study*. [online] URL: http://idem.uab.es/2Turró_JPC_2012.pdf
- [5] [online] URL: <http://www.seipa.edu.pl/index.php/ida/921/>
- [6] MAKIELA, Z. *Przedsiębiorczość regionalna* (Regional entrepreneurship), Wyd. Difin, Warszawa, 2008, s. 17-19. ISBN 978-83-7251-875-0
- [7] PIECUCH, T. *Przedsiębiorczość. Podstawy teoretyczne* (Entrepreneurship. Theoretical foundations), Wyd. C. H. Beck, Warszawa 2013, s. 50. ISBN 978-83-255-5291-6
- [8] *Przedsiębiorczość międzynarodowa. Aspekty teoretyczne i praktyczne* (International entrepreneurship. Theoretical and practical aspects), pod red. T. Kraśnickiej, Wyd. AE w Katowicach, Katowice 2008, s.7-12. ISBN 978-83-7246-418-7
- [9] SAETRE, A., S. *Intrapreneurship. An Exploratory Study of Select Norwegian Industries*, Norwegian Research Council, Trondheim 2001, s. 9
- [10] SCHEEPERS, M., J., Hough, J., Bloom, J., Z. Nurturing the corporate entrepreneurship capability, "Southern African Business Review" 2008, no. 3, s. 50-51
- [11] WOLCOTT, R., C., Lippitz, R. and M., J. The four Models of Corporate Entrepreneurship, "MIT Sloan Management Review" 2007, vol. 49, no. 1, s. 75
- [12] *Zarządzanie. Tradycja i nowoczesność* (Management. Tradition and innovation), pod red. J. Bogdaniecki i W. Piotrowskiego, PWE, Warszawa 2013, s. 67. ISBN 9788320820799

THE RISKINESS AND PROFITABILITY OF SLOVAK AGRICULTURE COMPANIES AND THEIR DETERMINANTS

Andrea Piterková, Adriana Rašovská

Slovak University of Agriculture in Nitra

andreapiterkova@gmail.com, adriana.rasovska@gmail.com

Key words:

agriculture risk – determinants - portfolio risk – portfolio expected return - legal form

Abstract:

The article analyses, using the knowledge of macroeconomics, statistical analysis and econometrics, the interaction of the financial indicators - Profit and Risk – in relation with indicators from balance sheets and profit and loss statements of 996 Slovak agriculture companies operating in Slovakia in examined period 2009 - 2012. To verify the existence of interactions between the studied variables and to detect the factor, which have significant impact on the return and risk, article uses the statistical methods of regression and correlation analyses, which results are summarized in a compendious table.

Introduction

During the past decade, the substantial changes in agriculture and agribusiness have been ultimately impacting profitability and riskiness in this sector. Agriculture production, income and welfare are affected, not only by the market development, or high price volatility of inputs and outputs [4], moreover by the specific agriculture characteristics such as seasonality, dependency on the climatic conditions, continuity, long-term periodicity or biological nature of production [7, 8, 10]. Two major types of risk in agriculture have been distinguished. Firstly, the business risk, including the production, market, institutional and personal risks, and secondly, the financial risk resulting from different methods of financing the business activities [1, 2].

The Slovak agriculture is considerably less productive, despite a high concentration of farms (up to 95.1 % of the utilized agricultural land is farmed by large farms) [6]. In spite of the permanent subsidisation from the government and EU, remain the Slovak

agribusiness entities rather low profitable or unprofitable, with the average negative economic results achieved by almost 40% of companies in the period 2009-2012 [9].

The sources and the level of risk severity can vary according to the farm size, specialisation, geographic location, weather conditions, supporting government policies, off-farm income, legal form and others [5]. Some of these factors are considered as the systematic risks, the rest might be influenced and determined by the farmer itself, in order to eliminate the potential variability in his economic performance [1, 5].

The main objective of the article is to measure the risk and return of Slovak agribusiness entities from the macroeconomic point of view and to identify the non-systemic factor, which have significant influence on the profitability and riskiness of these companies, regarding their legal form.

1. Methodology framework

The data set used in the study is obtained from the statistics of Ministry of Agriculture and Rural Development of Slovak republic, reported in the internal database of Department of Finance of Slovak Agriculture University in Nitra. The database consists of balance sheets and profit and loss statements of all agriculture companies operating in Slovakia. From the available database is selected particular information about 996 Slovak agriculture companies, which ran the business in each year of the period since 2009 till 2012. The companies are analysed regarding their legal form - cooperatives and capital companies (Joint-Stock companies and Limited liability companies).

To be able to measure the risk from the macroeconomic point of view, the methodology from the Markowitz Portfolio theory has been applied. The portfolio mainly consists of securities, assets, stock, shares, in which the investors invest their equity [3]. In the case of agriculture companies, also the equity invested in the business is considered. The equity has been included in the ROE ratio, calculated for each of 4 analysed years. To measure the risk and return of portfolio, created by all agriculture companies, as well as by agriculture companies in the legal form of cooperatives and capital companies, are necessary the following calculations:

- Expected return
$$E(X) = \sum_{i=1}^n x_i \cdot p(x_i) \quad (1)$$

- Standard deviation
$$\sigma = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2} \quad (2)$$

- Covariance
$$\text{cov}(X, Y) = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y}) \quad (3)$$

- Correlation
$$\rho_{XY} = \frac{\sigma_{XY}}{\sigma_X \cdot \sigma_Y} \quad (4)$$

- Risk of portfolio
$$\sigma_p = \sqrt{\sum_{i=1}^n \sum_{j=1}^n X_i \cdot X_j \cdot \sigma_{ij}} \quad (5)$$

- Return of portfolio
$$\bar{r}_p = \sum_{i=1}^n \bar{r}_i \cdot X_i = \bar{r}_1 \cdot X_1 + \bar{r}_2 \cdot X_2 + \dots + \bar{r}_n \cdot X_n \quad (6)$$

The second part of the study is emphasised on detecting the factor, which have significant impact on the return (represented by return on equity) and risk. The method used is the regression analysis, which examines the relationship between quantitative statistical features focusing on the causal dependency, where one or more events - independent variables stimulate effect dependent variable of. The role of regression analysis is to define the functional relationship, determining the change of dependent variable values to changes of the independent variable.

$$Y = f(X_1 X_2 X_k, \dots, B_0, B_1, \dots, B_p) + e \quad (7)$$

In the single regression and correlation analysis is assumed the existence of a linear relationship $Y = B_0 + B_1 X + e$ and used the method of least squares

$$\sum_{j=1}^n (y_j - \hat{y}_j)^2 = MIN \rightarrow \frac{\partial F(b_0, b_1, \dots, b_p)}{\partial b_i} = 0, \quad i = 1, 2, \dots, p \quad (8)$$

The overview of independent variables used in our study represents the Table 1. These variables are chosen based on the assumption that these factors can be influenced by the farmers themselves, and their potential significant impact on the dependent variables (ROE, risk) could lead to elimination of variability of profits and riskiness of companies.

TAB. 1: Independent variables

Independent variable	Formula	Unit
Equity	-	€
Returns from crop production on ha	$\frac{\text{Returns from crop production}}{\text{Cultivated area}}$	€
Returns per ha	$\frac{\text{Returns}}{\text{Cultivated area}}$	€
Debt	-	€
Firm size – total asset	-	€
Debt to equity ratio(D/E)	$\frac{\text{Debt}}{\text{Equity}}$	-

Source: Own processing

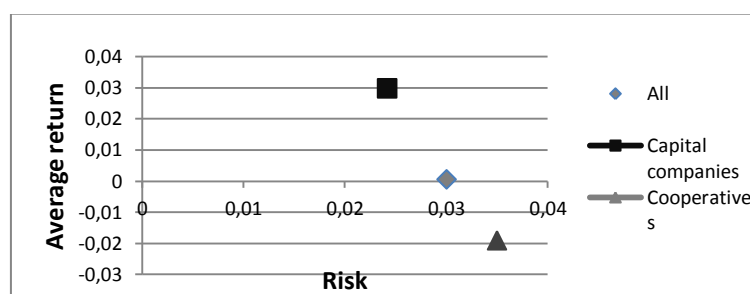
2. Results

Results are divided into two main parts, which describe a logical sequence of steps to meet the objective of the study. Firstly, the three portfolios of all agriculture companies, cooperatives and capital companies are created. Consequently, the risk and return of particular portfolios is measured. Secondly, the selected variables and their dependency on the profitability and riskiness are considered.

From the 996 Slovak agriculture companies in the dataset are removed the outliers, which reported the negative value of equity, or achieved more than 100 % average loss and average profit in the four year period. The rest of the companies are allocated in the portfolio, with the individual weights according to the share of equity from the sum of all capital invested into equity. Subsequently, the expected returns, standard deviations, correlation and covariance matrix are constructed, as the necessary steps to measure the portfolio risk.

TAB. 2, FIG. 1: **Risk and return of portfolios**

	All companies	Capital companies	Cooperatives
Portfolio return	0.04813%	2.97439%	- 1.89737%
Portfolio risk	3.00045%	2.41439%	3.49769%



Source: Own processing

The results show that, if we assume the allocation of all Slovak agriculture companies in one common portfolio, regarding the equity invested in the agribusiness, the risk will be 3.00 % with very low portfolio expected return less than 0.05 %. Remarkable difference occurred by dividing the companies with respect to their legal form. In the case of portfolio created by the capital companies, the measured risk reached the value 2.4 %

with the return 2.9 %. However, much worse results are seen by the form of cooperatives, where the expected negative return -1.9 % refers to the highest risk from these three measurements, almost 3.5 %. Evaluating the results can be assumed that by the decision making of farmers the legal form of capital companies ought to be preferred rather than the cooperatives.

To confirm the veracity of the hypothesis declaring existence of the correlation between examined factors, chosen based on the methodology, and the most important financial indicators – profit and risk, it is necessary to determine whether created econometric models have statistical evidence supporting. In econometric models, using simple regression analysis with input variables: Equity; Cultivated land (LPIS); Returns from the crop production per ha; Returns per ha; Debt; firm size - Total Asset; and Debt to Equity ratio.

Used econometric models can be categorized on the basis of the data as follows:

Profit/risk depending on:

- a) the Equity
- b) the Cultivated land (LPIS)
- c) the Returns from the crop production per ha
- d) the Returns per ha
- e) the Debt
- f) the firm size - total asset
- g) the Debt to Equity ratio

The regression analysis focuses on 996 Slovak agriculture companies in the examined period 2009 – 2012, where the disparity of the legal forms "50" (cooperatives) and "55" (capital companies) is taken into consideration:

TAB. 3: Interdependence of the financial indicator – Profit and the examined factors in both legal forms of entrepreneurship

2009-2012		Profit depending on the Equity	Profit depending on the Cultivated land (LPIS)	Profit depending on the Returns from the crop production per ha	Profit depending on the Returns per ha	Profit depending on the Debt	Profit depending on firm size - total asset	Profit depending on the Debt to Equity ratio
"50" & "55"	Multiple R	/	/	0,16407442	0,0966544	/	/	/
	R Square			0,02692041	0,0093421			
	Significance F			4,296E-07	0,0030289			

Source: Own processing

The profit of cooperatives and capital companies is mostly influenced by the factor *Returns from crop production per hectare* followed by the factor *Returns per hectare*. On the other hand there is no influence on the amount of cooperatives and companies profit in dependence of following factors: *Equity*; *Cultivated land (LPIS)*; *Debt*; *Firm size* as well as *Debt to equity ratio* because the value of Significance F is higher than 0.05.

TAB. 4: Interdependence of the financial indicator – Risk and the examined factors in both legal forms of entrepreneurship

2009-2012		Risk depending on the Equity	Risk depending on the Cultivated land (LPIS)	Risk depending on the Returns from the crop production per ha	Risk depending on the Returns per ha	Risk depending on the Debt	Risk depending on firm size – total asset	Risk depending on Debt to Equity ratio
"50" & "55"	Multiple R	0,2444054	0,1085069	/	/	/	0,149703924	0,20747512
	R Square	0,059734	0,0117737				0,022411265	0,04304593
	Significance F	1,168E-14	0,0007116				2,8284E-06	6,8198E-11

Source: Own processing

The risk of cooperatives and capital companies is in majority affected by the factor *Equity*, followed by the factor *Debt to equity ratio*, *Firm size* and factor *Cultivated land (LPIS)* affects the risk of companies at the minimum level. Indicators such as: *Returns from the crop production per ha*; *Returns per hectare* or *Debt* do not influence the value of cooperatives and companies risk (Significance $F > 0.05$).

Conclusion

The study focused on the measurement and evaluation of risk and return of portfolios, consisting of the Slovak agriculture entities. Remarkable differences have been found, taking into account the legal form of examined companies. Moreover, the determinants, having significant dependency on profit (expressed by return on equity) and risk, were analysed, in order to find the factors, which are able to be influenced by farmers, with the objective to maximize the return and minimise the risk.

References:

- [1] HARDAKER, J., HUIRNE, R., ANDERSON, J., LIEN, G., *Coping with risk in agriculture*. CABI Publishing, 2004, ISBN 0851999735, 9780851999739 332p.
- [2] HUIRNE, R. et al. Risk and risk management in agriculture: an overview and empirical results. *International Journal of Risk Assessment and Management*, 2000, pp. 125-136
- [3] MARKOWITZ, H., Portfolio Selection. *The Journal of Finance*, 1952, vol. 7 no.1, pp. 77-91
- [4] MURPHY, A., HARTELL, J., CÁRDENAS, V., SKEES, J., Risk Management Instruments for Food Price Volatility and Weather Risk in Latin America and the Caribbean. *IDB*, 2012, No. IDB-DP-220, 64 s.
- [5] OECD, *Managing risk in agriculture: A holistic approach*. OECD Publishing, 2009, 170 s. ISBN 9789264075313
- [6] RAŠOVSKÁ, A., SERENČEŠ, P., *Common agriculture policy 2007 – 2013 vs. 2014 – 2020*. In Multifunctionality and regional development. Gödöllő : Szent István University, 2013, 347 – 360 s. ISBN 978-963-269-376-7
- [7] SAVOV, R., LANČARIČ, D., KOZÁKOVÁ, J., ROVNÝ, P., Súčasný problémy ekologického poľnohospodárstva na Slovensku. *Acta oeconomica et informatica*, 2011, vol. 14, no. 2, pp. 53-57, ISSN 1335-2571
- [8] SERENČEŠ, P., MAJERNÍK, M., *Investičná činnosť poľnohospodárskych podnikov a jej financovanie nástrojmi kapitálového trhu*. Nitra: SPU, 2009, ISBN 978-80-552-0271
- [9] SERENČEŠ, P., SERENČEŠ, R., TÓTH, M., ČIERNA, Z., RÁBEK, T., *Financie v poľnohospodárstve*. 1. vyd. Nitra: SPU, 2010 183 s. ISBN 978-80-552-0438-3
- [10] TÓTH, M., ČIERNA, Z., RÁBEK, T. *Podpora poľnohospodárstva na Slovensku od roku 1993 a jej vplyv na finančnú situáciu poľnohospodárskych podnikov*. 1. vyd. Nitra: SPU, 2010. 96 s. ISBN 978-80-552-0489-5

MANAGEMENT BY PROJECTS - A CHALLENGE FOR PERSONNEL POLICY

Katarzyna Piwowar-Sulej

Wroclaw University of Economics

katarzyna.piwowar@ue.wroc.pl

Key words:

management by projects – social problems – personnel policy – personnel function

Abstract:

Nowadays the concept of management by projects (MBP) is practiced in more and more organisations. In every enterprise where MBP is introduced, the complexity of HR function, which reflects personnel policy postulates, increases. This paper reviews issues worth considering when implementing the personnel function in project-oriented organizations, is based on literature studies as well as the author's scholarly reflection connected with some experience gained during previous empirical research.

Introduction

The globalisation era calls for the ability to act immediately according to the change outside the organisation - by implementing flexible production processes or ways of organising work. The company of the future is often envisaged as one where a innovative approach to management enabling it to work in changing conditions is emphasized. Reoccurring, routine actions are losing on value whilst unique and complex projects are gaining.

Project is a unique and not a recurring activity which should have well-defined objective. It has a temporary organization with defined set of budget, resourcing and timescale constraints [1]. Realization of the projects is based upon the work in a team – specially established for that purpose.

The increasing importance of projects in functioning of organisations has led to a rapid development in the field of project management. Some enterprises, rather than settling for project management, introduce so-called management by projects (MBP). MBP can be defined as a general management method or concept which utilizes project

management tools in order to achieve objectives resulting from the strategy of the organisations. Enterprises which implement the concept are known as project-oriented organisations (POO). One can distinguish strictly project-oriented organisations (e.g. active in the IT development sector) as well as non-project ones (organisations dominated by operational/repetitive activity, such as banks), in which, however, projects are realized.

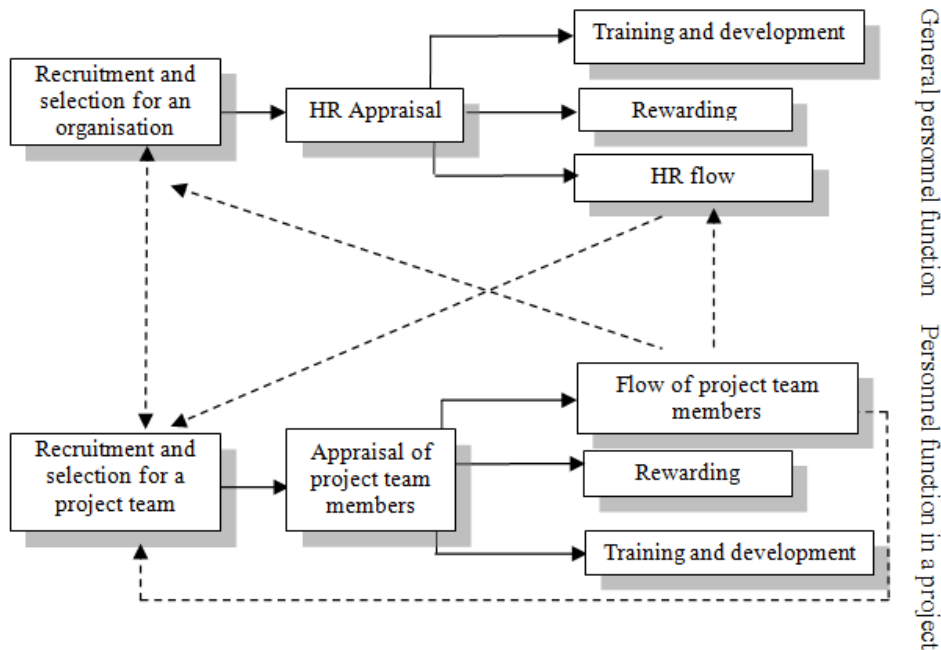
One can advance a thesis that in every enterprise where MBP is implemented, the complexity of individual elements of personnel management increases. In the analyzed case, the personnel function has a two-way (double-track) course: on one hand, in the general organisational field, and on the other hand, within a given project. In shaping of this function in project-oriented organisations, “new” subjects, non-existent in traditional organisations, such as project managers or project management offices, gain more importance. Moreover, the character of project work may have bad consequences of some sort (personnel problems). This type of work is much different from typical, routine work in line units (departments). Therefore, people responsible for personnel policy are faced with a challenge.

The objective of this paper is to present certain areas related to the personnel policy, which call for extra attention from people managing the companies and the HR specialists. This paper focuses on specific elements of personnel function, misshaping of which may lead to personnel problems. The implementation of this function thus reflects the current personnel policy. This article is based on studies of literature on the subject as well as the author’s scholarly reflection connected with some experience gained during previous empirical research.

Personnel function in a project-oriented organization

Project-oriented organizations typically make good use of the so-called matrix structures, i.e. structures that incorporate features of functional and task-oriented structure. Consequently, project-oriented organizations can be analyzed from the viewpoint of two separate structures of HR function: one involved with general management, and one directly related to the task at hand (Figure 1).

FIG. 1: Two-way course of the personnel function in project-oriented organizations



Source: [2]

There are many specific relations between some elements of the general personnel function and the elements of the personnel function in a project, as indicated with a dashed line in Figure 2. Due to the limitation in volume and directing the reader to appropriate literature these relations will not be discussed in this work, (for more see [2, 3]).

The above specificity of HR function in POO seems to attest to viability, or, to put it more accurately, the need to increase flexibility of employment, most notably in its quantitative aspect – in close relation to the size of project teams and the scope of the task at hand – mainly through proper diversification of the forms of employment used. This involves the use of varied forms of employment, both in the stable and unstable portion of company employment (for more see [4,5]). Work as members of project teams gives a chance for company employees to meet new colleagues from other departments, share experience and learn from each other. However, not every specialist in their area of knowledge is a suitable candidate for working in projects, i.e. a teamwork with people they do not know and under pressure of time. Thus, the implementation of MBP creates a challenge for people who are responsible for company personnel policy.

Elements of personnel function that requires extra attention in POO

In the table below selected elements of personnel function where presented. The elements require quite a specific attitude in a POO than in a traditional stable structure. Some issues presented there (some of them as questions) are worth attention.

TAB. 1: Selected issues related to the shaping of the personnel function in POO

ELEMENT OF HR FUNCTION	Issues worth emphasizing
Recruitment and selection for an organisation	• Establishing how suited the candidates are to the team • Establishing if the candidate is experienced in working in projects and in what role • Making sure that candidates are knowledgeable enough in the field of project management
Recruitment and selection for a project team	• Is it worthwhile to create an universal model of project competences? • The choice of recruitment and selection methods (Should universal methods be applied in particular projects?) • The decision of whether the employee should work full time or part time in the project (problems with work organization within department, prioritizing - current work vs. project tasks) • The decision whether to train a full time employee and set him/her to work in the project or hire an expert from outside of the company • Choice of the type of contract for the member of the project team whose work will focus on the project only
HR Appraisal	• Taking into account actual participation or willingness to participate in periodical formal assessment • Considering the criterion of the project management knowledge in periodical assessment

Appraisal of project team members	• Choice of assessment method (Should the same method be used in subsequent projects? - the issue of similarity between project and the duration of the project) • Determining the frequency of assessments (milestones can be an indicator) • Formalizing project manager's authority in the area of assessing members of the project
HR flow	• Establishing the position of project manager, project management department and project management office within the company • Taking into account roles played in various projects in of the company general career path • Creating the possibility of project-based career (from assistant to project manager)
Flow of project team members	• Enabling project members to change their roles within long term project
Rewarding	• Basing remuneration policy on job evaluation or competencies evaluation • Should the participation in the projects be extra rewarded? Should rewards be fixed (salary increase) or variable (bonuses)? • Should form of remuneration of project team members be included in the general remuneration policy?
Rewarding in a project	• Should a dedicated reward system be created? • Formalized vs. merit based remuneration in projects • Empowerment for project managers to reward project team members
General training	• Project management trainings - for everyone or for people that are working or are going to work in projects (money issue

	vs. perceived equity) • Engaging e.g. project management office specialists in training system (as trainers)
Training in project	• Reconciliation sudden training needs - deriving from nature of projects - with general employee training program

Source: own study

For example in project-oriented organisation, placing the reliance of base salaries policy only on the job evaluation seems to be not fully appropriate. Work is often focused on the needs of a single project, not on previously defined requirements of the job position. But remuneration based only on competencies is good for an organisation with a small number of key competencies influencing work results. The easiness of defining these competencies, frequency of changes in work environment, workers' flexibility and necessity of constant improvement of skills should be taken into account in the process of selection of the evaluation subject (job position and competencies) (for more see [6]).

Conclusions

Nowadays the concept of management by projects is practiced not only in typically project-oriented organisations. In every enterprise where MBP is introduced, the complexity of HR function, which reflects personnel policy postulates, increases. This function has a double-track: in the general organisational field and within a defined project.

Lack of care for particular elements of HR function may negatively impact interpersonal relations, with detrimental effect on teamwork, cooperation and involvement not only in project but also in company matters. This article lists issues worth paying attention. Its author is fully aware of the fact that this is not a complete list of personnel policy related topics. Therefore, this problem is to be further researched in future.

References:

- [1] JONES, R. *Project Management Survival. A practical guide to leading, managing and delivering challenging projects*, Kogan Page Limited, London 2007, pp. 5-6, ISBN-13 978 0 7494 5010 6
- [2] PIWOWAR-SULEJ, K. *Rola działu HR w organizacji zorientowanej na projekty – ujęcie modelowe versus wyniki badań empirycznych*, [in:] *Jakość zarządzania zasobami ludzkimi we współczesnych organizacjach*, ed. A. Stankiewicz-Mróz, J.P. Lendzion, Łódź: Wyd. MEDIA PRESS, 2012, p. 265, ISBN: 978-83-61215-34-9
- [3] PIWOWAR-SULEJ, K. *Funkcja personalna w organizacji zorientowanej na projekty – jej kształt oraz rola działu HR w realizacji tej funkcji*, [in:] *Kierunki ewolucji zachowań organizacyjnych*, [ed.] I. Bednarska-Wnuk, J.M. Michalak, I. Świątek-Barylska, „Folia Oeconomica”, Wyd. Uniwersytetu Łódzkiego, Łódź 2013, nr 283, pp. 168-170, ISSN: 0208-6018
- [4] BĄK-GRABOWSKA, D., PIWOWAR-SULEJ, K. *Management by projects and its implications for the model of employment – the Polish perspective*, „The Rumanian Economic Journal” Year XV no. 44 June 2012, p. 3-22, ISSN 1454-4296
- [5] BODAK, A., CIERNIAK-EMERYCH, A., GABLETA, M., PIETROŃ-PYSZCZEK, A., PIWOWAR-SULEJ, K. *Improving the Flexibility of Employment in Polish Economic Practice*, “World Academy of Science, Engineering and Technology” 2013 no 79, pp. 1477-1481, EISSN: 2010-3778
- [6] PIWOWAR-SULEJ K., *BASES OF REMUNERATION POLICY IN PROJECT-ORIENTED ORGANIZATION*, [IN:] *Managing Transformation with Creativity*, ed. D. Gomezelj, Omerzel, B. Nastav, S. Sedmak, Corvinus University of Budapest, Hungary 2012, pp. 431-446, ISBN: 978-961-266-201-1

RETHINKING LIQUIDITY RATIOS: THE CASE OF MANUFACTURING IN THE CZECH REPUBLIC

Jindřich Pokora

Masaryk University

pokoraj@gmail.com

Key words:

financial performance – liquidity ratios – current ratio – optimal values – manufacturing

Abstract:

Similar optimal or recommended values of liquidity ratios are commonly appearing in the Czech literature. The purpose of this paper is to calculate a recommended value of current ratio for large firms in the manufacturing sector based on the data in three consecutive years, from 2009 to 2011. The analysis of the best-performing firms showed that current ratio frequency distribution matches a gamma distribution function, where its peak determines the recommended value at 1.4 or as an interval (1.2, 1.6), which denotes the most common value of current ratio.

Introduction

The ability to pay short-term liabilities and not to operate with too many current assets is one of many factors of final business performance and could be measured by liquidity ratios since such computations require only financial statements. Liquidity ratios are aside from debt ratios unique in the group of financial ratios because there should exist an optimal value different from simple maximization or minimization of given ratios. When the liquidity ratio is too small, the company is forced to create new debts to finance its operations, and when the ratio is too big, some of the resources among current assets are not optimally utilized and could be potentially used for more profitable investments. In the research performed a single liquidity ratio is used, e.i. current ratio, that measures firm's ability to pay its liabilities within the next 12 months using all components of current assets.

The purpose of this paper is to suggest recommended values of current ratio (CR) as one of the basic liquidity ratios for the manufacturing sector in the Czech Republic. An analysis of large companies in three consecutive years (2009-2011) is conducted and computed values with recommended values appearing in the Czech literature are compared.

1. Theoretical Framework

The effect of liquidity on firms' financial performance is considered ambiguous [7, 186], since there is a number of studies with different findings. Generally speaking, optimal investment in liquidity should be increasing in the cost of external financing, the variance of future cash flow and expected return of future investment opportunities, while it should be decreasing in the profitability difference between physical and liquid assets [4, 355].

Performance is in this paper measured by return on assets (ROA), which is one of the most common used financial performance measures [3, 1069]. The effect of CR on ROA is generally, based on numerous researches, considered negative. Providing some additional findings, the effect of CR on ROA is slightly different among sectors.

These results usually come from linear regression models where liquidity is one of many regressors. Given the ambiguity of the liquidity effect on financial performance a linear relationship is considered inappropriate in this paper. Therefore a different technique for an analysis of liquidity is employed.

In the Czech literature recommended values or intervals for CR can be found. The interval (1.5, 2.5) is very common [2, 118; 6, 92]. In line with the business strategy, interval (1.6, 2.5) is appropriate for an average strategy, values of $CR > 2.5$ for a conservative strategy and (1, 1.6) for an aggressive strategy [5, 104]. Recommended value of $CR = 2$ corresponding with (1.5, 2.5) is calculated as an average for all firms in the economy [2, 117]. Sedláček considers values of $CR > 1.5$ as sufficient [8, 66]. For Grünwald the recommended value of CR is around 1.5 [1, 114].

2. Data and Methodology

For the analysis, financial statements of 764 large manufacturing firms from the Albertina database were exported. Large firm is defined as having more than 250 workers. Firms with any of the following items not filled in the database or equal to zero in years 2008-2011 were excluded (121 firms): sum of assets, current assets,

current liabilities and EBIT (only for 2009-2011). Furthermore firms with $CR > 5$ were excluded (40 firms) too, since these values are considered as outliers and would bias the tests based on a gamma distribution function in a significant way. This step is not problematic because it's obvious from both theory and practice that the optimal value of CR should be a lot less than 5. After these steps results of 603 firms were obtained.

CR and ROA for years 2009-2011 were constructed in the following way:

$$ROA_t = \frac{2 \times EBIT_t}{Assets_t + Assets_{t-1}} \quad CR_t = \frac{Current\ Assets_t + Current\ Assets_{t-1}}{Current\ Liabilities_t + Current\ Liabilities_{t-1}}$$

Analyzed firms were divided into three groups in each year according to their ROA in the given year. The group of high-performing firms (HPF) consisted of 25% firms with the highest ROA, the group of low-performing firms (LPF) consisted of 25% firms with the lowest ROA and the rest of the firms stayed in the last group that was not further analyzed.

3. Results

The goal was to find the optimal value of CR that would *ceteris paribus* maximize ROA, which was computed as the most common value of CR among HPF. For both HPF and LPF following items in each year were calculated: mean of CR, median of CR, standard deviation of CR, gamma distribution as a probability density function (PDF), Z-test of PDF and the peak of PDF.

Mean of CR in the analyzed sample of 603 firms was 1.54, 1.56 and 1.57 in the years 2009-2011. According to the model INFA used by the Ministry of Industry and Trade of the Czech Republic the mean of CR in the manufacturing sector was 1.58, 1.59 and 1.60 respectively. This is an indicator that the sample could be used as relevant for the whole manufacturing sector.

The comparison of HPF and LPF is carried out to observe a difference in CR between these two groups, mean is calculated as the “classic” measure of recommended value of CR. Calculation of the median and the PDF represents another view on the CR analysis. Z-test measures under the null hypothesis that the data can be approximated by gamma distribution. The fit of gamma distribution is computed using statistical package gretl. The results are in the TAB. 1. The first column describes each analyzed group, “L” stands for low-performing, “H” for high-performing, while the number denotes a year.

TAB. 1: CR analysis (2009-2011)

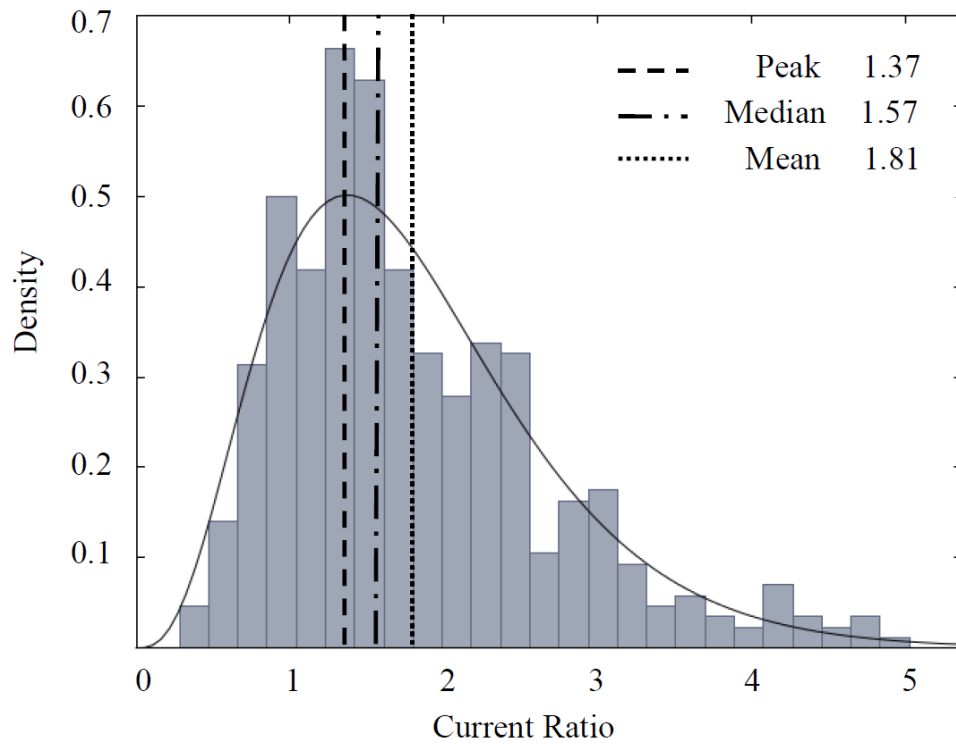
Grp	Mean	Median	St.Dev.	Gamma (shape)	Gamma (scale)	Z- test statistic	Z-test (p-value)	Peak
L09	1.32	1.07	0.77	2.91	0.45	3.19	0.00	0.87
H09	1.86	1.68	0.91	4.15	0.45	0.66	0.51	1.41
L10	1.41	1.15	0.81	3.01	0.47	2.12	0.03	0.94
H10	1.75	1.48	0.89	3.89	0.45	1.95	0.05	1.30
L11	1.35	1.11	0.85	2.51	0.54	2.37	0.02	0.81
H11	1.82	1.56	0.87	4.36	0.42	1.59	0.11	1.40

Source: Self-elaboration using statistical package gretl.

For HPF gamma distribution seems to be an appropriate distribution, all of the null hypotheses are not rejected on $\alpha = 0.05$. The result in 2010 is in doubt since there is a lot of values close to $CR = 5$ that drive the test close to rejection of the null hypothesis.

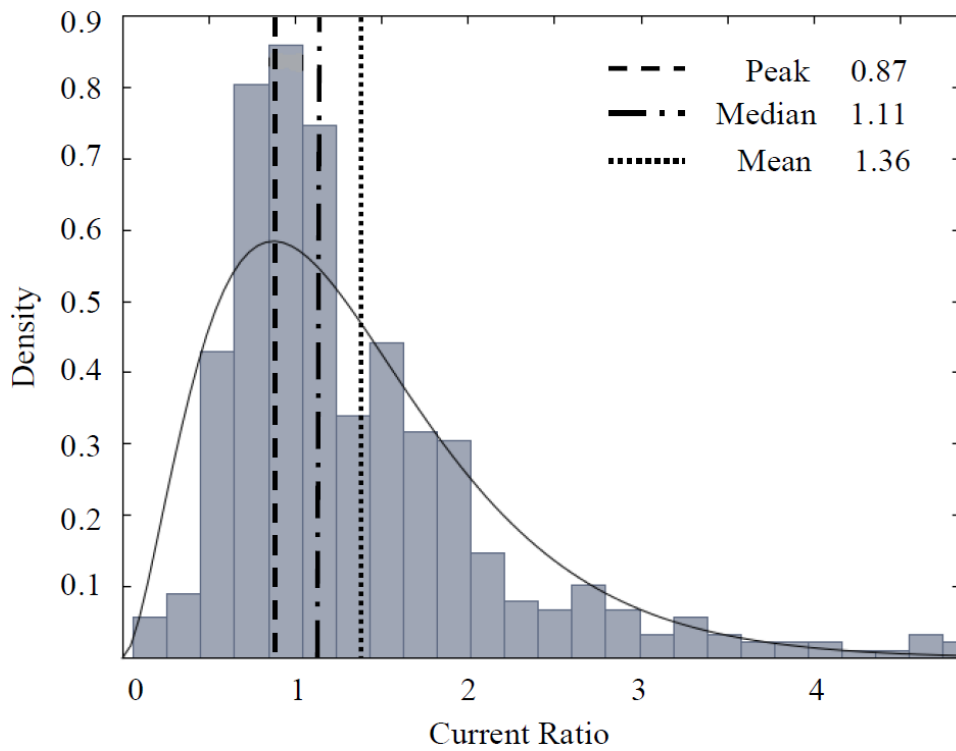
To formulate a recommended value of CR for large firms in the manufacturing sector, three different possible values should be discussed as shown on the FIG. 1 and FIG. 2. The question could be formulated as: What is the most common value of CR among HPF? Based on the fitted gamma distribution in FIG. 1 it's its peak at 1.37, rounded to one decimal place 1.4. If we consider an interval instead of a single value based on the same question, the peak is always a part of this interval regardless of size of this interval. By computing the smallest interval possible for 20% of analyzed firms we get (1.17; 1.57), rounded to one decimal place (1.2; 1.6).

FIG. 1: Histogram of CR (high-performing firms, 2009-2011)



Source: Self-elaboration using statistical package gretl.

FIG. 2: Histogram of CR (low-performing firms, 2009-2011)



Source: Self-elaboration using statistical package gretl.

From FIG. 1 and FIG. 2 it's obvious that mean is not the best possible measure of recommended CR since it's inappropriately affected by high values. Median seems to be a decent measure providing outcomes closer to the peak value.

From visual comparison of FIG. 1 and FIG. 2 can be implied that both HPF and LPF have similar shape of a density function with the significant difference that HPF distribution peaks at $CR = 1.37$, whereas LPF peaks closer to zero at $CR = 0.87$. This fact along with significant standard deviation causes the impossibility to evaluate a firm's performance purely on liquidity ratios.

Recommended value as the peak value of the density function is smaller than those appearing in the Czech literature. That could be caused by a difference between liquidity in the manufacturing sector and the liquidity in a whole economy. Its part plays the fact that the peak value based on the computed distribution is always smaller than the mean, which could have been used to compute recommended values in some of the Czech literature.

Conclusion

Based on the analysis in this paper the following concluding remarks about the liquidity of large firms in the manufacturing sector in the Czech Republic in years 2009-2011 can be formulated:

1. There is a relationship between liquidity (current ratio) and performance (ROA). Firms with higher ROA have on average higher current ratio.
2. The performance of a firm can't be evaluated purely on liquidity. Knowing only the value of current ratio it's impossible to assign the firm to either the high-performing or low-performing group.
3. The peak of a probability density function, in this paper matching a gamma distribution, is a value with the highest likelihood of the current ratio. The peak is at $CR = 1.4$ or, as a 20% interval, (1.2; 1.6) based on the data of high-performing firms. These can be considered recommended values of the current ratio.
4. Median is a better measure of recommended value of liquidity ratio than mean thanks to its unbiasedness by outliers. Data of high-performing firms yielded median of $CR = 1.6$ and mean of $CR = 1.8$ after the firms with higher current ratio than 5 were excluded.

References:

- [1] GRÜNWALD, R., HOLEČKOVÁ, J. *Finanční analýza a plánování podniku*. No. 1. Praha: Ekopress, 2007, 318 p. ISBN 9788086929262
- [2] HOLEČKOVÁ, J. *Finanční analýza firmy*. No. 1. Praha: ASPI, 2008, 208 p. ISBN 9788073573928
- [3] HULT, G., T., M., KETCHEN, J., R., D. J.; GRIFFITH, D., A., CHABOWSKI, B., R., HAMMAN, M., K., DYKES, B., J., POLLITTEE, W., A., CAVUSGIL, S., T., An Assessment of the Measurement of Performance in International Business Research. *Journal of International Business Studies*, 2008, vol. 39, no. 6, pp. 1064-1080, ISSN 0047-2506
- [4] CHANG-SOO, K., MAUER, D., C., SHERMAN, A., E., The Determinants of Corporate Liquidity: Theory and Evidence. *Journal of Financial & Quantitative Analysis*. 1998. vol. 33, no. 3, pp. 335-359. ISSN 0022-1090
- [5] KISLINGEROVÁ, E. *Manažerské finance*, no. 3, Praha: C.H. Beck, 2010, xxxviii, 811 p. ISBN 9788074001949
- [6] KNÁPKOVÁ, A., PAVELKOVÁ, D., ŠTEKER, K. *Finanční analýza: komplexní průvodce s příklady*, no. 2. Praha: Grada Publishing, 2013, 236 p. ISBN 9788024744568
- [7] LIARGOVAS, P., G., SKANDALIS, K., S. Factors Affecting Firms' Performance: The Case of Greece. *Global Business & Management Research*. 2010, vol. 2, no. 2/3, pp. 184-197. ISSN 1947-5667
- [8] SEDLÁČEK, J. *Finanční analýza podniku*, no. 2. Brno: Computer Press, 2011, 152 p. ISBN 9788025133866

USING AHP AND VIKOR METHOD TO EVALUATE THE REGIONAL DEVELOPMENT: CASE OF VISEGRAD FOUR

Eva Poledníková

VŠB-Technical University of Ostrava

eva.polednikova@vsb.cz

Key words:

AHP – disparities – NUTS 2 regions – VIKOR – Visegrad Four

Abstract:

The paper solves the problem of an alternative approach to quantitative evaluation of the regional development in Visegrad Four countries (V4; Czech Republic, Hungary, Poland, Slovakia). The aim of the paper is to evaluate the socio-economic development of V4 NUTS 2 regions and to define their mutual positions in the period 2000-2010 by utilizing multicriteria decision-making methods of AHP and VIKOR method. Using the quantitative multidimensional characteristics can lead to more precise evaluation of the socioeconomic development and disparities among regions.

Introduction

Regional development is a broad term that can be also seen as a general effort to reduce regional disparities by supporting (employment and wealth-generating) economic activities in the regions. The quantification of regional disparities falls into important spheres of a regional policy at state and European level. The central authorities at national level as well as authorities at the European Union (EU) level should enable balanced development of a member state, and should support the balancing of differences among the levels of particular regions. This is the reason why it is necessary to create a suitable methodology that will enable a measurement of the regions' current socio-economic level, and will consequently change this level after the implementation of the projects that focus on the improvement of a situation in a region. The aim of the paper is to evaluate the socio-economic development of V4 NUTS 2 regions and to define their mutual positions in the period 2000-2010 by utilizing AHP and VIKOR method. Based on multicriteria approach, the paper provides an alternative view on

quantitative evaluation of differences in the level of socio-economic development of regional unit.

1. Approach to regional development evaluation in the EU

At EU level the actual state evaluation of regional development derives from the quantitative analysis of regional disparities (differences in the socio-economic level of particular territorial units). The existence of disparities between regions, including their elimination, is one of the main aspects of EU Cohesion policy. In this context, we distinguish three types of regional disparities: *economic, social and territorial*, see [3], [4]. The level of regional disparities is evaluated by Cohesion Reports published by the European Commission, see [1]. The attitude of the researches to the measurement and evaluation of regional disparities is not uniformed. Most existing approaches to regional disparities evaluation use several disparities indicators that are processed by different less or more sophisticated mathematical and statistical methods, see e.g. [3], [5]. Alternative and not broadly extended approach to regional disparities represents multicriteria decision-making methods (e.g. AHP, TOPSIS, VIKOR), see [8]. Multicriteria decision-making methods help to decision maker organize the problems to be solved, and carry out analysis, comparisons and rankings of the alternatives. These methods use the hierarchy of elements and ranking the alternatives according to utility and distance functions.

2. Methodology

Before building an illustrative example of regional development evaluation, following section discusses the theoretical background of Analytic Hierarchy Process (AHP) and the VlseKriterijumska Optimizacija I Kompromisno Resenje (VIKOR). In this paper, AHP is used to derive the weights of criteria that are subsequently inserted to weighted decision matrix in VIKOR method. Subsequently, VIKOR method ranks the regions according to their socio-economic development.

2.1 AHP method

AHP is proposed to model subjective decision-making processes based on multiple attributes in a hierarchical system. Decision hierarchy structure and pairwise

comparisons to establish relation within structure are the key elements of AHP [7]. The decision hierarchy structure is created; the goal of the decision is at the top level, subcriteria at second level followed by the level of criteria (criteria on which subsequent elements depend). The lowest level represents a set of alternatives. Having the hierarchic structure, we compare the comparative weight between the attributes of the decision elements in form of pairwise comparison matrices. The comparisons are taken from Saaty's fundamental scale that reflects the relative strength of preferences, see [7].

2.2 VIKOR method

VIKOR method determines the compromise ranking-list, the compromise solution and the weight stability intervals for preference stability of the compromise solution obtained with the given weights. This method focuses on ranking and selecting from a set of alternatives in the presence of conflicting criteria. It introduces the multicriteria ranking index based on the particular measure of "closeness" to the "ideal" solution. [8, p. 71]. Assuming that each alternative is evaluated according to each criterion function, the compromise ranking could be performed by comparing the measure of closeness to the ideal alternative. The multicriteria measure for compromise ranking is developed from the *Lp-metric* used as an aggregating function in a compromise programming method. The various J alternatives are denoted as $a_1; a_2; \dots; a_J$. For alternative a_j , the rating of the i th aspect is denoted by f_{ij} , i.e. f_{ij} is the value of i th criterion function for the alternative a_j ; n is the number of criteria. Development of the VIKOR method started with the following form of *Lp-metric*:

$$L_{pj} = \left\{ \sum_{i=1}^n [w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-)]^p \right\}^{1/p}, 1 \leq p \leq \infty, j = 1, 2, \dots, J. \quad (1)$$

Within the VIKOR method, $L_{1,j}$ and $L_{\infty,j}$ are used to formulate ranking measure. The solution obtained by $\min_j S_j$ is with a maximum group utility ("majority" rule), and the solution obtained by $\min_j R_j$ is with a minimum individual regret of the "opponent". The compromise solution F^c is a feasible solution that is the "closest" to the ideal F^* , and compromise means an agreement established by mutual concessions. The compromise ranking algorithm VIKOR has the following steps [8, p. 72-74]:

The first step is to determine the best f_i^* and the worst f_i^- values of all criterion functions, $i=1, 2, \dots, n$, that is known as positive and negative ideal solution. If the i th function represents a benefit then [6, p. 447-448]:

$$f_i^* = \max_j f_{ij}, \quad f_i^- = \min_j f_{ij}. \quad (2)$$

Second step is to compute the values S_j and R_j , $j=1, 2, \dots, J$, by formula:

$$S_j = \sum_{i=1}^n w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-), \quad (3)$$

$$R_j = \max_i [w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-)] \quad (4)$$

where w_i are the weights of criteria. S_j is a_j with respect to all criteria calculated by the sum of the distance for best value, R_j is a_j with respect to the i th criterion, calculated by the maximum distance from the worst value.

Third step is to calculate the values Q_j , $j=1, 2, \dots, J$, by relation:

$$Q_j = v(S_j - S^*) / (S^- - S^*) + (1-v)(R_j - R^*) / (R^- - R^*) \quad (5)$$

where

$$S^* = \min_j S_j, \quad S^- = \max_j S_j, \quad (6)$$

$$R^* = \min_j R_j, \quad R^- = \max_j R_j. \quad (7)$$

and v is introduced as weight of the strategy of “the majority of criteria” (or “the maximum group utility”), here $v=0,5$. Index Q_j is obtained and based on the consideration of both the group utility and the individual regret of the opponent.

Next step is to propose as the compromise solution the alternative (a') which is ranked the best by the measure Q if the two conditions, *acceptance advantage* and *acceptance stability in decision making*, are satisfied, see [6]. The last step is to rank the alternatives, sorting by the values S , R and Q , in decreasing order. The best alternative $Q(a')$ is the best solution with the minimum of Q_j .

3. Application of AHP and VIKOR method for regional development evaluation

The AHP hierarchical structure is created as follows; the goal is to assess the level of regional development in Visegrad Four countries. The alternatives are total 35 NUTS 2 regions in V4 (8 Czech NUTS 2 regions, 7 Hungarian NUTS 2 regions, 16 Polish

NUTS 2 regions, 4 Slovak NUTS regions). These alternatives are evaluated by three types of subcriteria (economic, social and territorial disparities) and eight criteria shown in Table 1. These indicators are most frequently used indicators of regional disparities monitored within Cohesion Reports see [1], and available in Eurostat database.

TAB. 1: Selected indicators (criteria) for disparities evaluation in V4 regions

Type of indicator	Indicator	Abbreviation
Economic	GDP per capita (PPS)	GDP
	Disposable income of households (PPS)	DI
	Gross domestic expenditure on R&D (GERD) (% of GDP)	GERD
Social	Employment rate (%)	ER
	Unemployment rate (%)	UER
	Persons aged 30-34 with tertiary education attainment (%)	TE
Territorial	Density of motorway (km/1000km ²)	DM
	Density of railway (km/1000km ²)	DR

Source: [1], [2], own modification, 2013

To determine the final weights (preferences) of selected criteria, pairwise comparison in the context of AHP is computed. According to Table 2, indicators GDP per capita, disposable income and unemployment rate have the highest importance in evaluation of regional disparities and the level of region's development.

TAB. 2: Weights of criteria

Subcriteria	Weight	Criteria	Weight	Final weight
Economic	0,730644671	GDP	0,6370	0,4654
		DI	0,2583	0,1887
		GERD	0,1047	0,0765
Social	0,188394097	ER	0,2790	0,0526
		UER	0,6491	0,1223
		TE	0,0719	0,0136
Territorial	0,080961232	DM	0,7500	0,0607
		DR	0,2500	0,0202

Source: own elaboration, 2013

According to VIKOR method described above, combining with determined weight of criteria by AHP, the VIKOR method is applied to rank all regions in V4 in the year 2000, 2005 and 2010 based on the level of their economic, social and territorial development. Table 3 shows and compares the final value of index Q_j in given years as

well as average value of index. This ranking index is an aggregation of all criteria, the relative importance of the criteria, and a balance between total and individual satisfaction. The highest ranked region is the closest to ideal solution. The shortest distance from ideal solution is achieved by regions with capital city - Praha, Bratislavský kraj, Közép-Magyarország and Mazowieckie. These regions are ranked on the top four positions and their ranking has predominated for whole reference period. These regions achieved the highest level of socio-economic development and average regions' ranking implies the visible differences among regions of capital cities and the rest of V4 regions. On the other hand, Polish regions Podkarpackie, Warmińsko-Mazurskie and Slovak region Východné Slovensko can be considered as less developed compared to others. Their distances from ideal solution are the farthest and they are ranked in last positions in the year 2000 and 2005. In the year 2010, the strong weakening of Hungarian regions development was recorded. The regions Észak-Magyarország, Észak-Alföld, Dél-Alföld Dél-Dunántúl have farthest distances from ideal solution and they are ranked in last positions. In the year 2010, the convergence of some Polish and Czech regions to ideal solution is recorded (e.g. Warmińsko-Mazurskie, Łódzkie, Śląskie, Świętokrzyskie, Podkarpackie, Dolnośląskie, Moravskoslezsko, Jihovýchod).

TAB. 3: VIKOR method results (2000, 2005, 2010)

Year		2000		2005		2010		Average Qj	Average rank
Code	Region	Q _i	Rank	Q _i	Rank	Q _i	Rank		
CZ01	Praha	0,000	1	1,000	1	0,001	1	0,0004	1
CZ02	Střední Čechy	0,568	4	4,568	4	0,638	5	0,5910	5
CZ03	Jihozápad	0,628	6	6,628	6	0,701	7	0,6526	6
CZ04	Severozápad	0,729	11	11,729	11	0,798	17	0,7520	11
CZ05	Severovýchod	0,647	8	8,647	8	0,737	8	0,6772	8
CZ06	Jihovýchod	0,645	7	7,645	7	0,683	6	0,6576	7
CZ07	Střední Morava	0,722	10	10,722	10	0,768	14	0,7375	10
CZ08	Moravskoslezsko	0,757	12	12,757	12	0,751	11	0,7547	12
HU10	Közép-Magyarország	0,476	3	3,476	3	0,487	4	0,4799	3
HU21	Közép-Dunántúl	0,771	13	13,771	13	0,838	19	0,7934	15
HU22	Nyugat-Dunántúl	0,692	9	9,692	9	0,783	16	0,7219	9
HU23	Dél-Dunántúl	0,898	24	24,898	24	0,943	32	0,9129	27
HU31	Észak-Magyarország	0,964	32	32,964	32	1,000	35	0,9757	35
HU32	Észak-Alföld	0,961	31	31,961	31	0,979	34	0,9670	34
HU33	Dél-Alföld	0,885	22	22,885	22	0,942	31	0,9040	24
PL11	Łódzkie	0,884	21	21,884	21	0,813	18	0,8600	19
PL12	Mazowieckie	0,574	5	5,574	5	0,471	3	0,5400	4
PL21	Małopolskie	0,873	20	20,873	20	0,846	22	0,8640	21
PL22	Śląskie	0,817	15	15,817	15	0,739	9	0,7911	14
PL31	Lubelskie	0,957	30	30,957	30	0,935	30	0,9497	30
PL32	Podkarpackie	0,975	34	34,975	34	0,950	33	0,9665	33
PL33	Świętokrzyskie	0,951	28	28,951	28	0,909	26	0,9370	28
PL34	Podlaskie	0,955	29	29,955	29	0,921	28	0,9436	29
PL41	Wielkopolskie	0,804	14	14,804	14	0,762	13	0,7902	13
PL42	Zachodniopomorskie	0,861	19	19,861	19	0,867	23	0,8631	20
PL43	Lubuskie	0,918	25	25,918	25	0,876	24	0,9043	25
PL51	Dolnośląskie	0,851	16	16,851	16	0,744	10	0,8157	16
PL52	Opolskie	0,923	26	26,923	26	0,890	25	0,9121	26
PL61	Kujawsko-Pomorskie	0,892	23	23,892	23	0,840	20	0,8745	22
PL62	Warmińsko-Mazurskie	0,970	33	33,970	33	0,918	27	0,9528	31
PL63	Pomorskie	0,859	17	17,859	17	0,777	15	0,8319	18
SK01	Bratislavský kraj	0,231	2	2,231	2	0,004	2	0,1553	2
SK02	Západné Slovensko	0,861	18	18,861	18	0,753	12	0,8251	17
SK03	Stredné Slovensko	0,924	27	27,924	27	0,841	21	0,8964	23

Source: own elaboration, 2013

Conclusion

Applying AHP and VIKOR method we get the final regions' ranking based on distances (disparity) to ideal solution. Comparison of the region's ranking indicates the trends in

the level of regional development in V4 in year 2000, 2005 and 2010. The results showed that main regional disparities in V4 have persisted between regions with capital cities and other regions since year 2000. The final region's ranking also indicates the substantial differences in the level of socio-economic development between Czech regions and other regions. All Czech regions are in average ranked among the top twelve regions for all three years and region Praha is ranked on the first place among all regions as well as among regions with capital city. The dominance of capital city Prague results from more intensive integration into the world economy, which is reflected in different structures in comparison with other regions. Capital cities are main administrative centres, where the great mass of public institutions and the private sector is concentrated. On the other hand, it is necessary to take into account the statistical effect that can overvalue some indicators of economic performance. The approach to regional disparities elimination in V4 should be based on the support of an effective use of strengths and opportunities, stimulation of the endogenous potential and effective using of subsidies from European funds. The group of least developed regions should focus on the public investments in infrastructure (transport, communication, energy), spending on education and active labour market. Also research and development are major drivers of economic growth that support future competitiveness and result in higher GDP. It is necessary to take into account that each technique is specific and the results can be influenced by the characteristic of the data file, by the selected number and type of the indicators, as well as by selected method. The presented multicriteria decision making methods can be considered as suitable and interesting alternative of traditional approaches to regional development evaluation.

Acknowledgement:

This research paper was supported by the Faculty of Economics, VŠB-Technical University of Ostrava within Student Grant Competition, project's registration number SP2013/173 and within The Education for Competitiveness Operational Programme, project's number CZ.1.07/2.3.00/20.0296.

References:

- [1] EUROPEAN COMMISSION. *Fifth Report on Economic, Social and Territorial Cohesion*. Investing in Europe's future. Luxembourg: Publications Office of the European Union, 2010. ISBN 978-92-79-16978.
- [2] EUROSTAT [online]. Regional Statistics. 2013. [cit. 2013-10-29]. Available from: <http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/regional_statistics/data/database>.
- [3] KUTSCHERAUER, A. et al. *Regional disparities. Disparities in the Regional Development, their Concept, Identification and Assessment*. Ostrava: VŠB-TU Ostrava. 2010. ISBN 978-80-248-2380-5.
- [4] MOLLE, W. *European Cohesion Policy*. London: Routledge, 2007. ISBN 978-0-415-43812-4.
- [5] MELECKÝ, L., STANÍČKOVÁ, M. The Competitiveness of Visegrad Four NUTS 2 Regions and its Evaluation by DEA Method Application. In *Mathematical Methods in Economics 2011. Proceedings of the 29th International Conference. Part II*. Prague: University of Economics, 2011, pp. 474-479. ISBN 978-80-7431-059-1.
- [6] OPRICOVIC, S., TZENG, G.-H. Compromise solution by MCDM methods: A comparative analysis of VIKOR and TOPSIS. *European Journal of Operational Research*, 2004, 156, pp. 445–455. ISSN 0377-2217.
- [7] SAATY, T., VARGAS, G. L. *Models, Methods, Concepts and Applications of the Analytic Hierarchy Process*. New York: Springer Science+Business Media, 2012. ISBN 978-1-4614-3596-9.
- [8] TZENG, G. H., HUANG, J. J. *Multiple attribute decision making: methods and applications*. Boca Raton: CRC Press, 2011. ISBN 978-1-4398-6158-5.

CHANGES IN ECONOMIC THINKING IN THE POSTMODERN ERA

Jan Závodný Pospíšil

Palacký University Olomouc

jan.zavodny@upol.cz

Key words:

economic thinking – postmodern era – changes – consumer behavior

Abstract:

Postmodernism represents a fundamental change in the behavior of contemporary society. In addition it affects all fields of human activities, including economic science. First the paper defines topics such as postmodern era and economic thinking. Next author identifies these changes, their scope and influence on or presence in the society. Besides that paper analyzes the current economic thinking of the society, including schools of thought of contemporary economists.

Introduction

Postmodernism is typical for major changes in the perception of the world in the society. It is possible to see the shift from a scientific approach to the search for truth, the fragmentation, the intersection of the real and virtual world, the loss of involvement or a fundamental change in the perception of values, not only in the context of social exchange. The paper identifies these changes, their scope and influence on the society and moreover, it defines current economic thinking of the society.

1. Methods

The paper is an initial output of comprehensive research of changes in economic thinking in the postmodern era. The aim of this section is a theoretical definition of postmodernism and economic thinking. For this part was used descriptive research which should bring the information about specific aspects of the issue. The research is based on the following steps:

- formulation of the research problem,
- data collection and analysis of available resources,
- interpretation and conclusion.

2. Postmodern Era

Distinguished developmental waves or great historical transitions can be clearly tracked within the existing process of development of the society [1], [2], [4], [7], [11]. At the same time, according to these authors, each incoming phase is characterized as a quantum leap in terms of significant changes in the culture, way of life, society and families cope practices, technologies, management, relationship to the environment and nature, education and ethics. They describe the transition from one phase to another as a period of culture clashes, in which one has not ended yet and another one already exists. Fundamental changes in the areas mentioned above are characteristic for contemporary society. Fundamental social change, or a new coming phase, is increasingly the topic of a scientific interest. Examples of such interest can be Toffler's so-called rolling The Third Wave of global revolution, Beck's transition to the Risk society or Bauman's and Giddens' Transition to Postmodern Society.

The transition of a modern society to the postmodern one can be considered as current issue. However, Giddens [4] sees the transition to a postmodern society as a result of globalization which affects big events worldwide as well as day-to-day life of a person. Bauman [1] adds factors that are the basis of postmodernism. He mentions the fragmentation of society and human activities, time acceleration, values weakening, power resulting from access to information or household equipment. These factors create a heterogeneous society. Living in such society forces a person to do everything faster, which leads to the feeling of insecurity, dissatisfaction, longing for escape and simplification [12].

Postmodernism is the orientation which totally changes the view of today's world. Its prime characteristic is, above all, heterogeneity. It has arisen as a reaction against rationalism, scientism, or objectivity of modernism. Postmodernism says that there is no universal truth. Rationality by itself does not help us truly understand the world. The dogmatic claims are not regarded as knowledge in postmodernism. Everything accelerates very quickly - time, future or even the culture. Attention is given to play, images and symbols. A deep insight is not important for understanding how things works but more likely it is the surface, expressions, etc. that matter. Typical statement representing postmodernism is that there is no universal truth, abstract, etc. [5]. Postmodernism was first constituted in the humanities. It started in the arts as a literary-

scientific term. It entered the fields of architecture, painting, sociology and philosophy later [6]. After this, postmodernism hit even the science and then basically the whole society.

Postmodernism means totally a new approach to the science. The experts say that it is the end of science. Modern science had tried to find exact explication every time. Postmodern science says that for understanding the world, stories and symbols are important. The aim of a research is no longer searching for the truth but searching for efficiency. The questions is no more "Is this true?" but "What is this for?" [5]. Postmodernism has also an influence over the society culture. Its style says that innovation is no longer possible and all that is left is to imitate dead styles - we can only remix what has been done. Postmodern attempts to provide illusions of individualism through images that define possible subject positions or create desired positions [5].

3. Economic Thinking

There is a variety of definitions of economics, each looks at it from a somewhat different perspective. A well-known definition by Paul Samuelson says: „Economics is the study of how people and society end up choosing, with or without the use of money, to employ scarce productive resources that could have alternative uses to produce various commodities over time and distributing them for consumption, now or in the future, among various persons or groups in society. It analyses costs and benefits of improving patterns of resource allocation“[10]. Mankiw defines it similarly saying that: „Economics is the study of how society manages, or allocates, its scarce resources“ [8]. The definition by Frank and Bernake also respects the consequences of a certain economic behavior on society. The definition states that: „Economic is the study of how people make choices under conditions of scarcity and of the results of those choices for society“ [3].

The definition of economic thinking is based on the previous definitions. In Czech it is necessary to distinguish two meanings of the term economic thought. One covers the opinions of the current economic experts or schools of economics. Another one explains economic thinking as a way of looking at and analyzing the way the world works by comparing the costs of an action with the benefits generated as well the way of specific thinking of individuals, households, businesses and national economies. For this project,

it is important to consider both directions of economic thinking. Both meanings of the term economic thinking will be used throughout the project.

4. Changes in postmodern economic thinking

If economics is a science of efficient allocation of scarce resources among alternative uses and it also explores the implications of this allocation for the society, it can be expected that economics will be affected by the current wave of postmodernism. According to Jelinek [6], postmodern influence on cognition has the following consequences: (a) All current explanations of reality are viewed as mere interpretations that are useful but not objectively true. (b) People cannot go beyond their own interpretations of reality. (c) Our theories and statements cannot be measured by comparing to an unbiased outside world. On the contrary, our various theories create different worlds that we inhabit.

For modernism, a unique and structured view of the world was typical. Everything had its scientific, well-founded rules. Thanks to this, spontaneity and creativity were often repressed. Modernism does not suppose that the economic behavior may be other than in agreement with rational economic models. Traditional economists say that every human decision is rational and people know how to estimate the value of all goods and quite pragmatically they will realize what can bring them bigger profit. People try to maximize their profit and optimize their costs.

But postmodern society is slightly different. People are liable to irrational influences. These influences are coming from people's surroundings - from emotions, feelings and other sources. People are more likely focusing on short-sighted decisions rather than on longtime plans.

Conclusion

Postmodernism represents a fundamental change in the behavior of contemporary society. It affects all fields of human activities, including science. Different researches deal with postmodernism within the scientific community. However, these studies are primarily in the field of arts. In the field of economic science, there are studies that deal with changes in society in general, but these changes are monitored in isolation and within the context of the persistent economic thoughts. In the case of postmodern

influence over the economics, there is a lack of quality monographs or scientific papers that would deal with this issue with a broader perspective.

Future research importance lies in extending the general knowledge about penetration of postmodernism into the economics and its impact on society and economic thinking. With a basic definition of the influence of postmodernism over the economic thinking, it would be possible to work with the new reality in the future.

References:

- [1] BAUMAN, Z. *Úvahy o postmoderní době*. 2. vyd. Praha: Sociologické nakladatelství, 2002, 165 s. POST, s. 1. ISBN 80-864-2911-3
- [2] BECK, U. *Riziková společnost: na cestě k jiné moderně*. 2. vyd. Praha: Sociologické nakladatelství, 2011, 431 s. POST, 9. s. ISBN 978-807-4190-476
- [3] FRANK, R., H. *Ekonomie*. 1. vyd. Praha: Grada, 2003, 803 s. Profesionál. ISBN 80-247-0471-4
- [4] GIDDENS, A. *Unikající svět: jak globalizace mění náš život*. 1. vyd. Praha: Sociologické nakladatelství, 2000, 135 s. POST, s. 4. ISBN 80-858-5091-5
- [5] GRENZ, S., J. *Úvod do postmodernismu: jak globalizace mění náš život*. 1. vyd. Překlad Alena Koželuhová. Praha: Návrat domů, 1997, 199 s. POST, s. 4. ISBN 80-854-9574-0
- [6] JELÍNEK, O. *Věda kontra iracionalita 2: Postmodernismus a exaktní vědy*. 1. vyd. Praha: Academia, 2002. ISBN 80-200-1020-3
- [7] JOCHMAN, V. *The individual and society at the turn of the century: view from both sides*. Palacký University Olomouc, Philosophical Faculty Olomouc, Czech Republic September 3-5, 1998. Olomouc: Palacký University, 1998. ISBN 80-7067-923-9
- [8] MANKIW, G., N. *Zásady ekonomie*. 1. vyd. Praha: Grada, 1999, 763 s. ISBN 80-716-9891-1

- [9] POSPÍŠIL, J. *New Economics Challenges* : 2nd International PhD Students Conference. 1st edition. Brno: Masaryk University, 2010. Post-modern marketing and marketing communications, s. 380-385. ISBN 978-80-210-5111-9
- [10] SAMUELSON, P., A. *Ekonomie*. 1. vyd. Praha: Svoboda, 1991, xl, 1011 s. ISBN 80-205-0192-4
- [11] TOFFLER, A. *Nová civilizace: Třetí vlna a její důsledky*. 1. vyd. Praha: Dokořán, 2001, 125 s. ISBN 80-865-6900-4
- [12] ZIELINA, M., POKORNÁ, D., KAINZOVÁ, V. *Veřejná správa jako jeden z aktérů regionálního trvale udržitelného rozvoje podle konceptu Triple Helix*. In: *Mění se společnost?*. 1. vyd. Praha: Filozofická fakulta Univerzity Karlovy, 2012, s. 28-43. ISBN 978-80-7308-442-4

SUDETES – CROSS-BORDER REGION?

Jacek Potocki, Marian Kachniarz, Zbigniew Piepiora

University of Economics Wrocław

potocki@ae.jgora.pl, marian.kachniarz@ue.wroc.pl, nayer@wp.pl

Key words:

Sudetes – Polish-Czech borderland – transport – cross-border relations

Abstract:

The first aim of the article is to present the changing, from a dawn of time, cross-border functions of the Sudetes region. The second aim is to present changes which occur in the booming Central European cooperation within the confines of the European Union integration. Authors, on the background of the broad historical background, try to answer the question what is the role of Sudetes in the Polish-Czech cooperation. Conducted research suggests the conclusion that the Sudetes, despite the elimination of administrative barriers, continue to perform the function of the contact region which is marked by the discontinuity in space and infrastructure.

1. Introduction

Functions of border regions, in the rapidly changing spatial conditions, undergo significant transformations. It is a result of processes of the European integration, abolishing traditional administrative barriers in crossing borders. This situation produces a wide field to study changes in relationships and socio-economic links which are being developed in these areas.

Position of the Sudetes between two historical lands – Silesia and Bohemia since a dawn of time, influenced their cross-border functions. These functions, depending on circumstances, underwent considerable changes. The Sudetes, either bound economically, culturally and socially both these areas, approaching the function of the cross-border area. At other times were rather a barrier to the diffusion of all kinds, gaining functionality, rather, of the contact region which separated and not linked adjacent socioeconomic systems.

The first aim of the article is to present the changing, from a dawn of time, cross-border functions of the Sudetes region. The second aim is to present changes which occur in the booming Central European cooperation within the confines of the European Union integration. In the latter case, authors try to answer the question what is the role of Sudetes in the Polish-Czech cooperation. Are the Sudetes a region which is supporting the development of socio-economic links, or, on the contrary, they are a barrier which reduces mentioned links.

The region which is associated with the state border can be generally defined as border. Depending on the location relative to the border and the level of its formalization, it can be distinguished several categories of border regions. The criterion of the position constitutes border and frontier regions. The literature (e.g. [6], [3], [1], [10]) is dominated by point of view that the border region is adjacent to the state border, and is situated on one of its side. On the other hand, the frontier region is the area which is cut by the state border however, according to certain criteria, can be considered as a coherent integrity.

In such approach, as an example of the border region, it can be indicated the unit of the administration subdivision which functions within a particular country and it lies at the state border. On the other hand, an example of the frontier region may be the unit which is designated as part of the geophysical regionalization and it is located within more than one state. Therefore, the Sudetes – as an mountain range which is located in the area of Poland, the Czech Republic and the Federal Republic of Germany – are the typical, frontier region.

The cross-border region is the specific case of the frontier region. Z. Przybyła [6] defined it as “the territorial socio-economic system which is the manifestation of the elimination or the low level of formalization of the state border”. M. Więckowski [10] emphasized the importance of real cross-border links as a factor which constitutes the cross-border region. Such links are described as “regional relationships which cross the border” and contacts between authorities, institutions and people from two or more bordering states and transport links were included to them. He stated also that these links determine the spatial extent of the cross-border region.

The strength of cross-border relations may change with time. In the situation of the development of these relations, the cross-border of the region is amplified. Generally it

is a consequence of the reduction of the formalization of the border by the removal of barriers to cross-border flows. However, even the complete abolition of the border does not automatically result in the integration of the territories which are situated on both sides of the border. Z. Rykiel [7] defined as “contact regions”, regions which are located at the state border, which, indeed, has been abolished, but it still marks in the socio-economic structure.

2. The evolution of the cross-border function of the Sudetes

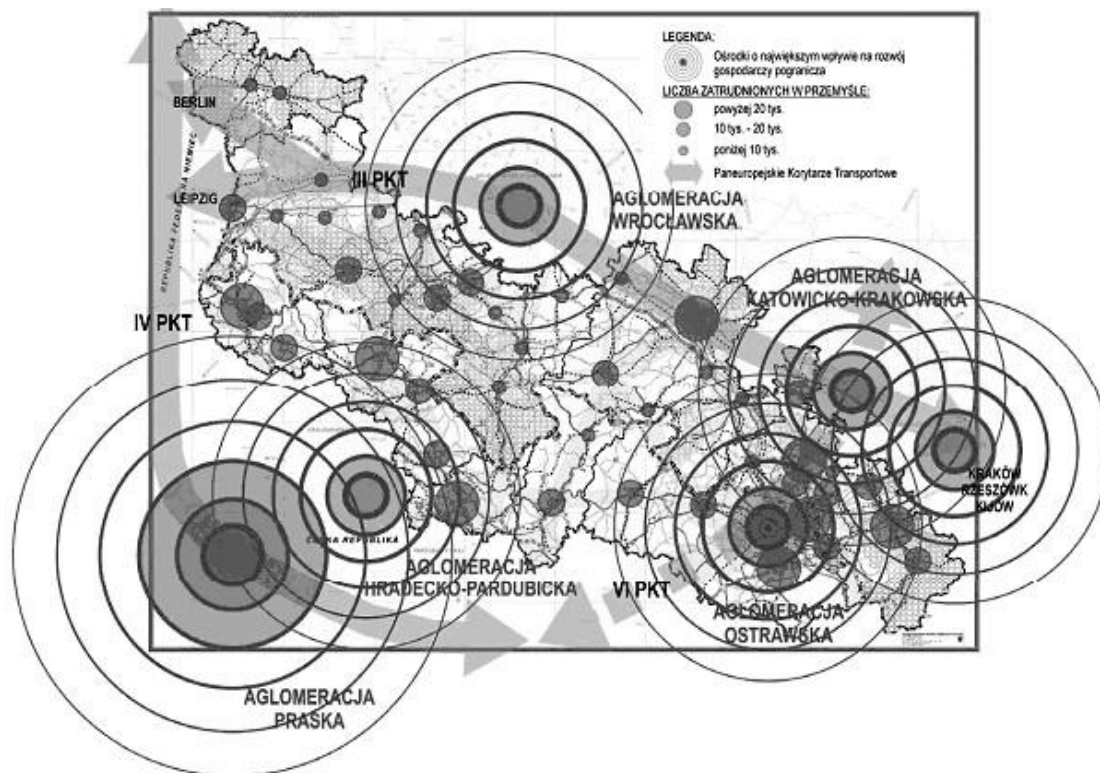
Political and economic transformation in Central Europe, has considerably changed the situation of the border between Silesia and the Czech Republic. Polish and the Czech Republic 's accession, first, to the European Union and, then, to the Schengen Area, abolished political and institutional reasons which determined the poor diffusion between these two areas. At the same time, after the problems connected with the transformation, both areas have entered a phase of dynamic growth. Both Polish western regions and northern and central Bohemia primarily developed to the co-operative links with the largest European economy – Germany. The main stream of the trade has also been directed towards developed countries in the European Union. It imbued parallel to the mountain range of the Sudetes, the latitudinal system of the trade flow between the two countries. Thus, in the late 90s, priority, for both Poland and the Czech Republic has become the construction of high class of linkages with Germany and the European transport system. Therefore, it did not change the logic of the pre-World-War-II plans and locations.

Meanwhile, after the accession of Central European countries to the European Union, the cooperative cooperation and the trade within the group began to rapidly increase. In particular, it became apparent between Poland and the Czech Republic. Analysis of the geographical structure of western Polish exports, conducted in a dynamic approach, leads to the conclusion that the share of Germany in exports is decreasing. In Lower Silesia and Opole provinces¹, has nearly doubled the role of the Czech Republic which is for them the second trade partner. Poland is the third partner for the Czechs, both in terms of exports (after Germany and Slovakia) and imports (after Germany and China).

¹ Province (voivodeship) – it is the level 2 in the Nomenclature of Units for Territorial Statistics (NUTS).

It especially concerns electromechanical and electronic industries which, as a result of the inflow of foreign direct investments, have evolved primarily in western Poland and in the Czech Republic [2: 49]. The trade between these two countries has increased in the first decade of the twentieth century up to four times. In recent years, despite the crisis, it increases by about 30% per year [4: 3]. A typical example of the Polish-Czech co-operation system are factories of Toyota and other manufacturers of automotive components. Engines and gearboxes are produced in Toyota plants in Walbrzych. Then, they are assembled in a common plant of Toyota and French PSA in Kolin in the Czech Republic.

FIG. 1: The economic potential of Silesia and northern Czech Republic on the background cross-European transport corridors.



Source: *Studium zagospodarowania przestrzennego pogranicza polsko-czeskiego*, Ministerstwo Budownictwa RP, Ministerstwo pro Místní Rozvoj CR, Warszawa-Wrocław-Praga 2006

Despite these economic transformations, the communication system between western Poland and the Czech Republic has not changed and, as before, it shows characteristics of the gravity to a latitudinal form. No investment, which would alter in any way the

system, has not been implemented in the entire length of the Sudetes – from the Zittau Valley to the Moravian Gate.

Tonnage limits, applicable to cross-border routes cause that for cargo traffic and transit, in the entire length of the border in the Sudetes, nothing has changed. Everlastingly, routes on which traffic of lorries weighing over 12 tons is allowed, remained roads leading through former border crossings Kudowa Słone/Nachod and Jakuszyce/Harrachov. What's the meaning of keeping the transit traffic through Jakuszyce – the highest in Poland located section of the road. The road in this point reaches a height of 880 meters over the sea level, passing through most snow areas of Poland (Fig. 2). To overcome the route, lorries have to pass through the tourist center of Szklarska Poręba and Harrachov and steep and narrow winding roads before Jakuszyce and in Kořenov.

FIG. 2: The Cross-border road E65 in Jakuszyce (880 m a.s.l.) in the winter



Source: phototrans.pl/images/photos/original/573/536721.jpg [downloaded 12.07.2012]

Winding mountainous sections of roads are burdensome for the transit traffic, significantly slowing down the movement of vehicles. Terrain and climatic conditions cause, especially in the winter, a lot of difficulties. As a result, many companies which have had to co-operate on a just-in-time way has been forced to invest in an unplanned pre-storage areas². Difficulties in the continuity of supplies, especially in the winter, cause stopping the production, even in large companies like Škoda factory³.

The spatial discontinuity of infrastructure which can be seen in the Sudetes inhibits the creation of a kind of a platform linking the two main axes of development of neighboring countries which are characterized by the latitudinal, aiming at Germany, orientation. Otherwise, we are only threatened by the dependence of the latitudinal direction of economic gravity (Fig. 3). Meanwhile, investments of this kind, both in Poland and the Czech Republic are not seen as a priority. It seems that there is a lack of vision and adequate overtaking reaction to the Central European trends. Many policymakers who are accustomed to the present gravity system, do not see the legitimacy of considering perspective and potential development axes.

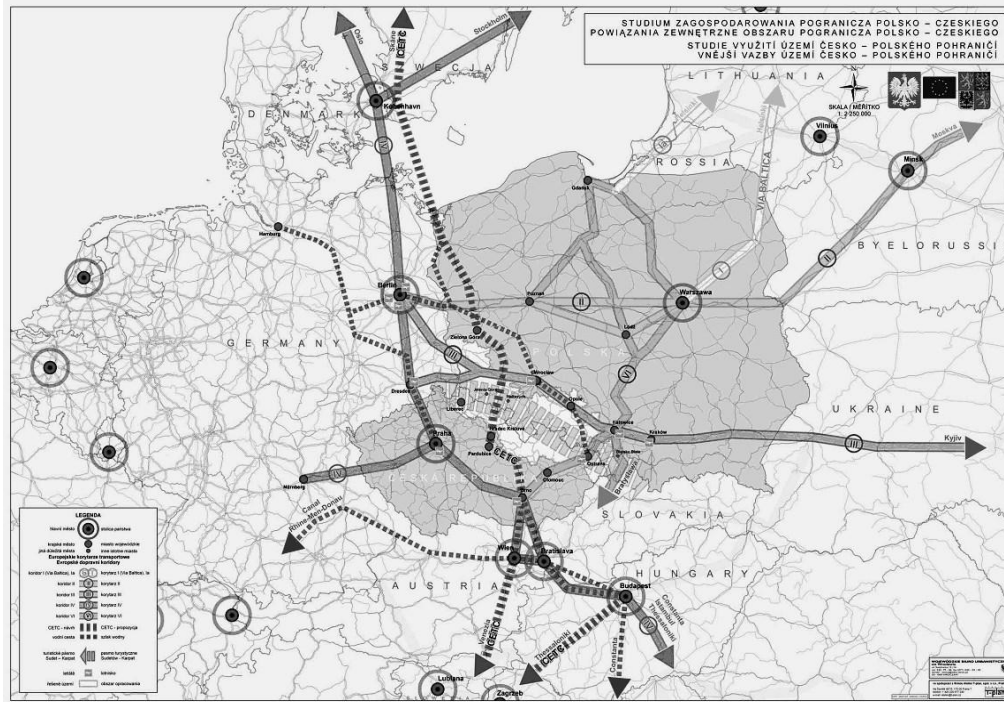
An example of struggling of such a point of view is the story of the cross-Sudetes section of the expressway S3/R11. Its implementation has already been repeatedly displaced in time. The reason of mentioned situation is a little traffic on the examined road. Indeed, when we look at the traffic stream across the border in Lubawka, it amounted approximately 3.5 thousand vehicles per day in 2011⁴. It is worth to remember that; firstly, there is the tonnage limit (up to 12 t), and secondly, there is currently the narrow and winding driveway (both Polish and Czech side). Currently, the mountainous barrier distil the traffic on many alternative routes, including its complete avoidance which is connected with the cost of significant detours.

² Examples of such development related primarily to companies in the automotive industry such as Japanese Takata Petri Parts in Krzeszów and Nova Paka.

³ For example, in Mlada Boleslav on February and March of the 2011, by four days car production has been stopped due to lack of part's supplies from Polish suppliers which reduced the production of 3200 cars.

⁴ *Średni dobowy ruch pojazdów silnikowych na sieci dróg krajowych w 2010 r.*, GDDKiA, Warszawa 2011

FIG. 3: The axis of the expressway S3 on the background of development axes of the Central Europe.



Source: *Studium zagospodarowania przestrzennego pogranicza polsko-czeskiego*, Ministerstwo Budownictwa RP, Ministerstwo pro Mistni Rozvoj CR, Warszawa-Wrocław-Praga 2006

Creating the convenient transport corridor will not only aggregate the traffic from current border crossing points in the Sudetes, but it also will move some traffic streams from routes which detour the mountainous area. The effect of absorbing the traffic from other directions is not calculated in analyzes presented by the General Directorate for National Roads and Highways⁵ on the basis of its current intensity on a particular route. It is confirmed by results of authors' research.

Assuming only that the new transport corridor will focus on 50% traffic of the adjacent border crossing points (Jakuszyce, Golińsk and Kudowa-Słone) and 20% of other routes located in the Sudetes, we obtain the number of 11 222 vehicles per day. It equates the potential traffic stream with its present intensity at Poland's largest cross-border routes in Jędrzychowice (approx. 13 thousand vehicles per day) and Cieszyn (approx. 12 thousand vehicles per day). The addition of 5% traffic of border crossing points which detour the Sudetes creates the new, even higher number – 12 677 vehicles per day.

⁵ Generalna Dyrekcja Dróg Krajowych i Autostrad (GDDKiA).

Conducted calculations clearly suggest that creating the cross-Sudetes road corridor in the standard of the expressway will concentrate the traffic stream to numbers that completely motivate the mentioned investment. The traffic congestion would not be lower than traffic congestions which are traced in other sections of the Polish road No. 3 (E65) (e.g. sections Legnica – Lubin or Zielona Góra – Gorzów Wielkopolski) and are higher than, for example, on the route Wrocław-Poznań. Results of the conducted calculation completely change the image of a potential traffic stream what can be expected in the mentioned section of the road. It would be worth, if the Polish General Directorate for National Roads and Motorways included these results in their analyzes. Therefore, it is rightly noted that delaying the construction of the expressway S3 from Legnica to Lubawka, and the consequent lack of the decision concerning on the construction of the expressway from Wrocław to Boboszków, and next to Brno and Vienna, eliminate the development of the economic cooperation between western Poland with the Czech Republic and the Republic of Austria (Mogiła and others 2011), and also force the area of the Sudetes to playing the role of the border region – which de facto separates two economic areas.

3. Conclusion

The cross-border role of the Sudetes underwent, over centuries, fairly radical changes. The function of the area which separated Silesia and Bohemia in early Middle Ages, was replaced in later centuries by the function of the region which associated economically both territories. The degradation of the role and return to the function of the barrier which was strictly separating two economic areas, took place after 1945. The condition of the infrastructure which facilitate these linkages, not only did not follow the development of the civilization, but, further, degraded. The image of the former border station in Lubawka is the sad symbol of this.

In recent years, as a result of the integration both of Poland and the Czech Republic with the European Union, the economic linkages has been intensified. In first 10 years of the 21th century, the mutual trade of mentioned countries and their relations with Germany increased several times. Hence, the priority direction of developing the infrastructure, both in Poland and the Czech Republic, was the latitudinal system, aimed primarily at Germany. Unfortunately, at the same time, the focus on the modernization

and construction of new connections Polish-Czech only in the region of Silesia occurred. The entire area of the Sudetes was devoid of such projects.

As a result of the Schengen Agreement, formal barriers in crossing boundaries disappeared – therefore, directions of cross-border flows are dependent, first of all, on the quality and the condition of the infrastructure. Omission of the Sudetes in plans of the modernization and the expansion of the infrastructure causes that they are still a major barrier to cooperation. Therefore, they are playing the important role of the border region which inhibits the development of economic linkages between the Czech Republic and western Poland. No initiatives changing the examined area to the cross-border region - binding two adjacent areas, precludes the creation of a more sustainable cooperation zone in this part of Europe. The orientation of both countries, only on the relationship with Germany, with the lack of the supporting infrastructure of the developing latitudinal cooperation, do not use the possibility of increasing the competitiveness of countries which are neighboring through the Sudetes.

References:

- [1] BORYS, T. 1999: *Obszary transgraniczne w statystyce regionalnej*, GUS, Warszawa.
- [2] *Czesko-polska wymiana handlowa w 2010 r. 2011*: Ambasada RP w Pradze, Praha.
- [3] HEFFNER, K. 1998: *Kluczowe problemy demograficzno-osadnicze obszarów przygranicznych Polska-Czechy*, Instytut Śląski, Opole.
- [4] MOGIŁA, Z., ZALEWSKI, J., ZATHEY, M. 2011, *Wykorzystanie przygranicznego położenia terenów znajdujących się w zachodniej części Polski dla rozwoju społeczno-gospodarczego*, ekspertyza dla MRR, Wrocław.
- [5] *Politika uzemniho rozvoje CR 2008, Ustav pro mistniho rozvoje*, Brno 2009.
- [6] PRZYBYŁA, Z. 1995: *Problemy współpracy ekonomicznej regionów przygranicznych (na przykładzie euroregionu Nysa)*, *Prace Naukowe Akademii Ekonomicznej we Wrocławiu nr 708*.

- [7] RYKIEL, Z. 1991: *Rozwój regionów stykowych w teorii i badaniach empirycznych*, Ossolineum, Wrocław.
- [8] *Studium zagospodarowania przestrzennego pogranicza polsko-czeskiego*, Ministerstwo Budownictwa RP, Ministerstwo pro Mistni Rozvoj CR, Warszawa-Wrocław-Praha 2006
- [9] *Średni dobowy ruch pojazdów silnikowych na sieci dróg krajowych w 2010 r.*, GDDKiA, Warszawa 2011.
- [10] WIĘCKOWSKI, M. 2004: Przyrodnicze uwarunkowania kształtowania się polsko-słowackich więzi transgranicznych, *Prace Geograficzne 195*, IGiPZ PAN, Warszawa.

INFLUENCE OF AN ECONOMIC CRISIS ON FUNCTIONING OF SPECIAL ECONOMIC ZONES IN THE LOWER SILESIA

Katarzyna Przybyła

University of Natural Science in Wrocław

katarzyna.przybyła@up.wroc.pl

Key words:

the special economic zone – an economic crisis

Abstract:

An attempt to determine the influence of an economic crisis on effects of functioning of special economic zones (SSE) is the purpose of this article. The examination was carried out for three SSE, which seats are localized on the area of the Lower Silesia province. In the article changes of data were analyzed e.g.: number of valid licenses for conducting activities in zones, investment expenses incurred by entrepreneurs or the size of employment.

Introduction

Initiated in 2007 with crack of the speculative bubble on the market of the fixed property in the USA, and deepened with collapse of a Lehmann Brothers investment bank in 2008 global economic crisis is often judged as the deepest recession of the world economy since the time of the Great Crisis from the 20th century.

Amongst causes of the riot of disturbances in world financial markets, both phenomena about macroeconomic, as well as microeconomic character are being mentioned. Global no balances and problems growing during the last decade which were a result of the long-term persistence of real interest rates on the low level can be the example of the first phenomena mentioned. Amongst premises of more microeconomic character, it is possible to enlist causes connected with functioning of the bank system and financial aspects of functioning of all sorts of subjects (among others the imperfect structure of incentives preferring short-term goals and results of the sale, while neglecting the assessment and mistakes of the measurement of the risk relating to product) [1, p.4-7].

Situation of the Polish economy, on the background of both countries of the euro zone and countries of our region, is looking comparatively favorably. Critical phenomena, which reached Poland with the certain delay, in initial phase were not accompany with violent adaptation of market mechanisms, both in the section of enterprises as well as households [2, p. 4]. However one can say objectively that the processes of the economic development have been slowing down, and the good example of it can be dynamics of changes GDP (tbl. 1)

TAB. 1: Real dynamics of the GDP, not-leveled seasonally (analogous period of the previous year = 100, average prices of the previous year)

year	2005	2006	2007	2008	2009	2010	2011	2012
PKB	103.6	106.2	106.8	105.1	101.7	103.8	104.5	101.9

Source: Own study based on: [3, p.68], [4, p. 64]

The purpose of this article is an attempt to determine the influence of economic crisis on effects of functioning of special economic zones in Poland (SSE). They are acting on the basis of the act on special economic zones from 20th October 1994 with later changes (Journal of Laws from 2007 No. 42, pos. 274), and their main purpose is precipitating the economic development of some part of the country. The examination was carried out for three SSE, which seats are localized in the area of the Lower Silesia province; these are a Special Economic Zone of the Low Enterprise in Kamienna Gora (KSSE), Wałbrzych Special Economic Zone 'INVEST-PARK' (WSSE) and Legnica Special Economic Zone (LSSE).

1. Effects of SSE functioning in conditions of an economic crisis

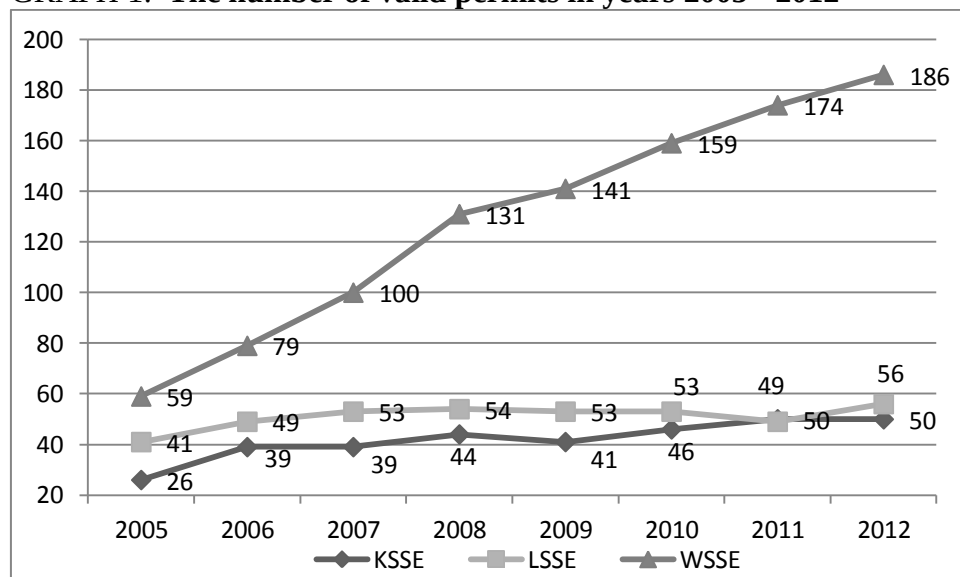
The condition of running a business on SSE area, and receiving the public aid, is having the permission. After asking for opinion of zone manager, the minister of economy is responsible for issuing those permits. It determines among others the object of the business activity and conditions of the required size of employment and value of investment¹.

Analysis of the number of valid permits (graph 1) and numbers of permits issued in following years (graph 2) lets state, that the first symptoms of the decline of the

¹ See also. art. 16, J.of L. from 2007 Nr 42, pos. 274

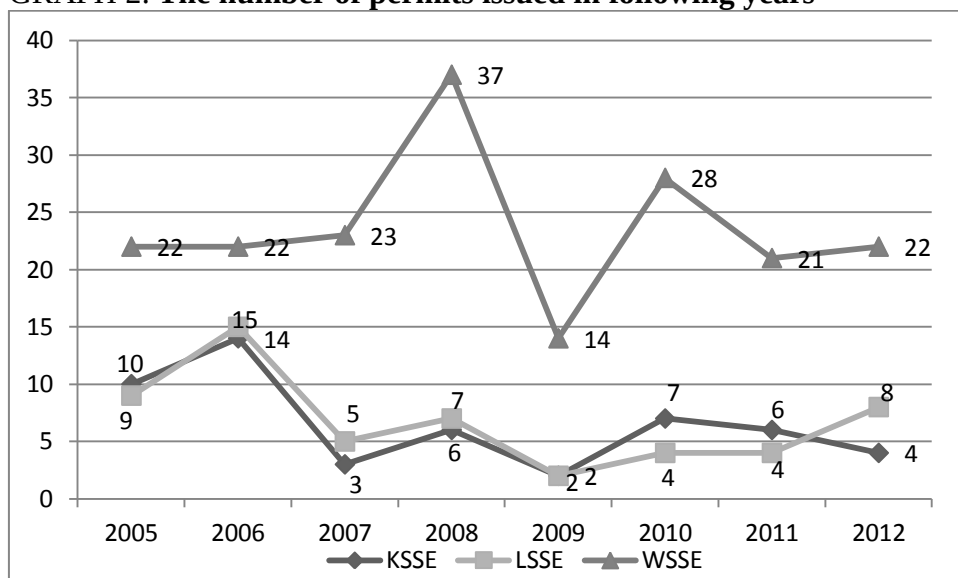
economic situation in zones was possible to observe at the end of 2007. It concerns especially two smaller zones - LSSE and the KSSE. After stabilizing and the slight improvement in 2008, the year 2009 turned out to be the critical. In WSSE number of valid permits slightly grew, at the same time in comparison with previous periods the number of permits issued in 2009 was definitely reduced. In LSSE and KSSE both the amount of counted in cumulative terms as well as issued permits in 2009 was reduced. In 2010 appeared in zones certain indications of the improvement- in KSSE number of valid permits grew with 5, and in WSSE with 18. Years 2011-2012 is a time of further stabilization of the situation in zones.

GRAPH 1: The number of valid permits in years 2005 - 2012



Source: Own study based on: [5, p. 14], [6, p.10], [7, p. 9]

GRAPH 2: The number of permits issued in following years



Source: Own study based on: [5, p. 14], [6, p.10], [7, p. 9]

Investment expenses measured with face values carried by entrepreneurs, who situated their companies in the SSE area, systematically expanded. Analysis of real investment expenses (tbl. 2), taking the size of the inflation in Poland ², into consideration, enables to make the similar observation. However checking the dynamism of this number let us notice that years 2008-2012 were clearly worse for all zones (graph 3). In 2008 investments grew significantly more slowly than in previous years, this phenomenon deepened in 2009. Certain symptoms of the improvement in the situation were possible to observe in the last examined period.

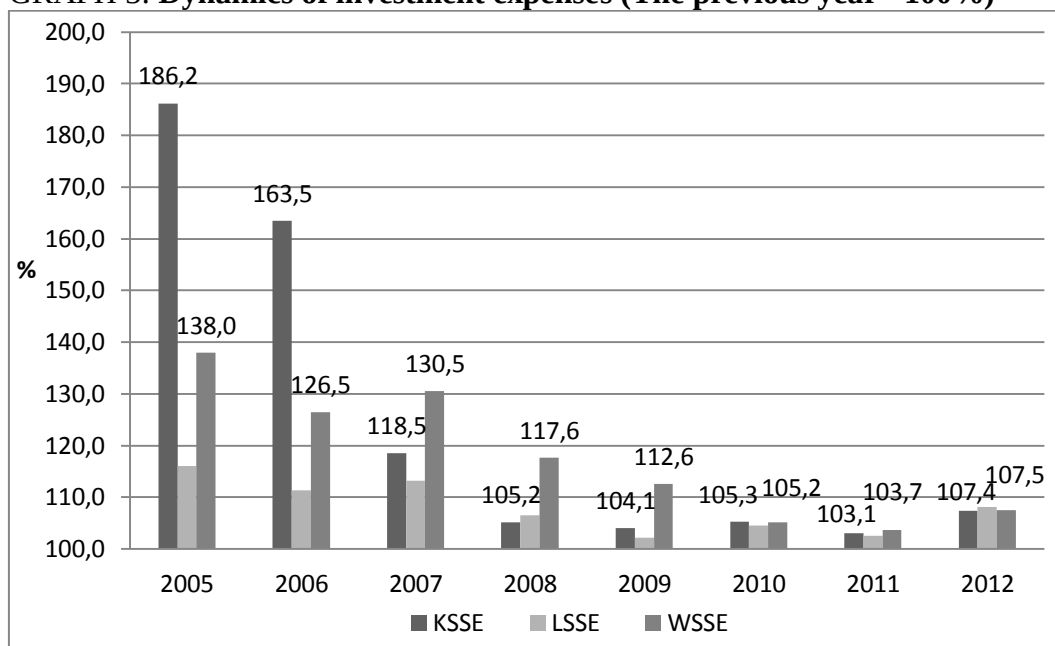
TAB. 2: Incurred investment expenses in real in c. p. from 2004 (m. zloty)

YEAR / SSE	2005	2006	2007	2008	2009	2010	2011	2012
KSSE	593.54	970.51	1150.44	1210.2	1259.9	1326.21	1366.71	1467.28
LSSE	2723.31	3031	3430.21	3653.59	3734.96	3906.39	4007.83	4335.03
WSSE	4501.96	5694.38	7431.67	8740.55	9842.51	10350.3	10734.82	11540.98

Source: Own study based on: [5, p. 14], [6, p.10],[7, p.11]

² Main Statistical Office data on the inflation in Poland: 2005 - 2,1%, 2006 – 1%, 2007 – 2,5%, 2008 – 4,2%, 2009– 3,5%, 2010 – 2,6%, 2011 - 4,3%, 2012 - 3,7%

GRAPH 3: Dynamics of investment expenses (The previous year =100%)



Source: Own study

As it was mentioned in the introduction, the main aim of creating and functioning of SSE is precipitating the economic development of chosen area in the country. In art. 3, point 6 of the acts on SSE the legislator determined that this purpose can be achieved for example by creating new jobs.

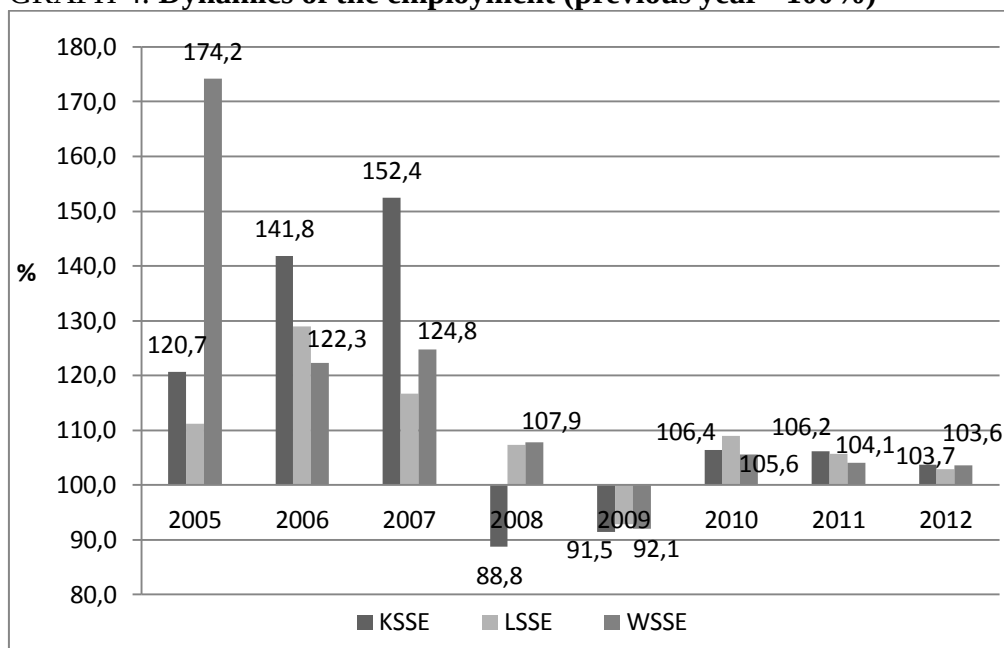
Analysis of the size of the generated employment in years 2005- 2012 by SSE (tbl. 3) and dynamics of changes of these numbers (graph 4) allows to state that after 2007 the situation in this field worsened in all explored zones. It is distinct peculiarly in the case of KSSE, where in 2008 the size of the employment was already by the 11.2% lower than the year earlier. In LSSE and WSSE in 2008 the increase in the employment slowed down. 2009 was a critical period in all zones, the number of working fell below the level from 2008 and 2007 year. Certain symptoms of the improvement in the situation were possible to be monitored in years 2010 - 2012, however the dynamism of the increase of the examined number was relatively low

TAB. 3: The state of employment in general (growing) in years 2005 - 2012

SSE/year	2005	2006	2007	2008	2009	2010	2011	2012
KSSE	2329	3302	5033	4469	4087	4349	4618	4790
LSSE	5385	6945	8104	8698	8079	8803	9300	9565
WSSE	18789	22980	28673	30924	28473	30057	31276	32392

Source: Own study based on: [5, s. 14], [6, s.10], [7, s. 14]

GRAPH 4: Dynamics of the employment (previous year =100%)



Source: Own study

2. Summary

It seems, that the fact that in SSE deposit mainly enterprises of foreign capital ³, it was inevitable to move the effects of an world economic crisis to Poland

Phenomena tied together with the global slump turned up in explored zones with the certain delay - more serious symptoms were possible to be monitored in 2008, and the critical year turned out to be 2009. The last examined years brought certain indications of improvements in the situation. At the same time it is possible to notice that WSSE, KSSE and LSSE turned out to be immune, in different degree, to negative effects of the crisis. It can be connected with the size of individual zones, the level of their development and with the owned infrastructure. The crucial factors seem to be also engagement and creativity of local authority connected with individual subzones and SSE boards of directors.

³. According to the *Information about the realization of act on special economic zones*, 31 December 2012 r, the share of Polish capital invested in zones in Poland was 18.8 % what equaled the 16 115.9 m. zloty of investment

References:

- [1] *Polska wobec światowego kryzysu gospodarczego*, Narodowy Bank Polski, Warszawa 2009, [online],
www.nbp.pl/.../polska_wobec_swiatowego_kryzysu_gospodarczego_2009.pdf
- [2] *Analiza sytuacji gospodarczej Polski w 2010 r.*, Ministerstwo Gospodarki, Departament Analiz i Prognoz, Warszawa 2011, [online],
www.mg.gov.pl/.../4q2010_pl_ostat.pdf
- [3] *Informacja o sytuacji społeczno -gospodarczej kraju (luty 2011)*, Główny Urząd Statystyczny, Warszawa 2011
- [4] *Informacja o sytuacji społeczno-gospodarczej kraju w sierpniu 2013 r.*, Główny Urząd Statystyczny, Warszawa 2013
- [5] *Informacja o realizacji ustawy o specjalnych strefach ekonomicznych, stan na 31 grudnia 2007 r.*, Ministerstwo Gospodarki, Warszawa 2008
- [6] *Informacja o realizacji ustawy o specjalnych strefach ekonomicznych, stan na 31 grudnia 2009 r.*, Ministerstwo Gospodarki, Warszawa 2010
- [7] *Informacja o realizacji ustawy o specjalnych strefach ekonomicznych, stan na 31 grudnia 2012 r.*, Ministerstwo Gospodarki, Warszawa 2013

TRANSFORMATION OF THE ECONOMIC BASE OF A TOWN - THE CASE STUDY OF JELENIA GORA

Zbigniew Przybyła, Katarzyna Przybyła

Wrocław University of Economics, Wrocław University of Environmental and Life
Science

Zbigniew.Przybyła@ue.wroc.pl, katarzyna.przybyła@up.wroc.pl

Key words:

economic base of a town – town's functions – functional transformations

Abstract:

The aim of this article is to identify the specialized (town creating, exogenous) functions of Jelenia Góra as well as the analyses of transformations of functional structure of the town. The research over the size, structure and changes in employment were carried out. This research was done on the base of the theory of the economic base of a town, with the help of the two measures – the indicator of the surplus of the employees (WNP) and the Florence's specialization index (WSF).

Introduction

Jelenia Góra is a town situated in the south-west part of Poland in Lower Silesia. In 2012 Jelenia Góra had 109 km² and 82846 inhabitants. According to the accepted classification Jelenia Góra belongs to the category of medium-sized towns. It is worth remembering that till the middle of 1975 Jelenia Góra was the borough then it got the status of the provincial capital which was lost due to the administration reform in 1998. Nowadays it is a seat of both boroughs: municipal and terrestrial. It is classified, according to the terminology of Territorial Units to Statistical Purposes (NTS) on the NTS 4 level. The purpose of this article is an identification of special functions and analysis of transformations in the functional structure of the city. It is worth remembering that the described examination is a continuation of earlier discussions¹, some of them presented during Hradec Economic Day.

¹ see: Przybyła K. *Poziom warunków życia w Jeleniej Górze w świetle przekształceń bazy ekonomicznej miasta*, Gospodarka przestrzenna VII, Wyd. KGP AE we Wrocławiu, Jelenia Góra 2004 [1], Przybyła K. *Przemiany w strukturze funkcjonalnej Jeleniej Góry w latach 1999 - 2002*, Prace Naukowe

1. The method used in research

As it was mentioned before, this research was based on the theory of economic base. It is one of the becoming more and more popular conception explaining the developmental processes taking place on both regional and local scale. Its basic assumption is making links between the development of an area and the export (it means the activity which aims at satisfying the needs of inhabitants of other e.g. national or foreign territorial units). The most important element stimulating the growth in the economy is, according to this conception, the outside demand for goods or services generated in given area. Companies and economic sectors producing for export form the so-called economic base of the region and also an economic base of a town. The development of this base guarantees multiplying effects in form of development of similar sectors, subcontractors and the market of local and regional services [4, p. 26].

According to the theory, it is possible to divide employed people into two groups: the endogenous group, made up from people working to satisfy the needs of this town and its inhabitants and the exogenous one, into which we classify all those workers who labour to satisfy the needs of inhabitants of other areas.

Such a division of people employed in the city allows to distinguish two basic groups of city functions:

- endogenous function: which is fulfilled by these departments of the economy of the city which serve the local population mainly and which make the city attractive for its own inhabitants,

- exogenous function (town-creating, specialized): which is fulfilled by these departments of the economy of the city which serve not only the local population but first of all of the population inhabiting outside areas, these departments constitute the economic base of a city, their development leads to the fast increase of endogenic activities and as a result, to the development of the city [5, p. 64].

In this article two applied methods of the measurement of the economic base of the city were presented - indicator of the surplus of workers (WNP) and rate of the Florence specialization (WSF), comprehensively discussed at earlier works [1, 2, 3].

Akademii Ekonomicznej im. O. Langego we Wrocławiu, *Gospodarka lokalna i regionalna w teorii i praktyce*, Nr 1083, Wrocław 2005 [2], Przybyła Z., Przybyła K. *The transformations in the functional structure of Jelenia Góra*, Hradec Economic Days 2011, Economic Development and Management of Regions, part II, University of Hradec Kralove, Hradec Kralove 2011[3]

One should notice that in the period from 1989 till 2011 systems (ways of classification) and collecting data about the size of the employment in the economy changed several times. Among others in 2008 a government order came into effect, on the base of regulation of the Council of Ministers PKD 2007 (Journal of Laws Nr 251, pos. 1885), replacing PKD 2004 so far being in effect. These changes cause the partial lack of the direct comparability of data at often unchanged names of classification levels. So in the examination carried out it was essential to exploit the expert wisdom.

2. Transforming functional structures of the city

After the II World War, until 1980, an industrial function kept the dominating role in the functional structure of Jelenia Gora. However, it is worthwhile noticing that the importance of this function was slowly reduced, giving up its seat to immaterial services, particularly tourism and spa. A relative increase in the significance of the farming followed [6]. Till 1990 mentioned above tendencies were present, the industry kept dominated significance in the economy (measured with the employment in individual cannon of the national economy), even if its significance was steadily falling down (in 1985 - 34.8%, in 1990 - 27% of all employed people). One can say that the presence of employment in sectors such as physical education, tourism and holiday-making could be positively distinguished in comparison with the employment in Poland. It let into the assumption that the significance of tourism-spa services has been growing. The analyses of data from years 1999-2002 indicates that the most important part in city life played industry-what is more-its significance for the market increased in this period. Of big importance were always the following branches: education, health protection and social care, sale and repairs-each of them over 10% of all working people [2, p. 416-417]. At the same time the values for the year 1999 WSF shows that the only sector of economic activity with the endemic character was section sales and repairs-which leads us into assumption that even if it was of great importance for the life of a city it was however underdeveloped in comparison with the whole country. All the other sections of economy had the value $WSF > 1$, it makes us conclude that they had the exogenous function. In a specific way two spheres: health protection and social care and also financial mediation were distinctive [2, p. 419]. In their case one could say about the high level of specialization in comparison with the rest of the country.

In 2003 Jelenia Gora was a polifunctional center with the dominant significance of services. The WSF values counted for the industry and services sectors showed their specialization in comparison with the rest of the country. The sector of market services was distinguished which at the same time shaped the economy character of Jelenia Gora. In 2003 about 45,4% of all the employees of exogenous group were employed in activities classified as market services. [3, s. 242-243].

On the bases of data included in table 1 WNP and WSF were counted for Jelenia Gora in 2008 and in 2011 (tab. 2). The structure accepted as a base of reference in the research became the structure of employment in the country. The form of WNP was made into the comparable relative form and in the same way the measurements of each kind of town-creating functions were described (tab. 3).

It is worth noticing that the number of employed people in town in 2011 was lower than three years earlier, taking into account the fact that in 1999 in Jelenia Gora there were over 27,7 thousands of people employed one can notice the negative tendency in this field.

TAB. 1: Employed according to grouped sections in 2008 and in 2011 according to PKD 2007

Specification		Jelenia Gora		Poland	
		2008	2011	2008	2011
Total		25114	23895	10684307	10961215
Grouped sections	Agriculture, forestry, hunting and fishing	191	336	2125024	2360020
	Industry and building	8493	7302	3190042	3065071
	Services I ²	5326	4618	1995908	2020153
	Services II ³	1245	797	431135	432343
	Services III ⁴	9859	10842	2942198	3083628

Source: Own study based on the data of Central Statistical Office [7]

In 2008 all the researched sections with the exception of agriculture section due to its lack of town-creating features, taken the value WSF >1 it makes us assume that they all

² Trade; cars repairs; transport magazine market; accommodation and gastronomy; information and communication, that is sections G H I J PKD 2007

³ Financial and insurance activity; the service of the property market, that is , sections K L PKD 2007

⁴ Other services, that is. sections M N O P Q R S T U PKD 2007, among them: education, health and social care, public administration and national defense; compulsory social insurance

had exogenous functions (tab. 2). Till 2011 sector Services II lost unexpectedly its specialization. At the same time the scope of specialization in Services I was limited which leads into assumption that the role of market services, so vital in previous research was limited. The new significance gained sector Services III, which belong to category of non-market services. This sector shaped economy character of Jelenia Gora in year 2011 in the most vigorous way. The town managed to keep its status of being highly specialized in both industry and building even if this specialization was not so highly rated as before.

TAB. 2: WNP and WSF values for Jelenia Gora

Grouped sections / measure	WSF		WNP	
	2008	2011	2008	2011
Agriculture, forestry, hunting and fishing	0.04	0.07	-4804.0	-4808.7
Industry and buliding	1.13	1.09	994.6	620.3
Services I	1.14	1.05	634.5	214.1
Services II	1.23	0.85	231.6	-145.5
Services III	1.43	1.61	2943.2	4119.8
Number of exogenous group	-	-	4803.9	4954.2

Source: Own study

Number of exogenous group in Jelenia Gora has increased in comparison to year 2008 but it still does not reached the number from 1999 (7917 people); and it has become a little higher in comparison with 2003 (4851 people) [see: 2, p. 419, 3, p. 242]. The calculated rates of structure of employment in exogenous group (tab.3), similarly to WSF, indicates that Services III basic function belongs to the group of the economy of the town directed outside.

TAB. 3: The index of the structure of employment in exogenous group

Grouped sections/ year	2008	2011
Agriculture, forestry, hunting and fishing	x	X
Industry and building	20.7%	12.5%
Services I	13.2%	4.3%
Services II	4.8%	x
Services III	61.3%	83.2%

Source: Own study

4. Summary

For the whole time when the research was carried out Jelenia Góra was a polifunctional town with services playing the most vital role. In 2011 over 87% of exogenous group employees was employed in service sector (2003 – 85% [3, p. 242], 2008 – 79,3%), therefore it is a continuation of the previous tendencies. The town, in comparison with the country, has still been specialized in industry and building. However, the scope of this specialization has been on a lower level. The significance of industry sector for the economy of the town is falling down.

Data presented in this article makes a reader assume that over the years Jelenia Góra's economy's significance for the whole country has still been dropping.

The decrease of employees was linked with the limitations in both the level and scope of town's specialization in majority of fields. One could assume that these are further consequences of both; the loss of the town the status of a regional capital and also the international crisis in economy.

References:

- [1] PRZYBYŁA, K. *Poziom warunków życia w Jeleniej Górze w świetle przekształceń bazy ekonomicznej miasta*, Gospodarka przestrzenna VII, Wyd. KGP AE we Wrocławiu, Jelenia Góra 2004
- [2] PRZYBYŁA, K. *Przemiany w strukturze funkcjonalnej Jeleniej Góry w latach 1999 - 2002*, Prace Naukowe Akademii Ekonomicznej im. O. Langego we Wrocławiu, Gospodarka lokalna i regionalna w teorii i praktyce, Nr 1083, Wrocław 2005
- [3] PRZYBYŁA, Z., PRZYBYŁA, K. *The transformations in the functional structure of Jelenia Góra*, Hradec Economic Days 2011, Economic Development and Management of Regions, part II, University of Hradec Kralove, Hradec Kralove 2011
- [4] GROSSE, T. G. *Przegląd koncepcji teoretycznych rozwoju regionalnego*, Studia Regionalne i Lokalne, Nr 1(8)/2002

- [5] SŁODCZYK, J. *Przestrzeń miasta i jej przeobrażenia*, Wyd. Uniwersytetu Opolskiego, Opole 2001
- [6] OBREBALSKI, M., *Przemiany struktury funkcjonalno – przestrzennej Jeleniej Góry*, Struktury funkcjonalno – przestrzenne, Prace KTN nr 33, Jelenia Góra 1983
- [7] Główny Urząd Statystyczny, Bank Danych Lokalnych [online],
http://www.stat.gov.pl/bdl/app/strona.html?p_name=indeks

SUBJECTIVE ASSESSMENT OF HEALTH IN THE CROSS-BORDER AREA – RESULTS OF THE SURVEY

Michał Ptak

Wrocław University of Economics

michal.ptak@ue.wroc.pl

Key words:

life quality – health care – border areas

Abstract:

The aim of the article is to present the results of the survey conducted within the Polish-German research project “The quality of life in the border area – strengthening of cross-border flows for the common sustainable development and regional planning”. The project is financed through Operational Programme ‘Poland-Germany (Saxony)’ providing support for specific German and Polish regions that lie along their common borders. The paper focuses on the satisfaction with health and health care system among residents of two border areas: Goerlitz county in Saxony (Germany) and Zgorzelec county in dolnośląskie voivodeship (Poland). The author also presents statistical data on the access to health care services in the two border areas.

Introduction

One of the main objectives of the project “The quality of life in the border area – strengthening of cross-border flows for the common sustainable development and regional planning” is to assess the subjective quality of life in the German-Polish border area. The assessment was done through survey conducted among 397 residents of the Goerlitz county and 450 residents of the Zgorzelec county. The sample was representative of the population by age, gender and location.

The questionnaire contained general questions related to the subjective life quality, which can be defined as an assessment of the fulfillment of needs [1]. Respondents were asked to answer the questions about satisfaction with their lives, quality of life in their neighborhood, quality of life on the other side of the German-Polish border and the changes in life quality (is it getting better or is it getting worse).

The questionnaire also contained more specific questions on different aspects such as health, place of living, education, safety in the place of living, financial and professional situation, cultural and sporting offer in the neighborhood. The results show that Germans gave higher ratings to most of these issues. However, the results are not so conclusive when considered in detail.

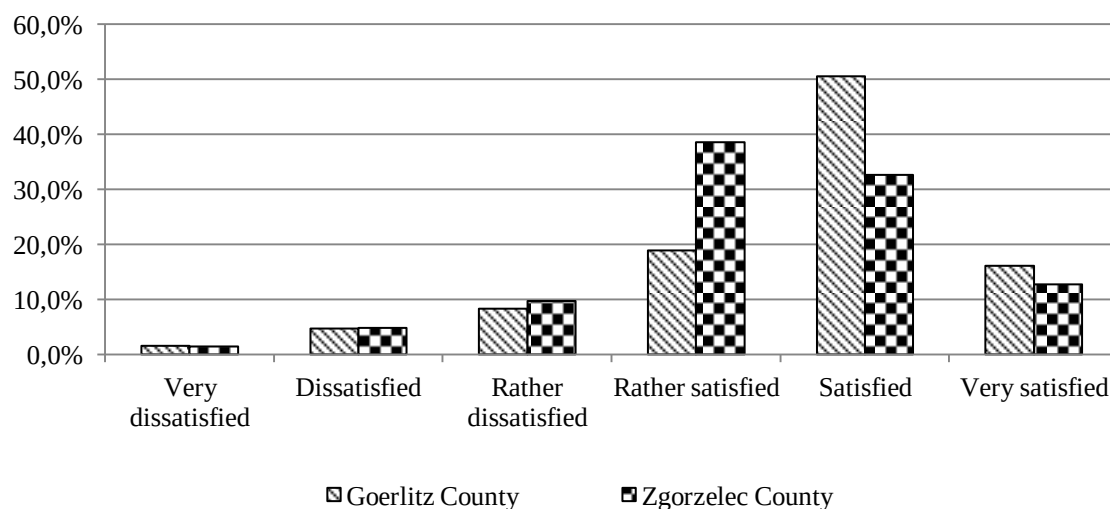
The project also involved an analysis of an objective life quality determined on the basis of available statistical data. The main challenge was a lack of comparable data on two analyzed cross-border counties. The data are usually available at the regional or national level.

This article focuses on the results related to health status and access to health care. The paper presents both results of the survey and the statistical data characterizing health aspects of quality of life.

1. Access to health care services – survey results

Figure 1 shows that the residents of the Goerlitz county are slightly more satisfied with their health: as much as two-thirds of the respondents felt that they are satisfied or very satisfied with health. In Poland, the proportion was more than 20 percentage points lower. It is worth noting that the answers given by the inhabitants of towns and villages of the Zgorzelec county were very similar. In Germany, residents of the urban areas were clearly more satisfied with their health than villagers.

FIG. 1: Satisfaction of respondents with their health



Source: survey results.

It was found that the older the respondent was the less he was satisfied with his health. For example, in the Goerlitz county more than 8 of 10 respondents aged 15-24 were satisfied or very satisfied with their health. In the oldest group of German respondents (aged 65 and over) the percentage was 54%. In Poland there were only 18% respondents in this age group which are satisfied or very satisfied with their health.

The study also showed that men are generally more satisfied with their health than women.

Respondents in the two analyzed border regions were given a five-point scale to rate the importance of four issues concerning the access to the health care services (1 was “invalid or not important” and 5 was “necessary”). The results are shown in tab. 1. The survey found that both Germans and Poles place greatest importance on access to emergency help.

TAB. 1: Questions to assess satisfaction of respondents with the access to the health care

Access to health care	Importance		State	
	Goerlitz	Zgorzelec	Goerlitz	Zgorzelec
Primary care physicians (number of medical institutions, working hours, quality of services)	3.41	4.54	3.32	3.26
Medical specialists (number of medical institutions, working hours, quality of services)	3.42	4.44	2.88	2.63
Emergency help	3.63	4.58	3.82	3.63
Pharmacies (number of pharmacies, working hours, prices)	3.21	4.41	4.10	4.18

Source: survey results.

It should be noted that residents of Zgorzelec county gave higher ratings to all four issues concerning the access to the health care. There was a clear tendency in both counties: the older the respondent, the higher importance was placed on the access to primary care physicians, medical specialists and pharmacies. Furthermore, in both

analyzed border areas women placed higher importance on the access to the health care than men.

Residents of two border counties were also given a five-point scale to rate the state of the four previously mentioned issues concerning the access to the health care (1 was “very poor” and 5 was “very good”). Table 1 shows that the access to physicians was rated higher by respondents from the Goerlitz county. On the other hand, Poles think they have better access to pharmacies.

Differences in answers were determined by the age and the place where respondents live. For example, it was found that the older the respondent was the higher rates he gave to the access to medical specialists. However, this regularity was only observed in the Goerlitz county.

In both border regions respondents from urban areas are more satisfied with the access to the pharmacies.

2. Access to health care services – statistical data

In order to assess objective quality of life the indicators-based approach was used. The indicators have been calculated using available data from public sources. As tab. 2 shows the ratio of physicians to population is higher on the German side of the border. Poles have better access to public pharmacies. It should be noted that in some cases indicators calculated on a local level slightly differ from the indicators calculated on a regional level.

TAB. 2: Access to health care services – statistical data (2011)

Indicator	Germany		Poland	
	Saxony	Goerlitz	Dolnośląskie voivodeship	Zgorzelec
Beds in hospitals per 100 000 inhabitants	638.8	723.1	483.8	597.6
Physicians per 10 000 inhabitants	37.6	30.6	20.2	18.4
Dentists per 10 000 inhabitants	9.3	9.1	3.3	1.4
Public pharmacies per 10 000 inhabitants	2.4	2.3	3.6	3.7

Source: [2].

To some extent the subjective assessment of the access to health care could depend on the prices of medicines and prices of medical services. Research carried out by regional statistical offices from the Neisse-Nysa-Nisa Euroregion¹ suggest that there is a difference in price in two counties for the same medicine or service (tab. 3).

TAB. 3: Prices of selected medicine, contact lenses and dental service

Specification	Part of Euroregion	2008	2012
“Aspiryn” Bayer, tablets 0,5 g 10 pieces	German part	2.45	2.68
	Polish part	1.93	1.83
Contact lenses (piece)	German part	4.91	4.84
	Polish part	7.78	5.03
Fitting a porcelain cap	German part	450.76	520.90
	Polish part	125.35	126.06

Source: [3], [4].

It should be noted that price differences may cause cross-border population movement. The research also analyses such movement (so called cross-border flows of persons or goods).

Summary

The survey showed that respondents in the Goerlitz county are generally more satisfied with their health and the access to health care. Relatively more residents of the Zgorzelec county think they have good or very good access to pharmacies. It is interesting that residents of Zgorzelec county place higher importance to all four analyzed issues related to the access to the health care services and to pharmacies.

The results of the survey conducted in the German-Polish border area are to some extent consistent with the statistical data.

¹ The analyzed cross border area is a part of the Neisse-Nysa-Nisa Euroregion which was the first euroregion in the Central and Eastern Europe.

References:

- [1] BORYS, T. *Propozycja siedmiu typologii jakości życia*, in: T. Borys (ed.), *Gospodarka a środowisko*, Prace Naukowe nr 22 Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, 2008, s. 129. PL ISSN 1899-3192. Cross-border friendship database, <http://cbfd.czso.cz>.
- [2] *Prices in the Euroregion Nysa 2008*, Wrocław: Statistical Office in Wrocław, Czech Statistical Office, Regional Office Liberec, Statistical Office of Saxony in Kamenz, 2008, s. 7-9.
- [3] *Prices in the Euroregion Nysa 2012*, Wrocław: Statistical Office in Wrocław, Czech Statistical Office, Regional Office Liberec, Statistical Office of Saxony in Kamenz, 2012, s. 11, 16.

THE IMPORTANCE OF TRANSNATIONAL CORPORATIONS AND FDI IN REGIONAL DEVELOPMENT

Katarzyna Puchalska, Tomasz Surmacz

University of Rzesow

toms@univ.rzeszow.pl

Key words:

transnational corporations – foreign direct investments – global economy

Abstract:

Contemporary corporations adapt their activities to the new conditions related to both the crisis and after the crisis situation as well as an ongoing process of globalization. The changes in the global environment induce them to change and seek new markets in their international expansion. The purpose of this paper is to present the importance of TNCs and FDI for regional development. In the first part attention is given to theoretical paradigms associated with FDI and TNCs in the second investment activities of TNCs were analyzed in terms of their location with the focus on Poland.

Introduction

The importance of transnational corporations (TNCs) and foreign direct investment (FDI) is related to their economic power. Activity of corporations fulfills many important functions in the global economy because it serves the development and changes on a global, regional and national scale. Implementing their policy of expansion (investment, cooperation, retail) corporations carry out the movement of resources and manufacturing capacities, stimulate growth and economic efficiency.[1, html]

1. Theoretical background of FDI

Foreign direct investment (FDI) is inextricably linked to the process of internationalization and globalization. Some authors associate the theory of FDI development with the first step in the development of globalization which began in the 60s. This does not mean, however, that this issue began to be a point of interest at this time[2, 154], as the origins of theory of internationalization of companies have their

beginning in concepts of international business which focused on explaining the international flows of goods and services. This issue was first analyzed by Smith [23] and Ricardo [22] as well as Ohlin [24] who pointed out the effects of international trade [3, 21]. Scientific investigations have focused on macroeconomic level and formed the basis of the theory of international capital movements based on differences in the interest rates. However, as Rymarczyk [4] states in the case of FDI interest rates' importance is very limited as it is made even if there are no differences between countries in this matter. Using this theory, however, was the first attempt to explain the phenomena of internationalization of production [4, 34-35]. Significant progress in the study of FDI is associated with microeconomic approach which includes the theory of an enterprise and market structure. One of the most well-known microeconomic theories of FDI is the theory of monopolistic advantages by S. Hyner and Ch. Kindleberger [25]. The authors of this theory have proved that the company shall take foreign investments when [2, 164]: it has a specific advantage in comparison to local enterprises; it is able to use these specific advantages, in comparison to local competitors, in such a way that they compensate the costs incurred because of carrying out business in a foreign environment; taking up production is more favorable than the transfer of the license; local production is more favorable than exports.

Ch. P. Kindleberger [5, 425-442] aptly noted that foreign investors are in a less favorable position than local businesses as the latter better than the first know specificity of some actions in their own country. But if foreign investors decide to make foreign investments and incur additional costs related thereto, they must have an advantage (assets) resulting from having oligopolistic or monopolistic position in a particular segment of international relations. Finding such an advantage is not easy. First of all, it must be significant enough to be able to at least neutralize the better starting position of the investment firms and at the same time anticipate a similar strategy of their rivals.

Interpretation of FDI as a result of oligopolistic behavior of firms in the global market was more widely introduced by F.T. Knickerbocker [6, 685-705], who pointed out the interdependence of firms' decisions functioning in the oligopolistic market structures. The author of another version of the theory explaining the movement of capital in the

context of an oligopoly is E.M. Graham with his "strategy of the exchange of threats", according to which, if a company's rivals made FDI in its home country, such a company should undertake activities in the countries of origin of their competitors to "control" their behavior and reduce excessive expansion (which explains, among others crossing FDI). The creators of the theory of internal transactions, also known as the theory of internalization are: P.J. Buckley and M. Casson and important part in its development is played also by S.P. Magee [7,123-135] and A. M. Rugman. This theory refers to the hypothesis stating that all direct investment and creation of multinational enterprises can be reduced to a problem of market imperfection and a phenomena of replacement of the external market with the internal market. According to this theory, the tendency of a company to internalize depends on the strength and direction of the impact of the following factors: specificity of an industry (eg. nature of the product, structure of the market), specific regional characteristics (eg. geographical distance, language and cultural differences), national specificity (eg. political system, tax system), or specificity of a company (eg. managerial and marketing experience) [8, 117].

The authors of the above theories of capital flows put the emphasis on the microeconomic determinants of FDI flows. In turn, one of the most famous theorems is the theory of the location of foreign direct investment. The authors of this theory are, among others: J. H. Dunning , A. M. Rugman [9, 3-15] and P. Tesch. In this theory FDI is dependent on the competitive advantages of the country (region) which are beneficial to the development processes of companies. Competitive advantages, determined by location, are known as location benefits (factors). They give advantage in foreign markets associated with possessing, price advantages and economies of scale and scope. Location theory seeks, therefore, factors determining the favorable and unfavorable geographical areas for business. It explains the advantages that a specific location has on the other. Location factors are specific to each receiving region and may be utilized only there [10, 51]. Another well-known theorem is eclectic theory by John H. Dunning [11, 163-190]. According to it, the condition for FDI is the simultaneous occurrence of three interlocking circumstances making up a paradigm commonly known as OLI paradigm (Ownership, Localization, Internalization). The author detailed the systematic determinants of FDI, dividing them into three groups:[12, 113] owner specific advantages, location specific advantages, internalization specific advantages.

The eclectic theory explains the factors determining the expansion of multinational companies, recognizing the most important specific advantages of companies, specific characteristics of the host country and the ability of firms to internalize the possessed advantages [13, 71]. This theory has been confirmed in various empirical studies explaining the motives of FDI standing up to criticism doubting its versatility[14, 119-120].

2. Defining transnational corporations

There are many definitions of TNC and there is no general way to define them. It seems that this is because corporations are complex economic entities which are difficult to classify [15, 29]. Very often, in the subject literature appear terms defining the concept of the corporation as an international, transnational, multinational, global. Usually, these terms are considered in the world literature as synonyms (or individual researchers choose one name that they consistently use), but some (eg. Ch. A. Bartlett, S. Goshala, G. Yip) differentiate these names on the basis of some specific characteristics (eg. type of structure)[16, 25]. In the fifties of the XX century, most researchers have used the term international enterprises which in the next decade have been replaced by multinational companies. However, the most prevalent name became the term transnational corporations used for the first time in 1964 by D. Karcher. He has described it as a capitalist enterprise running business which crosses the borders of a single country. This name was officially adopted by the UN in 1974 as the identification of the company which operations exceed the borders and headquarters in the home country organize and oversee these activities. According to this definition simple involvement in export or import activities are not enough to recognize the company as TNC. The corporation must conduct direct business activities abroad. Wherein from the point of view of ownership one can additionally distinguish several types of corporations: TNC in which all the assets belong to the parent company but are located in at least two countries; TNC in which assets are part of the parent company and partly to other companies - units. This unit can be created by the acquisition of an existing foreign company or creating a new and can take various forms: subsidiaries (the parent company owns about 50% of the assets), associates (the assets in the parent company range from 10 to 50%), incorporated company, branches (which, in whole or in part are owned by the parent company, but remain outside the legal structure of the corporation)

[17, 17]. There is also a division of TNC on the management basis, according to which there are three types of corporations: ethnocentric - the structure and management are centralized in the home country of the company; polycentric - the management and structure are adapted to local operating conditions and the headquarters control the finances and take strategic decisions; geocentric - the scale of centralization and decentralization depends on the area of operation and the importance of affiliates. [18, 116].

You can also look at corporations through their expansion overseas and distinguish: horizontally integrated corporations, vertically integrated corporations or conglomerate corporations [18, 116-117]. There are also definitions characterizing the nature of these entities in a more complex way. UNCTAD provides three criteria to be met by a company to be described as TNC: the possession of units independent of their legal form and field of activity in two or more countries; carrying out a joint strategy and policy of one (or more) decision-making centers; integration of units through the implementation of property rights (or by other means) so that they could have a significant impact on each other and be able to share knowledge, resources and responsibilities [2, 234-234].

Given the enormity of how TNCs have influence on many aspects of economic life in the world, and the purpose of their creation (management of resources to achieve efficient outcomes) and that they are driven by people and work for them you can also - after P.F. Drucker - call them specific and evolving social bodies. They are seen in a similar way by B. Kogut and U. Zander assuming that the company is a society in which an important role is played by the creation, transfer and application of knowledge as the basis for global competitiveness [2, 9-10, 124-125]. The existence of transnational corporations is related to the movement of capital, especially in the form of foreign direct investment.

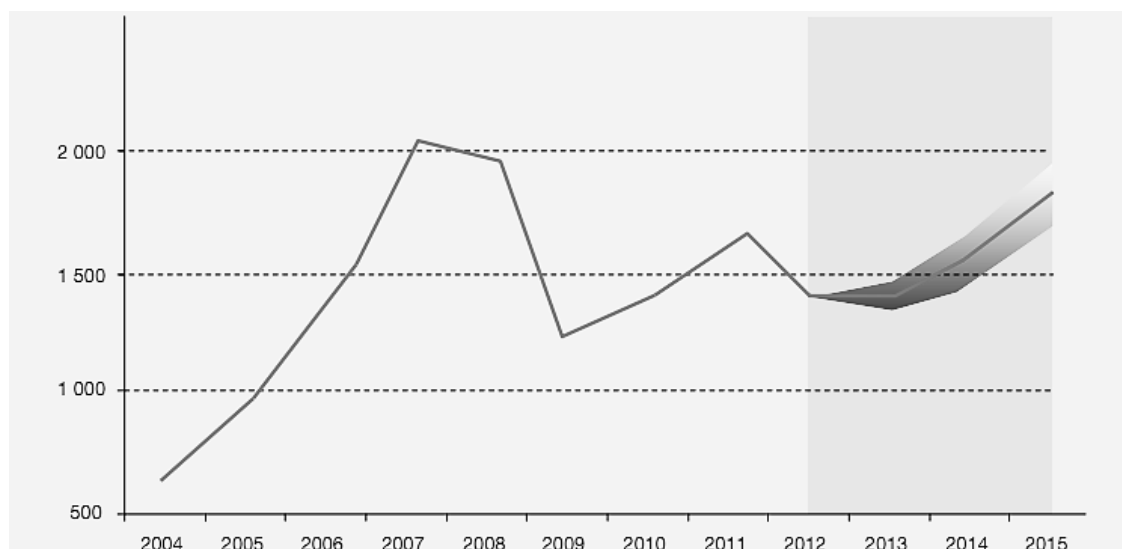
3. Foreign Direct Investment as an element of TNC activity – regional approach

It is difficult to overestimate the importance of TNCs for the development of the modern world economy. One of the most positive effects of FDI inflows seems to be a technology that can support the development and modernization of the economy of the

host country. In addition, the impact of foreign investors may also affect some soft resources such as organizational skills, innovation or work standards. Thus, in addition to the technology lines and patents, is transfer of knowledge on management important. The main effect of the inflow of FDI is usually an increase in employment in the host country. In addition to the quantitative changes in the labor market there can also be seen often qualitative changes such as an increase in qualifications. However, this is dependent on the type of industry and the possible transfer of technology, because the investment may be reduced the usage of cheap labor and not applying innovative technologies. Another impact of FDI on host countries may be providing them with innovative products. Yet another FDI impact is the creation of a significant share of international trade.

FDI in 2013 remain close to the 2012 level, with an upper range of \$1.45 trillion – a level comparable to the pre-crisis average of 2005–2007. The predictionas are that macroeconomic conditions should improve and investors will regain confidence in the medium term. Thus TNCs may convert their record levels of cash holdings into new investments. FDI flows may then reach the level of \$1.6 trillion in 2014 and \$1.8 trillion in 2015 (Fig. 1) [19, 18].

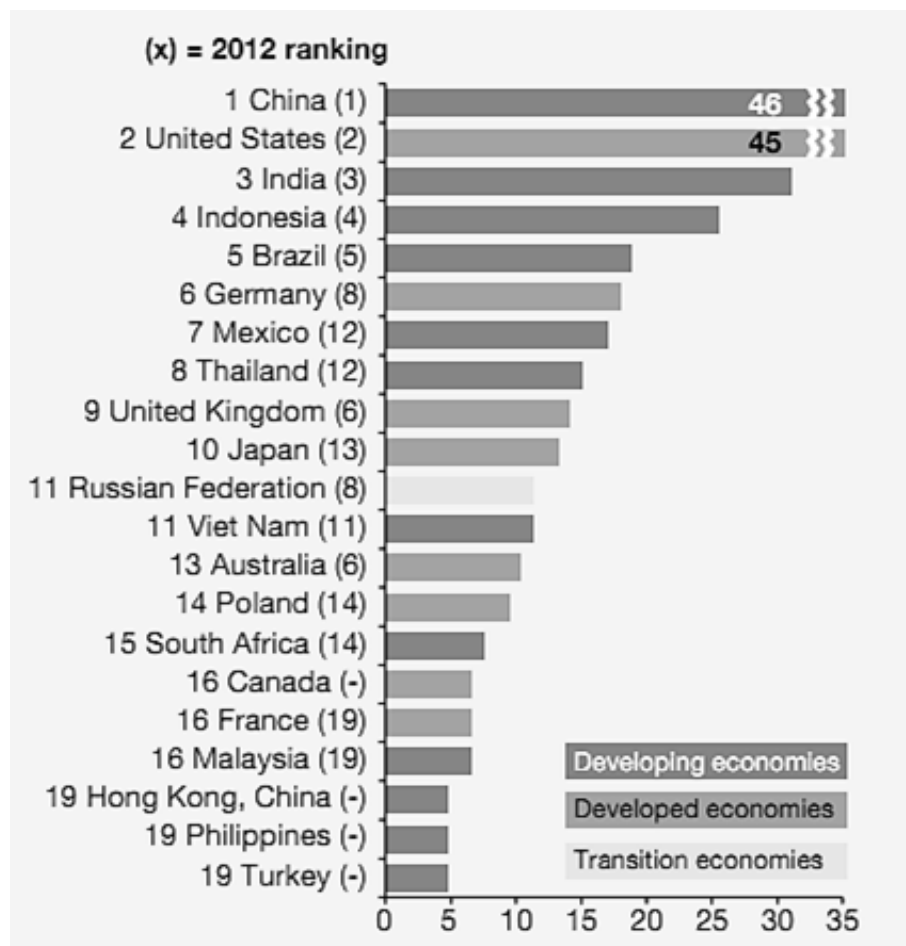
FIG. 1: Global FDI flows, 2004–2012, and projections, 2013–2015 (Billions of dollars)



Source: World Investment Report 2013, UNCTAD, s.19

In 2012 – for the first time ever – developing economies attracted more FDI than developed countries, accounting for 52 per cent of global FDI flows. This is partly because the biggest fall in FDI inflows occurred in developed countries, which now account for only 42 per cent of global flows. Developing economies also generated almost one third of global FDI outflows, continuing a steady upward trend. The EU and North America remain among the most important regions for FDI by TNCs and looking at the perspectives for FDI investments (Fig. 2) in terms of individual countries one can notice that the top five host economies is the same as in 2012, with China being on the top of the list and cited by 46 per cent of all respondents, followed closely by the United States of America (45%)[19, 22].

FIG. 2: TNCs' top prospective host economies for 2013–2015 (Percentage of respondents selecting economy as a top destination)

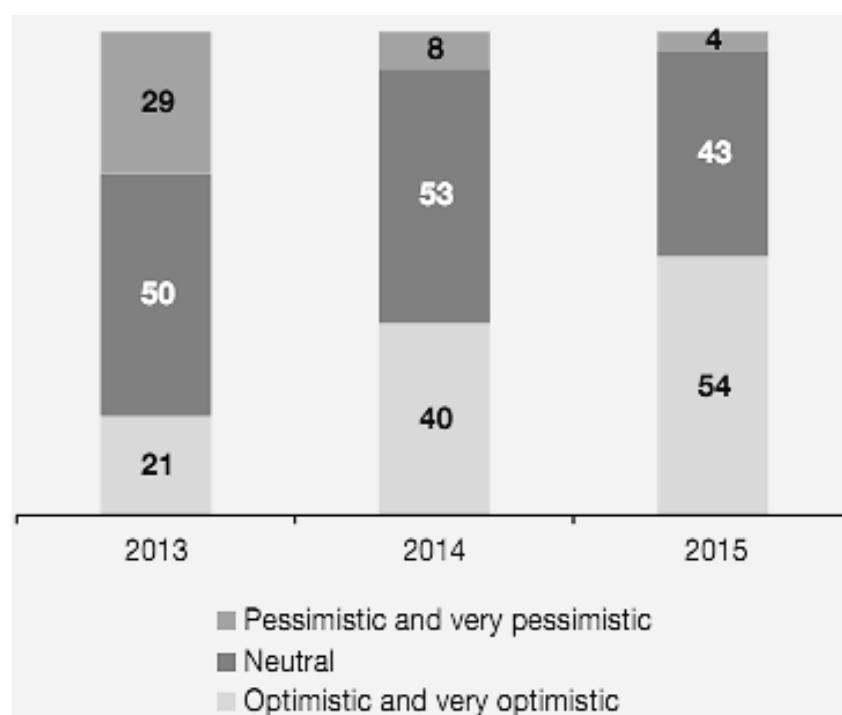


Source: World Investment Report 2013, UNCTAD, s. 22

But developing countries make up four of the top five host economies with only Russia missing from a group of BRIC countries. Six of the top 10 prospective host countries also come from the developing world, with Mexico and Thailand appearing for the first time on the list.

Responses to the survey on investment climate have showed that TNCs are aware of the risks of the global economy choosing neutral answers very often. However, by 2015 more than half of the respondents expressed themselves as optimistic or very optimistic (Fig. 3).

FIG. 3: TNCs' perception of the global investment climate, 2013-2015 (Percentage of respondents)



Source: World Investment Report 2013, UNCTAD, s.19

These seem to be very good news from a regional development point of view. The report "World Economic Outlook" stressed that not only Poland, but also other emerging European economies have experienced a serious downturn in 2012. This was due to the crisis in the euro zone, but also strengthening of national policies in major economies. Although the current levels of FDI are quite modest when compared with the levels before the crisis, Poland managed to attract more foreign investors than other

European countries and maintain a reputation of a stable country. Reputation and public image is an important factor in attracting investors and Poland has improved in this field. Among the international companies surveyed by Ernst & Young in terms of investment attractiveness, 37 percent those companies considered Poland the most attractive location for investment in Central and Eastern Europe. For example Czech Republic has received 15 %, Hungary 8 %, and Romania 6%.[20, html]. Poland did quite well in 2012, attracting 22.3% more projects than in 2011. Poland has become the leading destination for FDI projects last year in Central and Eastern Europe. Of all the western European countries only Spain equaled Poland in 2012, in terms of growth of greenfield investment. They have reached 4.87% dynamics. Poland ranked third in terms of job creation for the whole of the continent (a move from the 7th place). And Poland was the top improver globally in the past year, according to the World Bank's Doing Business 2013 report [21, 18]. Poland definitely attracts foreign investors with the size of the internal market, more and more stable economic and political environment and highly-skilled labor at competitive costs. According to Deloitte Polska, Poland will continue to attract investors especially from Business Process Outsourcing sector in the next 5-10 years. Other sectors which continue to attract large numbers of foreign investors are the aviation industry, machine manufacturing and innovative services. The Polish government is well aware of the importance of FDI for economic growth and many programs are designed to provide support for foreign investors. The country provides many incentives for FDI Projects such as subsidies as well as Special Economic Zones (SEZ). The latter (14 in Poland) provide such benefits as corporate tax exemption, support for new investment projects and grants for creating new jobs.

Conclusion

In most countries the global recession led to a reduction of FDI. In Poland this reduction was short-lived and FDI has stabilized and even increased in some areas. Although more and more investors choose developing countries Poland's position in Europe seems to be strong. Consequently, FDI investments should have a strong positive effect on Poland's growth.

References:

- [1] Korporacje transnarodowe w procesie globalizacji [online] 2013 [accessed on 24 February 2012], Available at:
http://globalizacja.genialne.info/korporacje_transnarodowe.html
- [2] J. Rymarczyk, *Biznes międzynarodowy*, PWE Warszawa 2012, pp. 9, 10, 124-125, 154, 164, ISBN 978-83-208-2029-4
- [3] Gospodarka Narodowa, Nr 10/ 2007: M. Gorynia, B. Jankowska, *Teoria internacjonalizacji*, Poznań 2007, p.21.
- [4] J. Rymarczyk, *Internacjonalizacja i globalizacja przedsiębiorstwa*, PWE, Warszawa, 2004, pp. 34-35; 81-84, ISBN 83-208-1508-8
- [5] Ch. P. Kindleberger, *Economic Development*, New York, 1958, The Benefits of International Money, *Journal of International Economics* 2 (Nov. 1972), pp. 425-442.
- [6] F. T. Knickerbocker, *Introduction* Government Information Quarterly, Volume 15, Issue 3, 1998, pp. 243-245, Deepak Sethi, Stephen Guisinger, David L. Ford, Jr. and Steven E. Phelan, Seeking greener pastures: a theoretical and empirical investigation into the changing trend of foreign direct investment flows in response to institutional and strategic factors, *International Business Review*, Vol. 11, Issue 6, December 2002, pp. 685-705.
- [7] Stephen P. Magee, *The Appropriability Theory of the Multinational Corporation*, *The Annals*, No. 458, November 1981, pp. 123-135.
- [8] J. Misala, *Międzynarodowa i gospodarka światowa. Teoria i mechanizmy funkcjonowania*. [in:] SGH Warszawa, 2005, pp. 117, ISBN 83-7378-187-0
- [9] A. M. Rugman, *Strategies for national competitiveness* Long Range Planning, Volume 20, Issue 3, June 1987, pp. 92-97
- [10] T. Latocha, *Lokalizacja produkcji międzynarodowej a procesy integracji europejskiej*, *Studia Europejskie*, 2/2005, p. 51.
- [11] J. Dunning, *The Determinants of International Production*, Oxford Economics, Papers 1973, No3. *The eclectic paradigm as an envelope for economic and business theories of MNE activity* *International Business Review*, Volume 9, Issue 2, April 2000, pp. 163-190.

- [12] J. Rymarczyk (ed.), *Międzynarodowe stosunki gospodarcze*, PWE, Warszawa 2006, p.113, ISBN 03-208-1604-1
- [13] J. Forowicz, *Ewolucja przedsiębiorstw- od strategii międzynarodowej do strategii globalnej*, wyd. *Bariery internalizacji przedsiębiorstwa*, pod red. M.K. Nowakowskiego, Warszawa 1997, p.71.
- [14] A. Buckley, *Inwestycje zagraniczne – składniki, wartości i ocena*, Warszawa 2002, pp. 119-120.
- [15] K. Piórko, „*Władza*” korporacji transnarodowych w *stosunkach międzynarodowych*, Wydawnictwo Naukowe Grado, Toruń 2008, p 29.
- [16] Chechelski P., *Wpływ procesów globalizacji na polski przemysł spożywczy. Studia i monografie*, Warszawa 2008, nr 145, p. 25
- [17] Oziewicz E., *Przemiany we współczesnej gospodarce światowej*, Warszawa 2006, p. 17, ISBN 83-208-1601-7
- [18] Jantoń – Drozdowska E., *Międzynarodowe stosunki gospodarcze*, Poznań 2009 (wyd. 3), pp. 116-117
- [19] UNCTAD. *World Investment Report* [online] 2013 [accessed on 24 October 2013] Available at: unctad.org/en/PublicationsLibrary/wir2013_en.pdf,
- [20] PAIiZ. *Perspektywa dla BIZ w Polsce w 2013* [online] 2012 [accessed on 24 October 2013] Available at: <http://akcjonariatobywatelski.pl/pl/centrum-edukacyjne/gospodarka/821,Perspektywa-dla-BIZ-w-Polsce-w-2013-r.html>,
- [21] Ernst & Young’s attractiveness survey Europe 2013, *Coping with the crisis the European way Report*, p.18
- [22] Ricardo D., *Principles of Political Economy and Taxation*, Amherst, Prometheus Books, 1996, New York.
- [23] Smith A., *Badania nad naturą i przyczynami bogactwa narodów*, PWN, Warszawa 1954.
- [24] Ohlin B., *Interregional and International Trade*, Harvard University Press 1933, Cambridge.
- [25] Hymer, S., *The International Operations of National Firms: A Study of Foreign Direct Investment*, Massachusetts Institute of Technology: MIT Press 1960.

MARKET WITH FOODS FOR SPECIFIC CUSTOMER GROUPS IN THE CZECH REPUBLIC

Olga Regnerová, Marta Regnerová

Czech University of Life Sciences Prague

oregnerova@pef.czu.cz , regnerova@pef.czu.cz

Key words:

market – international trade – gluten-free foods – consumer – corporate responsibility

Abstract:

Specific customer groups entering the Czech market can be defined according to certain criteria, such as age, interests, social status, but also the needs of foodstuffs resulting from particular disease individuals as consumers, such as gluten intolerance, diabetes mellitus, etc.

The paper deals with the availability of food in the internal trade of the Czech Republic including imported for a specific group of consumers with gluten intolerance. These consumers in their diet may suffer various small amounts of gluten.¹

The findings presented in the study resulted from the project solution in the IGA PEF CZU in Prague 20121027 (11210/1312/3106) „A survey supply of food suitable for customers with gluten intolerance in retail”.

Introduction

With an autoimmune disease of the small intestine that cannot cope with the protein gluten, or gluten, there live about 50 to 120 thousand citizens (consumers) in the Czech Republic. This is a percentage of about 0.5 – 1.2 % of the population. Of this number, they are only 10-15% of treated, others are not diagnosed yet. Basically, it comes to a chronic disease of the small intestine mucosa, the term the most commonly known celiac disease, or a gluten allergy or during dermatitis.

This disease requires foods that contain no gluten or only in small concentrations. Gluten is yet part of a series of common - classical (conventional) foods. The causes of the disease may

¹ See EC Regulation No. 41/2009, in the Czech Republic entered into force on 1 January 2012

be different, for example, the context of the celiac disease and rickets for children [5]. The disease can occur in childhood but also in adulthood. There are more trigger factors - a sudden change in your life, child birth, surgery, infectious diseases, stress, etc. The disease can occur after a tense psychological or physical experience and other emergency [2].

1. Foods for particular nutritional uses

January 1st 2012 Regulation (EC) No 41/2009 of 20 January 2009 entered into force. The regulation concerns a composition and labelling of foodstuffs for people intolerant to gluten, which establishes uniform European rules on the composition and labelling of foodstuffs for the gluten content [7]. For this regulation follows:

1. Different people with gluten intolerance can accept a small amount of gluten in different ways:
 - Food bearing the claim "gluten-free" - gluten may be not exceeding 20 mg / kg.
 - Food bearing the claim "very low gluten" - gluten may be not exceeding 100 mg / kg.
2. Regulation (EC) No 41/2009 also sets in foods for particular nutritional uses different requirements for labeling and gluten depending on the feedstock used.
3. The above indications provided for in this Regulation 'gluten-free' and 'very low gluten' also have a well-defined place on the product packaging.
4. Particular requirements for oats production of foodstuffs intended for celiacs:
 - Oats for human food for celiacs must be specially manufactured, prepared or processed to avoid contamination with wheat, barley, rye or their hybrids. Gluten content must not exceed 20 mg / kg.

2. Specifics of products, production and import of food for celiacs

Disease of gluten intolerance is a permanent intolerance to gluten (wheat starch - gluten protein) in food. Therefore, for a gluten-free diet there must be specially modified foods. A process of production of these foods is difficult. There must be achieved similar sensory properties in the production of to that of classic dishes without gluten restriction.

The number of people who have problems with absorbing gluten increases (we can even talk about diseases of civilization 2) and thus also increases the demand for food for the gluten-free diet. For this reason, it also increases the number of manufacturers who produce and

import these foods in the Czech Republic. Food Research Institute Prague for clarity gluten-free products market in the Czech Republic prepared a database of products and manufacturers (suppliers) who make these products available to the Czech market [9].

The Czech Republic traded on the international level in the field of gluten-free foods mainly to EU countries. Export of the Czech Republic is formed mainly by exports of non-food products (cars, computers, machinery and equipment), exports of food products (including gluten-free) is only 2.56 % of the total exports. Food imports (including gluten-free) is achieving 3.93% of total imports in the Czech Republic [6].

Foods for a gluten-free diet are imported mainly from Poland, Italy and Slovakia.

3. Specifics of products, production and import of food for celiacs

The survey off gluten-free food was programmed in two phases during 2012 and the first half of 2013:

The first phase: in certain types of retail outlets in the form of field research in relation to the monitoring of factors:

- width and depth of range of foods for a gluten-free diet,
- merchandising (presentation on the sales floor),
- brands and producers,
- level of monitored foods,
- area available at retail.

The second phase: a survey in the first half of 2013, "Consumer preferences when buying food for consumers with gluten intolerance" for consumers who need these foods in relation to their purchasing decisions and buying power. Respondents - celiacs were chosen through a random selection. They were asked whether they are willing to answer the research questions in the survey.

Objective of the survey: to map the supply and availability of food on the Czech market for special nutrition suitable for people intolerant to gluten in selected retail operating units.

The research question: Is a consumer group that is dependent on gluten-free foods satisfied with consumer basket and distribution in the Czech Republic?

There have been drawn up following methodological steps:

1. Study of the available literature and expert articles that relate to this topic (offers gluten-free foods and consumer behavior.
2. Processing Searches description of the problem and reference to specialized texts.
3. Evaluation of the primary research and survey.
4. Use logical deduction and synthesis of partial results of the survey. Receipt of proposals to improve sales and purchase food for a gluten-free diet in terms of their importance in the region, the availability (including the price) at the retail and corporate responsibility for antisocial studied factors related to the preferences of specific groups of consumers.

3.1. Brief survey results

Based on the results of the survey it can be said that gluten-free foods for the retail dealer is known concept. From the obtained results it is possible to confirm a certain type of synergy between the business unit and individual factors surveyed, broadly speaking, for the smaller unit (except specialized), the volume of an offered range of gluten-free products is smaller. All other examined factors generally confirm that the offered assortment, presentation, merchandising and brands are very different. The price is much higher when compared to conventional foods [1].

3.2. The economics of food for a gluten-free diet

Adherence to a gluten-free diet is very costly. In Table 1 there are compared to prices found during a survey in the self-service retail stores (rounded to the nearest CZK) on selected products with gluten sold in the Czech Republic for a gluten-free diet made in the Czech Republic, Poland, the Slovak Republic and Italy.

Data in the table below indicate widely differing prices of food classic (containing gluten) and food Czech, Polish, Slovak and Italian gluten-free products, which are sold in the Czech Republic.

TAB. 1: Comparison of selected foods with gluten and gluten-free diet

Products	Gluten products			Gluten-free products made in ...			
	Package	Price [CZK]		Czech Rep.	Poland	Slovakia	Italy
	[grams]	Package	Per 1 kg	CZK / 1kg	CZK / 1kg	CZK / 1kg	CZK / 1kg
White bread	500	19	38	98	204	106	164
Pasta	250	12	48	120	384	176	340
Sweets	100	15	150	320	530	320	480
Flour	1 000	19	19	79	118	110	105
Dumplings powder	350	38	109	129	197	137	203
Brown bread powder	1 000	37	37	64	60	65	60

Source: own survey and processing.

The following Table 2 indicates the prices of selected foods for a gluten-free diet in celiacs special store - healthy diet compared to similar conventional foods (containing gluten) in Tesco hypermarket.

TAB. 2: Comparison of selected foods for a gluten-free diet and gluten

Gluten products				Gluten-free products			
Product with gluten hypermarket Tesco	Package	Price [CZK]		Gluten-free product "Shop Celiak"	Package	Price [CZK]	
	[g] or [l]	Package	Per 1 kg or 1 liter		[g] or [l]	Package	Per 1 kg or 1 liter
Penam white bread	500	33,9	67,8	White bread	400	47,0	117,5
Penam toast bread	750	30,9	41,2	Toast bread	300	49,9	166,3
Müsli Bona Vita	750	76,9	102,5	Müsli Schär	375	96,0	256,0
Baking powder	20	4,4	220,0	Baking powder	20	11,0	550,0
Pizza Mr.4 Buitoni	300	60,9	203,0	Pizza.4 formagi	300	89,0	296,7
Pizza Mr. Ham Ristorante	340	56,9	167,4	Pizza ham frozen	320	89,0	278,1
Gambrinus Excelent	0,5	12,9	25,8	Celia beer	0,5	25,0	50,0
Rice basmati Lagris	500	42,9	85,8	Rice basmati	400	40,0	100,0
Spaghetti "Rosické"	500	18,9	37,8	Spaghetti Natural	500	35,0	70,0
Gnosi PastaDiCasaMia	500	52,9	105,8	Gnosi	300	78,0	260,0
Dipped bisquits	100	11,9	119,0	Dipped bisquits	150	51,0	340,0
Flour grandmother's choice	1000	12,9	12,9	Flour	1000	65,0	65,0
Corn bread crumbs	200	35,9	179,5	Corn bread crumbs	200	19,5	97,5
Breadcrumbs T value	500	10,9	21,8				

Source: own survey and processing.

From the results in the table it is evident that gluten-free products are considerably more expensive (bread toast 4x - 5x flour) compared to products containing gluten. For corn bread crumbs we can see that the prices of gluten-free food is also markedly different in selected stores: Corn bread crumbs 200 g pack in Tesco is about 14 CZK more expensive than in a specialty store celiacs - healthy diet. For consumer - celiac gluten-free food is the purchase of a considerable expensive.

Some health insurance companies provide contributions to the diet, such as the General Health Insurance Company, but the contribution is determined by the insured NGA under the age of 26 years and in a maximum amount of 6,000 CZK per year, it is 500 CZK per month [8]. According to the websites of the following insurance companies contribute to food for a gluten-free diet: Czech health insurance industry provides a contribution of up to 1,500 CZK up to 18 years age.

Also, the trade union health insurance of employees of banks, insurance companies and construction introduced financial support for people with celiac disease, Ranger fraternal Treasury, Health Insurance (500 CZK) and Employment Insurance Skoda. Other insurance companies still do not contribute. Because foods for a gluten-free diet is severely affecting the health status of specific customer groups of consumers, there is considerable scope for social responsibility program of health insurance to this group of citizens.

3.3. Purchasing consumer preferences - celiacs

Part of the project "Survey offers food suitable for customers with gluten intolerance in retail" was a questionnaire survey. The results of a field survey showed that not all randomly selected settlements is the availability of gluten-free foods satisfying. Matching the individual points of sale with hypermarkets and supermarkets where you celiacs with normal foodstuffs can buy gluten-free food and specialized stores for a gluten-free diet. Less satisfactory are superreta and stores with staff where a network of these retail formats in number is growing mainly through franchising, but spatially unevenly in different settlements.

The best selection of food for celiacs is in large conurbations. Celiac in the smaller towns and villages must therefore go for these products in larger towns. It is often assumed that they are motorized. If not, they are dependent on the assistance of third parties.

Among the most criticized factors, sales of gluten-free foods include:

- High price often exceeding the purchasing power of celiac patients.
- Small or inappropriate assortment representation offers a fully satisfying the needs of celiac patients.
- Poor availability, food is necessary to look at large spatial distances, often beyond their own region (former district), in which celiacs live permanently.
- In a space large stores shelves and ceiling signs are not marked.
- Information and label on the packet is written in small, often poorly legible letters, yet do not meet the requirement of EC Regulation No. 41 /2009.

Table 3 lists the basic data set of the survey respondents who were approached, and from which they were obtained in consumer preference when buying food for a gluten-free diet.

TAB. 3: Respondents by age – celiac.

All respondents			Age up to 20		Age 20 - 40		Age 40 - 60		Age 60 - 80		Age above 80	
Sex	# respondents	Percentage	# respondents	Percentage	# respondents	Percentage	# respondents	Percentage	# respondents	Percentage	# respondents	Percentage
Men	27	19,71%	3	2,19%	17	12,41%	6	4,38%	1	0,73%	0	0,00%
Wumen	110	80,29%	12	8,76%	75	54,74%	22	16,06%	1	0,73%	0	0,00%
Total	137	100,00 %	15	10,95 %	92	67,15 %	28	20,44 %	2	1,46 %	0	0,00 %

Source: own survey.

Data in the table confirm that celiac disease occurs more in younger ages. You cannot definitely confirm whether more women or men, because in the acquisition and selection of respondents were women more open and more communicative. The survey also showed that consumers - celiacs or their parents because some respondents were - celiac primary school pupils and one child of preschool age , in engineering units, retail buying products suitable to their medical regime conditioned dining on average 1x a week, mostly in specialized stores, the most influence on purchasing decisions assortment and price range. When buying specific gluten-free food is the most appeal to experience a good habit also assess the quality of the product according to your good experience.

Price gluten-free food is given to the total expenditure on food high discounts are only partially affected (gluten-free food in the discount offer is exceptional). Marks in the selection of gluten-free products are noticed, but do not prefer Czech products, assortment assessed as

insufficient. They would welcome the retailer form of presentations of new and better representation of price incentives and discounts on food for a gluten-free diet.

Here, too, shows broad enough space for social responsibility program trading companies operating retail stores to specific customer group of consumers with the need for gluten free food. From a general point of view we can proceed to the definition of the author McElhanney [3] Corporate Social Responsibility as the use of business to create a better world.

Conclusion

Companies that enter into the logistics chain in the manufacture, importation, distribution and sale of food for a gluten-free diet, are afraid of economic setbacks in the sale of these products. It is difficult to estimate how many customers come and how much they can pay for gluten-free food. The economics of trade still outweighs the societal mission - properly satisfy consumer products requiring special diets - gluten-free diet. It is necessary to discuss it in an open forum with the participation of all stakeholders.

Acknowledgements

Thanks for the opportunity to use the knowledge of the project at the Department of Trade and Finance under the IGA University of Agriculture in Prague 20121027 (11210/1312/3106) "Survey offers food suitable for customers with gluten intolerance in retail".

References:

- [1] HES, A., REGNEROVÁ, M. *Food for celiacs and CSR of business firms. Globalizácia a jej sociálno-ekonomické dôsledky 2013*. Žilina: mimoriadne číslo elektronického časopisu Podniková ekonomika a manažment ŽU, 2013, pp. 187-196. ISSN 1336-5878
- [2] KOHOUT, P., PAVLÍČKOVÁ, J. *Otázky kolem celiakie*. 1. vyd. Praha: Forsapi, 2010, 128 s. ISBN 978-80-87250-09-9
- [3] MCELHANNEY, K. A., *Just Good Business. The Strategic Guide to Aligning Corporate Responsibility and Brand*. Bratislava: Eastone Books, 2011. ISBN 978-80-8109-193-3
- [4] PERGL, V., *Strava Čechů – přemíra tuku, soli a sladkostí*. Právo, 2013, vol. 23, no. 263, pp. 9, ISSN 1211-2119

- [5] SAEED, A. *Celiac disease presenting as rickets in Saudi children*. Ann Saudi Med. 2013 Jan; 33(1): 49-51. 10.5144/0256-4947.2013.49. SCOPUS
- [6] Český statistický úřad. [cit. 2013-10-30]. Available from: http://www.czso.cz/csu/2012edicniplan.nsf/kapitola/0001-12-r_2012-1100
- [7] Potraviny pro zvláštní výživu určené pro osoby s nesnášenlivostí lepku. [cit. 2013-10-30]. Available from: <http://www.bezlepkovadieta.cz/potraviny-domaci-legislative/1/2032-3/oznacovani-potravin-z-hlediska-obsahu-lepku-plati-od-1-1-2012>
- [8] Společnost pro bezlepkovou dietu. [cit. 2013-10-22]. Available from: <http://celiak.cz/>
- [9] VÚPP. Databáze bezlepkové výrobky. [cit. 2013-10-30]. Available from: <http://www.vupp/o4bezlepkove/>
- [10] 223 records from the survey 2012 - survey in operation units of retail trade
- [11] 137 questionnaires in 2013, "Consumer preference when buying food for consumers with gluten-free diet."
- [12] 20 seminar papers 2013 on the theme "Food imports into the Czech Republic and food exports from the Czech Republic for a gluten-free diet."

THE UTILIZATION OF QUALITY OF LIFE MEASUREMENTS IN IDENTIFYING THE KEY PROBLEMS OF DEVELOPMENT

Piotr Rogala

Wrocław University of Economics

p.rogala@interia.pl

Key words:

quality of life measurement – subjective quality of life

Abstract:

The article presents chosen results of quality of life measurements. The studies were carried out from 2012 to 2013 in the districts of Zgorzelec (Poland) and Görlitz (Germany). They concerned the subjective quality of life of the districts' inhabitants. The article stresses the utilization possibility of the measurements in the process of managing different geographic units (e.g. cities, districts) in such areas as for instance the formulation of development strategy.

Introduction and purpose

It is becoming a more and more popular belief that improving the quality of life (QoL) may be the only goal people unanimously endorse and willingly contribute to achieve [5]. Therefore the concept is starting to be in the interest of local, regional and state authorities. The clearest sign of the growing interest is carrying out the quality of life measurements. The specialist literature offers some descriptions of activities in the area [see: 6]. Nevertheless, their number is not very high. Additionally the majority of the studies are vague and their results are not significant for practical uses. The article presents the measurements of quality of life of the inhabitants of Zgorzelec and Görlitz's districts. The discussion objective is to prove that the measurements' outcome facilitate identifying the crucial problems in a given geographic area. Therefore they might be useful in the process of managing the development e.g. during formulating the strategy of development for cities, districts.

1. The concept of quality of life

The term *quality of life* is widely used in medical studies, journalism, politics, management studies, commercials, etc. So far scholars have not yet reached a shared understanding of what QoL is. The existence of many different notions of quality of life arguing that this concept refers to an evaluation (an evaluative judgment) of selected aspects or entire life and that it does not refer to one unitary or objective entity. It is obvious that different interpretations of quality of life, different points of view, different definitions, lead to different decisions about very important topics [2].

It is often claimed that the concept of quality of life broadly encompasses how an individual measures the “goodness” of various aspects of his/her life. These evaluations include one’s emotional reactions to life occurrences, disposition, sense of life fulfilment and satisfaction, and satisfaction with work and personal relationships [7]. For instance Malkina-Pykh and Pykh define quality of life “as a measure of how positively or negatively we perceive our lives, a measure of well-being. This measure is influenced by three main domains: built environment QoL, social environment QoL and economic environment QoL. The built quality of life is where one lives: house, surroundings, available facilities, infrastructure (electricity supplies, telephone lines, running water and sewerage systems, etc). The social environment QoL involves friends, family, entertainment, health and education level. The economic environment QoL concerns money, how money is spent, employment / unemployment [2]”. But the authors add that quality of life depends on cultural perspectives and values. Values, the features of the world that people believe are crucial, right from the ethical point of view or personally desirable. Age, gender, socio-economic status, education, health, religion, occupation, etc, all contribute to forming our perspectives, and making people different one from the other. So these differences in personal condition and experience in life shape their beliefs and values about what is crucial, good, or desirable. Eventually these values determine also which conditions of life constitute the quality of life issue [2].

Quality of life must be measured by subjective and objective criteria. Objective criteria could be measured, counted and supervised. They are external to an individual and measurable by “others” [7]. Objective measures of the QoL include health, income, conditions of housing and neighbourhood, and other similar characteristics reported by the respondents and reflected in the average of a geographic unit [4]. While subjective

quality of life criteria exist in an individual's consciousness, the researchers are able to identify them from his/her answers [1].

Quality of life is also a dynamic concept. Values and self-evaluations of life may change over time in response to life and health events and experiences. Each area of quality of life can also have knock-on effects on the others. For example, retaining independence and social participation may promote feelings of emotional wellbeing, but are partly dependent on retaining health and adequate finances. These can also be influenced by local transport facilities, type of housing, community resources, and social relationships. Quality of life is multidimensional and its parts affect each other as well as the sum. It poses inevitable challenges for measurement [3].

2. Description of the surveys

In years 2012-2013¹ the measurements of QoL of the inhabitants of Zgorzelec and Görlitz's districts were carried out. They were a common initiative of the Department of Quality and Environment Management of Wrocław University of Economics and the Department of Spatial Order of the Dresden University of Technology. The surveys were financed by the European Regional Development Fund.

The survey measuring the QoL consisted of 7 distinct areas i.e. (1) health, (2) education, (3) safety (4) culture and leisure, (5) financial and professional situation, (6) place and condition of living, (7) social relation. All those areas covered specific issues influencing the QoL e.g. healthcare availability, functioning of the emergency services, personal safety, the air cleanness or the possibility to move around using own vehicle(car, motorbike). It allowed to identify 43 issues which were evaluated by the inhabitants. In every case the respondents judged their significance and the level of satisfaction out of it (the level of needs fulfilment). Both cases were evaluated in a five grade scale. Additionally there were questions of general nature concerning for instance satisfaction out of life, the border closeness and current changes taking place in the city. While choosing the sample group for the survey, the structure of both districts' inhabitants was taken into consideration. The criteria were based on three basic characteristics: gender, age, dwelling place (city, country). The survey was carried out

¹ The survey was carried out from November, 2012 to February, 2013.

at the 0,95 level of confidence and less than 5% margin of error. The Zgorzelec district gave 475 survey forms while the Görlitz district 385.

3. The measurement results

The gathered surveys results can be analysed in various ways. From the point of view of people in charge of managing certain geographic units, the most important seems to be defining:

1. factors that influence the inhabitants' QoL most,
2. the aspects of inhabitants' lives they are most and least satisfied of,
3. problems, which ought to be tackled in the first place i.e. the most important factors with the worst assessment in the inhabitants' opinion.

3.1. Factors that influence the inhabitants' QoL most

As the most influential factors, the inhabitants pointed out: personal safety, financial safety, availability of technical infrastructure (water supply and sewage system), road safety and the quality of drinking water. Nevertheless, significant differences were noted between the inhabitants of the Polish and German area. The first group focused on financial and professional situation (i.e. personal financial situation, living conditions and employment security. On the other hand, the German respondents, stressed factors connected with environmental issues (i.e. drinking water quality, air cleanness, access to urban greenery and waste disposal). For both Polish and German inhabitants, the feeling of safety was significant, though it was more important for the Poles.

3.2. The aspects of inhabitants' lives they are most and least satisfied of-

The respondents decided that their needs are satisfied best in the area of access to chemists, infrastructure and urban greenery. The differences in the answers concerned the Poles being satisfied mostly with their neighborhood (i.e. availability of Internet, phones, essential products, technical infrastructure and commercial services) while the Germans indicated factors concerning the environment (i.e. quality of drinking water, waste disposal, access to urban greenery, the acoustic climate and the air quality).

The respondents claimed that their needs are fulfilled poorly in the area of job opportunities, adjusting schools for the disabled and availability of medicine

consultants. This area showed some differences between the Polish and German areas as well. The Poles acknowledged that 4 out of 10 weakest factors concern education (they are universities, adjusting schools for the disabled, opportunities for adults to improve professional skills, and also nursery schools and crèches) The second place took dissatisfaction out of personal financial and professional situation (it concerns: job opportunities, personal financial situation, keeping balance between the work and free time). The Germans were the least satisfied with their financial and professional situation. This group accounted for 5 factors evaluated lowest (i.e. opportunities to find a new attractive job, employment security, personal financial situation, current job, and proportions between the work and free time)

3.3. Problems, which ought to be tackled in the first place

The conducted studies allow to use 2 criteria to divide all 43 factors influencing QoL i.e. average importance assessment and average condition assessment. This distinguishes 4 groups of factors: (1) important - evaluated highest; (2) important – evaluated lowest, they are the key problems that should be tackled in the first place; (3) of little importance – evaluated high and (4) of little importance – evaluated low².

The results of the surveys show that development plans concerning the Polish area ought to focus mainly on the following key issues: doctors and consultants accessibility, preparing the district for crisis situation, help for people in need (e.g. elder or sick people), help for the problem families, personal financial situation, opportunities to find a new attractive job. They are important for the respondents factors which are not fulfilled at a satisfactory level. Whereas the development plans concerning the German area need to concentrate mainly on the following issues: medicine consultants accessibility, vocational high schools, personal safety, financial safety, personal financial situation, commercial services accessibility, Internet and cell phone access.

² In the estimation of the importance of the factors it was assumed that the arithmetic mean of the importance assessment of all factors would be the value dividing the set into two groups i.e. Important and less important factors. The same procedure was carried out for the estimation of the condition factors evaluation.

Conclusion

On the basis of conducted studies on the subjective QoL, the key problems (from the inhabitants' point of view) of a specific geographic unit can be recognized. The information can be used in the process of prioritising activities in the local and regional development both at the level of designing the general development strategy and also at the level of sector policies and programmes (concerning e.g. environment, public transport).

Planning activities intending to improve the situation in the area of the mentioned problem issues, authorities should remember they were identified on the basis of subjective impressions of the inhabitants. Those opinions are often expressed not on the basis of fact analysis but on the common society's conviction. Therefore a proper analysis needs to be supplemented by an analysis based on objective indicators.

This article focuses attention only on chosen survey results. Measuring inhabitants' QoL gives much greater possibilities. It may serve e.g. to perform comparative analysis of different geographic units (gives the basis for benchmarking) or to determine the factors correlated with inhabitants' life satisfaction most.

References:

- [1] AKRANAČIČIŪTĖ, D., RUŽEVIČIUS, J., Quality of Life and its Components' Measurement. *Engineering Economics*, 2007, vol. 57, no. 2, p. 44 – 49. ISSN 1392 – 2785
- [2] BARCACCIA, B., ESPOSITO, G., MATARESE, M., BERTOLASO, E.M., MARINIS, M., Defining Quality of Life: A Wild Goose Chase? *Europe's Journal of Psychology*, 2013, vol. 9, no. 1, pp. 185 - 2003, ISSN 1841-0413
- [3] BOWLING, A., Current state of the art in quality of life measurement. (ed.) Alison J Carr Irene J Higginson, Peter G Robinson, *Quality of life*, London: BMJ Books, 2003, pp. 1-8. ISBN 0 7279 1544 4
- [4] FERRISS, A., L., *Approaches to Improving the Quality of Life*, London - New York: Springer, 2010, s.150, ISSN 1387-6570
- [5] FRIEDMAN, M. I., *Improving the quality of life: A holistic scientific strategy*, London: Praeger, 1997, s. 191, ISBN 0–275–96028–5
- [6] SIRGY, M.J., RAHTZ, D., SWAIN, D., (ed.) *Community Quality-Of-Life Indicators: Best Cases II. Dordrecht*: Springer, 2006, s. 329 ISBN 10 1-4020-4624-3
- [7] THEOFILOU, P., Quality of life: definition and measurement. *Europe's Journal of Psychology*, 2013, vol. 9, no. 1, pp. 150 – 162 . ISSN 1841-0413

KEY FACTORS OF CORPORATE SOCIAL RESPONSIBILITY DEVELOPMENT^{1*}

Magdalena Rojek-Nowosielska

Wroclaw University of Economics

magdalena.rojek-nowosielska@ue.wroc.pl

Key words:

Corporate Social Responsibility (CSR) – Caux Round Table Principles – development – factors

Abstract:

The article discusses the basic information about the concept of corporate social responsibility (CSR) and points to the key factors determining its development. The article is also an attempt to systematise the factors of the CSR, with reference to the principles of the concept of social responsibility based on business practices adopted during the Round Table meeting in Caux. The juxtaposition allows to notice that the theoretical assumptions of the CSR concept may be an inspiration to CSR development in business practice.

Introduction

The aim of this article is to discuss the most important factors that influence the development of corporate social responsibility concept in business practice. In addition, a collation of these factors with the existent principles of CSR has been made in an attempt to confirm the feasibility of realising the theoretical premises in practice.

While talking about corporate social responsibility, this article adopts the definition proposed by the European Commission. In a statement published in 2011: *A renewed EU strategy 2011-14 for Corporate Social Responsibility*, the Commission put forward a new definition of CSR, by defining it as “the responsibility of enterprises for their impact on society. (...) To fully meet their corporate social responsibility, enterprises should have in place a process to integrate social, environmental, ethical, human rights

* The project was funded by the National Science Centre in Poland.

and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders, with the aim of:

- maximising the creation of shared value for their owners/shareholders and for their other stakeholders and society at large;
- identifying, preventing and mitigating their possible adverse impacts [1, 6].

1. The identification of the factors conditioning the development of social responsibility

Quoting the T. Pszczołowski's definition of a factor, it is important to note, that it is “an element singled out in a complex of various phenomena, which is not always describable in descriptive or scientific terms, but which is regarded as a cause or a condition of some considered result” [2, 41]. Thus, in the light of this definition and in reference to the corporate social responsibility, the author of this article will consider the factors in question to be the elements of the socio-economical life, the existence and interaction of which can influence the emergence and the development of CSR concept.

Among many factors having impact on the development of CSR concept, it is necessary to mention the one connected with the consumer and competition pressures, caused by the rise of awareness, by more precise formulation of ones expectation by the vast number of stakeholders and, consequently, by the need for adapting to the changes occurring at a high pace. Another significant determinant of social responsibility is the necessity to incorporate into ones company's activities the ever increasing legal and formal demands concerning, for instance, the environmental protection. It is important to touch upon the globalisation and computerisation processes, which, on one hand speed up and facilitate the flow of information, but on the other hand make the less favourable events from the given company's history spread among the population without any problems, even across thousands of kilometres. It may cause further problems for the business entity (which may even lead to its bankruptcy) constituting a warning for other enterprises as well as consumers making conscious consumer choices.

In describing the factors determining the emergence and the development of social responsibility, it is good to gather the aforementioned factors into a few key groups. This will allow a more synthetic analysis of them. In the literature source, the concept of

3E is often mentioned, which stands for Economy, Ecology and Ethics. These are the most typical and, at the same time, “voluminous” areas of social responsibility analysis. Yet another substantial document that needs to be referenced to is the European Commission statement mentioned above - “*A renewed EU strategy 2011-14 for Corporate Social Responsibility*”. In the adopted definition there has been a reference made to the key areas, which should be taken into consideration while implementing ones responsibilities towards the stakeholders. What is, therefore, being proposed it to analyse the CSR influencing factors through the prism of economical, ecological and ethical perspective.

2. The key development factors and the principles of CSR

The analysis of the factors determining CSR development has been expressed in Table 1. It presents the factors together with their interpretation from the perspective of the CSR concept as well as with good practice “tips”, which constitute the principles of social responsibility. The CSR literature source points to such principles as: Global Compact, the principles of running a business adopted during the Round Table meeting in Caux or the Global Sullivan Principles. In this article, the principles of the Caux Round Table (which are available for viewing at www.cauxroundtable.org) will constitute the baseline for the analysis. For the purpose of clarification, it has to be mentioned that the information in the brackets (found in the last column of Table 1) refers to the principle number, which is referenced to as well as the section it is described in (e.g. investors, employees or local community).

TAB. 1: The juxtaposition of factors determining CSR development and the principles of CSR

Area	Factors influencing CSR development	Factor's interpretation from the CSR perspective	Exemplary CSR principles (with their confirmation in the Caux document)
Economy	The necessity to reduce costs	The necessity to consider the possibility of spending the financial resources in a more rational way in order to be also able to implement the principles of social responsibility; doing so it can also lead to a further reduction of costs and a more economical management – e.g. a more conscious usage of energy, water, paper etc.	– Caring for a constant improvement of the quality of products (e.g. in order not to rise costs of guarantee and servicing) (<i>preamble – principle 1</i>) – Improving the methods of management (including the rational use of resources) (<i>preamble – principle 2</i>)
	The rise of customer importance	The rise in social awareness and a high level of needs articulation	– Caring for a constant improvement of the quality of products (<i>principles 1,2,3,4/customers</i>) – Running a business in accordance with the existing laws (<i>preamble – principle 4, principle 2/customers</i>) – Foreseeing the results of ones own actions and taking responsibility for them (<i>preamble – principles 1,3</i>)
	The rise of investors importance	Transparency in running the business, Complete access to the information about the resources used. Investing in such a way that helps promote the investing company	ibid. and additionally: – complete access to information about the actions undertaken (<i>principle 2/investors</i>) – well thought-out investments leading to economical benefits (<i>principles 1,2,3,4/investors</i>)

	The responsiveness to branch trends	Keeping up the pace with the changes, the willingness to lead in the “peloton of competitiveness”	– Caring for a constant improvement of the quality of products (to stay in the market, to be the best) (<i>preamble - principle 1</i>) – Improving the methods of management (<i>preamble – principle 2</i>) – Publishing annual financial reports (<i>principle 2/investors</i>)
	The improvement of company's image and reputation	By being responsible one the investors' trust can increase	– Resorting only to fair competition and advertisement (<i>preamble – principle 7, principles 3,4,5/competitors; principles 1,2/suppliers</i>) – Taking ethical and ecological responsibility criteria into consideration in running the business (<i>preamble – principle 3, principle 3/employees; principle 1/suppliers; principle 2/competitors</i>) – Caring for a constant improvement of the quality of products (<i>principles 1,3/customers</i>)
Ecology	Putting more stress on eco-development having its resonance in legal regulations	The rise of social awareness and the necessity to increase the responsibility for the actions violating the rules of sustainable development	– Respecting the existing regulations concerning environmental protection (<i>preamble – principle 6</i>) – Decreasing the negative impact on the environment (<i>principle 4/community; principle 2/competitors; principle 3/customers</i>)
	The need to reduce costs in the “environmental” area	The possibility to reduce the costs connected with the environmental protection by following the CSR principles	– Reducing the usage of energy and natural resources (<i>preamble – principle 6; principle 2/competitors; principle 1/customers; principle 4/community</i>) – Minimising the environmental damages in all action undertaken (<i>preamble - principle 6; principle 2/competitors; principles 1,2,3/ customers</i>) – Decreasing the negative impact of products on the

			environment (<i>preamble - principle 6, principle 2/competitors, principles 1,2,3/ customers</i>)
	The increase of ecological awareness in society	The necessity of expressing a special care for the results of ones conduct (at its every stage) from the point of view of preserving the existing natural resources	– Taking responsibility for the produced goods at every stage of their life-cycle (<i>preamble – principles 1,6; principle 2/competitors, principle 1/ customers</i>) – Providing full information to all interested parties concerning the impact of the production and the products on the environment (<i>principle 3/employees</i>) – Publishing annual financial reports (<i>principle 4/suppliers; principle 2/investors</i>)
Ethics	The reaction to non-ethical behaviour	The possibility to shape a responsible image of the company by following the CSR principles	– Running a business in accordance with the existing laws (<i>preamble – principles 4,7</i>) – Resorting only to fair competition and advertisement (<i>preamble – principle 4/ customers, principle 2/competitors</i>) – Taking ethical and ecological responsibility criteria into consideration in running the business (<i>principles 2,3,4,5/competitors; principle 2/ customers</i>) – Foreseeing the results of ones own actions and taking responsibility for them (<i>principle 2/ customers</i>)
	The increase of social expectations about the safety of work conditions	Caring for the employees is one of the most important areas of CSR, because it is of vital importance to provide equitable work conditions to be able to develop the social responsibility in other areas	– Providing a financial security for both, the employees and the business owners (shareholders) (<i>preamble – principles 1,2; principle 1/employees; principle 5/suppliers; principle 2/community; principles 1,3/investors</i>) – Running a business in accordance with the existing laws (<i>preamble – principles 4,7</i>) – Limiting ones urges to

			generate profit in the situation when it can lead to actions violating the accepted social norms (<i>principle 3/employees</i>)
	The necessity of proper balancing between professional and private parts of life	ibid.	Following the principle of respecting the common good in accordance with the generally accepted norms (<i>principles 1,2,3,5/society</i>)

Source: Author's elaboration based on: [3, 49]

The above juxtaposition constitutes only an exemplary set of factors which may lead to the rise and the development of CSR. At this point it is important to stress that not all the principles described in the aforementioned document have been discussed and assigned to the factors mentioned. They constitute additional, more detailed guidelines useful in every-day business conduct.

3. Conclusion

Many factors exist which determine the development of corporate social responsibility. Their importance is specified neither in practical nor scientific terms. It seems, however, that the theoretical indications incorporated in the CSR principles have the potential to kindle pro-social behaviours undertaken by business people during their every-day business activity. Right in the definition of entrepreneurship there lies the element of making the best of the chances that every business entity faces. Nowadays, such a chance can be described as a business that does not rely on purely financial parameters, but which also reserves a place for the employee, for a conscious and responsible personnel policy, for a good relationship with ones local community or for promoting ecological technologies.

Corporate social responsibility can, and should, constitute a counterbalance for the overstated financial parameters. The ability to assess ones business, and later to draw conclusions and to use them properly in ones every-day business conduct can result in satisfied customers, efficient employees, cooperative and willing local administration, cooperative organisation (e.g. a pro-ecological organisation) and in turn investors and

capital owners willing to cooperate. Such actions are a part of the accepted principles of social responsibility which, in turn, lead to the success of the company.

References:

- [1] COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, *A renewed EU strategy 2011-14 for Corporate Social Responsibility*, Brussels, COM(2011) 681 final, p.6.
- [2] PSZCZOŁOWSKI, T. *Mała encyklopedia prakseologii i teorii organizacji*, hasło „czynnik”, Wrocław: Zakład Narodowy im. Ossolińskich, 1978, s. 41.
- [3] ROJEK-NOWOSIELSKA, M. *Kształtowanie społecznej odpowiedzialności przedsiębiorstw*, Wrocław: Wydawnictwo Akademii Ekonomicznej im. Oskara Langego we Wrocławiu, 2006, s. 49, ISBN 83-7011-812-7

MINIMALISTIC SIMULATION OF POPULATION AGING'S FISCAL IMPLICATIONS AND THE ROLE OF PRODUCTIVITY OF LABOR

Zdeněk Rosenberg

Masaryk University

zdenek.rosenberg@gmail.com

Key words:

ageing – pension system – fiscal policy – labor productivity – simulation

Abstract:

The simulation uses four scenarios of population aging and briefly analyses the most likely of them. It uses the number of people of each age and average government's revenues and expenditures related to citizen of every year of age to calculate total revenues and expenditures for 2013 to 2100. The simulation identifies 2060 to be the most problematic year with the deficit over 11% of GDP. The paper concludes that without increase in labor productivity the population's ageing leads to the collapse of public finances. At the same time only a slight increase in labor productivity is sufficient to keep the actual level of pensions and budget balanced in the long run.

Introduction

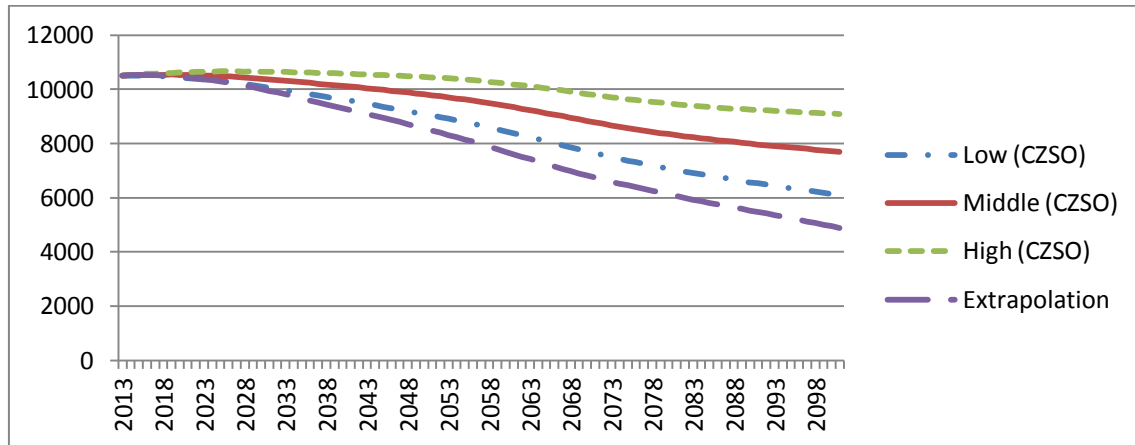
This paper presents a minimalistic simulation of the budget implications of population ageing in the Czech Republic. At first four population projections are presented. Then the average government's revenues and expenditures related to citizen of every age are constructed. The simulation consists of calculating total revenues and expenditures as well as cumulated deficit for 2013 to 2100 using the number of people of each age in all four projections. The paper ends with a calculation of how much must labor productivity rise to keep the budget balanced in the long run.

1. Population projections

Four population projections are used in this paper. Three of them were made by CZSO in [3] and the fourth is the author's extrapolation of the current demographic situation. The extrapolation is based on the current state of population with its fertility and

mortality as presented in [2] and is used to show what would happen if nothing has changed.

FIGURE 1: Projections of Czech population



Source: CZSO, author.

The dramatic drop in population observed in Figure 1 in the Extrapolation is caused by several factors: no net immigration, no rise of fertility and unchanged life expectancy. The basic assumptions upon which the CZSO projections are made are shown in Table 1. The origin of these numbers is not entirely clear as CZSO explains only the underlying trends. The “middle” variant is constructed as the most likely scenario and will be in the center of the following analysis.

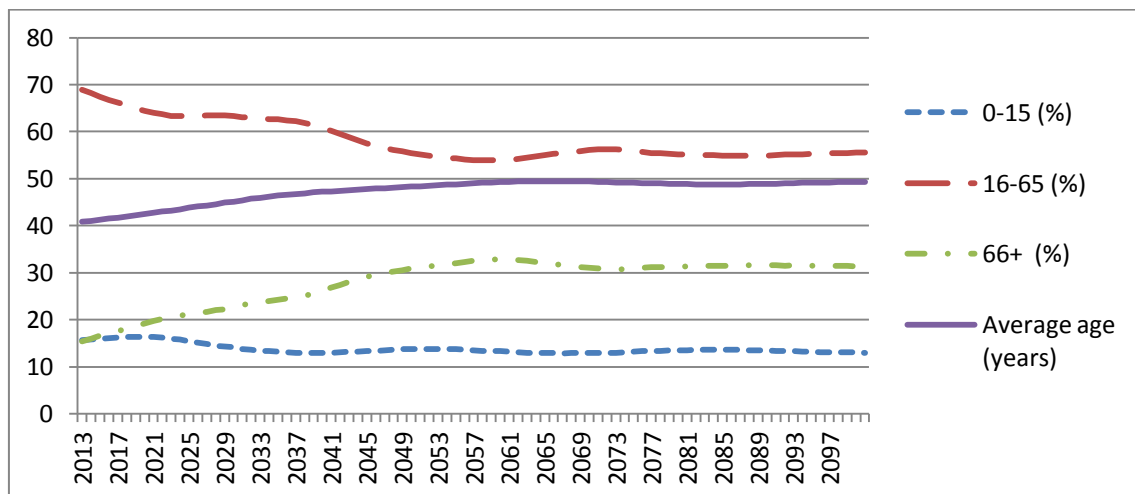
TAB. 1: Basic parameters of projections by CZSO

Year	Total fertility			Life expectancy (men / women)			Net migration		
	Lo	mid	high	low	middle	high	low	mid	high
2012	1.45	1.45	1.45	75.0 / 80.9	75.0 / 80.9	75.0 / 80.9	1029 / 3	10 / 293	1029 / 3
2015	1.45	1.45	1.45	75.6 / 81.4	75.8 / 81.6	75.9 / 81.8	-996	8 934	1886 / 4
2030	1.50	1.50	1.50	78.2 / 83.8	79.5 / 85.1	80.6 / 86.1	2 226	11 / 659	2111 / 0
2050	1.56	1.56	1.56	81.1 / 86.2	83.0 / 88.0	84.6 / 89.3	5 571	14 / 384	2329 / 1
2100	1.56	1.56	1.56	84.2 / 88.8	86.6 / 91.1	88.4 / 92.9	10 / 350	17 / 671	2540 / 0

Source: CZSO.

Figure 2 presents selected data from the “middle” projection. Besides the significant drop in population as a whole, a sharp drop of the percentage share of 16-65 years olds is apparent. The minimum of 53.9% is reached in years 2058-2060. The oldest age group’s share is at its maximum of 32.8% in 2059-2061. According to the most likely scenario, 48% of those over 18 will be 60 years old or older in 2052-2058, whilst it is 29% in 2013. The majority of those with right to vote will be over 56 in 2048-2059.

FIGURE 2: Share of main age groups and average age in most likely scenario

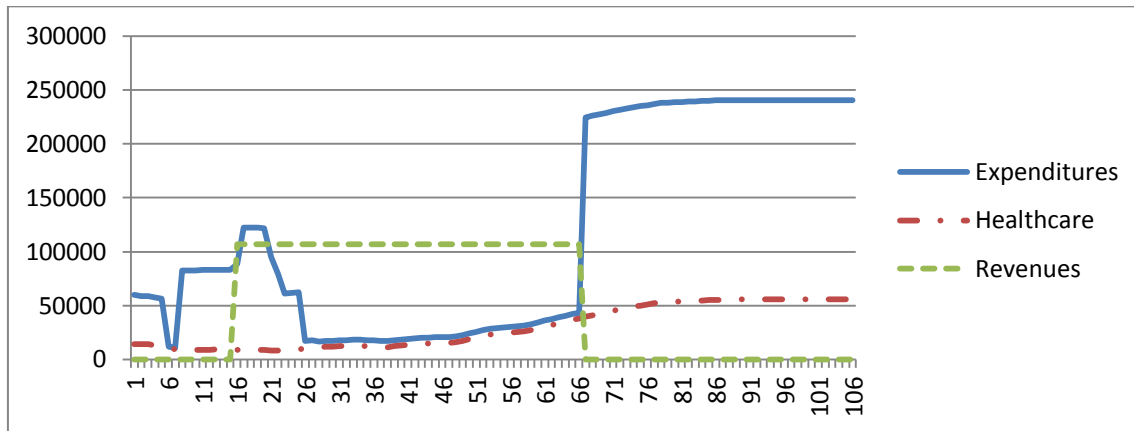


Source: CZSO.

2. Data

The simulation uses the government’s expenditures and revenues related to the average citizen of every year of age shown in Figure 3. All prices are in 2010 Czech crowns (CZK). There is no inflation in the simulation so when pensions do not change in time they are actually inflation adjusted. On the revenue side it is the complete revenue from taxation of labor which consists of tax on personal income and both the employee’s and employer’s health and social security insurance. From the average gross wage of 23951 CZK, which is equivalent to net wage 18471 CZK and super-gross wage of 32095, this tax is 13624 CZK. In the simulation, 163488 CZK (12×13624) is used for all agents. This is a very conservative assumption as the wages tend to increase with age.

FIGURE 3: Selected government's expenditures and revenues from the average citizen in the Czech Republic (CZK)



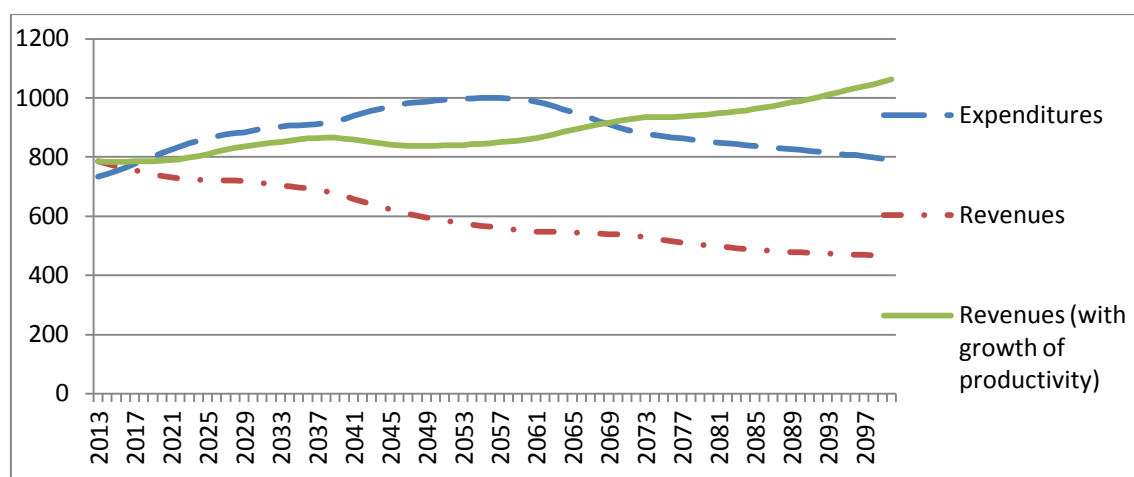
Source: Author's calculations.

Expenditures consist of social benefits related to every year of age¹, costs of every level of education as provided by OECD in [8], unemployment, healthcare costs and pensions. The secondary education is currently completed by 84 % of the population and tertiary is started by 50% and finished by 29%, which may increase in the future. Healthcare costs are a linear interpolation of data provided for cohorts of five years by the CZSO in [6]. This data was provided separately for both sexes, so the average has been used here for the purpose of the simulation. The Czech Republic's aggregate replacements ratio² is around 53% and is above the OECD average [7, p.9]. Although average monthly pensions were 11240 CZK for man and 9189 CZK for a woman [4], giving an annual average of 122574 CZK, a much higher number was used. In the simulation the average annual pension is 184957 CZK which is the result of 299 076 mil. CZK, which is the whole pension budget of 2012 spent on pensions of 1617 thousand recipients. This was done deliberately to compensate for the absence of wage increase adjustments.

¹ These are child and social benefits, housing allowance, transport allowance, parental allowance, contribution provident and foster care benefits. These are taken from [5] and evenly distributed among the age group they are meant for.

² It is the ratio of pensions of those aged 65-74 to the income of those aged 50-59.

FIGURE 4: Expenditures and revenues in most likely scenario (bil. CZK)



Source: Author's calculations.

3. Results

This simulation uses vectors of government's expenditures and revenues from an average citizen of every age and population data from projections to calculate the total revenues and expenditures of each year. The results without any growth are dismal as is obvious from both Figure 4 and Table 2 with an average annual deficit of more than 6.8% and new debt³ close to or over 600% GDP for every CZSO projection. This is consistent with findings from study [1] by Bezděk, Dybczak and Krejdl (2003)⁴ which uses a projection going only as far as 2050. The simulation presented here shows that the situation gets worst around 2060 with a deficit as high as 11.6% GDP.

In the simulation the increase in labor productivity proportionally increases the government's revenues. The most important finding of the simulation presented here is that even the low level of annual increase in labor productivity is sufficient to balance the revenues and expenditures over the whole projection. With an annual labor productivity growth of 0.951 % that is shown on Figure 4, there is no accumulated deficit and the highest deficit is 4.1% GDP in 2053.

³ New debt or accumulated deficit is simple summary of all deficits or surpluses during simulation. No interest rate is used. It is worth noting that without labor productivity growth here are deficits and with labor productivity growth there are surpluses at the end of period.

⁴ In this study a quite large rise in productivity of labor of 3.4% a year slowly declining to 1.9% is used along with pensions increasing at the 1/3 pace of wage increase. This level of growth may be realistic as the actual level of labor productivity average annual growth was 4.3% in 2004-2007.

TAB. 2: Deficits and average annual productivity growth sufficient for balanced budget (2013 – 2100)

Population projection	Without growth of productivity		Growth of productivity sufficient for balanced budget (%)	Population at the end of simulation (mil.)
	Accumulated deficit (% GDP)	Average annual deficit (% GDP)		
Extrapolation	-372,3	-4,2	0,680	4,892
Low (CZSO)	-599,7	-6,8	0,957	6,095
Middle (CZSO)	-691,9	-7,9	0,951	7,687
High (CZSO)	-751,9	-8,5	0,948	9,085

Source: Author's calculations.

4. Conclusions

Though one must be aware of the limits of this simulation two main conclusions can be made for one of the fastest aging OECD economies:

- a) The current level of pensions is not sustainable without growth of labor productivity. In the most likely scenario the deficit accumulated over a whole period is over 690% GDP and is still growing. Labor productivity and economic growth are a top priority in dealing with an aging population.
- b) Even very modest growth of less than 1% a year can make the current system sustainable. However even though the absolute income of the seniors would not drop, the relative would drop dramatically. Larger growth possibly accompanied by changes in pensions or tax system is needed to compensate for that.

Acknowledgements:

This article was supported by Specific research project at ESF MU.

References:

- [1] BEZDĚK, V., DYBCZAK, K., KREJDL, A. *Fiscal Implications of Population Ageing*. Finance úvěr, 2003. Vol. 53.
- [2] Český statistický úřad (Czech Statistical Office - CZSO). *Demografická ročenka České republiky 2012*. WWW: <<http://www.czso.cz/csu/2013edicniplan.nsf/p/4019-13>>
- [3] Český statistický úřad (Czech Statistical Office - CZSO). *Projekce obyvatelstva české republiky do roku 2100*. [online]. WWW: <<http://www.czso.cz/csu/2013edicniplan.nsf/p/4020-13>>
- [4] Český statistický úřad (Czech Statistical Office - CZSO). *Průměrná měsíční výše důchodů – změna v klasifikaci stupně invalidity od roku 2010*. [online]. WWW: <vdb.czso.cz/vdbvo/tabparam.jsp?voa=tabulka&cislotab=SZB0071UU&&kapitola_id=16>
- [5] Český statistický úřad (Czech Statistical Office - CZSO). *Česká republika od roku 1989 v číslech. Vyplacené dávky státní sociální podpory v ČR – podrobné členění*. [online]. WWW: <http://www.czso.cz/cz/cr_1989_ts/1311.xls>
- [6] Český statistický úřad (Czech Statistical Office - CZSO). *Výsledky zdravotnických účtů ČR 2000 až 2010. Výdaje zdravotních pojišťoven*. [online]. WWW: <[http://www.czso.cz/csu/2012edicniplan.nsf/t/CD003F9988/\\$File/330612k3.pdf](http://www.czso.cz/csu/2012edicniplan.nsf/t/CD003F9988/$File/330612k3.pdf)>
- [7] Ministerstvo práce a sociálních věcí (Ministry of Labour and Social Affairs). *Český důchodový systém v kontextu EU*. [online]. WWW: <<http://www.mpsv.cz/files/clanky/11969/Analyza.pdf>>
- [8] OECD. Education at a Glance 2013: OECD Indicators. Annual expenditure per student by educational institutions for all services (2010) [online]. WWW: < <http://dx.doi.org/10.1787/888932849350> >

ECONOMIC ANALYSIS OF REVERSE BONUS CERTIFICATES (PART I)

Monika Harčariková, Martina Rusnáková

The Technical University of Košice

monika.harcarikova@tuke.sk, martina.rusnakova@tuke.sk

Key words:

Uncapped and Capped Reverse Bonus certificates – Vanilla options – Barrier options

Abstract:

In this paper we introduce the classical reverse bonus certificates with cap and without cap. We present profit function of these certificates and find that the uncapped reverse bonus certificate is engineered from a combination of a short position in underlying asset and a long position in up and knock-out call options. We also find that capped reverse bonus certificate is engineered from a combination of a short position in underlying asset, a long position in up and knock-out call options and short position in a put option. Our analysis is applied on real reverse bonus certificate – DAX Capped Reverse Bonus Certificate issued by Raiffeisen Centrobank.

Introduction

Reverse bonus certificates are one of the modern structured products which incorporate partial capital protection. These products are suitable for investors who expect declining or stagnating markets. Paper [2] deals with analysis of classical bonus certificates.

Investment certificates are structured financial products which can offer opportunity for every market scenario. Investment certificates consist basically of two essential elements, i.e. an original instrument and a derivative one, often classic vanilla or exotic option. Structured product formation is discussed in work [1]. Exotic options belong to new generation of options, which are adapted to investor specific requirements. Detailed description of exotic options with their profit functions is in work [3]. Less known, but much more sophisticated type of exotic option is a barrier option. A barrier option has a second strike price called barrier. A barrier influences the activation (knock-in) or deactivation (knock-out) of barrier option and the barrier may be over (up) or below

(down) the current price of the underlying asset at the time of closing option contracts. Barrier option is therefore associated with a condition which has to be fulfilled, otherwise it will expire as worthless.

In this paper is realized an economic analysis of structured product – reverse bonus certificate with the purpose to explore how the principles of financial engineering are applied to the creation of such newly structured products. We deal with the nature of the formation of the reverse bonus certificate without and with the cap. Further we suggest an alternative investment portfolio by using vanilla and barrier options. Finally, we analyse a real Capped DAX Reverse Bonus Certificate. In this paper all analysis are based on profit functions. The construction of the new types of reverse bonus certificates will be mentioned in the second part of this article called *Economic analysis of reverse bonus certificates*.

1. Characteristics of reverse bonus certificates

Reverse bonus certificates are a variant of bonus certificates, i.e. certificates which profit profile depends on exceeding respectively not exceeding a barrier, specified at the time of the certificate issue above the actual spot price of the underlying asset. It means, these certificates behave inversely to the market, i.e. investor gains with falling of the underlying asset price and he loses with strong price increases.

In this case, the following basic parameters are important and defined at its issue. The first parameters are *subscription ratio* (p) and *maturity date* (T) of the certificate. Certificate has two special features, i.e. barrier level and bonus level which are fixed at issue time and remain unchanged during the lifetime of the certificate. The *barrier level* (B) is a limit which the underlying asset price must not reach or rise above from the issue date to maturity. In this case, at maturity the investor will be paid at a minimum the bonus level B_L . If, even for a moment, the underlying asset value rises above the B limit, then this protection is cancelled and the investor participates in the loss in full, just as with the reverse linear certificate. The profit is either unlimited (uncapped certificate), or it is limited by a cap, if there is one. Cap is the maximum value which the investor can get from the certificate at maturity. In some bonus certificates $C = B_L$.

Let us denote subscription ratio p , issue price of the certificate S_0 , price of the underlying asset at maturity S_T , barrier level B and bonus level B_L . So if the underlying

price does not rise above the barrier until the maturity date, then the profit function of the uncapped reverse bonus certificate at the maturity date will be:

$$P(S) = \begin{cases} -p(S_T - S_0) + NV - k & \text{if } S_T < B_L, \\ -p(B_L - S_0) + NV - k & \text{if } \max_{0 \leq t \leq T}(S_t) < B \wedge S_T \geq B_L, \\ -p(S_T - S_0) + NV - k & \text{if } \max_{0 \leq t \leq T}(S_t) \geq B \wedge S_T \geq B_L, \end{cases} \quad (1)$$

where NV is nominal value of the certificate and k is its purchasing price.

We underline that the profit function will be calculated according to relation (1) only if the underlying price does not rise above the barrier all the time until the maturity date. If it happens, profit function of the certificate is identical to profit function of reverse linear certificate which is $P(S) = -p(S_T - S_0)$ (2)

for any S_T .

There are significantly more certificates which also have a cap. It is the maximum price of the certificate at maturity, which the investor can get even in case $S_T \leq C$. In the case of if the value $C < B_L$ and the barrier are not exceeded, the profit function of the capped reverse bonus certificate at maturity is as follows:

$$P(S) = \begin{cases} -p(C - S_0) + NV - k & \text{if } S_T < C, \\ -p(S_T - S_0) + NV - k & \text{if } C \leq S_T < B_L, \\ -p(B_L - S_0) + NV - k & \text{if } \max_{0 \leq t \leq T}(S_t) < B \wedge S_T \geq B_L, \\ -p(S_T - S_0) + NV - k & \text{if } \max_{0 \leq t \leq T}(S_t) \geq B \wedge S_T \geq B_L. \end{cases} \quad (3)$$

2. The nature of the formation of reverse bonus certificates

The uncapped reverse bonus certificate is a structured product which is engineered from a combination of two positions, i.e. a short position in underlying asset and a long position in up and knock-out call options.

If we denote S_0 as the price of the underlying asset at beginning date and S_T as the price of the underlying asset at the ending date, the profit function of short position in underlying asset at ending date is:

$$P_1(S_T) = S_0 - S_T. \quad (4)$$

The long position in up and knock-out call option represents a right to buy an underlying asset for a given price known as strike price if its price over the term of the option is not exceeded. The barrier is set above the price of the underlying asset at the

beginning date. We see here an analogy with reverse bonus certificates. The investor in this certificate loses entitlement to payment of bonus providing reaching the barrier.

If we denote B_L as the strike price, B as the barrier level and c_{BUO} as the option premium, the profit function for long position in up and knock-out call option has the following form:

$$P_2(S_T) = \begin{cases} -c_{BUO} & \text{if } S_T < B_L, \\ S_T - B_L - c_{BUO} & \text{if } \max_{0 \leq t \leq T}(S_t) < B \wedge S_T \geq B_L, \\ -c_{BUO} & \text{if } \max_{0 \leq t \leq T}(S_t) \geq B \wedge S_T \geq B_L. \end{cases} \quad (5)$$

The profit function of uncapped reverse bonus certificate at the subscription ratio p can be obtained simply as the sum of formulas (4), (5) and has the form:

$$P(S) = \begin{cases} -p(S_T - S_0 + c_{BUO}) & \text{if } S_T < B_L, \\ -p(B_L - S_0 + c_{BUO}) & \text{if } \max_{0 \leq t \leq T}(S_t) < B \wedge S_T \geq B_L, \\ -p(S_T - S_0 + c_{BUO}) & \text{if } \max_{0 \leq t \leq T}(S_t) \geq B \wedge S_T \geq B_L. \end{cases} \quad (6)$$

Using an alternative investment we derived the same profit profile as profit profile of reverse bonus certificate without cap (1).

There are fewer reverse bonus certificate without a cap. The reason is the obligation to pay the option premium at the beginning date for the purchase of the up and knock-out call option. Thus, this certificate price k at the time of issuing is usually higher than its nominal value. If the following condition is met:

$$p \cdot c_{BUO} < k - NV \quad (7)$$

then the issuer who has also position in the alternative investment possibility would be profitable at the time of issuing.

There are significantly more reverse bonus certificates with a cap. Capped reverse bonus certificates can be formed from a short position in underlying asset, a short position in put options with the lower strike price C and long position in up and knock-out call options with a higher strike price B_L .

The profit function of short put position is:

$$P_3(S_T) = \begin{cases} S_T - C + p_s & \text{if } S_T < C, \\ p_s & \text{if } S_T \geq C. \end{cases} \quad (8)$$

The profit function from capped reverse bonus certificate at the subscription ratio p using the conditions $k_0 = pS_0$ and $p_S = c_{BUO}$ expressed as the sum of the individual function (5), (6) and (9) is:

$$P(S_T) = \begin{cases} -p(C - S_0 - p_S + c_{BUO}) & \text{if } S_T < C, \\ -p(S_T - S_0 - p_S + c_{BUO}) & \text{if } C \leq S_T < B_L, \\ -p(B_L - S_0 - p_S + c_{BUO}) & \text{if } \max_{0 \leq t \leq T}(S_t) < B \wedge S_T \geq B_L, \\ -p(S_T - S_0 - p_S + c_{BUO}) & \text{if } \max_{0 \leq t \leq T}(S_t) \geq B \wedge S_T \geq B_L. \end{cases} \quad (9)$$

If the following condition is met:

$$p \cdot p_S - p \cdot c_{BUO} > NV - k \quad (10)$$

then the issuer who has also position in the alternative investment possibility would be profitable at the time of issuing. To meet this condition $p \cdot p_S = p \cdot c_{BUO}$, the price k of reverse bonus certificate at the time of issuing is usually equal as its nominal value. Consequently, the function of alternative investment formed by vanilla and barrier options is the same as the profit function of capped reverse bonus certificate (3).

3. Characteristics and the nature of the formation of DAX Capped Reverse Bonus Certificate

DAX Capped Reverse Bonus Certificate is issued by Raiffeisen Centrobank. This product allows the investors to gain when DAX is declining or sideways. The yield is limited by the cap which equals the bonus level.

Key information is presented in Table 1. More information can be found at (www.rcb.at).

TAB. 1: The basic characteristics of DAX Capped Reverse Bonus Certificate

Underlying asset	The Deutscher Aktien Index (DAX)
Issue date	21 June 2013
Maturity date	21 June 2016
Nominal value	EUR 1,000.00
Issue price	EUR 7,928.48
Barrier	EUR 10,703.448
Cap = Bonus level	EUR 6,659.923

Source: self-processed according to Raiffeisen Centrobank

In the initial valuation date, the issue price is the closing price of the DAX on the initial valuation S_0 (EUR 7,928.48 corresponds to certificate issue price EUR 1000), nominal value NV , barrier B (135% of the initial reference price, corresponds to barrier level of the underlying asset EUR 10,703.448) and cap C equals B_L (84% of the initial reference price, corresponds to cap of the underlying asset: EUR 6659,923).

At maturity time of the given certificate may occur 3 scenarios. If the underlying asset price (DAX) is between bonus level and barrier level or the underlying asset price is under a bonus level and during the observation period the DAX always quotes under barrier 135%, then the investor will obtain fixed profit in the amount of a cap which equals bonus level according to subscription ratio p , i.e. 16% yield from nominal value (EUR 160.00 for each certificate). If the barrier is exceeded by the DAX price during time to maturity, then the certificate change on reverse linear, i.e. its profit respectively loss replicates inverse DAX price development and max profit is limited by the cap.

If subscription ratio is p , the price of the underlying asset at the ending date S_T , purchasing price k , the profit function of Capped DAX Reverse Bonus Certificate at issue date is:

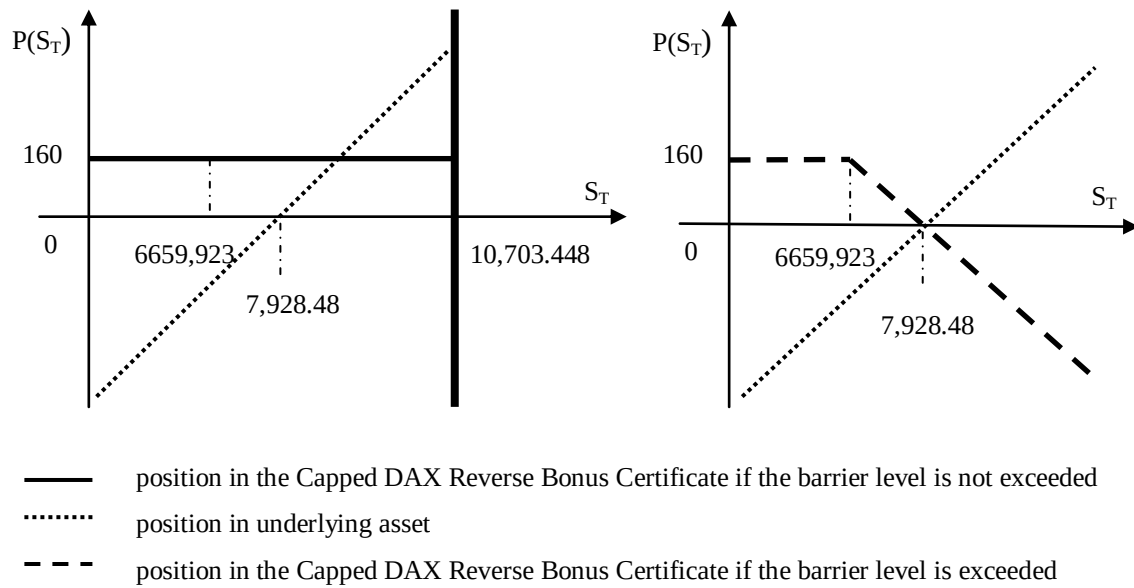
$$P(S) = \begin{cases} -p(6659.9232 - 7928.48) + 1000 - 1000 & \text{if } S_T < 6659.9232, \\ -p(6659.9232 - 7928.48) + 1000 - 1000 & \text{if } \max_{0 \leq t \leq T} (S_t) < 10703.448 \wedge S_T \geq 6659.9232, \\ -p(S_T - 7928.48) + 1000 - 1000 & \text{if } \max_{0 \leq t \leq T} (S_t) \geq 10703.448 \wedge S_T \geq 6659.9232, \end{cases} \quad (11)$$

where

$$p = \frac{N}{S_0} = \frac{1000}{7928.48} \quad (12)$$

And graph of Capped DAX Reverse Bonus Certificate at issue date is shown at **Chyba!**
Nenalezen zdroj odkazů..

FIG. 1: Profit function of Capped DAX Reverse Bonus Certificate



Source: own design

References:

- [1] ŠOLTÉS, V., RUSNÁKOVÁ, M. *Utilization of options in the formation of structured products*. Transactions of the Universities of Košice. 2010, no. 1, pp. 65-72. ISSN 1335-2334
- [2] ŠOLTÉS, V., YOUNIS, ABDUHAMID M. Ahmed, *Portfolio Proposals for Conservative Investors Using Discount and Bonus Certificates*, 2010, In: Transactions of the Universities of Košice. Č. 1 (2010), pp. 73-78. ISSN 1335-2334
- [3] ZHANG, P. G., *Exotic options: A Guide to Second Generation Options*, 1998, 2.nd edition, World Scientific Publishing, Singapore. ISBN 981-02-3482-1

ECONOMIC ANALYSIS OF REVERSE BONUS CERTIFICATES (PART II)

Martina Rusnáková, Monika Harčariková

The Technical University of Košice

martina.rusnakova@tuke.sk, monika.harcarikova@tuke.sk

Key words:

Uncapped and Capped Reverse Bonus certificates – Vanilla options – Barrier options

Abstract:

In this paper we proposed a new investment certificate on the principle of formation of the known reverse bonus certificates without and with cap. We present profit function of the proposed certificates. We find that the uncapped certificate is engineered from a combination of a short position in underlying asset and long position in down and knock-in call options. Following finding is that the capped certificate is engineered from a combination of a short position in underlying asset, a short position in put options and long position in down and knock-in call options. We also compare the proposed capped reverse bonus certificate with the classical capped reverse bonus certificate.

Proposal of the new type of uncapped and capped reverse bonus certificate

For declining or stagnating markets reverse bonus certificates are suitable financial instruments. Bonus certificates are analyzed in papers [2] and [4]. For example papers [1], [3], [5] deal with other types of investment certificates. Characteristic features of reverse bonus certificates, profit functions of uncapped and capped reverse bonus certificate, nature of their formation using barrier and vanilla options and practical analysis of real reverse bonus certificate – DAX Capped Reverse Bonus Certificate are mentioned in the first part of this article called *Economic analysis of reverse bonus certificates*. This paper follows the Part I.

The new types of reverse bonus certificates can be available for investors who wish to benefit from significant volatility in the market. If the underlying asset value falls below the barrier, then the investor is guaranteed a bonus (down and knock-in barrier option is activated). On the other hand, if the barrier level is not reached, the maximum loss is unlimited in the underlying price growth. The barrier level is set below the bonus level

and the initial price of underlying asset is set above the bonus level. The barrier can apply continuously, during the whole life of the product (American style).

Let us denote subscription ratio p , price of the underlying asset at time of issuing S_0 , price of the underlying asset at time of maturity S_T , barrier level B , bonus level B_L , nominal value of the certificate and its purchasing price k .

The profit function of the new type of uncapped bonus certificate at the maturity is:

$$P_{URB}(S_T) = \begin{cases} -p(S_T - S_0) + NV - k & \text{if } S_T < B_L, \\ -p(B_L - S_0) + NV - k & \text{if } \min_{0 \leq t \leq T}(S_t) \leq B \wedge S_T \geq B_L, \\ -p(S_T - S_0) + NV - k & \text{if } \max_{0 \leq t \leq T}(S_t) > B \wedge S_T \geq B_L. \end{cases} \quad (1)$$

If the underlying asset value stays below the bonus level at the maturity, then the investor profit increases with the price decrease of the underlying asset. There is inverse relation between the profit from certificate position and the profit from underlying position. If the underlying asset value stays above the bonus level at the maturity and the barrier is crossed until the maturity, then the investor is guaranteed a bonus expressed by the bonus level. The investment risk lies in not barrier crossing and the higher spot price at the maturity as the bonus level. In this case, the loss replicates underlying price growth.

The new type of uncapped reverse bonus certificate is a structure product which is engineered from a combination of a short position in underlying asset and a long position in down and knock-in call options with B_L as the strike price, B as the barrier level and c_{BUI} as the premium for an option.

The profit function of short position in underlying asset at ending date is:

$$P_1(S_T) = S_0 - S_T, \quad (2)$$

and the profit function for long position in down and knock-in call option has the following form:

$$P_2(S_T) = \begin{cases} -c_{BDI} & \text{if } S_T < B_L, \\ S_T - B_L - c_{BDI} & \text{if } \min_{0 \leq t \leq T}(S_t) \leq B \wedge S_T \geq B_L, \\ -c_{BDI} & \text{if } \min_{0 \leq t \leq T}(S_t) > B \wedge S_T \geq B_L. \end{cases} \quad (3)$$

The profit function of the alternative investment possibility at the subscription ratio p expressed as the sum of formulas (2) and (3) has the form:

$$P_{UAI}(S_T) = \begin{cases} -p(S_T - S_0 + c_{BDI}) & \text{if } S_T < B_L, \\ -p(B_L - S_0 + c_{BDI}) & \text{if } \min_{0 \leq t \leq T}(S_t) \leq B \wedge S_T \geq B_L, \\ -p(S_T - S_0 + c_{BDI}) & \text{if } \min_{0 \leq t \leq T}(S_t) > B \wedge S_T \geq B_L. \end{cases} \quad (4)$$

If the following condition is met:

$$p \cdot c_{BDI} = k - NV, \quad (5)$$

then the profit profile of this alternative possibility equals to the profit profile of the new type of uncapped reverse bonus certificate.

The cap level of the new type of capped reverse bonus certificate is below to the bonus level. The barrier level is set below the cap level and the initial price of underlying asset is set above the bonus level.

The profit function of a new type of the capped reverse bonus certificate at expiration time is:

$$P_{CRB}(S_T) = \begin{cases} -p(C - S_0) & \text{if } S_T < C, \\ -p(S_T - S_0) & \text{if } C < S_T \leq B_L, \\ -p(B_L - S_0) & \text{if } \min_{0 \leq t \leq T}(S_t) \leq B \wedge S_T \geq B_L, \\ -p(S_T - S_0) & \text{if } \min_{0 \leq t \leq T}(S_t) > B \wedge S_T \geq B_L. \end{cases} \quad (6)$$

New type of capped reverse bonus certificate offers the following possible payouts at maturity. If the underlying price has at least once breached the barrier level, then the investor receives at the minimum – bonus amount and at the maximum – cap amount. If the underlying price has never breached the barrier level but it is below the cap level, then the investor receives an amount equal to the cap level. If the underlying price has never breached the barrier level and it is above the cap level, then the investor receives a cash payment equal to the actual price of the underlying at maturity.

This new type of capped reverse bonus certificate can be constructed by a short position in underlying asset, a short position in put options with lower strike price C , premium p_S and a long position in down and knock-in call options with higher strike price B_L , barrier level B_L , premium c_{BDI} . The bonus level is below the current underlying asset price at the beginning date, but it is also above the barrier level.

The profit function of short put position is as follow:

$$P_3(S_T) = \begin{cases} (S_T - C + p_S) & \text{if } S_T < C, \\ p_S & \text{if } S_T \geq C. \end{cases} \quad (7)$$

The profit function of the alternative investment (8) can be obtained as a sum of functions (2), (3) and (7).

$$P_{CAI}(S_T) = \begin{cases} -p(C - S_0 - p_S + c_{BDI}) & \text{if } S_T < C, \\ -p(S_T - S_0 - p_S + c_{BDI}) & \text{if } C < S_T \leq B_L, \\ -p(B_L - S_0 - p_S + c_{BDI}) & \text{if } \min_{0 \leq t \leq T}(S_t) \leq B \wedge S_T \geq B_L, \\ -p(S_T - S_0 - p_S + c_{BDI}) & \text{if } \min_{0 \leq t \leq T}(S_t) > B \wedge S_T \geq B_L. \end{cases} \quad (8)$$

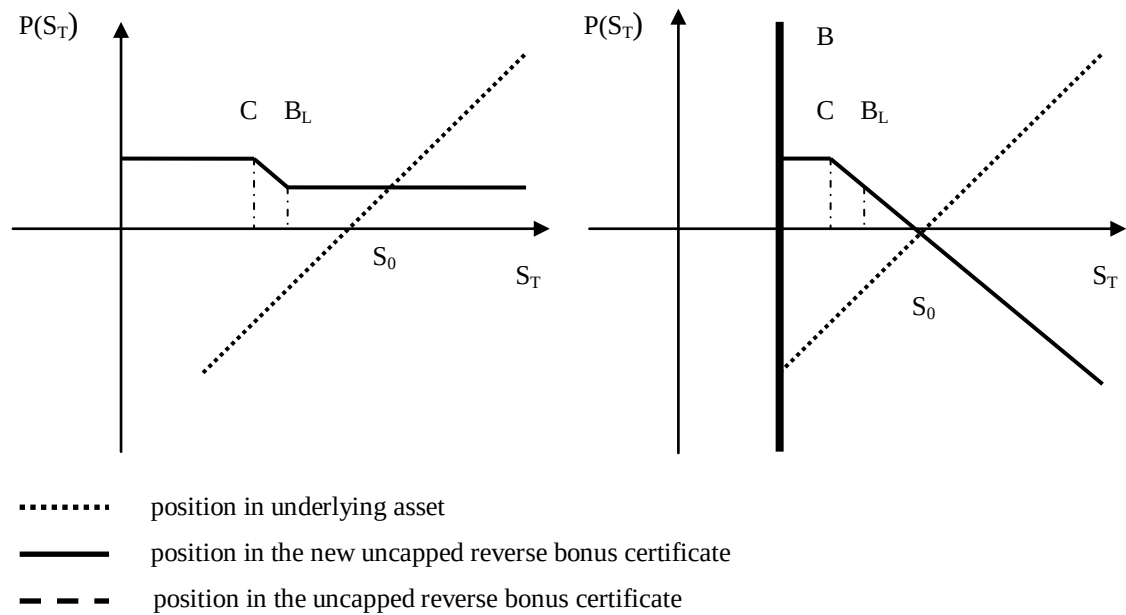
Assuming $p_S = c_{BDI}$ and $NV = k$ and the investment amount is reduced by the subscription ratio p , the profit function has the form:

$$P_{CAI}(S_T) = \begin{cases} -p(C - S_0) & \text{if } S_T < C, \\ -p(S_T - S_0) & \text{if } C < S_T \leq B_L, \\ -p(B_L - S_0) & \text{if } \min_{0 \leq t \leq T}(S_t) \leq B \wedge S_T \geq B_L, \\ -p(S_T - S_0) & \text{if } \min_{0 \leq t \leq T}(S_t) > B \wedge S_T \geq B_L. \end{cases} \quad (9)$$

Profit function of the new type of capped reverse bonus certificate at possible price scenarios is shown on Figure 1. The graph on the left of the new type of capped reverse bonus certificate represents the required scenario, i.e. barrier level is reached during the certificate maturity. The cap is the maximum amount and the bonus is the minimum amount which the investor can obtained. The graph on the right is shown the scenario of not barrier reaching. If the underlying asset value is above the bonus level at expiration date, the protection is cancelled and the investor participates inversely in the underlying value.

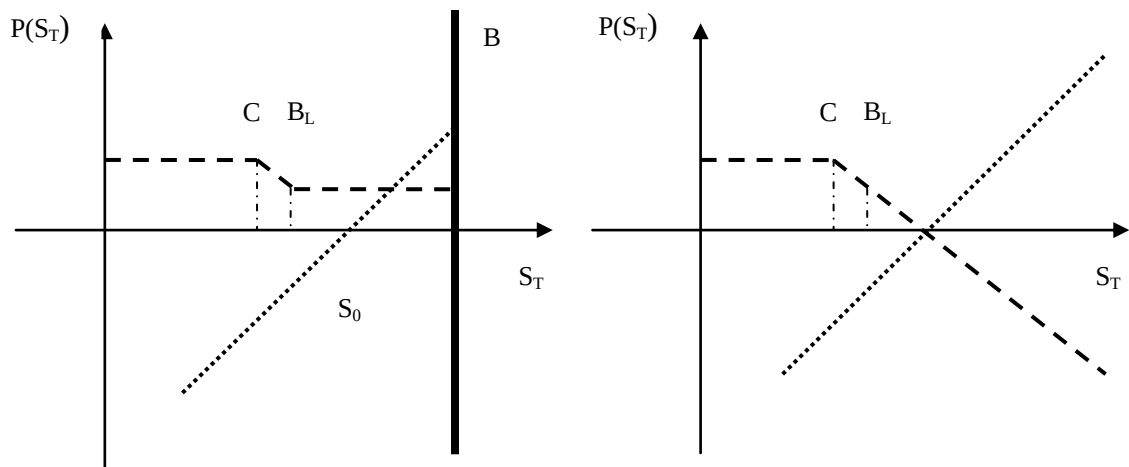
Profit function of the classical capped reverse bonus certificate at possible price scenarios is shown on Figure 2. The graph on the left of classical capped reverse bonus certificate represents the required scenario, i.e. barrier level is not reached during the certificate maturity. The investor obtains the cap or the bonus. The graph on the right is shown the scenario of barrier reaching. If the underlying asset value is above the bonus level at maturity, the protection is cancelled.

FIG. 1: Profit function of the new type of capped reverse bonus certificate



Source: own design

FIG. 2: Profit function of the classical capped reverse bonus certificate



Source: own design

Conclusion

Financial innovations, especially the formation of new financial products through the combination of derivatives and other products, have increased in the past years. Investment certificates are also new innovations which attract investors. These products are created by a combination of the underlying asset and options products on this underlying asset. Their structure is complicated and increases the demands on the intellectualization of investors.

The first part of this paper aims at showing the bases characteristics of reverse bonus certificates. We found profit functions of uncapped and capped reverse bonus certificate. We presented the nature of their formation using up and knock-out call options. We analysed real reverse bonus certificate – DAX Capped Reverse Bonus Certificate issued by Raiffeisen Centrobank.

In the second part of this paper we proposed new uncapped and capped reverse bonus certificates. We derived profit functions of these proposed certificates. We find the alternative investment position to the uncapped certificate, i.e. a short position in underlying asset and long position in down and knock-in call options. We also find the alternative investment position to the capped certificate, i.e. a short position in underlying asset, a short position in put options and long position in down and knock-in call options. We compare the proposed capped reverse bonus certificate with the classical capped reverse bonus certificate.

Performed economic analysis should help to understand the creation of reverse bonus certificates. The proposal of new uncapped and capped reverse bonus certificate could be useful for issuers of the investment certificates from the methodological as well as practical views.

References:

- [1] GORDIAKOVÁ, Z., YOUNIS, A. M. A. Proposal of a new guaranteed certificate using exotic options. *Journal of Applied Economic Sciences*, 2003, vol. 8, no. 2, pp. 191-197, ISSN 1843-6110
- [2] HERNANDEZ, R., BRUSA, J., LIU, P. An economic analysis of bonus certificates – Second-generation of structured products. *Review of Futures Markets*, 2008, vol. 16, pp. 419-451, ISSN 1933-7116
- [3] ŠOLTÉS, M. Vzťah Spread certifikátov a inverznej Vertical Ratio Call Back Spread opčnej stratégie. *E+M Ekonomie a management*, 2010, no. 2, pp. 119-123, ISSN 1212-3609

- [4] ŠOLTÉS, V., KUNDRÍKOVÁ, Z. *Turbo and bonus certificates: Competitiveness and European Integration*. Cluj-Napoca: Universitatea Babes-Bolyai, 2007, pp. 225-228, ISBN 9786065040120
- [5] ŠOLTÉS, V. *The Application of the Long and Short Combo Option Strategies in the Building of Structured Products*. Liberec Economic Forum 2011: proceedings of the 10th international conference: 19.9. – 20.9. 2011, Liberec. Liberec: Technical University of Liberec, 2011, pp. 481-487, ISBN 978-80-7372-755-0

STAKEHOLDER ANALYSIS OF SMALL AND MEDIUM-SIZED ENTERPRISES

Marie Slabá

Institute of Technology and Business in České Buděj

slaba-ma@seznam.cz

Key words:

small and medium-sized enterprises – stakeholder – stakeholder analysis – stakeholder prioritisation – stakeholder identification

Abstract:

The purpose of this article is the identification and prioritisation of stakeholder groups of small and medium-sized enterprises in the Czech Republic. The prioritisation of stakeholder groups was performed on the basis of the professional judgement of respondents and the Stakeholder Circle Methodology for ensuring objective prioritisation without personal influence of respondent. According to results of the author's research it is clear that priorities assigned to stakeholder groups based on the professional judgement differs from priorities assigned based on the Stakeholder Index in the Stakeholder Circle Methodology. Author analysed if there is any statistically significant relationship between the Stakeholder Index and priority in the Stakeholder Circle Methodology. This hypothesis was confirmed at the 99% confidence level.

Introduction

Small and medium-sized enterprises (further only SMEs) that are represented by approximately 20.7 million firms and more than 87 million employees form the 'backbone' of the European economy and constitute 98% of all European economy [2]. In the Czech republic SMEs represent nearly all Czech businesses (99,84%) [6]. The competitive fight in the sector of SMEs is hence very strong. As stated Brugha and Varvasovszky stakeholder analysis has become more and more popular and is one of the possible ways how to differ from competitors [1]. Stakeholder analysis and completely understanding of organization's stakeholders' community and its needs is one of the

possible ways how to be successful in the competitive fight. Stakeholders can be a threat as well as beneficial for the organisation [4]. According to Freeman stakeholder is any group or individual who can affect or is affected by the achievement of an organization's purpose [3]. Stakeholder analysis represents an analytical approach designed to understanding a system through the identification of stakeholders [7]. There are several approaches to the stakeholder analysis described in the foreign literature. The Stakeholder Circle Methodology (further only SCM) that is supported by the Stakeholder Circle Software (further only SCS) will be used together with traditional statistical methods for analyzing of stakeholder groups of SMEs in the Czech Republic. Based on the literature search and own author's research key stakeholder groups will be identified and divided into basic stakeholder groups. In the second step prioritisation of stakeholder groups will be carried out based on the professional judgement of respondents and the prioritisation based on the SCM will be conducted in the third step. The SCM will be used for ensuring objective prioritisation of stakeholder groups. On the basis of prioritisation due to the SCM the most important stakeholder groups of SMEs in the Czech Republic will be defined.

1. Material and methods

The main aim of this article is the identification and prioritisation of stakeholders of SMEs. According to the literature search of foreign scientific literature and researches concerning stakeholder management and analysis and author's research stakeholder groups of Czech market were identified. These groups were in accordance with the stakeholder analysis divided into groups of internal and external and primary and secondary stakeholder groups. These groups are summarized in TAB 1.

TAB. 1: Stakeholder groups of SMEs for research in the Czech market

Type of stakeholder group			
Primary	Secondary	Internal	External
Customers, employees, suppliers, government	Banks and financial institutions, consultancy firms, educational institutions, local communities, media, transporters	Employees, management, owners, shareholders	Banks and financial institutions, competitors, consultancy firms, customers, educational institutions, government, local communities, media, suppliers, transporters

Source: self-produced

First of all the traditional statistical methods will be used for identification of stakeholder groups of SMEs and their prioritisation on the basis of professional judgement of respondents. Because everyone is an individual and bring to the survey own subjective opinion, in the second stage of analysis the SCM and SCS for an objective prioritisation of stakeholder groups of SMEs and calculation of Stakeholder Index (further only SI) will be used (for detail see Formula 1).

In the line of this fact the main research problems of this article are following:

- identification of stakeholder groups of SMEs in the Czech market,
- prioritization of stakeholder groups of SMEs in the Czech market,
 - based on the professional judgment of respondents and
 - based on the SCM,
- detection of possible correlation between priority assigned to the stakeholder groups based on the SCM and SI.

As stated above prioritisation will be carried in two steps. First of all respondents will be asked to prioritise stakeholder groups according to their professional judgment. For prioritisation the scale from 1 to 14 (where 1 means the most important stakeholder group and 14 the less important stakeholder group) will be used. For ensuring objective prioritisation of stakeholders author used prioritisation based on the SCM.

Formula 1: **Stakeholder Index**

$$\sum Power, Proximity, (INT (\sqrt{(Stakeholder Value * Stakeholder Action / 25)} * 5))$$

Source: [8]

For calculation of SI it is necessary to evaluate factors - Power, Proximity, Stakeholder Value and Stakeholder Action. Stakeholder power represents a power of stakeholder to influence activities of organisation; proximity represents closeness of the stakeholder group to organisation's activities. Stakeholder Value and Stakeholder Activity take values from 1 (low) to 5 (high). Power and Proximity are assessed from 1 (low) to 4 (high). Because the SCS automatically assigns a value of priority to each stakeholder group author will try to discover if there is any statistical significant relationship between the calculated SI and the priority assigned by the SCS. Correlation between Priority and SI will be examined based on the correlation analysis and Coefficient of determination. Null hypothesis $H_0: \beta_1 = 0$ will be tested against alternative hypothesis

H1: $\beta_1 > 0$ on the P-value 0.05. The tested hypothesis is following – The higher the SI the most important stakeholder group is (the lower value of assigned priority is).

2. Results and discussion

The TAB 2 summarizes the basic information from the author's research.

TAB. 2: Stakeholder groups of SMEs in the Czech Republic

Stakeholder group	Absolute frequency	Relative frequency (in %)	Average priority	Standard deviation for priority	Priority based on the SCM	SI
Banks	22	21.15	10	1.09	9	31.13
Competitors	71	68.27	5	0.81	2	56.53
Consultancy firms	15	14.42	12	1.34	13	21.16
Customers	98	94.23	1	0.6	1	66.56
Educational institutions	32	30.77	7	1.57	8	35.51
Employees	80	76.92	3	1.92	4	50.06
Government	23	22.12	11	0.74	10	30.05
Local community	14	13.46	14	1.11	12	23.49
Management	21	20.19	4	1.34	6	45.78
Media	50	48.08	2	0.72	3	52.53
Owners	6	5.77	9	0.67	7	41.28
Shareholders	10	9.62	13	1.85	14	20.08
Suppliers	56	53.85	6	0.66	5	49.87
Transporters	31	29.81	8	2.09	11	26.54

Source: author's research

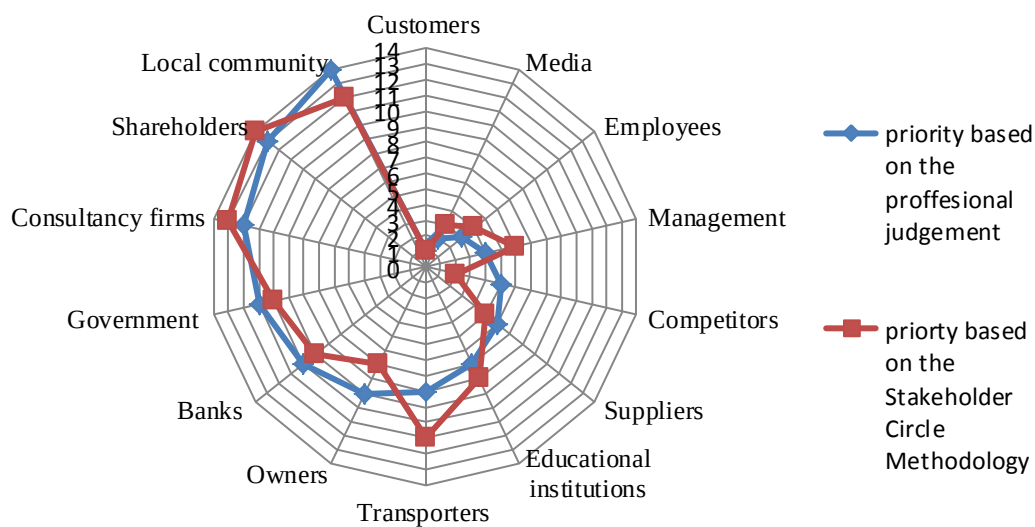
94% of respondents consider as important stakeholder group customers. In this case it was expected that all respondents check this stakeholder group. But several respondents belonging to the Public administration and defence; compulsory social security and Education from classification NACE and they have a different perception of customers and that can be considered as the main reason why several of these institutions did not checked this stakeholder group. The second most selected stakeholder group are employees, but in this case there are slight differences among priorities assigned to this group by respondents. Employees have the second largest standard deviation for priority after transporters, which standard deviation is 2.09. For employees standard deviation equals 1.92. The average priority assigned to employees is 3, but several respondents assigned the seventh and in few cases even the tenth priority was assigned to employees. More than 50 % of respondents selected competitors and suppliers and more than 48% of respondents selected media that are considered as the second most

important group of stakeholders for SMEs. The most important stakeholder groups are following groups in the following order: customers, media, employees, management and competitors.

In the second step author analysed data by the SCM through SCS. On the bases of the SCM the prioritisation was carried out and the SI was calculated (as described in the part Materials and methods). The highest priority was assigned to the customers as in the case of priorities assigned according professional judgement of respondents. This stakeholder group is also the group with the highest calculated SI. The second most important stakeholder group are competitors, followed by the media, employees and suppliers. The stakeholder group with the lowest SI is the group of shareholders.

When we compare priorities based on the professional judgement of respondents and priorities based on the SCM it is clear that priorities assigned by the respondents due to their professional judgement differ from priorities calculated on the basis of the SCM.

FIG.1: Priorities of stakeholder groups



Source: author's research

Note: The closer the stakeholder group is situated to the centre of the figure, the more important this stakeholder group for organization is. Stakeholder groups are ranged in Fig. 1 clockwise based on priorities.

Only customers have the same priorities in both cases. In following cases the priority on the basis of SCM is higher than priority assigned by respondents – banks, competitors, government, local community, owners, and suppliers. The biggest difference is in the case of competitors, where respondents assigned priority 5 and the priority on the bases

of the SCM is 2. In other cases the priority differs only by 1. For other stakeholder groups the priority assigned by the SCM is lower than priority assigned by respondents. Finally the stated hypothesis “The higher the SI, the most important stakeholder group is” will be tested through regression analysis and coefficient of determination. The importance of the stakeholder group will be expressed in the term of priority assigned by the SCS. According to the author’s calculation the best model for regression analysis for this case is a linear regression model $EY = \beta_0 + \beta_1 * x$. The estimation of the regression line follows: Priority = 18.6531- 0.28369*Stakeholder Index

Based on this model the null hypothesis $H_0: \beta_1 = 0$ against alternative hypothesis $H_1: \beta_1 > 0$ were tested. Since the P-value in the ANOVA table is less than 0.01, there is a statistically significant relationship between Priority and SI at the 99% confidence level. Since the P-value of the appropriate t-test is less than 0.01 and the slope of the line β_1 is negative it was statistically approved that the higher the calculated SI, the higher the priority is (the lower is the value of the indicator). This fact is confirmed by the negative value of the correlation coefficient, too. The value of calculated correlation coefficient is -0.988208. The value of correlation coefficient indicates a relatively strong relationship between variables and therefore we can confirm the study hypothesis.

Conclusion

Based on the author’s research and data analysed on the basis of the SCM key stakeholder groups were identified. The most important stakeholder group are customers. Priority 1 was assigned to this stakeholder group on the bases of the professional judgement as well as on the basis of the SCM. The second most important stakeholder group (due to the SCM) are competitors, followed by media, employees and suppliers. With these key stakeholder groups it is necessary to communicate adequately and take care of good relations with them because these groups have the greatest power to influence organisation itself and its activities. Four stakeholder groups of the five most important stakeholder groups are external stakeholder groups and only one stakeholder group is internal stakeholder group - employees.

The study hypothesis “The higher the SI the most important stakeholder group is (the lower value of assigned priority is)” was confirmed at the 99% confidence level.

This article deals only with identification and prioritization of the most important stakeholder groups of SMEs. After identification and prioritization it is necessary to

create appropriate targeted marketing communication with these stakeholder groups. Marketing communication and communication with stakeholder groups is one of steps of the SCM based on identification of engagement (communication) approaches tailored to the concrete needs, attitude and expectations of the key stakeholder groups [8]. For creating of targeted communication in the SCM the Engagement Index that represents the level of a support for all stakeholder groups is used. The next author's research will focus on the identification of stakeholder needs necessary for targeted communication and suggestion of targeted communication based on the Engagement Index.

References:

- [1] BRUGHA, R., VARVASOVSKY, Z. Stakeholder analysis: a review. *Health Policy and Planning*, 2000, vol. 15, no. 3, pp. 239–246, ISSN 0268-1080
- [2] ECORYS, EU SMEs in 2012: at the crossroads. *Annual report on small and medium-sized enterprises in the EU, 2011/12*. Rotterdam: Ecorys. 2012. Available from: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/supporting-documents/2012/annual-report_en.pdf
- [3] FREEMAN, R. E. *Strategic Management: A Stakeholder Approach*. Cambridge: Cambridge University Press, 2010, ISBN 978-0521151740
- [4] GIBSON, K. The moral basis of stakeholder theory. *Journal of Business Ethics*, 2000, vol. 26, no. 3, pp. 245–257, ISSN 0167-4544
- [5] CHINYIO, E. et al. *Construction Stakeholder Management*. Chichester (United Kingdom): Blackwell Publishing, 2010, ISBN 978-1-4051-8098-6
- [6] MULAČOVÁ, V. The Financial and Economic Crisis and SMEs. *Littera Script*, 2012, vol. 5, no. 2, pp. 95-103, ISSN 1802-503X
- [7] VARVASOVSKY, Z., BRUGHA, R. How to do (or not to do) ... A stakeholder analysis. *Health Policy and Planning*, 2000, vo. 15, no. 3, pp. 338–345, ISSN 0268-1080
- [8] WALKER, D. H. T., BOURNE, L., ROWLINSON, S. *Stakeholders and the supply chain. Procurement Systems: A Cross-industry Project Management Perspective*. London: Taylor & Francis, 2008, ISBN 0415416051

LEVELS OF HOUSING CAPITALIZATION RATES IN OSTRAVA DISTRICTS

David Slavata, Eva Janasová, Jiří Ardielli, Hana Janáčková

VŠB-Technical University of Ostrava

david.slavata@vsb.cz, eva.janasová@vsb.cz, jiri.ardielli@vsb.cz, hana.janackova@vsb.cz

Key words.

capitalization rate – estimation – housing market – housing prices and stock – stock – rents

Abstract:

The aim of the paper is to analyze the level of capitalization rate in the area of Ostrava city. The level of capitalization rate has been derived from individual surveys collected by the course taught at the VŠB-Technical University in Ostrava. The importance of capitalization rate is significant in the field of property estimation. The results of the research are presented in the last paper part. In addition to that, in this paper you will find information how the structure of the housing market changed in the Moravian-Silesian Region and in the Czech Republic during the last several years. What is being presented is the price change of flats as well as shift in the rate of capitalization between 2004 and 2012. Among others, paper uses data originally presented in the project SGS SP 163/2012.

Introduction

This paper presents data from the individual surveys that relate to the housing market in Ostrava. Thanks to regular price analysis, it presents comprehensive data starting from year 2004 through 2012. The processed data not only provide an overview of how the ownership structure of housing stock that was advertised on the market shifted over the time, but it also provides an overview of how the prices on the housing market in Ostrava responded to the real estate crisis of 2008. An interesting finding (that has been already described in greater detail in the outcomes of project no.: SGS SP 163/2012) is the determination of capitalization rate in Ostrava for individual years. By the way, the capitalization rate is also used as a basic element for determining correct yield in the market evaluation practice.

The importance of market prices and capitalization rate is significant in the field of property taxes. The property tax is calculated from the administrative price of property. While the administrative price is determined by Act No 151/1997 Coll., on the Estimation the market prices used to be different. Instead of the present construction of tax from transfer, the new act should enable new construction of tax from gaining. The tax should be calculated from real market prices.

The paper provides information for the expert in the field of estimation. The results of survey could be useful for developing of new methodology for Inland Revenue Office in the region of Ostrava city.

1. The Characteristics of the Housing Market in the Moravian-Silesian Region

The Moravian-Silesian Region is the third most populated region of the Czech Republic with the population of more than 1 230 000 people, 300 towns and villages. Within this region, the highest population density has been recorded in Ostrava (1,453 people per km²), the lowest in Bruntál municipality (63 people per km²). Real estate prices in the Moravian-Silesian Region are affected by high unemployment rate. In addition, the share of long-term unemployed (12 months and more) among those unemployed in Moravian-Silesian Region stands significantly above the national average.

1.1 Prices of apartments in Moravian-Silesian Region

In the years 2009 through 2011 the prices on the housing market in Moravian-Silesian Region had been declining. The average prices have been below the national average for quite some time (14,886 Kč/m² in the year 2011). Nation-wide, the prices have been the fourth lowest after the prices in regions of Karlovy Vary (13,396 Kč/m²), Ústí nad Labem (9,638 Kč/m²), and Liberec (13,274 Kč/m²).

The average prices of an apartment in the Czech Republic and in the Moravian Silesian Region throughout years 2009 – 2011 have a downward trend. The highest average prices of housing within Moravian-Silesian Region are in Ostrava and Opava, followed by Frýdek-Místek, Nový Jičín, Karviná and the lowest in Bruntál. Individual values of average housing prices for years 2009, 2010 and 2011 are summarized in a table below.

Basic data on the levels of rent for accommodation in particular villages and towns are available on the website of Ministry for Regional Development. The application is called

TAB. 1: Average Prices of Housing in Years 2009-2011 [CZK/m²]

Year	Czech Republic	Moravian-Silesian Region	Bruntál	Frýdek - Místek	Karviná	Nový Jičín	Opava	Ostrava -city
2009	21 948	16 136	12 288	16 533	14 912	14 606	17 306	17 414
2010	20 306	14 989	10 729	15 621	12 462	13 325	16 674	16 514
2011	20 280	14 886	10 711	15 731	13 167	13 589	15 723	16 284

Source: Czech Statistical Office, 2011

1.2 Levels of Rent in the Moravian-Silesian Region

Map of Accommodation Rents. Estimated rent is derived from processed monthly data on tenancy prices. For each municipality of Moravian-Silesian Region there is a value of usual rent in the table no. 4 below. Values of rent are presented in a form of interval. The usual rent of an apartment per month is derived from an average size apartment, i.e. from an apartment that has 65 square meters.

TAB 2: Overview of Usual Rent Levels in Selected Municipalities for Standard apartments in 2011

City	Usual Rent [CZK per m ²]	Usual Rent for an Apartment [CZK per month]
Bruntál	58.90 - 65.10	3 828.50 - 4 231.50
Frýdek - Místek	84.80 - 90.10	5 512.00 - 5 856.50
Karviná	88.30 - 93.80	5 739.50 - 6 097.00
Nový Jičín	77.70 - 85.80	5 050.50 - 5 577.00
Opava	81.30 - 89.90	5 284.50 - 5 843.50
Ostrava	73.10 - 114.90	4 751.50 - 7 468.50

Source: State Fund of Housing development, 2013

The above table shows that the lowest rents have been recorded in Bruntál. Also, the municipality Bruntál shows the lowest average rent from among all municipalities of the Moravian-Silesian Region. The highest rents in general are in Ostrava. Given the fact that Ostrava is relatively diverse town from the urban point of view, it is understandable that it

shows the interval with largest volatility. Ostrava's accommodation market is given a thorough attention in next chapters.

2. Methods, methodology

The main aim of the paper is to present the value of capitalization rate in territory of Ostrava city and partially in its districts. The methodology how to extract the rate of capitalization is relatively well known. There are several methods which clears how to reach the relevant results. The most homogenous information in this field it is provided by the [1].

The basic methods can be described as:

1. comparative approaches,
2. modular approach,
3. administrative approach.

2.1 Comparative approach

The comparative approach consists in assumption there is the relevant amount of information from the field of housing (flat) sales and rents. That kind of information can be taken from the sale contracts. The data identifying the revenues can be taken from the internal accounting for instance. The basic formula for expression of general rate of capitalization is as follows [1]:

$$i = \frac{1}{n} \cdot \sum \left(\frac{z_i}{COB_i} \right) \quad (1)$$

Where:

i.....	is rate of capitalization
n.....	is number of sales
z _i	is net income of i - flat (house)
COB _i	is sale price of i - flat (house)

2.2 Modular approach

The modular approach consists in assumption there is some value of non risky rate of capitalization. For correct determination of capitalization rate we have to add the risky additional charges. They are for instance the additional charges because of risky locality,

risk of non payments, risk of flood etc. The basic formula for expression of general rate of capitalization is as follows [1]:

$$i = in \pm ir \quad (2)$$

Where:	i.....	is rate of capitalization
	in.....	is value of non risky rate
	ir.....	is value of the risky additional charges

2.3 Administrative approach

It is possible to find the value of capitalization rate in the Evaluation Act number 151/1997. You can find the relevant information in the annex number 16. The value of capitalization rate is determined by the scale from 4,5% to 12%, depending on the purpose of usage of real estate property . The value of capitalization rate of property with the purpose of housing usage is defined by 4,5% or 5,5%.

To find out the best value of capitalization rate it is necessary to have the appropriate source of data. For the purpose of analyses the best method to develop is the first one (see ch. 2.1). The advantages to use the comparative approach are access to relatively trustworthy data, which are both actual and quantitative. The best source for the research could be used is the public advertising.

The disadvantage of the public advertisement source could be lack of some specific information. For instance in many of ads you cannot find the information, what are the real costs of flat (house) ownership. That is the necessary information to count the precise value of capitalization rate.

To avoid the problem it is possible to implement the modification such as gross rate of capitalization instead of net rate of capitalization.

The formula (1) should be changed in terms of the new information mentioned above [1]:

$$i = \frac{1}{n} \cdot \sum \left(\frac{gi}{COBi} \right) \quad (3)$$

Where	i.....	is rate of capitalization
	n.....	is number of sales
	gi.....	is gross income of i - flat (house)
	COBi.....	is sale price of i - flat (house)

The next problem we have to solve is lack of ads describing both gross income and the sale price of the same property. In that case we have to simplify the formula (3). It is possible to split the information into two independent parts. The part one describes the rents (property for rent) and the part two describes the sale prices, all in the same area (district) of the city (see formula 4).

$$i = \frac{\frac{1}{n} \sum gn}{\frac{1}{j} \sum COBj} \quad (4)$$

Where	i.....	is rate of capitalization
	n.....	is number of flats for rent
	gn.....	is gross income of n - flats (houses)
	COBj.....	is sale price of j - flats (houses)
	j.....	is number of flats for sale

Using the formula 4, it is possible to collect the relevant data and calculate the values of capitalization rate in the districts of Ostrava city.

Data processing

This section of the paper contains information from partial surveys that took place under a course taught at the Technical University of Ostrava. This course is called Economics of Housing and Technical Infrastructure. The obtained data were well fitted for a thorough analysis of housing market in Ostrava.

Surveys examined prices of the accommodation market that were advertised in the local media. Those were the advertised prices that were cleaned of extreme values. As for the time periods in which surveys were conducted, in years 2004 through 2008 it was always the first half of the calendar year and in 2010 the second half of a year. In 2011, the survey did not take place; therefore for sake of analogy selected data provided by the Czech Statistical Office were used instead. Data of year 2012 are an outcome from research project no: SGS SV 163/2012.

The housing market can be divided into several relatively homogeneous segments. The comparative analysis is therefore being conducted according to those segments. Among those segments there are apartments advertised both for rent and sale and within those that are being sold there are those privately and cooperatively owned. When it comes to

apartments that are being sold, prices are converted to the value per m² with respect to the average size of those offered apartments. Size of an average apartment had changed and varied in different years and this fact has been marked in all tables.

In addition, some essential information has been provided that concerns rental apartments. The author assessed the value of net rent, the value of advance payments (such as cash advance for various services – water, electricity, gas, etc.) as well as the total rent amount that landlord expects his tenant to provide (i.e. sum of net rent and all deposits for services).

3. Results and discussion

The results of research are presented in this chapter. There are presented not only the values of capitalization rate, but the other results of the research such as the ownership structure, progress of housing market and payments related to rental housing.

3.1 Ownership structure in Ostrava

Around 1/3, of all apartments that were advertised for sale in the past years, was privately owned. As the table shows, between years 2004 and 2005, the portion of privately owned apartment that were advertised for sale was 1/5. In 2006 a large-scale privatization of publicly owned housing started in Ostrava. This explains the dramatic increase in the share of privately owned apartments that occurred on the housing market in subsequent years. Share of privately owned apartments that were advertised for sale grew even to 2/5 in year 2012. In general it is easier to finance the purchase of a privately owned apartment in the Czech Republic than buying an apartment that is co-operatively owned. The private owner also has slightly better position in terms of legal rights than owner of a cooperative apartment. These factors influenced the change in ownership structure of apartments offered in Ostrava. I personally believe this general trend towards the private ownership will continue. In another words I predict that the share of cooperative housing will continue to decrease in favor of dwellings that are in private hands.

As long-term surveys show, there has been a price growth among advertised prices of housing in Ostrava up until 2nd half of 2008. In 2009 there was a sharp decline of approximately 22% due to the financial crisis. Year 2010 saw a slight growth. And in years of 2011 and 2012 there has been a slight decline. The decrease in 2012 (year on

TAB 3: Dwellings by Ownership in selected years [%]

Years	2004	2005	2006	2007	2008	2010	2012
Private	25.30	21.00	30.00	38.00	52.00	34.00	41.50
Cooperative	74.70	79.00	70.00	62.00	48.00	65.00	58.50
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Own survey, 2013

3.2 Apartment Market in Years 2004 - 2012

year change) amounted to 11.29 %. Trends noted in Ostrava more or less follow general trends that occur throughout whole of the Czech Republic. The decrease that occurred in accommodation prices in Ostrava in connection to the financial crises (over the subsequent years in comparison to the record year of 2008) amounts to 33 %.

TAB. 4: Prices of Advertised Housing in Ostrava in Selected Years [thousands of CZK]

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Average Price	509.6	467.9	649.3	1107.7	1393.4	1011.0	1021.7	1058.4	883.8
Average Size of Apartment	57.53	58.96	62.96	60.00	64.38	60.00	57.54	65.00	60.65
Price per m ²	8.85	7.92	10.30	18.35	21.64	16.83	17.74	16.28	14. 44
Nation-wide price per m ² [%]	N	-10.41	29.96	78.02	17.88	-22.21	5.41	-8.23	-11.29

Source: Own survey, 2013

3.3 Costs of Rental Apartments in years 2004 - 2008, 2010, 2012

There two key payments that tenant provides in connection to rented apartment; (1) a net rent and (2) a deposit for services. Within this survey, apart from this two payments, a total average payment that landlord advertised has been recorded (if specified in the advertisement and only when it was clear that the required payment includes both, net rent

and payment for services). The data presented in table below could have been significantly distorted by dissimilarity housing quality. Especially in some locations there are high-quality and well-equipped apartments (so called managerial apartments). High price of these apartments has a significant impact and distorts the determination of an average price.

If we look at trends, one may say that the level of rent has been decreasing in the last years that it reflects on the decreasing price of apartments that are on sale. It is interesting to look at the advance payments for services. The year 2010 saw a quite clear decline. One explanation for this is that there were subsidies provided by the government for energy conservation and insulation of buildings in recent years that reduced the costs of house maintenance. Unfortunately, the amount of advance payments has not been surveyed in 2012.

TAB. 5: Payments related to Rental Apartments in Ostrava in selected years [CZK per month]

Year	2004	2005	2006	2007	2008	2010	2012
Average net rent [CZK/month]	3553	4598	4807	8911	8550	7410	6944
Average advance payments [CZK/month]	2470	1824	2793	3059	2888	1729	Undetermined
Total average payment [CZK/month]	6023	6802	7467	8151	9101	8873	Undetermined

Source: Own survey, 2013

3.4 The Level of Capitalization rate

Due to the scale of getting data, it is possible to model the rate of capitalization in Ostrava city from the point of historical progress as well as from the point of its value in the presented districts of Ostrava city.

In terms of time, the level of capitalization ranged from 7.4% in 2008 to 11.8% in 2005, see below table 6. Numbers show that the lowest level of capitalization was recorded in the crisis year of 2008, when housing prices reached their peak on the market. From that point of view it was the worst investment.

TAB. 6: Rate of Capitalization in Selected Years in Ostrava [%]

Year	2004	2005	2006	2007	2008	2010	2012
Average Net Rent [thousands CZK per year]	42.63	55.17	57.68	106.93	102.60	88.92	83.32
Average Apartment Price	509.6	467.9	649.3	1107.7	1393.4	1021.7	883.8
Rate of Capitalization	8.3	11.8	8.9	9.6	7.4	8.7	9.4

Source: Own survey, 2013

The level of capitalization rate from the territory view in 2012 clearly documents the attractiveness of each city districts. The most attractive are the districts with the lowest value of rate. It is clear the investment in this area is not so risky.

TAB. 7: Rate of Capitalization in selected districts Ostrava [%]

City district	Gross rate of capitalization in %
Bělský Les	11.1
Dubina	11.9
Hrabová	5.2
Hrabůvka	9.7
Hulváky	14.6
Nová Bělá	4.3
Nová Ves	15.9
Slezská Ostrava	5.6
Svinov	6.8
Vítkovice	10.1
Výškovice	8.1
Zábřeh	9.4

Source: Own survey, 2013

The table 7 shows the differences in rate of capitalization between Ostrava districts. Most of the districts with high capitalization rate have the problems with social non adaptable people.

Conclusion

If we compare prices of apartments in the Moravian-Silesian Region, we will find that the housing prices are rather lower. From the presented analysis it can be further determined how the real estate crises impacted the prices of real estate in Ostrava. We have noted both; decreases in sales prices of houses on the marked as well as decrease of lease prices of rental accommodation. Housing prices decreased roughly by one third in comparison to

2008, the lease prices of rental accommodation decreased by one fifth. The price decrease dynamics was higher in case of sold housing than it was in case of rented accommodation. The rate of capitalization varied over time also. In 2012, the rate was 9.4%. The research defined the values of capitalization rate in the district of Ostrava city, what was the main aim of the research. It can be used as tool for quick decisions of investors to place their capital. On the other hand the results can provide the useful information for experts in the field of appreciation.

References:

- [1] BRADÁČ, A. *Teorie oceňování nemovitostí*. VIII. přep. vyd. Brno: Akademické nakladatelství CERM, 2009. ISBN 978-80-7204-630-0
- [2] ČESKÝ STATISTICKÝ ÚŘAD. *Statistiky: Průměrné ceny bytů* [online]. ČSÚ [cit. 2013-11-30]. Available from <http://www.czso.cz/csu/redakce.nsf/i/byty>
- [3] ELDRED, G. W. *Investing in Real Estate*. 6. ed. New Jersey, 2009, pp 72-73. ISBN 978-0470-49926-9
- [4] POLÁKOVÁ, OLGA a kol. *Bydlení a bytová politika*. 1. vyd. Praha: Ekopress, 2006. 294 s. ISBN 80-86929-03-3
- [5] STÁTNÍ FOND ROZVOJE BYDLENÍ. *Mapa nájemného*. [online] SFRB [cit. 2013-11-30]. Available from <http://www.sfrb.cz/servis/mapa-najemneho.html>
- [6] Act no. 151/1997 Coll., on Estimation

MANAGEMENT OF HUMAN CAPITAL IN LOCAL GOVERNMENT UNITS – SELECTED ASPECTS

Agnieszka Smalec

University of Szczecin

agnieszka.smalec@wzieu.pl

Key words:

human capital – local government units – management

Abstract:

This article has discussed selected aspects concerning human capital management in the local government units. It has emphasized the necessary changes in the attitude of the local government management and the treatment of personnel as crucial capital with influence over the service provided to clients of the local institutions. Appropriate communication and complex approach are essential for the increase in the employees' work quality and engagement. Within the times of the “information society”, local governments need to provide services adequate to clients' needs – which mostly involves active engagement in fulfillment of the citizens' needs. This article highlights the new challenges before the employees and managers.

Introduction

Two fundamental approaches in human resource management interlace with each other: first, so-called the hard approach to human resource management, has economic, calculation, quantitative character – an employee is treated as a typical tangible asset, which ought to bring results adequately higher than their cost. On the other hand, the soft model pays attention to the human being and emphasizes communication, motivation and leadership, and searches for methods to increase the employee engagement. Therefore, one can distinguish two extremely different models: the sieve model and the human capital model. This article concentrates on the latter. As the role of the personnel in the local government in several recent years has significantly evolved, it has shifted from administration to global vision in which the human is part of the local government strategy.

1. The concept and significance of the human capital

The human capital is the key element which shapes the regions' level of competitiveness, which is directly connected with the development of knowledge economy. Its value and quality must be maintained on high level in order for the processes of knowledge generation and transfer progress seamlessly. Employees are treated as assets as they are an essential source to building the competitive advantage and they are seen as capital which should be invested in, trained and motivated.

The human capital model is related to the soft model of the human resource management. That model is implemented by subjects who treat their own human resources as their priority. It created the work culture based on loyalty, engagement and long-term relationship. A person learns and develops all their life, forms an emotional attachment to their workplace and becomes loyal. Personnel may be shaped, with possibility to change not only their professional competence, but also attitude or perception of reality. People in the course of their lives “develop themselves” – they receive appropriate education and skills, which help them function on the job market. The capital, which people obtain are not only the learned skills, but also the inborn aptitude or even the very willingness to implement more effort. The human capital is treated as an essential factor in the regional development of the EU states, which is reflected in the objectives of the European regional policy. For employment are preferred persons with harmonious personality, able to work within a group, whose objective is cooperation as such. Open mind, will for continuous education, tolerance for change and risk are crucial attributes to personnel, who ought to acknowledge periodical changes and extending the scope of duties and the necessity to learn new skills. The human capital model generates organizational culture based on trust, loyalty, engagement and cooperation.

The main assumptions in the human capital approach are [1]:

- a) in candidates recruitment the most important criteria are: personality and predispositions,
- b) educating people is of key importance,
- c) making people redundant is the last solution,
- d) leaders should care of people development and organizational culture,

- e) psychological motivation tools: recognition, trust, possibility of self-realization, allowing for development.

The human capital model relates to the need for self-realization – its main stimulus is development. Human resource management attributes high value to teamwork.

2. The role of the human capital in the local government units

Providing the administrative services within units of the local government is greatly influenced by its personnel, whose approach should be characterized by the following: friendliness, competence, reliability, knowledge, truthfulness, flexibility etc. Each of the local government employees should be aware of their role and the fact how their work is reflected in the external perception of the government body and building positive contacts with the clients.

The human capital is the strategic resource for a given region, because [2]:

- the effectiveness of actions of the local government starts from the productivity of its employees, dependent on their capabilities, education, aptitude, practical experience, objectives and values, attitude and behavior, personality and motivators,
- it contributes to creating problems and simultaneously they are resolved thanks to it,
- it is the resource with the ability to learn and master their potential, to think of concepts and to think creatively.

A crucial role in local government units is played by the systems of recruitment, selection, motivation and review, as well as training of personnel, which aim at continuous raising their qualifications and work efficiency. Personnel skill assessment ought to be executed based on varied criteria, including appearance, attitude, negotiation skills (persuasion skills, gaining attention and interest, response to accusation, gaining trust, recognition and making use of buy signals, perseverance), engagement, creativity, time management, following the procedures.

The implementation of the human capital model within local government units ascertains good work atmosphere, which will make the results of the employees positive and stable in the long-term perspective. People have been guaranteed a job and development based on improvement of their competence. The disadvantage of the human capital model is the high labor cost following from the significant expenses on

investment in the employee development and education and improvement of the work conditions. Shaping a good team requires time, which not always can be acceptable.

Personnel in units of the local government should be flexible and possess the ability to adjust to varied expectation of clients within the legal framework. Extensive overuse of legal excuses, inadequate knowledge of duties and administrative procedures often invoke negative assessment. If an inhabitant of a given region was badly treated by the government body employees, they will usually speak of it widely and complain about the poor client service. Hearing such opinions, an investor may assume that a given government office may create problems when processing a given matter.

Crucial elements of the human resource are: knowledge, aptitude, skills, health, attitude and values and motivation. The owners of this resource are particular employees and they are the ones who decide on the level of implementation of this resource into their work. The local government has only limited power over the human resource [3].

Local government ought to cooperate with region's inhabitants and entrepreneurs, local leaders, non-government organizations, by creating atmosphere of trust, strengthening bonds, following the recognized norms and values. Each person must care of the common good. In the new approach to human capital, the government unit policy should change, among others the structures need simplifying, the number of organizational layers and overemployment ought to be reduced, operational units ought to be granted more decision power in employment and internal promotion; there needs to be introduced the performance-related pay system. It is also worth implementing the simplification of the formalities and document circulation procedures by elimination of paper documents and switching to e-documents.

In terms of employment in the government units, one can increasingly frequently observe the transformation from a “cushy job” (lifelong employment) to market-driven era. The employer's expectations of employees have changed and vice versa. A local government unit's employee is required to be communicative, empathetic, self-driven in knowledge and skill development, ready for change, with some creativity. Therefore the role of an employee requires the system approach. The modern government body needs to outpace the change and to be a self-learning organization, treating the knowledge acquisition as a continuous process, which allows for forecast of necessary organizational changes [4]. Thanks to such approach, the aim of professionalism and

partiality in actions will be achieved. Proper human capital management will allow for better client orientation or offering a range of services in one client service point. Thus, the government unit becomes client-, that is citizen-oriented. In addition, supporting and supplementary activity is worth outsourcing, via public procurement, which allows for achieving competitiveness of offers. Nowadays it is the human capital which is regarded a significant factor in region's competitive advantage and development. It is, therefore, the knowledge generator. However, it needs constant investment which will bring undeniable profit. One can notice that there proceed changes in the mentality and behavior of the government body employees. It means the reduction of formal and procedural solutions (ie. administrating) towards more active problem-solving and matter processing, which is typical of entrepreneurial behaviors [5].

Historically, for a long time local governments were not considered in a similar fashion to business units. Nowadays, it is frequently highlighted that businesses and public organizations benefit from learning from each other; one illustration may be the implementation of similar terminology, eg. a person who visits a government institution in a given matter is now referred to as client, stakeholder, partner, not an “applicant” (NB: the Polish term “petent” has negative connotations as indicating the inferiority of the client to the government body). This has contributed to revaluation of the citizen's attitude towards the government officer. Modern management is governed by the market needs, and the strategy is market- and client-oriented, as opposed to the state and procedure orientation (as observed in traditional administration) [6]. Transformation of approach in local governments ought to be directed at creation of government unit's image as an active subject which promptly reacts to the needs of people, commercial subjects and other organizations within its environment. The task for the managers is to inspire employees to develop their personalities and aspire to extend their knowledge and obtain new qualifications.

Employees need to be prepared for varied and unconventional events. Good communication is crucial to achieving smooth work of a government institution. The role of the local government does not involve the traditional strict governing, but the synergy of skillful communication, discussion and understanding of other subjects [7]. In new market-governed circumstances, local governments cannot limit themselves to

traditional methodologies of supplying public services to local communities, but they must act in service to their recipients and their needs.

Efficiency in actions of the modern local government institutions requires change in the attitude towards the stakeholder, and the basis for that is the appropriate human capital management. Local governments ought to implement the concept of internal marketing, which includes the personnel management philosophy and methods for continuous development and enhancement of culture dedicated to fulfilling the needs of internal and external clients. Therefore, what is necessary is the appropriate level of knowledge and awareness of all personnel, especially the management level. Building solid relations with clients based on mutual trust and common advantages, is achievable through improvement, modification and adaptation of service level to the whole range of market needs, with simultaneous ongoing process for the increase in the level of satisfaction and loyalty of the clients.

Conclusion

The issue of human capital management in institutions is by no means new, but it has been continuously considered a crucial and valid challenge for both the researchers and the institution personnel. The appropriate human capital management in units of the local government plays even more essential role, as it leads to their result improvement. As the local governments serve the good of the general public, their employees bear responsibility against the society and thanks to their appropriate attitude to the stakeholders, trust in a public institution is built. They need to be independent and objective in solving given matters. People aim at constant development and learn continuously, therefore human resources have great impact on the value creation of the local government and the region. These days it is demanded from the employee and the local government (the employer) that they possess the qualities of honesty, law-abiding and transparency in actions, but also that they create the suitable organizational climate, sense of attachment, cooperation and good communications. Such attitude follows mainly from the environmental transformations and the resulting reactions, growth in citizen right awareness, globalization, unlimited information exchange, as well as introduction of entrepreneurial culture in local governments. Nowadays, local governments need to step beyond their current conventions, and the employment in an institution does not necessarily have to be a “life-long job”.

References:

- [1] ZBIEGEŃ-MACIAG, L., WIERNEK, B., PAWNIK, W., DLUGOSZ-TRUSZKOWSKA, E.: *Zarządzanie personelem w firmie*. Uczelniane Wydawnictwa Naukowo-Dydaktyczne, Kraków 1999, p. 18.
- [2] KOPERTYŃSKA, M. W.: *Motywowanie pracowników – teoria i praktyka*, Placet, Warszawa 2008, p. 17.
- [3] POCHTOWSKI, A.: *Zarządzanie zasobami ludzkimi. Strategie – procesy – metody*, PWE, Warszawa 2006, p. 33.
- [4] GAWROŃSKI, H.: *Zarządzanie strategiczne w samorządach lokalnych*, Wolters Kluwer, Warszawa 2010, p. 55.
- [5] KOŻUCH, B.: *Zarządzanie publiczne w teorii i praktyce polskich organizacji*, Wyd. Placet, Warszawa 2004, p. 223, 229.
- [6] VIENAŽINDIENE, M., ČIARNIENE, R.: *The changes of public organizations' human resources management: theoretical aspect*, "Economic & Management" 2007, No. 12, p. 663.
- [7] SOTARAUTA, M.: *Formułowanie strategii zarządzania gminą w procesie harmonijnego rozwiązywania problemów*, „Samorząd Terytorialny” No. 1-2, 1996, p. 91.

RELATIONSHIP OF AGRICULTURAL SECTOR AND GOVERNMENT EXPENDITURES IN THE NEW EU COUNTRIES

Luboš Smutka, Michal Steininger

Czech University of Life Sciences Prague

smutka@pef.czu.cz, steininger@pef.czu.cz

Key words:

government expenditures – agriculture – correlation – elasticity – new EU members

Abstract:

The main ambition of this paper is to identify the relationship between government expenditures development on one side, and agrarian sector performance in individual analysed EU countries on the other. The results coming from the analysis are as follows: Significant correlation is apparent between agricultural government expenditures and the change to the number of economically active persons in agriculture, agricultural production development, agricultural area development, agricultural GDP development and agricultural capital stock development. Regarding the elasticity of new EU member countries' agricultural sector in relation to changes in government expenditures, significant elasticity is apparent in the case of number of economically active persons in agriculture, agricultural production (especially livestock production), arable area size, agricultural GDP and capital stock.

Introduction

Very important source of agricultural sector development is represented by government expenditures [4]. In Europe and especially in the European Union government expenditures and especially subsidies provided by the European Union's Common Agricultural Policy are very important source of individual farmers' and agricultural companies' income [7]. In fact, without government support the majority of EU farmers would be operating at a loss [2] – for many farmers subsidies coming from public sources represent an important part of their income [1]. In relation to government expenditures in the agricultural sector it should be mentioned that nowadays they are split into two flows. The first flow is represented by pure agricultural expenditures. The second flow is represented by expenditures related to environmental protection [6]. The new EU member countries have recorded a significant growth of government expenditures related to agriculture and environment protection value

during the last two decades. Government expenditures related to agricultural activities in some way, more than doubled during the last ten years. This growth of public support heavily influences the economy, structure and performance of each new EU member states' agricultural sector.

This paper's main ambition is to analyse the relationship between the agricultural sector and its performance on one side, and the level of government expenditures in agriculture on the other.

1. Materials and Methods

The main objective is to identify the relationship between government expenditures value development on one side, and the performance of the agrarian sector in each of analysed new EU member countries (NMCs - Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) on the other. The paper is focused especially on agricultural sector output, productivity and size development (area of agricultural land development, number of people working in the agricultural sector).

The paper is devoted to the correlation and elasticity analysis between government expenditures on one side and number of economically active persons in agriculture, agricultural GDP, agricultural production, crops and livestock production, arable and agricultural land size and value of capital stock on the other. In this case correlations and elasticities are calculated from two different points of view. The first point of view is represented by calculations conducted in relation to total value of public expenditures coming only to agriculture. The second point of view is represented by calculations conducted in relation to public expenditures supporting not only agricultural activities but also supporting environmental protection activities. The aim is to identify the level of dependency and sensitivity existing between public expenditures and agricultural sector structure and performance development.

The instruments used to manage these objectives are: basic indices, chain indices, geomean calculation, elasticity calculation, and (logarithmic) regression and correlation analysis [3]. To calculate elasticity it was necessary to conduct the set of regressions, providing basic information about mutual relationships between individual variables (the exogenous variable is government expenditures value) and individual endogenous variables are number of economically active persons in agriculture, total agricultural production, crops and livestock production, agricultural area, arable area, agricultural GDP, and agricultural capital stock value.

The main sources of data are databases provided by UN FAOSTAT and the World Bank. The analyzed time period is from 2001 to 2011 (Data for the previous years are not currently available). All data used in individual analyses (both correlation analysis and elasticity analysis) is conducted on constant prices.

2. Analysis and discussion

2.1. Correlation analysis

The analysis of correlation proved a significant relationship between expenditures and number of economically active persons in agriculture development, agricultural area development, agricultural GDP development, and agricultural capital stock development. Positive correlation is in relation to agricultural GDP and capital stock. Negative correlation exists in relation to the number of economically active persons in agriculture, agricultural and arable area, and also in relation to agricultural production – both crops production and livestock production. The results of correlation analysis confirmed especially the existence of strong relationships between government expenditures and number of economically active persons in the agricultural sector. Government expenditures, together with the above-mentioned investments, lead to a reduction of the number of economically active persons in agriculture and an increase in the effectiveness of individual countries agriculture. Government expenditures are also very important factors influencing production in individual countries – but not in NMCs as a group of countries.

In some countries government expenditures stimulate the growth of production, whilst in other countries they are not stimulating the growth of production value and volume. Reduction of production usually means that part of production is transformed into bio-production. In other areas, usually Less Favoured Areas (LFAs), production is subdued, meaning that a higher correlation of public expenditures exists in relation to livestock production in comparison with crops production. Those NMCs where noticeable stimulation occurs are Estonia, Latvia, Lithuania, Poland and Romania, with the specific case of Hungary, where government support in general is stimulating the level of production – though it is the only one where the level of support was significantly reduced and therefore a strong impact on level of production value is visible. The NMCs where little or no stimulation is apparent are the Czech Republic, Slovakia, Bulgarian and Slovenia.

If we analyse individual countries differences in relation to correlation between government expenditures and agricultural sector characteristics, we can say that in the case of number of economically active persons in agriculture development, a strong correlation exists in the case

of all analysed countries except for Latvia (correlation value is usually negative), in the case of agricultural production the correlation higher than 0.5 appeared in Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, Poland, Slovakia and Slovenia (In this case much higher correlations exists in relation to livestock production – correlation higher than 0.5 appeared in the case of all countries except for Romania). Crops production is much more independent in relation to government expenditures – the higher value of correlation appeared only in Estonia and Latvia – however the correlation analysis proved the high level of correlation between government expenditures and crops production in the case of NMCs as a group of countries (In relation to crops and livestock production – correlation value is usually positive – it means that current government expenditures are encouraging agricultural production value growth in individual countries.). The size of agricultural and arable land is also influenced by government expenditures – the high value of correlation did not appear only in Estonia, Lithuania and Slovenia (correlation value is usually negative – it means that the growth of subsidies does not encourage farmers to increase the size of agricultural land – nowadays the size of agricultural land and especially arable land is declining – but government policy is not the only factor which is responsible for this development – however a significant portion of government expenditures is appropriated for programmes reducing agricultural production and changing the status of agricultural land – especially programmes keeping land in piece are supported [5] Agricultural sector GDP development is also correlated with government expenditures development in some countries – especially in Poland, Romania and Slovenia. The high level of government expenditures correlation was discovered in relation to capital stock value development in individual analysed countries apart from Hungary and Romania – however the value of correlation is negative.

3. Elasticity analysis

The individual elasticity values are calculated on the basis of logarithmic regression analysis. Again there is a significant relationship existing between NMCs' government expenditures and especially number of economically active persons in agriculture, agricultural production (especially livestock production), arable area size, agricultural GDP and capital stock. However relationships are positive in many cases, usually the value of elasticity is very low – it means the change of government expenditures value by one percent causes the change of any selected variable lower than one percent. In relation to individual variables it can be said that the number of economically active persons in agriculture' elasticity is very low in all analysed countries except for Slovenia and Bulgaria (The explanation of this finding is that all

countries had already significantly reduced the number of economically active persons in agriculture during the period 1990–2000, during their economies restructuring process.). Agricultural production's (both crops and livestock production) elasticity calculated in relation to government expenditures is also very low in all analysed countries (It is possible to explain, as currently individual expenditures programmes, which are the result of EU policies are not encouraging the growth of production, and they are more focused on restructuring the agricultural production and agricultural activities [9]. They are more focused to support the multifunctional role of agriculture policy than to support the production growth. Also, the current government expenditures in individual EU countries are applied in relation to the EU's WTO obligations [8], meaning that subsidies should not primarily stimulate production.). The size of agricultural and arable area embodies also low elasticity – this can be explained by the effort of the EU to protect agricultural land – despite activities trying to keep land in piece or to keep land out of the production process. It is quite interesting to note the low elasticity of agricultural GDP and capital stock value in relation to government expenditures in all analysed countries. It means that government expenditures are not stimulating farmers to increase their investments, and that the majority of incomes from public sources are transformed into the usual cash-flow – these sources are used to cover production costs and probably they are also transformed into farmers' final profit. This is very interesting especially because of the value of government expenditures in individual NMCs related to agricultural sector activities according to FAO represents almost 40% of the final agricultural production value.

High correlation exists between public support and agriculture in relation to the number of economically active persons in agriculture, agricultural and arable area, and agricultural sector GDP, and gross capital stock in agriculture. Total agricultural production at the general level is not really influenced by government support. The higher level of elasticity existing between the provided public sources and agricultural sector is apparent in relation to the number of economically active persons in agriculture and agricultural GDP. The conducted functions reached the high determination index values especially in relation to the number of economically active persons in agriculture development, agricultural area development, and agricultural GDP development.

Conclusion

With respect to government expenditures, the total nominal value of expenditures for agricultural and environmental purposes in all NMCs increased during the monitored time period from ca 8.3bn. USD to ca 23bn. USD. In the same period, inter-annual growth rate of NMCs' government expenditures into agriculture reached 9.3%, and in the case of expenditures for environmental protection the inter-annual growth rate reached 12.3%. The most impressive growth of agricultural sector support was recorded in the case of: Romania, the Czech Republic, Bulgaria, Slovakia and Lithuania. In general, the value of government expenditures related to the agricultural sector or environment protection in all NMCs, virtually doubled, the only exception being Hungary. The highest level of correlation between government expenditures and selected agricultural sector's characteristics in NMCs can be seen in the case of the number of economically active persons in agriculture development, agricultural area development and agricultural GDP and capital stock value development. Agricultural sector in individual NMCs is sensitive on changes in government expenditures especially in relation to the number of economically active persons in agriculture, and agricultural GDP development.

Acknowledgement:

This paper is a part of the research project carried out by the authors within the framework of the grant No. 6046070906, funded by the Ministry of Education, Youth and Sports of the Czech Republic.

References:

- [1] BASEK, V., KRAUS, J. Comparison of selected indicators of farms in the EU member states. *Zemědělská ekonomika*. Volume: 57 Issue: 2 Pages: 71-84 Published: 2011
- [2] BIELIK, P.; JURICEK, P.; KUNOVA, D. The comparison of agricultural support policies in the OECD and the EU countries from the perspective of economic globalization processes. *Zemědělská ekonomika*. Volume: 53 Issue: 8 Pages: 339-348 Published: 2007
- [3] HINDLS, R.; HRONOVÁ, S.; SEGER, J.; FISCHER, J.: *Statistika pro ekonomy*. Professional Publishing, Praha. ISBN 978-80-86946-43-6. Published: 2007
- [4] POKRIVCAK, J; SWINNEN, JFM; DE GORTER, H. Agricultural policy and European integration. *Ekonomický časopis*. Volume: 51 Issue: 1 Pages: 33-49 Published: 2003

- [5] RENWICK, A., JANSSON, T., VERBURG, P. H. ET AL. Policy reform and agricultural land abandonment in the EU. *Land Use Policy*. Volume: 30 Issue: 1 Pages: 446-457 Published: JAN 2013
- [6] SADOWSKI, A., CZUBAK, W. The priorities of rural development in the EU countries in years 2007-2013. *Zemědělská ekonomika*. Volume: 59 Issue: 2 Pages: 58-73 Published: 2013
- [7] STRELECEK, F.; ZDENEK, R.; LOSOSOVA, J. Comparison of agricultural subsidies in the Czech Republic and in the selected states of the European Union. *Zemědělská ekonomika*. Volume: 55 Issue: 11 Pages: 519-533 Published: 2009
- [8] SWINBANK, A. EU agriculture, Agenda 2000 and the WTO commitments. *World Economy*. Volume: 22 Issue: 1 Pages: 41-54 Published: JAN 1999
- [9] VIAGGI, D., GOMEZ Y PALOMA, S., MISHRA, A. ET AL. The role of the EU Common Agricultural Policy: Assessing multiple effects in alternative policy scenarios. *Land Use Policy*. Volume: 31 Special Issue: SI Pages: 99-101 Published: MAR 2013

DEVELOPING MANAGERIAL COMPETENCY MODEL

Petr Smutný, Jakub Procházka, Martin Vaculík

Masaryk University

psmutny@econ.muni.cz, jak.prochazka@mail.muni.cz, vaculik@fss.muni.cz

Key words:

competency model – managerial skill – leadership – effectiveness

Abstract:

Competency models help us to understand, discuss and apply competencies. This study describes the process of creating a generic managerial competency model. Information from advertisements offering managerial jobs was used for analysis. Generic managerial competency model is developed, which we use for the purpose of research into leadership effectiveness. Results shown in this study are applicable to Czech managerial reality.

Overview of the main concepts

A competency is a measurable human capability that is required for effective performance and may be comprised of knowledge, a single skill or ability, a personal characteristic, or a cluster of two or more of these attributes.

Individual competencies are organized into competency models. Competency models usually encompass the total of what people can do and in some cases also what they know. Competency model is a framework that lists competencies required for effective performance in a specific job, job family (group of related jobs) organization, function or process. This helps us to understand, discuss and apply competencies [8].

Individual competency models include various abilities, skills, knowledge, personality features and other characteristics suitable or necessary for a position, for which a particular model has been created. Agut, Grau, & Peiró [1] develop competency model for managers of hotels and restaurants, Çizel, Anafarta, & Sarvan [3] also work with models developed for middle-level managers in the tourism sector. Harison and Boonstra [5] develop a set of IT and non-IT related competencies essential for project managers in charge of technologically driven projects of organizational changes.

Patanakul and Milosevic [9] develop model that includes unique multiple-project management competencies.

Other models, so called generic models are transferable between individual work positions and organizations. In the 80s of the last century, as well as nowadays, there has been a prevalence of generic models, which, apart from better adaptability, bring along further advantages [1], [6]. Hamlin [4] reports results of studies into the criteria of managerial effectiveness supporting the view that “universalistic” models are more consistent with the facts.

1. The process of developing a competency model

Morelli et al. [8] describes competency modelling process as complex and consisting of several interrelated steps.

Step 1: Defining the objectives

Defining the objectives is achieved through answering several important questions:

Why is the competency model developed?

What is the unit of analysis?

What is the relevant timeframe?

How will the competency model be applied?

Step 2: Planning the methodology

This involves selecting the sample of individuals who will contribute data for the project, as well as the methods to be used for obtaining the data. Validity and reliability issues need to be addressed at this stage.

Step 3: Identifying the competencies and creating the competency model

In this step, the content of the job is broadly defined. This information is then used to identify specific skills, knowledge and attributes that constitute competencies. The draft list should be reviewed by subject matter experts and revised based on their feedback. At last, competencies are identified and organized into a framework that constitutes a competency model. To complete the competency model, behavioral examples should be developed for each competency at one or more levels of proficiency.

2. Implementing the process of developing the competency model

Step1: Defining the objectives

Research is the main purpose behind developing this competency model. The competency model is used to measure learning effectiveness of managerial simulation game Manahra [10]. The second area of use for this competency model includes research into relationship between managerial skills and leader effectiveness.

As we focus our research on the relationship between managerial skills and effectiveness, we are looking for generally defined managerial abilities and skills, expertise and specific skills in a particular field and personality characteristics. The final model should be generic competency model.

Identified competencies and their components are to be used in research through surveys and self-assessment methodology.

Step 2: Planning the methodology

Advertisements offering managerial jobs were analyzed. This form of communication includes concentrated information about skills, knowledge and personal attributes of applicants – potential managers. We can presuppose adequate knowledge of the vacant positions (job description) as these advertisements are formulated by employers (companies) or cooperating personal agencies. Easy access is another advantage of this source of data.

Final sample of 111 advertisements offering managerial job vacancies was analyzed. Advertisements were obtained through internet portals www.jobpilot.cz and www.joblist.cz.

Quantitative content analysis was used in the research. Conventional type of the content analysis [7] was used as coding categories are derived directly from the text data. Expressions identifying required skills, knowledge or personal attributes were coded. Results were interpreted based on the frequency analysis.

Step 3: Identifying the competencies and creating the competency model

The set of coded expressions, that is the result of the coding process, can be divided into three subgroups based on the content of every particular expression. These groups include expressions depicting personal characteristics (attitudes, characteristics and values), knowledge (declaratory and procedural) of skills (the ability to apply knowledge for practical purposes).

Mintzberg's model of managerial roles was used as the means of expert review of the first draft results of the analysis. Definitions of individual managerial roles can be used to identify critical skills needed by managers to perform well. Also, the character of managerial roles as defined by Mintzberg is general enough to allow identification of generic skills and abilities, which would be transferable within a range of different managerial positions. Mintzberg's definitions were also used to develop behavioral descriptions of final set of identified skills.

Communication skill - ability of an individual (manager) to consciously and harmonically communicate, i.e. to speak as clearly and comprehensibly as possible, to attentively listen to others, be able to differentiate the substantial from the marginal, be open to needs of others and be careful to understand non-verbal signals.

Cooperability - ability of an individual (manager) to take an active and responsible part in group work processes, i.e. to share their knowledge, be open to others and respect their ideas, opinions, keep to the agreed rules of the "game" and to always keep the common goal in mind.

Motivational skill - ability of an individual (manager) to energize and bring in line behavior of colleagues and subordinates in a desired way, i.e. to have influence on the activity of an individual by appealing to their hierarchy of values, attitudes, abilities, knowledge and skills.

Evaluation and supervisory skill - ability of an individual (manager) to objectively and systematically justify and evaluate results of their own work as well as the results of others by using appropriate criteria and standards of values and assess their significance and to be able to systematically conclude the results.

Cognitive skills - ability of an individual (manager) use knowledge and information in order to understand their relations and to solve problems. The ability to see problems, break them into partial units, seek and find alternative solutions, integrate them and make decisions about global solutions.

Organizational skill - ability of an individual (manager) to schedule results, organize one's work and work of others to ensure optimal course of work process and to take over adequate share of responsibility.

Flexibility/Adaptability - ability of an individual (manager) to react to altered conditions. It includes the art of adapting one's way of thinking, behavior or solutions to a problem to new conditions.

Creativity – ability of an individual (manager) to be open to unusual and rarely used arrangements.

At last, all three levels of the competency model (skills, knowledge and personal attributes) were put together and the competency model was finalized.

TAB. 1: Managerial competency model

Competency	Skills / Knowledge		Personal attributes
	managerial	vocational / other	
LEADERSHIP COMPETENCY	Communication skill Cooperability Motivational skill Evaluation and supervisory skill	University education in technical or economic field Other vocational knowledge Orientation in the given branch Computer literacy Driving license (ability) English and German Language	Self-reliance Responsibility / Accountability Diligence Activity / initiative Self-development orientation Stress resistance
COMMUNICATION COMPETENCY	Communication skill		
MANAGERIAL COMPETENCY	Cognitive skills Organizational skill Creativity Flexibility/Adaptability Communication skill		

Source: author's research

3. Conclusion

Content analysis was used during the process of creating a generic managerial competency model. Information from advertisements offering managerial jobs was used for analysis. All advertisements labeled as “managerial positions” were included in the research. This did not allow us to differentiate among levels of managerial positions. One would expect that lower level positions would be more frequent in the sample (compared to number of executive positions vacancies advertised) thus the results are likely to be distorted in this way.

Only advertisements for positions in companies operating in the Czech Republic were used in the research. Comparison with results of some other studies originating from different social and cultural background shows similarities (on skills level) as well as differences (on personal attributes level). This raises some interesting questions and also suggests that validity of results shown in this study is limited to Czech managerial reality.

Acknowledgements:

This article is part of a research „Effective leadership: Integrative approach“. The research has been funded by Czech Science Foundation (P403/12/0249).

References:

- [1] ABRAHAM, S. E. et al. Managerial competencies and the managerial performance appraisal process. *Journal of Management Development*, 2001, vol. 20, pp. 842–852.
- [2] AGUT, S. a kol. Individual and contextual influences on managerial competency needs. *Journal of Management Development*. 2003a, vol. 27, No. 10, pp. 906–918.
- [3] CIZEL, B., ANAFARTA N., SARVAN F. An Analysis of Managerial Competency Needs in the Tourism Sector: The Case of Turkey. *Tourism Review*, 2007, vol. 62, pp. 14–22.

- [4] HAMLIN, G. H. In Support of Universalistic Models of Managerial and Leadership Effectiveness: Implications for HRD Research and Practice. *Human Resource Development Quarterly*, 2004, vol. 15, pp. 189–214.
- [5] HARRISON, E., BOONSTRA, A. Essential competencies for technochange management: Towards an assessment model. *International Journal of Information Management*, 2009, vol. 29, pp. 283–294.
- [6] HOLLENBECK, G.P et al. Leadership competency models. *The Leadership Quarterly*, 2006, vol. 17, pp. 398–413.
- [7] HSIU-FANG et al. Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 2005, vol. 15, pp. 1277-1288.
- [8] MARELLI, A. F. Strategies for developing competency models. *Administration and Policy in Mental Health*, 2005, vol. 32, Nos. 5/6, pp. 533 – 560.
- [9] PATANAKUL P., MILOSEVIC, D. A competency model for effectiveness in managing multiple projects. *Journal of High Technology Management Research*, 2008, vol. 18, pp. 118–131.
- [10] SMUTNÝ, P. et al. Learning effectiveness of management simulation game Manahra. In Carlos Vaz de Carvalho & Paula Escudeiro. *The Proceedings of The 7th European Conference on Games Based Learning*. Reading, UK: Academic Conference and Publishing International Limited, 2013. s. 512-520, 9 s. ISBN 978-1-909507-63-0.

ENVIRONMENT-DRIVEN MARKETING COMMUNICATION

Zdeněk Smutný

University of Economics, Prague

zdenek.smutny@vse.cz

Key words:

marketing management – communication – internet – interaction

Abstract:

This paper presents a view on the interactions and synergies that are determined by an environment of internet-based services including examples of interconnection with a physical environment. It presents online marketing tools and their use depending on the interaction in the environment of internet-based services. This viewpoint is not conventional because it does not evaluate individual instruments (based on ICT) only in perspective of their primary purpose of the communication in online marketing. It offers deeper insight into the links and interactions that are in progress at a level of an individual internet-based service as well as in terms of emergence across services. It can help marketers use online tools efficiently to meet the objectives of the marketing communication campaign.

Introduction

Recently, one of the key points of successful marketing activities of a commercial subject is its communication. This need was intensified by the development of information and communication technologies (ICT). In terms of communication, internet is among the most important phenomena (as a medium), and especially the internet-based services which are offered through it. There is a new peculiar space created here, which is not only an alternative to the physical, but is also linked with it. This internet-mediated space changes depending on the service that is used by a particular social group. Each such service (e.g. Facebook, Youtube, etc.) has its own possibilities, rules or laws for its user (whether it is man or softbot). Therefore, from our point of view, the service is a self-system – one possible world. Environment of the connected internet-based services (e.g. social media) can be called as a whole virtual environment. [5]

The fundamental problem is rapid development in this environment, which forces marketers to constantly change strategy of communication campaigns based on current trends in internet-based services (on the global and local level). There is a need for continuous learning of marketers (including self-learning), and not only on the level of the ability to control individual services (e.g. Twitter), but also on the level of knowledge of the attributes of virtual environment, which are given by the constitution on the software and hardware level, and based on the understanding the nature of potential tool for marketing communication and its adequate use in strategic planning of marketing campaigns.

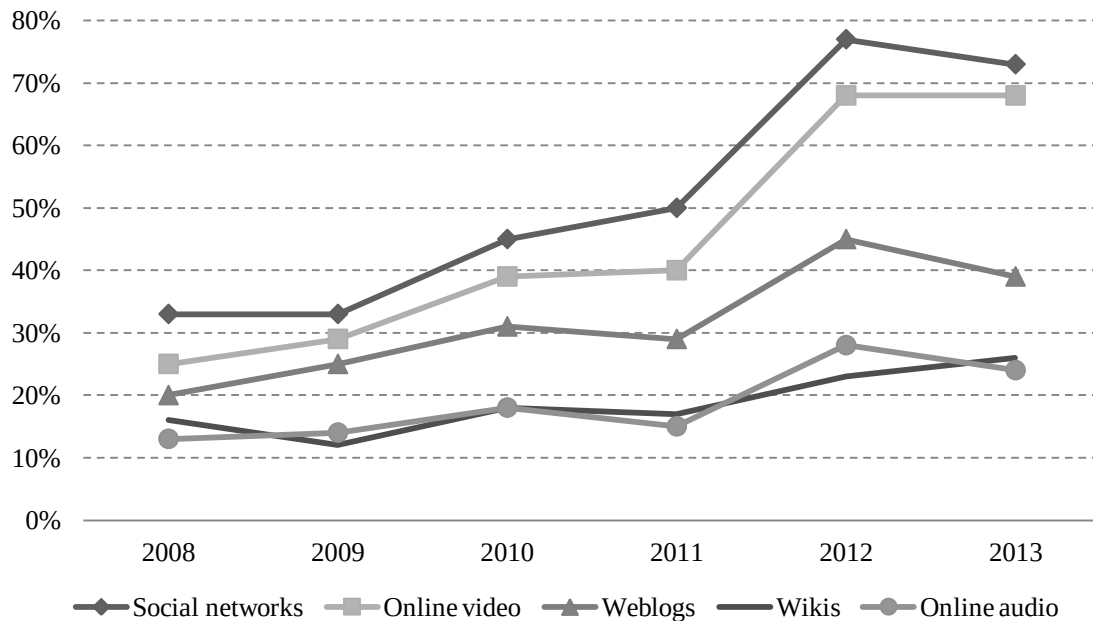
This paper presents a discussion and outlines the solution of two major problems that affect the final success of the communication activities of commercial subjects in the virtual environment. The first one is the way in which the different services interact and the underlying mechanisms of spreading the messages in the service. The second problem is the interconnection of communication campaigns in a virtual environment with those in the physical environment in order to create positive synergic effects within the integrated marketing campaign.

1. Rethinking of communication through social media

In the previous part we have denoted the development of services related to the internet-mediated space (e.g. social media), which are also related to the development of attitudes of society to them (such as the popularity of using the social media by people). Connected with this there is a shift in attitudes of commercial subjects, which have to reflect societal changes (trends) in context of socio-technical interactions. According to European survey [7], which was published in June 2013, we can find this reflection in the development of approach of managers of commercial subjects (usually CEO) to social media and its importance to communication activities (Graph 1). The growth of the importance of social media has reflected in the past six years the successful penetration of new technologies (based on ICT) in society and in increase in their use.

This trend underlines also prediction of Revenue Architects [4] in sales of digital goods, which „estimates that by 2015 over 70% of sales & fulfillment will be online.“ It affirms positive acceptance of new technologies in society whether it's on a software or hardware based. As a result, some companies have been forced to change also the view to the entire marketing mix and continually adaptation on (fast) changes.

GRAPH 1: Perceived importance of social media tools



Source: [7]

For commercial subjects is necessary to adapt a given situation and make more effective the use of financial resources. There will be described ways, where emphasis will be put on knowledge, which is contained essentially in environment based on ICT. This view is different from the preferred, which focuses only on tools and presentation of "best practices" limited to certain tools. The aim is to make marketing employee be aware of the different types of interactions and synergies which occur there. Therefore, it needs to equip him or her with baseline knowledge for managing the communication activities in this environment on which he/she performs an interpretation of the data obtained from the environment. In this paper, this issue is presented in terms of marketing communication mainly through social media primarily on practical examples (sample pensum of knowledge). The issue is more specifically discussed further at the level of using the interaction for marketing management in [6].

Amongst default knowledge of marketing employee, it is required to include "familiarity with the basic principles" which could be met in the internet environment and the provided services. Currently, the emphasis lies on the ability of workers to use communication tools (e.g. social media) as an instrument, not on the knowledge of internet-mediated environment (the environment determines the possible interaction). In terms of communication we are mainly interested in social media and among them the

most frequently mentioned ICT-based social networks. The network itself (in terms of graphs) can be divided according to the kind (social, biological, economic, etc.), or hierarchically by type (according to [1] divided complex networks to random, scale-free networks and networks of small-world). For each network, we are able to see the characteristics resulting from the structure of the network which explain some of the effects observed at the macro level, for example – from the perspective of an ordinary user of social networks (disseminating news, etc.) or on the other hand from the perspective of marketing staff (increased sales, number of addressed, etc.).

Within the social network a scale-free network is frequently mentioned. These connections can be found not only in the field of ICT at the software level at social networks or links between documents through the web (in terms of WWW), but also at the hardware level - i.e. connections between computers on the internet.

Among other kinds of complex social networks there are included random networks and small-world networks, where the theory of "six degrees of separation" is known, which says that it is a chain of six social links between people stand between me and anyone on this planet. In 2011 thanks to the Facebook service, which had over 700 million users during the experiment, it was found that 99.6% of the users are connected through five linkages and 92% even just over four linkages. [2]

For our purposes in the field of social networks there is one of the most fundamental characteristic of a scale-free network: in topology, there are hubs, i.e. nodes (vertices of the graph) which have a significantly higher degree than most network nodes. In such kind of network there is a hierarchy of centres and these centres are essential for communication to the child nodes.

If we are able to manage to hit it in communication and communicate through this node, we can reach much more recipients and accelerate the communication campaign. The aim of marketing employee would be identification of such nodes in the individual web services (Facebook, Twitter, etc.) with regard to the field in which the subject operates.

Besides the view of one social network, it is necessary to take into account not only the interactions within one network, but be aware of the ways the individual networks interact and integrate into each other. For example, Facebook allows to share and play videos directly from YouTube and YouTube can be used not only as a separate channel, but also as a basis for any viral video sharing via other social networks (e.g. Facebook,

Twitter, Bebo, G+, etc.). Parallel use of social networks in promoting brings a synergistic effect and reduces the necessary financial resources than in case we approached the services individually. To bring the system view (or think in system view), understand the individual media (based on ICT) and be able to apply their suitable interconnection and multiply the desired effect should be an essential part of marketing expert competence.

Interactions cannot be reduced only to the area of the virtual environment. It is also necessary to monitor the access points to individual services. Currently, these are various forms of desktop computers (PC, notebook, netbook, etc.), but also a mobile devices (phone, tablet, etc.), and in general, trend focusing on mobility. Along with it, there come some limitations, but also potential opportunities in connection with the physical environment – such as campaigns based on the current position of a person or augmented reality. This area solving human-computer interaction (generally any devices with a processor) is called Ubiquitous computing. Also in this area there are created models (e.g. Ubiquitous computing online user requirements – UCUR, see [3]) focused on the distribution of internet-based services that people need due to their current activities or behaviour. Practical application of these approaches to the current position of the recipient of communication has not been fully succeeded yet. This shift can only be expected, whereby there will be a qualitatively new reflection of the virtual environment to the physical and vice versa (see the next section of the paper).

Three basic principles were presented, which are based on the attributes of the environment (properties of scale-free networks, the ability to share across services and access points to services), which a marketing employee would be able to aware and could use them to increase the effectiveness of communication campaigns. This is an example of another approach (insight into the problems), where the emphasis is led to the environment, that determines the interaction and synergy towards instruments.

2. Examples of interconnection of communication between physical and virtual environments

When creating a strategy of communication campaign and media plan, the aim of marketing expert is to maximize the communication potential of the individual media to their parallel connection so that the campaign will be intensive which will be reached by repeating the communication content to recipients across various media. Further it is

presented examples, how to link communication campaigns in the physical environment with virtual and vice versa.

Probably the most interesting way today of linking the campaigns in physical and virtual environment is using the capabilities of mobile devices. This is happening most often by referencing either through an URL link or direct but less well-known QR code. Their aim is to move (to immerse) the recipient of communication quickly and unassuming from the physical world into the virtual environment – for example to the product/company profile on the social network, or download gaming applications on the virtual marketplace (Google Play, Apple AppStore, etc.).

Similarly, the connection works from the other side, where a certain software application can provide to user a link in the form of latitude and longitude coordinates (WGS) of place where will be another action – the game for loyal customers based on geocaching can be an example.

On the one hand, there must be a marketing specialist who is acquainted with currently available technologies (mobile devices), on the other hand, a recipient of communication must be capable and want to use the technology (must want interact this way). Based on this knowledge, the marketing specialist can combine the communication tools to maximize their synergy. The result is a comprehensive integrated marketing communication – in both physical and virtual environments.

3. Conclusion

With the proposed approach, we get another insight into the functioning and background of making the emergent phenomena in communication tools in environment of internet-based services. It was also presented on the example of social networks, what summary of knowledge is necessary from the marketing communication point of view. Emphasis was put on knowledge based on graph theory respective properties of graphs because this environment can be represent different types of graphs. It has been shown the positive influence on creation of marketing communication campaign, not only in the virtual or physical environment, but across both of them. This knowledge can then be used to create effective communication strategies and management of marketing communications (e.g. to help determine which tool creates the most positive interaction between users and therefore must be more supported).

Acknowledgements:

This paper was prepared as part of the research project "The innovative view of customer value and other factors influencing marketing management".

References:

- [1] CHUNG-YUAN, H., S. CHUEN-TSAI & L. HSUN-CHENG. Influence of Local Information on Social Simulations in Small-World Network Models. *Journal of artificial societies and social simulation*. 2005, vol. 8, n. 4.
- [2] Six degrees of separation? More like 4.74. *Phys.org* [online]. 2011 [cit. 2013-11-22]. Dostupné z: <http://phys.org/news/2011-11-degrees.html>
- [3] PESOUT, P. & O. MATUSTIK. On a Modeling of Online User Behavior Using Function Representation. *Mathematical Problems in Engineering*. 2012, DOI: 10.1155/2012/784164.
- [4] Software Distribution channel: The Reports of its death are greatly exaggerated. *Revenue Architects* [online]. 2012 [cit. 2013-11-22]. Available from: <http://www.avangate.com/lp/whitepaper-software-distribution-channel-management-2012.html>
- [5] SMUTNY, Z. Socio-technická interakce: virtuální prostředí jako důsledek informatizace společnosti. In: *Kognitivní věda a umělý život*. Opava: Silesian University in Opava, 2013. ISBN 978-80-7248-863-6.
- [6] SMUTNÝ, Z., V. ŘEZNÍČEK, J. KALINA & A. GALBA. Interaction of social media and its use in marketing management. In: *21th Interdisciplinarity Information Management Talks*. Linz: Trauner Verlag, 2013. ISBN 978-3-99033-083-8.
- [7] ZERFASS, A., P. VERHOEVEN, R. TENCH, A. MORENO & D. VERČIČ. *European Communication Monitor 2013. A Changing Landscape – Managing Crises, Digital Communication and CEO Positioning in Europe. Results of a Survey in 43 Countries*. Brussels: EACD/EUPRERA, Helios Media, 2013. ISBN 978-3-942263-21-4.

PRIVATE EQUITY AND VENTURE CAPITAL MARKETS OF CENTRAL AND EASTERN EUROPE: INVESTMENT TRENDS AND DIVESTMENT ACTIVITY

Andrzej Soloma

University of Warmia and Mazury in Olsztyn
soloma@uwm.edu.pl

Key words:

Venture capital – private equity – Central and Eastern Europe

Abstract:

The purpose of this paper is to focus on the investigation of the private equity investment process in the markets of Central and Eastern Europe (CEE), in the 2008-2012 period. The statistical data used in the article has been based on publications and reports of the European Private Equity and Venture Capital Association (EVCA). The study concludes that private equity funds activity is concentrated in a few countries in CEE region and that the most preferred form of exit route for private equity managers is trade sale.

1. Introduction

European private equity firms provide financing to about 5,000 companies per year, of which 83% are Small and Medium-sized Enterprises [2]. One group of academic studies looking at Europe data found evidence that private equity investments cause a significant increase in patent filings and thereby stimulate innovation. For example, Popov and Roosenboom research, using an 18-country panel covering the period 1991-2004, shows that PE investment accounts for as much as 12% of total European industrial innovation (i.e. innovation by private sector companies as opposed to public sector institutions such as universities) [7]. According to Boucly et al., private equity backed companies experience greater growth in sales, assets and employment than those not backed by a private equity fund [1]. The private equity industry in CEE was started more than 20 years ago. The region of Central and Eastern Europe (CEE) represents over €1.2 trillion of combined GDP and a population of more than 160

million people. According to the European Private Equity and Venture Capital Association (EVCA), private equity (PE) is equity capital provided to enterprises not quoted on a stock market. Venture capital (VC) is a subset of private equity and refers to equity investments made to support the early stage development phases of a business. In its statistics and reports, EVCA differentiates particular stages for VC and PE. For VC investment, the following stages are differentiated: seed, start-up, venture, and later stage venture. For the PE investment, growth capital, rescue /turnaround, replacement capital and buyout are differentiated [2]. Private equity has become a channel for the flow of capital and ideas internationally. The private equity industry comprises a broad spectrum of investment funds in terms of their size, legal structure and investment strategies. PE funds are pools of capital managed in general as closed-end, fixed-life funds making primarily equity capital investments into enterprises not quoted on a stock market. Private equity is distinguished by active management in order to make profit by enhancing the fundamental value of the private companies in which it invests in the course of an improved strategy and capital structure [3].

The purpose of this paper is to focus on the investigation of the private equity investment process in the markets of Central and Eastern Europe (CEE), in the 2008-2012 period. The statistical data used in the article has been based on publications and reports of the European Private Equity and Venture Capital Association (EVCA). The data for the private equity and venture capital markets of CEE include: Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine.

2. Investment activity

Several factors have contributed to the growth of the international PE market in CEE region: the internationalization of capital sources, growth of GDP, need for risk diversification, deal opportunities and increasing opportunities for exiting investments due to a well-developed stock market (especially in Poland) that permits exit through an IPO [8]. Nazarczuk and Lizińska suggest that attractiveness of the region is not a permanent characteristic of a given area [6]. Both the region and its environment are subject to continual transformations (changes involve the level of labour costs, tax

incentives for investors, possibilities of profits transfer, quality of business infrastructure i.e. transport access, telecommunication, business support institutions, etc.) causing the situation that in the future the region, compared to other regions, can be less or more attractive to the investors [6].

TAB. 1: Private equity investments in the CEE region (market statistics by country of the portfolio company), 2008-2012 (in € million)

Country	2008		2009		2010		2011		2012	
	€	N*	€	N	€	N	€	N	€	N
Bulgaria	92	14	185	9	82	8	7	4	84	5
Croatia	11	2	28	3	13	2	16	3	32	6
Czech Republic	423	20	1358	19	229	17	144	17	106	10
Estonia	13	10	5	10	26	21	7	7	19	16
Hungary	464	14	214	11	65	17	195	37	101	42
Latvia	75	17	1	4	5	7	20	10	4	7
Lithuania	0	0	1	2	2	3	27	21	8	34
Poland	636	71	275	27	652	45	678	55	478	75
Romania	294	29	221	23	119	17	66	14	27	8
Slovakia	31	3	0	1	14	19	9	7	98	6
Slovenia	3	2	79	5	7	2	14	8	4	4
Ukraine	354	13	38	8	96	10	63	11	43	6
Other**	43	14	28	3	24	3	1	1	4	1
Total CEE	2439	209	2433	125	1334	171	1247	195	1008	220

* Number of companies

** Bosnia & Herzegovina, Macedonia, Moldova, Montenegro and Serbia

Source: Own research based on [4]

Comparison of PE investments activity to gross domestic product (GDP) reveals the growth level of country market. In 2012, the ratio of PE investment value to GDP in the CEE region was 0.082%. The CEE level in 2012 remained at approximately one third of the European level [2]. This shows that the region has significant long-term potential for

further private equity development. PE funds activity is concentrated in a few countries in CEE region. The Czech Republic, Hungary and Poland accounted for 51.8% of investment by number of companies over 2008-2012 and 71.1% of investment by value. Looking at number of companies financed in the region, Poland remained the largest market in CEE, as has been the case since 2008 (Tab.1). This can indicate that PE funds evaluate Poland as a country that can cope with the global economic crisis better than other markets. A total of 220 companies in CEE received private equity backing in 2012. For the third year in a row, despite the decrease in the value of investments, the number of companies receiving private equity investments continued to rise in the CEE region (TAB. 1).

3. Market segments by investment stages

In the years 2008 through 2012, the CEE private equity market was much more growth-capital- oriented than the total European market (Tab.2). In 2008-2011 period, PE funds in CEE were careful about investing at the early stages of enterprise development. At this stage information asymmetry between PE funds and the company is particularly large. This is true especially when the management is characterized by a short management history or it is easier to find a branch investor for large, well-known companies (quicker disinvestments) than unknown firms of a short operating period. Avoiding the financing of early stages of company development is also significantly influenced by the fact that those PE funds that have larger capitals finance companies at later development stages and are less interested in investing small amounts in companies that begin their activity, due to relatively high unit operational costs that affect the rate of return [5]. A significant change in the level of venture investments occurred in 2012 compared to the previous 5 years. For the first time, CEE statistics showed an overall higher percentage of investments in the venture segment than was seen across all of Europe, with 10.2% vs. 8.7%, respectively (Tab.2). Venture investments were partly driven by certain EU-supported government programs (for example, the Jeremie program). Such government programs are aimed at closing liquidity gaps, which result when firms from the SME sector are unable to secure necessary capital.

TAB. 2: Type of private equity investment by stage focus in CEE region and Europe (in % of total investment)

	CEE (% of total investment)					EUROPE (% of total investment)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Seed	0.2	0.1	0.3	0.3	0.3	0.6	0.6	0.3	0.4	0.4
Start-up	2.4	0.4	2.1	4.2	7.2	4.6	8.1	4.2	4.1	4.9
Later-stage venture	5.0	1.3	2.7	3.0	2.6	7.9	8.1	4.1	3.9	3.4
Total Venture	7.6	1.8	5.1	7.6	10.2	13.1	16.8	8.5	8.3	8.7
Growth	28.9	15.9	40.6	21.6	20.3	13.5	19.8	15.4	11.6	10.4
Rescue/ Turnaround	0.0	0.3	0.4	0.2	0.3	0.5	3.0	1.2	0.9	1.0
Replacement capital	0.2	7.0	2.9	1.8	4.2	2.8	7.8	4.2	1.9	3.0
Buyout	63.3	75.1	51.1	69.0	65.0	70.1	52.5	70.6	77.3	76.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Own research based on [2]

In the years 2008 through 2012, buyouts continued to be the largest segment of the CEE private equity market. It should be noted that the line between buyout and growth capital investments is often blurred and transactions often combine both forms of investment.

4. Main sources of capital raised for CEE private equity

In the years 2008 through 2012, fundraising for the CEE region amounted to € 5.1 bn. Private equity attracts a range of different investors, as it offers them the possibility to diversify their portfolios and earn the desired returns. Diversification allows investors to reduce risk by investing in a variety of assets whose risk is not correlated. Investors allocating funds to PE in CEE include: banks, corporate investors, funds of funds, government agencies insurance companies, pension funds, private individuals and other asset managers. Since 2009, government agencies (i.e. country, regional, governmental or European institution for innovation and development, including structures such as the European Bank for Reconstruction and Development and the European Investment

Fund) have been the leading source of capital for CEE funds (Tab.3). Funds of funds accounted for the second largest source of capital.

TAB 3: Sources of capital raised for CEE venture capital and private equity in 2008-2012 (% of total)

Sources of capital	2008	2009	2010	2011	2012
Banks	12.1	10.1	1.6	12.2	4.3
Corporate investors	6.9	0.9	0.9	8.3	0.5
Funds-of-funds	25.0	9.4	8.3	25.6	19.4
Government agencies	2.7	28.3	64.3	14.1	29.2
Insurance companies	6.0	8.5	0.0	1.5	5.8
Pension funds	18.0	0.8	0.7	12.7	15.0
Private individuals	9.3	8.8	4.1	5.2	3.7
Other asset managers	2.8	0.7	5.8	0.5	4.8
Other sources	17.2	32.5	14.3	19.8	17.4
Total	100.0	100.0	100.0	100.0	100.0

Source: Own research based on [4]

5. Divestment process in CEE region

A private equity firm's goal is to invest in a private company and then sell its interest for a profit. Profits from realized investments occur as the result of "exit", for example: a sale or exit via initial public offering (IPO). The exit activity in 2012 was concentrated in a few countries. The Czech Republic alone accounted for 68.7% of the amount divested in the CEE region, with a total of €736 m. (Tab. 4). In terms of the number of exited companies, Poland led the region with 21 companies, followed by Slovakia (8) and the Czech Republic (7). These three countries made up 59% of all exited companies in 2012 in CEE. The most preferred form of exit route for private equity managers was trade sale to a strategic investor. Trade sale accounted for 85% of the total exit value by amount in 2012. This is in line with figures for Europe as a whole, which also show trade sale to be the main exit route but it amounted to only 38% of divestments by value in 2012 [2].

TAB. 4: Divestment by CEE country (exit value at investment cost), 2008-2012
(in € million)

Country	2008		2009		2010		2011		2012	
	€	N*	€	N	€	N	€	N	€	N
Bulgaria	1	1	6	3	5	2	7	4	57	3
Baltics**	27	9	1	2	8	6	40	6	9	9
Czech Republic	115	4	52	6	121	10	637	10	736	7
Hungary	76	10	6	5	8	9	687	11	3	2
Poland	69	18	31	9	77	16	180	24	53	21
Romania	52	5	12	4	23	5	31	3	120	3
Ukraine	5	2	9	3	88	3	2	1	20	3
Other***	5	4	15	5	14	1	33	9	72	13
Total CEE	350	53	132	37	344	52	1617	68	1070	61

* Number of companies

** Baltics: Estonia, Latvia, Lithuania

*** Bosnia & Herzegovina, Croatia, Macedonia, Moldova, Montenegro, Serbia, Slovenia and Slovakia

Source: Own research based on [4]

Conclusions

In the years 2008 through 2012, fundraising for the CEE region amounted to € 5.1 bn. Private equity attracts a range of different investors, as it offers them the possibility to diversify their portfolios and earn the desired returns. Since 2009, government agencies have been the leading source of capital for CEE funds.

Private equity funds activity is concentrated in a few countries in CEE region. The Czech Republic, Hungary and Poland accounted for 51,8% of investment by number of companies over 2008-2012 and 71,1% of investment by value. The most preferred form of exit route for private equity managers was trade sale to a strategic investor.

Several factors have contributed to the growth of the international private equity market in CEE region: the internationalization of capital sources, growth of GDP, need for risk

diversification, deal opportunities, increasing opportunities for exiting investments and investment environment of the largest markets (The Czech Republic, Poland) on the same level with major European markets in terms of risk profile.

References:

- [1] BOUCLY, Q., SRAER, D., THESMAR, D., Growth LBOs. *Journal Of Financial Economics*, 2011, Vol. 102, pp. 432–453, ISSN 0304-405X.
- [2] Central and Eastern Europe Statistics. An EVCA Special Paper. Brussels, 2009 - 2013 (without ISSN) Retrieved from: [http:// www.evca.eu](http://www.evca.eu).
- [3] DUDA, J., WOLAK-TUZIMEK, A. Ventures capital jako źródło finansowania inwestycji małych i średnich przedsiębiorstw w Polsce. *Ekonomia Menedżerska*, 2008, nr 3, pp. 33-45, ISSN 1898-1143.
- [4] European Private Equity & Venture Capital Association (EVCA) Yearbooks 2008-2013. Retrieved from: <http://www.evca.eu>.
- [5] MURRAY, G. C., Early-stage venture capital funds, scale economics and public support. *Venture capital*, 1999, Vol 4, pp. 351- 384, ISSN 1464-5343.
- [6] NAZARCZUK, J. M. LIZIŃSKA W. Level of Investment Attractiveness and Scale of Foreign Investments During the Years 2005–2006. *Olsztyn Economic Journal*, 2009, 4(1), pp. 125-137, ISSN 1897-2721.
- [7] POPOV, A., ROOSENBOOM, P., Does private equity investment spur innovation? Evidence from Europe. *ECB Working Paper Series*, 2009, No 1063 p. 4, ISSN 1725-2806.
- [8] SOŁOMA, A., The importance of the depth of the capital market on international venture capital and private equity allocation decisions: the case of Poland. *Economics and Management*, 2013, Vol 18(2), pp. 237-245, ISSN 2029-9338.

MARKET FOR PASSENGER TRANSPORT SERVICES: BASIC FRAMEWORK FOR WELFARE ANALYSIS

Rostislav Staněk

Masaryk University

rostanek@mail.muni.cz

Key words:

product differentiation – open access – competitive tendering

Abstract:

There are two ways how to increase competition in the market for passenger transport services: open access and competitive tendering. The paper presents a basic version of a model which enables to compare these two types of competition in terms of welfare. The demand side of the model includes heterogeneous consumers that differ according to their preferred departure time. The supply is modeled as differentiated oligopoly. Nash equilibrium conditions determine equilibrium price, number of products and offered departure time. The model results show that competitive tendering is welfare superior if consumers do not differ in their reservation prices too much.

Introduction

The organization of passenger railway services is undergoing significant changes in the past decades. It is about 20 years since the rail reform process in Europe began with the separation of infrastructure from operations of passenger services. Now, there is a tendency to increase competition in the market for passenger services. There are two ways how to open the passenger market to competition: open access and competitive tendering (or competitive franchising). Open access competition is a competition in the market, which means that firms are allowed to enter the market and compete in the market by setting prices, product quality and so on. Competitive tendering is a competition for the market. Competition for the market is characterized by the existence of some bidding process (typically an auction organized by public authority) that determines which firm can operate in the market. For example, public authority can run

an auction where it sells the right to operate in the market for passenger's transport services. If the operation in the market is expected to be profitable, then the firms are willing to pay for the right to operate in the market. Firm which offers the highest bidding price obtains the right to operate in the market. Both of these models coexist in the member states of European Union [1].

The aim of this paper is to present a basic framework which enables to compare these two competition regimes in terms of welfare. The model is an extension of Salop's model of product differentiation [5]. This model is suitable for modeling transport markets because it captures the distribution of consumers according to their preferred departure time. Johnson and Nash [2] [3] and Whelan and Johnson [6] present a model with similar demand characteristics. But these models do not contain profit-maximizing firms on the supply side and they do not take into account competitor's reaction to a change in the market, leading to a new equilibrium. Therefore they are not suitable for welfare evaluation. Contrary to the models presented in [2], [3] and [6], equilibrium product price, number of products and offered departure time are endogenously determined in the presented model. The model is solved in two versions: the competitive version corresponds to an industry with open access, the monopoly version corresponds to an industry with competitive tendering. These regimes are then compared according to total surplus or consumer surplus. The model is based by tools of game theory. Krčál [4] presents agent-based solution of a similar model. The paper proceeds as follows: next section describes the basic version of the model, section 2 provides general solution of the model, section 3 shows analytical solution and welfare comparison for special case when the consumers have the same reservation price.

1. Model

Consider a market with differentiated products. Product space can be represented by a circle with unit perimeter. Consumers are distributed uniformly around the circle. Consumer's position on the circle represents preferred departure time. Each consumer wish to buy one unit of the good and have waiting costs which are increasing and convex function of the waiting time. Consumers are willing to buy at the smallest generalized costs (price plus waiting costs) if it does not exceed the gross surplus they obtain from consuming the outside good. Outside good can be interpreted as using car instead of public transport. The original Salop's model [4] assumes that all consumers

differ only by their position on the circle and they obtain the same surplus from the outside good. This model provides a generalization of the Salop's model because it allows consumers to differ in their reservation prices. Concretely, we assume that each consumer has reservation price or the gross utility obtained by consuming the outside alternative R_i . Reservation price is random variable which is uniformly distributed on interval $\langle 0, \bar{R} \rangle$. The utility function of each consumer is therefore given as $U_i = R_i - P - Tx^2$, where P is the price paid, x is the difference between preferred departure time and actual departure time and T is the parameter which measure the value of waiting time.

The supply side of the market is formed by firms which can produce several differentiated products. Products are represented by a point in the product space (product can be interpreted as a train leaving in a given time of a day). The firm has to pay fixed costs F for each product located in the product space. Once a firm locates its products at some points in the product space, it sets prices for each product. Firm faces zero marginal costs. Hence, firm producing M products obtains profit $\Pi_i = \sum_{j=1}^M p_j D_j - FM$, where D_j is the number of consumers demanding product j . The model is solved in two extreme versions. The monopoly version of the model assumes that there is only one multi-product firm in the market. The competitive version of the model assumes that there is a free entry into the industry but each firm is allowed to produce only one product in one location. This assumption seems to be very restrictive but it does not change equilibrium values as long as the closest neighbor of each product is not produced by the same firm.

2. Equilibrium

This section describes game-theoretical solution of the model. First, consider competitive version of the model. The model can be solved by backward induction. Suppose that N firms entered the market in the first stage of the game. The assumption of convex waiting costs ensures that firms choose to be located equidistantly from one another on the circle. The position of the consumer that is indifferent between purchasing from firm i and purchasing from i 's closest neighbor $\tilde{x}$ is given by the following condition $\tilde{x} = \frac{1}{2N} + \frac{N(P-P_i)}{2T}$, where P denotes the price of firm's closest

neighbor. Expected profit of each firm can then be written as a price times expected demand minus fixed costs.

$$\Pi_i = 2P_i \int_0^{\tilde{x}} 1 - \frac{P_i + Tx^2}{\bar{R}} dx - F$$

By maximizing expected profit with respect to price P_i , we obtain the best response function $P_i = P_i(P)$. Because firms are located symmetrically on the circle, it is reasonable to look for symmetric Nash equilibrium. The equilibrium price is therefore given by the following condition $P_i^* = P_i(P_i^*)$. In the first stage of the model each firm chooses whether to enter the market or not. Equilibrium number of firms is determined by the zero profit condition for existing firms.

$$\Pi_i = P_i^* \frac{1}{N} - F = 0$$

Now consider monopoly version of the model. Because waiting costs are convex, monopolist maximizes its profit by locating its products equidistantly on the circle. Prices of all products will be the same because the situation is symmetric. Therefore, the indifferent consumer lies in the middle of the distance between two products, i. e. $\tilde{x} = \frac{1}{2N}$. The expected profit of monopoly firm is given by the following expression.

$$\Pi_i = 2NP \int_0^{\frac{1}{2N}} 1 - \frac{P + Tx^2}{\bar{R}} dx - NF$$

Monopoly firm maximizes its expected profit with respect to its price P and number of firms N .

3. Welfare analysis

Generally, it is possible to obtain only numerical but not analytical solution of the model. Therefore, this section provides analytical solution and welfare comparison in the simple case when the consumers do not differ in their reservation prices R . In order to provide welfare evaluation, the competitive version and monopoly version of the model are compared with the allocation selected by social planner. Benevolent social planner chooses such allocation which maximizes total surplus. Total surplus is given as follows.

$$TS = 2N \int_0^{\frac{1}{2N}} R - P - x^2T dx + 2N \left(P \frac{1}{2N} \right) - NF = R - \frac{T}{12N^2} - NF$$

As we can see, total surplus depends on the sum of the fixed costs and consumers' waiting costs and it does not depend on the product price. This is caused by the assumption that consumers have the same reservation price and each consumes only one unit. If this is the case, then profit margin constitutes monetary transfer from the consumer to the firms. It determines only the distribution between consumer and producer surplus but it introduces no distortion. Thus, social planner chooses optimal number of products $N^* = \sqrt[3]{T/6F}$. Moreover, total surplus is increasing in number of products if $N < N^*$ and decreasing in the number of products if $N > N^*$. Table 1 shows equilibrium values for both versions of the model and for social optimum.

TAB. 1: Equilibrium values

	Competitive version	Monopoly version	Social optimum
Price	$p^* = \frac{T}{N^2}$	$p^* = \bar{R} - \frac{T}{4N^2}$	$p^* \in (0, \bar{R} - TN^{*2})$
Number of firms	$N^* = \sqrt[3]{\frac{T}{F}}$	$N^* = \sqrt[3]{\frac{T}{2F}}$	$N^* = \sqrt[3]{\frac{T}{6F}}$

Source: Author's own calculations

The results show that market allocation generates too many products in both versions of the model and industry regulator faces a problem of excessive entry. The results also show that number of firms in monopoly version of the model is smaller compared to a competitive version. This implies that total surplus is greater in monopoly version of the model. If the regulator's only instrument is the choice of the competition regime, then it is optimal to choose competitive tendering instead of open access. But this conclusion crucially depends on the assumption that consumers do not differ in their reservation prices and consequently no trade is excluded from the market because of positive profit margin.

Generally there are two sources of inefficiency: excessive entry and positive profit margin. Excessive entry is a more serious source of inefficiency in the case of open access. On the other hand, open access regime leads to lower market power and lower profit margins. The deadweight lost caused by positive profit margin is therefore lower

in open access regime. Because these effects go in opposite directions, it is ambiguous which type of competition is welfare superior in general.

Conclusion

The paper presents a basic framework for welfare evaluation of different types of competition on market for passenger transport services. The framework is based on game theoretical models of product differentiation. The modeling framework has some important advantages. First, it incorporates some realistic demand characteristics. Second, prices and number of products are endogenously determined within the model by Nash equilibrium conditions. The model was used to compare open access and competitive tendering when consumers have the same surplus from outside option. The model shows that both regimes generate too many firms in relation to social optimum but competitive tendering is closer to social optimum than open access.

Acknowledgement:

This paper was created as a part of the specific research project no. MUNI/A/0781/2013 at Masaryk University.

References:

- [1] CER. *Public service rail transport in the European Union: An overview*. Brusel, 2011, 185 p.
- [2] JOHNSON, D., NASH, C. Competition and the provision of rail passenger services: A simulation exercise. *Journal of Rail Transport Planning & Management*, 2012, vol. 2, no. 1, pp. 14-22, ISSN 2210-9706
- [3] JOHNSON, D., NASH, C. Charging for scarce rail capacity in Britain: a case study. *Review of Network Economics*, 2008, vol. 7, no.1, pp. 53-76, ISSN 1446-9022
- [4] KRČÁL, O. Comparing Competition and Regulated Monopoly in a Railway Market: An Agent-Based Modeling Approach Current Trends in the Public Sector Research, *Proceedings of the 18th International Conference: Current Trends in Public Sector*, 2014, forthcoming

- [5] SALOP, S. C. Monopolistic competition with outside good. *The Bell Journal of Economics*, 1979, vol. 10, no. 1, pp. 141–156, ISSN 0361-915X
- [6] WHELAN, G., JOHNSON, D. Modelling the impact of alternative fare structures on train overcrowding, *International Journal of Transport Management*, vol. 2, no. 1, 2004, pp. 51-58, ISSN 1471-4051

FACTORS DETERMINING DRIVING FORCES OF COMPETITIVENESS IN EU COUNTRIES

Michaela Staníčková, Lukáš Melecký

VŠB - Technical University of Ostrava

michaela.stanickova@vsb.cz, lukas.melecky@vsb.cz

Key words:

CCI – competitiveness – driving forces – EU – factor analysis

Abstract:

The topics about competitiveness nowadays acquire economic interest. Although there is no uniform definition and understanding of this concept, competitiveness remains one of the fundamental criteria of economic performance evaluation in a wider comparison. European Union set out competitiveness as one of its main objectives; successful application of instruments for competitiveness support is assumption for its reaching. The main attention in this paper is devoted to indicators analysis of Country Competitiveness Index approach. The aim of this paper is to determine main factors determining driven forces of competitiveness in EU countries by multivariate statistical method of factor analysis.

Introduction

Although the European Union (EU) is one of the most developed parts of the world with high living standards, there exist huge economic, social and territorial disparities between Member States. These disparities have a negative impact on the balanced development across the Union and weaken its competitiveness in the global context [5]. Globalization, rapid technological change, an ageing population and new knowledge economy belong to external factors which are becoming a growing threat, which also change and reallocate traditional source of competitive advantage. The aim of this paper is to identify factors that determine driven forces of competitiveness in EU countries and have considerable influence on their long-term potentiality.

1. Theoretical background of competitiveness concept

Over the last decade or so, the term competitiveness has been widely used – and sometimes abused. The definition of competitiveness is difficult because of the lack of mainstream view for understanding this term. Competitiveness remains a concept that is not well understood and that can be understood in different ways and levels despite widespread acceptance of its importance. The concept of competitiveness is distinguished at different levels – microeconomic, macroeconomic and regional. Anyway, there are some differences between these three approaches; see e.g. [3]. In essence the questions and issues that are the heart of the concept of competitiveness are basically those that policy makers and economic theorists have been trying to address for hundreds of years: a better understanding of the issues that are central to improving economic well-being and to the distribution of wealth [4].

2. Methodological background of factor analysis

Competitiveness and its measurement have a significant position all over the world. The most common quantitative methods convenient for a high number of multivariate measured variables can be identified as multivariate statistical methods, e.g. Method of main components, Factor analysis or Cluster analysis. Multivariate analysis is an ever-expanding set of techniques for data analysis that encompasses a wide range of possible research situation [2]. Factor analysis (FA) is a statistical procedure used to identify a small number of factors that can be used to represent relationship among sets of interrelated variables. In this paper, FA is applied as structure detection method (all indicators are relevant to FA after correlation) and not as data reduction method.

The empirical analysis starts with building database of indicators that are part of Country Competitiveness Index (CCI) approach. Pillars of CCI are grouped according to the different dimensions (input versus output aspects) of national competitiveness they describe. The terms ‘inputs’ and ‘outputs’ are meant to classify pillars into those which describe driving forces of competitiveness, also in terms of long-term potentiality, and those which are direct or indirect outcomes of a competitive society and economy [1]. In this paper, we are interested in input indicators describing driving forces of competitiveness – we use 37 indicators of inputs (given the extent of paper, indicators are specified in the empirical section as part of competitiveness factors).

Reference period (years 2000, 2007, 2008 and 2011) is determined by selection of indicators and their availability at national level. Years 2000 and 2007 characterize a growth period; years 2008 and 2011 characterize a crisis, resp. post-crisis period. For elaboration of the empirical results, the software IBM SPSS Statistics 21 has been used.

3. Analysis of factors affecting the EU countries competitiveness

Policy makers need a clear sense of its current competitive position and its functioning and latent factors of competitiveness: the starting point. By understanding both its position and factors of competitiveness, the policy makers can better understand the potential development options and limitations for countries and plot a development trajectory towards a desired end state. In turn, they can more clearly identify the required interventions that must be undertaken to make the best use the factors of competitiveness to achieve their desired end point, as mentioned [4]. In this paper, we analyzed CCI indicators which are identified as sources of competitiveness. These indicators were divided into factors that are crucial for EU economies, as they are identified as drivers of competitiveness. In this paper, nine dominating factors for inputs explained 79,317 % of total variability in reference period (see TAB. 1), what can be considered as very satisfactory result. Factors of competitiveness of EU countries are divided into several areas of the national economy, which are nowadays key and necessary for economy based on knowledge and innovation.

TAB. 1: **Total variance explained – case of input indicators**

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.491	31.057	31.057	10.259	27.728	27.728
...	...	...	...	...	...	...
9	1.111	3.002	79.317	1.674	4.525	79.317

Source: own calculation and elaboration, 2013

The optimal number of factors is already known, their interpretation still proceed not. In the case of inputs, optimal number of factors is nine.

TAB. 2: Factors of competitiveness – case of input

Factor 1 Economic growth and development	No.	Indicator	Factor loadings	Description of indicator
	1	VA	,917	Voice and Accountability (1)
	2	RL	,914	Rule of Law (1)
	3	GE	,911	Government Effectiveness (1)
	4	CC	,903	Control of Corruption (1)
	5	GERD	,878	Total Intramural R&D Expenditure (2)
	6	LPPE	,869	Labour Productivity per Person Employed (2)
	7	RQ	,853	Regulatory Quality (1)
	8	PS	,762	Political Stability (1)
	9	GFCF	,755	Gross Fixed Capital Formation (2)
	10	LIA	,735	Level of Internet Access (3)
	11	IMR	-,722	Infant Mortality Rate (4)
	12	CDDR	-,703	Cancer Disease Death Rate (4)
	13	RF	-,667	Road Fatalities (4)
	14	LLPET	,616	Lifelong Learning - Participation in Education and Training (5)
	15	TPETLE	,551	Total Public Expenditure at Tertiary Level of Education (5)

Source: own calculation and elaboration, 2013

Factor 1 – Economic growth and development is composed of following indicators (1) the institutional environment, (2) macroeconomic stability, (3) technological readiness (4) health and (5) education, see TAB. 2. (1) Effective institutions improve the delivery of public goods and services, address market failures, reduce transaction costs, promote transparency of entrepreneurship and facilitate functioning of labor market. (2)

Macroeconomic stability ensures confidence in the markets and leads to higher long-term investment and is essential for maintaining competitiveness. (3) ICT fundamentally changed the organizational structure of society, facilitate adoption of new and more efficient ways of working and working practices, changing lifestyle, increase productivity and accelerate business processes. (4) Indicators of health describe human capital in terms of health status, with a particular focus on workforce. Healthy workforce is a key factor in increasing labor market participation and labor productivity, and strengthens competitiveness. (5) Economy based on knowledge and innovation requires educated human capital, which is able to adapt to changing economic and social situation, and educational systems that successfully create key skills and abilities.

TAB. 3: Factors of competitiveness – case of input

Factor 2 Level of infrastructure	No.	Indicator	Factor loadings	Description of indicator
	1	ISLB	,947	Income, Saving and Net Lending/Net Borrowing (1)
	2	AU	,926	Accessibility to Universities (2)
	3	ATP	,874	Air Transport of Passengers (3)
	4	MTLM	,857	Motorway transport - Length of Motorways (3)
	5	ATF	,823	Air Transport of Freight (3)
	6	RTLT	,742	Railway transport - Length of Tracks (3)

Source: own calculation and elaboration, 2013

Factor 2 – Level of infrastructure is composed of indicators of (1) macroeconomic stability, (2) training, (3) infrastructure, see TAB 3. (1) Indicator of income, saving and net lending and borrowing signalized the behaviour of fundamental institutional economic sectors. The relationship between income, savings and gross capital formation

determine the ability or need to finance various sectors (net lending / borrowing), which significantly affect the macroeconomic sector, thus the national economy. (2) Participation in education and the accessibility of higher education are considered essential for the continuous updating of skills and competencies of people that are needed for coping with the challenges of a constantly evolving society based on knowledge, innovation and ICT. (3) Modern and efficient infrastructure contributes to both economic efficiency and improving territorial equality, as it allows maximizing local economic potential and optimum utilization of resources.

TAB. 4: Factors of competitiveness – case of input

Factor 3	No.	Indicator	Factor loadings	Description of indicator
Pathological phenomena in human life and education	1	SDR	,796	Suicide Death Rate (1)
	2	ELET	-,708	Early Leavers from Education and Training (2)

Source: own calculation and elaboration, 2013

Factor 3 – Pathological phenomena in human life and education is composed of indicators of (1) health and (2) education, see TAB. 4. (1) Rising trend in numbers of suicides related not only to personal problems, but also with considerable amount of hopelessness associated with political situation in many countries or economic crisis. Economic downturn strongly toll on mental health of population, because people living in uncertainty suffer from depression and psychological problems, which may subsequently result in suicides. (2) EU applies strategies against early school leaving, at the same time, however, it should try to widen access to higher education and improve its quality. If we manage to provide young people the right skills and professional qualifications, it helps to economy in the fight against youth unemployment.

TAB. 5: Factors of competitiveness – case of input

Factor 4	No.	Indicator	Factor loadings	Description of indicator
Inflation trends, performance of educational institutions and public administration	1	HICP	-,851	Harmonised Index of Consumer Prices (1)
	2	PTR	,550	Pupils to Teachers Ratio (2)
	3	EA	,473	E-government Availability (3)

Source: own calculation and elaboration, 2013

Factor 4 – Inflation trends, performance of educational institutions and public administration is composed of indicators of (1) macroeconomic stability, (2) training and (3) technological readiness, see TAB. 5. (1) HICP was introduced as response to need to establish a comparable index of consumer prices, in order to measure inflation trends in all EU countries as a criterion for entry into the monetary union. (2) Smaller classes are benefit for all pupils because they are dedicated to individual attention from teachers, which are reflected in their ability to learn and have a significant impact on their participation in further education. (3) E-government deals with computerization of public administration. E -government is a tool for using of modern technology to simplify the lives of public administration customers while saving state funds.

TAB. 6: Factors of competitiveness – case of input

Factor 5	No.	Indicator	Factor loadings	Description of indicator
Expenditure on primary education and capacity of health services	1	TPEPLE	,833	Total Public Expenditure at Primary Level of Education (1)
	2	HP	-,687	Hospital Beds (2)

Source: own calculation and elaboration, 2013

Factor 5 – Expenditure on primary education and capacity of health services is composed of indicators in category (1) education and (2) health, see TAB. 6. (1) Primary education provides the basis for lifelong learning, forming relationships to education at all, extent responsible for further motivation of the child and to attenuate the inequality of social and cultural environment of the family. (2) Indicator of hospital beds indicate the availability of health care in hospitals, resp. possibility of being admitted to treatment in hospital for some time.

TAB. 7: Factors of competitiveness – case of input

Factor 6	No.	Indicator	Factor loadings	Description of indicator
Expenditure on secondary education and capacity of freight transport	1	TPESLE	,842	Total Public Expenditure at Secondary Level of Education (1)
	2	VFT	-,476	Volume of Freight Transport (2)

Source: own calculation and elaboration, 2013

Factor 6 – Expenditure on secondary education and capacity of freight transport is composed of indicators of (1) education and (2) infrastructure, see TAB. 7. (1) The secondary schools provides education and vocational training for nearly the entire population of young people who have completed their compulsory education and pre-employment or before entering college. (2) Transport regardless of its type, is fully dependent on the needs of the economy and society, both in freight and passenger traffic. The functioning of the transport market is influenced much more than in other areas of government economic and social policy.

TAB. 8: Factors of competitiveness – case of input*

	No.	Indicator	Factor loadings	Description of indicator
Factor 7 Participation in education	1	MSTEG	,883	Mathematics, Science and Technology Enrolments and Graduates (1)
	2	PHE	,643	Participation in Higher Education (1)
	3	PEE	-,575	Participants in Early Education (1)

Source: own calculation and elaboration, 2013

Factor 7 – Participation in education is composed of indicators in category (1) education, see TAB. 8. Educated population is a fundamental prerequisite for economic and social development of each country, either currently or in the future. Governments therefore have an interest in a broad population access to education and a wide range of educational opportunities for children and adults.

TAB. 9: Factors of competitiveness – case of input*

	No.	Indicator	Factor loadings	Description of indicator
Factor 8 Capacity of passenger services and healthy lifestyle	1	VPT	,802	Volume of Passenger Transport (1)
	2	HLE	,650	Healthy Life Expectancy (2)

Source: own calculation and elaboration, 2013

Factor 8 – Capacity of passenger services and healthy lifestyle is composed of following indicators (1) infrastructure and (2) health, see TAB. 9. (1) Transport is one of the basic needs of mankind, mainly due to different potential landscapes of the world. With transport routes can be moved and transported people, matter, goods, energy etc. (2) Indicator of healthy lifestyle is used to monitor health as a factor affecting productivity,

to measure the employability of workers, to monitor progress in the field of accessibility and to monitor the quality and sustainability of health care.

TAB. 10: Factors of competitiveness – case of input*

Factor 9	No.	Indicator	Factor loadings	Description of indicator
Affordability of education and civilization diseases	1	FAS	,880	Financial Aid to Students (1)
	2	HDDP	,702	Heart Disease Death Rate (2)

Source: own calculation and elaboration, 2013

Factor 9 - Affordability of education and civilization diseases is composed of indicators in category (1) education and (2) health, see TAB. 10. (1) Issue of inequality in financial resources in access to higher education is a key topic in recent years. Today's system of financial support for students in higher education is insufficient. Universities must be truly open to all who have sufficient skills to cope with studies. (2) Heart disease falls into category of lifestyle diseases, which is a group of diseases in which a significant contributor is lifestyle and environment of industrial society. A crucial prerequisite for economically, socially and personally successful company is a healthy population.

Conclusion

The most economically advanced countries in the world offer excellent conditions for business, long-term focus on supporting research and development. Considerable funds as public budgets, as well as corporate budgets are aligned to support new ideas and creative approach to economic activities. Domestic companies know that the future is prepared to companies that can offer their customers something extra, i.e. the added value. As show results of FA, economic growth will reach countries with creative companies. Profitability of large and small companies mainly depends on new ideas and thoughts. Promoting education and learning residents of countries for the future is very important. Now innovative employees determine the success of companies. The greatest assets of EU countries are not material things, but people who are able to create new values flexibly respond to changing market needs and constantly bringing new ideas.

Acknowledgement:

This paper was created under SGS project (SP2013/45) of Faculty of Economics, VŠB-Technical University of Ostrava and Operational Programme Education for Competitiveness – Project CZ.1.07/2.3.00/20.0296.

References:

- [1] ANNONI, P., KOZOVSKA, K., *EU Regional Competitiveness Index 2010*. Luxembourg: Publication Office of the EU, 2010, 289 p. ISBN 978-92-79-15693-9
- [2] HAIR, J. F., BLACK, W. C., *Multivariate Data Analysis*. 7th ed. New Jersey: Prentice Hall, 2009, 816 p. ISBN 978-01-38-13263-7
- [3] KRUGMAN, P., Competitiveness: A Dangerous Obsession. *Foreign Affairs*, 1994, vol. 73, no. 2, pp. 28–44, ISSN: 0015-7120
- [4] MARTIN, R. *A Study on the Factors of Regional Competitiveness* [Online]. EC DG Regional Policy, 2003. Available at: http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/3cr/competitiveness.pdf.
- [5] MELECKÝ, L., POLEDNÍKOVÁ, E., Use of the Multivariate Methods for Disparities Evaluation in the Visegrad Four Countries in Comparison with Germany and Austria. In *ICEI 2012*. Ostrava: VŠB-TUO, 2012, p. 199-209. ISBN 978-80-248-2685-1

ESTIMATING THE LEVEL OF UNSTABLE BANK DEPOSITS

Przemysław Stodulny

Poznań University of Economics

P.Stodulny@ue.poznan.pl

Key words:

bank – deposits – liquidity – LCR ratio – risk management

Abstract:

Liquidity risk is crucial in the business of each financial institution. Precise estimation of the required liquidity buffer (high liquid assets level) enables efficient costs management. The paper presents the concept of estimating the unstable term deposits level to the assessment of possible net liquidity outflows. The concept considers specifically each financial institution's risk of outflow of that part of customers who are more sensitive to the level of interest rates and easier withdraw their deposits.

Introduction

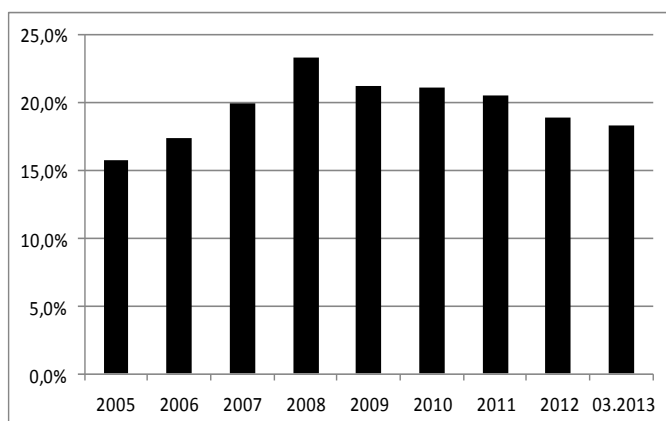
The financial crisis of recent years has highlighted the weakness of the financial risk management in banks, including liquidity risk. In many cases, the desire to increase profits at all costs led to an underestimation risk of the possible market turbulence. As a response to the new financial system experience, and to prevent similar financial crises in the future, a new package of banking regulations (Basel III) begun to be created. One of the main objectives is to improve the ability to absorb financial shocks. As noted in the explanatory memorandum of the EU Directive CRD IV, a number of countries have imposed some form of quantitative regulatory standards relating to liquidity, but at the EU level, there are no harmonized and sufficiently clear rules on appropriate levels of short and long term liquidity. The intention of the new regulations is to harmonize the principles of liquidity management of EU banks. Meanwhile, despite the many problems that the global financial crisis revealed, many banks remained resistant to external turbulence. It seems a sufficient argument for the inclusion, in the liquidity rules, of the specifics of given institutions' and their financial

risk profile. Risk profile is also expressed in the concepts difficult to be measured such as: realized pricing, customer loyalty, the real term of deposit funds¹. It seems that these specific elements cannot be included in the uniform ratios referring to a group of customers or products. This problem of measuring liquidity risk in respect of the deposit base is significantly in the view of the fact that customer deposits will be an increasingly important source of liquidity for banks.

1. Deposits as a crucial source of liquidity in polish banks.

The approach of Polish banks to liquidity issues changed significantly after the financial crisis crump in the years 2008-2009. In the Polish banking sector, since the end of 2005 to March 2009 non-financial customer deposits share declined from 65% to 53%. This gap was filled by increasing funding from the financial sector and, to a small extent, from budget entities. In this period banks not climbed rates for deposit products, compensating possible outflows of funds by transfer from the interbank market. This confirms the structure analysis of the balance sheets of banks operating in Poland in the years 2005-2013 (Fig. 1).

FIG. 1: The share of liabilities of the financial sector in the assets of the banking sector in Poland



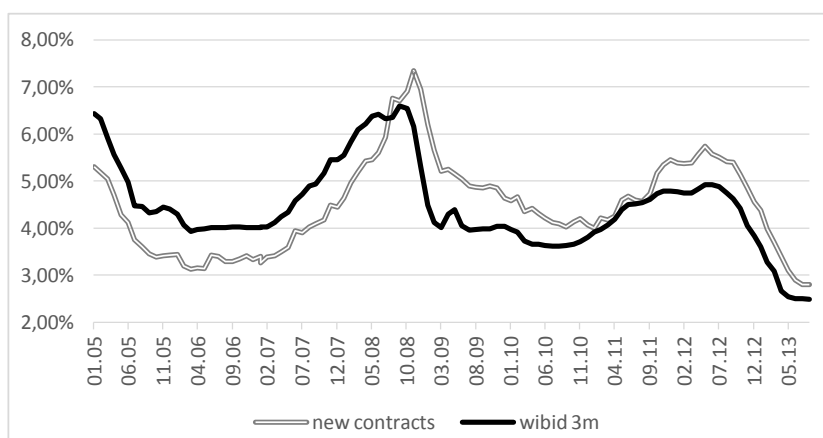
Source: own study based on <http://www.knf.gov.pl>

While there was a high excess liquidity in the financial markets it followed the flow of funds from foreign central of banks to subsidiaries operating in the Polish banking

¹ Different institutions follow different repricing strategies and have attracted different depositor bases [4, p. 217].

sector. Polish market guaranteed a much higher rate of return on assets than other European countries. In 2008 Polish banks' liabilities to non-residents from the financial sector reached 17 % of total liabilities, resulting in the amount of PLN 160 billion. At the end of 2011 this amount was further increased to PLN 189 billion. The outbreak of the financial crisis and the consequent loss of confidence in banks have caused the disappearance of transactions in the interbank market. Thus, the limited possibility of further funding to banks from this source. Funding from parent banks was also cut, which made them face liquidity problems. Recent years have highlighted a significant risk for the strategy of the banks financing less diversified funds from the financial sector. Since 2009 most banks returned to building up their liquidity position based on customer deposits. It was possible also thanks to the reduction of the risk perceived by customers. This trend of greater banks activity in the retail deposit market is confirmed by the changes observed in the structure of interest rates (Fig 2).

FIG. 2: Average interest rate of new contracts 1-3 month term deposits in polish banks and 3 month Warsaw Interbank Bid Rate



Source: own study based on <http://www.nbp.pl>

2. Unstable deposits in theory and practice

There are three terms relating to the deposit base in the literature and bank regulations: “non-maturity deposits”, “core deposits”, “unstable deposits”. Non-maturity deposits include any deposit that has no contractually maturity, so balances can be withdrawn at any time without any penalty. From the point of view of a financial institution’s these are funds which fluctuate in some part and the bank is not very likely to affect the level

of these deposits. For the bank non-maturity deposits are associated with the necessity to safeguard the possible outflow. We assume that the funds held in the transaction account are very insensitive to the rate of interest and the bank does not have real instruments to manage the deposit level.

In some publications core deposits include selected types of households deposits [2]. In other source are defined as stable and lower cost deposits and that reprice more slowly than other deposits when interest rates rise [6]. We are presenting an approach based on statistical analysis. The phenomenon of core deposits (residue) was described by Adolf Wagner (1857), who noted that some part of the deposit portfolio constantly remains in the bank. This is due to the fact that a lot of term deposits is prolong for further terms and funds on current accounts which are used by customers gradually, and therefore some part of them always stays in the bank. In addition, the amount withdrawn from bank deposits is replaced by the savings of new customers. Unlike in the case of transaction accounts the bank can affect the amount for savings and term accounts through interest rate. In the model of term deposit based on dynamics, there are two main streams, which can be controlled by bank: stream renewed deposits and the flow of new deposits from newly attracted customers. Simplifying that we can conclude that the resulting amount of the collected deposits is, thus, the result of customer behavior, the price decisions of the bank and its competitors. The concept of deposit residue refers to the long term ones in which the level of bank stable funding is valuing.

Unstable deposits are that part of the funds, about which there is a concern that they may be withdrawn at an established time horizon. These deposits cannot be regarded as a stable funding for long-term assets. The concept of unstable deposits refers to the short term ones in which the level of bank liquidity outflows is valuing. We can treat all of the funds on the accounts that are not core deposits as unstable deposits.

Using the rule of the deposit residue the stable part of the deposits can be estimated based on historical data of amounts on deposit accounts [3, 5]. Other studies indicate differences in the approach to estimating the total balance and the retained balance [4]. To take into account two factors creating deposit residue (retention rate and the inflow of new deposits) we consider the total balance in the accounts. Naive methods for estimating residue based on the assumption that the balance of accounts shows no trend. Then, the stable part of the deposit is at a level below which the amount has never

dropped in a set period. Statistical approach uses the method of decomposition of the time series for the trend component, seasonal fluctuations and random component, which is identical with unexpected changes in deposit balances. Then, we can predict the deposit residue on day l based on data from period $1, 2, \dots, n$ as below:

$$y_{n+l}^o = y_{n+l}^* - v_{n+l} \cdot d_{\alpha}, \quad l = 1, 2, \dots, L, \text{ where} \quad (1)$$

y_{n+l}^* - prediction deposit balance for period l ,

v_{n+l} - forecast error ex-ante for period l ,

d_{α} - cumulative normal distribution function for significance level α .

In general the problem of deposit residue estimation for period l is to find such a level of deposits y_{n+l}^o so that the probability of decrease deposit balance below y_{n+l}^o is lower than the projected α . Thus

$$P(y_{n+l} < y_{n+l}^o) \leq \alpha, \quad \text{where:} \quad (2)$$

y_{n+l} - empirical deposit level for period l ,

y_{n+l}^o - predicted deposit residue level for period l .

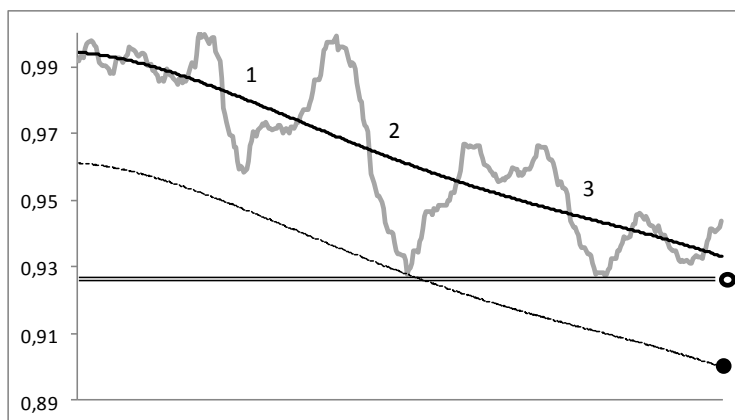
Presented approach could be matched with Value at Risk (VaR) methodology [1].

Unstable deposits are that part deposit balance that exceeds the estimated level of y_{n+l}^o .

The presented approach, although common in many banks, has serious inconveniences. Firstly, these are methodological difficulties. Deposits balance changes every day. These changes are determined by the bank's strategy, customer behavior, the actions of other entities, competitors and by other market and macroeconomic conditions. Very often it is difficult to find any regularity trend in the shaping of the deposit base. Exponential smoothing methods are poorly suited for long-term predicting in the occurrence of non-linear trends. In this case, residuals may not have normal distribution, as it was supposed in the presented approach. Secondly, when we estimate the stable deposits, the level based on historical data in each savings group we assess, is rather the effectiveness of liquidity management through interest rates. In fact, the stability of the deposit base can be bought bearing the price paid for amassed money. The behavior of the deposit base of a bank operating in a competitive environment reflects the interest rate policy and the effectiveness of its implementation. Figure 3 shows the development term deposit balance of one product group in one Polish bank. There is a general

downward trend, but at certain periods the sum of deposits is growing up. If we draw a trend line and apply a correction to the standard deviations, it can be seen that the designated level of stable deposits will be underestimated by a deep correction that took place during period 2. This outflow of deposits was caused by the decision to adjust the bank's liquidity position by reducing the interest rate for this group of deposits. Thus, if the outflow of deposits is due to a conscious bank decision, it doesn't carry a liquidity risk, hence the approach to the estimation of unstable deposits should be different.

FIG. 3: Estimating core deposit level for some term deposit balances



Source: own study based on deposit data of one polish bank

3. Unstable deposits in bank regulations

In the forthcoming banking regulation package (Basel III) there is a new approach to the measure the bank liquidity which is based on indicators the LCR (Liquidity Coverage Ratio) and the NSRF (Net Stable Funding Ratio). The LCR calculation assumes that the bank holds sufficient high-quality liquid assets that cover its total net cash outflows over 30 days. For the calculation of net outflows there are weights assigned to each category of deposits. Thus, the crucial part of net outflows is the unstable amount of deposits and other planned outflows reduced by the assumed incomes in the horizon of 30 days. New proposals imply the adoption of uniform solutions for all of the EU banks to appoint liquidity standards. This means that each bank will in the same way group stable and unstable deposits. Consequently, this will lead to detachment reported rates and actual development and variability of the deposit balances. A departure from the statistical stability approach to the formal description of the features which are characterized by stable deposits is very probably. The content of the CRR regulation shows that it also

seems an unjustified attempt to equate the weights for deposits made by the various entities of the group of households and small and medium-sized enterprises (SME). Despite the fact that we know that usually individuals are primary providers of savings and business entities make deposits to invest temporary surplus liquidity for security, but not for long run saving. It seems that business entities' deposits are characterized by higher volatility and. Polish bank experience shows that transactional accounts balances are more variable than term deposits (tab.1.), meanwhile EU regulations assign less outflows weight to the first category.

TAB. 1: 1-month variation coefficient in deposit groups in selected polish bank

average coefficient	Transactional accounts	Saving accounts	Term deposits
housholders	2,97%	4,96%	0,89%
SME	13,71%	-	4,16%

Source: own study based on deposit data of one polish bank

The concept of the designed liquidity measure is characterized by relative simplicity - not reflected in the profile of customers, the methods used by the bank to build loyalty, which undoubtedly affects the liquidity risk as well as the effect of a departure from the dynamic approach. Besides, if we assume the extreme conditions that the market is in a strong turbulence phase, selected entities of the banking sector are in danger of bankruptcy (as was during the recent financial crisis) talking about any degree of deposit base stability is doubtful and questionable. The effective deposit insurance scheme can only reduce the deposits outflow effects but its scale is difficult to predict.

4. Proposed unstable deposits' estimation method

Let p_j mean interest rate that the bank offers the customer for the j-th term deposit product. We assume that the average market rate of interest for this term deposit is $\bar{p}_j$. Then for $\hat{p}_j$ can specify the relative interest rate offered by the bank in relation to competitive offerings. Thus,

$$\hat{p}_j = p_j - \bar{p}_j, \text{ where:} \quad (3)$$

We can assume that bank customer decisions depend on the offered interest rate. The customer will be more inclined to leave the funds in the bank that will offer a higher rate $\hat{p}_j$. This means that the rate of deposit renewability will be an increasing function of $\hat{p}_j$. On the basis of empirical data, we can observe that for interest rates higher than market renewability ratio of deposits, it increases asymptotically to level w , where w means maximum level of renewability ratio which can be affected by the rate of interest. On the other hand, for interest rates lower than market declining percentage of the funds remaining in the bank, it approach 0. We can also observe indifference interval for the rates close to the market offers.

Let the following function describe the development of the renewability ratio of bank deposits.

$$f(\hat{p}_j) = \frac{w_i}{1 + a_i e^{b_i \hat{p}_j + c_i \hat{p}_j^2 + d_i \hat{p}_j^3}} \text{ where } 0 \leq f_i(p_j) \leq w_i \leq 1, a_i > 0 \quad (4)$$

We can estimate this function's parameters by the linearization of the form as below:

$$-\ln \frac{1}{a_i} + d_i \hat{p}_j + c_i \hat{p}_j^2 + b_i \hat{p}_j^3 = \ln \left(\frac{w_i}{Y} - 1 \right) \quad (5)$$

The concept of the LCR ratio in Basel III regulations is based on the estimated outflow of deposits during the next 30 days. These outflows shall be assessed under the assumption of a combined idiosyncratic and market-wide stress scenario. In our unstable deposits model we accept the deposit market crisis and the possibility of the appearance the rate of interest deposit war. We assume that the bank isn't attracted new deposits in the period of the month. In addition the bank can renew maturing deposits for the market rate. Thus, bank's renewability ratio for the j -th term deposit product is:

$$f_i(0) = \frac{w_i}{1 + a_i} \quad (6)$$

In this way we can estimate the potential volume of deposit outflows (DOUT) during the next 30 days as below:

$$DOUT = \sum_{i=1}^p \left(1 - \frac{w_i}{1 + a_i} \right) \sum_{t=1}^{30} dm_t \text{ where} \quad (7)$$

dm_t - volume of term deposits maturing in period t .

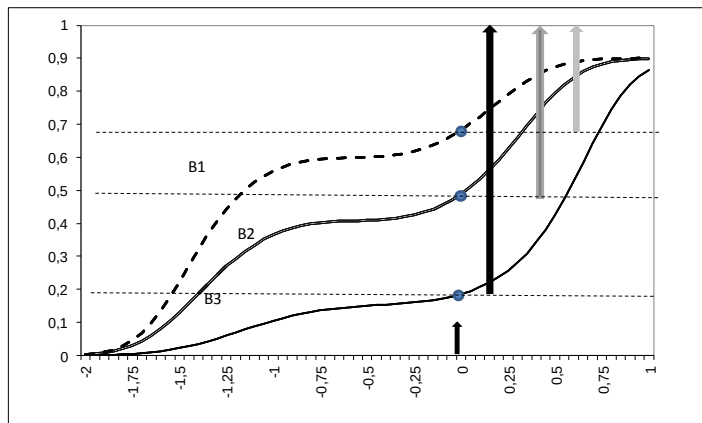
Unstable deposit rate can be calculated as below:

$$r^{DOUT} = \frac{30 \cdot DOUT}{n}, \text{ where} \quad (8)$$

n - average deposits term in days

The simulations of the presented method shows that the greater loyalty of bank customers, the lower the rate of unstable deposits (fig 4.).

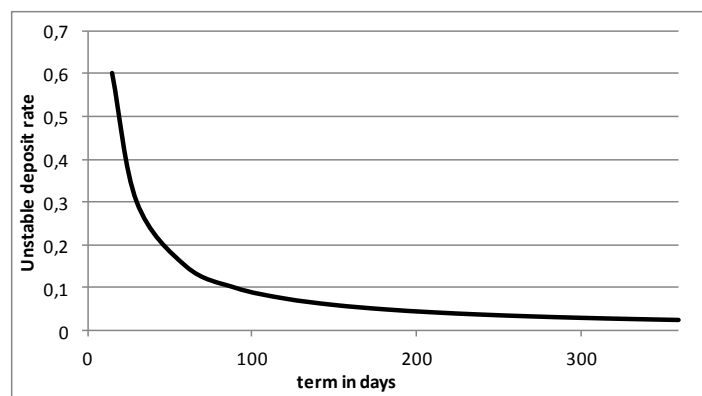
FIG. 4: Unstable deposit level for three hypothetical banks calculated based on the presented method



Source: own study based on made simulations

The average rate of unstable deposits depends on the maturity structure of deposits base. The longer term of the deposits, the lower part of its maturity in period of 30 days. Assuming a constant level of withdrawn deposits lengthening maturity increases the deposit base stability (fig 5). Long-term financing preferences are contained in the Basel III regulations.

FIG. 5: Unstable deposit rate for various deposit term (days)



Source: own study based on made simulations

Conclusions

The standardization of estimating liquidity ratios principles for EU banks is aimed at ensuring the transparency and comparabilities reported data. It seems that its implementation can lead to detachment of published indicators from the real dangers coming from the market. In the case of extreme factors influence can significantly increase the level of volatility and deposits outflow for the particular bank. Then the risk of the liquidity gap may not be the same for all financial institutions, what we could observe in recent years. Defined in the CRR regulation method of estimating potential net outflows won't prevent war deposit in case of the liquidity crisis. Probably banks won't find motivation for stopping from the use exceeding rates of interest in order to acquire missing financing. The method of estimating unstable term deposits level presented in this paper is meeting the requirement to take account of the specific nature of the business each bank can do. Presented approach includes the motivation for banks to build customer loyalty understood as a long-term relationship based on non-price instruments. We show that such concept lets take into account the special nature of term deposits which are characterized by a greater stability based on meeting the contractual term adherence and avoiding the loss of earned income.

References:

- [1] DOWD, K. *Beyond Value at Risk. The new science of risk management*, Wiley, Chichester, 1999, ISBN 0-471-97622-9
- [2] HARVEY, J., SPONG, K. *The Decline in Core Deposits: What Can Banks Do?*, *Financial Industry Perspectives 2001*, Federal Reserve Bank of Kansas City, 2001, <http://www.kc.frb.org>
- [3] LUDWICZAK, B. Metody szacowania osadu, *Bank*, 2008, nr 07/08 (190/191), s. 50-53. ISSN 1230-9125
- [4] SHEEHAN, R. G. Valuing Core Deposits, *Journal of Financial Services Research*, April 2013, Volume 43, Issue 2, ISSN 0920-8550

- [5] STODULNY, P. Metody prognozowania zapotrzebowania na środki płynne banku, *Metody ilościowe w analizach regionalnych i finansowych*, 2011, s. 258-275, ISBN 978-83-7241-801-2
- [6] STUDY ON CORE DEPOSITS AND BROKERED DEPOSITS, Federal Deposit Insurance Corporation, 2011, <http://www.fdic.gov/regulations/reform/coredeposit-study.pdf>

CORPORATE INDEBTEDNESS: BANE OR BLESSING? EMPIRICAL EVIDENCE FROM THE CZECH REPUBLIC

Lenka Strýčková

Technical University of Liberec

lenka.stryckova@tul.cz

Key words:

capital structure – leverage – indebtedness – profitability – business

Abstract:

This study focuses on the indebtedness of Czech companies and its development between the years 2006 and 2011, thereby contributing to an ongoing discussion on the corporate capital structure and its optimal form. The paper aims to provide up-to-date empirical evidence on the relationship between the leverage and corporate performance of selected companies from the Czech Republic within 14 major business sectors. The results of this study show that corporate leverage varies across industries, and confirms the impact of the global financial and economic crisis on the corporate indebtedness level. Furthermore, the findings indicate that, generally, financial leverage was associated with positive effects on corporate profitability in most business sectors.

Introduction

The general attitude of companies towards corporate debt has undergone substantial development since the first theories concerning capital structure were published in the fifties of the last century. It is clear that the debt strategy of an enterprise is not only result of its own choice and characteristics, but also the outcome of the legal and financial environment and corporate governance traditions in which the enterprise operates.

The traditional view on the optimal ratio of debt to equity is one that just balances the debt's tax advantage and the costs of bankruptcy. The use of debt offers a company many advantages by creating more investment opportunities and a possible rise in the shareholder's value. On the other hand, extensive use of debt may introduce a higher

risk for the investors, which may increase the interest rate and/or bring credit restrictions on the company.

The modern theory of capital structure was established by Modigliani and Miller (1958) [6]. Kraus and Litzenberger (1973) [4] in their trade-off theory postulated that optimal capital structure involves balancing the corporate tax advantages of debt financing against the costs of financial distress that arise from bankruptcy risks. Myers (1984) [7] contributed with his theories based on asymmetric information. The pecking order theory based on informational asymmetry suggests that firms do not have leverage targets. They use debt only when retained earnings are insufficient and raise external equity capital only as a last resort.

Ross, Westerfield and Jordan (2009) [10] define the use of debt in the corporate capital structure as financial leverage. The more debt an enterprise uses (as a percentage of assets), the higher the degree of its financial leverage.

Pandey (2009) [9] sees financial leverage as the existence of debt in a corporate capital structure, whereas operating leverage he defines as the use of fixed costs.

Generally, the degree of financial leverage is defined as the change in a company's profit after tax due to changes in its EBIT (Earnings Before Interest and Taxes).

Several studies have already examined the relationship between corporate debt and profitability. For example, Arditti (1967) [1] or Nissim and Penman (2003) [8] found a negative relationship between leverage and returns. George and Hwang (2009) [3] found a significant negative relationship between leverage and stock returns, and primarily emphasized the dependence on the business sector. On the other hand, several studies found a positive relationship between leverage and returns and showed that returns increase with leverage, e.g. Masulis (1983) [5].

1. Data and methodology

This study combines an analytical and a descriptive approach. In the analysis, the yearly observations of hundreds to thousands of companies were implemented within each business sector. The corporate financial data used in this study were obtained from the commercial database Albertina, which covers all economic subjects in the Czech Republic. Panel data were used in this study; selected companies were divided into fourteen groups by business sector according to the classification CZ-NACE. The

economic results of randomly selected companies (joint-stock and limited companies) were investigated within each business sector; the number of companies within the business sectors depended on the availability of the economic data required for the analysis.

Leverage in this empirical study refers to the financing methods of the company and its ability to meet its financial obligations, and is measured by the debt ratio (total debt to total assets ratio), the debt to equity ratio, and the profit effect of financial leverage.

The debt ratio indicates the relative amount of corporate debt in proportion to the assets of a company. The debt ratio is calculated by dividing total liabilities (i.e. long-term and short-term liabilities) by total assets:

$$\text{Debt ratio} = \text{Total liabilities} / \text{Total assets}. \quad (1)$$

It indicates what proportion of equity and debt the company is using to finance its assets, or in other words, it measures the percentage of funds provided by creditors [13].

The debt-to-equity ratio (D/E ratio), as a measure of a company's financial leverage is calculated by dividing its total liabilities by the stockholders' equity.

$$\text{Debt-to-equity ratio} = \text{Liabilities} / \text{Equity}. \quad (2)$$

It indicates what proportion of equity and debt the company is using to finance its assets.

The profit effect of financial leverage is a combined index which indicates whether the return on equity (ROE) is positively affected at the given level of indebtedness. The index is in principle calculated by dividing return on equity (ROE) by the return on investment (ROI). The use of debt will increase, or “leverage up”, a firm’s ROE if the firm earns more on its assets than the interest rate it pays on debt [2]. A value greater than 1 means that the use of debt increases ROE, and a value less than 1 decreases ROE. The formula is:

$$\text{Profit effect of financial leverage} = (\text{Earnings before tax} / \text{Earnings before tax and interest}) * (\text{Total assets} / \text{Equity}). \quad (3)$$

2. Empirical results

Table 1 offers an insight into the average debt level of Czech companies in the period from 2006 to 2011, while the average debt ratio and the average debt to equity ratio

were calculated within selected business sectors. The index of the profit effect of financial leverage is used as a measure of the relationship between returns and leverage.

TAB. 1: Debt levels and the profit effect of financial leverage of Czech companies between 2006 and 2011

Business sector	Year	Debt ratio		Debt to equity ratio	Profit effect of financial leverage
		Mean	Median	Mean	Mean
A Agriculture, fishery, and forestry	2006	59.38	51.53	1.34	2.48
	2007	60.66	53.06	1.31	1.91
	2008	60.49	51.62	1.35	1.68
	2009	59.20	51.32	1.13	1.78
	2010	58.80	50.17	1.33	1.79
	2011	58.46	49.33	1.25	1.68
B Mining and quarrying	2006	61.60	56.03	1.30	1.50
	2007	64.26	51.37	1.03	1.04
	2008	57.67	50.89	1.44	1.47
	2009	58.12	49.03	1.17	1.94
	2010	55.62	44.62	0.79	1.24
	2011	58.13	48.51	1.62	2.03
C Manufacturing	2006	66.09	60.90	1.90	2.15
	2007	62.90	57.84	1.79	2.13
	2008	62.56	56.21	1.45	1.81
	2009	62.88	54.04	1.40	1.69
	2010	64.32	54.40	1.26	1.76
	2011	64.26	54.59	1.40	1.75
D Electricity, gas, steam and air conditioning	2006	59.02	59.90	2.83	2.90
	2007	54.85	53.60	2.20	2.69
	2008	55.44	52.87	2.80	2.46
	2009	55.50	56.22	2.32	2.64
	2010	55.69	53.35	2.46	2.59
	2011	54.50	50.52	1.76	2.23

E	Water supply; sewerage, waste management and remediation activities	2006	58.64	51.11	1.77	2.18
		2007	60.07	46.80	1.67	2.28
		2008	54.83	43.36	1.27	1.96
		2009	55.88	44.84	1.35	2.01
		2010	55.50	43.35	1.16	1.72
		2011	49.41	38.60	1.39	2.36
F	Construction	2006	69.93	69.61	2.78	3.01
		2007	67.91	67.00	2.55	2.87
		2008	65.63	62.70	2.13	2.38
		2009	64.27	58.81	1.67	2.05
		2010	64.71	58.08	1.58	1.89
		2011	64.66	57.14	1.46	1.92
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	2006	77.24	70.76	1.55	2.08
		2007	76.14	69.75	1.81	2.24
		2008	74.16	66.22	1.45	1.78
		2009	74.46	65.33	1.13	1.62
		2010	73.43	63.76	1.08	1.52
		2011	74.75	62.61	1.20	1.68
H	Transportation and storage	2006	72.60	70.95	2.63	2.72
		2007	71.82	70.02	2.55	2.69
		2008	73.35	69.61	2.05	2.14
		2009	74.60	69.39	1.82	2.19
		2010	74.54	68.47	1.59	2.01
		2011	73.89	67.80	1.81	2.11
I	Accommodation and food service activities	2006	103.06	88.31	-0.15	0.63
		2007	104.35	86.46	-0.10	0.57
		2008	106.49	87.43	-0.21	0.48
		2009	108.64	90.36	-0.31	0.38
		2010	112.05	91.13	-0.32	0.34
		2011	111.88	88.18	-0.01	0.66
J	Information and communication	2006	66.12	57.75	1.35	1.91
		2007	65.73	57.22	1.28	1.77

			2008	64.54	56.29	1.35	1.94
			2009	64.11	53.09	1.25	1.89
			2010	63.25	52.47	1.12	1.78
			2011	63.59	50.88	1.13	1.84
K	Financial and insurance activities		2006	60.12	56.94	2.01	1.42
			2007	60.05	52.55	2.23	1.64
			2008	58.33	50.44	1.75	1.70
			2009	57.30	47.70	1.43	1.21
			2010	53.94	50.00	1.34	1.85
			2011	53.94	50.00	1.34	1.85
L	Real estate activities		2006	70.98	76.12	1.14	1.53
			2007	70.96	75.27	1.45	1.70
			2008	71.62	75.34	1.02	1.22
			2009	74.34	76.08	0.93	1.26
			2010	72.18	73.67	0.76	1.07
			2011	73.30	73.16	0.40	0.88
M	Professional, scientific and technical activities		2006	64.73	56.88	1.51	1.98
			2007	63.26	53.21	1.29	1.83
			2008	61.59	50.59	1.32	1.72
			2009	61.40	48.78	1.18	1.67
			2010	61.30	46.84	0.85	1.28
			2011	61.30	46.84	0.85	1.28
N	Administrative and support service activities		2006	73.68	65.73	1.27	1.81
			2007	72.30	64.10	1.74	2.10
			2008	71.86	63.49	1.26	1.75
			2009	71.26	61.44	1.13	1.61
			2010	69.96	58.66	1.10	1.58
			2011	69.55	57.73	1.00	1.58

Source: own investigation

3. Discussion on debt and returns

The average debt level of Czech companies, as measured by the mean **debt ratio**, varies according to the business sector, and there are also noticeable changes over time within each sector. Generally, the average ratio between total liabilities and total assets in all industries exceeds the threshold of 50%, at various levels. However, the median debt ratio, which is less subjective than the mean, shows a slightly lower level of indebtedness.

The results in most industries indicate the tendency towards a decline in the debt level over time, from 2006 to 2011. Exceptions occur in the sectors of Transportation and storage, Accommodation and food service activities, and Real estate activities, where the debt level has increased during the reference period.

Table 1 also shows that the sector of Accommodation and food service activities exhibits the highest level of debt ratio; it exceeds the threshold of 100% of the total assets. The sectors of Electricity, gas, steam and air conditioning, Water supply, sewerage, waste management and remediation activities, Agriculture, fishery, and forestry, Mining and quarrying, and surprisingly also Financial and insurance activities, exhibit lower levels of leverage (between 50 and 60%, on average).

When taking into account the second indicator of indebtedness, **the debt-to-equity ratio**, the optimal value is considered to be about 1, which indicates the same relative proportion of a company's equity and debt used to finance a company's assets. Provided that the D/E ratio is below 1, the company uses more equity than debt for financing. Generally, the maximum acceptable debt-to-equity ratio is between 1.5 and 2, or less.

It is also evident from Table 1 that the ratio is very industry-specific. The results in this table show that among those sectors with the highest financial leverage are Electricity, gas, steam and air conditioning, Construction, Transportation and storage, and Financial and insurance activities, where the D/E ratio exceeded 2 points in at least one year during the given period.

When examining the trends over time according to the debt-to-equity ratio, the dominant feature in most business sectors is the decline in the value of the ratio. A possible reason for this is the broad impact of the global economic and financial crisis on the behavior of companies and the willingness of banks to lend money.

The **profit effect of financial leverage** was the combined index chosen as a tool for examining the relationship between leverage and return. A value greater than 1 indicates that the use of debt financing increases ROE, and a value less than 1 that it decreases it. The last column in Table 1 shows the profit effect of financial leverage for all selected business sectors within the period from 2006 to 2011. It is evident that the effect of debt financing on the returns of firms is positive in the majority of sectors and periods; the exception is the sector of Accommodation and food service activities during the whole period under examination, and the sector of Real estate activities solely in 2011. However, although the profit effect of financial leverage is mostly positive, this effect is not constant over time within selected sectors. The value of the profit effect index decreased over time in most sectors, with the lowest values either during the financial crisis or in the post-crisis period.

Conclusions

This paper investigates the corporate financial leverage of Czech companies from 14 selected business sectors between 2006 and 2011, and focuses on the relationship between leverage and corporate performance. Three indicators were considered in this study: the debt ratio, the debt-to-equity ratio, and the profit effect of financial leverage.

The empirical analysis has shown that the debt ratio varied according to the business sector, and that the average debt ratio generally exceeded the threshold of 50%. According to the second indicator of indebtedness, the debt-to-equity ratio, the dominant feature in most business sectors is the decline in the value of the ratio. Finally, the profit effect of financial leverage was investigated. This analysis revealed that the profit effect of financial leverage was positive in the majority of business sectors. Nevertheless, this effect was not constant over time within the investigated sectors.

Generally speaking, the results of this study are in accordance with Modigliani Miller's capital structure theory: as the proportion of debt in the corporate capital structure of Czech companies increases, the return on equity increases as well.

Regarding the question heading this paper concerning the benefits or the drawbacks of corporate indebtedness, the empirical analysis confirmed that the use of debt "leveraged up" a firm's ROE across most investigated sectors.

Acknowledgements:

This contribution was created under the research project “Determinants of the corporate capital structure in the Czech Republic”, prepared by the Faculty of Economics of the Technical University of Liberec.

References:

- [1] ARDITTI, F. D., Risk and Return on Equity. *Journal of Finance*, 1967, vol. 22, no.1, pp. 19-36, doi: 10.1111/j.1540-6261.1967.tb01651.x
- [2] BRIGHAM, E. F., HOUSTON, J. F., *Fundamentals of Financial Management*. 13th ed. Mason Ohio: South-Western Cengage Learning, 2013, 734 p. ISBN 05-384-8212-5
- [3] GEORGE, T. J., HWANG, Ch. Y., A Resolution of the Distress Risk and Leverage Puzzles in the Cross-Section of Stock Returns. *Journal of Financial Economics*. 2009, vol. 96, no. 1, pp. 56-79, ISSN 0304-405X
- [4] KRAUS, A., LITZENBERGER, R. H., A State-Preference Model of Optimal Financial Leverage. *The Journal of Finance*, 1973, vol. 28, no. 4, pp. 911-922, ISSN 1540-6261
- [5] MASULIS, R. W., The Impact of Capital Structure Change on Firm Value: Some Estimates. *Journal of Finance*, 1983, vol. 38, no. 1, pp. 107-126, DOI: 10.1111/j.1540-6261.1983.tb03629.x
- [6] MILLER, M. H., MODIGLIANI, F., The Cost of Capital, Corporation Finance, and the Theory of Investment. *The American Economic Review*, 1958, vol. 48, no. 3, pp. 261-297, ISSN 0002-8282
- [7] MYERS, S. C., MAJLUF, N.S., Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 1984, vol. 13, no. 2, pp. 187-221, ISSN 0304-405x
- [8] NISSIM, D., PENMAN, S. H., Financial Statement Analysis of Leverage and How It Informs About Profitability and Price-to-Book Ratios. *Review of Accounting Studies*, 2003, vol. 8, no. 4, pp. 531-560, ISSN 1380-6653

- [9] PANDEY, I. M., *Financial Management*. 9th ed. Vikas Publishing House PVT. Ltd., 2009, 806 p. ISBN 9788125916581
- [10] ROSS, S., WESTERFIELD, R., JORDAN, B. D. *Fundamentals of Corporate Finance*. 9th ed. New York: McGraw-Hill, 2009, 1008 p. ISBN 05-384-8212-5

DEVELOPMENT OF SOCIAL NETWORKS FROM THE LOCAL AND GLOBAL PERSPECTIVE

Libuše Svobodová, Miloslava Černá

University of Hradec Králové

svobodova.libuse@uhk.cz, cerna.miloslava@uhk.cz

Key words:

Social media – social networks – technologies – corporation – communication

Abstract:

The power of social media phenomenon is discussed in the article. Its role and potential in business environment are highlighted for social media have earned their irreplaceable position there; businesses utilize them in creation of reputation systems, prediction markets, online communities, and computer-supported cooperative work. Definition of key expressions and categorization of social media is provided as a technical background to latest findings on the biggest players on the social media landscape in the Czech Republic and worldwide.

Introduction

Social media isn't just used for connecting with existing customers, it's also a great beneficial tool for acquisition. With 54% of marketers gaining a new customer through Facebook this year alone, businesses should be looking to join this trend.

Facebook often comes out on top in the world of social media, however Twitter should by no means be overlooked! With 36% of businesses gaining a new customer through Twitter, this easy to use microblogging platform should be considered just as highly.

LinkedIn is a more professional network, with over 200 million members and 2 more joining every second. This is a great place to build business connections, hunt for potential employees and find out what other businesses are doing to stay ahead. [15]

Social media

“Social media is all that allows anyone to communicate with anyone - in other words, user-generated content distributed via easily accessible Internet tools.” There are many categorizations of social media one of them divides social media them into six broad

categories: discussion forums and groups, reports, and page views, social networks, micro- blogging, blogs, bookmarking [12]. Beside these social media it is necessary to mention social applications for collaborative content (e.g. Wikipedia), multimedia sharing (e.g. YouTube), social tagging (e.g. Deli.cio.us) and social gaming (Second Life).

The other frequently cited comprehensive classification is the one created by Kaplan and Haenlein; their categories include collaborative projects, blogs and microblogs, content communities, social networking sites, virtual game-worlds, virtual social worlds. [16, 61]. The problem with categorization is that there are no strict boundaries between individual media as they complete not only one mission and they change with the development of technologies and current requirements of the clients.

“The social media issue has become a significant research system in the market. Social media enable to listen to the market and find out what the target audience thinks and feels. This knowledge can be used for example in the marketing mix, it can become a fundamental part of the services and customer support and can be directly incorporated into the planning.” [12]

Social network

“This is the type of service that allows communication and sharing of information in a more or less permanent manner that is different from chat or phone. Currently, the Internet is most commonly used for their creation, but in principle it is possible to imagine a corporate social network based on bulletin boards, envelopes and other elements of non-electronic form. Another characteristic feature is the existence of profiles that present individual people. These profiles (according to most general provisions) should correspond to real persons or companies, but this is not necessarily true.” [2]

Another study brings statistic data from global perspective [10]. In this survey authors define online social networks as invention enabling people who share interests and activities across political, economic, and geographic borders to get connected.

1. Methodological Frame

The objective of this contribution is to provide readers with an insight into the role and potential of social media with the focus on business environment for social media have earned their irreplaceable position there.

The article is based on a literature review enriched in latest statistical studies.

Definition of key expressions and categorization of social media is provided as a technical background to the latest findings on the biggest players on the social media landscape in the Czech Republic and worldwide.

The following chapter 'Current social networks' makes an entry into the issue; the most widely utilized social networks are accompanied by current facts in brief.

The chapter dealing with comparison of Czech and world networks brings useful data; beneficial seems to be comparison based on the age distribution. The data might be of practical use, e.g., for advertisers who are aiming at various target groups.

The last chapter is devoted to the role of social networks in corporate setting; several key missions are described, e.g. social networks used as a standard channel by companies to support company-customer interaction. The astonishing increase in presence of companies on social networks is illustrated in the statistical figure bringing the chart ranking most extensive corporate pages on Facebook and profiles on Twitter.

2. Current social networks

The biggest players on today's social media landscape are Facebook, Twitter, Google+, LinkedIn, YouTube a MySpace. All these networks have much in common, but each of them has a different mission and consequently a different type of users that use the network and for which this virtual world has become a second home.

Facebook

FIG. 1: Facebook and facts in brief



Source: [11]

Facebook is the most popular social network in the world.

Companies, organizations and brands can via Facebook pages share their messages and interact with users. Specific figures on the network are shown in the figure 1 above.

Google+

Google+ is literally Google plus meaning something extra. All Google services such as Gmail, YouTube, or Blogger now have one big plus that enriches - the social network. Google+ brings the popular elements of social media - comments, sharing photos and music, video chat, and more - to your social contacts. [5]

FIG. 2: **Google+ and short facts**

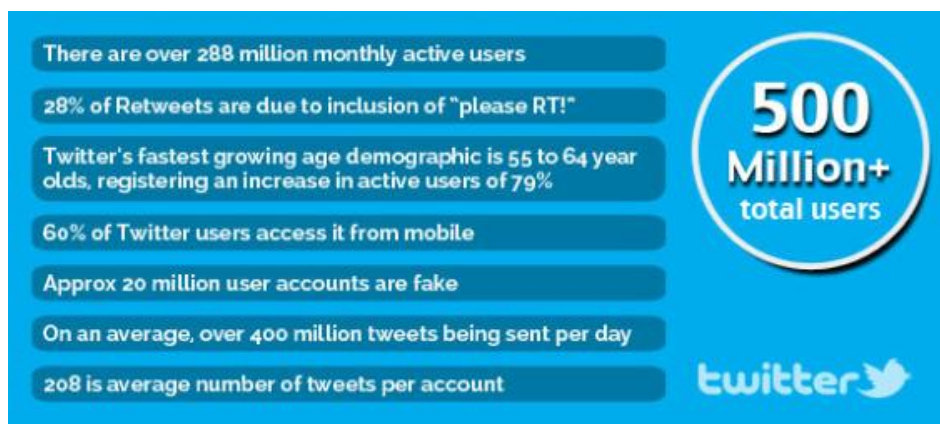


Source: [11]

Twitter

Twitter is like a river of short text messages (SMS slightly shorter), which are publicly written by media, institutions, celebrities, and especially by all the others. The user selects from them those users that he/she considers interesting - the media, experts and friends - from which he/ she creates own private river. "[1]

FIG. 3: **Twitter and short facts**



Source: [11]

LinkedIn

"Its slogan is 'Connecting the world's professionals to make them more productive and successful'." LinkedIn is the largest professional network in the world with more than 225 million members in 200 countries around the world. LinkedIn's mission is to connect professionals around the world so that they can be both more efficient and successful in their careers. [6]

FIG. 4: LinkedIn and short facts



Source: [11]

Other social networks that are available and frequently visited are, e.g., MySpace, Foursquare and others.

3. Comparison of social networks in the Czech Republic and in the world

On the picture there can be seen four most widely used social networks in the Czech Republic and in the World.

FIG. 5: Comparison of social networks in the Czech Republic and worldwide



Source: [7]

Even from the above mentioned data it is evident that Facebook and Google+ are ranked at the first place, and then they are followed by LinkedIn and Twitter. As for the Czech Republic, other Czech local social networks such as Lidé.cz, Spolužáci.cz a Libimseti.cz are presented. They represent a large proportion of users who are registered and use these social networks more often than Twitter, Google+ and LinkedIn.

The statistics state that two thirds of users in the Czech Republic are 34 years old or younger. The table illustrates that social nets are not only for teenagers. These data are important for advertisers who are aiming at various target groups. There is the difference in the classification in the first group. Worldwide there is one group up to 17 years, in the Czech Republic we have two groups, see tab. 1. The data also shows that abroad use social networks more “older” people than in the Czech Republic.

TAB. 1: Age distribution on social networks in the Czech Republic and in the world

Age	13 – 15	16 – 17	18 – 24	25 – 34	35 – 44	45 – 54	55 – 64	65 +
CR	5 %	7 %	27 %	28 %	17 %	7 %	4 %	3 %
World		5 %	16 %	26 %	25 %	19 %	6 %	2 %

Source: [8], [9]

Social network demographics in 2012 present also the detailed Age distribution on social networks and online communities in the world.

Interesting findings which relate to age category follow:

- The oldest users - LinkedIn has the oldest user base, with the average user being 44.2 years old.
- The average Facebook user is 40.5 years old and the average Twitter user is 37.3 years old. Compared to a previous survey, the age of the average Facebook user has gone up two years, while the age of the average Twitter user has gone down two years. In other words, Twitter’s user base is getting younger, while Facebook’s is getting older. [9]

The study has an optimistic ending worth mentioning, which might serve as a main mission of social sites: *“there’s a place for everyone in today’s social media landscape. These sites have users that span the entire age spectrum, and there really are no limits to what you can achieve online, regardless of age or gender.”*

4. Social network in corporation environment

Social media have earned its irreplaceable position within corporation setting; the importance of social computing is a current trendy issue. Businesses utilize *social computing* in creation of reputation systems, prediction markets, social network analysis, online communities, and computer-supported cooperative work.

Among standard areas of corporation use of social network rank:

- Presentation of the company on a Profile: Facebook and Twitter dominate followed by Google+.
- Games gain more and more popularity. Main mission is definitely attract attention of potential future clients on the basis games designed entirely for fun but recently the ration has risen in favour of games designed for training and education.
- Customer service is a standard channel used by companies to support company-customer interaction.
- Monitoring of the company position, how it is perceived, what image it has and what role it plays on the market is another powerful area. Professional monitoring with sophisticated tools can make wonders with public opinion.

Interesting data can be found in the following chart which shows the most extensive corporate pages and profiles in the Czech Republic.

FIG. 6: The most extensive corporate pages on Facebook and profiles on Twitter

Škoda	559 712	MADFINGER games	136 695
Slevomat	233 353	avast! team	90 939
T-Mobile CZ	187 673	Webnode Official	67 589
Samsung Česko a Slovensko	179 906	Project Syndicate	45 304
Mc Donald's Česká republika	157 314	Vtipy na každý den	40 399
Vodafone CZ	153 771	Socialbakers	37 322
O2 CZ	152 279	ČT24	26 031
Hewlett-Packard s.r.o.	143 148	Živě.cz a Computer	25 265
Pilsner Urquell	139 440	NetBeans Team	17 868
ZOO Praha	121 337	Vodafone ČR	17 158

Source: [7]

The presence of companies on social networks is astonishingly stronger. When years 2011 and 2012 are compared the attendance of company websites from social networks increased by 90% (in the reference sample). The biggest player was YouTube.com, which also belongs to the social network (unfortunately no figures on the number of users are available). Number of corporate web pages visits from internet catalogues vs.

social networks might be another interesting and beneficial comparison. Catalogues of course, still bring more visitors, but in 2012 there was a significant downturn. Social networks are yet constantly rising; and it is possible that in the year 2013 they will overtake catalogues. More data are available on [7].

Conclusion

In this paper we have focused just on the segment of a large social application issue. A thorough knowledge of the potential and possibilities of using networks creates a promising environment for their use. New applications are developed and new ways of communication, cooperation and interaction are adopted. This phenomenon has become an inseparable part of our professional and private lives.

In 19 of 21 countries, about three-in-ten or more of those polled use sites such as Facebook, including about half in Britain (52%), the U.S. (50%), Russia (50%), Spain (49%), and the Czech Republic (49%). So the Czech Republic plays a visible role on the social network scene but unfortunately we are very small market so even good numbers cannot significantly impress investors [13].

Acknowledgement:

This work was supported by the Excellence grant project “The ICT reflection within cognitive process development”.

References:

- [1] BOČEK, J. *Twitter od nuly: proč jej vlastně používat a jak začít*. Posted 20-04-2011 [cit. 10-12-2013] URL: <http://www.zive.cz/clanky/twitter-od-nuly-proc-jej-vlastne-pouzivat-a-jak-zacit/sc-3-a-156710/default.aspx>
- [2] ČERNÁ, M., ČERNÝ, M. *Úvod do problematiky sociálních sítí* Posted 29-02-2012 [cit. 10-12-2013] URL: <http://clanky.rvp.cz/clanek/o/g/15075/UVOD-DO-PROBLEMATIKY-SOCIALNICH-SITI.html/>
- [3] ČERNÁ, M., POULOVÁ, P. Visit Rate of Internet Portals and Utilization of their Tools and Services. *E+M Ekonomie a Management*, 2008, Vol. XI, Iss. 4, pp 132–142
- [4] FACEBOOK. *Základní informace o stránkách*. 2013 [cit. 10-12-2013] URL: <https://www.facebook.com/help/281592001947683/>

- [5] GOOGLE. *Úvod*. 2013 [cit. 10-12-2013] URL: <https://support.google.com/plus/answer/2409856?hl=cs>
- [6] *LinkedIn*. 2013 [cit. 10-12-2013] URL: http://www.linkedin.com/static?key=what_is_linkedin&trk=hb_what
- [7] MICHL. P. *Infografika: Sociální síť v Česku*. Posted 08-04-2013. [cit. 10-12-2013] URL: http://www.m-journal.cz/cs/internet/socialni-site/infografika--socialni-site-v-cesku__s416x9788.html
- [8] VÁCLAVÍK, L. *Na Facebooku jsou už 4 miliony Čechů*. Posted 19-06-2013 [cit. 10-12-2013] <http://www.cnews.cz/na-facebooku-jsou-uz-ctyri-miliony-cechu-statistiky>
- [9] *Study: Social network demographics in 2012*. Posted 21-08-2012 by Pingdom. [cit. 10-12-2013] URL: <http://royal.pingdom.com/2012/08/21/report-social-network-demographics-in-2012/>
- [10] *Social Networking Statistics, Statistic Verification Source: Browser Media, Socialnomics, MacWorld, Research Date: 11.12.2012, Retrieved 28-12-2012*. [cit. 10-12-2013] URL: <http://www.statisticbrain.com/social-networking-statistics/>
- [11] *Social Media in 2013: By the Numbers*. Posted 06-11-2013 [cit. 10-12-2013] URL: <http://socialmediatoday.com/jonathan-bernstein/1894441/social-media-stats-facts-2013>
- [12] STERNE, J. *Měříme a optimalizujeme marketing na sociálních sítích*. vyd. 1. Praha: Computer Press, 2011, 280 s. ISBN 978-80-251-3340-8
- [13] *Češi milují sociální síť, tvrdí americká studie*. Posted 12-12-2012 [cit. 10-12-2013] URL: <http://www.zive.cz/clanky/cesi-miluji-socialni-site-tvrdi-americka-studie/sc-3-a-166786/default.aspx>
- [14] *Study: Social network demographics in 2012*. Posted 21-08-2012 by Pingdom, [cit. 10-12-2013] URL: <http://royal.pingdom.com/2012/08/21/report-social-network-demographics-in-2012/>
- [15] *Using Social Media for Business*. Posted 03-11-2013 [cit. 10-12-2013] URL: <http://socialmediatoday.com/phillipakiripatea/1884291/infographic-using-social-media-business>
- [16] KAPLAN, A. M., HAENLEIN, M. Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53 (1). 2010

METHODS OF CALCULATING CAPITAL REQUIREMENTS FOR FOREIGN EXCHANGE RISK IN POLISH COMMERCIAL BANKS

Anita Szygula

Boleslaw Markowski Higher School of Commerce in Kielce

szygulaanita@gmail.com

Key words:

foreign exchange risk – commercial bank – institutional standards – methods of calculating capital requirements

Abstract:

The article presents methods of calculating capital requirement for foreign exchange risk employed by Polish commercial banks. The application of the methods of monitoring foreign exchange risk relates to the theory of social action and social theory of cultural structure. The institutional standards and cultural targets of managing foreign exchange risk were chosen as the subject of description. The author portrays patterns of calculating foreign exchange risk according to institutional standards.

Introduction

Foreign exchange risk related to the risk of currency exchange is of vital meaning in international finance and it is also one of the components of the market risk that in the activities of commercial banks is understood as one of the main market risks [1], [2]. Because of Poland's growing involvement in international economy, it can be observed that all domestic commercial banks are in a bigger or smaller scale affected by foreign exchange risk. Fluctuations in exchange rates and the relationships between them may in fact cause a reduction in a particular currency assets and liabilities balance sheet of individual banks, as well as off-balance sheet transactions and off-balance sheet liabilities. Consequently, this leads to the formation of losses in the banking business, as well as causes a mismatch of the capital requirement for market risk with the size of the risk incurred. In such conditions, it becomes important for each commercial bank to

take appropriate foreign exchange risk, as well as to apply skilful management of internal capital assessment procedure for calculating capital requirements.

The article presents Polish legal solutions concerning methods of calculating capital requirements for foreign exchange risk. Due to the defined social order set by the European banking system – understood according to the theory of social systems as a result of compliance with shared values, institutionalized within the global system [3] – it is assumed that a normative factor is the condition for the stability of this kind of order. The institutionalism which is characteristic here [4] refers to a subjective process in which the Polish banking system began to be oriented at European solutions, namely the implementation of the EU standards into national law as well as it is in force for the individual commercial banks [5]. Therefore, the structural nature of risk management in Polish commercial banks induces one to attempt analysis of legislation providing a method for calculating the capital requirement for foreign exchange risk in relation to the sociological theory of operation of social systems and the theory of social structures, explaining the quintessence of the patterns of cultural targets and institutional norms [6].

1. Institutional standards and cultural targets of foreign exchange risk management in the theory of social action and social theory of cultural structure

Foreign exchange risk management in Polish commercial banks, interpreted in relation to the sociological theory of social structure, necessitates the indication of two components of the social structure, which in this case are essential. These are: 1) culturally defined intentions and interests marked as sanctioned targets, and 2) the accepted ways of achieving these targets [6]. According to the social theory of cultural structure, the sanctioned objectives of commercial banks examined in terms of foreign exchange risk management refer to such bank activities which take into account market fluctuations in prices of instruments included in the trading portfolio. Banks carry out commercial operations in order to obtain financial benefits, therefore the changes in exchange rates may lead to the formation of profits, but they can also cause losses. In the area of market risk, market transactions can be expressed in terms of interest rates, stock indices, or just in exchange rates. In the case of foreign exchange risk, the transactions are conducted for the purchase and sale of financial instruments eligible for

sale before their chargeability or maturity. In the quest for effective implementation of the foreign exchange risk management process, the dominant aims of commercial banks thus constitute a system of reference for aspirations and actions directed at keeping an appropriate amount of capital adequate to the size of the risk. Creating a risk management system, implementing the capital adequacy assessment process – and within this process defining how to measure foreign exchange risk – and introducing tools of transforming risk measurement into the capital requirements, are the cultural objectives relating to the activities of commercial banks globally.

Commercial banks performing certain functions for the external and internal environment of a given social group meet the cultural objectives by applying the relevant provisions of the institutional business. Regulations of the European banking system, and the national regulations, create external institutional environment for the banks, while their internal environment is created by their own regulations. According to the theory of social actions the functions for environment are defined as: 1) an adaptive function, 2) the function of achieving the goal, 3) the function of cultivating patterns, and 4) an integrating function [7] [3]. In the bank risk management of Polish commercial banks the actions can be associated with the duty of establishing management systems in individual banks. The adaptive function is fulfilled by the adaptation of bank operations to the requirements of institutional external environment. Here bank management and implementation of development strategies allows commercial banks to capture regulatory changes in the external environment, and obliges them to take internal action. Banks perform the function of achieving their objectives through activities focused on a specific task, namely the implementation of the risk management process and the process of creating models of internal capital adequacy assessment process. These activities in particular banks fulfil both the function of cultivating patterns and the integrating function. Cultivating patterns involves commercial banks' use of the tools defined in the rules of the Polish banking system, such as the methods of calculating capital requirements for the bank's identified risks, in this case due to foreign exchange risk. Whereas adapting and adjusting specific methods to their particular circumstances enables commercial banks to meet the integrating function [5]. According to the theory of social structure these are just the accepted ways of achieving these goals. The choice of means leading to the cultural

targets, or the methods of calculating capital requirements for foreign exchange risk, is limited by institutional standards. The methods are perceived as relative patterns, which must be identical to the standards defining the form, but at the same time they must ensure efficiency.

2. Methods of calculating foreign exchange risk as the patterns of institutional norms

Cultural targets related to capital adequacy assessment process are implemented by banks through using the patterns of institutional standards, or regulations of the Polish banking system, which necessitate a suitable method to calculate the capital requirement for foreign exchange risk, according to institutional cultural patterns. The methods of calculating capital requirements for banks, set out in legislation, facilitate the calculation of the basic capital requirement. These methods provide a set of tools for carrying out an explicit process to convert risk numbers to capital requirements, which applied for the purposes of capital planning, management and internal control, allows one to specify the bank's risk profile and capital adequacy assessment [8].

The methodology for calculating the capital requirement for foreign exchange risk includes a set of rules which allow for determining the position of the original requirements as well as determine the general requirements, through the use one of three methods: 1) the basic method, 2) the value at risk method, or 3) the mixed method [9].

Methods for calculating the capital requirement are shown in Table 1.

TAB. 1: Methods for calculating the capital requirement for foreign exchange risk

THE METHOD	THE WAY OF CALCULATING THE CAPITAL REQUIREMENT
the basic method	The capital requirement for foreign exchange risk is calculated as 8% of the total currency position, provided that the item exceeds 2% of the bank's own funds. It can be set at zero if the foreign exchange position does not exceed 2% of the bank's own funds.
the value at risk method	The capital requirement for foreign exchange risk is calculated in accordance with the general principles adopted in the method of value at risk *, specifying the price parameters as exchange rates and gold prices. The use of this method imposes an obligation on

	the bank to develop and implement procedures to measure and manage the different elements of the foreign exchange risk. These may include currency risk management principles based on the designation of the level and structure of assets and liabilities of foreign exchange, as well as on the determination of the level of risk, ensuring the achievement of adequate foreign exchange result, carrying out the monitoring and control of foreign exchange risk.
the mixed method	The capital requirement for foreign exchange risk is calculated according to the rules regarding the ability to isolate the foreign exchange market primary positions covered by the risk, and the currency of the original items not covered by this method. Individual primary positions are the basis for the calculation of partial capital requirements in accordance with the principles of the basic method and the method of value at risk. The capital requirement for foreign exchange risk is the sum of the partial specific capital requirements.

* method of VaR, see.: [10]

Source: author's own study based on: § 7 - § 9 of Schedule 6 to Resolution No. 76/2010 of the Financial Supervision Commission of 10 March 2010 on the scope and the detailed rules for determining capital requirements for particular types of risk "Capital Requirement Calculation Foreign Exchange Risk", Journal. Office. Financial Supervision Authority dated 9 April 2010, No. 2, item. 11, Annex 2 to the Resolution No. 76/2010 of the Financial Supervision Commission of 10 March 2010 on the scope and the detailed rules for determining capital requirements for particular types of risk, "General rules for calculating the position of the underlying instruments", Coll. Office. Financial Supervision Authority dated 9 April 2010, No. 2, item. 11 and § 7 and § 13. 6 Resolution No. 76/2010 of the Financial Supervision Commission of 10 March 2010 on the scope and the detailed rules for determining capital requirements for particular types of risk, Coll. Office. Financial Supervision Authority dated 9 April 2010, No. 2, item. 11.

Regardless of the method chosen, the basis for calculation is the designation of primary positions in foreign currencies and the primary positions in gold. Primary positions are calculated as the balance sheet (Dt, Ct) or off-balance sheet arising from the operation, off-balance sheet or off-balance sheet contingent operations of the current transaction,

where the underlying instrument is indexed according to foreign currency. The total capital requirement for foreign exchange risk is calculated including the banking portfolio and the trading portfolio. It is the sum of the capital requirements for foreign exchange risk in respect of the positions matched in currencies closely correlated, or the sum of the capital requirement calculated using one of the methods for calculating the capital requirement for foreign exchange risk, or the sum of the capital requirement for foreign exchange risk, in respect of the units of participation in a collective investment calculated as 20% of the net position in each of these units [10]. Polish commercial banks draw up the rules of foreign exchange risk management choosing one of the methods proposed in the patterns of institutional standards in accordance with the principle of proportionality, taking into account the scale and scope of activities of individual banks.

3. Conclusion

The presented data shows that Polish membership in the European Union determines the bank risk management by institutional external environment of commercial banks, and that the currency risk management is an essential area of prudential banking operations aimed at maintaining the level of equity, adequate to the size of the identified risks. The rules of institutional activities, determined at the level of the European banking system, affect the economic and organizational stability of individual commercial banks. These provisions relate to the requirements defining the way of managing capital which is adequate to the extent of risk within the organizational banks' activities.

Due to the differences between banks operating in Poland in terms of their size, scale and level of product advancement when determining the capital adequacy, legal regulations provide a choice of methods, referring to the theory of social action and social theory of cultural structure, that can be implemented by individual banks, and are relevant from the point of view of taken risks associated with the activities of specific entities.

References:

- [1] *Application of the Supervisory Review Process under Pillar 2*, Consultation Paper (CP03 revised), CEBS Committee of European Banking Supervisor, June 2005, p.7-8
- [2] HEFFERNAN, S. *Nowoczesna bankowość*, (transl.) HOROWSKA, J., KĄDZIELA E. M., JANKOWSKI, M., MASŁOWSKA-PIETRZAK, K., PIETRZAK, T., Wydawnictwo Naukowe PWN, Warszawa 2007, s. 230-243. ISBN 978-83-01-15235-2
- [3] BIALYSZEWSKI, H. *Wstęp do wydania polskiego*, [in:] Talcott Parsons, *Szkice z teorii socjologicznej*, (transl.) Alina Bentkowska, Państwowe Wydawnictwo Naukowe, Warszawa 1972, p. X-XI, p. XXVII-XXXII
- [4] ZOMBIRT, J. *Nowa Umowa Kapitałowa. Ewolucja czy rewolucja*, CeDeWu, Warszawa 2007, p. 191-194. ISBN 978-83-60089-44-6
- [5] SZYGULA, A. *Gospodarowanie kapitałem w banku spółdzielczym. Instytucjonalne reguły systemu bankowego a proces zarządzania ryzykiem*, Wydawnictwo Naukowe PWN, Warszawa 2011, p. 53-55. ISBN 978-83-01-16732-5
- [6] MERTON, R., K. *Teoria socjologiczna i struktura społeczna*, Wydawnictwo Naukowe PWN, (transl.) Ewa Morawska, Jerzy Wertenstein-Żuławski, Warszawa 2002, p. 197-204. ISBN 83-01-13876-9
- [7] PARSONS, T. *Szkice z teorii socjologicznej*, (transl.) BENTKOWSKA, A., Państwowe Wydawnictwo Naukowe, Warszawa 1972, p. 425–439
- [8] *Drugi filar Nowej Umowy Kapitałowej*, Dokument konsultacyjny DK/7/2F, Generalny Inspektorat Nadzoru Bankowego, listopad 2005, p.12
- [9] Uchwała nr 76/2010 Komisji Nadzoru Finansowego z dnia 10 marca 2010 r. w sprawie zakresu i szczegółowych zasad wyznaczania wymogów kapitałowych z tytułu poszczególnych rodzajów ryzyka, Dz. Urz. KNF z dnia 9 kwietnia 2010 r., no 2, poz. 11, § 7

- [10] Załącznik nr 6 do uchwały nr 76/2010 Komisji Nadzoru Finansowego z dnia 10 marca 2010 r. w sprawie zakresu i szczegółowych zasad wyznaczania wymogów kapitałowych z tytułu poszczególnych rodzajów ryzyka, *Obliczanie wymogu kapitałowego z tytułu ryzyka walutowego*, Dz. Urz. KNF z dnia 9 kwietnia 2010 r., no. 2, poz. 11, § 11

THE GAME OF TRUST AS APPLIED TO FOREIGN DIRECT INVESTMENTS

Jakub Szygula

Cracow University of Economics

jakubszygula@tlen.pl

Key words:

trust – game theory – foreign direct investments – investment incentives

Abstract:

The article models the relations between host-countries seeking to attract foreign direct investments and foreign investors in terms of game-theoretic game of trust. Host countries are regarded as trustors, whereas foreign investors are regarded as trustees. The formal solution to the game of trust suggests that foreign-countries should not incentivize foreign direct investments. Trust is presented as one of the external factors influencing host-countries to choose the Pareto-optimal solution in the game-theoretic model. Correlation of the data from the Human Development Report and the Global Competitiveness Report confirms that the higher level of trust in societies translates to more incentives for foreign direct investments.

Introduction

As soon as one begins to consider the issue of trust it is evident that it is multi-faced. Trust, depending on the context, can be related to emotions, to the social environment, to sets of beliefs, outlooks or values. Trust is the subject of studies in social sciences as well as economical sciences. In economical sciences the issue of trust is raised in negotiation theories as well as in regards to transaction costs. [1] In the article trust shall be discussed in terms of game theory, which provides formal framework and forms the basis for predicting the behavior of various actors. FDI are one of the forms of economical activities that can be described using game-theoretical framework. As such foreign investors and host-countries can be paired in the roles of players.

1. Players in the game of trust

J. Coleman is one of the best known authors incorporating the issue of trust in the research on the rationality of choice. [2] J. Coleman considers trust to be one of the factors of decision-making in risk environment, in which the risk undertaken by one actor is dependent on the future activities of another actor. As such J. Coleman differentiates between actors that bestow trust, trustors, and actors that trust is bestowed upon, trustees. With the potential benefits for both actors being based on their own decisions and with the introduction of time gap within the decision-making process as an additional condition, J. Coleman was able to treat these actors as players and to present the issue of trust in terms of the game of trust.

In activities pertaining to FDI two main categories of actors can be indicated. Those include foreign investors, often in the form of transnational corporations, on one side and host-countries on the other side. For further analysis it is necessary to assign the roles of trustors and trustees to these two categories of actors. It can be argued that foreign investors should be regarded as trustors due to them bearing the variety of risks inherent in FDI, such as economic risks, transfer risks, exchange rate risks, location risks, sovereign risks and political risks. However, in the latter part of the article it shall be demonstrated that the game of trust can be set-up and analyzed from the perspective of host-countries as the trustors and foreign investors as the trustees.

2. Rules of the game of trust

Whether valid conclusions can be derived from the analysis of the game of trust and its derivative games is dependent on the situation meeting certain conditions used to describe the rules of the game. [3] Three of these conditions are discussed below:

First such condition is the stipulation that the trustor enables the trustee to either honor or abuse the trust bestowed upon it. Naturally, if the trustor does not choose to bestow trust in the first place, the trustee has no opportunity to act upon it. In the context of host-countries trust translates to incentivizing FDI, by means of low corporate tax, various types of tax concessions, special economic zones, preferential tariffs, land and infrastructure subsidies. In contrast, refusing to trust might result in not pursuing

preferential policies or erecting barriers meant to obstruct the inflow of foreign capitals. The wide range of relevant legal regulations implies complicate array of choices, but for the purpose of the analysis numerous decisions can be aggregated into the general guideline for economical policy of the host-country, to either actively attract FDI or not. In turn the foreign investor can choose to either operate within the rules established in the host-country or to undermine these rules and further exploit its preferential position.

The second condition is that in comparison to the situation with no trust bestowed, the trustor profits more if trust is placed and honored, but is worse off if trust is abused. Numerous studies detail benefits for the host-countries from FDI, such as increased production potential, creating job opportunities, increased efficiency of work as well as technological development and knowledge diffusion. [4] However, without willful cooperation from foreign investors these benefits can be minimized and overshadowed with negative aspects of foreign capital, including crowding-out less efficient native businesses, exploitation of natural resources, unfavourable structural changes to the economy and the direct costs of FDI incentives. These problems can be especially pronounced in developing host-countries, whose economical and legal potential can be lesser than transnational corporations'. The issue of government control over corporations ties into the fact that the base game-theoretical model does not allow for the trustor to outright compel the trustee to honor the agreement.

The last discussed condition relates to the time-lag between the actions of both players, making it possible for the trustee to act after the decision of the trustor is known. The game of trust is sequential. [5] In the framework of international markets, transnational corporations are aware of incentives offered by specific host-countries and in addition to that evaluate conditions and inherent risks based on the data provided both by the host-countries and international rating agencies. Furthermore, legal documents detailing the exact terms of the investment are prepared before the investment itself is finalized. It can be therefore assumed that the trustee can make an informed decision whether to honor or bestow the trust placed upon it.

Taking into consideration the above assumptions the game theory requires numerical values to be assigned to the results of combined decisions of both players. It is worth noting that in economical studies these payoffs are broadly interpreted as utilities to various players. Both host-countries and foreign investors are expected to calculate the expected returns on investment in monetary terms, but especially in the case of host-countries there are additional non-economical factors to be considered and evaluated. As such payoffs are dependent both on individual perceptions and on the values players adhere to, including trust itself. For the purposes of the article the extensive form of the game of trust is summarized below:

TAB. 1: Decision tree and payoffs table for the game of trust as applied to FDI

Move 1 Trustor (Host-County)			
Move 2 Trustee (Foreign Investor)			
Trustor's payoffs	0	-1	1
Trustee's payoffs	0	2	1

Source: Own Study, based on [2] and [6]

3. Formal solution to the game of trust

Awareness of the rules of the game of trust lets the players formulate their strategies and make rational choices with the goal of maximizing their payoffs. It is understood that presenting rational strategies means solving the game. Formal solution to the above form of the game of trust can be conducted with the use of backward inductions. If the trustee's move is to abuse trust, it can expect its payoff to equal 2, whereas if the trustee chooses to honor trust its payoff is equal to 1. 2 is greater than 1, therefore the trustee shall decide to abuse trust. Being aware of that, the trustor's choice is between bestowing trust with the expected payment of -1 and not bestowing trust with the payment of 0. Since 0 is greater than -1, the trustor decides not to place trust in the trustee.

It should be noted that the above solutions provides strategies with perfect Nash equilibrium in subgames, i.e. there are no reason for the players to one-sidedly abandon the subgame equilibrium strategies constituting the game of trust. At the same time the decision not to trust is not Pareto-optimal, i.e. there exists a theoretical possibility of simultaneously increasing the payoffs of both players. Such an optimal strategy would of course involve both bestowing and honoring trust. This observation demonstrates the fundamental importance of trust in economical sciences in general and FDI in particular.

4. Trust as used to avoid non-optimal decisions in the game of trust

As presented above in the game-theoretical model the notion of trust is akin to calculated cooperation. In the actual international economy there are numerous factors that allow the host-countries and foreign investors to avoid non-optimal game of trust solutions. These factors notably include the fact that there are multiple host-countries and corporation playing the game at the same time, thus introducing iteration and reciprocity [1], the fact that it is possible to send reliable signals of trustworthiness via established corporate reputation [2] and that access to information for host-countries and translational corporations is asymmetric. [5] However, of no less importance is the subjective perception of trust within the societies and leadership of the host-countries.

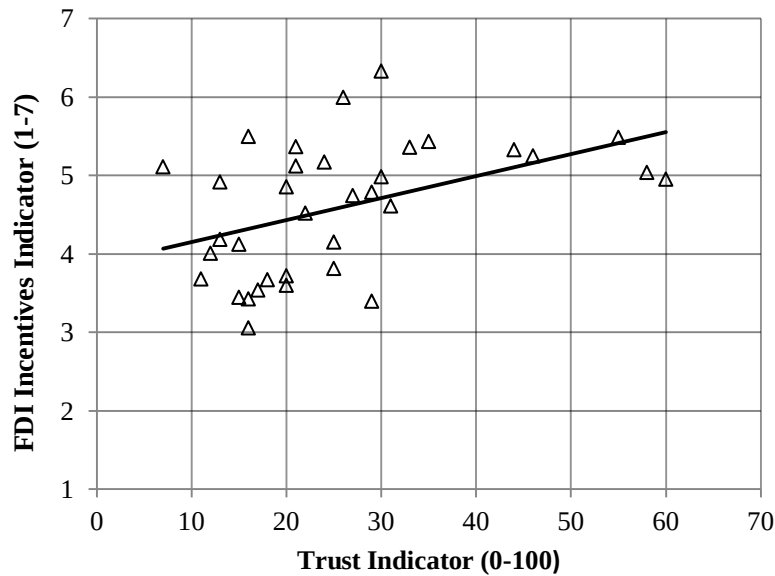
There are no wide-scale studies relating to the political leadership of host-countries trust towards transnational corporations.¹ Therefore, to demonstrate the influence of the concept of trust on decisions whether to attract FDI approximate indicators need to be used. The data for the trust indicator is taken from the UNDP Human Development Report², whereas the data to used to estimate FDI incentives is taken from World Bank Competitiveness Report.³ These two indicators are correlated for 35 European countries on the chart presented below:

¹ For research on trust in as related to government, business, media and non-governmental organizations refer to Edelman Trust Barometer. [www.trust.edelman.com]

² Table 9, Trust in People Index, p. 177. [7] The range of values is 0% - 100%.

³ Section 6.12. Business rules impact on FDI Index, p. 463. [8] The range of values is from 1- 7. Data from 2011 report is used to match data from Human Development Report.

CHART. 1: Trust and the decisions to attract FDI to countries in Europe.



Source: Own Study

The Pearson correlation coefficient between the introduced trust and FDI indicators equals approximately 0.45, which denotes medium-strength positive correlation and suggests there is merit in further research on the subject of trust as seen from the perspective of host-countries in relation to foreign investors.

Conclusion

The theory of games enables the creation of mathematical models of social and economical realities, which serve as both diagnostic tools and points of reference for experimental studies on strategic decisions based on trust. Trust as an innate element of games theory is rational and based on the specified rules of the game and expected payoffs. The relationship between countries seeking investment and transnational corporations providing the capital and technologies is shaped by the fact that in the game of trust Nash equilibrium strategies are not Pareto-optimal. In conclusion, the choice between trust and mistrust is an essential dilemma both on an individual level represented by one iteration of the game of trust between specific host-country and specific foreign investor and on collective level of the entire international economy. Due to its connection to social perceptions trust transcends the game level and can be an influential factor choices on the meta-game level.

References:

- [1] BERG, J., DICKHAUT, J., McCABE, K. *Trust, Reciprocity and Social History* [in]: Games and Economic Behavior vol. 10, Iowa 1995, p. 122-142, [available at: http://people.exeter.ac.uk/dgbalken/BEEM10908/Berg_Dickhaut_McCabe_GEB_1995.pdf, accessed 01-11-2013]
- [2] MÖLLERING, G. *Trust: Reason, Routine, Reflexivity*, Elsevier Ltd., Amsterdam 2006, ISBN 0080448550, p. 15-50,
- [3] BUSKENS, V., RAUB, W. *Rational choice research on social dilemmas: Embeddedness Effects on Trust* [in:] *Handbook of Rational Choice Social Research*, WITTEK, R., SNIJDERS, T., NEE, V. (ed.), Russel Sage, New York 2008, ISBN 9780804784184, p.113-150,
- [4] WOŹNIAK-MISZEWSKA, M. *Mezoeconomia transgraniczna przedsiębiorstw*, Difin, Warsaw 2012, ISBN 9788376416267, p. 15-143,
- [5] ADAMUS, M., MARKIEWICZ, P. *Trust and implicit information asymmetry in repeated games* [in:] *Active Citizenship by Knowledge Management & Innovation Proceedings of the Management, Knowledge and Learning International Conference*, DERNOL V. (ed.) , Zadar 2013, ISSN 22323309, p. 739-746,
- [6] KALINOWSKI, S. *Konkurencja lub Kooperacja – Studia Eksperymentalne nad funkcjonowaniem rynków*, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2008, ISBN 9788374173445, p. 16-62,
- [7] *Human Development Report 2013*, MALIK, H. (ed.), United Nations Development Programme, New York 2013, ISBN 9789211263404,
- [8] *The Global Competiveness Report 2011-2012*, SCHWAB, K. (ed.), World Economic Forum, Geneva 2011, ISBN 9789295044746,

SUSTAINABLE ENTREPRENEURSHIP IN SOCIAL AREA

Jarmila Šebestová

Silesian University in Opava

sebestova@opf.slu.cz

Key words:

entrepreneurship – strategy – sustainability – social value

Abstract:

Social business units have to create social value as a measurable factor with regard to prospective costs. Those entrepreneurs must provide an evaluation of their resources and goals and triangulate the process of evaluation of their key customers, employees and resources to obtain the desired effect. The main goal of presented paper is to summarize sustainability in social point of view and in addition to theoretical framework to present current findings in priorities of social business providers in Moravia-Silesian Region.

Introduction

Entrepreneurship in social services is often related to the social importance of the service and individual interaction with the customer, so people, who provide their business, often use their past experience to support their decisions; a practitioner reaction, according to his knowledge and action-based theory [7]. In many European countries, the system of social services has been changed and reorganized, new models of financing have been introduced (mixture of for profit and non-profit organizations). In attempting to construct a model of sustainable behaviour, a number of challenging questions immediately arise as (a) which priorities those businesses have to include into their strategy? (b) Would be the quality the leader of the behaviour? There are the questions to be answered by the data analysis.

1. Sustainable Social Entrepreneurship within theoretical context

Social entrepreneurs are widely defined as entrepreneurs with a social mission, which is central and definite. The performance of the business is not measured by profit but by

social values. Entrepreneurs create social values using the same resources as others in the market to reach their goals. Of course, social entrepreneurs play a significant role in changing the behaviour of the social sector [2] by:

- Adopting a mission to create and sustain social values – they see profit a part of their business model, but social values and service to society is their long-term benefit.
- Recognizing new opportunities to achieve their mission – they meet the Schumpeterian definition by doing new things in new ways, because they are not able to change current policy in social care, they think of ways how to surmount obstacles created by the policy (such as forms of business, licensing to provide business and care).
- Engaging in the practice of the continuous innovation process and learning – they are pioneers in providing business and think about possible new approaches.
- Developing resource strategies because they understand the risks of their stakeholders.
- Having a sense of accountability - they understand the social value and connections between needs, outputs, size and processes.

These factors lead to the creation of advantages and sustainability, but other factors must be addressed – social welfare and social innovation or making a contribution to society. If social and economic entities vary in their actions, the differences do not solely focus on motivation in the creation of social value – the contribution to the welfare or wellbeing in the given community, which needs to be served by other means. Social entrepreneurs produce monetary returns to maximize social value. This helps to develop strategic orientation and key resources [1].

Tarvainen [8] divided vitality and sustainability into nine sections (1) knowledge creation and sharing, (2) change management and competition, (3) creativeness and innovativeness, (4) leadership, (5) strong purpose and direction, (6) intellectual capital, rules and standard, (7) organizational culture (8) atmosphere and finally (9) trust.

2. Materials and methods

This survey represents the first profile of social enterprises in Moravia-Silesian region. Social enterprises work in communities to fulfil training, income, social, cultural, and environmental missions. A further selection criterion included that the social enterprise must, when possible, be independently verified as a social enterprise. Given the objectives of the study – to generate widely intelligible and comparable quantitative indicators of the impact of social enterprise activity in region – we opted for a sample survey method using a short and highly standardized questionnaire, designed for easy completion and return in order to achieve a high response rate, types of entities are not sufficient in this area; the emphasis is placed on the key role of non-profit organizations in this sector. The adequacy of sample size (n) was calculated by using the formula recommended by [6]:

$$n = \frac{t^2 \times p \times (1-p)}{\omega^2} \quad (1)$$

where:

- t ... confidence level, corresponding to probability with the results will be guaranteed, from the statistical tables of the Student's distribution
- p ... prevalence, probability or proportion of the sample components that will explore the problem
- ω ... acceptable limit of error

The sample size corresponds to recommended minimum value in probability of 0.95. The minimum sample size was computed according equation (1) as follows: t value in $\alpha = 0.05$ is 1.96, p value = $(86\ 068 / 1\ 513\ 556) = 0.0568$ is counted as proportion of businesses and non-governmental organizations on active businesses in 2012 [3]; $\omega = 0.05$ is acceptable error limit of 5 %. Minimum sample size = $1.96^2 \times 0.0568 \times (1 - 0.0568) / 0.05^2 = 82,32$ respondents.

The sample size was 105 respondents ($104 > 82$) so the sample was sufficient to provide the study and in was obtained in 2013 (January – May) by personal visit. The questionnaire had five main sections, related sections with the service sector was sustainability and financial issues. Main purpose of this study was to compare priorities for sustainability in those quite different types of entities (in the social sector – mainly non for profit, in the service sector – main share for profit services).

First of all, we have to mention that in the area of social services, there are existing very different legal forms. In our sample we divide organizations into five categories: “civic associations” like public benefit organizations (PBOs, obecně prospěšná společnost – 8%), foundations and church organizations (29%), endowment funds (příspěvkové organizace; 37%), but on the other hand two types of legal companies were involved – cooperatives (20%) and company limited (2%; without any response 4%). The highest percentage of social enterprises provided support to immediate neighbourhoods in the area within 40 km.

3. Results and Discussion

Nowadays, finding a model of sustainable advantage creation is not a new topic. If we decided to study sustainability, we have to ask about the difference in social sector [4]. The analysis is based on the statistical data analysis of multidimensional statistic methods in the qualitative research area, using Principal Components Analysis (PCA). To achieve more sophisticated results and to identify dominant tendencies, we used PCA with a VARIMAX rotation (factor loading minimization).

TAB. 1: Factor analysis for sustainable social business

F1	F2	F3	F4	F5	F6	F7	F8	F9
Sustainability	Full time employees	Personal development	Productivity of work	Legal form	Volunteers	Other services	Part time employees	Clear mission
Optimization of resource utilization 0.885	Number of fulltime employees 0.792	Qualified work-force 0.821	Full time employees work hours/week- 0.849	Type 0.866	Number of them -0.75	Share on revenues 0.881	Number 0.915	Specific target group 0.875
Optimizing performance 0.867	Turnover 0.789	Education 0.739	Manager 's week hours 0.585				Paid services as main part 0.653	
Prevention of loss and waste 0.845	Supply of services -0.537							
The harmonization of the environment 0.743								

Source: own research, Extraction Method: Principal Component Analysis. Rotation

Method: Varimax with Kaiser Normalization. KMO = 0.686

Factor analysis extracted nine different factors, which, we could divide in four specialized groups:

- Clear mission (factor F9) – important to know, who is beneficiary from the service, in for profit organization: who is my customer.
- Legal form (F5) – in the Czech law isn't similar when you provide social work or other social activities under different legal forms. It will change a lot in area of financing, fundraising, tax payment or when the organization decides to provide their own business to co-finance their social service in 2014 (new legal framework).
- Personnel policy (factors F2, F3, F4, F6, F8) – complex approach to each segment (full time, volunteers, part-time) in organization. Each type of worker in social enterprise has an influence on final beneficiary. In this area it is very important key for success. It is quite similar to 7P for services and
- Sustainability (F1) – there is 4 factors out of 6 mentioned in the questionnaire (other were quality and human needs). It is clear that is not connection with quality or customer needs, because they know human needs and they have to pass rules about quality standards in social work.

Due to the complex nature of the analyzed factors on businesses in the services and their reliance on difficult to predict events (whether objective or subjective in nature) evaluation may, however, be only very hypothetical and inaccurate, and the more the closer of (present) time period is questioned. Estimate of the development of the individual factors for a longer time horizon can 'work' with long-term trends and in that sense disregard (potentially occurring) contingencies, for a shorter period coincidence is on the contrary pivotal phenomenon.

To sum up, the quality issues aren't mentioned as a key factor of sustainable business in the social area, because, the main part is uniqueness of the service and the target group (as mentioned in text – clear mission). In balance of it, the priority is to provide good performance – bring optimal social value to the final user – to the community and re-invest the resources again for another project by share of revenues (F1, F7).

Conclusion

Usage effectiveness of the analysis is therefore closely connected with overall stability, respectively the ability and the possibility of prediction of individual factors. In times of turbulent changes (which is unfortunately present) analysis can be used as a tool for rather negative recommendation ("what not to do") than positive options ("what to do") to provide sustainable business in area of social services. Consequently, estimates of the impact of individual factors for closer time periods must be formulated as inherently unquantifiable statements, therefore, only in the form of qualitative determination of decreasing or increasing influence.

Acknowledgement:

This article has been elaborated as one of the outcomes of Student Grant System research project of Silesian University in Opava Nr. SGS/9/2012 "Entrepreneurship in Response to Turbulent Politic, Economic, Social and Technological (PEST) Ecosystem in the Context of Sustainable Development".

References:

- [1] CARLAND, J.W., HOY, F., BOULTON, W. R., CARLAND, J. A. C. Differentiating Entrepreneurs From Small Business Owners: A Conceptualization. *Academy Of Management Review*, 1984, vol. 9, no.2, pp. 354-359, ISSN 0363-7425.
- [2] DEES, G. The Meaning of Social Entrepreneurship. [online]. 1998. [cit. 2013-11-28]. Accesed from: [www.Caseatduke.Org/ Documents/Dees_Sedef.Pdf](http://www.Caseatduke.Org/Documents/Dees_Sedef.Pdf)
- [3] Ekonomické subjekty podle právní formy [online]. Czech statistical office, 2013. [cit. 2013-11-28]. Accesed from: http://vdb.czso.cz/vdbvo/tabparam.jsp?voa=tabulka&cislatab=ORG9020UC&&kapitola_id=441#pozn1
- [4] GOVINDARAJAN, V., GUPTA A.K. Linking control systems to business unit strategy: impact on performance. *Accounting, Organizations and Society*, 1985, vol. 10, .no. 1 pp. 51-66. ISSN 0361-3682.
- [5] JENSEN, M. C. Value maximization, stakeholder theory, and the corporate objective function. *Journal Of Applied Corporate Finance*, 2001, vol. 14,no. 3 pp.8-21. ISSN 1745-6622.

- [6] OLARU, M., DINU, V., STOLERIU, G., ȘANDRU, D., DINCĂ, V. Responsible Commercial Activity of SMEs and Specific Values of Sustainable Development in Terms of the European Excellence Model. *Amfiteatru Economic*, 2010, vol. 12, no. 27, pp.10-26. ISSN 1582-9146.
- [7] SCHÖN, D. A. *The reflective practitioner: how professionals think in action*. reprint. New York: Basic Books, 1984, 384 p. ISBN 978-046-5068-784.
- [8] TARVAINEN, T. *The Vitality of Welfare Service Enterprises*. In Conference proceedings from ICSB Conference 2011. ICSB: Stockholm, 2011. [CD ROM] ISBN 978-0-9819028-3-8. p. 1-10

QUALITY CONTROL SYSTEMS AND THEIR ROLE WITHIN INCREASING OF THE PROCESS PERFORMANCE

Eva Šlaichová

Technical University of Liberec

eva.slaichova@tul.cz

Key words:

quality – business processes – performance – quality management systems – performance

Abstract:

Requirements for measurement accuracy are increasing constantly and with them requirements for evaluating quantifiable characteristics of measurement systems. In mechanical engineering the requirements are highest in the automotive industry. This contribution introduces different methodologies of measurement systems, gives definitions of the basic concepts and explains their mutual relationships. This conception is based on the general requirements of CSN EN ISO 9001:2008 and ISO/TS 16949: 2009, according to which every organisation must create, document, implement and maintain their quality control system and continually improve its efficiency.

Introduction

Due to the application requirements of ISO 9000, organisations are obligated to address issues of measurement procedures and performance monitoring processes. The first step of this for every organisation is defining and explaining basic concepts. If performance is to be measured, it must be compared with the predefined, so-called target value of result. Measuring process performance enables the understanding of activities that provide objective and precise information on the course of individual processes. The only customers for these measurements are process owners who have the authority to recognise and use the measurement results for further decision-making, even though they do not necessarily carry out the measurements themselves. [8] Performance, which

EFQM (European Foundation for Quality Management) defines as the measure of achieved results, should therefore depend on the set target values mentioned above. In the case of quality management systems, quality targets represent quantified characteristics of products and processes that the company should achieve within a given time period. The key area for the creation of performance measurement methods in quality management systems, then, is the proposal of suitable indicators that objectively characterise performance. The measurement or monitoring of performance itself is insufficient, however, if the data acquired is not analysed using suitable statistical methods leading to the further improvement of the processes. [7]

1. Study of of Measuring Quantitative Variables – Overview of Methodologies

Measurement processes must then be planned, validated, implemented, documented and controlled. The identification of gauges, measuring and related equipment and measurement software is a part of the complete specification of the measurement process in accordance with CSN EN ISO 10012. The abilities of those servicing these gauges and measuring equipment, the measurement approach, conditions of the measurement process used and other factors influencing the reliability of the measurement results should be considered within the framework of this list [3]. The measurement process itself is considered part of the production process, which gives certain values (data) at its output. Regarding the measurement system in this way enables the application of all tools offering a methodology of evaluating the capability of production processes and statistical regulation of the process. [2]

The following basic methodologies are commonly used in quality management systems:

- QS 9000 methodology – Statistical Process Control (SPC) and Measurement System Analysis (MSA).
- VDA 5 capability of control processes.
- Ford EU 1881 methodology.
- Uncertainties during measurement of A/B types according to EA-4/02 methodology.

2. Statistical Process Control (SPC) and Measurement Systems Analysis (MSA)

The purpose of QS 9000 methodology is to provide processes for assessing the quality of the measurement system. Although these guidelines are general enough to be used for any measurement system, they are primarily designed for measurement systems used in industry.

The MSA method is used for evaluating the gauges themselves (e.g. calibrated gauges) as well as assessing the entire measurement system (hence the name Measurement System Analysis). [6] The method focuses on the analysis of sources of uncertainty within the entire measurement process. It is based on the assumption that it is not enough to have a precise gauge, but other factors may have an influence, and so it assesses the measurement system as a whole. The aim is to determine the influence of various factors on the variability of results. The MSA method therefore uses and contains further statistical methods and techniques. The MSA method emphasises the repeatability and reproducibility of measurement (R&R – Repeatability and Reproducibility). The main aim is to improve the precision of the entire measurement. [1]

Quality management systems (e.g. QS 9000 or ISO/IEC TS 16949) require that “uncertainty of measurement is known and corresponds to the required measurement capability of any controlling, measuring or testing equipment.” Uncertainty is the interval associated with the result of measurement which describes the range within the framework of the defined confidence level, in which it is expected that the true result of measurement lies. Measurement uncertainty is commonly referred to as double value.

Statistical Process Control (SPC) is a preventative quality control tool, which enables interventions in the process to maintain a stable and acceptable level in the long term on the basis of timely detection of significant deviations from the predetermined level (see Table 1). This instrument has an important role during the production of large batches or the frequent repeated production of the same batch. One of the real exact methods for forecasting of behavior of production processes in the enterprise is creation of management of defects. Its part is a statistical evaluation of defects data. [5]

TAB. 1: Basic issues in the application of Statistical Process Control (SPC)

Basic issues in the application of Statistical Process Control (SPC)	
Why	There is variability in the manufacturing process, the process should have a target value.
Purpose	To prevent the generation of defective products.
Aim	To reduce variability so that quality does not vary and monitor if the trend does not change.

Source: author's own adaption

3. Quality Management System Requirements for the Automotive Sector - ISO/TS 16949

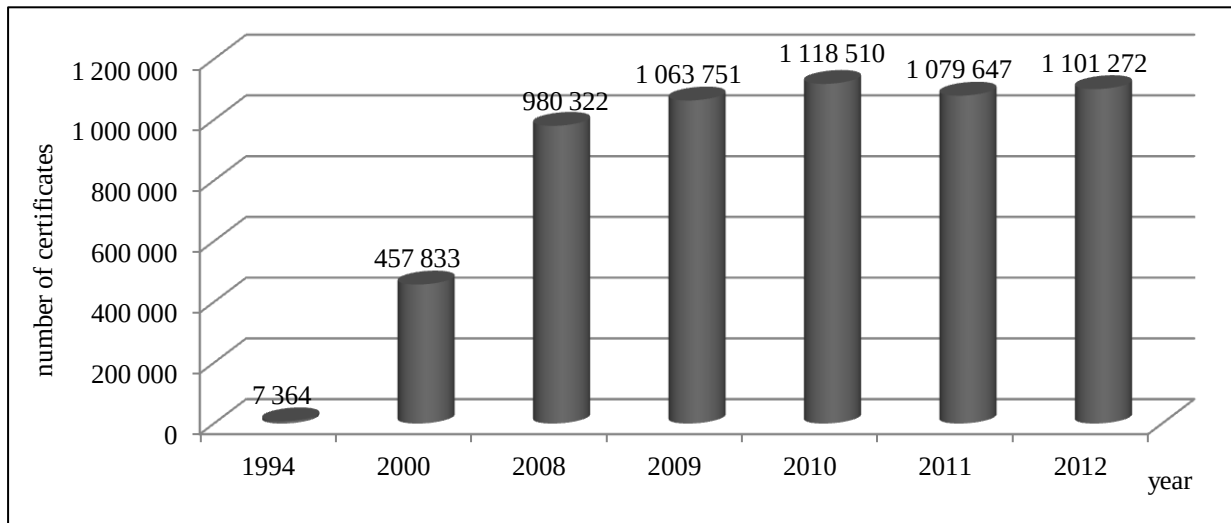
As has been already mentioned, QS 9000 is the industry standard in the automotive business. It was developed in the Chrysler/Ford/General Motors group and contains the full extent of the ISO 9001 standard as well as other requirements, particularly related to launching new products, product approval by the customer, the implementation of chosen methods, process capability and continuous improvement. Every supplier in the automotive industry must comply to the requirements of this standard to some degree.

Certification according to ISO/TS 16949 enables enterprises to:

- 1) Improve quality of their production and processes with the help of particular tools (APQP, PPAP, FMEA, SPC, MSA)
- 2) Quickly and required quality performance and accepting of all requirements and needs of the customer [9].

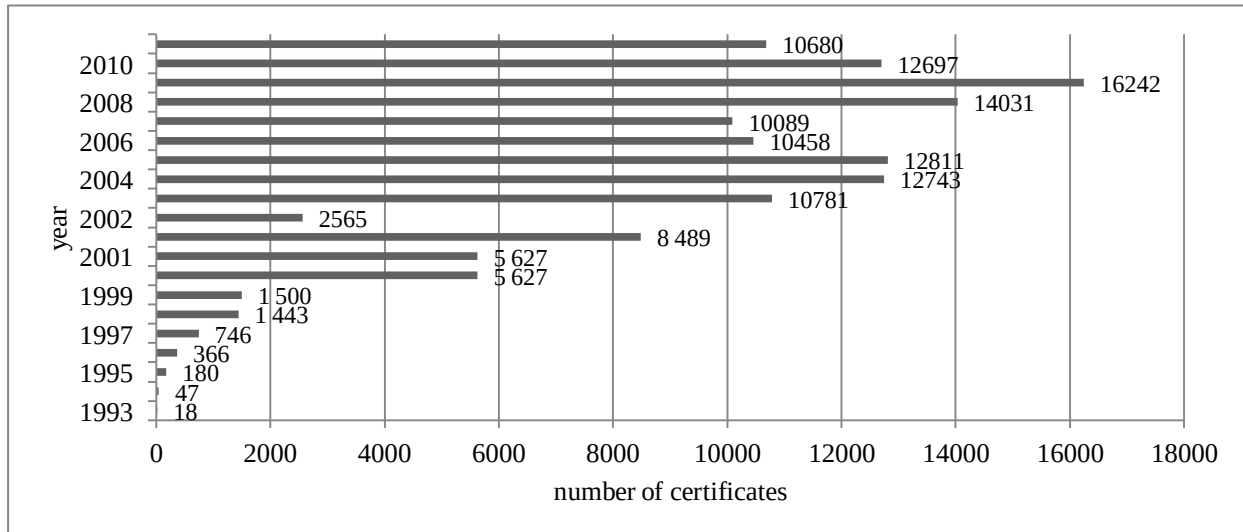
Every year the ISO International Central Secretariat (ISO/CS) performs survey of numbers of new certifications of all quality management standards. According to the results of this statistical survey the quality management system certification became a worldwide phenomenon. The survey shows that by the end of the year 2012 total number of 1 101 272 certificates ISO 9001:2008 were issued in 184 countries of the world. In comparison with the year 2011 it is only 2 % growth (see Figure 1). However in comparison with the year 2000, when the most significant revision of the standard ISO 9001:2000 was done, the growth is already 41 %. During last 11 years development of the numbers of issued certificates of the quality management system ISO 9001 in the Czech Republic has been variable. There was a time of decrease and stagnation but also period of significant growth (see Figure 2). While in the year 1993 only 18 certificates were issued, in 2012 the total amount was already 10 680. [4]

FIG. 1: Worldwide number of certificates ISO 9001 in the years 1994 – 2012



Source: author's own adaption, data International Organization for Standardization

FIG. 2: Development of number of certifications in the Czech Republic



Source: author's own adaption, data International Organization for Standardization

Conclusion

The systems of measurement should be performed not only to meet the document requirements of ISO 9001:2008, but mainly to prevent incorrect results of measurement and ensure the immediate discovery of deficiencies and timely corrective measures. The functional characteristics required for a planned measuring process should be clearly identifiable and quantifiable. The metrological requirements are then determined on the basis of the requirements and regulations of the customer and organisation as such. The

processes of measurement must be designed to fulfil the specific requirements of the customer. At the same time they must be documented and validated, all after consultation and in agreement with the customer. The elements of the process and management tools must be clearly defined and identified for each measurement process. The choice of these elements and regulatory limits (measurement uncertainty) must be proportional to the risk of non-fulfilment of the specified requirements.

References:

- [1] BEDNÁŘ, J. *Measurement systems analysis - Gage R& R Study*. In Proceedings of RQR07. Ostrava: VŠB- TU Ostrava, 2007. s. 9-12. ISBN 978-80-248-1575- 6
- [2] ČSN 01 0115: 1996 *Mezinárodní slovník základních a všeobecných termínů v metrologii*
- [3] ČSN ISO 5725-1 Přesnost (správnost a shodnost) metod a výsledků měření. Část 1: Obecné zásady a definice
- [4] ISO Survey 2012 [online]. Geneva: International Organization for Standardization, 2013 [vid. 2013-09-20]. Dostupné z: http://www.iso.org/iso/home/contact_iso.htm
- [5] MANLIG, F. Management poruch – důležitá součást plánování a řízení výroby. In: Gemeinsames Wissenschaftliches Symposium der TU Dresden and TU Liberec, 1995, s. 38 – 41
- [6] Metodika MSA. [online] [vid. 2012-10-26] Dostupné z: <http://www.jakost.cz/metodiky/metrologie/vyklad-zakladnich-pojmu-metrologie.pdf>
- [7] NENADÁL, J. *Měření v systémech managementu jakosti*. 2. dopl. vyd. Praha: Management Press, 2004. ISBN 80-7261-110-0
- [8] SUCHÁNEK, P., RICHTER, J. Kvalita a výkonnost potravinářských podniků - dílčí výsledky. In Pavel Jedlička. *Hradecké ekonomické dny 2013*. 1. vyd. Hradec Králové: Univerzita Hradec Králové Fakulta informatiky a managementu, 2013. s. 233-244, 12 s. ISBN 978-80-7435-250-8
- [9] ŠURINOVÁ, Y. Špecifické aspekty implementácie požadaviek ISO/TS 16494:2009 v podmienkach slovenských organizácií. *Kvalita: Česko Slovenský odborný časopis*. Žilina: MASM, 2013, roč. 21, s. 22 – 26. ISSN 1335-9231

SQUEEZING OUT MINORITY SHAREHOLDERS (NEW CZECH LEGISLATION VS. BRITISH SQUEEZE OUT RULES)

Jiří Šorf

Charles University

jirka.sorf@gmail.com

Key words:

squeeze out – minority shareholders – threshold – buy-out – sell-out

Abstract:

Have you been suffering from minority shareholder obstructions recently? Find an easy solution ... get rid of them...squeeze them out...However easy it might sound, complying with the prescribed legal conditions for the procedure of the squeeze-out is the challenge you have to face. To make matters worse, there has been adopted a new Business corporations Act coming into effect just on New Year's Day of 2014. Although it certainly brings about a visible and appreciable progress towards simplification and effectivity of the squeeze-out procedure, I would like to demonstrate that there are still some things which might have been solved more effectively or even occur among the squeeze-out provisions. As a criterion for the comparison with the new Czech squeeze-out regulation, I decided to opt for the British Companies Act 2006.

Introduction

Disposing of a majority share in a joint-stock company exceeding a very high threshold and dealing with occasionally dissatisfied minority shareholders is an obstacle several companies have to go along with. The right remedy occurred in the form of so called „Minority squeeze-out“ – a legal procedure enabling the major shareholder to buy out all the remaining shares not dwelling in his property. The first element is the BIDDER – a natural or juridical person or entity wishing to gain complete and unconditional control over some company. To trigger the squeeze-out procedure, it is necessary to release a TAKEOVER OFFER – an offer to acquire all in the shares of a company or all the shares of one or more classes in case of the existence of more classes in the

company. Needless to say that the shares held by the bidder at the time of the offer are excluded. The bidder is allowed to count in also the shares he has contracted to acquire despite they are still not in their possession. The next thing to be achieved is so called 90% THRESHOLD typical of Czech as well as British legislation. Exercising the squeeze out requires at least 90% in value of the shares of any class to which the takeover offer relates or in case of voting shares, not less than 90% of the voting rights carried by them. The announcement via an appropriate NOTICE must be carried out to all relevant minority shareholders. There are some formal criteria to be met, however the most important is informing them that their shares will be compulsorily acquired. Once the bidder has completed this, he is obliged to send the target company a copy of this notice and a statutory declaration in the prescribed form. If not so, the bidder might be liable for committing a criminal offence. As far as TIMING is concerned, the exercise of the squeeze-out rights must be made within three months beginning on the day after the deadline for the acceptance of the bidder's offer (up to six months extension in case of private companies). The main incentive for the minority shareholders is the CONSIDERATION they are going to receive in return for giving up on their rights to shares. Having served the notice on minority shareholders, the bidder must make another step towards the squeeze-out completion – transfer of the consideration for the shares the offer relates right to the target company. Once the money has been received on its account, the target company is obliged to register the bidder as the holder of the minority shares. As a counterprocess, these money is used as the trust for the „bought-out“ minority shareholders. It is of the essence that the original consideration for one share stated in the notice must unconditionally equal to the consideration finally provided to each minority shareholder for each one share. To conclude the preface, all these are to be generally met so as to achieve a successful squeeze-out.

1. Loophole number one – schemes of arrangement

Current Czech squeeze-out reglementation sets out a strict 90% threshold of shares which must be or are to be in the ownership of the bidder. Despite being a very good guarantee of stability of the provisions and giving certainty to minority shareholders, it cannot be considered fully efficient. Let us take into consideration a hypothetical situation that there is a considerable number of untraceable shareholders (bearer shares

phenomenon). Such cases are colloquially coined DEAD REGISTER APPLICATIONS in the Great Britain. In such a case, the bidder's effort might be simply wrecked due to the impossibility to trace the shareholders or the real shareholders. And here comes the difference. The British legislation provides for such complicated cases a special mechanism called SCHEMES OF ARRANGEMENT, whilst the Czech legislation does not solve this situation anyhow and requires strict sticking to the 90% threshold. De lege ferenda it will undoubtedly be necessary (within a few decades) to incorporate similar provisions into the Czech legislation as well. What is more (and this is merely my point of view), both regulations could go even further by setting legal conditions for squeezing out not only minority shareholders and not only complying with 75% threshold (Great Britain) or even 90% (Czech Republic). But let me get back to the core of already mentioned schemes of arrangement.

The SCHEMES OF ARRANGEMENT¹ are an alternative to the compulsory acquisition procedures. In comparison with the normal development of the squeeze-out procedure, for the progress in compliance with schemes of arrangement, one must obtain a court approval in advance. The second distinguishing factor is a stronger emphasis on the cooperation between the bidder and the target company. As mentioned before, the threshold is rapidly decreased in this version of the squeeze-out – down to 75 per cent in value of the shares held by each class of members no matter whether they are present and voting in person or by proxy.

The British schemes of arrangement provisions devote almost a complete decisive role to the hands of the court. The court is given a wide discretion in sanctioning or evaluating the scheme as for the power to review the creation of the relevant classes and checking whether the class members dispose of the same or at least similar rights and general compliance of the schemes of arrangement with the common interest. What is more, the court must be satisfied with the submitted evidence which is supposed to sufficiently persuade the court the untraceability of the shareholders and the allegation that if they had been traced, the 90% threshold would have been met because these missing shareholders would have accepted the offer.

In other words, providing that the bidder manages to persuade more than 75% shareholders as described above and at the same time manages to persuade the court

¹ see s. 899 and 981, Part 28, Companies Act 2006 ^[1]

about the legality and necessity of the squeeze-out, they are to get hold of up to 25% of shares previously belonging to other shareholders (not necessarily minority shareholders).

There is also a slight difference with regard to the notices. The notices summoning the meeting of shareholders must be (as in the normal course of events) sent to all shareholders. Additionally, they must contain a special statement giving a thorough explanation of the impact of the scheme and must be accompanied by another statement – this time about material interests of the directors or the effect of the scheme on their interests. Both provisions seek for increasing the liability of the directors for an undesired impact on the company – hence the directors are given a chance to explain their underlying or background reasons for the necessity of the schemes of arrangement. Providing that the company sustains any damages no matter whether negligably or intentionally (or even as a result of malice), they are the ones to be liable for these.

Once the Registrar of Companies (British version of the Commercial Register²) files the copy of the order received by the court, the scheme becomes legally binding. Typically, the law prescribes fiftyfive days to complete the scheme of arrangement from the moment the scheme circular has been sent to the shareholders.

2. Loophole number two – joint offerors

Currently, the Czech legal framework does not provide for the takeover offer made by to or more persons jointly. Such lack of legal reglementation might turn out to be a real problem in case it occurred a real attempt of a joint offer in the Czech Republic and was accompanied by a legal vacuum of how to proceed in such a situation. Despite being very brief in this respect, the British Companies Act still provides for a sufficient solution in such cases³. The conditions for the exercise of the rights typically conferred by the provisions related to the right of the offeror to buy out minority shareholder or the right of minority shareholders to be bought out by the offeror are satisfied by the

² Currently, the supervisory and approval system within the squeeze-out procedure in the Czech Republic belongs to the Czech national bank. In accordance with §391 Act No. 90/2012 Col. on Business Corporations, the squeeze out carried out in a listed company where its stock is traded at any European stock Exchange market requires approval of the Czech national bank granted beforehand. ^[2]

³ see s. 987, Chap. 3, Part 28, Companies Act 2006 ^[1]

JOINT OFFERORS acquiring or unconditionally contracting to acquire the necessary shares jointly in the case of acquisitions by virtue of acceptances of the offer.

To unconditionally divide the burden of liability, the further provisions set forth that all the related rights and obligations of the single offeror are respectively joint rights and joint and several obligations of the joint offerors. When requiring or authorising a notice or any other document to be given / sent / submitted by the joint offerors or to them is complied with if the notice or the document is given or sent by or to any of them.

3. Loophole number three – proportionality of consideration

The British Act on Business corporations guarantees the right of proportional consideration to all minority shareholders concerned. The proportionality shall be determined by the General meeting and should be supported by a professional expertise or in case of publicly traded shares on stock markets, the statement about the proportionality of the consideration must include reasoning why it should be considered proportional and it requires additional approval of the Czech national bank. All for the provisions regarding the determination of the consideration. But what if there are more classes of shares? What about debentures with voting rights? What about foreign entities using forms of shares prohibited by the Czech legislation – e.g. treasury shares? No remark at all about any of these.

The British legislation summarizes all these cases under the section coined Cases where the offer is treated as being on the same terms as in case of typical cases of consideration. Such cases apply to cases where shares carry an entitlement to a particular dividend which other shares (mainly by reason of being allotted later) do not carry, shares with a difference in the value of consideration offered for the shares allotted earlier as against that offered for those allotted later and shares where the difference merely reflects the difference in the entitlement to the dividend⁴.

Dealing with the convertible securities and debentures carrying voting rights when deciding whether to include or to exclude them for the purposes of squeeze-outs is also a necessary part to handle legally with. The Czech Business Corporations Act does not regulate these – the British one carefully states both of them. Firstly, the convertible securities are treated as shares in the company if they are convertible into or entitle the holder to subscribe for such shares. And secondly, the debentures carrying voting rights

⁴ see s. 976, Chap. 3, Part 28, Companies Act 2006 ^[1]

are treated as shares on condition that they are admitted to trading on a regulated market⁵.

To enrich the spectrum of possible situations, the British Companies Act regulates the applicability of the act on the law of a country or territory outside the United Kingdom or cases where the persons to whom an offer of consideration in the specified form is precluded are able to receive consideration in another form that is of substantially equivalent value.

Closely related matter to consideration determination is the definition of the shares to which an offer relates. Where the takeover offer is made and, during the period beginning with the date of the offer and ending when the offer can no longer be accepted, the offeror - acquires or unconditionally contracts to acquire any of the shares to which the offer relates, but does not do so by virtue of acceptances of the offer – those shares are treated as excluded from those to which the offer relates. The exclusion also applies to shares which the associate of the offeror holds or has contracted to acquire no matter whether at the date of the offer or subsequently⁶.

4. Loophole number four – the associates

The exclusion of certain shares in the previous chapter mentions „associates“. The range of entities which are connected or cooperating with the main bidder could be very extensive and wide. One of the most common forms could be above stated joint offerors whereby the liability for the rights and duties is joint and several. However, there are also forms which enable cooperation or connection with the main bidder but do not bring about legal responsibility which remains utterly on the main bidder. The main offeror or bidder accepts the presence of so called ASSOCIATES voluntarily and is fully aware of the fact that he is the guarantor for what they do. The Czech regulation does not provide for any comparable institute and unfortunately does not even mention this possibility. The British provisions concerning the associates are quite complex and if not anything else at least set forth their existence and regulate who can become an associate.

Being an associate (in relation to an offeror) might be the nominee of the offeror, a holding company, subsidiary or fellow subsidiary of the offeror or a nominee of such a

⁵ see s. 989 and s. 990, Chap. 3, Part 28, Companies Act 2006 ^[1]

⁶ see s. 977, Chap. 3, Part 28, Companies Act 2006 ^[1]

holding company, subsidiary or fellow subsidiary, a body corporate in which the offeror is substantially interested. The further provisions extend the application even to the person who is, or is a nominee of, a party to a share acquisition agreement with the offeror or in relation to this – his spouse or civil partner and any of their minor children or step-children⁷.

One might wonder who is a „fellow subsidiary“ or what shall be considered as a „substantial interest“ in a body corporate and how could the „share acquisition agreement“ be characterized. Fellow subsidiary of another body corporate is if both companies are subsidiaries of the same body corporate as well as neither of them is a subsidiary of the other. Having substantial interest in a body corporate describes a situation where the body or its directors are accustomed to acting in accordance with its directions or instructions or where he is entitled to exercise or control the exercise of one third or more of the voting power at general meetings of the body. When it comes to a share acquisition agreement, as such shall be considered an agreement for the acquisition of or of an interest in or shares to which the offer relates, providing that it includes provisions imposing obligations or restrictions on any one or more of the parties to it with respect to their use, retention or disposal of such shares, of their interests in such shares, acquired in pursuance of the agreement.

5. Loophole number five – „The sell-out“ right

Finally, I would like to propose a thing yet unseen in any of the modern legislations, needless to say – including the Czech as well as the British ones. All the stuff described before deals with the entitlement of the bidder to buy out the minority shares. On the other hand, it must be emphasized that the minority shareholders (and not only them) also might have an interest in the squeeze-out fulfilment. One must take into consideration the fact that they basically cannot influence the course of events in the company and can financially benefit from holding the shares just by dividends (and the decision whether it gets paid or not is not usually influenced by their limited amount of votes) or other rights which cannot be considered as financially beneficial. As a result, it is my strong belief that providing that certain amount of minority shareholders decide on a joint action towards the majority shareholder, such a progress should be legally

⁷ see s. 988, Chap. 3, Part 28, Companies Act 2006 ^[1]

(Czech and British) foresee it, but its wording is limited to one paragraph only and in both cases does not state expressly what shall be the threshold necessary for minority shareholders right to sell out. One can deduce that it shall correspond with the majority shareholder threshold – 90% and 10%, 75% and 25% respectively. I am convinced that such threshold should be less than 50% whereby the shareholder disposing of less than 50% should be given a chance to prove that his position and his rights are restricted to such an extent that effective performance or rather any sufficient performance of rights is completely excluded. In such a case, the majority shareholder should be obliged to the sell-out. Undoubtedly, the court would have to take a great part in assessing the legality of such a step.

6. Conclusion

This brief excerpt strives to point out that no legal regulation cannot be considered fully effective unless it has been thoroughly compared with foreign legislations and tested by practice. None of these unfortunately happened in the course of preparation of the squeeze-out rules in the Czech Republic and therefore – firstly, the visible loopholes will certainly bring about further amendments to these paragraphs in the future. Secondly, there are certain situations that might arise where the Czech squeeze-out procedure does not provide for any solution (e.g. joint offerors or associates) and which can cause very problematic interpretation or application of law problems. Thirdly, the Czech squeeze-out does not allow for the threshold less than 90%, however, there are many reasons for setting certain rules ensuring the possibility of sell-out at a lower threshold (as in the British case). And finally, the almost untouched issue of the sell-out giving the (minority) shareholders the right to demand the sale of their shares as long as they prove inability of an effective performance of their rights. This work does not aim at criticism; it humbly tries to spread the awareness of the potential loopholes occurring in the newly adopted squeeze-out procedure rules in the Czech Republic.

References:

Let me emphasize that this work elaborates uniquely on the basis of the interpretation and application of current and upcoming legislation and as such intentionally does not take into consideration other author's points of view and lacks bibliographical quotations.

- [1] Companies Act 2006 (as abbreviated in sec. 1298) - An Act to reform company law and restate the greater part of the enactments relating to companies; to make other provision relating to companies and other forms of business organisation; to make provision about directors' disqualification, business names, auditors and actuaries; to amend Part 9 of the Enterprise Act 2002; and for connected purposes, Territorial extent: England and Wales, Northern Ireland, Royal Assent: 8th November 2006
- [2] Act. No 90/2012 Col., as amended, The Act on Business corporations

SYSTEM DYNAMICS MODEL OF A COURNOT OLIGOPOLY WITH TIME DELAYS

Radim Špicar

University of West Bohemia

rspicar@kpm.zcu.cz

Key words:

oligopoly – Cournot – system dynamics – modeling – time delays

Abstract:

This paper examines the influence of time delays on establishing equilibrium in a Cournot Oligopoly model by using the tools of system dynamics, specifically by using a simulation done in Vensim PLE software. The first section briefly introduces system dynamics and the tools that are used in the field; the second section applies these tools to the Cournot oligopoly problem. First, a simulation of a standard behavior without time delays is done. Afterwards, time delays are introduced into the model and their influence on establishing equilibrium is analyzed.

Introduction

It is becoming increasingly important to describe and analyze the behavior of complex systems across various scientific fields. System dynamics provides the tools to perform such analysis because it takes phenomena such as feedback loops, synergies and time delays into account. This paper applies the system dynamics principles to a Cournot oligopoly model and analyzes the effect of time delays on establishing equilibrium.

1. System dynamics

A system can be defined as a combination of various components, which together form an entity that can be studied in its entirety [2]. A dynamic system is any system whose behavior changes with time. System dynamics can be defined as “a multi-disciplinary subject, which basically deals with the study of any dynamic system. Fundamentally, it deals with ‘feedback’ mechanisms and is built on ‘cause and effect’ relations among the factors influencing the system under investigation” [3, 2].

[6, 12] lists some of the characteristics that can be found in complex dynamic systems. Dynamic complexity arises because systems are constantly changing, tightly coupled, governed by feedback, nonlinear, history-dependent, self-organizing, characterized by trade-offs, adaptive, counterintuitive and policy resistant.

The main tools used in system dynamics modeling include “casual loop diagrams” and “stock and flow diagrams”. Casual loop diagrams are visual tools constructed from the same basic elements (such as words, phrases, links and loops). Links can be either positive or negative, which is called their polarity. Positive polarity means that if the cause increases, the effect increases as well. Negative polarity means the opposite – if the cause increases, the effect decreases. Note that positive polarity can also be expressed as a decreasing cause leading to a decreasing effect [4, 32].

Stock and flow diagrams capture the system’s structure using stocks (which represent the accumulation of a certain element, such as inventory) and flows (which represent the rate at which the stocks accumulate, such as purchases). Even though the strategic management community started to consider the role of stocks and flows explicitly, research shows that people’s intuitive understanding of stocks and flows is poor [6, 14].

2. Cournot oligopoly

A Cournot oligopoly is a well-known oligopoly model described in various publications that focus on microeconomics. When only two companies are present in the model, the model becomes a duopoly. E.g. [5, 133] describes the model as a duopoly with two companies producing a homogenous product that are in competition with each other. The model assumes that both companies are equally strong, which is represented by having the same total-cost function. The goal of both companies is maximizing profit when met with a linear demand function. If the functions are written as

Total costs of a company = $F + c \cdot \text{Quantity}$

produced by the company,

Price = $a - b \cdot \text{Quantity}$

produced by both companies,

where F , a , b and c are constants, then
the optimal quantity produced by each
company can be expressed as

Optimal quantity produced by a company = $(a - c) /$

(3b) .

These equations of course assume that information is perfectly symmetrical and that both companies have exact data on how much their competitor is producing. What will happen to this equilibrium when time delays are introduced into the system? It may be that each company has only delayed information about their competitor's moves and actions (such as from public statements) and that this time delay is longer than the decision cycle. This means that each company is basing their decision on how much to produce on information that are at least one time step (decision cycle) delayed. In effect, each company only possesses information about the second to last decision of their competitor, instead of the very last one as is the case in the standard Cournot oligopoly.

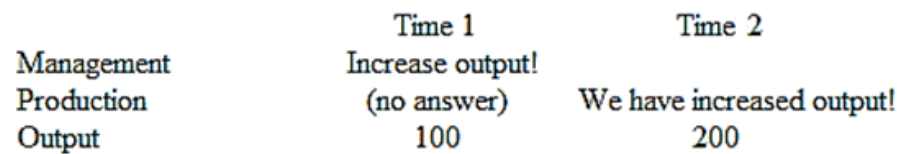
[1, 2050] mentions three types of possible delays in a Cournot oligopoly – “a production lag in adjustment of firms' output to its desired output; an information lag in the receipt of information about rival firms' output; and an 'own' information lag about firms' own output.” [1] also provides a complex mathematical framework needed to solve models that account for these delays.

This paper does not attempt to describe the behavior and equilibrium mathematically but rather graphically, using system dynamics and simulation tools. The next section contains a discussion of the model's behavior for two of the delays mentioned in [1], the production delay and the information delay related to firms' own output.

3. Simulation setup and results

In this section it is assumed that a delay exists between the decision to increase production and the actual increase. Additionally, it is also assumed that a delay exists in the information flow within each company in a duopoly. In other words, it takes some time before a decision to increase production is manifested in the increased output and it also takes some time before this increased output is acknowledged. For simplicity, we assume that these two delays are the same duration within a company though they may differ among competing companies. Figure 1 illustrates the delays.

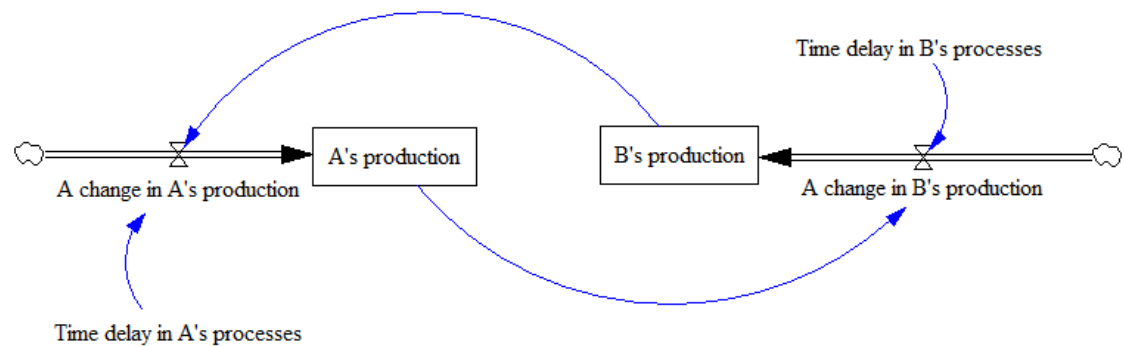
FIG. 1: **Production and information delay**



Source: Author’s own depiction

A stock and flow diagram is needed to perform simulations of the model’s behavior. A simple depiction used in simulations in this paper is shown in figure 2.

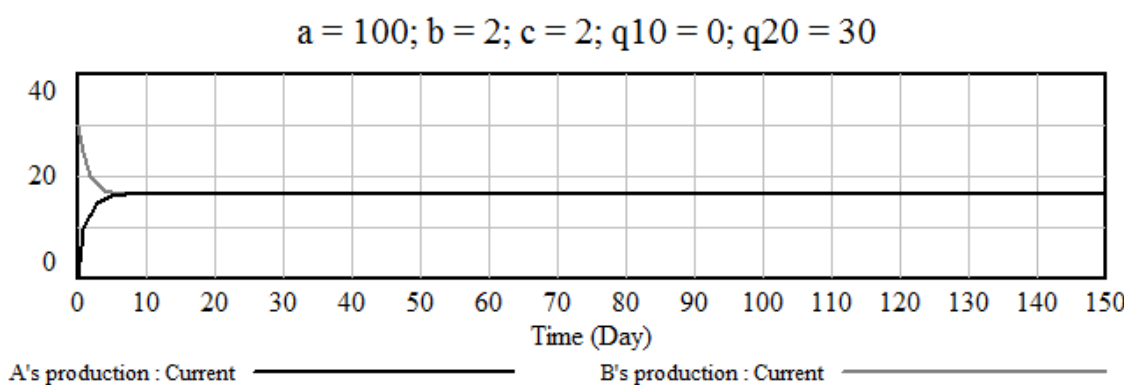
FIG. 2: **Stock and flow diagram of a Cournot duopoly with time delays**



Source: Author’s own depiction

A stock and flow understanding of the model leads to an interesting behavior that significantly differs from the standard Cournot duopoly. Figure 3 shows the simulation results of a base case scenario where no delays exist.

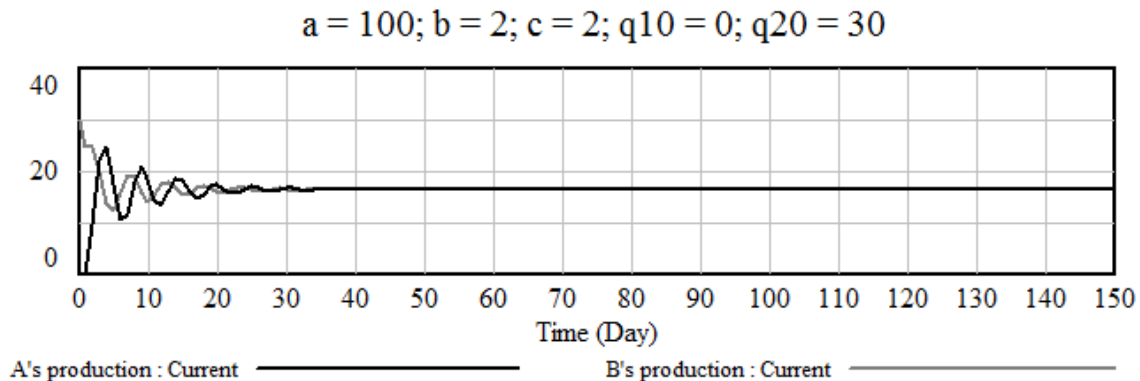
FIG. 3: **Standard behavior of a Cournot duopoly**



Source: Author’s own depiction

Figure 3 shows the expected behavior of the two firms' production in a Cournot duopoly. One slowly increases its production while the other slowly decreases it so that equilibrium is achieved in a reasonable timeframe. Depending on the initial values of the variables, the behavior may differ and the process of establishing equilibrium may be graphically different, however the conclusion is not. Let's now introduce a time delay into the system for company A only. Results of the simulation for a time delay of 1 time step are shown in figure 4.

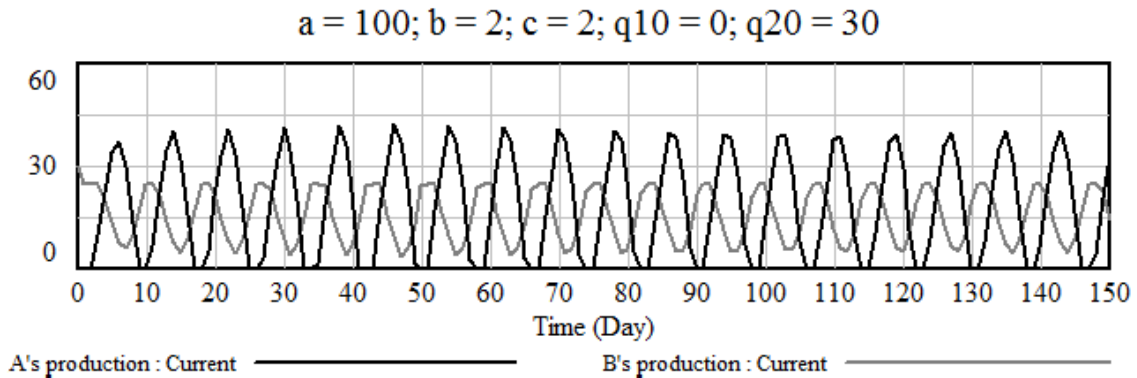
FIG. 4: Behavior of a Cournot duopoly with a single time delay of 1 time step



Source: Author's own depiction

Equilibrium is still formed, albeit at a slower pace and with more overshoots. However this behavior still leads to the same conclusion and does not vary wildly from the behavior of a standard Cournot duopoly where both firms' output starts below the equilibrium level. Figure 5 shows the behavior when company A is faced with a delay of 2 time steps, which is longer than their decision cycle (which is 1 time step).

FIG. 5: Behavior of a Cournot duopoly with a single time delay of 2 time steps



Source: Author's own depiction

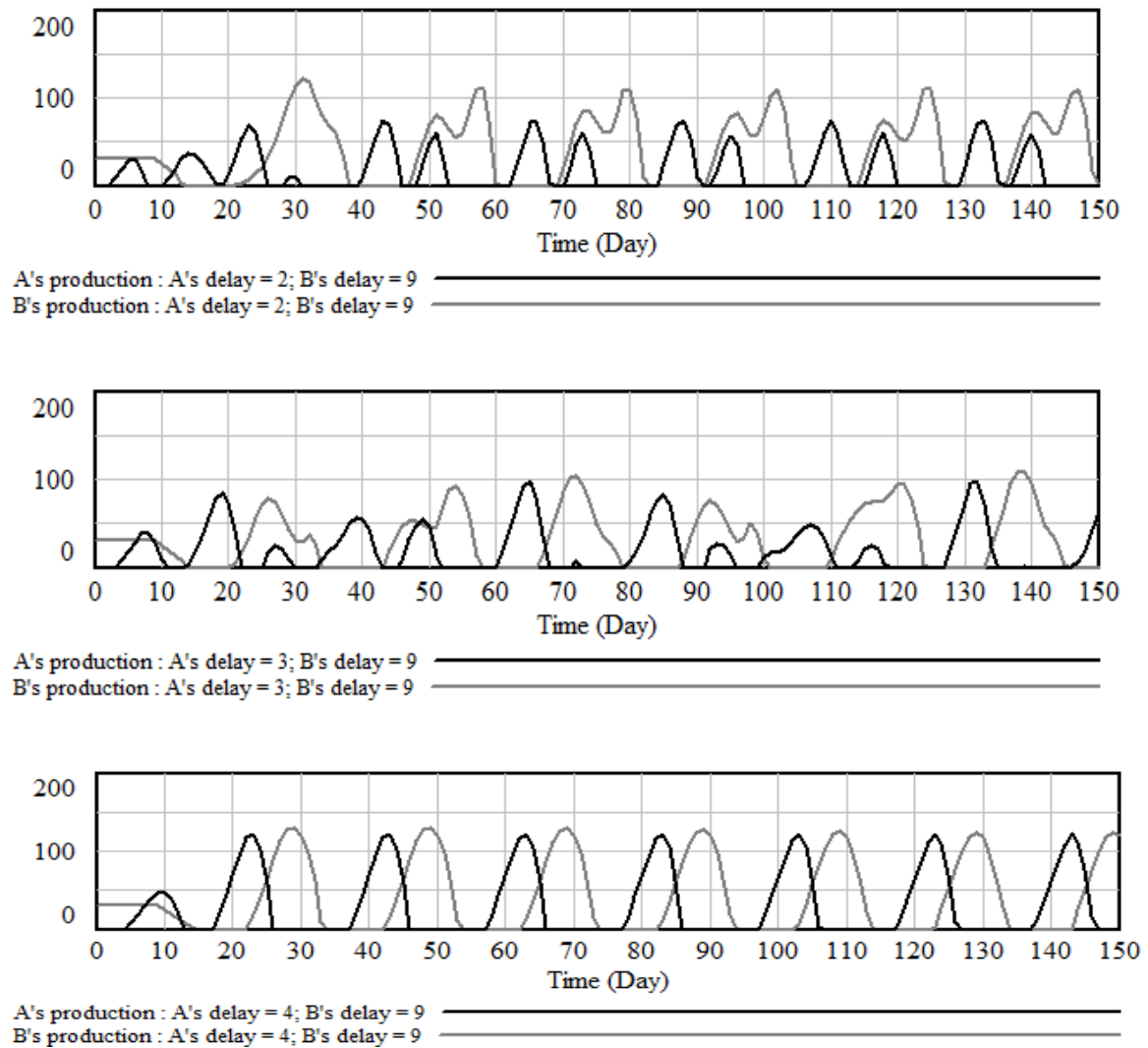
There is no equilibrium and the system never stabilizes. This stems from the stock and flow understanding of the model, where the stock of A's production is constantly increased (or decreased) due to a lack of information feedback. In other words, one department in the company constantly hounds the other to increase production since they are given all information about the output level with a significant time delay. A longer delay means a higher peak of each cycle.

Introducing delay for both companies leads to changing the shape of each cycle as well as the peak production. In general, the greater the difference between both companies' delays, the more complex each cycle is. See figure 6 for examples.

Conclusion

This paper presents a stock and flow model representation of a standard Cournot duopoly model known from microeconomics. Time delays were subsequently introduced into this model and their effects on establishing equilibrium were monitored. A combination of production and information delays with equal durations was considered. In other words, it was assumed that production adjusts to plans only with a delay and that the information feedback about this adjustment is delayed as well.

FIG. 6: Behavior of a Cournot duopoly with a dual time delay of varying time steps



Source: Author's own depiction

We found that when a delay is introduced to one company only, the system remains stable and achieves equilibrium as long as this delay is equal to or lower than the decision cycle. For greater delays, the system shifts into a periodic behavior with the peak determined by the length of the delay.

When both companies are subjected to delays, the system exhibits more varied behavior depending on the difference between the delays. The greater the difference is, the more complex the behavior becomes within each cycle. However, the behavior of the system remains cyclical for all cases.

Acknowledgments:

This paper was created as part of the SGS-2012-028 project.

References:

- [1] CHIARELLA, C., KHOMIN, A. An analysis of the complex dynamic behaviour of nonlinear oligopoly models with time delays. *Chaos, Solitons* [online]. 1996, vol. 7, issue 12, s. 2049-2065 [cit. 2013-10-24]. DOI: 10.1016/S0960-0779(96)00071-9.
- [2] LOBONTIU, Ni. *System Dynamics for Engineering Students Concepts and Applications*. Burlington: Elsevier Science, 2010. ISBN 978-008-0928-425.
- [3] RANGANATH, B. J., LEWLYN L. R. RODRIGUES. *System Dynamics: Theory and Case Studies*. New Delhi: I.K. International Publishing House, 2008. ISBN 9788189866921.
- [4] REYNOLDS, M., HOLWELL, S. *Systems approaches to managing change: a practical guide*. 3. dopl. vyd. New York: Springer, 2010, xiv, 309 p. ISBN 9781848828094.
- [5] SOUKUP, J. *Mikroekonomická analýza (vybrané kapitoly)*. Slaný: Melandrium, 2001. ISBN 0-07-028101-7.
- [6] STERMAN, J., HOLWELL, S. *Business dynamics: systems thinking and modeling for a complex world*. 3. dopl. vyd. Boston: Irwin/McGraw-Hill, c2000, xxvi, 982 p. ISBN 00-723-1135-5.

SUPPORT FOR SMALL AND MEDIUM ENTERPRISES IN THE ECONOMIC CRISIS IN SELECTED EU COUNTRIES

Zsuzsanna Tóth, Ladislav Mura

J. Selye University Komárno, University of Ss. Cyril and Methodius in Trnava

tothz@selyeuni.sk, ladislav.mura@gmail.com

Key words:

enterprise – support of entrepreneurship – small and medium enterprises – state

Abstract:

Small and medium enterprises represent 95 to 98% of all businesses in member state of European Union. Therefore support for these businesses is in the interest of economic development of each country or integration groupings are important. Special attention is given to financial support of small and medium enterprises. The paper presents entrepreneurship support policy of small and medium enterprises with emphasis on support policies to overcome economic crisis in the selected countries of the European Union in second wave of economic crisis.

Introduction

For several reasons an increased attention is paid to the sector of small and medium sized enterprises in the economy of each country. They are dynamic elements of the market, they provide employment in those areas where are no larger companies for various reasons, they flexibly respond to market conditions and introduce many innovations. On the other hand, they are far more vulnerable than large enterprises. They are sensitive to changes in market conditions. Their existence is significantly affected by the on-going economic crisis [3, 115].

At present, under the influence of global economic crisis, we can see rising unemployment and efforts of management of various enterprises to reduce costs. An alternative option for the unemployed is to start their own businesses using professional help not only in the establishment, but also in the start-up phase. The initial stage of the

life cycle of a business is the most vulnerable phase. Entrepreneurs should require consultancy and use tools which offer various institutional base of business support. Business practice, however, according to the findings of the National Agency for Development of Small and Medium Enterprises, shows that SMEs do not use sufficient professional help in business support [2, 74].

The effects and consequences of the global economic crisis refer directly or indirectly to any businesses [1, 198]. Management of small and medium-sized enterprises must accept important decisions to eliminate the demand of crisis on their businesses. In addition to internal opportunities there exist external forms of support provided by the governments of the Member States of the European Union. Most of the measure and state aid head to small and medium enterprises.

In order to mitigate the impacts of the crisis on businesses, national governments developed crisis and action plans to support the economy. In this paper, therefore, we pay attention to the support of entrepreneurship of small and medium-sized enterprises in selected countries of the European Union. The aim of this paper is to present the current forms of support for small and medium enterprises in selected countries of the European Union.

Result and Discussion

As already mentioned above, we focus on the part of the support of the economy, which binds specifically to support small and medium enterprises. Considering the second wave of the economic crisis we emphasize the support of the elimination of the consequences of the economic crisis on small and medium-sized enterprises. Since states most affected by the crisis such as Greece, Spain and Portugal call for a broader and deeper scope than the space of the contribution in the conference provides, we decided to present other forms of support of other selected countries.

France

The French government announced in October 2012 the plan, which includes 22-billion aid to small and medium-sized enterprises. By agreement of the banks with the government banks allocate 17 billion euros of that amount to small businesses. Each month they must publish a report if they meet their obligations. A government agency, which is responsible for supporting the development of innovative enterprises and small

and medium enterprises, received the remaining 5 billion euros. It will guarantee financing from banks and investors.

To 31st December, 2012, a total of 5500 requests for assistance were recorded and the loans in the amount of 450 billion euros were guaranteed [5, 283]. In 2013 the government published a similar call for more support for small and medium-sized enterprises, provided that the enterprise has not been the beneficiary of another specific financial support from the state.

Ireland

Irish exporters repeatedly face several challenges, especially the price fluctuations of the pound sterling and the euro. Britain is the most important export market for the Irish SMEs and the Irish are becoming more interested in purchasing in Northern Ireland where prices are lower and the VAT is reduced. To help small and medium-sized enterprises a 100-million fund (Enterprise Stabilisation Fund) was created and designed to "companies with international trade." Moreover, the government established the so-called bad bank. Its role is to manage the bad assets from financial institutions to release the credit flow towards the small and medium enterprises again.

Italy

The Italian government was among the first ones to support the business during the economic crisis as early as April 2009, when it approved a plan to increase the budget Fondo di Granz (guarantee fund) from 500,000 euros to 1.5 million euros. The decision is part of a package to help businesses to avoid bankruptcy. Representatives of small and medium-sized enterprises in 2010 and 2011 requested more loans, less bureaucracy and the improvement of the business environment. The government from 2012 until now has been working continuously to simplify legislation, labor market and to support the retraining of workers.

Great Britain

Parts of a stimulus plan for the economy are mainly the tax reductions in various regions. The government reduced VAT from 17.5% to 15% to support business activities and consumer trust. Furthermore, in the context of financial guarantees for businesses, in the period 2010 -2012 the government released the amount of £ 1.3 billion to support bank loans worth a thousand to a million pounds. Guarantee may be used to support new loans or to restructure the existing ones at which risk increases.

Romania

Romania has implemented a three-year macroeconomic plan to overcome the crisis and a plan to recapitalize state banks for the period 2009-2012. The government extended unemployment benefits for three months. Those employees who are forced to limit their working time can receive 75% of their salaries without payment of tax for three months. The biggest obstruction for Romanian SMEs is bureaucracy. According to the report of PricewaterhouseCoopers firms spend an average of 202 hours per year in administrative procedures related to tax duties.

Slovakia

As a measure against the economic crisis, the government undertook the full implementation of the Action Plan for the SBA (Small Business Act). Slovak anti-crisis intervention has drawn up no special fund for SMEs so far. Existing tools are supposed to ensure the access to finance. The increase in capital (33 million) of Slovak Guarantee and Development Bank from the beginning of 2008 gradually created space to finance programs for small and medium enterprises [4, 361]. In addition, till 31st March 2012 drawing down the credit line from the European Investment Bank was prepared in the amount of 30 to 40,000,000 euros for the development of small and medium enterprises. State support for export enterprises ensured an increase in capital of Eximbank (11.5 million). The aim is to finance export credits, with a focus on small and medium enterprises. Within Micro-loan program of the National Agency for Development of Small and Medium Enterprises, the Government specifically supported over 550 entrepreneurs between 2010 and 2012 in a total amount of EUR 5 million.

In further measures the government planned to accelerate the implementation of the JEREMIE program for small and medium enterprises. The aim is preferably to use bank guarantees and a micro-loan program, which is implemented by companies with a special status. The updated aid scheme (de minimis) for the Operational Programme Competitiveness and Economic Growth has brought scope for increased financial aid, in relation to a temporary two-year exemption beyond the de minimis threshold in state aid of up to 500 000 euros. Another group of measures relates to innovation and to the increase of competitiveness. In the second half of 2011 and in 2012, the government funded 20 projects with € 26.6 million euros. The measure increased staff capacity in the company's research and development. Businesses have resources on condition that

they develop the workplace of research and development or create a new one. Preferably, it is designed especially for small and medium-sized enterprises.

In the Crisis Plan for 2013 the government states that it is necessary to promote innovation and technology transfer, especially for small and medium-sized enterprises, in order to solve energy demand, reduce environmental impacts and increase production efficiency. The Government therefore intends to establish a program to support the creation of networks and clusters, a program to support activities to the involvement of Slovak companies into international clusters, including the use of community programs of the European Commission. Applied research and innovation should be supported by the resources of the agencies for funding and development. The emphasis thus is shifted from basic research to applied one.

Conclusion

SMEs present 95 to 98% of all businesses. Support for these businesses is therefore important for the economic development of each country or integration group. The paper presents a policy of promoting entrepreneurships of small and medium-sized enterprises with an emphasis on policies to support the overcoming of the economic crisis in selected regions of the European Union. It is obvious that the economic policy of each state, which includes the policy to support entrepreneurships, was formed mainly by the economic situation and the budget of the country. At the macroeconomic level, respectively on the level of the whole European Union, policy support became part of the Small Business Act.

Acknowledgement:

This article is a partial outcome of the research project VEGA 1/0381/13 called "Evaluation of the innovative potential of entrepreneurial networks in the early stages of its functioning", which is being solved at the Faculty of Economics of J. Selye University in Komárno.

References:

- [1] IVY, J. State-controlled economies vs. rent-seeking states: Why small and medium enterprises might support state officials. *Entrepreneurship and regional development*. 2013, vol. 25, no. 3-4, pp. 195-221, ISSN 0898-5626
- [2] KUBRICKÁ, M. *Podpora malého a stredného podnikania v Slovenskej republike*. Sprievodca iniciatívami. Bratislava: NARMSP, 2012, 305 s. (bez ISBN)
- [3] MURA, L. *Ekonomika malého a stredního podnikání*. Dubnica nad Váhom: MiFiD, 2011, 185 s. ISBN 978-80-89400-22-5
- [4] UBREŽIOVÁ, I., WACH, K., HORVÁTHOVÁ, J., Entrepreneurship in small and medium-sized enterprises: Comparative study between Slovakia and Poland for the years 2001-2007. *Agricultural Economics – Czech*. 2008, vol. 54, no. 8, pp. 358-366, ISSN 0139-570X
- [5] ZHANG, B., SHI, Y., ZHANG, D., Research on Small- and Medium-sized Enterprises Financial Support System. *China Private Economy Innovation International Forum*. 2012, pp. 280-287. ISBN 978-0-9845209-9-2

SUPPORT OF TOURISM IN MORAVIAN-SILESIA REGION

Klára Václavíková, Patrik Kajzar

Silesian University in Opava

vaclavinkova@opf.slu.cz, kajzar@opf.slu.cz

Key words:

regional gastronomy – tourism – Moravian-Silesian region – culinary tourism

Abstract:

The paper describes Moravian-Silesian region as a destination with a wide range of regional specialties. The aim of this paper is to define the basic requirements for the use of regional gastronomy as a means to support the development of tourism in the Region. The main method is a SWOT analysis. Regional gastronomy belongs to the culinary tourism. Culinary tourism is defined as the performance of unique and memorable eating and drinking.

Introduction

Tourism is a growing industry in the Moravian-Silesian Region. Moravian-Silesian region has great potential for the development of tourism. Conditions are geographic, demographic and many more. The authors describe the detailed conditions for culinary tourism. The article describes the regional specialties. SWOT analysis describes the strengths and weaknesses of the region. The aim of this paper is to define the basic requirements for the use of regional gastronomy as a means to support the development of tourism in the Region.

1. The theoretical basis

1.1. SWOT analyze

SWOT analysis method comes from economics and is now commonly used in scholarly work with a variety of themes. This method is used to assess complex situations, prospects and proposals for regional development (which is already basically a mandatory part of the strategic plans of territorial units) in various documents relating

to regional, sectoral and territorial development in the revitalization of cities and regions in valuation of the environment, etc.[1]

SWOT analysis is a method that identifies the strengths, weaknesses, opportunities and threats related to a particular project, type of business, business strategy, politics (in the sense of measure), etc. This is the method of analysis used primarily in marketing, but also eg analysis and policy-making (policy analysis). This makes it possible to comprehensively evaluate the functioning of the company, find problems and new opportunities for growth. It is part of a strategic (long-term) planning [4].

1.2. Culinary tourism

Culinary tourism is a relatively young field of tourism. Culinary tourism is defined as travel for unique and memorable culinary experiences of all kinds. Although many people think that culinary tourism is go round only a restaurant equipped with several stars, but this is wrong. This includes trips to the booth on a street in Beijing, back-street bar in New York, they knew only local, or even enjoying ice cream on the street somewhere in Italy. Already survey conducted a few years ago for the World Travel Market in London, showed that out of 2,000 respondents throughout 53 percent considered eating traditional local dishes for a very important part of their holiday. Culinary vacations are now common throughout the world and travel agencies will offer you whatever you want, including visits to local markets, cooking lesson and tasting all sorts of things [6].

Culinary tourism is defined as the performance of unique and memorable eating and drinking. It focuses on the search and consumption of prepared food and beverages. It cannot be classified as a form of rural tourism [5].

The importance of culinary tourism is due to the fact that almost 100% of the visitors to eat in a restaurant when traveling. It is an opportunity to discover the local food and culture in the area. Today, we can say that the local cuisine is a motivating factor when choosing a destination. Tourists culinary travel are also interested in museums,

shopping, arts and recreation, and are highly motivated to gain experience unique and unforgettable meals.

2. Prerequisites Moravian-Silesian region for culinary tourism

2.1. Cultural and geographical conditions

Traditional **cultural** centers of the region are Ostrava, Opava and the Czech Cieszyn with significant Polish minority, Czech Cieszyn. The region has many theaters, museums, galleries and theaters. In Ostrava, the seat of the internationally known Janacek Philharmonic. Lovers of literature can use more than 400 libraries. Towns offer a wide range of sports through stadiums, multipurpose halls and hundreds of playgrounds, gymnasiums, swimming pools and facilities. Besides cultural and sports activities in towns and villages, providing a picturesque and varied scenery of northern Moravia and Silesia countless opportunities for recreation, tourism, sightseeing and therapeutic programs. In summer, the Region offers an extensive network (cycling) trails for hiking and biking in the winter, mountain ranges and Hruby Jeseník Beskydy are centers of cross-country and downhill skiing. Moravian-Silesian Region boasts many cultural monuments on its territory the urban conservation areas (center of Příbor, New Jičín and Štramberk). The Castle gems counties are located in Hradec nad Moravici, Raduň in Kravařích the Opava region or in Fulnek. The most important castles are Sovinec the Rýmařov, Old Jicin and Hukvaldy in area of Beskydy mountains.

The uniqueness of the region are the conditions for industrial tourism (Automobile Technical Museum in Kopřivnice: Studénka Wagon Museum, Museum of Mining in Ostrava-Petřkovice, area of Lower Vitkovice, NKP Mine Michal etc.).

Moravian-Silesian Region is **geographically** very diverse region. The West is bound by the massif of Hruby Jeseník the highest peak of the region and the whole of Moravia Praděd (1491 m). Upland gradually passes into the low Jeseník, plateaus with more gradual terrain, and Odra Hills. The central part of the region is characterized by densely populated lowland terrain Opavské lowlands, Ostrava Basin and the Moravian Gate. Towards the southeast regaining mountain landscape character and culminates backs of Beskydy - Slovak border in the Moravian - Silesian Beskyd

Mountains with the highest peak Lysa hora (1323 m) and the Silesian Beskyd Mountains on the border with Poland. Moravian-Silesian Region is defined districts - Bruntál, Frýdek-Místek, Karvina, New Jicin, Opava and Ostrava-city is divided into 22 administrative districts of municipalities with extended powers, in which there are a total of 299 municipalities, of which 41 are towns. Its area of 5,427 square kilometers occupies 6.9% of the territory of the Czech Republic and ranks as the 6th among all the regions. More than half of the region is agricultural land, the other more than 35% of the forest lands (especially in the mountain areas of Jeseníky and Beskydy).

2.2. SWOT analyze of Moravian-Silesian region

The SWOT analyze is the first step to determine the current position to the destination tourism market. Identify strengths and weaknesses of the destination we discover what constitutes a market destinations of tourism opportunities and recognition proves to be a threat to market destinations find out what the success of the market destinations and in what direction. For creating a successful marketing strategy is also important to detect weaknesses and the opportunities and as subsequently eliminated. Analysis of strengths and weaknesses is an analysis of the trends and activities in the destination. Further opportunities destinations in the tourism market are not only the benefits stemming from the strengths but also the benefits stemming from the external environment destination, if it is possible to use them. Threats destination is usually based on weaknesses, respectively of the drawbacks in the external environment such as exchange rates, the rising price of oil and other.

TAB. 1: SWOT analyse

Strengths	Weaknesses
•Significant natural capital and natural environment. •The majority of the site is the status of nature reserves, national nature reserves and monuments. •Rich background of historical - cultural monuments. •The proximity of numerous border crossings with Poland and Slovakia, easy access for visitors from neighboring countries. •Much of the region is composed of forested areas. •Year round use of the area. •A large number of ski areas and trails in the winter months. •A large number of facilities for relaxation and wellness. •Location with suitable conditions for farming and grazing. •Good affordability of tourism services.	•Traffic access to some tourist attractions and poor road markings. •Poor quality of roads. •Lack of parking spaces. •Poor quality accommodation in some locations. •Lack of promotion of the area. •Low offer travel agency services. •Low attendance by foreign tourists. •Lack of aid funds. •Lack of jobs for new graduates. •Plenty of restaurants offering regional specialties.
Opportunities	Threats
- Further development of attractive tourist sites. •The development and modernization of ski resorts. •Expansion of foreign clients. •Promoting a favorable quotations. •Support for new forms of tourism (agro-tourism, eco-tourism). •The use of new forms of promotion. •Use of sustainable development to promote competitiveness. •Ability to draw national and international support programs, subsidies. •Growing interest in domestic tourism.	•Lack of financial resources for the repair and modernization of the region. •Deterioration of roads and paths. •Ineffective marketing strategy. •Stagnation of improving the quality of services in facilities intended for tourism. •Overloading the most important tourist sites in winter (Nýdek, White). •Low competitiveness of some less attractive locations. •Proximity and strengthening competitive position and developing regions.

Source: Own research

Based on the SWOT analysis, we can assume that support the development of regional gastronomy is a good way to increase tourism in the area. According to the portal <http://www.czechspecials.cz/restaurace/> are in the Moravian-Silesian region certified

these restaurants: Beskydský Horizont, Kunčice pod Ondřejníkem, Bowling City, Kojetín, Carbon, Frýdek – Místek, Clarion Congress Hotel - Restaurace, Ostrava, Horský hotel Sepetná, Ostravice, Hotel Cvilín, Krnov, Hotel Jana, Přerov, Hotel Pivovar, Kojetín, Hotel Sport, Orlová – Lutyně, Hotel Zámek, Havířov, Mamaison Hotel Imperial - Restaurace La Brasserie, Restaurant Legend, Ostrava, Miura hotel, Čeladná, Penzion Běla, Bělá pod Pradědem, Potrefená Husa, Ostrava, Racek, Ostrava-Výškovice, Restaurace Golf Resort Lipiny, Karviná-Fryštát, restaurace Lašská jizba, Sedliště, Restaurant La Vida, Ostrava, Restaurant Nelli, Havířov, Restaurant Srub, Ostrava – Dubina, Restaurant U Helbicha, Ostrava – Zábřeh, Restaurant Buena Vista, Ostrava – Zábřeh, Restaurant Kaskáda, Ostrava, Sporthotel Kurzovní, Karlova Studánka, Výtopna, Orlová and Zaječský vinný sklep, Ostrava- Maránské hory. This is an area of North Moravia and Silesia [10, 11].

Conclusion

The article describes a very interesting topic, it is a culinary tourism. The authors focused on the area of the Moravian-Silesian region. The main method was the SWOT analysis in basic form. They were described strengths, weaknesses, opportunities and threats of the region. The authors also focus on the description geographical and cultural conditions for tourism in the area. This is important because tourists are looking for culture, sport and monuments. The main object of tourist is also good to eat and get to know local specialties. The authors use information about the project Czech specialist. This project is certified restaurant. Based on this information, it is stated that in the MSR is enough certified restaurants offering regional specialties. This all-in area leads to the promotion of tourism. There are geographical, cultural and many other prerequisites for tourism. One prerequisite is also broad offer regional specialties. It can be said that the area has potential for tourism development. Regional gastronomy can be used as a tool for the development of tourism in the area.

References:

- [1] BOHM, A. 2008. *The SWOT Analysis*. GRIN Verlag, pp. 2-8. ISBN 978-3-640-42419-1.
- [2] HAMPL, M. 1998. Výzkumné trendy v sociální geografii. *Sborník ČGS*, vol 103, 4/1998, pp. 437-444.
- [3] IVANIČKA, K. 1983: *Základy teórie a metodológie socioeconomickej geografie*. Bratislava SNP, p. 448.
- [4] JAKUBÍKOVÁ, D., 2008. *Strategický marketing*, Praha: Graha Publishing, pp. 103. ISBN 978-80-247-2690-8.
- [5] JAKUBÍKOVÁ, D., 2012. *Marketing v cestovním ruchu*, Praha: Graha Publishing, pp. 98-99. ISBN 978-80-247-4209-0.
- [6] KRIZEK, F., NEUFUS, J. 2011. *Moderní hotelový management*. Praha: Grada, pp. 70-75. ISBN 978-80-247-3868-0.
- [7] RÝGLOVÁ, K. et al. 2011. *Cestovní ruch – podnikatelské principy a příležitosti v praxi*. Praha: Grada, 216 p. ISBN 978-80-247-4039-3.
- [8] Czech Statistical Office, 2013. Characteristics of the Moravian-Silesian region. [online]. [cit.18.10.2013]. http://www.czso.cz/xt/redakce.nsf/i/charakteristika_moravskoslezskeho_kraje
- [9] Czech Statistical Office, 2013. Moravian-Silesian region. [online]. [cit.22.10.2013]. [http://www.czso.cz/csu/2012edicniplan.nsf/t/4C0020FF4C/\\$File/80136412a1.pdf](http://www.czso.cz/csu/2012edicniplan.nsf/t/4C0020FF4C/$File/80136412a1.pdf)
- [10] Czech Specials, or Taste the Czech Republic!, 2013. [online]. [cit 1.11.2013]. <http://www.czechspecials.cz/>
- [11] Moravian-Silesian region, unusual experiences, 2013. Gastronomic specialties. [online]. [cit.5.11.2013]. <http://www.msregion.cz/scripts/detail.php?pgid=350&conn=1522&pg=1>

COMMUNICATION AND INFORMATION SHARING IN THE PROCESS OF CREATING MARKET ADVANTAGE AMONG SMALL AND MEDIUM ENTERPRISES COLLABORATION

Bogdan Wierzbinski

The University of Rzeszow

bowie@ur.edu.pl

Key words:

flow of information – small-enterprises – competitiveness

Abstract:

The aims of this paper are to consider the potential benefits of information sharing for Small and Medium Enterprises (SME). Information must first be considered in the context of a wider understanding of the functioning of phenomena and processes within the firm as well as its surroundings. Information is crucial in the process of defining goals. When collected it becomes a very important business resource, being one of the key success factors and, it is inextricably associated with the increase of knowledge and consequently, the wisdom of employees. A fuller understanding of economic processes in the chain of value creation greatly benefits not only external marketing activities and information but also actions directed to the inside of the enterprise.

Introduction

In order to understand the subject undertaken affecting the operation of the company and increasing its ability to compete by acquiring and sharing information. In particular the information provided to employees produces significant results in the context of the establishment and proper exploration of the business relationship within the environment, which promotes the realisation of the organization's vision and its strategic objectives. Economic studies were conducted using the questionnaire survey, which was carried out in 2012 on a sample of $n = 83$ Small and Medium Enterprises (SME) in the Sub-Carpathian province. Within the sample small companies (10-49 employees) - accounted for 68.67% of the population; micro enterprises (up to 9

employees) - accounted for 31.33%. Disproportionate stratified random selection was used in order to characterize ways of communication and sharing information in the context of creating the firm's market advantage.

1. The concept of marketing information system

The market information system in the enterprise can be organized in many ways. It includes mainly staff, equipment and procedures that include, checking, sorting, analyzing, evaluating and distributing accurate information which is needed for decision making. Built in this way the system has its origins in managers (or other interesting parties) ordering the information, where having completed all the procedures "relevant" information, on which to base a decision, is generated. It is important that the information is prepared in a suitable form and at the right time, thus helping in the managerial process [1,357]. While the importance of obtaining and collecting information is indisputable there are many methods of organizing this process and many ways of communicating and understanding this information, which could effect a firm's position in a competitive market [2, 29].

The marketing information system within the enterprise should primarily, serve functions supporting decision making: [3,195].

- Reinforcing information concerning strategic marketing objectives,
- Supporting the decision-making process,
- Enabling easier internal tactical and strategic decision making,
- Enabling easier internal communication between departments within the firm.

An appropriate internal communication system plays no less a rule than external communication with external actors. The complexity of the communication system in the firm is based on several basic premises. First, firms are often complex systems, comprising a plurality of group's interactions with each other. Secondly, each member of a particular group, such as division or cell, participates in the processes of communication.

Enterprises participating in the process of management have formal organizational structures and the resulting channels mainly communicate both "down" and "up". Onto this communication structure is applied an informal communication system, the construction of which is often very complicated and includes communication which is horizontal and diagonal [4, 213]. Understanding methods of communicating and

distributing information, within the firm and beyond, is one of the key factors for success. The importance of information must first be considered in the context of a wider understanding of this phenomena [5, 137-145]. Table 1 characterizes the main reasons for the exchange of information and communication processes between businesses.

TAB. 1: The means of communication among the surveyed companies (*smallest - 1, biggest - 5*)

small businesses (10-49 employees)						
Variable	number	Mean	Med	Min	Ma x	SD
informal cooperation	57	3.51	4	1	5	1.04
predicting and solving operational problems	57	3.47	4	1	5	1.05
Successful co-determination of liability	57	3.75	4	2	5	0.87
Mutual costs reducing strategy	57	3.79	4	1	5	0.90
micro businesses (up to 9 employees)						
Variable	number	Mean	Med	Min	Max	SD
informal cooperation	26	3.15	3	1	5	1.16
predicting and solving operational problems	26	3.31	4	1	5	1.16
Successful co-determination of liability	26	3.27	3	2	5	0.96
Mutual costs reducing strategy	26	3.35	4	1	5	1.09

Source: own study

As is clear from the research of SME, small companies in particular prefer to cooperate in determining responsibility (average rating 3.75, SD 0.87) and in determining ways of reducing costs (average rating 3.79, SD 0.90). Similar indications are present in the population of micro-enterprises, which also belong to SME's. The fact that informal cooperation received high scores deserves attention from the perspective of the creation of social capital which is significant in the process of management.

Information is the basis for defining human objectives and strategies. Consistently collected it's becomes a very important resource for the company as one of its key success factors and, what is inextricably linked with that, is that knowledge multiplies and as a result the wisdom of employees increases.

Information increases knowledge and consequently leads to the development of staff which should contribute to the process of building and implementing the strategy of the

entire firm. Hence, the aim should be to increase the existing state of knowledge, which can be done through activities such as: [6, 154].

- "Buying" in the context of hiring staff, forming alliances and partnership, and outsourcing,
- knowledge can be acquired on the basis of hiring consultants or subcontract,
- finally knowledge may be gained through constant staff development in the organization.

Knowledge of the market, within which the enterprise is operating or can be considered in terms of the subject (broadly defined information about the resource potential of the enterprise, consumer preferences, resources and capabilities and behaviour of suppliers and customers - mostly quantitative) and present (information on the size, structure and changes in demand structure, marketing channels - predominantly qualitative) [7, 36].

3. Exchange of information system - integration processes

The feature that characterizes the modern world is a cooperative process, integration generally referred to as globalization (commonly noticeable is the phenomenon of uniformity, integration of product markets, finance, formation of business networks) [8, 109].

In this context, the cooperation of enterprises in the process of transferring values (products, services) creates a specific structure as a marketing channel, which can be defined as a group of individuals or organizations through which a product or service is available to the consumer, industrial consumer [9, 460]. These are collections of interdependent entities involved in the process of providing a product or service for consumption or use [10, 17]. The distribution channel (marketing channel) as a whole must satisfy a variety of features: increases the value; adjusts the quantity or offer to customer needs; provides information about the product and the market both intermediaries and customers; establishes and maintains appropriate relationships with the clients and intermediary trade [11, 155].

Table 2 is characterized by forms of enterprise communication with the environment of the surveyed enterprises. When analyzing the collected empirical material it should be noted that in the study population of 41.67% of SMEs, micro-enterprises mainly use the telephone in dealing with the environment.

TAB. 2: Forms of communication by firms in the business environment (three possible answers)

firms (n = 83)	telephone	e-mail	Integrated system	EDI	Internet (Web page)	Line total
small businesses (10-49 employees)	50	39	2	5	24	120
% Of the column	65.79%	84.78%	100.00%	100.00%	82.76%	
% Of row	41.67%	32.50%	1.67%	4.17%	20.00%	
% Of table	31.65%	24.68%	1.27%	3.16%	15.19%	75.95%
micro businesses (up to 9 employees)	26	7	0	0	5	38
% Of the column	34.21%	15.22%	0.00%	0.00%	17.24%	
% Of row	68.42%	18.42%	0.00%	0.00%	13.16%	
% Of table	16.46%	4.43%	0.00%	0.00%	3.16%	24.05%
Number	76	46	2	5	29	158
% Of table	48.10%	29.11%	1.27%	3.16%	18.35%	100.00%

Source: own study

The method of communication between businesses in the transmission of values and the impact on the consumer in the process of providing a more complete and faster information can be enhanced through the website, however, only 20.00% of the entrepreneurs in this group declared a possibility. It can be concluded that a lack of trust exists in business processes between partners. The main barriers affecting the use of electronic infrastructure contact among the firm population is characterized in Table 3.

TAB. 3: The main reasons for not sharing information with business partners

firms (n = 83)	others in supply chain do not require such a service,	costs are greater than the expected benefits,	information may be available to competitors	Lack of ability to use the technology	Line total
small businesses (10-49 employees)	14	9	33	1	57
% Of the column	63.64%	100.00%	64.71%	100.00%	
% Of row	24.56%	15.79%	57.89%	1.75%	
% Of total	16.87%	10.84%	39.76%	1.20%	68.67%
micro businesses (up to 9 employees)	8	0	18	0	26

% Of the column	36.36%	0.00%	35.29%	0.00%	
% Of row	30.77%	0.00%	69.23%	0.00%	
% Of total	9.64%	0.00%	21.69%	0.00%	31.33%
Number	22	9	51	1	83
% Of total	26.51%	10.84%	61.45%	1.20%	

Source: own study

The main reasons for the lack of agreement to function using one computer system include primarily entrepreneurs' indication that information may be available to competitors (64.71% of the surveyed enterprises) and other actors in the chain do not require such a service (63.64%) among small businesses 10-49 employees. It should be emphasized that among micro-enterprises these two reasons also cause a lack of agreement on the operation of the network to exchange information. It seems, however, that it is primarily a consequence of the lack of trust in relations between enterprises, which results from the highly competitive and limited resources of the organization. Generally entrepreneurs do not seem to take into account the very important issue of the use of technological innovations related to information flow in the process of raising productivity.

In connection with the need to maintain the competitiveness of European enterprises SME sphere should be involved in the process of generating innovation, including innovation process of production. In the survey conducted among European enterprises SME sphere in all sectors, respondents specified that the best way to increase the competitiveness of action on the market in the coming years will be done through product innovation [12,196]. In recent decades, there have been very rapid changes in global competition, these changes taking place in the post-industrial space generating paradoxes. It is very likely that the future will be characterized by an unprecedented level of diversification, acquisition of knowledge and unrest [13, 26]. Increasing importance of the means of transmission and sharing information is a key factor for success in the context of cooperation with other actors and fuller satisfaction of needs.

The consumer is the main driver of the integration processes, which should begin with the integration of internal processes and activities, and extend to the external integration with suppliers and customers. The inner and outer integration can be achieved mainly by e.g. streamlining all internal functions and by sharing information in the context of

building relationships with suppliers and customers. Improving every internal functions should precede external connection with suppliers and customers in the external phase of cooperation [15, 239]. Integration refers mainly to the flow of materials and information. Balancing the demand side and the supply side is easier with the integrated flow of information with suppliers and customers. Integration activities can be interpreted as "the process of coordinating the activities, resources, and organizations in the context of joint operation" [15, 239]. The philosophy of co-operation is seen as relationship marketing - emphasis is on a common vision, objectives and benefits and the informal structure of the relationship [16, 60]. Integration activities are usually associated with the implementation of innovative solutions in the process of improving competitiveness. The technological development and globalization of the market are creating a new competition in which businesses are forced to use resources available from others actors [17, 168-179]. Surveyed firms, in the context of exchange of information, such as forecasts, sales data, etc., are reluctant to share their data (59.04% of those surveyed do not provide information to firms with whom they cooperate and only 40.96% share information). Studies suggest that in the economic environment there is a lack of trust in business partners, which may generate additional costs associated with the operation of the surveyed enterprises.

Summary

The Sub-Carpathian region, with the fast growing city of Rzeszow as its capital and changing external circumstances on the local market, creates many opportunities as well as threats for Small and Medium Enterprises (SME). The basic functions performed by the system of marketing information, such as information flow, assists the decision-making process and facilitates tactical and operational marketing decisions. Thus, business operations should be based on the principle of trust, which facilitates internal communication between departments and helps to establish appropriate interaction with the internal and external environment. This study identifies barriers to the free flow of information in the SME sector and emphasises the importance of communication and exchange of information within the firm and also with other external actors.

References:

- [1] KOTLER P., ARMSTRONG, G., SAUNDERS, J., WONG, V. *Marketing podręcznik europejski*, PWE, Warszawa 2002, s. 357
- [2] HERACLEOUS, L., *Better than the Rest: making Europe the Leader in the Next Wave of Innovation and Performance*, Long Range Planning, February 1998. [w] System informacji strategicznej – wywiad gospodarczy a konkurencyjność przedsiębiorstwa, red. R. Borowiecki, M. Romanowska, Difin, Warszawa 2001, str. 29
- [3] *Badania rynkowe i marketingowe*. Praca zbiorowa pod (red.) J. Kramer. PWE, Warszawa 1994, s. 195
- [4] MRUK, H. *Komunikowanie się w marketingu*, (red.), PWE, Warszawa, str. 213
- [5] WIERZBINSKI, B. *Znaczenie informacji marketingowej w kontekście budowy relacji i podniesienia konkurencyjności kanału marketingowego*. [w] „E-Gospodarka w Polsce. Stan obecny i perspektywy rozwoju”. ZN Uniwersytetu Szczecińskiego nr 598, Ekonomiczne Problemy Usług nr 58, część II, Szczecin, 2010, s. 137-145
- [6] KOURDI, J. *Business strategy: a guide to effective decision making*, Bloomberg Press 2003, str. 154
- [7] GIERSZEWSKA, G., ROMANOWSKA, M. *Analiza strategiczna przedsiębiorstwa*, PWE, Warszawa 2002, s. 36
- [8] MESJASZ, L., MESJASZ, C. *Strategie przedsiębiorstwa na rynku międzynarodowym w warunkach globalizacji*, Zeszyty Naukowe nr 639, Akademii Ekonomicznej w Krakowie, 2004, str. 109-128, s. 109
- [9] BRASSINGTON, F., PETTITT, S. *Principles of Marketing*, Prentice Hall Second Edition 2000, str. 460
- [10] STERN, L.W., EL-ANSARY, A.I., COUGHLAN, A.T. *Kanały marketingowe*. PWN, Warszawa, 2002, s. 17
- [11] BURK WOOD, M. *Plan marketingowy*. PWE, Warszawa, 2006, s. 155
- [12] VAN HALL, S. A., C. van LEEUWEN, E. E. LENGTON, R. W. H. van der LINDEN, *European Business Environment, Doing Business in the UE*. Edited by Frans J.L. Somers – Noordhof Uitgevers Groningen - 2010. s 196

- [13] ACHROL, R. S. Evolution of the Marketing Organization: New Forms for Turbulent Environments, *Journal of Marketing*, 1991, 55/3 (Oct.), s. 26
- [14] NARASIMHAN, R., SOO WOOK, K. Information system utilization strategy for supply chain integration, *Journal of Business Logistics*, 2001, vol. 22, no. 2, s. 54
- [15] HERTZ, S. Dynamics of alliances in highly integrated supply chain networks, *International Journal of Logistics: Research and Applications*, vol. 4 (2001), no. 2, s. 239
- [16] NOOTEBOOM, B. *Inter-Firm Alliances : Analysis and Design*, Publisher: Rutledge 1999, s. 60
- [17] FRASER, J. and OPPENHEIM, J. *What's new about globalization?*, McKinsey Quarterly, 1997, vol. 2, pp. 168-179

CORPORATE SOCIAL RESPONSIBILITY AS A CONTEMPORARY CONCEPT OF BUSINESS MANAGEMENT

Anna Wolak-Tuzimek

University of Technology and Humanities in Radom

awt@uthrad.pl

Key words:

corporate social responsibility – stakeholders – enterprise – society

Abstract:

The article presents selected aspects of corporate social responsibility. The objective of this paper is to present reasons for which the idea of corporate social responsibility is increasingly applied to enterprise management. Development of the notion of CSR and its current definition by the European Commission are discussed. Main arguments for introducing the idea to enterprises and views of its opponents are covered. Potential benefits of CSR to enterprises, employees and society are also mentioned.

Introduction

Growing interest in issues of corporate social responsibility (CSR) can be observed. The need to elaborate the concept is voiced not only by entrepreneurs themselves, but also by communities, local and central authorities, as well as a range of participants in social and economic life who affect functioning of businesses.

The objective of this paper is to present reasons for which the idea of corporate social responsibility is increasingly applied to enterprise management.

CSR concerns not only businesses but also to any type of organizations (e.g. social organizations, public administration). The idea, gains increasing support among both entrepreneurs and those affecting operation of businesses. Support from many international organizations is of considerable importance to development of CSR.

1. The notion and nature of corporate social responsibility

The theory of corporate social responsibility is rooted in business ethics. Its origins are believed to reach back to Leo XII's 1891 encyclical *Rerum Novarum* and publication of *The Fundamentals of Business Ethics* in 1926 [1]. Opening of economy to ethics was reflected in business practice. Activities of entrepreneurs were no longer evaluated only in terms of the profits they earned. Development of the idea was made possible by transformations of enterprise operation and its role in society.

The current understanding of CSR dates back to 1953, when Howard R Bowen, regarded by some as the father of corporate social responsibility, published *Social Responsibility of Businessmen*. The author was the first to postulate the idea of 'social responsibility' and its definition: 'It refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of actions which are desirable in terms of the objectives and values of our society' [2].

One of the most widely appreciated definitions was proposed by K. Davis, who initially took CSR to mean decisions and actions that have regard not only to economic and technological considerations. At a later phase of his career, Davis pointed out that social responsibility of entrepreneurs involves their duty to take into account the impact of business decisions and actions on the social system [3].

Milton Friedman's views that 'social responsibility binds only individuals while the responsibility of businesses is limited to providing profits to their shareholders' [4] and that 'the sole object of an entrepreneur's activities is to maximize profit in the name of commitments to shareholders' [5] enjoyed declining popularity. It was stressed that entrepreneurs benefited from a number of privileges granted by society and therefore must consider values of significance to society in their operations [6].

Relevant literature postulates a range of definitions for corporate social responsibility. Most commonly, it denotes conduct of a business in a clear and transparent manner having regard to ethical principles and responsible for customers, workers, investors, society, environment, etc.

The end of the 20th century brought new issues associated with corporate social responsibility as a consequence of globalization and emergence of transnational corporations. Key notions acquired a global dimension. Expectations of business actions changed as well.

The currently prevailing definition by the European Commission assumes that, for enterprises to fully discharge their obligations, they should have in place a mechanism for integration of social, environmental, ethical and human rights issues, as well as consumer problems, into their underlying strategies, in close cooperation with parties concerned to [7]:

- maximise creation of new values for owners/ shareholders and other interested parties, as well as the society as a whole;
- recognition, prevention and relieving of their possible adverse effects.

The Commission encourages entrepreneurs to adopt a long-term, strategic approach to CSR and to explore the potential for developing innovative products, services and business models that will contribute to the public good and produce improved quality and more productive jobs.

2. Reasons for implementation of corporate social responsibility

According to the new definition of social responsibility posited by the Communication from the Commission dated 25 October 2011, enterprises fulfil their commitments in close cooperation with groups or individuals an organization acts upon directly or indirectly and which affect operations of a given organization.

Social responsibility of enterprises is built by ordering, systematizing and documenting a range of principles and actions which may concern:

- relations with specific groups of external and internal stakeholders,
- responsibility for propagation of sustainable consumption among buyers of products by a company,
- actions as part of environment protection,
- designing products that can be used by consumers longer than earlier products,
- supporting local initiatives to improve quality of life,
- counteracting corruption and encouraging business partners to undertake joint measures preventing such practices,
- appropriate competitive practices,
- encouraging workers to do volunteer work for local communities.

The idea of CSR has become popular as perception and functioning of enterprises have been changing. Principles of corporate social responsibility are increasingly often

espoused by market organizations, e.g. commercial banks wishing to build positive relations with their environment [8].

The theory of CSR has both its advocates and opponents. Some believe an enterprise primarily consists of a social subsystem whose stability depends on recognition of stakeholders' needs and requirements and CSR is the appropriate idea which creates order and facilitates dialogue. An enterprise has not only rights and duties but also responsibilities for its actions in the economic, legal and social dimensions. Those countering the theory claim that enterprises primarily exist to maximize profits and thus focus on economic objectives, not ethical considerations.

Key arguments for and against introduction of corporate social responsibility to enterprises are summarized below.

TAB.1: Arguments for and against corporate social responsibility

Arguments for introducing CSR	Arguments against introducing CSR
• Business activities create problems, therefore enterprises should be involved in solving them • Employees make up social groups to which businesses are responsible • Enterprises have the resources necessary to solve social problems • Enterprises are partners in an economy just like the government and society, therefore, they should try to meet social, economic and ecological needs of their partners • By accepting its social, economic and ecological commitments, an enterprise acts in its own interest and in the interests of society.	• The object of business is to generate profits to owners • Enterprises don't have commitments other than economic, except those stipulated by law • Involvement in social problems helps enterprises to influence their environment • Conflicts of interest are possible • Enterprises lack experience of managing social programs • All decisions not associated with market activities reduce economic efficiency, waste time and energy of management, which diminishes economic effectiveness

Source: [9]

Implementation of corporate social responsibility in enterprise operations may generate additional costs yet on balance it proves beneficial.

3. Benefits from introducing CSR in enterprises

Benefits arising from corporate social responsibility do not only apply to enterprises themselves. Both, internal and external environment of such an entity, gain along a variety of dimensions of socio-economic life.

Potential benefits from applying CSR to particular stakeholder groups are tabulated below.

TAB.2: Potential benefits of applying CSR

Potential benefits of applying CSR for enterprises
• Enhanced integration of staff around business objectives • Positive work environment • Quicker attainment of business goals • Involvement of employees in management process • Creation of employee responsibility • Creation of employee innovation • Increased work productivity • Increased sales • Increased profits • More flexible responses of enterprise to market shifts • Increased flexibility of employees • Boosted market and social prestige
Potential benefits of applying CSR for employees
• Higher wages • Increased safety at work • Fewer work accidents • Improved development and professional prospects • Improved job security • Improved work satisfaction • Reduced staff turnover • Lower fluctuations of headcount • Improved workplace facilities and welfare • More timely payment of wages

Potential benefits of applying CSR for society
• Increased consumption out of higher wages • Increased investments owing to greater innovation • Increased social work productivity in the economy • More tax and national insurance collected • Increased tax revenue and central budget savings • Mobilisation of resources for charity • Realisation of charity and social goals impossible without business support • Improved social mood - fewer strikes • Increased productivity • Above-average GNP growth • More timely tax payments

Source:[10]

Market players can take advantage of CSR benefits to varied extents. For small enterprises, these benefits arise from [11]:

- Improved adjustment to customer requirements,
- Cooperation with international corporations,
- Improved productivity,
- Improved capacities for knowledge acquisition and innovation.

Small enterprises enjoy limited benefits from introduction of CSR principles in comparison with large businesses as the former find it harder to operate CSR methodologies and standards, do not have recognizable brands, have less time for cooperation with non-government organizations, local communities and government agencies.

Conclusion

Corporate social responsibility is a theory according to which enterprises voluntarily consider social interests, environment protection and relations with a variety of stakeholder groups when creating their development strategies.

Two underlying motivations for implementation of CSR can usually be distinguished:

- creation of new opportunities and maximizing of benefits (market expansion, improved reputation),
- improved control of risks

Benefits of introducing CSR outweigh its losses to enterprises. As staff commitment and motivation rise, innovation grows and image with stakeholders improves, enterprises gain competitive edge over other market players.

References:

- [1] LORD, E. W. *Fundamentals of Business Ethics*, Ronald Press, New York, 1929.
- [2] BOWEN, H. R. *Social Responsibilities of the Businessman*. New York: Harper&Row, 1953.
- [3] DAVIS, K. *Can Business Afford to Ignore Social Responsibilities?*, California Management Review 1969.
- [4] FRIDMAN, M. *The Social Responsibility of Business Is to Increase its Profits*, New York Times Magazine, 13.09.1970.
- [5] FRIDMAN, M. *Capitalism and Freedom*, Chicago: University of Chicago Press, 1962, 133-134 pp. ISBN 0-226-26421-1
- [6] WADE, C.L. *Racial Discrimination and the Relationship Between the Directorial Duty of Care and Corporate Disclosure*, Pittsburgh: University of Pittsburgh Law Review, 2002, Vo. 63, 383 p.
- [7] Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the regions. A

- renewed EU strategy 2011-14 for Corporate Social Responsibility, 25.10.2011. COM(2011)681, www.eur-lex.europa.eu [cit. 28.11.2013]
- [8] SOLOMA, A. *Kryteria wyboru banku preferowane przez właścicieli mikro i małych przedsiębiorstw na Warmii i Mazurach*, Toruń: TNOIK, 2010, 50p. ISBN 978-83-7285-532-9
- [9] WOŹNIAK-MISZKOWSKA, M. *Wybrane aspekty społecznej odpowiedzialności biznesu inwestorów zagranicznych*. In Porada-Rochoń M. (ed.), *Społeczna odpowiedzialność biznesu jako wyraz reorientacji działania współczesnych firm*, Szczecin: Stowarzyszenie Kreatywni dla Szczecina, 2011, 40 p. ISBN 978-83-933780-0-5
- [10] MAZUR-WIERZBICKA, E. Polskie realia stosowania zasad społecznej odpowiedzialności biznesu- przeszkody i korzyści, www.mikro.univ.szczecin.pl [cit. 25.11.2013]
- [11] RAYNARD, P., FORSTATER M. *Corporate Social Responsibility, Implications for Small and Medium Enterprises*. In *Developing Countries*, UNIDO, Vienna. 2002.

AN ANALYSIS OF THE SITUATION ON THE LABOUR MARKET IN RURAL AREAS IN POLAND

Dariusz Żmija

Cracow University of Economics

zmijad@uek.krakow.pl

Key words:

labour market – rural areas – unemployment – professional activity of population

Abstract:

The paper analyses the situation on the labour market in rural areas in Poland within the years 2008 – 2012. The basic characteristics related to professional activity of the inhabitants of Polish villages based on the results of the Labour Force Survey (LFS) have been presented. The conducted analysis has indicated that within the years 2008 – 2012 the number of professionally active persons in rural areas in Poland increased as a result of the increase in the number of unemployed persons with only insignificant increase in the number of employed persons. The persons in households without a holder of a farm are in a far worse situation on the labour market.

Introduction

The Polish village have felt the changes brought by the political transformation in the country in an acute manner. The processes of transformation did not include the specific characteristics of the agricultural sector, the agricultural farms have been treated in a manner similar to non-agricultural enterprises. The transformation has disclosed an excess labour force involved in agricultural production in Poland, which is not conducive to the agrarian structure and the effective economy. Simultaneously, the accompanying phenomenon of unemployment makes limiting employment in agriculture difficult. The unfavourable situation on the labour market in rural areas in Poland touches the entire rural population. The official statistics related to the scale of unemployment phenomenon in rural areas in Poland do not reflect the actual size of that phenomenon, since the fact of the existence of hidden unemployment in rural areas is a serious problem. It is related, among others, to the fact that in Poland the owners and

possessors of farms of the area of cultivated land exceeding 2 comparative fiscal hectares cannot be registered as unemployed. Due to that, in accordance with the estimations, there are about 1 million jobless persons in individual farming [2]. The approximate data describing non-registered unemployment in rural areas indicates its different value, even up to 1.5 million unemployed individuals [1].

The basic objective of the article is the analysis of the situation on the labour market in rural areas in Poland within the years 2008 – 2012. The paper includes an analysis of the basic characteristics related to professional activity of rural population in Poland. The analysis has been based on the Polish literature as well as the data coming from the Central Statistical Office and the Ministry of Labour and Social Policy.

1. Professional activity of rural population in Poland

One of the main sources of information about the labour market in Poland is the Labour Force Survey (LFS). The aim of this research is to obtain information on the size and structure of the labour force. As a result of the research, the number of persons who are professionally active, meaning the number of persons working and those unemployed as well as the number of professionally inactive persons, meaning those who are not working and who are not interested in working, is determined. The LFS research covers all persons aged 15 and more, who are the members of households that have been selected at random. Work, i.e. the fact of performing, possessing or seeking a job in the reference week, is the basic criterion for dividing the population from the point of view of its economic activity into working persons, unemployed persons and professionally inactive persons.

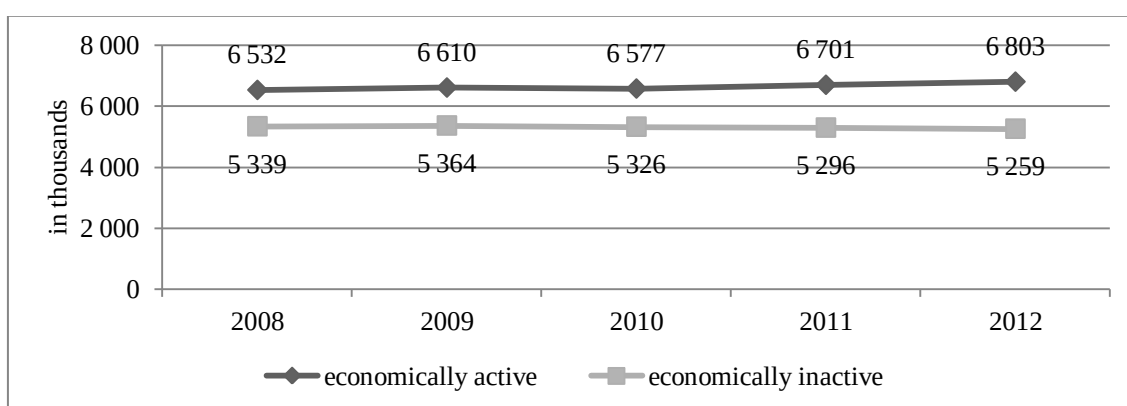
Within the years 2008 – 2012 the number of professionally active persons, which means persons aged 15 and more, who are recognized as the employed ¹ or the unemployed ² in rural areas in Poland was systematically increasing. In 2008 it achieved the level of

¹ According to the LFS the employed person is anybody who in the reference week performed any kind of work providing earnings or income, as an employee, self-employed or contributing family worker; had work but did not perform it due to sickness, maternity leave or vacation, or due to other reasons, but the break in employment did not exceed 3 months, or exceeded 3 months, but these persons were paid employees and during that period received at least 50% of the hitherto wages and salaries.

² The unemployed according to the LFS are persons aged 15—74 who simultaneously fulfilled the following three conditions: were not working in the reference week, were active job-seekers, were available for work within two weeks after the reference week. As unemployed are also considered persons who were not job-seekers because they already had found a job and they were waiting to start it in the period not longer than 3 months and they were able to take the job.

6 532 thousand persons, an in 2012 - 6 803 thousand persons, which meant the increase by 4.15% (GRAPH 1). Within the researched period the number of professionally inactive persons³ in rural areas at first was growing up to 5 364 thousand persons in 2009, next it was falling down and finally, in 2012, it reached the level of 5 259 thousand persons. In 2012 as compared to 2008 the number of professionally inactive persons in rural areas decreased by 80 thousand persons, that is by 1.5%⁴.

GRAPH 1: Professionally active and inactive persons in rural areas in Poland in the IV quarter of a given year within 2008 – 2012



Source: own study based on [3]

While analysing the structure of economically active population⁵ in rural areas in Poland within the years 2008 – 2012, presented in GRAPH 2, it must be noted that the number of unemployed persons within that timeframe was systematically growing. Within the researched years there was a general increase in the number of unemployed persons from 421 thousand persons in 2008 up to 678 thousand persons in 2012 that is by more than 61%. At the same time there was only an inconsiderable increase in the

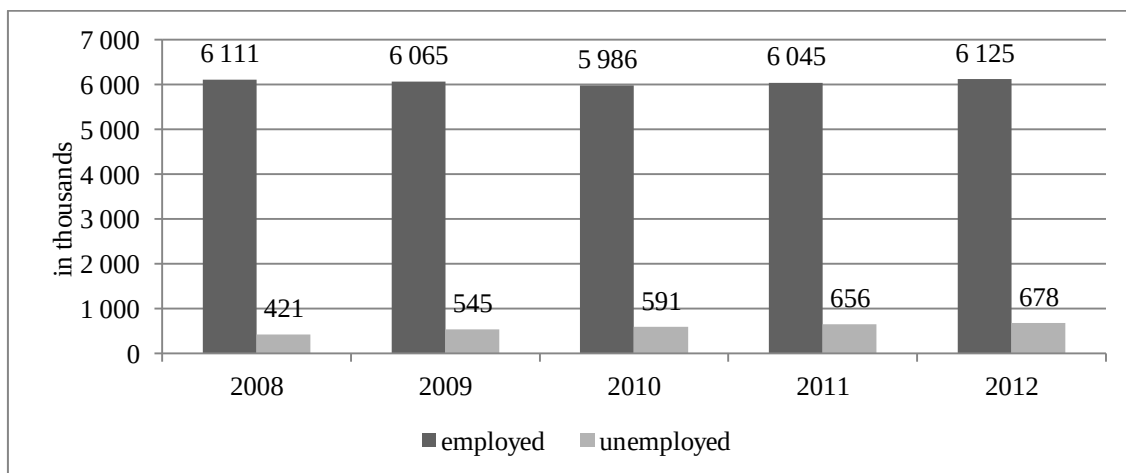
³ The economically inactive population means persons aged 15 and more, who were not classified as employed or unemployed, i.e. persons who during the reference week: did not work and were not job-seekers, did not work and were job-seekers, but were not ready to start a job within two weeks after the reference week, did not work and were not job-seekers because they had found a job and they were waiting to start it in the period: longer than 3 months, not longer than 3 months, but they were not able to take the job.

⁴ In 2010 the methodology of elaborating the LFS results has changed, due to that the data pertaining to the years 2008 – 2009 is not fully comparable with the data related to the subsequent years.

⁵ An economically active population means people aged 15 and more who are recognized as the employed or the unemployed.

number of employed persons in rural areas from 6 111 thousand persons in 2008 up to 6 125 thousand persons in 2012, i.e. by 0.23%.

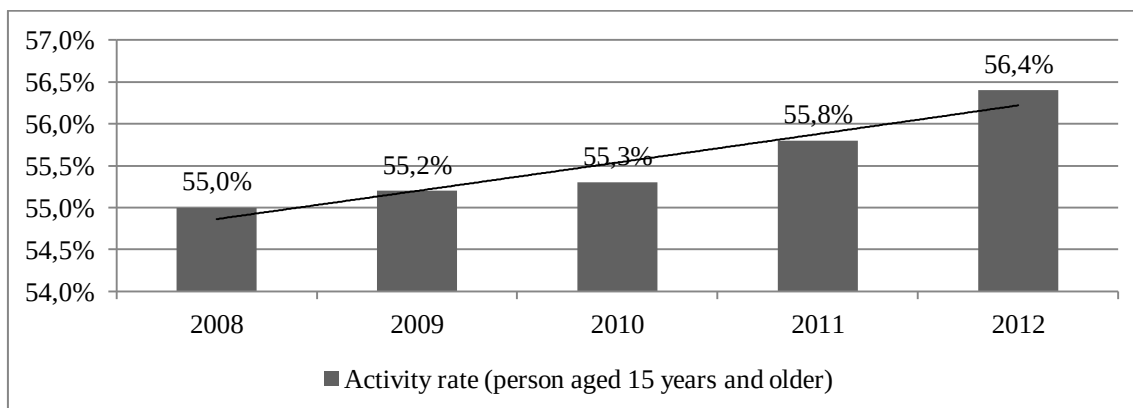
GRAPH 2: Professionally active persons in rural areas in Poland in the IV quarter of a given year within 2008 – 2012



Source: own study based on [3]

The abovementioned phenomena are reflected in the values of activity rate and employment rate within the researched period. While analysing the share of professionally active persons in the total number of population aged 15 and more within the years 2008 – 2012, its systematic increase must be noted (GRAPH 3). In 2012 in rural areas in Poland the activity rate was at the level of 56.4%, which constituted the increase by 1.4% in comparison with 2008.

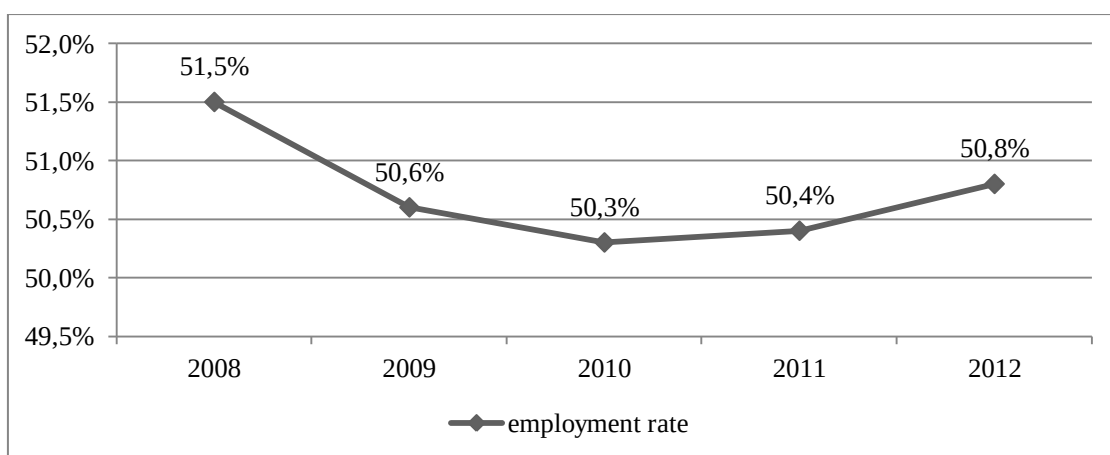
GRAPH 3: Activity rate of the population aged 15 and more in rural areas in the IV quarter of a given year within 2008 – 2012



Source: own study based on [3]

The analysis of the employment rate values within the years 2008 – 2012, presented in GRAPH 4, indicates that the share of employed persons in the total number of population aged 15 and more in rural areas in Poland decreased from 51.5% in 2008 to 50.8% in 2012. The greatest fall took place in 2009 when the percentage share of employed persons in the total number of population dropped by 0.9% in relation to the previous year. However, its systematic increase that has been noted since 2011 is a positive trend.

GRAPH 4: Employment rate in rural areas in the IV quarter of a given year within 2008 – 2012

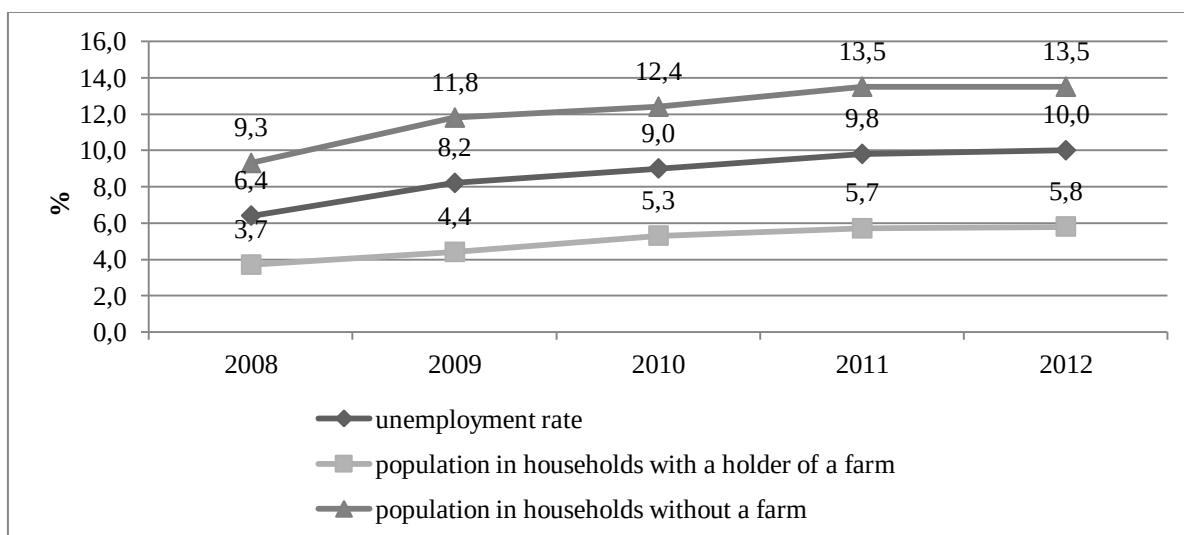


Source: own study based on [3]

The group of unemployed persons in rural areas in Poland is not a homogeneous group and has a diverse structure that can be analysed from the point of view of various criteria. The inhabitants of rural areas can be divided into two groups due to their relation with agricultural farm. The first group includes persons who are connected with an agricultural farm, i.e. persons residing in rural areas, being members of a household with a holder of an agricultural farm or an agricultural plot. The second group is a population not connected with agriculture, including persons residing in the countryside, being members of a household in which no member is a holder of an agricultural farm or an agricultural plot. For this reason, differences exist between them in the scope of labour relationships [4]. Data concerning the unemployment rate in rural areas in Poland within the years 2008-2012 according to the LFS according to the status

as at the end of the reporting period with consideration of relations of the unemployed with agricultural farm has been presented in GRAPH 5.

GRAPH 5: Unemployment rate in rural areas in the IV quarter of a given year within 2008 – 2012



Source: own study based on [3]

According to the LFS, within the researched years the unemployment rate in rural areas in Poland was systematically growing from 6.4% in 2008 up to 10% in 2012. From among the population in households with a holder of an agricultural farm the unemployment rate was at a lower level. In 2008 it amounted to 3.7%, whereas in 2012 – 5.8%. Population in households without a farm was in much worse situation. The unemployment level among those persons was the highest and within the years 2011-2012 it remained at the level of 13.5%.

Conclusions

The situation on the labour market in rural areas in Poland is difficult. The economic transformation disclosed developmental delays in agriculture and in rural areas. Former employees of agricultural farms as well as persons laid off from liquidated enterprises and institutions have become a part of the unemployed in rural areas. The conducted analysis has indicated that within the last five years the number of professionally active persons in rural areas in Poland has increased. The percentage share of the

professionally active population in the total number of population aged 15 and more has also been increasing systematically. However, a growth in the number of professionally active persons was first of all related to the increase in the number of unemployed persons with only inconsiderable increase in the number of employed persons. The increase in the number of unemployed persons resulted in the systematic increase of unemployment rate, while, considering the connection of rural population with an agricultural farm, the population in households without a farm was in a far worse situation on the labour market. The above analysis proves that in rural areas there is an excess workforce in agriculture and a lack of employment places for non-agriculture population. The activation of the unemployed in rural areas entails the granting of assistance in getting to the jobs, first and foremost in the non-agricultural sector.

References:

- [1] DUCZKOWSKA-MAŁYSZ K., *Przyszłość polityki rozwoju obszarów wiejskich. Możliwe scenariusze. Dylematy i wyzwania*, Ekspertyza przygotowana na zlecenie Ministerstwa Rozwoju Regionalnego, MRR, Warszawa 2009, s.5
- [2] KOCISZEWSKA I., *Wybrane problemy społeczno-ekonomiczne rozwoju obszarów wiejskich*, J. Agribus. Rural Dev. 2(24), 2012, s. 131 – 132
- [3] Kwartalna informacja o rynku pracy za IV kwartał, Departament Pracy, GUS, Warszawa 2008–2009 i 2012
- [4] ŻMIJA D., *Unemployment in Rural Areas in Poland*, Acta Scientiarum Polonorum. Oeconomia. 12(1) (2013), s. 72

THE USE OF EU FUNDS DEDICATED TO THE DEVELOPMENT OF ENTREPRENEURSHIP IN RURAL AREAS IN POLAND BASED ON THE MAŁOPOLSKIE PROVINCE

Katarzyna Żmija

Cracow University of Economics

zmijak@uek.krakow.pl

Key words:

rural areas – functions of rural areas – rural entrepreneurship – EU funds

Abstract:

The communes of the Małopolskie Province are characterized by an explicit spatial diversity of the performed economic functions. The rural entrepreneurship is a factor that has a considerable influence on the changes in the structure of economic functions performed within a given area. The analysis of the use of EU funds for the selected actions of the Rural Development Programme for 2007 – 2013 (RDP 2007-2013), dedicated to support the development of rural entrepreneurship indicates that it is different depending on the functional type of a commune.

Introduction

There are many factors that affect the formation of functions of rural areas, out of which a great diversity of natural environment of the country, including the conditions favourable to the development of agriculture, the distribution of natural resources and the development of non-agricultural employment centres must be mentioned above all. There have been numerous works dedicated to the issues concerning transformations of the functional structure of rural areas within the period of economic transformation in Poland, which continue to be the subject of various scientific researches. The thorough methodological studies concerning the spatial structure and functional classification of rural areas in Poland have been conducted by W. Stola (1987, 1993) [5, 6]. The studies have been continued by the research on transformations of spatial structure and functional classification of rural areas in Poland within the years 1988 – 2000 at the commune level [1, cf. 3].

The rural entrepreneurship is a factor that has the great impact on the changes in the structure of functions performed in rural areas. The European Union programmes that enable, among others, to directly support the ventures focused on the development of non-agricultural economic activities in those areas, are one of the instruments supporting its development. The Rural Development Programme for 2007 – 2013 (RDP 2007-2013) is a programme of a special significance with reference to rural areas in Poland as it covers, among others, the actions which aim at supporting the non-agricultural and agriculture-related activities, increasing an economic competitiveness and the development of the entrepreneurship and the labour market in rural areas [4].

The main objective of this article is to determine the level of use of EU funds within the selected actions of the Rural Development Programme for 2007 – 2013 (RDP 2007-2013) by the beneficiaries, who carry out the projects in the communes located in rural areas of the Małopolskie Province with consideration of the functional type of a commune. It presents the functional typology of the communes of the Małopolskie Province and includes the analysis of the stage of implementation of the selected actions within RDP 2007 – 2013 at the level of the selected functional types of communes. The research has covered *Action 311 – Diversifying in direction of non-agricultural activity*, *Action 312 – Creation and development of micro enterprises* and *Action 413 Implementing local development strategies*, carried out in Poland within RDP 2007 – 2013, which are targeted at supporting the development of rural entrepreneurship.

1. Functional types of communes in rural areas of the Małopolskie Province

The paper uses the methodology of classification of the functional types developed by J. Bański [2] for the purpose of defining the functional types of rural and urban-rural communes of the Małopolskie Province. The methodology delimitates functional areas at the Polish commune level, including the division of the areas into urban communes, urban-rural communes and rural communes. A combinatory approach for functional classification of the areas by combining a spatial approach (i.e. distinguishing towns, areas under their influence, traditional rural areas and peripheral areas) with a structural approach (distinguishing only the main economic functions or their combinations) has been applied in this paper. J. Bański has proposed a separation of the following types of

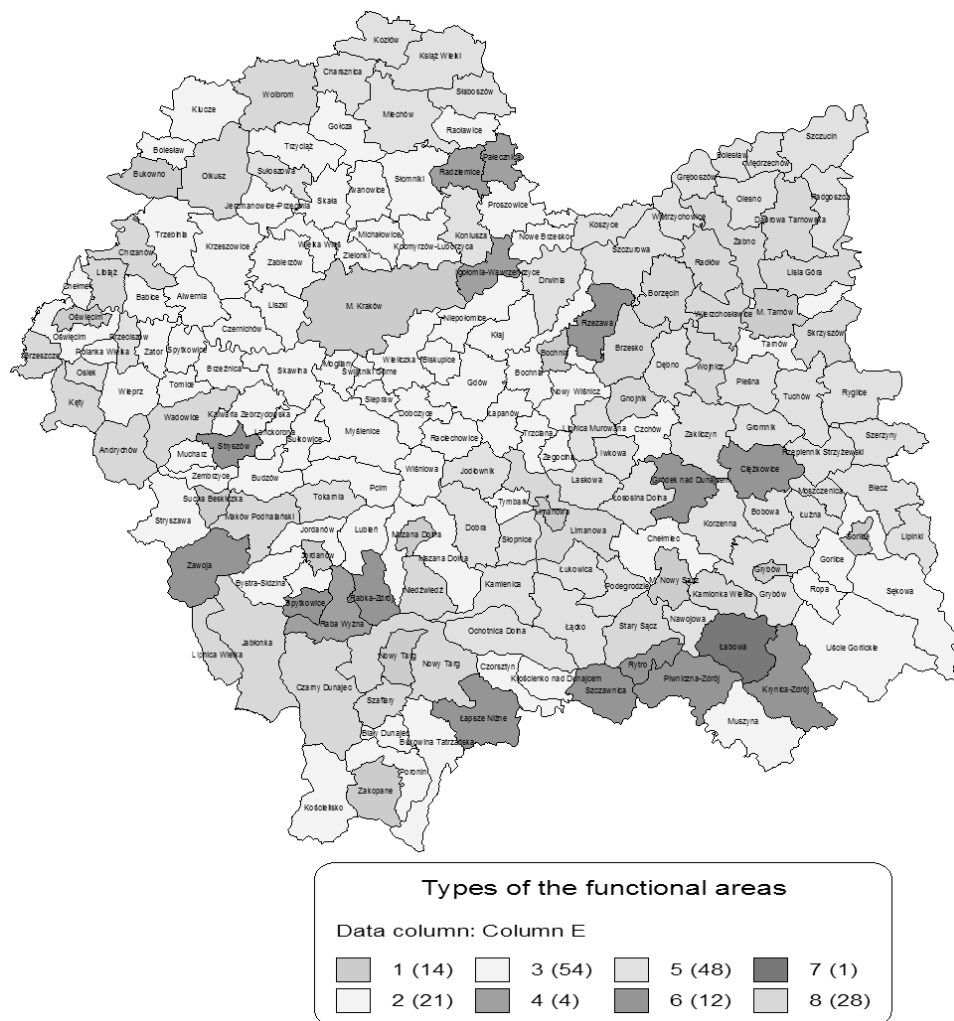
the functional areas: 1. multi-functional urban areas (municipalities, of intensive functions), 2. multi-functional areas undergoing the process of urbanization (of intensive functions), 3. multi-functional transition areas (of intensive and extensive functions) 4. mono-functional agricultural rural areas, 5. rural areas with a predominance of agricultural functions, 6. rural areas with a predominance of tourism functions, 7. rural areas with a predominance of forest functions, 8. rural areas of mixed functions.

Delimitation of functional areas structure at the communes level has been conducted based on a set of the following diagnostic features that allow to classify a given commune to one of the eight functional types: population density, the number of economic entities registered in the REGON (National Official Business Register) system per 1000 inhabitants in productive age, balance of migration within 2008 – 2011 (a four-year period), the percentage share of agricultural land, percentage of farms producing for the market, the percentage share of farms running only agricultural business, number of overnight accommodation places provided per 1000 inhabitants, number of overnight accommodation tourist facilities per 100 km², percentage of the commune's land under forest, timber removals in m³/km². The primary source of statistical data were materials collected by the Local Data Bank of the Central Statistical Office (data as of the year 2011), supplemented by the data from the Agricultural Census (2002, 2010). The research has been conducted at the level of the communes of the Małopolskie Province and covered 168 urban-rural communes and rural communes of the Małopolskie Province, where the inhabitants could apply for the funds within the researched RDP 2007 – 2013 actions.

The results of the obtained classification of the functional types have been presented at map 1. Due to the fact that some of the functional types of communes are of inconsiderable number, the further analysis will cover only the following types of communes: areas undergoing the process of urbanization, multi-functional transition areas, communes of agricultural functions (combining two types of communes: mono-functional agricultural rural areas and rural areas with predominant agricultural functions), communes of tourism or forest functions (combining the communes of tourism functions with forest functions), communes of mixed functions. Out of 168 researched communes 21 (i.e. 12%) are areas undergoing the process of urbanization,

54 communes (32% of the total number of communes) are multi-functional transition areas, in 52 communes, i.e. 31% of the total number of communes, agricultural function is a predominating function, in 13 communes (8% of the total number of communes) tourism or forest functions are predominating functions, whereas 28 communes (17% of the total number of communes) can be defined as communes of mixed functions.

MAP. 1: Functional types of rural and urban-rural communes in Małopolskie Province



Source: author's own study

The researched communes of the Małopolskie Province are characterized by the favourable conditions for diversification of the functional structure. A vicinity of big cities stimulates the development of intensive functions of linear and point character

such as housing industry, services, trade or transportation. Attractiveness of the region in terms of nature and landscape as well as climate aspects ensures good conditions for the development of tourism, recreation and health-resort related business activities. As a result of the favourable conditions for agricultural activities or the lack of perspectives for the development of non-agricultural business the remaining areas are agricultural areas. All factors cause that Małopolskie Province is characterized by the spatial diversification of economic functions.

2. Use of EU funds for the researched actions at the level of the selected functional types of communes

Based on the data provided by the institution implementing the researched actions, i.e. the Małopolska Regional Department of the Agency for Restructuring and Modernisation of Agriculture, an analysis of the value of EU funds granted and paid to the beneficiaries of the selected actions, who are residents or have a seat in the

TAB. 1: Data related to the stage of implementation of the researched actions within RDP 2007 – 2013 at the level of the selected functional types of communes of the Małopolskie Province

Functional type of commune	No. of contracts	Value of subsidies granted [PLN]	Structure of subsidies granted	Value of subsidies paid [PLN]	Structure of subsidies paid
areas undergoing the process of urbanization	151	20,550,272.50	10.8%	10,686,866.00	11.0%
multi-functional transition areas	452	60,708,254.50	31.9%	29,989,130.10	30.9%
communes of agricultural functions	524	59,788,813.20	31.5%	34,776,587.04	35.8%
communes of tourism or forest functions	77	10,514,356.00	5.5%	4,591,766.00	4.7%
communes of mixed functions	290	38,543,107.85	20.3%	17,102,754.28	17.6%
Total	1 494	190,104,804.0	100.0%	97,147,103.42	100.0%

Source: author's own study based on ARMA data

researched communes, has been carried out. The analysis takes into consideration the functional type of a commune of the beneficiary. The figures related to the use of EU

funds at the level of the functional types of the communes according to the stage of implementation as of 16th July 2012 have been presented in table 1.

While analysing the data related to the values of granted subsidies at the level of the selected functional types of communes it must be stated that the largest part of the subsidies has been granted in the communes that are multi-functional transition areas. The Beneficiaries in those communes have been granted nearly 32% of the total value of the subsidies. A slightly lower amount has been granted to the beneficiaries in the communes of agricultural functions (31.5% of the total value of the subsidies). The beneficiaries from the communes of mixed functions have received a one fifth of the granted subsidies. The lowest amount of the funds has been granted for the projects carried out in the communes classified as areas undergoing the process of urbanization and those of tourism and forest functions. The distribution of values of the paid subsidies is similar, however, it should be noted that the funds allocated to the communes of agricultural functions are paid faster and constitute almost 36% of the total amount of the payments made.

TAB. 2: Data related to the stage of implementation of the researched actions within RDP 2007 – 2013 calculated per one commune of a given type

Functional type of commune	No. of communes, in which a project is carried out	Average no. of contracts in a commune of a given type	Average value of subsidies granted to the beneficiaries calculated per 1 commune of a given type [PLN]*	Average value of subsidies paid to the beneficiaries calculated per 1 commune of a given type [PLN]*
areas undergoing the process of urbanization	21	7.2	978,584.40	508,898.38
multi-functional transition areas	53	8.5	1,145,438.76	565,832.64
communes of agricultural functions	52	10.1	1,149,784.87	668,780.52
communes of tourism or forest	12	6.4	876,196.33	382,647.17
communes of mixed functions	27	10.7	1,427,522.51	633,435.34
Total	165	9.1	1,152,150.33	588,770.32

* includes only those communes where at least one investment co-financed by the funds for the researched actions has been carried out

Source: author's own study based on ARMA data

Due to the fact that particular types of communes vary in terms of their volume and in order to give an objective picture of the differentiation of use of EU funds at the level of the selected types of communes the data related to the stage of implementation of the researched actions has been calculated for an average commune of a given type (TAB. 2).

The results of the calculations indicate that the beneficiaries from the communes of mixed functions obtained definitely the largest amount of funds when calculated per statistical commune of a given type. The beneficiaries from the communes of agricultural functions and from those constituting multi-functional transition areas have presented a slightly lower activity, which resulted in a lower average value of the subsidies granted per one commune. The lowest value of funds per one commune has been obtained by the beneficiaries from the communes located in areas undergoing the process of urbanization and those of tourism or forest functions. The same sequence of particular groups of communes can be noticed in case of an average number of projects carried out in one commune of a given type. The analysis of the subsidies paid calculated per one commune of a given type have also revealed that as of the day of the analysis the value of the funds paid in an average commune is higher for the communes of agricultural functions, mixed functions and those communes that constitute multi-functional transition areas. The lowest amount of funds per one commune of a given type has been paid in the communes classified as areas undergoing the process of urbanization or those of tourism or forest functions.

Conclusion

The Małopolskie Province is characterized by an explicit spatial diversity of the economic functions performed in particular communes. A clear diversity in the volume of EU funds granted for the development of non-agricultural business activity in rural areas of the Małopolskie Province within the researched RDP 2007 – 2013 actions can be observed between the groups of communes belonging to the distinguished functional types. The conducted analysis indicates that in absolute terms the largest amount of funds has been granted to the beneficiaries in the communes that are multi-functional transition areas and in the communes of agricultural and mixed functions. Considerably lower amount of funds has been granted for the projects carried out in the communes

undergoing the process of urbanization and those of tourism or forest functions. Also the analysis of the value of subsidies per one commune of a given type indicates that in comparison with other types of the communes, the beneficiaries of those two types of communes appeared to be less active or less effective in applying for the funds allocated to the researched actions. Therefore, it can be stated, based on the performed analysis, that in the communes classified as those two functional types the importance of EU funds for changing the structure of economic functions in a commune is the least.

References:

- [1] BAŃSKI, J., STOLA, W., *Przemiany struktury przestrzennej i funkcjonalnej obszarów wiejskich w Polsce*, Studia Obszarów Wiejskich. Tom III, Komisja Obszarów Wiejskich, Polskie Towarzystwo Geograficzne, Zakład Graficzny UW, Warszawa 2002, ISSN 1642-4689
- [2] BAŃSKI, J., *Typy obszarów funkcjonalnych w Polsce*, Instytut Geografii i Przestrzennego Zagospodarowania PAN, Warszawa 2009
- [3] DUCZKOWSKA – MAŁYSZ, K., Typologia obszarów wiejskich - kryteria delimitacji w świetle doświadczeń krajów Unii Europejskiej, [w:] *Przekształcenia obszarów wiejskich Makroregionu Południowo - Zachodniego*, Tom 1: Typologia gmin pod względem poziomu i warunków rozwoju, pod red. Z. Więckowicz, Wydawnictwo Akademii Rolniczej we Wrocławiu, Wrocław 1998, s. 23 – 41, ISBN 8385582290
- [4] Program Rozwoju Obszarów Wiejskich na lata 2007 – 2013 (PROW 2007 – 2013), MRiRW, Warszawa, lipiec 2007, s. 293 – 294
- [5] STOLA, W., *Klasyfikacja funkcjonalna obszarów wiejskich Polski*. Próba metodyczna, Instytut Geografii i Przestrzennego Zagospodarowania PAN, Ossolineum, Wrocław – Warszawa – Kraków – Gdańsk – Łódź 1987, ISBN 83-04-02825-5
- [6] STOLA, W., *Struktura przestrzenna i klasyfikacja funkcjonalna obszarów wiejskich Polski*, Dokumentacja Geograficzna, Zeszyt 3, Instytut Geografii i Przestrzennego Zagospodarowania PAN, Warszawa 1993, ISSN 0012-5032

Hradec Economic Days

Volume 4

Issue 2

Double-blind peer-reviewed proceedings part V. of the international scientific conference Hradec Economic Days 2014 Economic

Development and Management of Regions

February 4th and 5th, 2014

Editor: Pavel Jedlička

Hradec Economic Days are published annually

Edition size: 350 pcs.

Publisher: University of Hradec Králové,

Publisher`s office: Rokitanského 62, Hradec Králové 3, 500 03, Czech Republic

VAT ID: CZ62690094

ISSN 2464-6059 (Print)

ISSN 2464-6067 (Online)

ISBN 978-80-7435-370-3