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# Journal of Applied Economic Sciences

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**Table of Contents** 

1	Alamelu <b>RAMACHANDRAN</b> , Selvabaskar <b>SIVASANKARA GANDHI</b> , Sivasundaram Anushan <b>CHANDRASEKARAN</b> <i>An empirical investigation of relationship between organisational</i> <i>strategy and total quality management practices in manufacturing</i> <i>units in Tamil Nadu</i>	7
2	Mária <b>ANTOŠOVÁ</b> , Bohuslava <b>MIHALČOVÁ</b> , Adriana <b>CSIKÓSOVÁ</b> Assessment of the balanced scorecard system functionality in Slovak companies	15
3	Marco <b>BIAGETTI,</b> Giulio <b>GUARINI</b> Wellbeing and internal migration in Italy: an econometric analysis	26
4	Sunghee <b>CHOI</b> The effect of oil prices on resional portfolios of Korean smal and medium enterprise features on region, sub-period, and measurement type of oil price changes	37
5	Marián <b>GÁL</b> , Jan <b>KRESTA</b> Indebtedness of municipalities and its influence on financing of sport: case study of Slovakia	47
6	Filiz <b>KONUK</b> , Feyyaz <b>ZEREN</b> , Şuayyip Doğuş <b>DEMİRCİ</b> Persistence of profitability in Turkey: evidence from insurance sector	57

7	Pavla <b>MACUROVÁ</b> , Karla <b>JURÁSKOVÁ</b> The trends in development of full logistics services	65
8	<i>Qaiser MUNIR</i> , Sook Ching <b>KOK</b> Does Malaysian gold bullion coin prices follow mean reversion or random walk?	76
9	Lea <b>NEDOMOVÁ</b> , Milos <b>MARYSKA</b> , Petr <b>DOUCEK</b> The enterprise architect role – and its mission in corporate information and communication technology – a Czech study	88
10	Wadim <b>STRIELKOWSKI</b> , Josef <b>ABRHÁM</b> , Jan <b>HERGET</b> Success factors of growth and development for small and medium enterprises in tourism sector	101
11	Ladislav <b>SUHÁNYI</b> , Alžbeta <b>SUHÁNYIOVÁ</b> Multi-criteria decision-making tool design for the investment decision-making of territorial self-government regions	110
12	Alagirisamy Kamatchi Subbiah <i>SUKUMARAN</i> <i>Business success versus failure neural</i> <i>network model for small and medium enterpsies</i>	123
13	Dominik <b>VYMĚTAL</b> , Petr <b>SUCHÁNEK</b> Value-chain modeling in e-commerce systems	134
14	Nataša <b>URBANČÍKOVÁ, Peter BURGER</b> Financing clusters from public funds in the European countries	148

# AN EMPIRICAL INVESTIGATION OF RELATIONSHIP BETWEEN ORGANISATIONAL STRATEGY AND TOTAL QUALITY MANAGEMENT PRACTICES IN MANUFACTURING UNITS IN TAMIL NADU

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#### Abstract

The major aim of the study is to identify the factors related to the implementation of Quality Management practices in manufacturing units from organization perspective, based on an empirical analysis and to identify the relationship between TQM implementation and organizational strategy. This study is limited to small manufacturing units registered with confederation of Indian Industries in Tamil Nadu. The instrument used in this study is a survey questionnaire. The samples of 110 units are selected for the study. The study implies that the presence of people involvement based organization strategy influenced the successful implementation of TQM and its success depends on the dimensions of top management involvement and organization culture which resulted in higher organizational performance. This encourages managers to accompany their TQM practices with the infusion and reinforcement of employee empowerment, shared vision, and style of an organization.

Keywords: manufacturing unit, organizational strategy, Tamil Nadu, TQM.

JEL Classification: M10, M11, M19

#### **1. Introduction**

Global competitive trend has made corporate to think of quality way of satisfying their customer. To compete in a global market, units must be equipped with the latest technology, up-todate information, skilled employees and advanced managerial skills. The concept of quality management originated as a consequence of the question of survival during tough competition. It is a people oriented approach and has many implications on the strategy of the organization. Thus, the present study focuses on whether the organizational strategy influences the implementation of quality management practices in manufacturing units and to recognize the relationship between the same.

#### 2. Review of literature

A thorough analysis of literature pinpoints that only selective organisations have made predominant continual improvements through quality programs and the success of TQM depends on organisation strategy, shared values, management style, and organizational structure (Robin Mann, Dennis Kehoe, 1993). Many researchers have identified the relationship between TQM practices and relevant factors like organisational strategy, culture. TQM and lean manufacturing recently become pervasive primary strategy for manufacturing performance enhancement (Anvari, 2011). Process Alignment and People Involvement are two key strategies for successful implementation of TQM. It provides useful insight into the organization that uses TQM as an organization strategic program (Richard *et al.*, 2004). Corporate case methods revealed that organisation may change their strategic approaches through TQM outcomes. Larger companies tend to gain greater benefits from TQM than smaller firms. The findings have implications for managers wishing to formulate a business strategy

based on TQM (Milé Terziovski, Danny Samson, 2000) and several authors have stressed the need for analysis of influence of strategy towards quality practices. It will lay out a simple, straightforward approach that how to utilize this new strategic management tool (Laza *et al.*, 1990). The study revealed that differences in TQM implementation depending on the selected strategy. It is also noticed that companies with greater degrees of co-alignment between their strategies and TQM are those with the highest levels of performance (Mar Fuentes *et al.*, 2006).

#### Conclusion

Manufacturing units are the backbone of economic growth. These units are the major sources of technological innovation and new products. TQM practices are essential for units to face competition in era of globalization. Hence the adoption of TQM becomes very important for the attainment of a sustainable development. To be effective, TQM practices must be associated with its organisation strategy. The results of the present study suggest that implementation of TQM must be correlated with people involvement strategy of the organisation.

The study provides a model of critical success factors of TQM practices. Including other dimensions of organisation, a comparative of TQM practices of manufacturing with those of service enterprises may be carried out. Further research methods using case studies are required to analyse the relationship between strategy and quality initiatives.

- [1] Anvari, A.R., Ismail, Y., and Hojjati, S.M.H. (2011). A study on Total Quality Management and lean manufacturing: through lean thinking approach, *World Applied Sciences Journal*, 12 (9): 1585-1596.
- [3] Flynn, B.B., Schroeder, R., Sakakibara, S. (1995). The impact of quality management practices on performance and competitive advantage, *Decision Sciences*, 26 (5): 659-691.
- [2] Garvin, D.A. (1998). *Managing Quality: The Strategic and Competitive Edge*, Free Press, New York.
- [7] Hung Yu-Yuan, R. (2004). The implementation of Total Quality Management strategy in Australia. Some empirical observations, *The Journal of American Academy of Business*, Cambridge, 5(1&2): 70-74.
- [4] Laza, R.W. and Wheaton, P.L. (1990). Recognizing the pitfalls in quality management, *Public Utilities Fortnightly*, April, 12: 17-21.
- [5] Mar Fuentes M., Molina, L.M. (2006). Total quality management, strategic, orientation and organisational performance: the case of Spanish Companies, *Total Quality Management*, 17(3): 303-323.
- [8] Mann, R., Kehoe, D. (1993). Factors affecting the implementation and success of TQM, *International Journal of Quality & Reliability Management*, 12(1): 11-23.
- [6] Ramachandran, A., Chidambaram, V., Swaminathan, V. and Kesavan, S. (2013). A Pragmatic Study on Waiting Line Strategies of an Indian Private Sector Bank, *Journal of Applied Economic Sciences*, 4(26): 405-416.
- [9] Terziovski M., Samson, D. (2000). The effect of company size on the relationship between TQM strategy and organisational performance, *The TQM Magazine*, 12(2): 144-149.
- [10] Youndt, M.A., Snell, S.A., Dean, Jr., J.W., Lepak, D.P. (1996). Human resource management, manufacturing strategy and firm performance, *Academy of Management Journal*, 39: 836-866.

# ASSESSMENT OF THE BALANCED SCORECARD SYSTEM FUNCTIONALITY IN SLOVAK COMPANIES

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#### Abstract:

Slovak companies record conflicting responses regarding the use of the balanced scorecard (BSC) system in practice. Apart from information on positive results there are reports referring to negative experiences, documenting the insufficient contribution of the BSC system. The starting point of the research described in this paper is based on the assumption that the BSC is not meeting the management expectations to the required level it was implemented into practice, yielding limited contribution, or reduced functionality. The results presented were aimed to verify the functionality or disfunctionality of the BSC system and identify its degree in those Slovak companies businesses where the methodology has been applied.

Keywords: Balanced scorecard, strategy, research, benefits BSC, functionality/dysfunctionality BSC.

JEL Classification: D24, L10, L25, M10, M21.

#### 1. Introduction

The methodology of the balanced scorecard (BSC) has been originally developed for performance measurement by Kaplan and Norton (2000), who were convinced that measuring company performance so "solely" on the basis of financial indicator is no longer sufficient and does not fully correspond to the reality. It has been spreading throughout the word since its inception. The fact is supported by lots of research findings of reputable institutions e.g. Balanced Scorecard Institute, Bain & Company etc., results of studies conducted by Hoque & James (2000), Ittner, Larcker & Randall (2003), Davis & Albright (2004), Lipe & Salterio (2002), Olson & Slater (2002), Malina & Selto (2001), Bilodeau & Rigby (2007).

Further research findings (Bilodeau, Rigby 2007) show substantial growth in the application of BSC systems in the world that started in the year 2002, accompanied with improved ordering of the rest of the tools supporting management, to have been in active use with as much as 65 % of companies since 2006. Currently, the BSC is occupying a prominent position among other tools of company management.

This contribution is presenting BSC methodology as being applied in Slovak companies, all these based on a survey performed in year 2010. With due respect to the original theoretical assumption of international authors (Kaplan, Norton 2001, 2005, Johnson, Scholes 2000, Horvath & Partners 2002, Vysušil 2004), as well as to the publications of local authors (Gavurová 2011, Mihalčová, Gavurová 2007, Slávik 1999), the authors of have focused their research on the verification of functionality or dysfunctionality of the BSC system in selected Slovak companies.

#### Conclusion

The contribution was oriented on the system of factors affecting the full functionality of the BSC methodology and the mutual relations among them. The research conducted helped identify and compare the expected and actual benefits of the BSC, measure of functionality and measure of dysfunctionality, further categorizing the causes of the status and the mutual relations between the individual causes with a representative sample of Slovak companies. As the problem of BSC is rather

extensive, the contribution is presenting only the selected outputs of the research mentioned. Not included are e.g. the quantification of benefits in the form of value-based indicators, rate of return of the resources invested when implementing and maintain the BSC in practice, reassessment of the causalities within the BSC system etc.

Based on the outputs of the research conducted in local companies, a list of potential benefits from applying the BSC methodology in practice was compiled. The 20 potential benefits were grouped by their contents into four main areas, i.e. in the area of strategy and goals, corporate culture, human research management and company performance management (Table 5).

#### Acknowledgements

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- [1] Ahn, H. (2001). Applying the balanced scorecard concept: an experience report. *Long Range Planning*, 34(4): 441-461.
- [2] Andersen, H. and Lawrie, G. (2002). Examining Opportunities for Improving Public Sector Governance through Better Strategic Management. *PMA Conference*, Boston: 13.
- [3] Antošová, M. (2012). Strategický manažment a rozhodovanie. Iura edition, Bratislava, 333.
- [4] Antošová, M. and Gallo, P. (2012). Uplatnenie metodiky Balance Scorecard v súkromnom podniku. *Maneko*, 4(2): 229-236.
- [6] Bilodeau, B. and Rigby, D. (2007). Management Tools and Trends 2007. [online] <u>http://www.bain.</u> <u>com/management\_tools/Management\_Tools\_and\_Trends\_2007.pdf</u>
- [7] Butler, A.L.S.R. and Neale, B. (1997). Linking the balanced scorecard to strategy. *Long Range Planning*, 30(2): 242-253.
- [8] Brewer, P. (2002). Putting Strategy into the Balanced Scorecard. Strategic Finance, 83(7): 44-52.
- [9] Cobbold, I.C., Lawrie, G.J.G. (2002). The Development of the Balanced Scorecard as a Strategic Management Tool. Paper presented at the Third International Conference on Performance Measurement and Management, Boston, MA, USA.
- [10] Eagleson, G.K. and Waldersee, R. (2000). Monitoring the strategically important: assessing and improving strategic tracking systems, Performance Measurement 2000: Past, Present and Future. *A. Neely Ed.*, Cranfield School of Management, Cranfield: 137-144.
- [11] Epstein, M.J. and Manzoni, J.F. (1997). The balanced scorecard and tableau de board: translating strategy into action. *Management Accounting*, 79(2): 28-36.
- [12] Gallo, P. (2013). Strategický manažment a controllingové analýzy. Dominanta, Prešov, 169.
- [13] Gavurová, B. (2011). Systém Balanced scorecard v podnikovom riadení. *Ekonomický časopis*, 59(2): 163-167.
- [14] Gavurová, B. and Jasovská, J. (2008). BSC v strategickom riadení podnikov. *Podniková revue*, 7(13–14): 33-52.
- [16] Johnson, G. and Scholes, K. (2000). Cesty k úspěšnému podniku. Computer Press, Praha, 803.
- [18] Kaplan, R.S. and Norton, D.P. (2005). *Balanced Scorecard. Strategický systém měření výkonnosti podniku*. Management Press, Praha, 268.
- [19] Kaplan, R.S. and Norton, D.P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Boston: Harvard Business School Press, 329.
- [20] Kaplan, R.S. and Norton, D.P. (1992). The balanced Scorecard: Measures that drive performance. *Harvard Business Review*, January-February 1992: 71-79. [online] <u>http://lgdata.s3-website-us-east-1.amazonaws.com/docs/130/770671/Balanced Scorecard Kaplan Article .pdf</u>
- [21] Kennerley, M.P. and Neely, A.D. (2000). Performance measurement frameworks a review. Paper presented at the 2<sup>nd</sup> International Conference on Performance Measurement, Cambridge, 291-298.
- [22] Lingle, J.H. and Schieman, W.A. (1996). From Balanced Scorecard to strategic gauges: is measurement worth it. *Management Review*, 85: 55-62.

- [23] Mihalčová, B. and Gavurová, B. (2007). Balanced Scorecard a jej problémy pri implementácii v slovenských podnikoch. *Ekonomika a Manažment podniku*, 5(2): 47-57.
- [24] Miyake, D. (2002). Beyond the Numbers. Intelligent Enterprise Magazine. [on/line] www.intelligententerprise.com/020726/512feat1\_1.jhtml
- [25] Olve, N., Roy, J. and Wetter, M. (1999). *Performance Drivers: A practical quid to using the Balanced Scorecard*. John Wiley, New York.
- [26] Schneiderman, A.M. (1999). Why Balanced Scorecard failed. *Journal of Strategic Performance Management*, 1999: 6-11.
- [27] Slávik, Š. (1999). Stratégia riadenia podniku. Sprint, Bratislava, 285.
- [28] Šoltés, V. and Gavurová, B. (2012). Application of the cross impact matrix method in problematic phases of the balanced scorecard system in private and public sector. *Journal of Applied Economic Sciences*, 8(1): 99-119.
- [29] Teplická, K. (2006). Multidimensional effect of the Balance scorecard in a manufacturing corporation. *Acta Montanistica Slovaca*, 11(3): 225-230.
- [30] Vysušil, J. (2004). Metoda Balanced scorecard v souvislostech: implementace a úspěšná realizace v řízení podniku. Profess Consulting, Praha, 119.
- \*\*\* Balanced Scorecard Institute. (2008). Best Practice Poll: So... How How Did You Measure Up? [online] <u>http://www.balancedscorecard.org/Portals/0/PDF/BalancedScorecardInstituteSurvey</u> <u>Results.pdf</u>
- \*\*\* Horvath & Partners. (2002). Balanced Scorecard v praxi. Profess Consulting, Praha, 386.
- \*\*\* JRC. Cross-Impact Analysis. 2008. [online] <u>http://forlearn.jrc.ec.europa.eu/guide/2scoping/meth</u> <u>cross-impact-analysis.htm</u>

# WELLBEING AND INTERNAL MIGRATION IN ITALY: AN ECONOMETRIC ANALYSIS<sup>1</sup>

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#### Abstract

We apply a double panel data econometric analysis (a static regional, for the period 1995-2011, and a provincial dynamic panel, for the period 2005-2011) for Italy, in order to evaluate which wellbeing factors can cause internal migration, by pointing out the relevance of subjective factors and economic variables. For what concerns social variables, we verify the Tiebout's hypothesis, according to which migration depends on the satisfaction of provision of public goods; furthermore, we consider the relevance of social cohesion in the migration process, according to the EU Regional Policies framework. As for the economic variables, we follow the Harrod-Todaro approach, according to which individuals migrate to improve their economic wellbeing related to labour market conditions.

Our results find that pull factors of internal migration are the high level of income per capita and the good perception of the quality of local services, while push factors of internal migration are the high perception of social insecurity and the huge level of unemployment with the latter increasing its influence during the crisis.

Keywords: internal migration, regional development, wellbeing, Tiebout's hypothesis.

JEL Classification: J11, R10, R58.

#### **1. Introduction**

Internal migrations are an economically relevant phenomenon for a number of reasons. Firstly, at global level, the amount of internal migrants is six times bigger than that of international migrants (UNDP, 2009). Secondly, in Italy, ever since the end of World War II, interregional migrations have been consistently larger than international in terms of amount, human capital intensity and displacement, duration (Berti, 2008). Thirdly, internal migrations can limit regional convergence in per capita income since migrants are mainly high-skilled individuals: the loss of (young) skilled labour force drags down human capital, making impossible the generation of virtuous circles of cumulative growth, resulting in an scanty level of economic development in the long run (Greenwood, 1997). Moreover, there are financial flows from Southern to Centre-Northern Italy in order to sustain young southern migrants living in precarious labour conditions in the North (Pugliese, 2009), especially in the earlier years of their experiences away from home. These financial flows contribute to deplete otherwise available cash and to sop it up towards the Centre-North. Finally, in Italy, at least since the second half of the 1990s, internal migrations from underdeveloped to developed areas have somewhat increased (SVIMEZ, 2007). For these reasons in this paper, we want to shed some brighter light on which factors (economic vs. social) related to wellbeing affect the choice of migrating among Italian

<sup>&</sup>lt;sup>1</sup> The views expressed in this article are those of the authors and in particular do not necessarily reflect those of the Department for the Development and Economic Cohesion. We would like to thank Filomena Maggino for helpful suggestions and anonymous referees. The usual disclaimer applies. A previous version of paper was presented at the First Conference of the AIQUAV (Italian Association for Studies on Quality of Life), *Quality of Life: Territory and Population*, Florence, July 2013.

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Regions. This is achieved by means of two thorough econometric analyses carried out at both static and dynamic levels, for Italian regions and provinces and the periods 1995-2011 and 2005-2011 respectively. In our view, the need for these two econometric analyses is given by two facts: 1) to confirm that the statistical links found at a higher territorial level are similar to those at a lower level; 2) to overcome the constraint given by the limited number of units of the regional analysis which makes a dynamic panel data analysis unfeasible.

Economic factors are those usually connected with labour market while social factors are more akin to concepts like quality of life (Cebula, 2009), quality of public services supplied and social cohesion. The introduction of variables related to people's perception is indeed the main valued added for the regional analysis, as in the literature, authors mainly used objective variables to explain the determinants of migration. In fact, in the analysis of migration and to the best of our knowledge, only Cadwallader (1992), measures the subjective perceptions of individuals on regional economic variables.

Furthermore, from a policy viewpoint, our approach is highly consistent with the Italian regional policy approach, where local actors have a proactive role. For what concerns the provincial analysis, the loss of subjective factors (unavailable at that territorial level) is compensated by the huge increase in observations that allows for a well-performed dynamic analysis. Our results show that while both economic and social factors do have an impact on internal migrations in Italy evaluated at regional level and in a static framework<sup>4</sup>, when a dynamic analysis is performed on Italian provinces (and thus when the t-1 migration rate is considered), social contexts measured by the crime rate are relevant throughout the whole period. Oppositely, among the economic factors considered, unemployment is less important than the standard of life until the outbreak of the European crisis: indeed, starting from 2008, unemployment becomes again the main cause of migrations. This fact bears witness of the hardship that households and individuals have been exposed to since 2008, which has never been recorded in the last sixty years. The paper is organised as follows: in section 2 the theoretical framework is presented. Section 3 briefly describes data. In section 4 the econometric model is introduced and results are shown, while section 5 concludes.

#### Conclusions

We have investigated the relevance of some socioeconomic factors for internal migration in Italy in the period 1995 - 2011, by applying a double panel data econometric analysis: a static regional and a provincial dynamic panel. According to our regional results, Italian internal migrations are influenced significantly by variables related to labor market and economic wellbeing and by factors related to the quality of life. In particular, the pull factors of internal migration are the high level of income per capita and the good perception of the quality of local railway services, while the push factors of internal migration are the high level of unemployment rate and the high perception of insecurity. When provinces are examined, results do not change much. However, a shift among the economic determinants (from the standard of life to the unemployment rate) is encountered, correspondent to the inception of the Eurozone crisis.

- [1] Andrienko Y., Guriev S. (2004). Determinants of interregional mobility in Russia. Evidence from panel data, *Economics of Transition*, 12 (1): 1–27.
- [2] Barca F. (2008). An Agenda for A Reformed Cohesion Policy a place-based approach to meeting *European Union challenges and expectations*, Economics and Econometrics Research Institute, EERI Research Paper Series No 06/2008.
- [3] Berger-Schmitt R. (2002). Assessing quality of life and living conditions to guide national policy. *Social Indicators Research Series*, 11: 403-428.
- [4] Bertelsmann Stiftung (2012). *Cohesion Radar: Measuring Cohesiveness. Social Cohesion in Germany a preliminary Review.* Jacobs University, Bremen.

<sup>&</sup>lt;sup>4</sup> Comparable results are obtained using fixed and random effects.

- [5] Berti, F. (2008). *Le migrazioni interne tra mobilità sociale e mobilità territoriale, in Emigrare nell'ombra. La precarietà delle nuove migrazioni interne*. Berti F. e Zanotelli F. (ed.) Franco Angeli.
- [6] Cadwallader, M.T. (1992) *Migration and residential mobility: Macro and micro approaches*. University of Wisconsin Press, Madison, WI, 1992.
- [7] Cebula, R.J. (2009). Migration and the Tiebout-Tullock Hypothesis Revisited, *American Journal* of Economics and Sociology, 68(2): 541-551.
- [8] Corsi, M., Guarini, G. (2011). Measuring progress of Italian regions: A classical approach, *Ekonomiaz, Basque Economic Journal*, 78: 342-369.
- [9] Deller S. C., Ottem T. (2001). Crime and the quality of life in Wisconsin counties, *Agricultural & Applied Economics*, Staff Paper No. 442.
- [10] Etzo, I. (2008). Internal migration: a review of the literature, MPRA Paper n. 8783.
- [11] Golini, A. (1974). Distribuzione della popolazione, migrazioni interne e urbanizzazione in Italia, Istituto di Demografia, Facoltà si Scienze Statistiche Demografiche ed Attuariali dell'Università di Roma.
- [12] Greenwood, M.J. (1997). Internal Migration in Developed Countries, in Mark R. Rosenzweig and Oded Stark, editors, *Handbook of Population and Family Economics*, Volume 1B, Amsterdam Elsevier, pp. 647-720.
- [13] Fachin, S. (2007). Long-run trends in internal migrations in Italy: A study in panel cointegration with dependent units, *Journal of Applied Econometrics*. 22 (2): 401-28.
- [14] Greenwood, M.J., Hunt, G.L. (2003). The early history of migration research. *International Regional Science Review*, 26: 3–37.
- [15] Harris J.R., Todaro, M.P. (1970). Migration, unemployment and development: A two sector analysis, *American Economic Review*, 60: 126-142.
- [16] Kearns, A., Forrest, R. (2000). Social cohesion and multilevel urban governance. *Urban Studies*, 37(5): 995-1017.
- [17] Marelli, E. (2006). L'immigrazione in Italia: fattori di attrazione e impatto a livello provinciale, *Economia e Società Regionali*, 2: 29-58.
- [18] Napolitano, O., Bonasia, M. (2010). Determinants of different internal migration trends: the Italian experience", *MPRA Paper* n. 21734.
- [19] Omtzigt, D.J. (2009). Survey on Social Inclusion: Theory and Policy, Report working paper.
- [20] Powdthavee, N. (2005). Unhappiness and Crime: Evidence from South Africa", *Economica*, 72: 531–547.
- [21] Pugliese, E. (2009). Emigrazione e trasformazioni sociali nel mezzogiorno, *QA Rivista dell'Associazione Rossi-Doria*, 2: 7-30.
- [22] Putnam, R. (2000). Bowling Alone, New York, Simon & Schuster.
- [23] Ritzen, J. (2001). Social Cohesion, Public Policy, and Economic Growth: Implications for OECD Countries, in J. F. Helliwell (Ed.), *The contribution of human and social capital to sustained wellbeing and growth* - International Symposium Report (pp. 291-309). Quebec.
- [24] Roodman, D. (2009). How to do xtabond2: an introduction to difference and system GMM in Stata, *StataCorp LP*, 9(1): 86-136.
- [25] Tiebout, C.M. (1956). A pure theory of local expenditures, *Journal of Political Economy*, 64(5): 416–24.
- [26] Van der Gaag, N., Van Wissen, L. (2008). Economic determinants of internal migration rates: a comparison across five European countries. *Tijdschrift voor Economische en Sociale Geografie* 99 (2): 209-222.
- [27] Viesti G. (2005). Nuove migrazioni. Il 'trasferimento' di forza lavoro giovane e qualificata dal Sud al Nord, Il Mulino, 4: 678-689.
- \*\*\* SVIMEZ Rapporto SVIMEZ 2007 sull'economia del Mezzogiorno, 2007.

- \*\*\* UNDP Overcoming barriers: Human mobility and development, Human Development Report 2009.
- \*\*\* Council of Europe "New Strategy and Council of Europe Action Plan for Social Cohesion", approved by the Committee of Ministers of the Council of Europe on 7 July, 2010.
- \*\*\* European Commission, *Investing in Europe's future*. Fifth report on economic, social and territorial cohesion, Bruxelles, 2010.
- \*\*\* European Foundation for the Improvement of Living and Working Conditions, Eurofound. *Regional Social Capital in Europe*, Dublin, 2005.
- \*\*\* Italian Government. Department for Development and Cohesion Policies, *Italian National Strategic Framework 2007-2013*, 2007.

# THE EFFECT OF OIL PRICES ON RESIONAL PORTFOLIOS OF KOREAN SMAL AND MEDIUM ENTREPRISE: FEATURES ON REGION, SUB-PERIOD, AND MEASUREMENT TYPE OF OIL PRICE CHANGES<sup>5</sup>

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#### Abstract

By making use of the newly constructed regional portfolios of Korean SMEs, this paper examines the effect of oil price changes on these portfolios returns. The results from the multifactor market model are as follows: (1) the portfolios classified in the capital area (Seoul, Incheon, and Gyeonggi-do-do) are less likely to be significantly exposed to oil price changes rather than others in non-capital area; (2) portfolios are more likely to be significantly exposed to oil prices changes when oil price changes are sizable; (3)portfolios are more likely to be significantly exposed to the type of oil price changes measured by the 'random-walk' assumption rather than by the 'GARCH (1,1)' process. These results suggest informative features on oil price exposures of Korean SMEs.

Keywords: oil price exposure, Korean SME, multifactor market model, GARCH.

#### JEL Classification: G12; L71

#### **1. Introduction**

As oil prices movements during the past decade have been dramatic, the research interest in the effect of oil price changes on the economy has recently grown. Skyrocketing from about \$40 per barrel in mid-2000s, crude oil prices finally reached the record-high in July, 2008 but sharply fell down by around a third of the record-high in December, 2008 due to the global financial crisis. Then oil prices resurged and tend to be moving around the level of \$100 during a few of years. Considering that oil is a crucial resource for the economy, it is highly presumed that the recent oil price changes affect economic activity through various channels. Yet, most of existing studies are macroeconomic perspectives by asking how macroeconomic variables, such as, GDP, consumption, inflation rate, etc., are affected by oil price changes.<sup>6</sup>

Unlike most of previous studies, this paper examines Korean SME portfolios returns and oil price changes from 2007 to 2011, when the changes are dramatically volatile. In specific, this paper investigates how the effect of oil price volatility on Korean SME portfolios is different by the region, sub-period, and measurement type of oil price volatility. This firm-level analysis is meaningful in that it reflects a microeconomic perspective and provides the features on oil price exposures of Koran SMEs which is the distinctive case study in the oil price exposure field.

#### **Concluding remarks**

This paper examines oil price exposure of region-based portfolios of Koran SMEs while the research interest in the effect of oil prices on economy grows as the oil prices dramatically changes. With 7 regional portfolios constructed by matching the information on major foreign trade locations in Korea and firm's headquarters (or primary production facility), the multifactor market model suggests the results as the followings.

First, among the 7 major regional portfolios, the portfolios grouped by the SMEs located in the capital area ('*Seoul'*, '*Gyeonggi-do-do'*, '*Incheon'*) are less likely to be exposed to oil prices rather

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<sup>&</sup>lt;sup>6</sup> For more details, see Section 2. Literature Review

than the portfolios grouped by SMES located in the 'non-capital-areas' ('*Daegu'*, '*Gyeongsangbuk-do'*, '*Busan'*, '*Gyeongsangnam-do'*). In particular, within the 'non-capital-areas' portfolios, '*Busan'* and '*Gyeongsangnam-do'*, are more likely to be significantly exposed. Second, regional portfolios are more likely to be significantly exposed to oil prices for the sub-periods when oil prices changes are much volatile rather than the sub-periods when oil prices changes are relatively stable. Third, regional portfolios of Korean SMEs are more likely to be significant exposed to the simple changes in oil prices rather than GARCH(1,1)-processed changes in oil prices.

These results provide implications to academic scholars as well as industry practitioners that Korean SMEs located in the non-capital areas need to make more effects for improving the capability of risk-managing on oil price fluctuations. In particular, the capability needs to be improved as soon as possible before the global oil market is unstable again since their exposure to oil prices tends to be more significant as the market state becomes unstable. Also, when estimating oil price exposure of Korean SMEs, the simple changes in oil prices based on 'random-walk' assumption are useful for capturing significant exposures rather than the most common GARCH (1,1).

Although the empirical analyses of this paper provide informative results on Korean SMEs' oil price exposures, but further works still remain for the next research. First, in order to divide 5 subperiods, it is better in terms of scientific treatment to employ a statistical discernment method, for instance, Markov-switching model. Second, it needs to undertake decomposition analysis for finding factors of sensitivity of Korean SMEs oil price exposure. Rather than using the exchange rates as an exogenous variable in eq. (1), it would be more interesting to consider the rate as an endogenous factor of Korean SMEs oil price exposures since it is known that they heavily depend on imported crude oil. Other firm-specific factors, such as, R&D, oil intensity, and so on, are also considerable.

- Ahn, S., Cha, S., Ko, Y., and Yoo, Y. (2008). Implied Cost of Equity Capital in Earnings-Based Valuation Model: Evidence from Korea, *Asia-Pacific Journal of Financial Studies*, 36 (4): 599-626.
- [2] Bredin, D., and Elder, J. (2011). US Oil Price Exposure: The Industry Effects, Midwest Finance Association 2012 Annual Meetings Paper. Available at SSRN: http://ssrn.com/abstract=1931447 or http://dx.doi.org/10.2139/ssrn.1931447
- [3] Chen, N. F., Roll, R., and Ross, S.A. (1986). Economic Forces and the Stock Market, *Journal of Business*, 59 (3): 383-403.
- [4] Choi, S. (2010). Estimating Exchange Rate Exposure of Trade-Intensive Firms: Application to Korean Oil Refiners and Petrochemicals, *Global Economic Review*, 39(3): 217-227, DOI: 10.1080/1226508X.2010.513144
- [5] Choi, S. (2012). Exchange Risk Exposure of Korean SMEs: Issues in Firm Location, Exchange Rate Type, and Exchange Rate Changes Size, *Procedia-Social and Behavioral Sciences*, 65: 860-886, <u>http://dx.doi.org/10.1016/j.sbspro.2012.11.211</u>
- [6] Gogineri, S. (2010). Oil and the Stock Market: An Industry Level Analysis, *The Financial Review*, 45(4): 995-1010, DOI: 10.1111/j.1540-6288.2010.00282.x
- [7] Hamilton, J.D. (1983). Oil and the Macroeconomy since World War II, *Journal of Political Economy*, 91(2): 228-48, http://www.jstor.org/stable/1832055.
- [8] Hamilton, J.D. (2009). Causes and Consequences of the Oil Shock of 2007-08, *Brookings Papers* on Economic Activity, 215-59.
- [9] Huang, R., Masulis, R., and Stoll, H. (1996). Energy Shocks and Financial Markets, *Journal of Futures Markets*, 16(1): 1-27.
- [10] Jones, C. and Kaul, G. (1996). Oil and the Stock Markets, Journal of Finance, 51(2): 463-491.
- [11] Kilian, L. and Park, C. (2009). The Impact of Oil Price Shocks on the US Stock Market, *International Economic Review*, 50(4): 1267-1287, DOI: 10.1111/j.1468-2354.2009.00568.x
- [12] Sadorsky, P. (2008). The Oil Price Exposure of Global Oil Companies, Applied Financial Economics Letters, 4(2): 93-96, DOI: 10.1080/17446540701537764

Journal of Applied Economic Sciences

# INDEBTEDNESS OF MUNICIPALITIES AND ITS INFLUENCE ON FINANCING OF SPORT: CASE STUDY OF SLOVAKIA

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#### Abstract:

Indebtedness of public administration has become a key issue of the economic debates and discussions in recent years. Growing public debt negatively influences the economic development and causes serious troubles to every country and its inhabitants. In a paper we analyze and examine the influence of growing indebtedness on municipalities' decision to finance sport. For our purpose, we chose eight capital cities of the Slovak high territorial units. We analyzed the development of indebtedness and financial health indicators within period 2009-2012. From obtained data we examined how indebtedness influences the decision of selected municipalities to finance and provide sport activities and services. Methodology and methods for data analysis are described in Section 2. We stated hypothesis that indebtedness in selected municipalities causes decreased financing of sport activities. We found out that indebtedness development has direct connections, impacts, and correlation on decision of municipality representatives. Further conclusions and discussion are part of Section 4. Paper is elaborated within national scientific research project VEGA 1/1195/12 Strategic interactions of the Slovak local municipalities in determining the tax rates.

Key words: indebtedness, municipalities, financing of sport, economic development.

JEL Classification: H72, H76, H63

#### **1. Introduction**

New position and functions of municipalities, obtained independence and sovereignty in 1990, opportunity to manage financial capital and own property motivated municipalities to new development. Needs of municipalities to invest and renew own infrastructure and to widen provided number of local public goods and services were so huge that municipalities suffered from lack of current revenues to cover all of them. Municipalities turned to capital markets.

Nowadays, when indebtedness of all levels of public budget structure became a vital problem of developed economies, it is important to focus attention and analyze causes of indebtedness and its influence on municipalities. While bigger municipalities are usually more capable to repay debt because of bigger budget size, smaller ones with lower budget volumes have become more risky. The higher indebtedness with decreasing current revenues causes insolvency and thus municipalities are not able to provide desired volume and quality of public goods and services.

For the purpose of our analysis in a paper, we chose eight regional municipalities in Slovakia which are the heads of higher territorial units in Slovakia. Not only that we analysed indebtedness and financial health indicators' development, we also searched the correlation between indebtedness of selected municipalities and their decision to finance sport in municipality. We chose the analysis of municipality indebtedness because it is a subject of the national research project VEGA 1/1195/12 Strategic interactions of the Slovak local municipalities in determining the tax rates.

Not only that we analysed the development of indebtedness within 2009-2012, we also aimed to determine whether high levels of municipalities' indebtedness have direct influence and impact on their decision to finance and provide sport activities and services.

We stated the following *hypothesis*: Indebtedness in selected municipalities causes decreased financing of sport activities.

Paper is divided into five Sections. Objectives and methodology are defined in Section 2. Section 3 deals with the Literature overview of focused topic. Analyses of indebtedness and financial health indicator development as well as discussions and conclusions are part of Section 4. We examined and calculated how indebtedness influences decision of municipality representatives to finance sport within the period of 2009-2012 in selected municipalities. We stated conclusions for analysed municipalities with both similar and specific trends in each of them. Final Section 5 summarizes facts and gives outcomes for future discussion.

#### Conclusion

In a paper we focused on the indebtedness of eight Slovak municipalities and its influence and impact on financing of sport activities. We found that general tendencies are equal in every municipality with no matter its economic performance, economic development or geographic and demographic position. The economic crisis hand in hand with drop of shared income tax from natural persons as a key income for municipalities alongside with purpose state and EU grants caused decreased finances to sport activities. Only few huge capital investments in specific periods due to organisation of big international competitions and events convinced municipality representatives to spend more on capital assets and thus to bring more capital to sport. These spending contributed to increased indebtedness. On the other hand, it did not mean the increase of current expenditures as explained in Section 4.

Stated hypothesis was confirmed. Indebtedness level and financial health of municipalities have direct impact on spending on sport (see few exceptions in Section 4). Growing indebtedness and the one attacking the legislative limits causes smaller support of sport. Worsen financial health indicator also contributed to lowered sport support. Therefore, the municipal representatives should be very caution about future borrowing. The level of indebtedness should decrease significantly. Sport is one the original competence belonging to municipalities. Its financing should not be only the matter of public capital; it is dependent on private one, too. But without municipality interest and contribution to its development, without capital investments to building of new or to reconstruction and modernisation of persisting sport facilities, there will always be lack of private capital and lack of sport interest from local inhabitants.

- [1] Andrejovská, A. (2012). Evaluation of the economic situation in municipalities using the ratio and absolute indicators. *Public administration and society*. 13(1): 102-108.
- [2] Djurović, J.M., Jelić, M.A., Radojičić, S.M. (2013). Municipal indebtedness and debt management. Annals of the Oradea University. *Fascicle of Management and Technological Engineering*.
- [3] Gál, M. (2012). Financial analysis of municipalities in Slovakia. *Tudományos Mozaik*: 9. kötet: második rész. Kalocsa: Tomori Pál Foiskola, 155-163.
- [4] Gál, M. (2010). Small and medium enterprises in times of the economic crisis: case study of Slovakia. *ERENET Profile*. 5(2): 29-35.
- [5] Horváthová, L. (2010). Financing local governments in the Slovak Republic. *Naukovij visnik Užhorodskovo universitetu*. 29(2): 267-281.
- [6] Maličká, L., Harčariková, M., Gazda, V. (2012). Determinants of local tax revenues in EU countries. *European Journal of Economics, Finance and Administrative Sciences*. 52: 120-126.
- [7] Maličká, L., Horváth, J., Gazda, V., Kubák, M. (2012). Fiscal decentralization and public debt in the Europeam Union. *Journal of Local Self-Government*. 10(3): 265-276.
- [8] Mirdala, R. (2013). Lessons learned from tax versus expenditure based fiscal consolidation in the European transition economies. *Journal of Applied Economic Sciences*. 8(1): 73-98.
- [9] Nothdurft, J., Weinberg, S. (2013). *The Municipal government debt crisis. The Heartland Institute and Truth in Accounting.* Accessible on <u>http://www.statedatalab.org/library/doclib/2013-Cook-county-financial-report.pdf</u>
- [10] Semmens, D. (2012). Municipal debt: Types, limitations and requirements. Montana Municipal Institute for Clerks, Treasurers and Finance Officers, Canada. Accessible on

http://www.msulocalgov.org/resources/Data%2FTraining%20Resources%2FMMCTFOA%2FM MCTFOA%202012%20Archive%2F405.2%20Debt%20Management.pdf

- [11] Tušan, R. (2012). Consolidation of the municipality accounting statement. *Public administration and society*. 13(2): 93-105.
- [12] Wołowiec, T., Skica T. (2013). The instruments of stimulating entrepreneurship by local government units (LGU's.). *Ekonomska Istraživanja Economic Research*. 26(4): 127-146.
- \*\*\* Internal financial statements and local budgets of Bratislava, Trnava, Trenčín, Nitra, Žilina, Banská Bystrica, Prešov, Košice (2009-2013).
- \*\*\* Statistic Office of the Slovak Republic (accessible on www.statistics.sk).
- \*\*\* Web portal of the Slovak Municipalities (accessible on <u>www.obce.ineko.sk</u>).
- \*\*\* European Statistic Office (accessible on <u>www.eurostat.com</u>).
- \*\*\* Act No. 369/1990 with further amendments on municipality constitution
- \*\*\* Act No. 583/2004 on budgetary rules of local municipalities
- \*\*\* Act No. 582/2004 on local taxes

# PERSISTENCE OF PROFITABILITY IN TURKEY: EVIDENCE FROM INSURANCE SECTOR

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#### Abstract

In recent years, the investigation of persistency of profit for insurance sector has become a significant subject of research with its increasing importance in economy. With this respect, by using the data of return on assets (ROA) and return on equity (ROE) of 7 insurance companies quoted in BIST (Stock Market of Istanbul) in the period from March 2005 till September 2013, the profit of these companies was investigated whether persistent or not via IPS (2003) without break and Panel LM (2005) with structural break unit root tests. As a result of study, by eliminating the findings via panel LM test that profit was observed persistent from model without break, profit was determined non-persistent in situation taken into account structural breaks. The reason of this situation can be competitive economic structure and effects of 2008 global financial crisis in the scope of being developing country of Turkey. Furthermore, these findings are supported by accomplished previous literature for Turkey.

Keywords: Turkish insurance sector, persistence of profitability, firm performance, Panel Unit Root Test.

JEL Classification: G22, L25, C23

#### **1. Introduction**

According to competitive hypothesis, the gained profits and suffered losses of businesses are temporary in the highly competitive environments (Agostino *et al.* 2005). In other words, competitive process eliminates all economic profits and losses in the long term. So, if one company is obtaining excessive profits, these mentioned profits encourage new competitors to enter the market and new competitors cause decrease in profits by offering same product in lower price. This also causes the decrease in profit margin. This process continuous until market profitability gets equal to competitive rate (Cuaresma and Gschwandtner, 2006). Similarly, companies profiting below average are either eliminated from market by activities of investor or taking precautions in order to reach average market profitability (MCmillan and Wohar, 2011).

Starting with Mueller (1977), a series of contributions aiming to analyze the permanence of profitability has appeared. In literature, while there are many studies aiming to determine the permanence of profits on manufacturing enterprises and banks, there are a few numbers of studies about insurance. However, insurance companies, which are one of the largest institutional investors for stock, bond and real estate markets, have an increasing significance because of increase of risks and uncertainties in most societies and being part of the general development of financial institutions (Outreville, 2013). Insurance companies, which are an important funding source for economy in especially developing countries, may affect economic growth through channels of marginal productivity of capital, saving rate, technological innovations and the cost of the intermediation (Pervan *et al.* 2013). Insurance companies are necessary elements of economic growth (Outreville, 2013). In many studies, the relationship between insurance market activities and GDP were tried to be

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revealed (Outreville, 1990; Haiss and Sümegi, 2008; Kugler and Ofoghi, 2005; Ward and Zurbruegg, 2000; Arena, 2008; Vadlamannati, 2008; Lee and Chiu, 2012; Chang *et al.* 2013; Akinlo, 2013).

There haven't been any studies about persistency of profits on insurance companies which developed rapidly by 25% compound annual growth rate (invest.gov.tr) between years 2002-2010 in Turkey and had importance place among finance sector. Besides, there haven't been any encountered studies about permanency of profit in literature of insurance sector except the study of Pervan *et al.* (2013) examining Croatia. In this respect, this paper will take significant place to fill the gap in this area.

#### **Conclusion and discussion**

In economies where the competition is intense, reached both profits and loss are temporary. On the other hand, it is possible to talk about the persistency of profits if there can be seen profits other than average in long-run. With globalized world, the significance of insurance sector in economy has increased. Thus, the place of insurance companies among financial markets is becoming important.

In this study, the persistency of profits of 7 insurance companies in BIST (Stock Market of Istanbul) is investigated via ROA and ROE as two well-known profitability indicators in the literature. The period spanning Mar-2005 till Sep-2013 was investigated by quarterly data. In study, first the profits for these companies were observed persistent by using IPS panel unit root test (2003).

Second, panel LM unit root test (2005) taking into account structural breaks was used, the findings of IPS test was shown after elimination. While some of series became stationary by Panel LM test with one break, whole panel became stationary by Panel LM test with two breaks. The hypothesis of persistency of profits is not valid for all companies examined in the study. This situation can be due to the competitive structure of markets of Turkey which is described as developing country, and global financial crisis occurred in the period of 2008. In fact, the break dates detected in panel LM test, intersect with the period of global financial crisis as supporting these findings.

In studies on Turkish banking sector, Bektaş (2007), Kaplan and Çelik (2008), Aslan and İskenderoğlu (2012) observed non-persistency of profits. Compared with these studies, the results of our study examining different sector also support the previous literature. Furthermore, in the study made by Pervan *et al.* (2013) on persistency of profits in insurance sector, they detected that the profits were persistent, but they became temporary during economic crisis periods. Thus, this paper concluded with more advanced results by taking into account structural breaks during economic crisis periods and criticizing the findings of this study.

As a result, it is more appropriate to hypothesize the non-persistency of profits in finance sector. However, in order to confirm the assumption, new comprehensive investigations containing other sectors in finance area must be the focal point of the following studies.

- [1] Agostino, M., Leone, L. and Trivieri, F. (2005). Profits persistence and ownership: evidence from the Italian banking sector, *Applied Economics*, 37(14): 1615–1621.
- [2] Akinlo, T. (2013). The causal relationship between insurance and economic growth in Nigeria (1986-2010), *Australian Journal of Business and Management Research*, 2(129): 49-57.
- [3] Arena, M. (2008). Does insurance market activity promote economic growth? A cross country study for industrialized and developing countries, *Journal of Risk and Insurance*, 75(4): 921–946.
- [4] Aslan, A. and Ömer İ. (2012). Türk Bankacılık Sektöründe Karlılığın Kalıcılığının İncelenmesi, *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 2, s.59-68.
- [5] Athanasoglou, Panayiotis P., Sophocles N. Brissimis, Matthaios D. Delis, (2008). Bank- specific, industry-specific and macroeconomic determinants of bank profitability, *Int. Fin. Markets, Inst. and Money* 18: 121–136.
- [6] Bayus, B., Erickson, G., Jacobson, R. (2003). The financial rewards of new product introductions in the personal computer industry, *Management Science*, 49(2): 198-210.
- [7] Bektas E. (2007). The persistence of profits in the Turkish Banking system, *Applied Economics Letters*, 14(3): 187–190.

- [8] Canarella, G., Miller, S., Nourayi, M., (2012). Firm profitability: mean reverting or random-walk behavior?, *University of Connecticut working papers*.
- [9] Chang, T., Chien-Chiang, L., and Chi-Hung, C. (2013). Does insurance activity promote economic growth? Further evidence based on bootstrap panel Granger causality test, *The European Journal of Finance*, 1: 1–24, DOI: 10.1080/1351847X.2012.757555
- [10] Cuaresma, J.C. and Gschwandtner, A. (2006). The competitive environment hypothesis revisited: non-linearity, nonstationarity and profit persistence, *Applied Economics*, 38: 465–472.
- [11] Flamini, V., Schumacher, L. and Calvin, A. McD. (2009). The determinants of commercial bank profitability in Sub-Saharan Africa, *IMF Working Paper*, No. 09/15. IMF, Washington, DC.
- [12] Geroski, P.A. and Jacquemin, A. (1988). The persistence of profits: A European comparison, *Economic Journal*, 98(391): 375–389.
- [13] Glen, J., Kevin, L., and Ajit, S. (2001). Persistence of profitability and competition in emerging markets, *Economics Letters*, 72(2): 247–253.
- [14] Goddard, J., Hong L., Molyneux, P. and Wilson, O.S.J. (2011). The Persistence of bank profit, *Journal of Banking & Finance*, 35(11): 2881-2890.
- [15] Goddard, J., Molyneux, P. and Wilson, O.S.J. (2004). Dynamics of growth and profitability in banking, *Journal of Money, Credit and Banking*, 36(6): 1069-1090.
- [16] Gschwandtner, A. (2005). Profit persistence in the "very" long-run: evidence from survivors and exiters, *Applied Economics*, 37(7): 793–806.
- [17] Gujarati, D. (2011). Temel Ekonometri, Çeviren: Ümit Şenesen, Gülay Günlük Şenesen, *Literatür Yayıncılık*.
- [18] Haiss, P. and Kjell, S. (2008), The relationship between insurance and economic growth in europe: a theoretical and empirical analysis, *Empirica*, 35: 405–431.
- [19] Hirsch, S. and Gschwandtner, A. (2013). Profit persistence in the food industry: evidence from five European countries, *European Review of Agricultural Economics*, 40(5): 741-759, doi: 10.1093/erae/jbt007
- [20] Im Kyung-So, Pesaran, M.H., Yongcheol, S. (2003). Testing for unit roots in heterogeneous panels, *Journal of Econometrics*, 115: 53 74.
- [21] Im Kyung-So, Junsoo Lee and Margie Tieslau (2005). Panel LM Unit Root Tests with Level Shifts, *Oxford Bulletin of Economics and Statistics*, 67(3): 393–419.
- [22] İskenderoğlu Ömer, Alper Aslan, Ilhan Öztürk (2011). Persistence of profit in Turkish banking firms: evidence from panel LM tests, *Actual Problems of Economics*, 10(124): 429 434.
- [23] Kambhampati, U.S. (1995). The Persistence of Profit Differentials in Indian Industry, *Applied Economics*, 27(4): 353–361.
- [24] Kaplan Muhittin and Tuncay Çelik (2008). The Persistence of Profitability and The Competition in The Turkish Banking Sector, *Erciyes Üniversitesi İktisadi İdari Bilimler Fakültesi Dergisi*, 30: 157-167.
- [25] Kugler M., and Ofoghi, R. (2005). Does Insurance Promote Economic Growth? Evidence from the UK, *University of Southampton Working paper*.
- [26] Lee Chien-Chiang and Yi-Bin Chiu (2012). The impact of real income on insurance premiums: evidence from panel data, *International Review of Economics and Finance*, 21, 1: 246–260.
- [27] Lee, J., and Strazicich, M.C. (2004). Minimum LM Unit Root Test with one structural break, *Working Papers* 04-17, Department of Economics, Appalachian State University.
- [28] Lee, J., Strazicich, M.C. (2003). Minimum Lagrange multiplier unit root test with two structural breaks, *The Review of Economics and Statistics*, 85 (4): 1082-1089.
- [29] Lee, Chien-Chiang, Meng-Fen Hsieh, (2013). Beyond bank competition and profitability: can moral hazard tell us more? *J. Financ Serv Res*, 44: 87–109.
- [30] Levonian, M.E. (1993). The Persistence of Bank Profits: What the Stock Market Implies, Working Papers in Applied Economic Theory, No. 93-15. *Federal Reserve Bank of San Francisco*, San Francisco

- [31] Maruyama, N., Hiroyuki, O. (2002), Does the persistence of profits' persist? A study of company profits in Japan 1964–1997, *International Journal of Industrial Organization*, 20, 10: 1513–1533.
- [32] Mcmillan, D.G. and Wohar, M.C. (2011). Profit Persistence Revisited: The case of the UK, *The Manchester School*, 79 (3): 510–527.
- [33] Mueller, D.C. (1977). The persistence of profits above the norm, *Economica*, 44(176): 369–380.
- [34] Mueller, D.C. (1986). Profits in the Long Run, Cambridge University Press, Cambridge.
- [35] Mueller, D.C. (1990). Profits and the process of competition, D. Mueller (Ed.), The Dynamics of Company Profits: An International Comparison, *Cambridge University Press*, Cambridge.
- [36] Odagiri, H., and Hideki, Y. (1986). A study of company profit-rate time series: Japan and the United States, *International Journal of Industrial Organization*, 4(1): 1–23.
- [37] Outreville, J. F. (2013). The relationship between insurance and economic development: 85 empirical papers for a review of the literature, *Risk Management and Insurance Review*, 16(1): 71-122.
- [38] Outreville, J. F. (1990). The economic significance of insurance markets in developing countries, *Journal of Risk and Insurance*, 57(3): 487–98.
- [39] Pervan, M, Arnerić, J., and Ćurak, M. (2013). The persistence of insurers' profitability, *Croatian Operational Research Review*, 4: 132-141.
- [40] Ramadan, I.Z., Qais, A.K. and Thair A. Kaddumi (2011). Determinants of bank profitability: evidence from Jordan, *International Journal of Academic Research*, 3(4): 180-191.
- [41] Roland, K.P. (1997). Profit Persistence in Large US Bank Holding Companies: An Empirical Investigation. Economics Working Paper, 97-2. *Office of the Comptroller of Currency*, Washington, DC.
- [42] Ruiz, I. (2003). About the theory and empirical analysis of the persistence of profit and its applicability to Colombia, *Ecos de Economía*, 16: 65 76.
- [43] Vadlamannati, K.C. (2008). Do insurance sector growth and reforms affect economic development? Empirical evidence from India, *The Journal of Applied Economic Research*, 2(43): 43–86.
- [44] Ward, D. and Zurbruegg, R. (2000). Does insurance promote economic growth? Evidence from OECD economies, *The Journal of Risk and Insurance*, 67(4): 489–506.
- [45] Yılancı, V., Zeren, F., Ari, A. (2013). Tüketim-Gelir Oranı Güneydoğu Asya Ülkelerinde Durağan Mı?: Panel Birim Kök Testi, *Yönetim ve Ekonomi Araştırmaları Dergisi*, 21.
- [46] Yurtoglu, B. Burçin (2004). Persistence of firm-level profitability in Turkey, *Applied Economics*, 36(6): 615–625.

# THE TRENDS IN DEVELOPMENT OF FULL LOGISTICS SERVICES

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#### Abstract:

The article presents the results of a research focused on identifying, understanding and synthesizing the current trends in the field of full logistics services. The character of the article is empirical and descriptive. The research was dealing with the activities of providers of full logistics services operating in the Czech Republic and working in the B2B segment. The searching was based on a combination of qualitative methods (monitoring, analysis of documents, interviews) with simple statistical methods. About 300 providers of full logistics services were identified in the Czech Republic. Their classifications according to size, ownership, scope of activities and transport modes used in their services were performed. More detailed findings about sample of 13 large providers were obtained. These findings were related to competition in the branch of full logistics services, approaches to solve the problems generated by crisis, empowering the integrated logistics solutions and exclusive partnership with customers as well as the organizational concentration within the branch of logistics services. In conclusion of the article the areas for further research are formulated.

Key words: third party logistics, fourth party logistics, full logistics services providers, contract logistics, supply chain management, outsourcing.

#### JEL Classification: M110

#### **1. Introduction**

The aim of this article is to present the results of a research focused on identifying, understanding and synthesizing the current trends in the field of full logistics services. The research was focused both on identifying the new requirements and challenges for logistics services providers, and on the directions, forms and practices that the providers apply to respond to this situation. The objects of the research were organizations providing full logistics services and operating in the Czech Republic. Their activities were studied in a global context.

We were looking for answers to the following research questions: What are the typical features of the providers of full logistics services operating in the Czech Republic? How do the requirements and conditions for the provider of full logistics services change? What shifts have been visible in the strategies and activities of the providers of full logistics services, related to the current crisis and competitors fight? How contribute the logistics providers to grow of integration in the supply chains?

The research process has combined qualitative and quantitative procedures. The main methods applied during the research included a content analysis of public databases, documents of the examined companies, press releases, as well as monitoring, interviews and simple statistical analysis.

Chapter 2 of this article provides a terminological definition of the subject-matter of this research. The 3<sup>rd</sup> chapter describes how the data were gathered and processed throughout the research. The research outcomes are presented in the 4th chapter. In the fifth chapter, you will find the synthesis and discussion of the obtained knowledge and also the suggestions for further research.

#### Conclusions and suggestions for future research

A synthesis of the findings gathered during the research helped us to find out that the foundation of nearly 300 organizations providing full logistics services in the Czech Republic in the last 20 years reflects the significant expansion of the line of business providing full logistics services. It corresponds with the global trend of development in this field. The convenient location of the Czech Republic in the middle of Europe, the modern transport and storage infrastructure, the availability of

qualified labour force and the large volumes of flows of goods - these are the factors that attract not only local logistics companies, but especially a number of multinational logistics operators, into this line of business. The logistics providers situated here have the wide territorial action radius. The special phenomenon is that logistics capacities located in the Czech Republic are frequently used as centres serving clients in other countries.

The survey acknowledged a big dynamics and innovation agility within the field of full logistics services and also the fact, that business in this field is becoming more and more difficult. The development trends of full logistics services are born from the conflicts of various factors, including: increasing demand for more complex and more integrated logistics solutions, requirements for acceleration of the flow, price competition intensified by the continuing economic crisis, environmental limits and increasing prices of inputs.

Crucial innovations of the provided services are brought by major providers that have the necessary potential to do so. The survey acknowledged that they have to do the hard work in order to sustain its position and achieve the required profitability. It is expected that a number of smaller logistics service providers can have problems to react effectively on the increased customer requirements and they will be pushed aside to role of subcontractors for major providers.

The most significant identified trends are:

- interconnection of capacities and extension of the territory where the providers of logistics services operate by means of organizational concentration;
- acceptance of long-term responsibility for a large part of the supply chain in order to facilitate an exclusive partnership with customers;
- deeper and deeper penetration of providers of logistics service into the structure of supply chains, takeover of activities which used to be domain of producers or traders, and creation of entirely new activities adding benefits to the supply chains operation.

These signs of integration within the structure and operation of supply chains can increase the potential for achieving synergy effects. Some of large providers have done a big step towards 4PL because their contract logistics begins to include not only the physical flows ensuring, but also some elements of supply chain management for their clients. However there is a question of when the expansion of the scope of business activities of logistics providers hits on the limits of manageability by a single entity.

The article presents the outcomes of research probe focused on mapping and understanding the current situation and the ongoing trends in the field of full logistics services. Given the nature of the used methods of data acquisition, the presented findings have the character of evidence or signals that will represent the subject of further verification using more demanding methods. The created database containing information on the providers of full logistics services is the take-off platform for this purpose.

The suitable topics for further research can be the development of horizontal cooperation between the providers of logistics services and also the prerequisites of existing providers necessary to take over the role of supply chain integrators.

#### Acknowledgement

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- [1] Ludwig, Ch. (2013). Gefco changes organisation and strategy. Automotive Logistics, 2013, July September: 10 – 12. [cit. 2013-7-1]. <u>http://www.automotivelogisticsmagazine.com/finished-vehicle-logistics/gefco-changes-organisation-and-strategy</u>
- [2] Ludvík, L., Peterková, J. (2013). Specifics of size structure and managing role of the large companies in enterprise environment in the Czech Republic, *Journal of Applied Economic Sciences*, 1(23): 63 – 72.
- [3] Marasco, A. (2008). Third-party logistics: A literature review, *International Journal of Production Economicsm*, 113: 127 147.

- [4] Novák, R., Zelený, L., Pernica, P., Kolář, P. (2011). *Přepravní, zasílatelské a logistické služby*. First Edition. Wolters Kluwer ČR.
- [5] Win, A. (2008). The value a 4PL provider can contribute to an organization, *International Journal* of *Physical Distribution & Logistics Management*, 38 (9): 674-684.
- [6] Wrobel, H., Klaus, P. (2009). Projektanbahnung in der Kontraktlogistik. Eine empirische Studie zum Status Quo und zu den Erfolgsfaktoren im Vertrieb und im Einkauf von Kontraktlogistikdienstleistungen. First Edition. Fraunhofer Verlag.
- \*\*\* Atoz Logistics. 2012. Logistická kniha seznamů 2012. Systémy Logistiky.
- \*\*\* DB Schenker (2013). Každý týden po železnici z Číny do České republiky. [cit. 2013-10-23]. www.schenker.cz/log-cz-cz/start/novinky/.
- \*\*\* Bizbiz. http://www.bizbiz.cz/.
- \*\*\* Justice. http://portal.justice.cz/
- \*\*\* Logistics (2013a). Budoucnost vidíme v inteligentní logistice. Logistika, 2013 (7-8): 26 29.
- \*\*\* Logistics (2013b). European Food Network. Logistika, 2013 (9): 10.

# DOES MALAYSIAN GOLD BULLION COIN PRICES FOLLOW MEAN REVERSION OR RANDOM WALK?

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#### Abstract:

Mainly past studies used security prices to test the random walk theory. Not much attention is given to gold bullion coin prices. Furthermore, past literature emphasised on the developed countries' markets to test the random walk theory for gold prices. However, the evidence for developing countries' markets is lacking. In addition to this, several important events happened in the past decade seem to have affected the gold prices. Therefore, the purpose of this study is to test for the presence of a random walk in the series of Malaysian gold bullion coin (1oz) daily prices, ranging from July 18<sup>th</sup> 2001 to May 11<sup>th</sup> 2012, by incorporating the structural break in the series. Past studies on testing the random walk theory of gold prices used tradition unit root tests without incorporating structural breaks. In contrast, this study applies Zivot and Andrews (1992) one-break and Lumsdaine and Papell (1997) two-break unit root tests. Furthermore, we also provided the empirical evidences based on traditional unit root tests to compare the results with the prior studies on this topic.

The main finding is that Malaysian gold bullion coin prices follow mean reversion, implying that the market is inefficient and the impact of shocks is transitory. We also capture important break dates in the series. The finding has implications for econometric modelling, in particular forecasting and structural breaks. The structural breaks captured in the series reflect that investors are responsive to market sentiment. Furthermore, as our empirical results show mean reversion, therefore, investors can exploit past price trend to get abnormal profit. This paper adds to the literature on random walk theory of gold prices, by providing the evidence on Malaysian gold bullion coin prices. In our knowledge, no previous research tested the random walk theory of gold prices on Malaysia, by using structural break unit root tests.

Key words: random walk, mean reversion, structural breaks, unit-root tests, gold bullion coins, developing economy.

JEL Classification: C22, G14.

#### **1. Introduction**

The gold investment has become increasingly important aside from others, such as stocks, bonds, unit trusts, and currencies. Gold investment gains its momentum for some reasons: gold can be a store of value in addition to a nation's currency; investors perceive that gold can be used for inflation-hedging; some investors tend to speculate in the gold market for abnormal returns; and long-term investors seek for capital gain from gold investment as they believe gold price will increase with time, because the supply of gold is limited. Current literature has been highlighting the importance of gold investment. For instances, Smith (2002: 671) mentioned that the stock markets in the Unites States, Europe, and elsewhere were badly affected by the catastrophic event of September 11<sup>th</sup> 2011, and over the same period, gold price surged showing increasing interest among investors in gold as a safe haven; and Narayan *et al.* (2010: 3299) stated that oil price surged instigates gold investment to hedge for inflation.

Gold bullion is a popular investment choice for gold investors. It is known that the return on gold investment is highly dependent on capital gain, in which investors will usually exploit the differences between the buying and selling prices. Gold is unlike stocks, because stocks provide streams of dividend in addition to price fluctuations, indeed, for gold, only price fluctuations are relevant (Smith, 2002: 671). Thus, price trend forecast remains vital from the viewpoint of gold

investors. With this concern, it is crucial to find out whether the gold bullion series follow a process of random walk which neglects the feasibility of price trend forecast, or a process of mean reversion supporting the superiority of technical analysis. By practice, foregoing will imply whether gold investors should commit for a simply buy-and-hold strategy or time the market.

Random walk theory is considerably important for the gold market. According to Smith (2002: 671), the return on gold investment is much depending on price fluctuations. Investors are interested to know whether price trend forecast is useful in this market, which can be indicated by whether the gold bullion series follow a process of random walk. In the model of random walk, it is assumed that price changes are independent random variables, which conform to some probability distribution (Fama, 1963: 420; 1965a: 35). The model implies that the sequence or the order of past returns is of no consequence in assessing the distributions of future returns (Fama, 1970: 387). Samuelson (1965: 41) stated that, "In competitive markets, there is a buyer for every seller. If one could be sure that a price will rise, it would have already risen". In brief, foregoing reflects that future prices are unpredictable based on past price trend. Random walk is consistent with the weak-form efficient market hypothesis (EMH), asserting that market is competitive and current prices fully reflect all available information. Thus, random walk would neglect the superiority of technical analysis in price trend forecast. On the other hand, mean reversion is the tendency for stocks with high returns today to experience low returns in the future, and for stocks with low returns today to experience high returns in the future (Hubbard, 2008: 218). Mean reversion implies that prices will eventually move back towards the historical average in the series. Therefore, investors can utilize historical means to predict future price movement. Thus, mean reversion would support technical analysis. Nonetheless, when market is efficient the impact of shock will be permanent. Conversely, it will be transitory (see Narayan and Narayan, 2007: 241; Munir et al., 2012: 9-10).

The purpose of this study is to test for the presence of a random walk in the series of Malaysian gold bullion coin (1oz) daily prices, ranging from July 18<sup>th</sup> 2001 to May 11<sup>th</sup> 2012. The main contributions of this paper are as following: First, very little researches have examined the random walk theory for gold bullion coin series. Mainly past studies used security prices to test the random walk theory (Narayan and Smyth, 2004, 2006; Narayan, 2005, 2006, 2008; Munir *et al.*, 2012; Nayak, 2012). Distinctively, this study examines the random walk theory for gold bullion coin series, which this is rarely been emphasized by existing studies. The rationale is that the testing of random walk hypothesis will give finding showing the right investment strategy for gold investors. If the series follow random walk, the market is efficient, and this neglects the value of technical analysis. Therefore, a simple buy-and-hold strategy is proposed. In contrast, if mean reversion is found in the series, it implies that prediction on future price movement can be performed using past price trend. Thus, it supports the use of technical analysis to obtain abnormal returns. Mean reversion also indicates that the market is inefficient.

Second, most of the previous literature emphasized on the developed countries' markets to test the random walk theory for gold prices (Tschoegl, 1978; Abken, 1980; Selvanathan, 1991; Smith, 2002). There seems to be very little attention is paid on the markets of developing countries. Obviously, literature provides insufficient evidence for developing countries. As a consequence, a comparison on the findings of developed and developing countries cannot be performed. In the light of this, this study contributes to the body of literature using Malaysia as a developing country, to provide an insight of whether the developing country's market is consistent with the developed countries' markets.

Third, several important events happened in the sample period of this study, spanning from July 18<sup>th</sup> 2001 to May 11<sup>th</sup> 2012. These events are likely to have affected the prices of the gold bullion coin. For instances, the September 11 attacks (in 2001), the Bali bombings (in October 2002), the Malaysian 11<sup>th</sup> General Election (in March 2004), the world crude oil price fluctuations (from 2004 to 2006), the magnitude 7.7 earthquake off the south-western coast of Java, Indonesia (in July 2006), the global recession (in 2008), the outbreak of H1N1 influenza (in 2009) and others. Therefore, this study is motivated to analyze whether or not the market of gold bullion coin is affected by particular external shocks, in turns reflecting investors' response to market sentiment. In order to capture the above mentioned structural breaks, this study is applying Zivot and Andrews (1992) one break unit-root test, and Lumsdaine and Papell (1997) two-break unit-root test. Random walk process is supported when the gold bullion coin series is found nonstationary. If the series exhibits mean reversion, it inversely

indicates the feasibility of future price prediction based on past price trend. Lastly, for comparison, we also apply battery of univariate unit root tests without structural break in testing the random walk hypothesis.

The rest of the paper is structured as follows. Section 2 reviews the empirical studies on the random walk theory. Section 3 discusses the empirical methodology used in this study. Section 4 reports the results from Zivot and Andrews (1992), and Lumsdaine and Papell (1997) tests. Section 5 concludes.

#### Conclusion

This study tested the random walk hypothesis for Malaysian gold bullion coin prices, by addressing the issue of structural break. We apply Zivot and Andrew (1992) one break unit-root test, and Lumsdaine and Papell (1997) two-break unit-root test on the daily prices of Malaysian gold bullion coin (1 oz.), for the period of July 18<sup>th</sup> 2001 to May 11<sup>th</sup> 2012. Our finding provides support for mean reversion, showing the violation of efficient market hypothesis. Meantime, we identify significant break dates, and capture important events giving significant impact to the gold coin series. Since mean reversion is shown, we suggest that the impact of shock is only transitory. The finding offers considerable support for technical analysis.

The rationale for this paper is that previous studies which have employed unit- root tests without a structural break for gold prices in developing countries have found little evidence for mean reversion (see e.g. Li and Wang, 2011). The results from these studies stand in contrast with evidence from unit root testing of gold prices in developed markets which provides more support for mean reversion (Tschoegl, 1978; Smith, 2002). The failure to find mean reversion in gold prices in developing countries in studies which have not allowed for structural break might reflect the failure to account for an additional structural break. As Lumsdaine and Papell (1997) point out, given the loss of power when ignoring one structural break in standard unit root tests, it is logical to expect a similar loss of power when ignoring two or more breaks in one-break tests. This paper has thus considered the random walk hypothesis employing daily data on Malaysian gold bullion coin (1 oz.) prices over the period 2001 to 2012, using unit root tests with one and two structural breaks in the trend. Overall, our main finding is that we found the support of mean reversion in the gold coin prices from Zivot and Andrews (1992) and Lumsdaine and Papell (1997) structural break unit root tests.

- [1] Abken, P.A. (1980). The economics of gold price movements, *Economic Review*, March/April, Federal Reserve Bank of Richmond, pp. 3-13.
- [2] Ben-David, D., Lumsdaine, R., Papell, D.H. (2003). Unit Root, Postwar Slowdowns and Long-Run Growth: Evidence from Two Structural Breaks, *Empirical Economics*, 28: 303-319.
- [3] Chaudhuri, K., Wu, Y. (2003). Random Walk versus breaking trend in stock prices: evidence from emerging markets, *Journal of Banking and Finance*, 27: 575-592.
- [4] Dickey, D.A., Fuller, W.A. (1981). Likelihood ratio statistics for autoregressive time series with a Unit Root, *Econometrica*, 49(4): 1057-1072.
- [5] Elliott, G., Rothenberg, T. J., Stock, J. H. (1996). Efficient Tests for an Autoregressive Unit Root, *Econometrica*, 64: 813–836.
- [6] Fama, E.F. (1963). Mandelbrot and the stable Paretian hypothesis, *The Journal of Business*, 36(4): 420-429.
- [7] Fama, E.F. (1965a). The behavior of Stock-Market prices, *The Journal of Business*, 38(1): 34-105.
- [8] Fama, E.F. (1965b). Random walks in stock market prices. *Financial Analysts Journal*, 21(5): 55-59.
- [9] Fama, E.F. (1970). Efficient capital markets: a review of theory and empirical work, *The Journal of Finance*, 25(2): 383-417.
- [10] Fama, E.F. (1991). Efficient capital markets: II, *The Journal of Finance*, Volume XLVI, (5): 1575-1617.
- [11] Fama, E.F., French, K.R. (1988). Permanent and temporary components of stock prices, *Journal of Political Economy*, 96(2): 246-273.

- [12] Hubbard, R.G. (2008). *Money, the Financial System, and the Economy*, 6<sup>th</sup> Edition, Boston: Pearson Education.
- [13] Huber, P. (1997). Stock market returns in thin markets: evidence from the Vienna Stock Exchange, *Applied Financial Economics*, 7: 493-498.
- [14] Kim, J.H. (2006). Wild bootstrapping variance ratio tests, *Economics Letters*, 92: 38-43.
- [15] Kim, J.H. (2009). Automatic variance ratio test under conditional heteroskedasticity, *Finance Research Letters*, 6: 179-185.
- [16] Kim, J.H., Shamsuddin, A. (2008). Are Asian stock markets efficient? Evidence from new multiple variance ratio tests, *Journal of Empirical Finance*, 15: 518-532.
- [17] Li, X., Wang, Y. (2011). Information Transmitting Efficiency in China Gold Sport Market: a Random Walk Test with Wild and Bootstrap Variance Ratio Method, *Conference Proceedings*, International Conference on Business Computing and Global Information, pp. 251-254.
- [18] Lo, A., MacKinlay, A.C. (1988). Stock market prices do not follow random walks: evidence from a simple specification test. *Review of Financial Studies*, 1(1): 41-66.
- [19] Lumsdaine, R., Papell, D. (1997). Multiple trend breaks and the Unit Root hypothesis, *Review of Economics and Statistics*, 79: 212–218.
- [20] Mehrara, M., Moeini, A., Ahrari, M., Varahrami, V. (2010). Inefficiency in Gold Market, *International Research Journal of Finance and Economics*, 43: 58-68.
- [21] Munir, Q., Kok, S.C., Furouka, F., Mansur, K. (2012). The efficient market hypothesis revisited: evidence from the small open ASEAN Stock Markets, *The Singapore Economic Review*, 57(3): 1-12.
- [23] Narayan, P.K. (2005). Are the Australian and New Zealand stock prices nonlinear with a unit root?, *Applied Economics*, 37: 2161-2166.
- [24] Narayan, P.K. (2006). The behavior of US stock prices: Evidence from a threshold autoregressive model, *Mathematics and Computers in Simulation*, 71: 103-108.
- [25] Narayan, P.K. (2008). Do shocks to G7 stock prices have a permanent effect? Evidence from panel unit root tests with structural change, *Mathematics and Computers in Simulation*, 77: 369-373.
- [26] Narayan, P.K., Smyth, R. (2004). Is South Korea's Stock market efficient? *Applied Economics Letters*, 11: 707-710.
- [27] Narayan, P.K., Smyth, R. (2006). Random Walk versus Multiple Trend Breaks in Stock Prices: Evidence from 15 European Markets, *Applied Financial Economic Letters*, 2: 1-7.
- [28] Narayan, P.K., Narayan, S. (2007). Mean reversion in stock prices: new evidence from panel unit root tests, *Studies in Economics and Finance*, 24(3): 233-244.
- [29] Narayan, P.K., Narayan, S., Zheng, X. (2010). Gold and oil futures markets: Are markets efficient?, *Applied Energy*, 87(10): 3299-3303.
- [30] Nayak, K.M. (2012). A study of random walk hypothesis of selected scripts listed on NSE, *A Journal of Economics and Management*, 2(4): 508-517.
- [31] Paytakhti Oskooe, S.A. (2011). The Random Walk Hypothesis in Emerging Stock Market-Evidence from Nonlinear Fourier Unit Root Test, *Proceedings of the World Congress on Engineering*, Volume 1 - WCE 2011, July 6-8, London, UK.
- [32] Perron, P. (1989). The Great Crash, the Oil Price Shock and the Unit Root Hypothesis, *Econometrica*, 57: 1361–1401.
- [33] Phillips, P. C. B., Perron, P. (1988). Testing for a Unit Root in Time Series Regression, *Biometrika*, 75: 335–346.
- [34] Poterba, J.M., Summers, L.H. (1987). Mean Reversion in Stock Prices: Evidence and Implications, *NBER Working Paper Series*, 2343: 1-36.
- [35] Samuelson, P.A. (1965). Proof that properly anticipated prices fluctuate randomly, *Industrial Management Review*, 6(22): 41-49.

- [36] Schwert, G.W. (2003). Anomalies and Market Efficiency, *Handbook of the Economics of Finance*, Elsevier Science, Chapter 15, pp. 937-960.
- [37] Selvanathan, E.A. (1991). A note on the accuracy of business economists' gold price forecasts, *Australian Journal of Management*, 16(1):91-95.
- [38] Sen, A. (2003). On Unit-root tests when alternative is a trend-break stationary process, *Journal of Business and Economics Statistics*, 21: 174-184.
- [39] Shively, Philip A. (2003). The nonlinear dynamics of stock prices, *The Quarterly Review of Economics and Finance*, 43: 505-517.
- [40] Smith, G. (2002). Tests of the random walk hypothesis for London gold prices, *Applied Economics Letters*, 9: 671-674.
- [41] Tschoegl, A.E. (1978). Weak-Form Efficiency in the Gold Market, *Working Paper WP1013-78*, Alfred P. Sloan School of Management.
- [42] Wang, M.L., Wang, C.P. (2010). Relationships among oil price, gold price, exchange rate and international stock markets, *International Research Journal of Finance and Economics*, 47: 80-89.
- [43] Wright, J. (2000). Alternative variance-ratio tests using ranks and signs, *Journal of Business and Economics Statistics*, 18: 1-9.
- [44] Zivot, E., Andrews, D.W.K. (1992). Further evidence on the great crash, the oil price shock and the Unit Root hypothesis, *Journal of Business and Economic Statistics*, 10: 251-270.

# THE ENTERPRISE ARCHITECT ROLE – AND ITS MISSION IN CORPORATE INFORMATION AND COMMUNICATION TECHNOLOGY – A CZECH STUDY

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**Abstract:** 

The article analyses the relatively new role "Enterprise Architect" in Czech companies. Enterprise Architect is a specific role, which supervises the architecture of the whole corporate system and the design of its parts and methodologies in the ICT area. For these tasks, the people in the role "Enterprise Architect" possess a wide spectrum of knowledge and skills. We then define the scope of the Enterprise Architect role in the companies; we describe its core activities in practice and the concrete jobs that can be carried out by the role. All, that is set against the backdrop of the Czech Republic's labor market. In view of the market structure, we analyze these requirements from multiple aspects, dominated by the company size and dependence of the company on using ICT. The article includes a presentation of our research methodology, including the solution for measuring the knowledge in the different knowledge domains. The principles of the methodology are confronted with the approaches that were used in surveys conducted in other countries. In the end, the identified requirements for this role are formulated as well as their dependence on the monitored impacts of these requirements on the options for educating of experts in universities.

Keywords: enterprise architect, knowledge profile, corporate ICT.

JEL Classification: A23, J01, J21, J24, O15

#### **1. Introduction**

With the development of information and communication technologies (ICT), both the requirements for the expertise of all roles in departments and sections of the corporate ICT are changing. In this respect, it is important to answer the questions connected with *the changes to competences and qualifications* of the ICT expert staff (Skrbek and Ehleman 2006). Qualifications and competencies can be investigated from many points of view. One of these is the view of the factors influencing the fluctuation of staff in companies (Joseph *et al.* 2007), the total concept of ICT competencies for some ICT roles are described by (CEPIS 2012b). Other concepts, which rather have the character of executive views, can be found, for example, in (Doucek, Maryska and Novotny 2012; Sudzina, Pucihar and Lenart 2011; Veber 2009; Vodacek and Vodackova 2001).

The aim of this paper is analysis of knowledge required by companies for the role Enterprise Architect that is becoming more and more important in current time (Brown, P.C. 2011; NUS 2009) as one of the roles that significantly interconnect the top management level with the ICT management. (CIO 2007; Roser, Muller and Bauer 2011). Increasing importance of the Enterprise Architect role is proved by the researches among companies (Doucek, Maryska and Novotny 2012; Maryska, Novotny and Doucek 2010) and analysis of surveys realized by labor portal in the Czech Republic (Mediacom 2012) that shown us that there is lack of well-educated Enterprise Architects professionals in the Czech Republic. The analysis presented here is based on the similar research can be realized in the Czech Republic, because authors are familiar with this local labor market. Nevertheless research is possible to realize over the world because we provide detailed methodology, descriptions etc.

In order to be able to investigate the requirements of the market for the role Enterprise Architect, first we had to define this role. The main source for definition of role was, on the one hand, the theoretical information provided in particular by the Council of European Professionals Informatics Societies (CEPIS). In this analysis, CEPIS defines 21 main roles in the ICT area including the role Enterprise Architect which is characterized by a detailed description (CEPIS 2012a). On the other hand we have applied also approach of the Software Engineering Institute, Carnegie Mellon University (SEICMU) that derives the position of the Enterprise Architect role in corporation (SEICMU 2009). As compared with (CEPIS 2012a), the SEICMU describes also hierarchy of roles in the company.

Employees working in the Enterprise Architect role are jointly responsible for the process of investment decisions the objective of which is promotion of achieving the corporate mission and strategy (CEPIS 2012a). This includes both the identification of potential investment programs, i.e., for instance, the development in the area of hardware and software, but also identification of errors in managing the company's ICT platform that cause the company not achieving its mission and strategy. The Enterprise Architect role also provides advices to managers whether and what investment in ICT should be made in the companies, evaluates how investments in ICT could improve the achievement of the corporate strategy etc.

This implies that the Enterprise Architect is responsible both for the area of analysis and the area of design of company's ICT (Opengroup 2012; SEICMU 2009). Opengroup (The Open Group 2009) also specifies the different knowledge and skills for the roles of corporate ICT system architects as follows. They break them down into:

- Framework Skills Areas;
- Business Skills and Methods;
- Enterprise Architecture Skills.

This approach is similar to approach of (ITCP 2012) which divides skills and knowledge into following four groups and 13 subgroups:

- Skills and Knowledge "Broad" ICT Knowledge, Specialist ICT Knowledge;
- Professional knowledge Ethics and CoP, Security and Privacy, ICT Legal Issues, ICT in Context of Organizations;
- Competency and Responsibility Autonomy, Influence, Complexity, Business Skills;
- Character References, Publications of Applicants, Serious Convictions.

Our research focused on the group "Skills and Knowledge". Other important sources of our research were more oriented to the assessment of the ICT knowledge are presented in Core Body of Knowledge (ITCP 2012) and The Skills Framework for the Information Age – SFIA Framework (ACS 2012; SFIA 2012).

Current situation at the Czech local labor market can be described as discrepancy between requirements of enterprises on Enterprise Architect's knowledge with knowledge that offers university ICT study programs. This finding is confirmed by another research made by the team at the University of Zagreb (Varga, Stiffler and Luzar-Stiffler 2004) and by team in Saudi Arabia (Al-Jabri, Fraihat 2005). These teams confirm our findings that there is a big discrepancy between companies' expectations about potential graduates' knowledge and real knowledge of graduates. From our point of view it is really important that (Varga, Stiffler and Luzar-Stiffler 2004) use in their research knowledge structure similar to our research methodology. The reasons and gaps that formed motivation for the research about Enterprise Architect role and that were confirmed by the research were:

- There is felt lack of Enterprise Architect specialists on the Czech labor market;
- There is known what knowledge companies expect from specialists in the role Enterprise Architect;
- New study courses and specializations are prepared by us and these should cover companies' requirements on this role.

The difference between requirements of enterprises on Enterprise Architect's knowledge and university ICT study programs is identified as the gap that should be reduced by universities based on the communication between enterprises' and universities' representatives. Our research should help to close this gap through identification what knowledge companies expect from the Enterprise Architect role.

#### Conclusions

The article, based on the conditions of a small European economy, identifies the practical requirement on the Enterprise Architect role. Less than 10 percent of respondents consider this role vital for the operation of the company.

The Enterprise Architect role is relatively new on the labor market in the Czech Republic and universities don't provide education for this role because they don't know what knowledge should be provided.

Current study programs of universities do not include enough curricula that would prepare professionals for the Enterprise Architect role. In our opinion, this is caused by the fact that the Enterprise Architect role unifies in it the requirements on theoretical knowledge and on experience obtained by a prolonged practice in real situations of managing corporate ICT as well.

The main results from the research in this article are as follows:

For business:

- The research summarizes requirements of companies on the role Enterprise Architects according to the number of employees and on the level of corporate dependency on ICT.
- The companies who put relatively high requirements on the knowledge connected to the Enterprise Architect role must at the same time realize that it is no easy task to find and hire such a professional. This is also confirmed by the results of (The Open Group, 2009).

#### For academics:

- The research provides to the universities information what knowledge the companies expect from the employees in the role Enterprise Architect.
- The size of company or dependence on ICT does not have to be taken into account the impact of size or dependence on ICT is not significant.
- Study programs that prepare students for the role Enterprise Architect have to provide not only ICT knowledge but they have to provide also non-ICT knowledge that enables to Enterprise Architect communicate with representatives of non-ICT departments.
- The universities *can* prepare "universal" well-educated type of Enterprise Architects for all sectors in the economics because the requirements of companies are not too different in analyzed sectors.

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- [1] Al-Jabri, I., and Fraihat, M.H. (2005). Professionals in Saudi Arabia. <u>http://faculty.kfupm.edu.sa/</u> <u>MISAC/ imjabri/pub/IIMA1.pdf</u> (accessed June 14, 2013)
- [2] Brown, P.C. (2011). TIBCO Architecture Fundamentals. Addison-Wesley.
- [3] Doucek, P., Maryska, M., and Novotny, O. (2012). Requirements on the competence of ICT managers and their coverage by the educational system experience in the Czech Republic. *Journal of Business Economics and Management*. iFirst1:24, DOI: 10.3846/16111699.2012.658436
- [4] Doucek, P., Novotný, O., Maryška, M., Nedomová, L. (2011). Capital in ICT Competitiveness of Czech ICT Graduates. In: CONFENIS 2011 Re-conceptualizing Enterprise Information Systems [flashdisk]. Aalborg, 16. 10. 2011 – 18. 10. 2011. Aalborg: CIP, pp. 71–86.
- [5] Doucek, P., Maryska, M., and Novotny, O. (2013). Analýza souladu obsahu ICT studijních oborů s požadavky praxe v České republiky. *E+M. Ekonomie a Management*, Volume XVI, 3: 148–161.
- [6] Hanclova, J., and Doucek, P. (2011). Education and ICT Sector in the EU (Panel-National Application). Praha 09.06.2011 10.06.2011. In: *Efficiency and Responsibility in Education*. Praha: Czech University of Life Sciences in Prague, s. 84–92. WOS: 000300799300010
- [7] Joseph, D., NG, K.-Y., Koh, C., and Ang, S. (2007). Turnover of information technology professionals: a narrative review, meta-analytic structural equation modeling, and model development. *MIS Quarterly*, 31(3): 547:577.

- [8] Kimball, R. (2012). *The Data Warehouse Toolkit: The Complete Guide to Dimensional Modeling*. 2<sup>nd</sup> Edition, John Wiley&Sons.
- [9] Kunstova, R. (2012). Changes in Position of the IT Department in Organizations, in 19<sup>th</sup> Interdisciplinarity Information Management Talks, Jindrichuv Hradec, Linz: Trauner Verlag universitat, WOS: 000299 185000007
- [10] Lavalleé, P. (2007). Indirect Sampling, Springer Science + Business media, LL.C.
- [11] Maryska, M., Novotny, O., and Doucek, P. 2010. ICT Knowledge Analysis of University Graduates. Jindřichův Hradec, 08.09.2010 – 10.09.2010. In: *IDIMT-2010 Information Technology* – *HumanValues, Innovation and Economy*. Linz: Trauner Verlag universitat, pp. 125–135. WOS: 000288345500013
- [12] Maryska, M. (2012). Requirements of Small and Medium Companies on ICT Professionals' Knowledge. Jindřichův Hradec, 12.09.2012 – 14.09.2012. In: *IDIMT-2012*. Linz: Trauner Verlag universitat, pp. 195–202.
- [13] Maryska, M., Doucek, P., Mikovcova, H., and Nedomova, L. (2013). "Foreign Languages" Knowledge Analysis of Applicant at the University of Economics, Prague. Valašské Meziříčí 28.08.2013 – 30.08.2013. In: *Strategic Management and its Support by Information Systems*. Opava: TU FE, pp. 115–123.
- [14] Roser, S., Muller, J., and Bauer, B. (2011). An evaluation and decision method for ICT architectures for cross-organizational business process coordination, *Information Systems and E-Business Management*, 9: 51-88, DOI: 10.1007/s10257-010-0141-5
- [15] Skrbek, J., and Ehleman, J. (2006). Replika Project as an Example of European Way to the Creation of Shareable Common Educational Space. In: *IDIMT-2006*, 14<sup>th</sup> Conference on Interdisciplinary Information Management Talks. Book Series: Schriftenreihe Informatik, pp. 343-354. Linz: Trauner Verlag universitat. ISBN 3-85499-049-9
- [16] Strawman, J. (2004). Computing curricula 2004 overview report including a guide to under graduate degree programmes. In: *Computing Strawman Draft*. ACM/AIS/IEEE, 1.
- [17] Strawman, J. (2012). Computer Science Curricula 2013. Strawman Draft. February 2012. <u>http://ai.stanford.edu/users/sahami/CS2013//strawman-draft/cs2013-strawman.pdf</u> (accessed June 14, 2013).
- [18] Sudzina, F., Pucihar, A. and Lenart, G. (2011). Impact of ERP Systems Implementation: A Case of Slovenian Companies. In *Organizational Science Development: Future Organization*. Portorož, Slovenia: University of Maribor. pp. 1287-1295.
- [19] Thompson, S.K. (2012). *Sampling* (Wiley Series in Probability and Statistics), John Willey and Sons, Inc., 3<sup>rd</sup> Edition.
- [20] Varga, M., Stiffler, Ch., and Luzar-Stiffler, V. (2004). Evaluating IT Knowledge Requirements for Business Professionals. <u>http://bib.irb.hr/datoteka/149808.Evaluating IT\_Knowledge\_Requirements for Business Professionals ITI2004.pdf</u> (accessed June 14, 2013).
- [33] Veber, J. (2009). *Management. Základy moderní manažerské přístupy, výkonnost a prosperita.*. Praha: Management Press, 733 pp.
- [34] Vodacek, L., and Vodackova, O. (2001). *Management. Teorie a praxe v informační společnosti.*4. rozšíř. vyd. Praha: Management Press, 314 pp.
- \*\*\* ACS. (2012). Information for Skills Assessment Applicants. <u>http://www.acs.org.au/index.cfm?</u> action=show&conID=skillassessment
- \*\*\* CEPIS. (2012). *Professional e-Competence in Europe*. Council of European Professional Informatics Societies. <u>http://www.cepis.org/media/</u> (accessed February 2, 2012).
- \*\*\* CEPIS. (2012b). *EUCIP e-CompetenceBrochureInterior*. <u>http://www.cepis.org/\_media/CEPIS\_</u> <u>ECOMPETENCE\_BROCHURE\_INTERIOR\_10OCT\_LR1.pdf</u> (accessed February 4, 2013).
- \*\*\* CIO. (2007). The Rising Importance of the Enterprise Architect. <u>http://www.cio.com/</u> article/101401/The Rising Importance of the Enterprise Architec (accessed February 7, 2012).

- \*\*\* ITCP. (2012). New Zeland Information Technology Certified Professional. http://www.itcp.org.nz/detail/areas (accessed June 13, 2013).
- \*\*\* Mediacom. (2012). *Chybi IT odborníci, firmy musí využít outsourcing služeb*. <u>http://www.mediakom.cz/cs-web/index.php</u> (accessed June 13, 2013).
- \*\*\* NUS. (2009). *National University of Singapore. The Emerging Role of the Enterprise Architect.* <u>http://www.iss.nus.edu.sg/iss/catalyst\_display.jsp?artid=1378&type=9&rid=45&cid=25</u> (accessed February 7, 2013).
- \*\*\* OECD. (2010). Information Technology Outlook 2010, Paris, OECD Publishing, 299 pp., ISBN 978-92-64-08873-3
- \*\*\* SEICMU. (2009). Software Engineering Institute. The Role and Development of an Enterprise Architect. <u>http://www.sei.cmu.edu/library/assets/Developing\_Enterprise\_Architects.pdf</u> (accessed February 7, 2013).
- \*\*\* SFIA. (2012). *Skills Framework for the Information Age*. <u>http://www.sfia.org.uk/cdv4/index.html</u> (accessed June 14, 2013).
- \*\*\* The Open Group. (2009). The Open Group Architecture Framework (TOGAF).
- \*\*\* Opengroup. (2012). Architecture Skills Framework. <u>http://pubs.opengroup.org/architecture</u> /togaf8-doc/arch/chap30.html (accessed February 20, 2012).

# SUCCESS FACTORS OF GROWTH AND DEVELOPMENT FOR SMALL AND MEDIUM ENTERPRISES IN TOURISM SECTOR

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#### Abstract

Polish SMEs are the key aspect for the development of Polish economy. They can be a solution to reducing the unemployment, improving the economic situation, soothing social tensions and increasing the quality of life in Poland. SMEs provide employment opportunities for Polish citizens, and engage in local issues and contribute to sustainable economic development. Therefore, they are crucial for helping Polish economy by cushioning the impact of institutional changes caused by Poland's transition to a capitalist economy.

The aim of this research is to identify factors influencing the success of Polish SMEs in tourism sector (measured by the gross profit per employee). Our results show that being a middle-aged owner/manager who established an enterprise because he or she wanted to achieve self-realization or experience risk and run a one-person, or sole-trader enterprise that had certificates for its products, used Broadband Internet connection and was located in the province in the proximity of large cities increased the probability of achieving enterprise success.

Keywords: SMEs, economies in transition, entrepreneurship, tourism, Poland, enterprise success.

**JEL:** C23, D22, L26, P20

#### **1. Introduction**

Small and medium enterprises (SMEs) are of crucial importance for the development of the entire Polish economy. Poland is a post-communist country that has undergone various transformational changes, including the breaking up and consequent rebuilding of economic and social institutions, particularly that of entrepreneurship (Abrham, 2011). Although private business in some limited form have always existed in Poland, even in the times of the Communist regime, the structural changes of the 1990s caused unemployment, a decrease in production and economic stagnation in the country. Even though the Polish economy has achieved stable economic growth (on average 3-4% annually), the impact of the system's changes is still apparent (Zientara, 2009).

The high level of unemployment and the GDP per capita below the EU average are still their main distinguishing features. This is mainly a result of the poverty and other problems in Polish regions. Thus, Polish small and micro enterprises represent one of the best means how to improve the situation in Poland. Small firms' engagement in local issues, creation of new jobs and opportunities for people makes them one of the key factors in the economic development of Poland. Therefore, the success of Polish SMEs that constitute most of Polish SMEs is closely connected to the improvement of the quality of life in Poland. This is, therefore, the main reason why the researchers should be interested in defining this success and identifying its factors (Mullins, 1996).

And this does not only go to the researchers. Policy-makers and relevant stakeholders responsible for SMEs development and promotion should also be interested in what predetermines the success of SMEs in Poland. This knowledge might be crucial in devising targeted policies aimed at supporting successful SMEs development and growth (Variyam and Kraybill, 1992; or Chancharat and Chancharat, 2013).

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This paper is structured as follows: Section 2 provides the comprehensive overview of the research literature that is dealing with the concept of SMEs success. Section 3 outlines the main hypothesis and describes the data that was used in this study. Section 4 presents the empirical model of the success of SMEs in tourism sector and discusses in detail its main outcomes. Section 5 concludes with some closing remarks and policy implications for the future.

#### Conclusions

The results of the small model of enterprise success can be summarized in the following way: being a middle-aged owner/manager and running the tourism-oriented SME that is located in Mazowieckie province all increase the probability of making more profit per employee. While being a younger or older owner/manager and running an enterprise that is located in Warmia-Mazury province all reduce the probability of increasing enterprise profit per employee (thus, its success).

In general, it seems appropriate to assume that the purpose of SMEs policies is to promote growth and success of enterprises, enhancing employment creation and increasing welfare in Polish regions and through this improve the quality of life in Polish regions. Usually, there are central and local governments who create these policies. There are many aspects and levels of governmental assistance. However, the most important steps central and local governments can do with regard to SMEs are the following:

- Improvement of the regulation environment;
- Using public assistance for strengthening the sector of SMEs;
- Deepening the knowledge on the impact of public assistance on the conditions of the sector of SMEs.

Moreover, the question arises: *What is the most appropriate enterprise polices would be in the context of Polish economy*? This question gains special importance with regard to Polish experience with economic transition, when old formal and informal socialist institutions were destroyed and new formal and informal institutions of business and entrepreneurship are still under construction. With regard to this, policies targeted at Polish SMEs should take into account Poland's local specifics and problems. There are no blueprints (i.e. copying enterprise support policies from developed countries) that can be easily used. This is due to the fact that the situation that persists in transition economies is very specific, and their impacts cannot be adequately envisaged.

Regulation environment is still seen by the majority of Polish SMEs as the main barrier for their operation and existence. That is why creation of more favourable conditions for the functioning of SMEs requires an in-depth improvement. This is of specific relevance for Polish SMEs that are bounded by the regulation environment and have difficulties in accessing public assistance. These firms are interested in practical results, whilst the dissemination which is done on the public and local governments' level often focuses on "unpractical measures" (such as preparing reports and organizing conferences).

Perhaps the most crucial aspect in the creation of good regulatory environment is the creation of regulatory institutions that would have some expertise about the situation in Polish regions. In developed democracies there is a strong level of social control over these institutions (e.g. social pressure, lobbying, tradition and the political culture). Therefore, in order to secure their functioning in a post-socialist economy, such as Poland, there is a strong urge for creation of some verification mechanisms.

Public assistance, especially the EU structural funds, can be of a great assistance for Polish SMEs. The only problem is claiming these funds by small firms. In general, taking into consideration the existing practices for providing funding from the EU structural funds, it immediately becomes apparent that the procedures of applying for the public assistance might be simplified. This is especially important for opening public funding for Polish SMEs which have no time, human and intellectual resources for dealing with the paperwork and long application process. A number of things can be done in order to simplify the procedure of getting structural funds for Polish SMEs, namely: (i) limiting the bureaucracy and the paperwork necessary for applying for the EU funding and (ii) eliminating formal barriers (firms' eligibility). It often happens that SMEs have to put together multiple applications and overcome a number of other difficulties just to find out that they are not eligible for funding due to some conceptual reasons (size, credit history).

In order to create policies that would help SMEs, Polish government should have a good overview of small firms' problems and achievements. In today's Poland there is big disproportion in the information that enterprises have to provide when they apply for public assistance and the information researchers can obtain about enterprises. Therefore, it appears that Polish officials know more about enterprises than researches. With regard to this, it is believed that some specific steps should be made by the Polish government. These steps might include the following: hiring specialists for preparing in-depth analyses of economic situation in Polish enterprises, viewing small but relatively homogenous samples of enterprises, constructing specific tools for assessment of the small enterprises sector situation as well as coordination of empirical research. Perhaps, the experience of some EU Member States that are particularly successful in getting the EU structural funding can be implemented in Poland.

Therefore, it seems that Polish stakeholders need to think about undertaking some practical steps with regard to small enterprises. Generally, there is a clear demand for specialists with a good knowledge of EU Institutions as well as researchers capable of creating a holistic and comprehensive picture of Polish SMEs. If such people cannot be found in Poland, perhaps, foreign specialists can be hired to prepare the entrepreneurial strategy for Poland. A very clear and transparent strategy that would envisage some practical steps can considerably increase the utility from assistance to the Polish small enterprises: less money would be spent in vain and more help will be directed to the areas where it is needed.

These and other actions should be undertaken as soon as possible. Relevant Polish stakeholders should understand that Polish economy needs success. Successful economy will never be able to exist without successful institution of entrepreneurship. Polish SMEs that play a crucial role in the creation of this institution and contributing to the positive overall economic development in Poland clearly constitute the key aspect of this success.

- [1] Abrham, J. (2011). Rural development and regional disparities of the new EU Member States. *Agricultural Economics*, 57(6): 288-296.
- [2] Besser, T. (1999). Community involvement and the perception of success among small business operators in Small Towns. *Journal of Small Business Management*, 37(4): 16-30.
- [3] Bogdanoiu, C.L. (2008). Risk taking in economical financial activity. *Journal of Applied Economic Sciences*, 2(4): 79-84.
- [4] Chancharat S., Chancharat, N. (2013). Technical efficiency of Thailand small and medium enterprise: the application of data envelopment analysis. *Journal of Applied Economic Sciences*, 2(24): 154-164.
- [5] Driessen, M., Zwart, P. (2006). *The role of the entrepreneur in small business success: the Entrepreneurship Scan*, University of Groningen, Netherlands.
- [6] Fratostiteanu, C. (2010). Guidelines for promoting science, technology and technical-scientific creativity by analyzing the companies' performances, in the context of the globalized economy. *Journal of Applied Economic Sciences*, 3(13): 247-257.
- [7] Gaskill, L.R., Van Auken, H., Manning, R. (1993). A factor analytic study of the perceived causes of small business failure. *Journal of Small Business Management*, 31(4): 18-31.
- [8] Grumbach, K., Selby, J., Damberg, C., Bindman, A., Quesenberry Jr, Ch., Truman, A., and Uratsu, C. (1999). Resolving the gatekeeper conundrum. *JAMA: The Journal of the American Medical Association*, 282(3): 261-266.
- [9] Guarini, G. (2013). Technological break-even point and labour productivity: theoretical and empirical aspects. *Journal of Applied Economic Sciences*, 2(24): 198-209.
- [10] Hashi, I. (2001). Financial and institutional barriers to SME growth in Albania: results of an enterprise survey. *MOST: Economic Policy in Transitional Economies*, 11(3): 221-238.
- [11] Hausman, J. (1978). Specification tests in econometrics. Econometrica, 46(6): 1251-1271.
- [12] Honig, B. (1998). The human, financial and social capital of Jamaican micro-entrepreneurs, Working Paper, Tel Aviv International School of Management, Israel.

- [13] Keats, B., Bracker, J. (1988). Toward a theory of small firm. performance: A conceptual model. *American Journal of Small Business*, 12(4): 41-58.
- [14] Kotey, B., Meredith, G. (1997). Relationships among owner/manager personal values, business strategies and enterprise performance. *Journal of Small Business Management*, 35(2): 37-64.
- [15] Mullins, J. (1996). Early growth decisions of entrepreneurs: the influence of competency and prior performance under changing market conditions. *Journal of Business Venturing*, 11(2): 89– 105.
- [16] Perry, M. (1999). Small Firms and Network Economies. Rutledge, London
- [17] Storey, D. (1994). Understanding the Small Business Sector. London, Routledge, London
- [18] Strielkowski, W. (2012). Factors That Determine Success of Small and Medium Enterprises. The Role of Internal and External Factors. *Journal of Applied Economic Sciences*, 3(21): 334-350.
- [19] Variyam, J., Kraybill, D. (1992). Empirical Evidence on Determinants of Firm Growth. *Economic Letters*, 38(1): 31-36.
- [20] Walker, E., Brown, A. (2004). What Success Factors are important for small Business owners? *International Small Business Journal*, 22(6): 577-594.
- [21] Zientara, P. (2009). Employment of older workers in Polish SMEs: employer attitudes and perceptions, employee motivations and expectations. *Human Resource Development International*, 12(2): 135-153.

# MULTI-CRITERIA DECISION-MAKING TOOL DESIGN FOR THE INVESTMENT DECISION-MAKING OF TERRITORIAL SELF-GOVERNMENT REGIONS

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#### Abstract:

The aim of the paper is to propose a model of multi-criteria investment decision-making tool supporting the decision-making of territorial self-government regions at the level of NUTS 3, based on theoretical knowledge and data obtained from the empirical survey conducted in three analyzed countries (the Slovak Republic, the Czech Republic and Hungary). The proposed model of multi-criteria investment decision-making tool is based on the method of Data Envelopment Analysis (DEA) adapted to the needs of the investment decision-making of self-government regions. Based on the results it can be said that the proposed tool is a suitable complement of the investment decision-making of territorial self-government regions.

Keywords: region, self-government, investment decision-making, investment activities, data envelopment analysis.

JEL Classification: H43, H76, R15, R53

#### 1. Introduction

Local self-government is a form of public government and public administration that allows an independent governance of "res publicae" in the territory smaller than the State. Individual management of local self-governments brings also in their investment activities. These are connected to local self-government functions and are used in order to improve the quality of life and the environment, to enhance the business environment, to increase the competitiveness of the region and to ensure its development. Implementation of investment implies sacrificing certain current values in order to achieve the future which usually is of uncertain values. Such a "risky" treatment of public finance and the responsibility to the public assume an adequate approach to the decision-making. Qualified decisions increase the likelihood of higher future values, and especially in the public sector these future values are often of non-financial nature.

#### Conclusions

The paper deals with the design of the model of multi-criteria investment decision-making tool that integrates theoretical knowledge with the results of analysis performed on the basis of primary and secondary data. The proposed model is widely applicable as a decision-making support tool in deciding which investment variant of the strategic investment to choose by the regional self-governments in the countries surveyed (the Slovak Republic, the Czech Republic, Hungary). It is based on the method of Data Envelopment Analysis (DEA) adapted to multi-criteria decision-making in the investment decisions of regional self-governments. In the model there are identified the selection criteria, and the importance of each criterion as well and all is tested on a model example at the same time.

The *EMS software* was used for the calculations within the model in this paper. Although the aforementioned software is freely available on the personal website of the German professor Holger

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Scheel, this software is not for commercial use. As mentioned earlier, according to the statement of the author it serves only for academic purposes.

In the case the self-government's decision to use the proposed model as a support tool for their strategic investment decision-making, we would recommend to buy one of the specialized commercially available software that is able to calculate the DEA model "Assurance Region Method". We propose the following suitable software: DEAFrontier, DEA-Solver-Pro, Frontier Analyst.

- [1] Anderson, P., Petersen, N.CH. (1993). A procedure for ranking efficient units in Data Envelopment Analysis, *Management Science*, 39(10): 1261-1264.
- [2] Bernroider, E. Stix, V. (2006). On the applicability of Data Envelopment Analysis for multiple attribute decision making in the context of information systems appraisals, *Communications of the IIMA*, 6(2): 105-116.
- [3] Darnton, G., Darnton, M. (1997). *Business process analysis*. London: International Thomson Business Press, 311pp.
- [4] Fandel, P. (2006): Možnosti použitia DEA vo viackriteriálnom rozhodovaní s intervalovo zadanými váhami kritérií, *Acta Oeconomica et Informatica*, 9(2): 32-36.
- [5] Charnes, A., Cooper, W., Rhodes, E. (1978). Measuring the efficiency of decision making units, *European Journal of Operations Research*, 2: 429-444.
- [6] Juszczyk, S. (2003). Metodológia empirických výskumov v spoločenských vedách. Bratislava: IRIS, 2003. 137 p. ISBN 80-89018-13-0
- [7] Keeney, R.L., Raiffa, H. (1993). *Decisions with multiple objectives: preferences and value tradeoffs*. London: Cambridge University Press, 1993.
- [8] Majorová, M. (2007). *FDH DEA model ako alternatívna metóda benchmarkingu*. Available at: http://www.fem.uniag.sk/Martina.Majorova/files/majorova\_vs2007-edited.pdf
- [9] Roll, Y., Cook, W.D., Golany, B. (1991). Controlling factor weights in Data Envelopment Analysis, *IIE Transactions*, 23 (1): 2-9.
- [10] Thompson, R.G., Singleton, F.D., Thrall, R.M., Smith, B.A. (1986). Comparative site evaluation for locating a high-energy physics lab in Texas, *Interfaces*, 16: 35-49.
- \*\*\* UK Department for Transport, Local Government and the Regions (2001). *DTLR multi-criteria* analysis manual, 2001. Available at: <u>http://iatools.jrc.ec.europa.eu/public/IQTool/MCA/DTLR\_MCA\_manual.pdf</u>

# BUSINESS SUCCESS VERSUS FAILURE NEURAL NETWORK MODEL FOR SMALL AND MEDIUM ENTERPSIES

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#### Abstract

The role of small and medium enterprises in any economy needs no exaggeration. They provide employment to the local community and contribute significantly to the nation's income and growth. Yet many of these enterprises routinely fail. This study attempts to predict a non-financial qualitative factors model on the lines of Lussier (1995), with modifications in the independent variables and using 'profit for at least three years out of the last 5 years' as a measure of success or failure of an enterprise. The study will contribute to the limited literature on business success versus failure prediction studies using neural networks.

Keywords: business, success, failure, non-financial factors, neural network model.

JEL Classification: M210

#### **1. Introduction**

Small and medium enterprises play an important role in the economic functioning of any country. These entrepreneurs provide more jobs than large firms. UNIDO (1969) has reported in a study involving many developing countries that small enterprises achieved higher productivity than large capital intensive enterprises as the formers' investment per worker was lesser. Yeung and Chew (2001) stated that the small firms spent about two times higher amount than the large firms in fundamental research. Small and Medium enterprises were seen as creators of new jobs (Swierczek & Ha, 2003). Small entrepreneurs were the reasons for dynamism in the economy (Fritsch, 2008). They contributed for the local and regional development (Reynolds *et al.*, 1994; Westhead and Wright, 1998). Employment generation, productivity enhancement and commercialization of innovation were all engendered by the entrepreneurs (Van Praag & Versloot, 2007). This paper has attempted to design a neural network model to predict the business success versus failure with the help of data collected from small and medium enterprises located in an industrial estate in Trichirappalli and its surrounding areas in India.

The paper is based on the non-financial qualitative managerial factors suggested by Lussier (1995), with modifications in the explanatory variables and the meaning for business success or failure, but unique in using neural network for the purpose of the study.

#### Conclusion

The model predicted in the study is useful to the entrepreneurs and the policy makers at the first instance. The entrepreneurs shall appreciate the criticality of the efficiency of their employees and follow scientific methods of recruitment, training and compensation. They may also watch the attrition rates and carry out suitable measures to retain the right employees in the business. As the small business generates employment and assists the wide spread development in the economy and sizeable investments have been made in these ventures, it is the policy makers' responsibility that those entrepreneurs are provided with adequate and timely funds through the bankers. Small firms can contribute to the distribution of economic resources equitably (Doern, 2009). The entrepreneurs shall also be prepared to bring in adequate capital and where necessary, additional capital so that their businesses can survive and become successful at times of distress. It is in the interest of the suppliers also that the entrepreneurs are successful so that they are able to have an enduring business relationship with the business. Again, the model reveals the importance of prior experience and exposure for the successful conduct of the business by the entrepreneurs.

The public agencies and bankers who provide funds shall do so only for the experienced entrepreneurs so the scare resources of a developing country like India are used to the best advantage. Another fact the model brings out is that the regular maintenance of accounts and the taking stock of what happens in the business on a regular basis are important for the success or failure of the business.

Obviously the model is useful to the investors whose return risk trade- off depend upon the success or failure of the business. The model is also useful to the public and the society at large as they can identify in advance the successful firms from the other firms.

- [1] Ahn, B.S., Cho, S.S., & Kim, C.Y. (2000). The integrated methodology of rough set theory and artificial neural network for business failure prediction, *Expert Systems with Applications*, 18: 65-74.
- [2] Altman E.I., Saunders A. (1998). Credit risk measurement: Developments over the last 20 years, *Journal of Banking and Finance*, 21(11-12): 1721-1742.
- [3] Altman, E.I. (1983). Why businesses fail? The Journal of Business Strategy, 3(4): 15-20.
- [4] Altman, E.I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy, *Journal of Finance*, 3(4): 589-609.
- [5] Beaver, W.H. (1966). Financial ratios as predictors of failure, Journal of Accounting Research. *Empirical Research in Accounting: Selected Studies*, 4: 71-111. Article Stable URL: <u>http://www.jstor.org/stable/2490171</u>
- [6] Bilderbeek, J., Pompe, Paul P.M. (2005). The prediction of bankruptcy of small-and-medium sized industrial firms, *Journal of Business Venturing*, 20(6): 847-869, Available at SSRN: <u>http://ssrn.com/abstract=1507603</u>
- [7] Blum, M. (1974). Failing company discriminant analysis, *Journal of Accounting Research*, 2(1): 1-25.
- [8] Brush, C.G., Manolova, T.S. and Edelman, L.F. (2008) Separated by a Common Language? Entrepreneurship Research across the Atlantic, *Entrepreneurship Theory and Practice*, 32(2): 249-266.
- [9] Cahill, E. (1980). Company failure and the vigilant accountant, Accountancy, 91: 63-65.
- [10] Carter, R. and Van Auken, H. (2006). Small firm bankruptcy, Journal of Small Business Management, 44: 493-512.
- [11] Castillo, J.and Wakefield, M. (2006). An exploration of firm performance factors in family businesses: Do families value only the "bottom line"? *Journal of Small Business Strategy*, 17(2): 37-51.
- [12] Chell, E. and Baines, S. (1998). Does gender affect business "performance"? A study of micro businesses in business service in the UK. *Entrepreneurship and Regional Development*, 10(2): 117-135.
- [13] Cho, M. (1994). Predicting business failure in the hospitality industry: An application of Logit model, *Doctoral dissertation*: Virginia Polytechnic Institute and State University.
- [14] Cooper, A., Dunkelberg, W. Woo, C. and Dennis, W. (1990). New business in America: The firms and their owners. *Washington D.C.: The NFIB Foundation*.
- [15] Deakin, E.B. (1972). A discriminant analysis of predictors of business failure, *Journal of Accounting Research*, 10: 167-179.
- [16] Dennis, W.J. & Fernald, L.W. (2001). The chances of financial success (and loss) from small business ownership, *Entrepreneurship Theory and Practice*: 26: 75-83.
- [17] Dimitras A., Zanakis S., and Zopudinis C. (1996). A survey of business failures with an emphasis on failure prediction methods and industrial applications, *European Journal of Operational Research*, 90(3): 487-513.
- [18] Dixit, A. and Pandey, A.K. 2011. SMEs and economic growth in India: cointegration analysis. *The IUP Journal of Financial Economics*, IX(2): 41-59.
- [19] Doern, R. (2009). Investigating barriers to SME growth and development in transition environments: a critique and suggestions for developing the methodology, *International Small Business Journal*, 27(3): 275-305.

- [20] Dun and Bradstreet. (1994). Industry norms and key business ratios. Pennsylvania: Dun and Bradstreet.
- [21] Edmister, R.O. (1972). An empirical test of financial ratio analysis for small business failure prediction, *Journal of Financial and Quantitative Analysis*, 2: 1477-1493.
- [22] Flagg, J.C., Giroux, G.A., and Wiggins, C.E., Jr. (1991). Predicting corporate bankruptcy using failing firms, *Review of Financial Economics*, 1(1): 67-78.
- [23] Fritsch, M., (2008). How does new business formation affect regional development? Introduction to the special issue, *Small Business Economics*, 30: 1-14.
- [24] Gambrel, A.P. (2004). Impact of cash flow on business failure prediction using a neural network. Dissertation: H. Wayne Huizenga School of Business and Entrepreneurship, Nova Southeastern University.
- [25] Ghosh, B.C. and Kwan, W. (1996). An Analysis of Key Success Factors of SMEs: A Cross National Study of Singapore/Malaysia and Australia/New Zealand. ICSB, Stockholm.
- [26] Ghosh, B.C., Kim, T.S. and Meng, L.A. (1993). Factors contributing to the success of local SMEs: an insight from Singapore, *Journal of Small Business and Entrepreneurship*, 10(3): 33-45.
- [27] Ghosh, B.C., Tan, W.L., Tan, T.M. and Chan, B. (2001). The key success factors, distinctive capabilities and strategic thrusts of top SMEs in Singapore, *Journal of Business Research*, 51: 209-221.
- [28] Gilbert, L.R., Menon, K., and Schwartz, K.B. (1990). Predicting bankruptcy for firms in financial distress. *Journal of Business Finance & Accounting*, 7(1): 161-171.
- [29] Gritta, R.D., Wang, M., Davalos, S., and Chow, G. (2000). Forecasting small air carrier bankruptcies using a neural network approach, *Journal of Financial Management & Analysis*, 3(1): 44-49.
- [30] Halabi, C.E., and Lussier, R.N. (2008). A model for predicting small firm performance: Increasing the probability of entrepreneurial success. *Documentos de Trabajo*.
- [31] Hamer, M.M. (1983). Failure prediction: Sensitivity of classification accuracy to alternative statistical methods and variable sets, *Journal of accounting and public policy*, 2(4): 289-307.
- [32] Hanlon, D. and Saunders, C. (2007). Marshaling resources to form small new ventures: Toward a more holistic understanding of entrepreneurial support, *Entrepreneurship Theory and Practice*, 31(4): 619-641.
- [33] Harold S.S.T. *et al.* (2011). A success versus failure prediction model for small businesses in Singapore, *American Journal of Business*, 26(1): 50-64.
- [34] Hawley, D.D., Johnson, J.D., and Raina, D. (1990). Artificial neural systems: A new tool for financial decision-making, *Financial Analysts Journal*, 4(6): 63-72.
- [35] Hyewon Y. (2005). Business failure prediction for Korean lodging firms using multiple discriminant analysis and logit analysis. Thesis: University of Nevada, Las Vegas.
- [36] Johnsen, T., and Melicher, R.W. (1994). Predicting corporate bankruptcy and financial distress: Information value added by multinomial Logit models, *Journal of Economics and Business*, 46(4): 269-286.
- [37] Kwansa, F., and Parsa, H. (1991). Business failure analysis: an events approach, *Hospitality Research Journal*, 14(2): 23-34.
- [38] Lau, G.T. and Lim, J.W.B. (1996). An exploratory study of factors affecting the failure of local small and medium enterprises, *Asia Pacific Journal of Management*, 13(2): 47-61.
- [39] Lussier, R.N. (1996). A startup business success versus failure prediction model for the retail industry, *The Mid-Atlantic Journal of Business*, 32(2): 79-89.
- [40] Lussier, R.N., and Corman, J. (1996). A business success versus failure prediction model for entrepreneurs with 0-10 employees, *Journal of Small Business Strategy*, 7(1): 21-35.
- [41] Lussier, R.N. (1995). A non-financial business success versus failure prediction model for young firms, *Journal of Small Business Management*, 33: 8-20.

- [42] Lussier, R.N. and Pfeifer, S. (2001). A cross-national prediction model for business success. *Journal of Small Business Management*, 39(3): 228-39.
- [43] Sommers, W. and Koc, A. (1987). Why most new ventures fail (and how others don't). *Management Review*, September: 35-39.
- [44] Neshamba, F. (2000). Growth and Transformation among Small Business in Kenya. The Nottingham Trent University, Nottingham.
- [45] Olsen, M., Bellas, C., and Kish, L.V. (1983). Improving the prediction of restaurant failure through ratio analysis, *International Journal of Hospitality Management*, 2(4): 187-193.
- [46] Platt, H.D., and Platt, M.B. (1991). A note on the use of industry-relative ratios in bankruptcy prediction, *Journal of Banking and Finance*, 15(6): 1183-1194.
- [47] Pratt, V. (2001). Sharing business skills in Kenya. Center for International Private Enterprises, available at: <u>www.cipe.org</u>.
- [48] Reynolds, P., Miller, B. (1989). New firm survival: analysis of a panel's fourth year. Frontiers of Entrepreneurship Research: Eds. R.H. Brockhaurs, N.C. Churchill, J.A. Katz, B.A. Kirchoff, K.H. Vesper, & W.E. Wetzel, Wellesley, Mass: Babson College.
- [49] Reynolds, P., Storey, D. J. and Westhead, P. (1994). Cross national comparisons of the variation in new firm formation rates, *Regional Studies*, 28: 443-56.
- [50] Shin, K. and Lee, Y. (2002). A genetic algorithm application in bankruptcy prediction modeling. Expert Systems Applications, 23(3): 321–328.
- [51] Sommers, W., and Koc, A. (1987). Why most new ventures fail (and how others don't). *Management Review*, September, 35-39.
- [52] Storey, D., Keasey, K., Watson, R., and Wynarczyk, P. (1990). The performance of small firms: Profits, jobs, and failure: London: Roudledge Small Business Series.
- [53] Storey, D., Keasey, K., Watson, R., and Wynarczyk, P. (1987). Performance of small firms: Profits, jobs, and failure: London: Croom Helm.
- [54] Suarez, J.J. (2004). A neural network model to predict business failure in construction companies in the United States of America. Dissertation: University of Florida.
- [55] Swierczek, F.W., & Ha, T.T. (2003). Entrepreneurial orientation, uncertainty avoidance and firm performance: an analysis of Thai and Vietnamese SMEs, *International Journal of Entrepreneurship and Innovation*, 4(1): 46-58.
- [56] Taffler, R.J., and Tisshaw, H. (1977). Going, going, gone four factors which predict, Accountancy, 88: 50-54. The Nottingham Trent University, Nottingham.
- [57] Taffler, R.J. (1982). Forecasting company failure in the UK using discriminant analysis and financial ratio data, *Journal of Royal Statistical Society Series*, A: 342-358.
- [58] Tsukada, J., and Baba, S. (1994). Predicting Japanese corporate bankruptcy in terms of financial data using neural networks, *Computers & Industrial Engineering*, 27(1): 445-448.
- [59] Udo, G. (1993). Neural network performance on the bankruptcy classification problem. *Computers & Industrial Engineering*, 25(1): 377-380.
- [60] Ulmer, K.J., and Neilsen, A. (1947). Business turnover and causes of failure. Survey of current business, 27(4): 10-16.
- [61] van Gelder, J.L., de Vries, R.E., Frese, M. and Goutbeek, J.P. (2007). Differences in psychological strategies of failed and operational business owners in the Fiji Islands, *Journal of Small Business Management*, 45: 388-400.
- [62] van Praag, C.M. and Versloot, P.H. (2007). What is the value of entrepreneurship? A review of recent research, *Small Business Economics*, 29(4): 351–382.
- [63] Wang, C.L. (2008). Entrepreneurial orientation, learning orientation, and firm performance, *Entrepreneurship Theory and Practice*, 32(4): 635-657.
- [64] Westhead, P. and Wright, M. (1998). Novice, Portfolio, and Serial Founders: Are they Different? *Journal of Business Venturing*, 13: 173-204.

- [65] Wiklund, J. and Shepherd, D.A. (2008). Portfolio Entrepreneurship: Habitual and novice founders, new entry, and mode of organization, *Entrepreneurship Theory and Practice*, 32(4): 701-725.
- [66] Wong, B. K., and Selvi, Y. (1998). Neural network applications in finance: A review and analysis of literature, *Information and Management*, 4(3): 129-139.
- [67] Yeung, H.W.C. and Chew, Y.T. (2001). The SME advantage: adding local touch to foreign transnational corporations in Singapore, *Regional Studies*, 35(5): 431-48.
- [68] Zavgren, C.V. (1985). Assessing the vulnerability to failure of American industrial firms: A logistic analysis, *Journal of Business Finance & Accounting*, 2(1): 19-45.

# VALUE-CHAIN MODELING IN E-COMMERCE SYSTEMS

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#### Abstract:

Currently, e-business and e-commerce systems became standard tools in the business environment. As we can see in practice and literature, current trend in e-business and e-commerce, is to develop systems enabled to manage and coordinate (and help the managers to manage) the business and production operations. Companies' managers increasingly need new methods and tools that can help them in their decision-making. In general, managements can make right decisions only in case they have current and adequate information. In addition, managers have to get all information in time, and decision-making processes should be realized quickly and under the strong thumb of a competitive environment. It also applies in the context of management of e-business and e-commerce systems. One of basic features of efficient e-commerce is correct definitions and descriptions of all internal and external processes of the supplier. All of them are targeted to customers' needs and requirements. The optimal and most exact way how to obtain and find optimal solution of e-commerce system and its process structure is modeling and simulation. Contrarily to most approaches using processoriented modeling, this paper presents the value-chain-oriented modeling approach. Value chain model and its transformation into control loop is shortly presented as a base for simulation. The closing discussion outlines next research directions.

The aim of this paper is to outline value chain approach to modeling in e-commerce systems. First, we present an e-commerce system as a subject of our research. Next the role of modeling at the design level and its' role in the decision support is discussed. After that, we shortly characterize the two main business modeling perspectives, namely the process-oriented and value-chain-oriented approach. Section 4 deals with an outline of generic e-commerce model based on value chain modeling. The last sections include simulation model, model results, and closing remarks.

Keywords: E-commerce system, business process modeling, value oriented model, basic transaction cycle.

JEL Classification: C02, C19, C63, C69, M11, M29, M31.

#### 1. Introduction

E-Commerce systems are standard prerequisite of most sales and manufacture oriented companies now. Enterprises using e-commerce are challenged by increasing competition what makes it necessary to improve their internal efficiency. Experience shows that the most effective way to achieve the efficiency goals is re-engineering process based on modeling and simulation. Re-engineering methods have been recognized as a useful general performance improvement tool (Davenport, 1992), (Hammer; Champy, 2000). In this paper we focus on the e-commerce modeling having the simulation support as ultimate aim in mind. In our opinion, using typical process oriented modeling needs some enhancement to achieve more flexibility of decision-making based on simulation. This is where the business pattern and semantic oriented value flow models may come into consideration. The aim of this paper is to outline value chain approach to modeling in e-commerce systems. First, we present an e-commerce system as a subject of our research. Next the role of modeling at the design level and its' role in the decision support is discussed. After that, we shortly characterize the two main business modeling perspectives, namely the process-oriented and value-chain-oriented approach. Section 4 deals with an outline of generic e-commerce model based on value chain modeling. The last sections include simulation model, model results, and closing remarks.

#### Conclusion

While typical process modeling methods concentrate on work- and control flow, value chain modeling perspective takes the added value created during the business process in consideration. This approach opens very interesting perspectives from the system analyst and programmer point of view as the main question asked during the model definition is not "*How*" the workflow runs, but "*Why*" it runs in the way as we see it. Of course, the fact that the value chain perspective omits some important features of the process such as starting point splits and joins of control flow and so on, it is important for the presented modeling research that both perspectives are combined together. Using this combination, a generic e-commerce simulation model was presented based on control loop paradigm. In this loop, the measuring part of the model uses REA value chain approach, while the dynamic part of the company and the environment entities such as customers and suppliers are realized as software agents.

The examples of simulation runs were presented paper showing that is possible to use such environment both for e-business modeling and as a decision support tool for company stakeholders. However, several challenges for further research are still open. First, the decision function concept used for customer decision is still too simple and does not take customer budget limitations into consideration. Second, the feedback function and management decision model is to be expanded with the aim to close the control loop more realistically. Third, the presented concept of disturbances from the environment is to be researched taking necessary statistic data as a source for further modeling.

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- [1] Baden-Fuller, C., Haefliger, S. (2013). Business models and technological innovation, *Long Range Planning*, Special Issue SI, 46(6): 419-426.
- [2] Bălan, A. (2009). The knowledge management necessity for the modernization of the organizations, *Journal of Applied Economic Science*, Volume IV, 4(10): 494-501.
- [3] Bucki, R., Suchánek, P. (2012). The method of logistic optimization in e-commerce, *Journal of Universal Computer Science*, 18(10): 1238-1258.
- [4] Chaffey, D. (2011). *E-Business and E-Commerce Management: Strategy, Implementation And Practice*, New Jersey: Prentice Hall.
- [5] Chaffey, D., Hickie, S., Greasley, A., Bocij, P. (2006). Business Information Systems: Technology, Development and Management for the E-business, Financial Times Management.
- [6] Chang, C.J., Ingraham, L.R. (2007). *Modeling and Designing Accounting Systems: Using Access to Build a Database*, New York: John Wiley & Sons.
- [7] Davenport, T.H. (1992). *Process Innovation: Re-engineering Work through Information Technology*, Boston: Harvard Business School Press.
- [8] Dunn, C.L., Cherrington, J.O., Hollander A.S. (2005). *Enterprise Information Systems. A pattern based approach*, New York: McGraw-Hill.
- [9] Gao, R.Z., Zhang, Z.J., Tian, Z.H., Guan, X.L., Li, A. (2013). Modelling the emergence and evolution of e-business ecosystems from a network perspective, *Studies in Informatics and Control*, 22(4): 339-348.
- [10] Geerts, G.L., McCarthy, E.W. (2009). An ontological analysis of the economic primitives for the extended-REA enterprise information architecture. [Online], [Accessed September 27, 20], Available from: <u>http://www.msu.edu/user/mccarth4/sowa.doc</u>
- [11] Geerts, G.L, Mccarthy E.W. (2006). Policy level specification in REA enterprise information systems, *Journal of Information Systems*, 20(2): 37-63.
- [12] Hammer, M., Champy, J. (2000). *Reengineering radikální proměna firmy: manifest revoluce v podnikání*, Praha: Management Press.

- [13] Hruby, P. (2006). Model Driven Design Using Business Patterns, Heidelberg: Springer Verlag.
- [14] Huňka, F. (2013). Power-types in business process modeling, *Journal of Applied Economic Sciences*, 8(1): 52-62.
- [15] Huňka, F., Hučka, M., Kašík, J., Vymětal, D. (2010). REA value chain applied on production planning model, *International Journal of Logistics and Transport*, 5(1): 43-52.
- [16] Huňka, F., Hučka, M., Kašík, J., Vymětal, D. (2009). Some ontological issues of the REA framework in relation to enterprise business process, *Journal of Applied Economic Science*, Volume IV, 2(8): 203-209.
- [17] Krajčík, V. (2013). Information system for the management of the processes, Accounting and Management Information Systems AMIS 2013, The Bucharest University of Economics Studies, Bucharest, pp. 648- 668.
- [18] McCarthy, E.W. (1982). The REA accounting model: a generalized framework for accounting systems in shared data environment, *The Accounting Review*, July 1982, pp. 554-577.
- [19] Pradeep, I.K. et al. (2010). CRM System Using CM-AKD Approach of D3M, International Journal of Engineering Science and Technology, 2(3): 237-242.
- [20] Porter, M. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, New York: Free Press.
- [21] Ripl, T. (2005). Business process modelling methods and methodologies, *Systémová integrace*, 12(3): 27 42.
- [22] Suchánek, P. (2010). Business intelligence as a support of e-commerce systems in connection with decision making and cross-border online shopping, *Journal of Applied Economic Sciences*, Volume V, 1(11): 94-102.
- [23] Suchánek, P., Slaninová, K, Bucki, R. (2010). Business intelligence as the support of decisionmaking processes in e-commerce systems environment, *Proceedings of the Workshop: Methods* and Applications of Artificial Intelligence, pp. 5-20.
- [24] Suchánek, P., Šperka, R., Dolák, R., Miškus, M. (2011). Intelligence Decision Support Systems in E-commerce, Efficient Decision Support Systems - Practice and Challenges in Multidisciplinary Domains, InTech, Available from: <u>http://www.intechopen.com/books/efficientdecision-support-systems-practice-and-challenges-in-multidisciplinary-domains/intelligencedecision-support-systems-in-e-commerce, pp. 109 – 130.</u>
- [25] Šperka, R. (2012). Agent-based design of business intelligence system architecture, *Journal of Applied Economic Sciences*, Volume VII, 3(21): 366-367.
- [26] Řepa, V. (2006). Podnikové procesy: Procesní řízení a modelování, Praha: Grada Publishing.
- [27] Vymětal, D. (2009a). Agent oriented modeling of business information systems, Munich Personal RePEc Archive, Available from: <u>http://mpra.ub.uni-muenchen.de/18397/1/</u> <u>MPRA\_paper\_18397.pdf</u>.
- [28] Vymětal, D. (2009b). Value chain and process models: is the gap between them real?, *Distance Learning Simulation and Communication Proceedings*, Brno: Univerzita obrany Brno, pp. 198-205.
- [29] Vymětal, D. (2008). ICT in Czech companies: business efficiency potentials to be achieved, Proceedings Nové prístupy k riadeniu podnikov a jazyková výchova ekonomických odborníkov, Bratislava, pp. 226 – 240.
- [30] Vymětal, D., Hučka, M., Huňka, F., Kašík, J. (2008). Production planning model using REA ontology, *E+M Ekonomie a management*, 4: 93 101.
- [31] Vymětal, D., Šperka, R., (2011). Agent-based Simulation in Decision Support Systems, Distance Learning, Simulation and Communication Proceedings, Brno: Univerzita obrany Brno, pp. 245 – 252.
- [32] Vymětal, D., Scheller, C. (2012). MAREA: Multi-Agent REA-Based Business Process Simulation, *Proceedings ICT for Competitiveness*, Karviná, pp. 300 310.

- \*\*\* Aris. ARIS Architecture of Integrated Systems. Workflow Management within the ARIS Framework, (2000). [Online], [Accessed July 22, 2010]. Available from: <u>http://www.pera.net/</u><u>Methodologies/ARIS/ARIS.html</u>
- \*\*\* BPME Business process management explained. (2008). [Online], [Accessed February 19, 2008], Available from: <u>http://www.qpr.com/bpm-explained.html</u>
- \*\*\* BPMI Business Process Management Initiative, (2003). Business Process Modeling Notation. Working Draft (1.0), 2003. [Online], [Accessed August 20, 2010]. Available from: <u>http://xml.coverpages.org/BPMNv10Draft.pdf</u>
- \*\*\* National Institute of Standards and Technology (1993). Integration Definition for Function Modeling (IDEF0). [Online], [Accessed August 20, 2013]. Available from: http://www.idef.com/pdf/idef0.pdf.

## FINANCING CLUSTERS FROM PUBLIC FUNDS IN THE EUROPEAN COUNTRIES

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#### Abstract

Supporting and financing geographically concentrated industrial clusters became an object of public regional policies as the positive effects raising from spillover of knowledge among the clustered firms and institutions is believed to supporting growth of regional economies. An interesting dimension of the industrial cluster financing is a mode of private and public funds combination that might present a major factor in the success of a cluster. The approach in this paper states research hypotheses on the relation between the share of public funds and innovative performance level of a particular country as well as the length of its EU membership. The empirical investigation is based on an extensive primary research of 125 clusters in 25 European countries. Unexpectedly, the survey has proved significantly higher use of public funds for cluster activities in the countries of innovation leaders and innovation followers (as divided in The Innovation Union Scoreboard 2013), at all national, regional and local levels. Hence, strong financial support of clusters is not prevalently a subject of structural aid to less developed regional economies, but a regular measure in well developed countries with higher innovation performance. Statistically significant differences have been observed also in the structure of financing clusters when comparing old or EFTA countries with new member countries. The paper was elaborated within the project VEGA 1/0506/13.

Keywords: clusters, financing clusters, public funds, private funds.

#### JEL Classification: O31, R58.

#### 1. Introduction

Financing clusters has been an issue of a number of studies in several European countries (Lämmer-Gamp et al., 2011; Oxford Research AS, 2008; OECD, 2007). Some of the studies were aimed at the position of clusters in the countries of Central and Eastern Europe (Ketels and Sölvell, 2006; Pavelková and Jirčíková, 2008). Financing clusters is possible by employing resources either from the private sector or public sector, or their combinations. The present state of affairs is based on empirical studies partially focused on the sources of financing clusters. Sölvell et al. (2003) discovered the public sector as the main source of initial financing of cluster initiatives in 54% cases. Another extensive research (Ketels et al., 2006) revealed that in developing countries the majority of resources come from international donor organizations, in the new EU member countries the greatest share comes from the private sector. The cycles of clusters are time after time marked as missed opportunities, what raises a question of effectively of partial public financing and a proper financial structure according to its public/private ratio and vertical proportioning (EU, national, regional, local). There exist a number of obstacles and gaps to cluster potential realization and the differences can be clearly identified at the country level associated with innovation performance, EU membership length, etc. what is researched extensively by The European Cluster Observatory launched in 2007. The distinction among countries in availability and use of various forms of capital is rather omitted in research so far and not included in the standard mapping of the European clusters.

The main goal of the article is to find out whether statistically significant differences in cluster public support based on the innovation performance of a country's membership in the EU exist. Different structure of financing cluster initiatives is supposed to coincide with the economic power, or innovative performance of the individual EU countries.

#### Conclusions

The intensity of financial support for clusters employing public funds varies greatly across the European countries. Some recent research studies of other authors have implied a larger share of public finance in the countries with higher innovative performance.

The Hypothesis 1 related to question of higher proportion of public funds in countries with higher levels of innovation performance is not statistically significant. However, Table 4 shows that the average rank in the Kruskal-Wallis test is decreasing with the lower level of innovation performance. Also, the supply of public funds for cluster activities in the countries of innovation leaders and innovation followers is generally more generous at all national, regional and local levels. Similarly, there is a range of private resources on offer in those countries. Clusters in the countries with a lower level of innovative performance have to rely more frequently on the membership fees of cluster members. As a result, lacking resources prevent such clusters from their further development and impede their progress. Representatives of some clusters operating in the countries with moderate or modest innovation performance expressed an opinion that they commonly have problems to participate in some programmes or respond to public calls as they lack funds to co-finance the projects. This makes the receiving public funds even more complicated for the clusters in their early stage. At the same time the competitiveness of clusters is considerably higher when they are at least partly financed from public funds. Hence, this gives a powerful argument for continuing active public cluster policies.

Hypothesis 2 examines the impact of the length of EU membership on the share of public funds in clusters. This relationship has been statistically displayed - clusters in the old EU countries have in their income structure significantly higher proportion of public resources in comparison to clusters in the new EU member states. Statistically significant differences have been observed in the structure of financing clusters in the old member countries in comparison with the new member countries and the EFTA member countries. Besides, as the cluster support from the national, regional and/or local level in Germany, Sweden, Denmark and Finland has provided enough evidence to prove that these are efficient methods of improving competitiveness of clusters and the regions, similar results could be gradually achieved by the clusters in the new member countries.

The variability of the public sources supporting the cluster activities in the old and new member states depends on the overall country development as well as enhanced networking and trust. Moreover, clustering is a result of historical economic development and a natural model in western countries. The new member states use often the top-down approach in cluster initiatives supporting, what is somewhat extraneous element in the economy of a country or region. Also, the understanding the concept of clusters and their potential contribution to regional competitiveness is generally not well understood by the policy makers.

Another reason of a lower cluster support in the new EU countries is a less developed proinnovation culture in comparison to the old EU countries. Regional or local level is not involved neither in the research or cluster financing, as it is common in the old EU countries. Following the emprical research results, the differences in supporting clusters from public resources can be confirmed mainly between the group of new EU member countries on one side an the old EU member and EFTA countries on the other side.

- [1] Babcock-Lumish, T.L. (2009). *Financing Clusters of Innovation: The Geography of Venture Capital Investment, US and UK*, University of Oxford, United Kingdom.
- [2] Barsoumian, S., Severin, A., van der Spek, T. (2011). *Eco-innovation and national cluster policies in Europe A Qualitative Review*, Brussels.
- [3] Bednářová, D. (2008). Charakteristika a činnost klastrů v Jihočeském kraji, *E+M Ekonomie a Management*, 04 : 90-91.
- [4] Bogdan, A.M. (2011). European Union funds a solution for the Romanian economic recovery, *Journal of Applied Economic Science*, Volume VI, 2(16): 115-120.

- [5] Charles, D., Damianova, Z., Maroulis, N. (2009). *Contribution of policies at the regional level to the realisation of the European Research Area*, Prepared by ERAWATCH NETWORK ASBL, pp. 26-27.
- [6] Chiţu, I. B., (2012), The real impact of projects financed through european social fund sectoral operational programme for human resources development- over target audience, *Journal of Applied Economic Science*, 7(4): 366-372.
- [7] Chiţu, I.B., Tecău A.S. (2012). Consultancy services in marketing and management growth factor of competitiveness for small and medium enterprises, *Journal of Applied Economic Science*, 7(4): 373-379.
- [8] Field, A. (2005). *Discovering Statistics Using SPSS (Second Edition)*, SAGE Publications, London, pp. 542-550.
- [9] Hudec, O. *et al.* (2007). *Statistical methods in Economics*, Faculty of Economics, Technical University in Košice, Košice, pp. 161-169.
- [10] Ketels, C., Lindqvist, G., Sölvell, Ö. (2006). *Cluster Initiatives in Developing and Transition Economies*. Stockholm: Center for Strategy and Competitiveness, pp. 22-23.
- [11] Ketels, C., Sölvell, Ö. (2006). *Innovation Clusters in the 10 New Member States of the European Union*, European Commission.
- [12] Lämmer-Gamp, T., Meier zu Köcker, G., Christensen, T.A. (2011). Clusters Are Individuals -Creating Economic Growth through Cluster Policies for Cluster Management Excellence. Danish Ministry of Science, Technology and Innovation/Competence Networks Germany, Copenhagen/Berlin, pp. 22-23.
- [13] Lindqvist, G., Sölvell, Ö. (2011). Clusnet final report Organising clusters for innovation: Lessons from city regions in Europe. pp. 47-48.
- [14] Meier zu Köcker, G. (2009). Clusters in Germany An Empirical Based Insight View on Emergence, Financing, Management and Competitiveness of the Most Innovative Clusters in Germany. Institute for Innovation and Technology, Berlin, pp. 15-17.
- [15] Monroe, S.A. (2006). *How corporate strategy contributes to firm performance: a cross-sectional study of resource governance decision making in US firms.* New Zealand, pp. 163-164.
- [16] Pavelková, D. et al. (2009). Klastry a jejich vlyv na výkonnost firem. Prague, pp. 111-112.
- [17] Pavelková, D., Jirčíková E. (2008). Klastry jako nástroj zvýšení konkurenceschopnosti firem, in: E
  + M Ekonomie a Management, 11(3): 62-72.
- [18] Hollanders, H., Es-Sadki, N. (2013). *Innovation Union Scoreboard 2013*, Maastricht Economic and Social Research Institute on Innovation and Technology (UNU-MERIT).
- [19] Radosevic, S. (2002). Regional innovation systems in Central and Eastern Europe: determinants, organizers and alignments, *Journal of Technology Transfer*, 27(1): 87-96.
- [20] Sheskin, D.J. (2007). *Handbook of Parametric and Nonparametric Statistical Procedures (Fourth Edition)*. Chapman and Hall/CRC.
- [21] Sölvell, Ö. (2009). Clusters Balancing Evolutionary and Constructive Forces. Stockholm, pp. 24-25.
- [22] Sölvell, Ö., Ketels, C., Lindqvist, G. (2003). *The Cluster Initiative Greenbook*. Stockholm, pp. 39-40.
- [23] Spišáková, E., (2010). Inovačné aktivity podnikov, možnosti financovania inovácií a ich reálne využitie, Košice: TUKE, pp. 56-75.
- [24] Stejskal, J., Hájek, P. (2012). Competitive advantage analysis: a novel method for industrial clusters identification, *Journal of Business Economics and Management*, 13(2): 344-365
- [25] Švejda P. a kol. (2007). *Inovační podnikaní,* Asociace inovačního podnikani ČR: Praha, pp. 139-154.
- [26] Urbančíková N., Burger P. (2010). Miera regionalizácie inovačných politík a jej vplyv na inovačnú výkonnosť regiónov, *E+M Ekonomie a Management*, 13(1): 34-35.

- [27] Žižka, M. (2008). Vliv klastrů na konkurenceschopnost podniků v České republice, *Ekonomický časopis*. 56(1): 51-52.
- \*\*\* OECD (2007) Competitive Regional Clusters National Policy approaches, pp. 88-91.
- \*\*\* Oxford research AS, (2008) Cluster Policy in Europe A brief summary of cluster policies in 31 European countries. Norway, pp. 20-23.



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