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Evidence of Fire-Sale M&A in European Transition Countries

Josipa Višić

The aim of this paper is to determine differences in variables that create investment climate and therefore affect the values of incoming cross-border M&A in selected European transition countries. Cluster analysis for 1999 and 2007 shows that countries with unfavourable investment climate received high levels of incoming cross-border M&A. Sole country in the cluster characterised by healthy investment area (Slovenia) had the highest GDP per capita accompanied with the lowest values of incoming cross-border M&A relative to its GDP. These results could be interpreted as an evidence of fire-sale M&A in most European transition countries. In 2010, situation changed and although recession left trace, data on cross-border M&A indicate that foreign investors focused more on companies which operated in countries with healthier economy. These results indicate that a healthy investment climate is necessary to provide a sustainable economic development of a country.

Key Words: cross-border M&A, fire-sale M&A, sustainable economic development, investment climate
JEL *Classification:* F21, G34

Introduction

Doing business in 21st century is marked by strong pressures of domestic and foreign competition, numerous market possibilities, and volatile environment. Therefore, the size of a company, regarded as a shield, becomes more important. With its size, companies try to respond to business challenges by diminishing their sensitivity to negative changes in business environment. Hence, companies often use different forms of external rather than internal growth, due to faster changes that external growth can provide them. Combining resources and abilities of two or more companies can be organised in several forms, but this research is directed toward mergers and acquisitions (M&A). Companies are forced to keep up with domestic and foreign competition and when a company decides to place its products on a foreign market it has a choice between exporting and local production in form of FDI. If it decides to produce

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locally a company can built its own facilities (greenfield investment) or it can buy a share or an entire company on a foreign market in form of incoming cross-border M&A (Nocke and Yeaple 2007, 337).

There are numerous classifications of company's motives for undertaking M&A activities and the most commonly mentioned are: 1) using synergy effect of growth, 2) manager's interest, 3) dispersion of risk, 4) increasing market power and 5) reaction to changes in business environment (Tichy 2001, 368–372). However, the focus will be on determinants of M&A on the country level, or even more precise, on determinants of incoming investments in the form of cross-border M&A.

Cross-border M&A act as a medium of geographical diversification and also can be used as a tool for overcoming risks specific for company's home country. Local companies can benefit from incoming cross-border M&A as they help them to prevail limitations in form of: 1) difficult and unfavourable financing, 2) outdated technology and business organization, 3) saturated and/or too small domestic market, 4) slow adjustment to market conditions etc. Yet, foreign acquirers do not necessarily have long-term goals in mind (i. e., short-term speculative motives are also a reason to undertake cross-border M&A). Negative influence of cross-border M&A can be manifested as: 1) asset stripping, 2) job cuts and lower wages, 3) poor operating results caused by insufficiently prepared integration process of involved companies etc. (Gugler and Burcin Yurtoglu 2004, 481–502). However, it should be noted that some of the above mentioned positive and negative consequences are not solely the feature of cross-border M&A, but can also be a characteristic of domestic mergers and acquisitions.

As expected, cross-border M&A conceal numerous risks, but sometimes, as in cases of financial and economic crisis, they may play a role that greenfield investments are not able to accomplish. Due to their nature, cross-border M&A are able to faster ensure financial and non-financial resources and by doing so, they are able to reconstruct existing capacities and increase the competitiveness of companies involved and indirectly the economy of the involved countries (Nocke and Yeaple 2007, 357). A research done by Aguiar and Gopinath (2005, 451), using samples from East Asian countries, indicates that during financial crisis and high insolvency of domestic companies an increase in economic activity in the form of cross-border mergers and acquisitions can be noticed. However, such processes are often encouraged by the opportunity to buy a company at much more favourable conditions due to its bad business

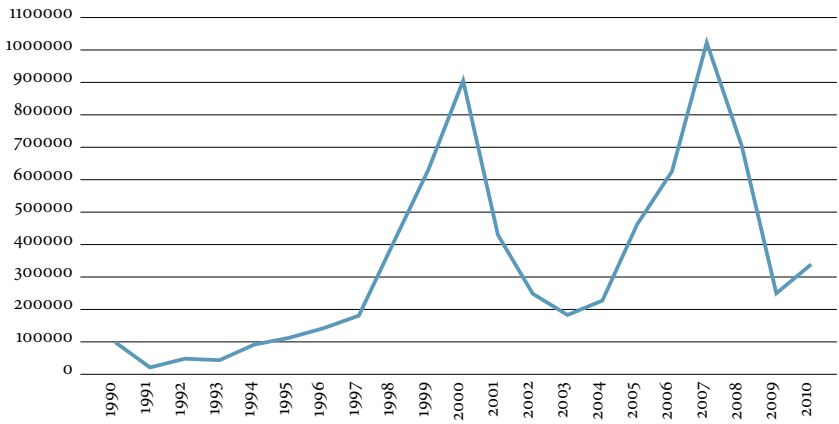

FIGURE 1 Value of worldwide cross-border M&A in period between 1990 and 2010 (millions USD)

situation and which is called a fire-sale M&A.

Globalisation makes cross-border M&A more important, more valuable and more numerous which can be seen in figure 1. Yet, contrary to theoretical assumptions that capital should flow from capitally rich to capitally poor countries, most of the global capital flows still occur among developed countries and thus confirm a Lucas paradox. Theoretical explanations of Lucas paradox can be grouped in two categories: 1) explanations based on differences in preconditions of economic development among countries such as technological differences, availability of production factors, government policies and institutional structures among countries, 2) explanations oriented towards imperfections of international capital market and especially towards asymmetric information. Only certain number of large growing economies such as China, India, Brazil and Russia attract large investments in form of incoming cross-border M&A (Hyun and Kim 2007, 7). Hence, it is interesting to analyse which macroeconomic factors of target countries are drivers of this form of investments.

The aim of this paper is to determine how selected European transition countries are grouped considering differences in variables that influence the value of incoming cross-border M&A. In former research studies (Višić and Škrabić Perić 2011, 180–181; Višić, Tomas and Škrabić 2009, 274–277) dynamic panel models were used to analyse different determinants of incoming cross-border M&A value for a group of selected countries. Based on former results on relevant determinants, this

research aims to determine if differences among these countries exist. Also, it aims to answer if less developed countries have a reasonable fear of foreign ownership i. e., could one regard inward investments in form of cross-border M&A as a proof of fire-sale M&A in European transition countries. Namely, it has been noticed that European transition countries with stronger domestic economy tend to be more careful when encouraging foreign investments. It is important to note that foreign ownership is not regarded as a negative consequence of globalisation, yet it is often characterised by opportunities that foreign owners have used due to problems domestic companies were facing. However, the purpose of the research is to help to further investigate sources that drive capital in order to find an answer how to accomplish sustainable development of transition countries without disturbing free capital flows.

The paper has a four-chapter structure. The second chapter provides literature review, while the third describes the data and research analysis. Conclusion is given in the last chapter.

Theoretical Review

During 20th century, M&A activity has expanded and today it is even more interesting due to growing interest of foreign investors towards transition countries. Most studies on determinants of M&A use microeconomic perspective. Scientific researches on macroeconomic determinants of M&A directed towards transition countries are rare, especially when it comes to providing empirical evidence on determinants of cross-border M&A directed towards European transition countries. Hereinafter, a concise review of the most significant studies on the respective theme is given, while some of these studies will be more extensively presented while presenting results of this research.

Aguiar and Gopinath (2005) analysed connection between country's financial system and its M&A activity on the sample of East Asian countries. They concluded that liquidity crush, which domestic companies faced as a result of East Asian crises, increased M&A activity. Kamaly (2007), on the other hand, analysed cross-border M&A in sixty different developing countries to determine their flows and macroeconomic determinants. Di Giovanni (2005) used panel data on cross-border M&A in order to estimate the importance of certain macroeconomic, financial and institutional variables and to explain flows of international M&A. Unlike di Giovanni, Rossi and Volpin (2004, 278) analysed determinants of international and domestic M&A focusing mainly on the role of the

law and regulation in different countries. Globerman and Shapiro (2004) estimated which variables have statistically significant impact on incoming and outgoing flows of M&A and FDI. Further, what they investigated are the determinants of international M&A activities similar to those of other forms of FDI, such as greenfield investments. Neto, Brandão, and Cerqueira (2008) used Globerman and Shapiro's (2004) study as a guidance for their research; however, they expanded their panel data analysis to include location specific investment determinants. Hyun and Kim (2007) explored factors important for determining size and direction of M&A flows for acquiring and target countries. Manchin (2004) observed determinants of the number of incoming M&A in EU countries while investor countries were EU members, USA, Canada, Norway and Switzerland. Aminian, Campart and Pfister (2005), on the other hand, analysed macroeconomic determinants of cross-border M&A flows between European and Asian countries.

Cluster Analysis

DATA DESCRIPTION

Data on the value of cross-border M&A are taken from the UNCTAD data base *The Cross-Border Mergers and Acquisitions,* while all other data are taken from World Bank database named *World Development Indicators & Global Development Finance* (March 2012) and *The Worldwide Governance Indicators* (2011 Update). Following countries are included in this research: Bulgaria, Czech Republic, Estonia, Croatia, Latvia, Lithuania, Hungary, Macedonia, Poland, Rumania, Slovakia, and Slovenia.

Undoubtedly, all selected countries are not at the same level of economic development, but they all could be regarded as European transition countries and they all are a potential area of interest for foreign investors. Exact differences in their economic development and business surrounding are interesting when analysing value of cross-border M&A. Cluster analysis (K-means approach) using SPSS Statistics 17.0 is used to sort selected countries into three[1] groups according to similarity of values of following indicators:

- Ratio of value of incoming cross-border M&A to country's GDP ('M&A/GDP') – annual percentage. Cross-border M&A sales are calculated on a net basis as follows: sales of companies in the host economy to foreign TNCs (–) sales of foreign affiliates in the host economy. The data cover only those deals that involved an acquisi-

tion of an equity stake of more than 10%. Data refer to the net sales by the region/economy of the immediate acquired company. M&A to GDP ratio is used instead of using just the value of incoming M&A in order to alleviate differences among sizes of selected economies. Decision to use value of M&A to GDP ratio also has a theoretical anchorage in Kamaly's paper (2007, 22).

- GDP per capita ('GDP pc') – converted US dollars at constant 2000; annual%;
- Interest rate spread ('IR spread') – lending rate minus deposit rate; annual%;
- Inflation rate ('Inflation') – consumer prices; annual%;
- Rule of Law ('Law') – a measure capturing perception of the extent to which agents have the confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence;
- Control of Corruption ('Corruption') – a measure that captures perception of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.

The Word Bank has formed six indicators of governance: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. All indicators are constructed using an unobserved component methodology and measured in units ranging from about –2.5 to 2.5, with higher values corresponding to better governance outcomes (for more details, cf. Kaufmann, Kraay, and Mastruzzi 2009). Based on results from a former study (Višić, Tomas, and Škrabić 2009, 275) on impact of governance indicators on the value of incoming cross-border M&A in European transition countries the last two indicators have been chosen for cluster analysis.

Cluster analysis for the chosen countries will be preformed on data from 1999, 2007, and 2010. Year 1999 has been selected due to peak of value of worldwide cross-border M&A in this year, as it can be seen in figure 1. This growing trend and a wave shaped movement with the peak around year 2000 are characteristic for chosen European transition countries as well, as shown in figure 2. Shen (2008, 1) explains this wave shaped M&A movement with the following arguments: government in-

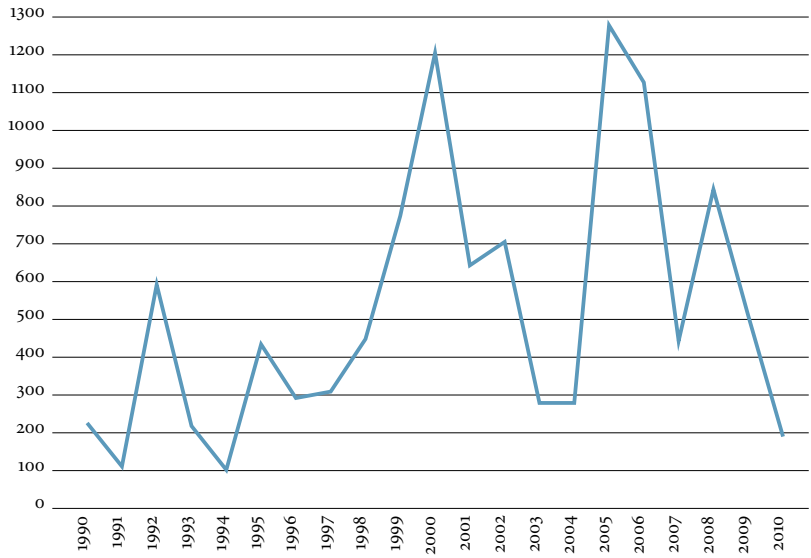

FIGURE 2 Average value of incoming cross-border M&A in observed countries (millions USD)

centives and deregulation, business cycle effects, reactions characteristic for oligopoly, stock market boom etc. His observations correctly explain cross-border M&A movement in these countries, which all are at different stage of adjustment to capitalistic globalisation.

Year 2007 has been selected to check for changes in assigning countries to cluster groups, also it is the last year, which can be surely regarded as a 'recession free' year. World economic crises cannot be considered while making conclusion about similarities/differences among the chosen countries in order to detect factors significant for their sustainable development and free capital flows in this period. However, the year 2010 was affected by global recession and it will be interesting to see how countries have changed in twelve years.

RESULTS OF CLUSTER ANALYSIS

Twelve chosen European transition countries are new EU members or about to be very soon. It is interesting to explore their macroeconomic and financial indicators observed from the focus of value of incoming cross-border M&A. Investments are undoubtedly important for a country; however, it was interesting to analyse if low levels of incoming cross-border M&A necessarily indicate poor investment climate.

Considering cluster analysis was made for three years, results for year

TABLE 1 Descriptive statistics for year 1999

Items	*N*	Minimum	Maximum	Mean	Std. dev.
M&A/GDP	12	0.00	10.46	2.5764	2.96565
GDP pc	12	1486.93	9662.97	4014.2854	2231.30613
IR spread	12	4.20	19.78	8.3430	4.21629
Inflation	12	–1.28	45.80	7.8075	12.48843
Corruption	12	–.091	0.93	0.1783	0.53752
Law	12	–.056	1.05	0.3145	0.48922

NOTES Valid *N* (listwise) = 12.

1999 will be presented and then compared to those from 2007 and 2010. While observing indicators of descriptive statistics presented in tables 1 and 2, one could notice that the value of GDP per capita have not significantly changed and for the richest country it is approximately six times larger than the minimal value. Although in 2010 (table 3) the maximum value of GDP per capita was lower than in 2007, the difference between the richest and the poorest country slightly declined. Similar conclusion is applicable for indicators of *rule of law* and *control of corruption.* The difference between minimum and maximum values has declined over the years thanks to improvement for countries with unfavourable values of governance indicators. Inflation rates stabilised over the years and their values are not as drastic as they were in 1999. Interest rate spread is, in its absolute value, lower in 2007 than in 1999, yet relative difference between its minimal and maximal values in some countries was still high and amounted 500% i. e., 700%. In 2010, values of interest rate spread grew and were higher than in 2007. Ratio of value of incoming cross-border M&A to GDP has drastically decreased in 2007 and continued to decline in 2010. However, the relative difference between its minimal and maximal values has decreased as well.

Cluster analysis results (shown in tables 4, 5, and 6) detect significant differences between clusters. It can be observed that in 1999 and 2007 cluster with the lowest GDP per capita, the highest interest rate spread, highest inflation, and the worst value of governance indicators is at the same time a cluster with the highest level of investments in form of incoming cross-border M&A. Moreover, the cluster with the highest GDP per capita is the cluster with the lowest interest rate spread, lowest inflation, and the best value of governance indicators but with the lowest level of incoming cross-border M&A as well. This relation among values of

TABLE 2 Descriptive statistics for year 2007

Items	*N*	Minimum	Maximum	Mean	Std. dev.
M&A/GDP	12	−.057	5.08	1.1644	1.65928
GDP pc	12	2110.69	13377.92	6178.7459	3046.95047
IR spread	11	1.46	7.00	4.2763	1.98131
Inflation	12	2.39	10.11	5.1494	2.58768
Corruption	12	−.091	0.98	0.1995	0.51708
Law	12	−.043	1.00	0.3667	0.45730

NOTES Valid *N* (listwise) = 11.

TABLE 3 Descriptive statistics for year 2010

Items	*N*	Minimum	Maximum	Mean	Std. dev.
M&A/GDP	11	−.059	2.64	0.6274	0.83209
GDP pc	12	2220.58	12729.45	5918.1827	2904.02205
IR spread	8	2.42	8.62	5.8358	2.29958
Inflation	12	−1.09	6.09	2.2253	1.87031
Corruption	12	−.018	0.91	0.2733	0.34732
Law	12	−.029	1.15	0.5504	0.46922

NOTES Valid *N* (listwise) = 8.

TABLE 4
Average indicator values for each cluster in 1999

Items	Clusters		
	1	2	3
M&A/GDP	3.30	0.08	2.39
GDP pc	2203.81	9662.97	4581.57
IR spread	11.29	5.14	6.43
Inflation	10.04	6.15	6.22
Corruption	−0.023	0.93	0.39
Law	−0.007	1.05	0.51

indicators among clusters alters in 2010. The cluster with highest level of GDP per capita still has the lowest value of incoming cross-border M&A but it also has the highest interest rate spread. The main difference is that in 2010 the cluster with the highest value of incoming cross-border M&A to GDP is not a cluster with the lowest values of GDP per capita, highest interest rate spread, highest inflation, and the worst value of governance indicators.

TABLE 5
Average indicator values for each cluster in 2007

Items	Clusters		
	1	2	3
M&A/GDP	3.25	0.53	0.21
GDP pc	2400.01	6804.93	13377.92
IR spread	6.11	3.77	2.32
Inflation	5.62	5.56	3.61
Corruption	–0.046	0.38	0.95
Law	–0.025	0.57	0.83

TABLE 6
Average indicator values for each cluster in 2010

Items	Clusters		
	1	2	3
M&A/GDP	0.46	0.51	0.06
GDP pc	2467.76	5318.24	6649.84
IR spread	5.41	5.18	6.69
Inflation	3.55	1.90	1.81
Corruption	–0.013	0.27	0.42
Law	–0.011	0.80	0.76

TABLE 7
Distance between the central points for each cluster in 1999

Cluster	1	2	3
1		7459.168	2377.775
2	7459.168		5081.398
3	2377.775	5081.398	

Differences among clusters become even more noticeable when one analyses data in tables 7, 8, and 9, which represent distances between central points of clusters. Additionally, these differences among clusters became greater in 2007 but decreased in 2010.

Presented data may at first seem contradictory. According to the results of cluster analysis countries with unfavourable investment climate (characterised by high interest rate spread, high inflation rate, low level

TABLE 8
Distance between the central points for each cluster in 2007

Cluster	1	2	3
1		4404.929	10977.909
2	4404.929		6572.982
3	10977.909	6572.982	

TABLE 9
Distance between the central points for each cluster in 2010

Cluster	1	2	3
1		2850.478	4182.080
2	2850.478		1331.603
3	4182.080	1331.603	

of economic development measured with GDP per capita, and low value of governance indicators) received relatively high levels of incoming cross-border M&A in 1999 and 2007. Possible explanation hides in tables 10, 11, and 12, which provide detailed list of all observed countries that belong to each cluster. The country with persuasively the highest GDP per capita accompanied with low level of incoming cross-border M&A is Slovenia, which based its economic growth on different approaches compared to those chosen by other European transition countries. Namely, Slovenia protected its companies and banks during the transition and on time perceived potential danger of foreign capital.

Investments (M&A) are usually considered to have a positive impact on county's economy and they are often encouraged by different politic and economic measures. Namely, international expansion in form of M&A provides companies an opportunity to acquire strategic asset and enhance its competitive edge (Deng 2009, 76). However, it is important to notice that their impact on involved companies and countries can be both positive and negative. If M&A are performed according to long-term business goals for the target markets, they should be welcomed. Yet, acquiring companies often have short-term goals, which result in exploitation of target companies. In that manner, M&A can negatively affect involved companies and indirectly their domestic economies if they are characterised by buying (a part of) companies in crises i. e., when their value reaches fire-price level or by asset stripping. That is exactly what seems to be happening in the period from 1999 to 2007. Countries with stimulating investment climate had lower levels of incoming cross-border M&A, while foreign investors exploited unfavourable business environment and increased their investment in countries with low level of GDP per capita. In 2010, the situation changed and foreign investors obviously shifted their focus from companies whose values reached fire-price level to companies from healthier investment climate. These results are in accordance to Coeurdacier, De Santis, and Aviat (2009, 70). They used database on European cross-border M&A and found that the quality of institutions in the host country is an important determinant of cross-

TABLE 10 The observed countries according to the cluster they belong to in 1999

Case	Country	Cluster	Distance
1	Bulgaria	1	0.000
2	Croatia	3	767.205
3	Czech Republic	3	0.000
4	Estonia	3	1555.465
5	Hungary	3	974.182
6	Latvia	1	1578.594
7	Lithuania	1	1649.371
8	Macedonia	1	227.688
9	Poland	3	1072.138
10	Rumania	1	136.696
11	Slovakia	3	70.709
12	Slovenia	2	0.000

N. of countries in each cluster		
Cluster	1	5
	2	1
	3	6
Valid		12
Missing		0

border M&A. Although this research indicates the existence of fire-sale M&A in 1999 and 2007, it is necessary to stress that researches on fire-sale M&A are rare and studies using microeconomic data can result in different conclusions about existence of fire-sale M&A. In that manner, Ang and Mauck (2011, 542) provided significantly different conclusion about fire-sale acquisitions during economic crises depending on used reference points while analysing conventional stock price.

Analyses of previously presented data bring to attention that in 1999 and 2007 Slovenia was the only member of the most successful cluster when all indicators are observed except the ratio of value of incoming cross-border M&A to GDP. Slovenian macroeconomic and financial indicators direct us to conclusion that Slovenia had a healthy investment climate, while low levels of incoming cross-border M&A indicate high level of protection of domestic market. During observed period Bulgaria, Macedonia, and Rumania remained members of a cluster with the worst results considering economic development and investment climate, but with a high ratio of value of cross-border M&A to GDP. Other countries joined the cluster of countries with moderately good investment climate and relatively high ratio of value of cross-border M&A to GDP. Even though global recession obviously had a negative influence on cross-border M&A, GDP per capita and interest rate spread of selected countries, differences among clusters decreased in 2010.

TABLE 11 The observed countries according to the cluster they belong to in 2007

Case	Country	Cluster	Distance
1	Bulgaria	1	383.105
2	Croatia	2	812.623
3	Czech Republic	2	1636.260
4	Estonia	2	1553.864
5	Hungary	2	45.070
6	Latvia	2	457.115
7	Lithuania	2	0.000
8	Macedonia	1	0.000
9	Poland	0.	0.
10	Rumania	1	484.919
11	Slovakia	2	2255.733
12	Slovenia	3	0.000

N. of countries in each cluster		
Cluster	1	3
	2	7
	3	1
Valid		11
Missing		1

TABLE 12 The observed countries according to the cluster they belong to in 2010

Case	Country	Cluster	Distance
1	Bulgaria	1	325.863
2	Croatia	3	1051.654
3	Czech Republic	3	0.000
4	Estonia	3	1142.778
5	Hungary	2	631.582
6	Latvia	2	0.000
7	Lithuania	–	–
8	Macedonia	1	0.000
9	Poland	–	–
10	Rumania	1	415.758
11	Slovakia	–	–
12	Slovenia	–	–

N. of countries in each cluster		
Cluster	1	3
	2	2
	3	3
Valid		8
Missing		4

Conclusion

The purpose of this paper was to determine how European transition countries were grouped according to differences in the value of incoming cross-border M&A in 1999, 2007, and 2010. Statistical program SPSS Statistics 17.0 was used to perform cluster analysis on data for Bulgaria, Czech Republic, Estonia, Croatia, Latvia, Lithuania, Hungary, Macedo-

nia, Poland, Rumania, Slovakia, and Slovenia. Selected countries were grouped in three clusters according to values of the following indicators: ratio of value of incoming cross-border M&A to GDP, GDP per capita, interest rate spread, inflation rate, rule of law, and control of corruption.

The research results indicate that in 1999 and 2007 the countries with unfavourable investment climate (characterised by high interest rate spread, high inflation rate, low level of economic development measured by GDP per capita, and low levels of governance indicators) received high levels of inward investments in form of cross-border M&A. The only country characterised by healthy investment climate (Slovenia) had the highest level of GDP per capita accompanied with the lowest value of incoming cross-border M&A to GDP ratio. Presented results confirm the presence of fire-sale M&A in the chosen countries i. e., confirm that foreign investors took advantage of companies in countries with unenviable values of selected indicators. In 2010, the situation changed and although recession left trace on countries, data on cross-border M&A indicate that foreign investors changed their focus from companies whose price was low due to unfavourable investment climate to companies, which operated in countries with healthier economy.

It is necessary to develop an investment climate that provides sustainable development of domestic economies of transition countries. Positive impacts of foreign investments are undeniable; however, domestic economy should be a carrier of the economic growth of a country. Economic development should balance aspirations of target countries to become stronger with aspirations of foreign capital to invest freely abroad. If these two streams were balanced it would be a win-win situation, although a share of incoming cross-border of M&A might, in that case, decrease in comparison to other forms of inward investments such as joint ventures etc.

Cluster analysis does not use statistical tests; therefore, conclusions based solely on results from this analysis do not have the strength they might have had if they had been obtained using some other econometric method. Hence, this fact could be regarded as a weakness of this paper. However, the presented results are indicative and serve as guidance for forthcoming (post)recession studies of cross-border M&A in European transition countries.

Notes

1 During the research a cluster analysis has been made for two and four groups of countries. However, due to limitation of relatively small number

of selected countries, relevant results have been obtained only for three-group cluster analysis.

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The Contribution of FDI, *Technology and* R&D *to Spillovers in Industrial Development: A South African Firm-Level Investigation*

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This article studies the contribution of technological and knowledge spillovers towards the competitiveness of South African manufacturing firms. Literature often emphasizes the role of foreign direct investment (FDI), technology, and research and development (R&D) in spillovers, but seldom consider their effect simultaneously. This study focuses on the micro-economic production level and on the interaction of these factors. It determines their influence on the competitiveness, profits and eventual industrial development. The empirical study utilised data from the World Bank's firm-level survey on South African manufacturers. The study reveals that direct foreign investments and ownership contribute little towards secondary spillovers, which probably depends on absorptive capacity. Technological advancement is not very significant, while research and development are dependent on absorptive capacity to enhance competitiveness, especially with regard to the investment in human capital. International quality certification, foreign licensing and capacity utilisation all contribute positively towards the ability to enhance productivity growth and the competitiveness of firms.

Key Words: production, spillovers, FDI, technology, R&D, industrial development, competitiveness
JEL *Classification:* D24, D83, L11, L30, L60, O30

Introduction

This study investigates the contribution of technological and knowledge spillovers towards the competitiveness of South African manufacturing firms. The assumption is that spillovers have a positive effect on industrial development. Literature on the competitiveness of firms, for instance the Porter Diamond (Porter 1998) or agglomeration

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economics (Krugman, Obstfeld, and Melitz 2012, 172), often mentions spillovers without giving much attention to it, nor defining it. Even though spillovers are regarded as important, they are difficult to conceptualise and measure, and are often ignored. This paper wishes to investigate spillovers and find more clarity on these aspects.

The research question is to what extend technological and knowledge spillovers contribute to more efficient micro-economic production and competitiveness. Efficiency leads to higher profits and eventually to industrial development. Literature shows that technology, direct foreign investments (FDI), and research and development (R&D) cause most spillovers on the micro-economic production level and this study focuses on the contribution of these factors.

The available literature often investigate the role of some of these factors, but seldom acknowledge that FDI, R&D and technology might lead to spillovers simultaneously, and that there might be interaction between these factors that may affect competitiveness and the efficiency of production. This study wishes to investigate the interaction of these factors working together generating spillovers. Literature assumes that spillovers may contribute in a positive way, but neglect the fact that it might also be harmful to firms in some instances. This merits some attention and was also considered in this study. Even if a direct link to spillovers cannot be found, this study still aims to obtain a better understanding of the interaction that exists between foreign direct investment, technology, knowledge and research and development in the production process.

This article made a literature study, followed by an econometric study on firm-level data of South African manufacturing companies, mainly using panel data and regression analysis. This article is structured as follows: firstly, the literature study will report on the role of FDI, R&D, and technology causing spillovers during production of firms, as described by the existing literature and theory. Secondly, the findings of an empirical investigation are reported.

In the empirical section, the contributions of spillovers towards the competitiveness on firm-level were evaluated first, followed by an investigation of spillovers in relation to human capital. Here the focus is primarily on the level of experience and education of management and labour. Finally, the findings on the possible harmful effects of spillovers in production and competitiveness are reported. The final section summarised and concludes the article. Firstly, attention will now be paid to literature of existing research on this subject.

Literature Review on Spillover Effects

Firms learn from each other. According to Guiliani and Bell (2005, 47), spillovers occur especially in industrial districts or clusters, which they define as 'geographic agglomerations of economic activity that operate in the same sector.' Cassiman and Veugelers (2002, 13) found that firms with higher incoming spillovers and better appropriation are most likely to cooperate in R&D agreements. Appropriation means the ability of firms to determine the part of its innovation that gets to be revealed to others and the information that the firm keeps to itself in order to reap the benefits of their innovativeness. The information sources for incoming spillovers are usually in the public domain for any firm to use. Whether this is useful to a particular firm depends on the firm's ability and absorptive capacity to create information flows from this public pool of knowledge.

The assumption is that economic growth in a country can be attributed to the openness of its trade and capital flows (Du Plessis and Smith 2007). The service sector also contributes to growth due to factors such as education and training, R&D and human capital accumulation. According to Clemes, Arifa, and Gani (2003), the expansion in the services sector contributes greatly to the expansion in the manufacturing sector. This then shows that services and manufacturing influence each other, and inter-industry as well as intra-industry linkages are of great importance and investments in both these sectors should be encouraged as they motivate growth, knowledge and technological spillovers, including absorptive capacity and capabilities.

There is a link between economic growth and spillovers. The spillover effects of investment start with capital (Keynes 1970, 136). According to Berthelemy (1995, 153), investments not only improve the productive capacity of a particular business and individual workers within that firm, but they also improve the productive capacity of other businesses or workers that come into contact with those directly affected by the investments. The knowledge and experience is then transferred between various parties, and spillovers stretch even beyond the confines of a single industry.

Clemes, Arifa, and Gani (2003, 29) also show that investments in both services and manufacturing are needed for the expansion of these sectors, as growth in the services sector has an increasing effect on the demand for several manufactured goods. If growth in one sector can

have an impact on growth in another sector, this should make it evident that growth between firms within the same sector can be facilitated by spillovers – firms in different sectors also influence each other (Clemes, Arifa, and Gani 2003, 30), and so firms in the same sector should have a greater influence on each other. This can be made more realistic by the behaviour of investors. If an industry progresses well, it will attract more investors, as the term 'growth in numbers' applies. If only a few firms are successful in an industry, it discourages investors because it leads to low expectations.

Studying South African manufacturers, Kleynhans and Swart (2012) found a positive correlation between sales figures and expenses on communication and the number of skilled workers and innovation, while the number of competitors and private ownership are detrimental to sales, emphasising the role of MNEs and FDI. Studies have revealed that in order for firms to be successful in their innovation processes, there has to be interaction between agents that are involved in a particular industry (Park, Lee, and Park 2009, 74). When entrepreneurs start new businesses, it is often close to previous employers. In that way, clusters are formed and they might keep in touch, working together and spillovers are thus generated.

Newly appointed employees at a firm generally share information more easily with outsiders. The longer an employee is employed, the more specific this information becomes (Dahl and Pederson 2003, 3). While conducting research for this paper, many engineers have agreed that knowledge sharing is important. It makes work easier and improves their productivity.

Literature on spillovers usually assumes that *foreign direct investment* (FDI) is a major contributor. Blomstrom and Sjoholm (1999, 6&7) found positive micro-spillovers from FDI in Indonesia and several other countries. Konings (2001, 626), in his study on the effect of FDI on domestic firms, found that the output in foreign firms or firms within a country that have a large share of foreign investors, is higher on average than that of other domestic firms. Blomstrom and Sjoholm (1999, 8) found that labour productivity is also higher in foreign firms than in domestic ones. This could be because of the higher income of workers in these firms and the higher sophistication of machinery and equipment, as well as the modern technology of foreign firms.

The flow of knowledge between international actors is important as this is the best way to transfer international knowledge related to con-

sumer needs and market trends (Kesidou and Romijn 2008, 2023). Positive FDI spillovers to local firms are, however, only spawned if the technology gap between the foreign firm and the domestic one is not too large and if the host country has the minimum human capital to provide absorptive capacity (Konings 2001, 26).

Most literature found that FDI has no secondary spillovers that are large enough to improve industrial development, and at times, FDI might even be harmful to other domestic firms. The existence of R&D spillovers means that the research done by one firm can be used by other firms without other firms purchasing the rights to do so (Steurs 1995, 250). Aitken and Harrison (1999, 617) also could not have found any evidence proving that domestic firms benefit from FDI spillovers and there were no signs of the existence of technology spillovers from foreign firms to domestically owned firms in Venezuela, and this matter can be generalised to other developing countries. Positive effects of FDI for recipient firms do exist, but domestically owned firms tend to suffer. Konings (2001, 632) found that spillovers that are associated with FDI do not enhance the performance of other domestic firms. In fact, the promotion of FDI may even lead to perverse effects in the short-run.

According to Konings (2001, 26), spillovers are achieved in industries that conduct high *research and development* (R&D), and/or by firms that have a sufficient amount of knowledge to start with. Cassiman and Veugelers (2002, 3) found that there is a relationship between external flows and the decision to cooperate in R&D. Firms that regard the available sources of external information as an important input to their innovative process, will be actively involved in R&D agreements (Cassiman and Veugelers 2002, 13). Firms that are able to appropriate the results from innovation processes are also likely to cooperate in R&D agreements. Innovative activities of firms are able to affect incoming spillovers and appropriation capabilities. However, in order for a firm to benefit from R&D spillovers, it also has to undertake R&D projects itself (Bernstein and Nadiri 1988, 6). According to Steurs (1995, 256) an increase in R&D should lead to a decrease in costs because equilibrium output and profits from production will be at their highest level given the lowest cost, and this will lead to consumer surplus as prices will be at its lowest.

As development increases, technological spillovers also become important. *Modern technology* provides much more flexibility within firms and their processes than there were before (Paul 2002, 302). Technology spillovers have positive effects on the productivity of domestic firms, but

there may be a competition effect that can be harmful, putting pressure on domestic firms (Konings 2001, 624). According to Blomstrom and Sjoholm (1999), technology spillovers are often a result of an increase in competition that follows FDI.

It is generally believed that local participation with multinational corporations (MNCs) reveals the MNC's knowledge base and that it will lead to spillovers of technology in the domestic industry. Blomstrom and Sjoholm (1999, 7), however, found that local participation with MNCs does not facilitate much technology spillovers in the host economy, but that spillovers are rather determined by other factors.

Spillovers may also have adverse effects on firms, although existing literature gives very little attention to this. Spillovers of information and technology that can benefit a firm's competition may also harm the firm if competitors obtain such knowledge and technology. In such cases, such spillovers should be limited. Firms attempt to protect and keep the benefits of their innovations to themselves by controlling the information flows from the firm to the pool of publicly available information (Cassiman and Vuegelers 2002, 1). If appropriation of benefits is imperfect, this could increase benefits from cooperative R&D agreements. It is understandable that firms have to protect themselves, but they also have to be careful that their forms of protection do not harm or inhibit the growth of the industry. If firms do not hide their information from other firms and appropriability is imperfect, this will increase the incentive of firms to take advantage of R&D investments of other firms and this encourages free riding on the R&D efforts of joint research ventures by those that are not part of such agreements (Cassiman and Vuegelers 2002, 2).

Evidence suggests that competitive firms and universities may form linkages with less productive firms because they can somehow benefit from it. Within the Brazilian wine industry context, these benefits are through universities acquiring land and vineyards to enable experiments. The opposite is also true; firms may link with universities because they can get access to free advice from others because they do not have an adequate supply of skilled labour (Giuliani and Arza 2009, 917). Synergies might also exist. The problem lies in regulating linkages of associates and competitors.

The next section details the research design and the data, and considers the methodology and econometric analysis that were used in this study. This is followed by a report on the findings of the empirical re-

search that was conducted during this study and the paper concludes with a discussion in the last section.

The Research Design

This section will first describe the database used, followed by an explanation of the model and procedures that was followed during this research. Then the results obtained will be given. Firstly, reporting on the findings about spillovers on firm-level in general, secondly, the role of human capital in spillover effects are investigated, and finally, the possible harmful effects of spillovers are studied and reported.

SOUTH AFRICAN MANUFACTURING DATA

This study investigated South African manufacturing firms that produce durable, as well as non-durable products. Data from the World Bank's surveys on manufacturing firms was used. The database is known as the World Bank Enterprise Surveys (see http://www.enterprisesurveys.org/). It provides comprehensive firm-level data of emerging markets and developing economies. The World Bank uses standard survey instruments to collect firm-level data on the business environment from business owners and top managers. The surveys cover a broad range of topics including access to finance, corruption, infrastructure, crime, competition, labour, obstacles to growth, and performance measures.

This World Bank database offers business data of 130,000 firms in 135 countries. Some of the firms export, while others only produce for the domestic market. The oldest firm began its operations in 1890, whereas the youngest firm is four years old. The sample that was utilised for this study included 1057 observations. The Augmented Dickey-Fuller unit root test was performed to test for shocks in the data. The 2008 financial crisis, which had a great impact on the manufacturing sector, does affect the data, but the results remain reliable. The White heteroskedasticity test was used to test for consistency in the variation of the error terms in the estimates. The inclusion of variables for FDI, exports and in some regressions a time lag, also addressed the problem of endogeneity to some extent.

THE EMPIRICAL MODEL AND PROCEDURE FOLLOWED

This study assumes that spillovers are dependent on foreign direct investment (FDI), technology, research, and development (R&D), as it was

indicated by the existing literature (Bielik, Pokrivčák, Qineti, and Pokrivcakova 2006; Konings 2001; Cassiman and Veugelers 2002; Leahy and Neary 2004), thus:

Spillovers = FDI + technology + R&D.

In other words, the more a firm invests in technology and R&D, and/or receives FDI funds, the more it will contribute to spillovers in the industry. This will also assist other firms, as other firms learn from it. As a firm invests more in R&D and its workers become more educated, this will also increase its contributions to spillovers, although it has a dual effect. An increase in human capital will also make workers more conscious of what may be shared with workers from other firms, which may in turn also decrease spillovers.

The research question can specifically be phrased as, to what extend foreign direct investment (FDI), technology, research, and development (R&D) contribute towards spillovers between firms and through that, towards higher production output, productivity and international competitiveness. A direct measure for spillovers cannot be found easily. The number of competitors was used as a proxy for spillovers in this study. Firms in any industry are usually dependent on each other; if one firm improves on its production, it invites an equally competitive response from other firms (Hitt, Ireland, and Hoskisson 2009, 53). It can further be explained that the more competitors a firm has, the more firms will respond to the activities of one firm and so the firm is forced to stay competitive in order to remain in business. The existence of many competitors forces it to invest in new technology and R&D and to attract FDI. Firms have to be more innovative than others to stay competitive. The more competitive a firm is, the higher the possibility of spillovers. Konings (2001, 623) found that for firms to benefit from FDI, they have to possess absorptive capacity and their technology has to be at least partially advanced. To increase its technological capacity, a firm has to be competitive. Firms have to stay ahead of their competitors, and should therefore always strive to be competitive.

The fact that a firm exists over time is an indication that it has the capacity to sustain its operations and compete with other firms. The longer a firm has been in existence, the more competitive it is, and firms that are competitive are the ones that contribute most to spillovers because they invest in research and development (R&D) and technology, and are the main attractors of foreign direct investment (FDI).

The number of competitors and hence competitiveness was said to be used as a proxy of spillovers, while foreign ownership was used as a measure of foreign direct investment. Information technology expenditure by firms was used as a measure of technology. R&D is taken as a proxy for investment in human capital (Cypher and Dietz 2009, 459) and cannot be measured with just a single variable. Capacity utilisation, the cost of training workers, foreign licensing and international quality certification were used as measures of R&D – dummy variables were used in this case. The use of these variables is justified because capacity utilisation indicates how well a firm has invested in research and development and in return it is able to utilise its capacity. If a firm trains its workers, it spends funds, investing in human capital, which is a part of R&D. This increases the absorptive capacity of the firm and the ability to benefit from the spillovers as workers know more, are better skilled and are able to take advantage of new technologies that are introduced all the time. If a firm has international quality certification, that means its products are good enough to be exported to other countries and are accepted in those countries and the firm is competitive.

The impact of factors such as the experience of managers, the education of workers and the number of employees on competitiveness was also tested. Competitiveness and spillovers were measured in relation to managerial experience (manexp), the level of education among workers (workeduc) and the number of employees (employ). This was estimated using panel data and regression analysis, which can be represented as:

$$compnum = \beta_0 + \beta_1 manexp + \beta_2 workeduc + \beta_3 employ.$$

Finally, the possible negative effects of spillovers on firm-level were estimated. Spillovers may also be harmful to competitiveness and this is largely determined by how the information is transferred. The impact of crime, corruption, Internet communication, how much the firm spends on security, number of years with supplier, employment source of information and the number of employees in the business were tested.

The empirical findings of what was thus far explained above are reported in the following sections.

Empirical Results on Spillover Effects

The model was then tested and general estimations were made. The competitiveness of firms and factors strengthening it will also be discussed, as well as factors that give firms a competitive advantage. These are then

related to spillovers. Spillovers can be harmful depending on how they occur and how they are managed; the results of this hypothesis are also given in the following section. The results are as follows.

SPILLOVERS IN GENERAL

The model implies that the number of competitors (*compnum*), hence competitiveness and therefore spillovers are determined by: foreign ownership (*forown*), IT expense (*itexpense*), capacity utilisation (*capacity*), international quality certification (*intqual*), foreign license (*forlic*), and the cost of training workers (*costtrain*). The aim of this equation is to test spillovers given all the relevant variables (mentioned throughout the text as FDI, technology and R&D).

The final estimated model is:

$$\begin{aligned} Compnum = {} & -0.132 && -0.0017\ forown && -7.44^{e-10}\ itexpense \\ & (0.11) && (0.002) && (8.11^{e-9}) \\ & +0.0148\ capacity && +0.149\ intqual \\ & (0.0023) && (0.065) \\ & +0.9212\ forlic && -0.0048\ costtrain \\ & (0.102) && (0.0098) \end{aligned}$$

$n = 1056$, $R^2 = 52.9\%$, $\bar{R}^2 = 52.6\%$, Prob(F-statistic) = 0.000000.

The R^2 of 52.8% indicates that a part of the variation in the independent variables explains a significant part of the variation of the dependent variable (number of competitors). The R^2 higher than 50 per cent implies that the model is quite a good fit. The probability (F-stat) is zero, indicating a significant regression.

The model has 1056 observations and the Durbin-Watson is less than 2, implying that some negative autocorrelation exists, which implies that some relationships between the variables in the equation are not as significant as it was initially considered, but the reason for this negative autocorrelation is because some variables affect spillovers negatively. For instance, as some aspects of R&D, such as cost of training increase, spillovers decrease as the firm now has more information and wants to protect the information it has in order for the firm itself to profit from it. This gives the firm more competitive advantage in its industry.

The findings of the study confirm the findings of other researchers on this topic (e. g., Konings, 2001). FDI still contributes very little to spillovers. The increase in the FDI in one firm does very little in benefiting the other firms; the benefit of the FDI is mainly enjoyed by the

firm receiving it. The contribution would be better if domestic firms had absorptive capacity and the technology levels were higher. There is even a negative relationship between FDI and spillovers. The receiving firm enjoys the benefits derived from FDI, all other firms can only benefit if they have absorptive capacity. Therefore, FDI does not increase spillovers in the manufacturing industry.

Spillovers from technology are not as large as it was anticipated; however, the reason for this might be slow technological development in South Africa. Spillovers from R&D are high, but the more educated workers there are, the less these spillovers are; unless these spillovers flow through improper channels.

As technological knowledge increases in a firm, the firm acquires new ways to protect its resources from outside exposure, which may decrease spillovers. Industrial espionage has become common in industry today and firms constantly try to protect themselves. Technological advancement should contribute more to spillovers; however, the results do not show this. The reason the results prove otherwise could be because technological advancement in South Africa is not at the level where it should, or could be, and hence does not contribute as much. If there were more investments in technology as well as R&D, the results might be slightly different.

The components that were utilised to measure research and development were the cost of training workers (which means that the firm invests in human capital), international quality certification, foreign license and capacity utilisation. All of these factors increase spillovers except the cost of training.

Exporting firms have the ability to contribute positively to spillovers. They have exposure to other countries that have acquired the necessary skills to meet the import requirements of that country; their production is effective and can aid other firms in achieving this. Firms with capacity utilisation increase competitiveness and therefore spillovers in the sense that these firms invest in R&D, they have the absorptive capacity and can utilise the skills and knowledge acquired through R&D. Instead of all that knowledge spilling over to other firms, they become more competitive and have appropriation capabilities. Firms that invest in human capital have the advantage of employees who can discern what information can be shared with other firms and to protect the interests of the firm, therefore, decreasing spillovers. They have enough knowledge to know what can be transferred to other firms and what should not be disclosed within

the firm. Their knowledge gathered from R&D allows them to protect the firm and its innovations and knowledge. The following section focuses on the role of human capital in spillovers.

SPILLOVERS IN RELATION TO HUMAN CAPITAL

Considering the influence that spillovers may have on human capital, existing literature suggests that the experience and education of managers and workers increase competitiveness of firms (Leahy and Neary 2004). This study found that experiences of managers, education of the workforce, and the number of employees also contribute to competitiveness. It may, however, also decrease spillovers because there is more appropriation and workers are better able and willing to protect the information and activities of firms when they are more experienced and better trained. The number of competitors was used as the dependent variable. The more competitive a firm is, the lower the number of competitors as new competitors do not stay in the industry for long and it empowers the other competing firms.

It was found that when the experience of a manager increases by one per cent, the competitiveness of the firm increases by 1.7 per cent. It was also found that if the manager has more experience, the chances of the firm contributing to spillovers are less; as was shown above, when human capital increases, spillovers decrease. If the firm has an educated workforce, it does not rely as much on spillovers, hence spillovers on firm level decrease. When the education of workers in a firm increases by one per cent, the competitiveness of the firm increases by 24.97 per cent. The more skilled the workers of a firm are, the more productive and competitive the firm will be.

There is a negative relationship between the number of employees and competitiveness, which is in line with the law of diminishing returns on labour. A one per cent increase in the number of employees leads to a 0.04 per cent decrease in competitiveness. A firm using more human labour than technological capital, experiences lower production levels. More employees in a manufacturing firm often implies that the firm still uses much manual labour and could be less competitive than those who are more technologically oriented. Firms with many workers may be slower in their production output, as humans work slower than machines. Another factor could be that the more employees the firm has, the larger the chances of information on its operations leaking to its competitors, declining its competitive advantage.

HARMFUL EFFECTS OF SPILLOVERS

Spillovers may occur in ways that are harmful to firms. This implies that there is a point where spillovers may start being harmful or occur in a manner that may decrease the firms' profitability and its competitive position. This phenomenon was measured with the inclusion of variables on corruption (*corrupt*), the Internet communication (*intercom*), percentage cost of security (*costsec*), years known supplier (*yrsuppl*), employees (*tempemploy*), supplier as a new source of information (*sourceinfo*), number of employees (*employ*), as well as crime, theft, and disorder (*crime*).

The higher the levels of corruption in a firm, the more it is exposed to information leaking to competitors. Much information is exchanged via the Internet; employees get comfortable and share information with their informal contacts. Firms reveal much of their practices on the Internet, on firm websites, or in other forms. The more the firm pays for security, the more serious it seems to be about protecting its property and innovations; therefore, this variable shows to what extend the firm protects itself against spillovers and its effects on competitiveness.

Temporary employees within a firm may share information indiscriminately with anyone as they interact with various firms. This may threaten firms. Information can also be transferred through suppliers. It is important that firms use suppliers that are trustworthy. The longer the firm uses a certain supplier, the more trustworthy such supplier becomes. Sensitive information of a firm is safer with suppliers that have a long relationship with that firm. An increase in crime, theft, and disorder within industries also promote spillovers, which may be harmful to the competitiveness of firms.

The final regression estimated in this case was:

$$
\begin{aligned}
compnum = \; & 1.8199 && + 0.163\ corrupt && + 0.425\ intercom \\
& (0.142) && (0.056) && (0.051) \\
& + 0.0248\ costsec && + 0.009\ yrsuppl && + 4.84^{e-5}\ tempemploy \\
& (0.016129) && (0.005971) && (0.000553) \\
& + 0.0544\ \text{sourceinfo} && - 0.0004\ employ && - 0.0726\ crime \\
& (0.0163) && (0.0002) && (0.0527)
\end{aligned}
$$

$n = 1055$, $R^2 = 9.02\%$, $\bar{R}^2 = 8.32\%$, Prob(F-statistic) = 0.000000.

The model is a reasonable fit. The adjusted $\bar{R}^2$ is at 8.3% per cent indicating that the independent variables do have some significance, though

not much. Although the variation of the independent variables explains only about eight per cent of the variation of the dependent variable, the correlation is still positive. The Durbin-Watson shows some positive autocorrelation at 1.01.

As corruption increases, competitiveness decreases. Information leak to potential entrepreneurs and often occurs through improper channels. New firms learn about the operations of an existing firm, which may harm its competitive position. Corruption, including bribes, decreases the benefits of spillovers, because spillovers do not happen in a way, which benefits firms in such cases. The firm is usually not aware of the piece of information, which is leaking to external parties and these could be some confidential information. The party that benefits is the one involved in the corruption while the other suffers.

One per cent increase in the Internet communication by employees increases the number of competitors by 42.5 per cent. Information spread much faster over the Internet, even confidential information about the firm and its operations can harm its competitiveness. An increase in the cost of security for the firm also increases the number of competitors to some extent. The amount is very small and its significance is questionable. As business with the same supplier increases through the years, the number of competitors of a firm also increases. This is, however, small because relationships have been built with suppliers and suppliers may be reluctant to share information about a firm with other parties. When a firm is only exposed to a single supplier, it limits its exposure, which minimises backward and forward linkages and the possibility of its competitors learning something new is minimised, leading to a decrease in spillovers. Staying with only one supplier may also have some disadvantages as well; there is an opportunity cost when it comes to staying loyal to a single supplier. The supplier could give discounts to its loyal customer and the firm trusts the supplier. On the other hand, suppliers may also have enough information about the firm to hurt the firm. A new supplier might also give discounts in order to lure firms away from competitors; however, these firms might be sceptical, because they do not know the supplier well enough to trust him with their information and they lack experience of the quality of goods and services he supplies.

One per cent increase in the number of employees increases the number of competitors by 0.04 per cent. This is because employees learn new skills and knowledge while working with one firm and then apply them when they move to another firm. An increase in new suppliers provides

increases of information on competitors to some extent. New suppliers provide firms with new information about the industry, which increases the competitive advantage of particular firms, in relation to its competitors. This will force some competitors out of business, thereby increasing its market share, making it even more competitive. As the number of employees increases, it reduces the number of competitors. This is because potential entrepreneurs that could become a firm's competitors remain part of the firm. An increase in crime leads to a significant decrease in the number of competitors. Crime does not contribute positively to industrial development and will not increase the number of firms that emerge therein.

Summary and Conclusion

This study considered the effect of technological and knowledge spillovers on the competitiveness and efficiency of micro-economic production of South African manufacturers. The focus was on the interaction between foreign direct investment (FDI), technology, and research and development (R&D) spillovers, as these factors are often emphasised in the existing literature. The article starts by assuming that spillovers advance industrial development and should be encouraged. Industrial development seems to escalate when firms are growing individually and this growth is extended to other firms. Other firms learn from growing firms and then they grow, too – this is what is meant by the spillover effects of industrial development. It is usually assumed that a rise in FDI, technology and R&D deliver increasing returns to firms and even greater returns for the industry as a whole.

The findings of this study confirm the results of previous researchers on this topic. FDI contributes little to secondary spillovers to other firms. An increase of FDI in one firm does very little in benefiting the other firms; the benefit of the FDI is mainly internalised by the firm receiving it. Benefits occur mostly when domestic firms have the absorptive capacity and a stage of technology, which is high enough to enable firms to take advantage thereof.

Technological advancement should contribute to spillovers; however, this did not show in the results of this specific study. The reason could be that technological advancement levels in South Africa are too low and hence do not contribute much. If more could be invested in the capacity and capability to utilise and internalise new technology, as well as R&D, the results might be slightly different.

Considering spillovers in general, this study found a positive relationship between competitiveness and R&D, especially with regards to capacity utilisation, foreign licensing and international quality certification, while the cost of training was detrimental, probably due to limited absorptive capacity. On the other hand, the relationship between competitiveness and foreign ownership was negative. The same applied to the contribution of FDI and technology; although more expenses on IT, especially the Internet, leads to more spillovers.

With regards to spillovers in relation to human capital, it was found that the degree of managerial experience and educational level of labour contributed positively to competitiveness, but to a decline in spillovers, probably because workers learn to protect the concerns of their firms better. On the other hand, spillovers increase with the number of employees, leading to a decline in competitiveness. Firms that invest in human capital have the advantage of employees that are capable of discerning what can be shared with other firms, protecting the interests of their firms, which decreases spillovers. They have enough knowledge to know what information may be transferred to other firms and what should remain within the firm. Their knowledge gathered from R&D allows them to protect the firm, its innovations, and knowledge.

Spillovers have the ability to enhance but, to the other extreme, it can also diminish productivity growth. Spillovers are generally to the advantage of firms and should be promoted, but if they occur in the wrong places, it may be detrimental to the competitiveness of firms. This phenomenon was highlighted by the results of this study. Crime and corruption, among other factors, contribute to the incorrect spillover of knowledge and technology, and this may be harmful. Firms can also fall victim to industrial espionage. Information which a firm would prefer to keep restricted within the firm can also be transferred over the Internet; having a negative effect if it is leaked to its competitors.

Investigating the possible negative and harmful effects of spillovers, this study revealed that spillovers are positively associated with the volume of internet communication, the number of temporary workers, corruption, crime, theft, and disorder, which also curbs competitiveness and industrial development in general. New suppliers can serve as a source of information due to more spillovers, while this decline as suppliers are known longer to a particular firm as loyalty is build up with time. As could be expected, the level of spillovers decline as expenditure on security increases, which then also enhances firm's competitiveness.

Much information about the interaction of technology, FDI and R&D, and their contribution towards knowledge and technological spillovers and competitiveness was revealed by this study. Several studies reported in the existing literature consider the contribution of one of these factors towards spillovers that may affect competitiveness. The unique contribution of this study is that it also acknowledges that there are interactions between these factors of technology, FDI and R&D that influence the spillover effects together. Therefore, it also studied the spillover effects that these factors have when considered simultaneously when estimating regressions. Very little is also known about the negative effects of spillovers in the existing literature and in that regard this study makes a particular contribution.

Determining and measuring spillovers still remains a difficult endeavour and much research still needs to be done. In further research, the time factors and causality should also be taken in regard, although data restrictions make it difficult. More attention might be given to such techniques as investment and other actions during the production and management processes probably take some time to take effect, which cannot be indicated using cross sectional data and regressions. This study already utilised panel data to build in some time lag into the model.

Spillovers are good for industrial development and should be promoted; however, the process should be well managed, or else it may harm the competitiveness of firms. The limitations of studies like this one are that spillovers are not easily measurable. It is difficult to determine just how much a firm contributes to its industry in terms of foreign direct investment, how much technological knowledge it shares with other firms, or how much R&D benefits it shares with other firms. Basically, it is difficult to determine just how much is spilled over from one firm to the rest of the industry or into a knowledge sharing system.

Following this study, some recommendations are in order. Governments need to encourage firms to gain knowledge. It should give incentives to firms to invest in research and development (R&D), as well as in human capital. The government could subsidise firms that embark on such activities. Governments are in a better position to attract foreign direct investments (FDI) towards countries and industries. It can better negotiate with international capital and when private firms intend to go into business with foreign firms, it may be easier to attract investors if there is backing from government. Large, resourceful organisations, transnational corporations, large domestic firms and universities should

be encouraged to invest in the accumulation and the creation of local knowledge and technology.

The promotion of professional contact between firms should be promoted, as this contributes towards industrial development. Firms with the same knowledge base can cooperate. Firms can grow much faster and contribute more to industry in this way. Firms should, however, discover the best ways to protect themselves from corruption, crime and theft, as these could harm the competitiveness of the firm. The governments should make patent application processes shorter so that producers can protect their ideas and innovations and profit from them. This will all accelerate industrial development. This study highlighted the positive effects, which technological and knowledge spillovers have on the efficiency and competitiveness of firms.

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Social Responsibility and Professional Ethics in Management: Some Empirical Evidences at Country Levels

Cene Bavec

In the presented exploratory study, we demonstrated some empirical evidences on relations between social responsibility of business, managerial ethics, and economic environment at county levels. We conducted desk research on 41 countries using different secondary information sources. We confirmed hypotheses, which associate higher social responsibility and ethics to openness and competitiveness of people and management, enhanced economic performance, higher economic freedom, and lower level of corruption. The rationale behind the research hypothesis is disputed question if socially responsible and ethically managed business is economically more successful and sustainable. Evidently, in the most developed countries unsocial and unethical business behavior is not generally acceptable. However, in less developed economies profit is so high on the priority list that social responsibility and ethics are academic questions. We hypothesize that companies consciously select where it is beneficial to be socially responsible and ethical, and where it is more profitable to make business ruthlessly. We also tested the hypothesis that social responsibility contributes to the resilience of economy. This hypothesis was partially confirmed and partially rejected. Finally, we addressed a question if our results are meaningful for individual organizations, as well. We could just say that more developed countries have a larger proportion of businesses that behave affirmatively regarding social and ethical issues, which means that they find it beneficial also at individual level.

Key Words: social responsibility of business, management ethics, economic performance, corruption
JEL *Classification:* O10

Introduction

Social responsibility of business is still a disputed issue (Joyner and Payne 2004). Friedman and followers of the neo-liberal school of economy stand firmly on the position that business should not have any social

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responsibility. Its goal is to make a profit, and that is all. In his interview for *The New York Times,* Friedman (1970) explicitly declared that 'the social responsibility of business is to increase its profits.' They are little more benevolent to the issue of management ethics, but just as long as ethical behavior directly supports business activities and consequently contribute to the profit.

On the other side, responsible business campaigners, followed by many managers and politicians (US Department of Commerce 2004; United Nations 2007), advocate social responsibility as an essential part of sustainable business strategies and operations. They also tend to treat social responsibility and ethics as two sides of the same coin (Carroll 1991). However, many scholars and managers position themselves somewhere in-between (Donaldson and Dunfee 1994; Lepoutre and Heene 2006; Derry and Green 1989). It does not mean that they reject socially responsible behavior in business; they are just putting the profit and efficiency higher on the priority list.

There are still many questions about efficiency of socially responsible and ethical management (Bavec 2009). If managers believed that this is the most efficient way of doing business than they would spontaneously behave socially responsible and ethically. Obviously, many of them are not convinced. Many behave socially responsible and ethically when it suits them and not when they can reach their business goals with other means. From more idealistic perspective, we would all like to believe that there is not an antonym between business efficiency and social responsibility of business. Many indications, including our research show that this could be the case. However, there are still many very pragmatic questions (Bavec 2007). For example, how different models of social responsibility could coexist and compete in the same economy or in the global market. Can someone be socially responsible while others are not in the same competing market? This dilemma is clearly seen in operations of many multinational companies on the relation developed – developing countries (Jenkins 2005; Jamali and Mirshak 2007; Doane 2005). Many multinational companies have very different social and ethical standards for operating in homeland or developed countries than in the developing world. This behavior is evidently highly unethical and is rightly under the fire of responsible business campaigners.

The EU and many developed countries have partially embedded some concepts of social responsibility and ethics into their legal systems, particularly environmental issues. However, when we refer to social respon-

sibility and ethics in general, we usually consider just non-legal binding incentives. In its strategy for Europe 2020, the European Commission defined social responsibility of business as *a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis* (European Commission 2010). The emphasis is on voluntary actions. Another interesting issue in this definition is differentiation between the social and environmental concerns. However, we are slowly integrating different environmental aspects of social responsibility into our legal systems, therefore, they are not voluntary anymore and we cannot consider them as social responsibility in the traditional sense. Therefore, social responsibility is focused more on communal issues.

The dark side of social irresponsibility and unethical behavior is reflected in corruption (Williams and Beare 1999). Corruption is the most severe obstacle for economic and social development in any country (Dearden 2000). It is one of the main reasons for enormous economic and social difficulties in developing countries, and cannot be ignored even in the most developed countries. Many studies reveal that higher social responsibility of business and professional ethics significantly reduces corruption, or vice versa (Rodriguez et al. 2006). Therefore, we have to discuss social responsibility and professional ethics from this point of view, as well. Maybe it is less relevant issue for developed countries, but it is definitely an important one for developing countries.

In our paper, we shall avoid all highly inflammable ideological discussions. We will just present an experiment with available empirical evidences that would confirm some relation between social responsibility, managerial ethics, and economic environment at county levels. It would be methodologically extremely difficult to assess these relations at the level of an individual organization because we could do that only in two ways. The first one is to follow changes in the business efficiency over time and assess, which social responsibility and ethic strategies lead to the best business results and simultaneously the most positive social implications. The second one would be standard benchmarking between individual companies, with immense difficulties to gather relevant and methodologically comparable data, particularly on social environment and behavior. In practice, both approaches are nearly impossible to implement (McWilliams and Siegel 2000; Korhonen 2003). Therefore, in our desk research we decided to experiment with data at national levels. We can find many meaningful data in different published studies and

national statistics, particularly for the EU and OECD countries. We presumed these relations at national level would give us some significant indications on the situation at the level of an individual organization.

Research Methodology and Hypotheses

SECONDARY INFORMATION SOURCES

In our desk research, we focused on relations between social responsibility of business and professional ethics in management on one side, and different indicators of business environment and level of corruption on the other side. Our research sample included 41 EU, OECD and some Asian countries. The goal was to test different assumptions in different cultural environments.

In the table 1, we collected data that we had used in the research. To simplify some calculations and interpretations of results, we introduced two aggregate indexes: Social Responsibility and Ethical Practices (SREP) and Openness and Competitiveness of People (OCP). However, in clustering countries by these two indexes (figure 1 and figure 2), we used original set of IMD indexes to avoid unnecessary loss of information.

1. *Social Responsibility and Ethical Practices* – SREP (Column 1) is an aggregate index that we calculated from three indicators: *ethical practices, credibility and social responsibility of business managers* (IMD 2010).
2. *Openness and Competitiveness of People* – OCP (Column 2) is an aggregate index we calculated from five indicators: *entrepreneurship of managers, value system in society that support competitiveness, flexibility and adaptability of people, attitudes toward globalization in society, openness of national culture to foreign ideas* (IMD 2010).
3. *Business efficiency* (Column 3) is an index from IMD (2010) (an extent to which enterprises are performing in an innovative, profitable and responsible manner).
4. *Competitiveness* (Column 4) is the main aggregate index from IMD (2010).
5. *Resilience of the economy* (Column 5) is an index from IMD (2010).
6. *Index of economic freedom 2010* (column 6) (The Wall Street Journal and The Heritage Foundation 2011).
7. *Corruption perception index 2010* (Column 7) is an index that ranges countries from 0 – highly corrupted, to 10 – highly clean (Transparency International 2010).

TABLE 1 Data used in the research

Country	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Australia	6.88	7.06	74.5	92.2	7.04	82.5	8.7	3.3
Austria	6.50	6.12	67.1	84.1	5.46	71.9	7.9	3.5
Belgium	6.19	5.37	48.5	73.6	3.48	70.2	7.1	2.5
Bulgaria	3.64	5.04	9.6	47.8	2.43	64.9	3.6	9.0
Canada	6.83	6.89	69.5	90.5	5.55	80.8	8.9	4.4
China Mainland	5.16	6.22	50.3	80.2	6.02	52.0	3.5	10.1
Croatia	3.25	3.99	4.1	40.1	1.93	61.1	4.1	−1.4
Czech Republic	4.73	5.52	36.7	65.4	4.36	70.4	4.6	3.0
Denmark	7.41	6.44	68.1	85.6	5.22	78.6	9.3	3.2
Estonia	5.47	6.47	41.3	62.6	4.79	75.2	6.5	7.6
Finland	7.03	6.10	60.1	80.0	4.02	74.0	9.2	4.8
France	5.97	4.62	43.6	74.4	4.43	64.6	6.8	2.1
Germany	5.90	5.68	52.5	82.7	5.14	71.8	7.9	4.2
Greece	5.03	5.41	31.8	52.3	3.23	60.3	3.5	−7.3
Hong Kong	6.18	7.55	79.5	99.4	5.40	89.7	8.4	5.7
Hungary	4.72	4.54	27.9	54.1	3.00	66.6	4.7	2.3
India	5.86	7.04	60.4	64.6	6.82	54.6	3.3	8.3
Ireland	5.91	6.99	58.8	78.1	2.36	78.7	8.0	−0.7
Israel	5.68	7.54	66.1	80.3	7.13	68.5	6.1	6.8
Italy	4.66	5.30	27.4	56.3	4.17	60.3	3.9	1.4
Japan	7.16	5.48	54.1	72.1	3.78	72.8	7.8	4.3
Korea	5.85	6.45	51.4	76.2	5.55	69.8	5.4	4.9
Lithuania	4.94	6.45	34.0	54.1	3.20	71.3	5.0	0.4
Luxembourg	7.13	6.60	72.8	86.9	4.87	76.2	8.5	3.6
Netherlands	6.41	6.78	65.0	85.7	5.20	74.7	8.8	2.5
New Zealand	6.71	6.36	54.1	78.5	4.11	82.3	9.3	1.4
Norway	7.26	6.02	72.2	90.0	6.11	70.3	8.6	1.3
Poland	4.86	6.30	40.6	64.5	5.80	64.1	5.3	5.2
Portugal	4.16	5.10	22.4	57.1	2.41	64.0	6.0	1.1
Romania	4.99	5.35	22.6	47.5	4.03	64.7	3.7	−1.9
Russia	3.49	5.01	15.3	49.3	1.94	50.5	2.1	0.4
Singapore	7.06	7.29	79.6	100.0	5.78	87.2	9.3	14.6
Slovakia	4.63	5.74	33.7	51.1	3.08	69.5	4.3	4.8

Continued on the next page

TABLE 1 *Continued from the previous page*

Country	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Slovenia	4.10	4.24	8.3	48.7	3.41	64.6	6.4	1.9
Spain	4.76	4.81	33.1	58.8	2.44	70.2	6.1	0.4
Sweden	7.04	6.75	71.7	90.9	5.75	71.9	9.2	7.8
Switzerland	6.70	6.53	72.8	96.1	6.27	81.9	8.7	3.7
Taiwan	6.71	7.28	77.6	90.4	6.07	70.8	5.8	8.3
Turkey	5.96	6.43	41.1	51.1	4.87	64.2	4.4	7.3
UK	5.89	6.04	51.6	76.8	3.17	74.5	7.6	6.8
USA	6.05	6.76	66.8	99.1	3.94	77.8	7.1	1.9

NOTES Column headings are as follows: (1) Aggregate index Social Responsibility and Ethical practices (SREP), (2) Aggregate index Openness and Competitiveness of people (OCP), (3) Business efficiency 2010, (4) Competitiveness 2010, (5) Resilience of the economy 2010, (6) Index of economic freedom 2011, (7) Corruption perception index 2010, (8) GDP Growth in 2010.

8. GDP *growth in 2010* (Column 8) (http://stats.oecd.org) for member countries and (Central Intelligence Agency 2010) for other countries).

HYPOTHESES

The research focused on the following five hypotheses:

- H1 *Social responsibility and professional ethics of management encourage openness and competitiveness of people and management.*
- H2 *Social responsibility and professional ethics of management have positive effects on business performance.*
- H3 *Economies with high social responsibility and professional ethics of management demonstrate economies that are more resilient.*
- H4 *Social responsibility and professional ethics of management positively correlate with economic freedom in the country.*
- H5 *Social responsibility and professional ethics of management lead to lower level of corruption.*

The first hypothesis presumes that socially responsible and ethically managed business is a characteristic of social environment with higher openness and competitiveness of people and management. It indirectly means that societies can build its competitiveness in socially acceptable manner, rather than on unsocial and unethical behavior. Similar claims

were made by some other authors (Singhapakdi, Karande, Rao, and Vitell 2001; Vitell and Hidalgo 2006).

The rationale behind the second hypothesis reflects still highly disputed opinion that socially responsible and ethically managed business is also economically more successful (McWilliams and Siegel 2000; Zairi and Peters 2002; Porter and Kramer 2006).

The third hypothesis presumes that socially responsible and ethically managed business makes economies more resilient to economic and social crisis, because social environment is more ready to support business in potential troubles. In our relatively simple model, we judged the resilience with the IMD's index of resilience of the economy (based on the opinion of managers in the particular country) and the estimated GDP growth in 2010.

The fourth hypothesis assumes that we can achieve high socially responsible and ethically managed business only in countries with high economic freedom. This claim is not obvious because many responsible business campaigners are convinced that they can achieve their goals in countries with lower economic freedom and in the predominant state owned businesses, as well (Blowfield and Frynas 2005; Jenkins 2005; Jamali and Mirshak 2007).

The fifth hypothesis deals with corruption. We anticipated that high social responsibility and professional ethics of management significantly reduce corruption (Dearden 2000; Rodriguez et al. 2006).

Presentation of Results

CLUSTER ANALYSIS

In the first step in the research, we checked if two aggregate indexes Social Responsibility and Ethical Practices (SREP) and Openness and Competitiveness of People (OCP) have meaningful interpretation. We applied hierarchical cluster analysis for both indexes. However, we did not perform cluster analyses on aggregate indexes but on the original set of variables, avoiding the loss of information by reduction of variables. For the SREP there were three variables (figure 1) and for OCP we used five variables simultaneously (figure 2). From the presented dendrograms, we can visualize similarities between individual countries very easily; however, they are not revealing any ranking of countries.

The dendrogram in the figure 1 is opened to different interpretations and in-depth analysis. We can see over 10 too distinct branches of coun-

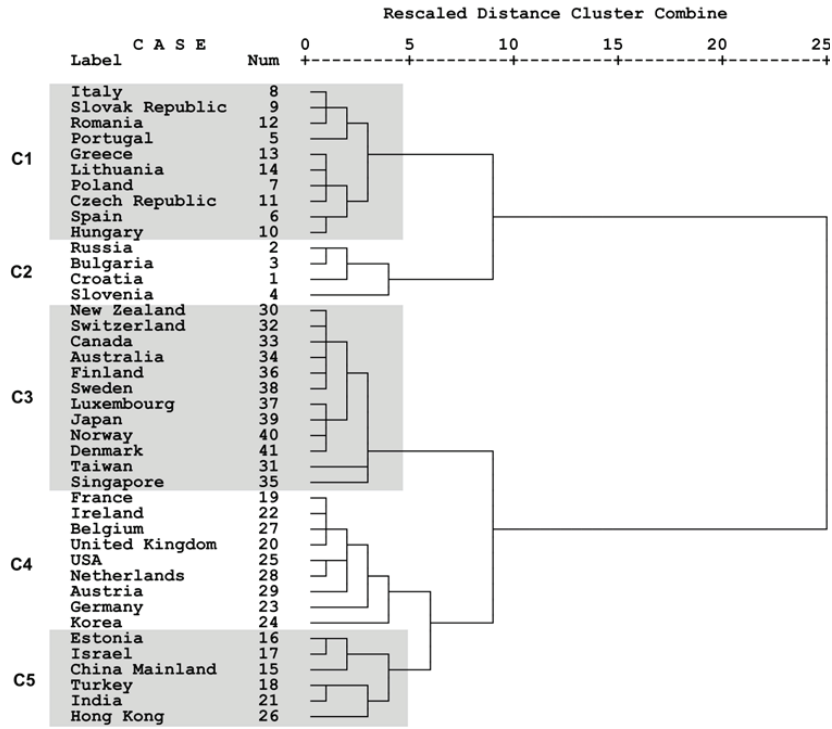

FIGURE 1 Clustering countries by the three variables (ethical practices, credibility and social responsibility of business managers) forming the aggregate indexes Social Responsibility and Ethical Practices (SREP) (based on data from IMD 2010)

tries at the highest level of cluster separation at the rescaled distance. In the first one, there are countries that form C1 and C2 clusters, in the second one are countries in the clusters C3, C4, and C5. It means that a mixture of Eastern European countries, some Mediterranean countries, and Russia (clusters C1 and C2) demonstrates significantly different social and ethical practices than all other analyzing countries (clusters C3 and C4) which all belong to the most developed European and Asian and North American countries. Geographically heterogeneous cluster of countries (C5), which includes China, Turkey, India, Hong Kong, Israel, and Estonia, also belongs to this group. These countries are from very different regions and different cultural backgrounds, but they share similar social and ethical practices of management. These are definitely interesting results, which could lead to many discussions.

We can also see which countries are particularly similar, for example

New Zealand, Switzerland, Canada, Australia, Finland, and Sweden (part of the cluster C3). However, the whole composition of the cluster C3 is very enlightening with unexpected group of countries from very different regions. Something very similar can be noticed in the cluster C4. It shows that similar social and ethical practices of management are not regional characteristics, but are more or less global and depend more on general social and cultural environments.

It would be also very interesting to discuss the composition of the cluster C1. We would expect that Central and Eastern European countries would share some social and ethical characteristics. However, there are also old EU countries Italy, Greece, Portugal, and Spain in this group. In the cluster C2, there is also Russia forming the group with Bulgaria, Croatia, and Slovenia, which is also less expected.

With similar research goals and similar methodology, we performed cluster analysis also on five variables representing openness and competitiveness of people – OCP (figure 2). The clusters are not the same as in the figure 1, but there are some striking similarities. Again, we can see two distinguished branches of countries at the rescaled distance over 15. The composition of these two branches is nearly the same as in the figure 1. For example, the composition of clusters C3 and C4 in the first dendrogram is very similar to the composition of clusters A1 and A2 in the second one.

The most developed European and Asian countries together with China, Turkey, and India (clusters A1, A2 and A3) are again separated from Eastern European countries, some Mediterranean countries, and Russia (clusters A4 and A5) pointing to the significant differences in openness and competitiveness of their people. However, for the dendrogram in the figure 2 there are also some less obvious grouping. Clusters A6 (Japan), A7 (Hungary and France), and A8 (Croatia and Slovenia) demonstrate so large differences in openness and competitiveness of their people that they could be treated as separated clusters with very low level of similarities with others. These countries are somehow unique by these criteria. An interesting feature could be also seen in the cluster A3, which contains a small group of Lithuania, Turkey, Poland, and Estonia that would be expected in separated clusters.

TEST OF HYPOTHESES

Similar composition of majority of clusters leads to the conclusion that SREP and OCP are interdependent. More formally, it can be also seen

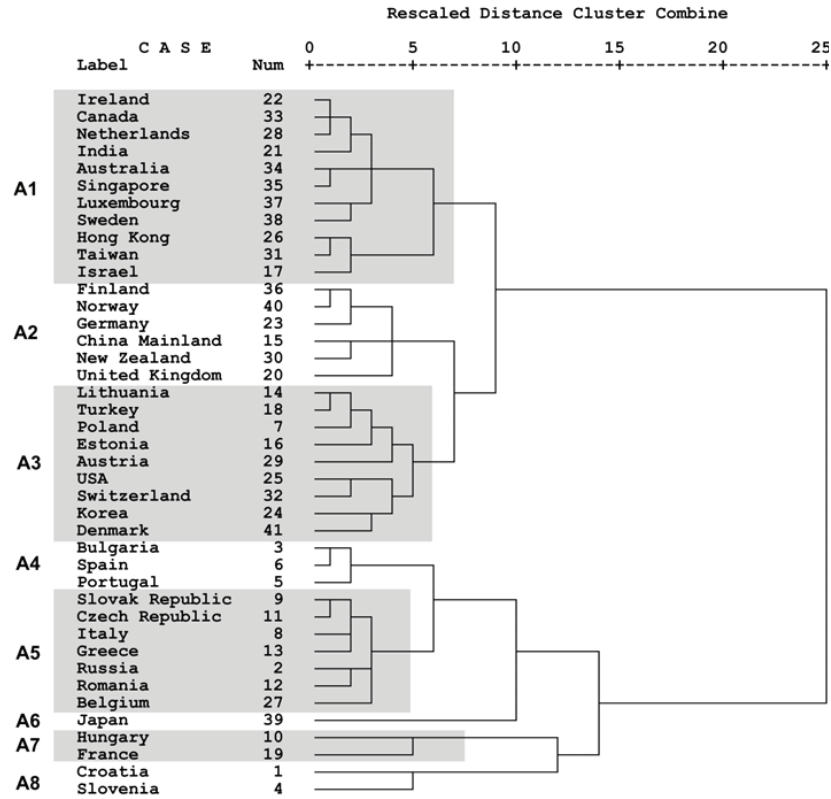

FIGURE 2 Clustering countries by five variables (entrepreneurship of managers, value system in society that support competitiveness, flexibility and adaptability of people, attitudes toward globalization in society, openness of national culture to foreign ideas) forming the aggregate index Openness and Competitiveness of People – OCP (based on data from IMD 2010)

from their correlation which is 0.658 significant at the $p < 0.01$ level. However, from statistical correlations we cannot assess the position and similarities of individual countries. Therefore, visual comparison of the structures of two dendrograms provides additional information that can significantly deepen our insight into potential similarities and dissimilarities of countries and group of countries. Both approaches confirm the first hypothesis that socially responsible and ethically managed business is a characteristic of social environment with higher openness and competitiveness of people and management.

To confirm the second hypothesis that high social responsibility and professional ethics of management positively have a positive effect on

TABLE 2 Correlations between the selected variables

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	1	.658**	.893**	.885**	.695**	.783**	.837**	.319*
(2)		1	.807**	.815**	.738**	.780**	.565**	.447**
(3)			1	.923**	.796**	.680**	.788**	.443**
(4)				1	.757**	.839**	.845**	.407**
(5)					1	.547**	.521**	.529**
(6)						1	.803**	0.254
(7)							1	0.243
(8)								1

NOTES Column headings are as follows: (1) Aggregate index Social Responsibility and Ethical practices (SREP), (2) Aggregate index Openness and Competitiveness of people (OCP), (3) Business efficiency 2010, (4) Competitiveness 2010, (5) Resilience of the economy 2010, (6) Index of economic freedom 2011, (7) Corruption perception index 2010, (8) GDP Growth in 2010. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

business performance, we calculated correlations between the SREP and two indicators that describe business performance: Business efficiency and Competitiveness (table 2). Both correlations are very high (0.893 and 0.885) significant at the $p < 0.01$ level. In our very simple model, these two indicators are an indication of business performance; therefore, we could also confirm the second hypothesis.

With the same methodology, we confirmed the third hypothesis that economies with high social responsibility and professional ethics of management are a characteristic of economies that are more resilient. We used just two indicators: Resilience of economy and the growth of GDP in 2010. The correlations between SREP and Resilience of economy is 0.695 significant at the $p < 0.01$ level, confirming the hypothesis. However, the IMD's indicator of resilience is just a matter of management opinion, therefore, we also tested the hypothesis with the growth of GDP in 2010. The rationale behind this second assessment is a presumption that resilient economy will exit the current crisis faster than other countries. This deduction is a clear simplification, but it still gives some objective information of economic resilience. We can notice a small correlation at 0.319 and significance at the $p < 0.05$ level. Therefore, with this indicator we cannot convincingly confirm the fact that country with high SREP will exit current economic crisis faster than others.

Confirmation of the fourth hypothesis is straightforward. Correlation

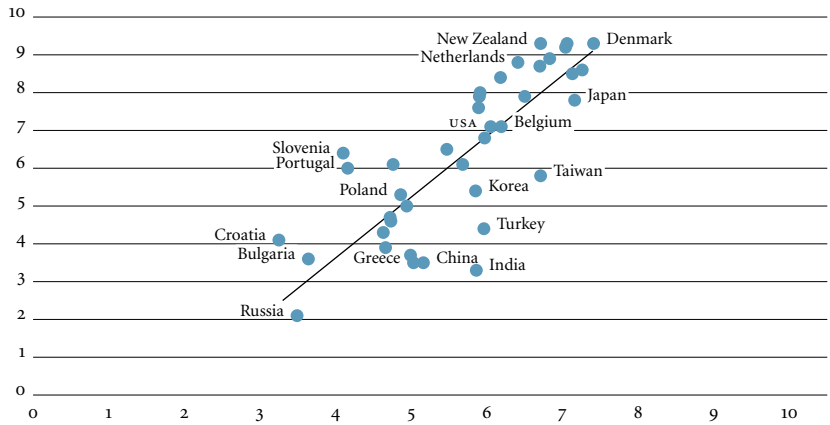

FIGURE 3 Dependence between the aggregate index Social Responsibility and Ethical Practices (SREP) and Corruption Perceptions Index

between the SREP and the Index of economic freedom is 0.783 significant at the $p < 0.01$ level. It means that social responsibility and professional ethics of management positively correlate with economic freedom in the country. However, we did not discuss what the causes and consequences are. We would just guess that these two national characteristics stimulate each other.

We also found high correlation between SREP and Corruption Perceptions Index which is 0.837 significant at $p < 0.01$ level. It confirms our fifth hypothesis that high social responsibility and professional ethics of management lead to lower level of corruption. To visualize this relation and to illustrate the positions of some individual countries we presented the dependency between SREP and Corruption Perceptions Index in the graph (figure 3).

Without going into details, we can see general distribution of countries with labels to some individual countries. Regardless of high correlation, we can also notice that some countries (for example India, Turkey, China, Taiwan, and even Slovenia and Portugal) are relatively far from the trend line, indicating that for them the fifth hypothesis should be taken with some precautions.

Comments and Conclusions

The presented exploratory desk research started with the question if social responsibility of business and professional ethics in management contributed to business performance and its sustainability, or they mean

just a necessary burden. We would like to believe that social responsibility and business performance are not opposed forces, but in reality, many managers are not sure. They share a 'contingency' approach in the sense that in some environments it is beneficial to be social responsible, however, in others it would reduce business results. They consciously select where it is beneficial to be socially responsible and where it is more profitable to make business ruthlessly. Consequently, we are dangerously close to the Friedman's idea that the profit is all that matters. Not going into detail discussions, this approach shows deeply unethical behavior particularly in relation developed – less developed countries. Evidently, in the most developed countries unsocial and unethical business behavior is not acceptable.

However, in many less developed economies profit is so high on the priority list that social responsibility and ethics are more or less academic questions. They even do not have efficient social or legal mechanisms to fight such behavior.

In the paper, we discussed some empirical evidences on relations between social responsibility of business, managerial ethics, and business environment at the national levels. We confirmed hypotheses, which associate higher social responsibility and ethics to openness and competitiveness of people and management, enhanced economic performance, higher economic freedom and lower level of corruption. However, there is still an unanswered question what the cause and what the consequence are. If we observe this issue in the last century in the most developed countries, we can easily notice that at the beginning no business cared about social responsibility and ethics. With economic and particularly social development in these countries, they reached the level when such misbehavior was much less acceptable. High level of economic development leads to higher sensitiveness towards social and ethical questions. We could expect the same development in future in developing countries that are still fighting with basic economic problems.

Another intriguing question is relation between social responsibility of business and professional ethics in management and openness and competitiveness of people and management. These issues do not look related, but intuitively we would claim that in socially responsible organizations with ethical management employees are more motivated, opened for competition and globalization and consequently to innovative ideas. We confirmed a significant correlation between two aggregate indexes that measure these issues (SREP and OCP) consequently confirming that

higher social responsibility positively influences openness and competitiveness of people.

We also briefly addressed the issues of corruption and economic freedom. In many less developed countries, corruption is the biggest obstacle for economic and social development, but this is a part of never ending discussion about the economic costs of corruption (Dearden 2000). It is also indicative that most of Europeans, including Western Europeans, still believe that corruption is a problem in their countries, with exception of Denmark, Sweden, and Luxembourg (Eurobarometer 2009). It would be important to understand if we could reduce corruption with systematic support to social components of the business. The answer is far from trivial, because any state or local community involvement in business could unintentionally trigger an opposite effect, increasing corruption. The other side of the same medal is economic freedom, which significantly correlates with non-corruptness. Therefore, together with social responsibility and ethics it could be one of mechanisms to fight corruption. However, in the research we also showed that for some non-European countries higher social responsibility and ethical behavior do not reflect in lower corruptness, which additionally complicates the picture.

We also experimented with the correlations between social responsibility and professional ethics with the resilience of national economies. In our very simple model, we used two indicators. IMD's indicator of the resilience of the economy revealed high and statistically significant correlation confirming the hypothesis that social responsibility contributes to the economic resilience. This issue is also highly relevant because resilience and consequently sustainability of business could be important arguments for higher social responsibility and higher ethical standards. This is something that every manager would understand; profit yes, but it should be sustainable. We also assessed the economic resilience with estimated economic growth in the 2010, expecting that more resilient economies will grow faster and exit the economic crisis faster. However, the correlation was low and we could not confirm the hypothesis with this indicator. This result was a minor surprise, because we expected the opposite. Obviously, there are many other factors, which make an economy resilient.

In our research, we used data at national levels. It immediately raises a question if our results are meaningful for individual organizations, as well. Results at national levels are statistical average of all individual orga-

nization, therefore, we would conclude that in average we could 'shrink' these conclusions to the level of an individual organization. However, we could just say that more developed countries have a larger proportion of businesses that behave affirmatively regarding social and ethical issues, which means that they find it beneficial also at individual level.

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Lifelong Learning Programme as a Mechanism of Change at the National Level: The Case of Slovenia

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European Commission (EC) funding programmes in the field of education and training present supranational policy instruments bringing change to various levels of social reality at the national level. In an attempt to present the holistic view of their effect, this paper presents the results of the Lifelong Learning Programme (LLP) impact evaluation, which consisted of a mixed method research approach combining a focus group discussion method, interviews, content analysis, and survey research. Results show that EC education and training funding programmes do bring change to the national (system), mezzo (organisational), and micro (individual) levels. Yet, the impact seems to be different at the observed levels as well as in the different target domains, and is weakest at the system level. This prompts the question about whether it makes much (economic) sense to exploit EC programmes as mechanisms of national policy goal implementation.

Key Words: social change, EC programmes, impact, evaluation, education
JEL *Classification:* I25, D04

Introduction

The European education and training funding programmes have been present in the Slovenia education system since 1999. When the Erasmus, Comenius, Socrates, and other actions within Leonardo da Vinci programmes were launched between 2000 and 2006, more than 3600 teachers and mentors, 4000 students, 3000 pupils and 500 organisations participated in Slovenia. These figures are increasing with the Lifelong Learning Programme (LLP), which is replacing the aforementioned programmes. In 2006, the European Commission (EC) proposed to the Parliament to integrate its various educational and training initiatives under

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a single umbrella, known as the Lifelong Learning Programme, 'with a significant budget of nearly € 7 billion for 2007 to 2013; the new program replaces previous education, vocational training and e-Learning programs, which ended in 2006' (European Commission 2009, 1). Considering the scope of these programmes, the question immediately arises: What type of change (impact) would these supranational policy instruments bring to various levels of social reality at the national level? Due to the LLP sub-programmes' and actions' nature we assume, that the change will predominantly affect individual LLP participants. Lesser impact is expected at institutional and national level.

We address this problem by presenting information on the impact made by the LLP, which represents the next generation of EC action programmes in the field of education and training in Slovenia. We present two aspects of the change that the LLP has brought to Slovenia. The first aspect is the scope of LLP implementation, and the second aspect is the change itself the LLP has brought to Slovenia as shown through the results of the impact evaluation which was carried out between December 2009 and February 2010. The evaluation covered the LLP implementation during the period from 1 January 2007 through 31 December 2009.

We consider change to be a programme impact manifesting itself at various levels of social reality: macro level (i. e., education system), mezzo level (i. e., institutional), and micro level (i. e., individual). Since it is impossible to observe change in all its manifestations, we observe the LLP impact across different pre-selected programme goal areas (i. e., substantive areas) determined by LLP programme goals and evaluation stakeholders. This article also mitigates deficiencies in empirical research in this field. There are many available evaluation studies (e. g. Bracht et al. 2008; McChosan et al. 2008; Association for Empirical Studies in Centre for Research into Schools and Education at the Martin Luther University 2007; Širok et al. 2007; Ernst & Young 2006; Centre for Strategy and Evaluation Services 2004; European Commission 2004; Deloitte & Touche 2001), but they predominately deal with either specific sub-programmes (for example, Erasmus), or are plagued with considerable deficiencies that hinder proper conclusions on the impact of the programme (Širok and Petrič, forthcoming). Most of these evaluations seek to determine the quality of sub-programme/actions processes and procedures, including the effectiveness and/or efficiency of implementation. Their evaluation focus is thus mostly on programme outcomes, while programme impact is very rarely the objective of analysed evaluation

studies and rarely quantitatively measured (see Bracht et al. 2008; Association for Empirical Studies in Centre for Research into Schools and Education at the Martin Luther University 2007).

The analysis shows that LLP represents a supranational policy mechanism, bringing important change to different levels of social reality at the national level, predominantly at the individual level. First, data indicate high levels and high quality of LLP implementation in Slovenia. Second, LLP objectives are found to be relevant for, and influential within, the national policy priorities. However, considering the relationship between the LLP and national education policy, the relevance of the LLP objectives with regard to national priorities is evident, not as an unadulterated LLP impact, but rather as the extended impact of EU education policies at the national (system) level. Third, the comprehension of where and how national education policy documents overlap and relate to the EU goals and priorities are often being relegated to the implementation level. At the institutional and individual levels, LLP importantly contributes to the development of numerous competencies as well as to initiation of interpersonal cooperation, but predominantly at the lower cooperation intensity levels. The recognition of common cooperation goals and intentions among individual LLP end-users is also only weakly present, or not present at all. No significant impact in the dimension of personal growth in individual end-users was possible to observe, while the same respondents viewed LLP as contributing to an individual's employability.

The text is organised as follows. The next section provides a short overview of the scope of LLP implementation in Slovenia. The third section presents the research approach used to measure and explain the LLP impact in Slovenia, as well as the evaluation data sources we utilised. The forth section presents empirical evidence on the LLP impact in Slovenia. We conclude the paper by debating the role of a supranational policy mechanism at the national level.

EC Funding Programme as a Mechanism of Change and LLP Implementation in Slovenia

EC programmes are financial mechanisms introduced to trigger change in the EU member states and broader, and, therefore, on the national level, as well. In this section, we present the main characteristics of these programmes and their implementation at the national level in Slovenia.

The European Communities' Funding Programmes are promoting changes, agreed upon from the supranational level to the national level,

by supporting the development of common policies and activities in the field of education and training. The Lifelong Learning Programme (European Parliament and the Council 2006) is the largest programme for community action in the field of lifelong learning. Its general objective is 'to contribute [...] through lifelong learning [...] to the development of the Community as an advanced knowledge-based society' (art. 1, sec. 2). Historically, there are several reasons why the European programmes were created and developed and, consequently, why they set education and training as the key element to unite Europe and its people. These programmes sought to unite the European region, to improve labour market mobility, to introduce various novelties into the education systems, mainly tools for transparency and raising quality, to improve the continent's competitiveness in relation to other continents, and to enable interconnection, comprehension, and understanding (Pepin 2006).

In the second half of the 1980s, the first programmes from the field of education and training were implemented (Comet, Erasmus, Petra, Lingua, Eurotecnet, etc.) and were designed with the political aim of narrowing the gap between the EU and the US, in certain key areas. With the development of a common European market, focus shifted to the recognition of professional diplomas and, later, away from emphasising harmonisation to emphasising mutual trust and comparison in the field of vocational education and training and tertiary education. Here, the Socrates and Leonardo da Vinci programmes, and more or less all actions under their umbrellas, played an important role. In the 1990s, the concepts of a knowledge-based society, lifelong learning, and quality became increasingly well-known. Since 2000, these concepts have become the pillars of further development of the European Union (European Commission 2011). During the same period, lifelong learning has gradually emerged as a principle. Since March 2000, when the European Union adopted a new economic, social, and environmental strategy, known as the Lisbon strategy, education and training have surpassed labour as the most important principle, in order to build knowledge throughout Europe. During this period, with the aid of the Socrates II and Leonardo da Vinci II programmes, politicians attached great importance to the EU education and training system. In 2002, the European Parliament stressed that the content of education systems should not be determined exclusively by references to the economy and the labour market; rather, it should be to develop awareness of one's citizenship, one's communication capability, and one's intercultural awareness and

social skills, yielding to the enriched focus and role of the recent LLP programme.

Although the EC funding programmes, in the area of education and training, are considered to be supranational mechanisms used to introduce change at the national level, it has to be noted that they are, and have been, predominately decentralised, meaning that implementation has been left to the state and national levels. The European Commission and Council did not wish to harmonise Europe, but rather it tried to establish mutual trust and identification of national systems. That is why certain actions remained in the domain of a particular country, which has the possibility to implement an action in accordance with the needs of its education system, because the European Commission plans and sets those actions only in certain basic aspects (common priorities, use of funds, etc.). In the new programming period (2007–2013), LLP programmes are also divided into decentralised and centralised activities. The difference between these is that the implementation of decentralised activities (mobility, partnerships, projects for transfer of innovation, and study visits) is carried out by national agencies (NA). In Slovenia this NA is known as CMEPIUS, whereas in Brussels, the executing agency implements all centralised activities. In contrast to prior periods, today, as much as 80% of the programme's resources are earmarked for decentralised activities.

The EC education programmes have been extensively present in Slovenia for over a decade and their presence has gradually grown, both in terms of programme end-user numbers as well as in financial terms. From 2000 to 2006, more than 3600 teachers and mentors, 4000 students, 3000 pupils, and 500 organisations participated in the following European education and training funding programmes in Slovenia: Erasmus, Comenius, Grundtvig and other actions of Socrates and Leonardo da Vinci programmes. For these purposes, the European Commission granted Slovenia € 22,754 million (Center Republike Slovenije za mobilnost in evropske programme izobraževanja in usposabljanja 2007), before the previously mentioned programmes were consolidated in 2007 under the LLP (European Parliament and the Council 2006). The programme is continuing to grow in terms of financial viability. Funds for LLP implementation in Slovenia rose from 6201 (thousand Euros) in 2007 to over 6744 in 2008 and 7533 in 2009 (Flander 2010, 12). From 2007 onward, the level of financial realisation has remained high at approximately 95% (Flander 2010, 12), making it dif-

ficult to improve. The number of LLP participants has grown as well. Table 1 presents the number of submitted and approved projects and the yearly increase in new applicants (end-user growth). The observed participation dynamic can be explained by several factors; however, according to CMEPIUS management, the most evident reason for any applicant numbers decrease in certain actions or subprogrammes lies, in changes to the national rules of application that have been introduced within the LLP.

Methodology

We consider change to be a programme impact manifesting itself at various levels of social reality: the macro level (i. e., education system), the mezzo level (i. e., institutional), and the micro level (i. e., individual). This evaluation study treats impact as long-term and sustainable changes introduced by a given intervention in the lives of beneficiaries, related to the specific objectives, an intervention, or unanticipated changes caused by an intervention (Blankenburg 1995; Weinwright 2003), and classifies it as an ex-ante impact assessment evaluation (Rossi, Freeman, and Lipsey 2004). The major difficulty with this evaluation type is its inability to validly assess programme impact (ibid.), which also plagues the majority of other EC education programme evaluations (Širok and Petrič, forthcoming). In order to minimise this deficiency within the constriction of our evaluation context, three research strategies were applied: a mixed method research approach, a quasi-experimental design in survey research, and data source triangulation.

The first research strategy, a mixed method research approach, was selected in order to draw valid evaluation conclusions of the programme's impact at the macro level, combining a focus group discussion method (Krueger 1994), interviews (Foddy 1994), content analysis (Babbie 2007), and survey research. The envisaged use of various research methods is a necessity originating from the need to combine different data sources and the perspectives of LLP stakeholders.

The second research strategy addressing the limitations of evaluation context was addressed by the quasi-experimental design in survey research, which was applied in order to validly measure change on the mezzo and micro levels (the micro-impact of the macro level policy programmes). Impact was operationalized as a latent variable, partitioned in areas where latent, sustainable programme consequences are anticipated or reasonably expected. This partitioning resulted in a list of theoretical

TABLE 1 LLP Implementation in Slovenia: Applicants and End-Users

NA yearly reports data	2007		2008			2009		
	(1)	(2)	(1)	(2)	(3)	(1)	(2)	(3)
Comenius multilat. partnerships	184	76	134	47	–27	113	56	–16
Comenius bilateral partnerships	24	3	24	7	0	15	4	–38
Comenius in-service training	86	69	118	65	37	200	56	69
Comenius assistants	30	9	12	12	–60	51	10	325
Comenius host schools	52	11	42	9	–19	30	11	–29
Comenius preparatory activities	38	37	41	38	8	23	22	–44
Comenius Regio partnerships						9	4	
Erasmus mobility – EUC	28	28	29	29	4	8	8	–72
Erasmus mob. – stud. and HEI staff	1910	1469	2312	2041	21	2454	2130	6
Erasmus mobility – others						35	34	
Erasmus Preparatory Visits						5	3	
Erasmus intensive programmes	6	5	13	5	117	13	8	0
Erasmus Intensive Language Courses						6	4	
LdV Mobility	83	49	81	56	–2	76	42	–6
LdV Partnerships			42	13		35	13	–17
LdV Transfer of innovation	33	7	38	7	15	23	6	–39
LdV Preparatory visits						20	15	
Grundtvig learning partnerships	36	9	48	10	33	33	14	–31
Grundtvig in-service training	29	11	45	19	55	27	9	–40
Grundtvig preparatory activities	3	3	6	4	100	10	7	67
Grundtvig assistants						3	1	
Grundtvig visits and exchanges						15	6	
Grundtvig workshops						6	1	
Grundtvig senior volunt. project						1	1	
Study visits – visits	52	18	57	47	10	49	32	–14
Study visits – organizing						5	5	
Total		1804		2409	33,54		2502	3,86

NOTES Column headings are as follows: (1) applications, (2) signed, (3) yearly applications increase rate (%).

concepts (Meehan 1994) that grasp the impact domain (i. e., cooperation, tolerance, employability), assuming that the action has an impact. Impact scope was determined through ex-post quasi-experimental design,

where the difference between y_1 in time after the action (y_{1t1}) and y_1 in time before the action (y_{1t0}) was attributed to the participation of beneficiaries in action (x), controlling other factors ($x_1, x_2, \ldots, x_n$). In our approach, $y_{1t1} - y_{1t0}$ was measured by the respondent's subjective evaluation of this difference. Additionally, a measuring instrument was developed in such way that the programme effects cannot be attributed to the (non)participation in action (x), yet x can be treated as the intensity of involvement/participation in an action. Impact was measured as a mean value of a variable, measuring a specific impact domain, either as a difference between two states or as the subjective evaluation of the difference. In the survey, the five-level bipolar rating scale was utilised. The average scores below 3 were interpreted as a negative impact, values around 4, or greater, were interpreted as a positive impact, and values around 3 were interpreted as having no impact (i. e., impact absence) (Širok in Petrič, forthcoming).

Since the political programme ambitions outweigh the research abilities and restrictions of evaluation context, this evaluation applied additional strategies to isolate/narrow the LLP impact domains of evaluation interest. Taken together, the LLP, and all its sub-programmes, follow more than 30 programme goals. Since it is impossible to observe change in all its manifesting forms, we observed the LLP impact across different pre-selected programme goal areas (i. e., substantive areas), as determined by LLP programme goals and evaluation stakeholders, following the principle of utilisation-focused evaluation (Patton 1996) in the survey phase. The primary evaluation users were, thus, actively integrated into the development and testing phases of the survey questionnaire. Toward this end, the NA established a working group consisting of members of the contracting authority and evaluators in order to determine the fundamental premises of the ongoing evaluation. First, the structure of programme goals was determined based upon the LLP decision (European Parliament and the Council, 2006). Next, the NA coordinators were asked to list up to five goals that captured the essence of every evaluated sub-programme/action within the LLP programme. In the next stage, selected goals were examined and anchored to appropriate sociological concepts. Selected concepts were then reviewed by the NA coordinators, who added points and areas of interest, such as customer satisfaction and additional contextual variables. Lastly, the 'action-impact domain-measurement level' grid was formed, integrating the appropriate LLP impact domain (i. e., employability) with the corresponding pro-

gramme action (i. e., Leonardo da Vinci mobility projects), and measurement level (individual or organisational). The actual impact of the LLP on programme end-users has been measured both at the organisational (mezzo) level and at the individual (micro) level within the following LLP goal areas: competence, cooperation, networking, and the European dimension. At the individual level, the impact in the area of employability and personal growth has been additionally assessed, as has tolerance at the institutional level. Since each study should take into account as many relevant control variables as possible, a careful selection of relevant control variables was guided by a strong theoretical understanding of a particular impact domain in cooperation with primary evaluation users.

The use of various data sources and associated research methods enabled both data and method triangulation and, thus, the coverage of relevant stakeholder perspectives, which also provided validity for the evaluation findings. The following data sources were used to achieve data triangulation: documentary sources including reports, accounting data, focus group discussion, interview transcripts, and raw survey data. Two focus groups were organised: one with relevant policy makers in the field of education (nine participants) and one with NA management (three participants). Additionally, two interviews were conducted with one representative of each of the aforementioned target groups. Data sources and evaluation findings thus reflect perspectives of the following stakeholder groups: LLP end-users at individual and institutional levels, relevant policy makers in the fields of education and training, NA management, and LLP sub-programme/action coordinators.

The survey was conducted as a web survey. The survey was pilot-tested in May 2009 and then officially conducted between December 2009 and February 2010. All final beneficiaries of evaluated actions, occurring between 2006 and 2009, were targeted and invited to participate in the survey. Their e-mail addresses were drawn from the NA records. The target respondents in organisations were programme coordinators. Managers/leaders were not chosen in order to avoid a pro-organisational bias. In total, 123 questionnaires were returned for eight sub-programmes based on organisational participation, representing a 36.5% response rate. Target respondents for the individual surveys were all individuals who participated in LLP programmes related to individual mobility. In total, 658 individual questionnaires were returned for nine sub-programmes, representing a 17.4% response rate.

Results

Our empirical analysis is presented below. As mentioned, this analysis consists of two parts; the first part presents the LLP impact at the macro level on the basis of qualitative data and the second part presents the LLP impact at the mezzo and micro levels by presenting the survey data. The macro-system impact of the LLP in Slovenia can be characterised as the transfer of EU guidelines to the national level, missing out on complementarity and coherency, and an instructive moment. Thus, the implementation is primarily guided by a bottom-up approach, as well as by the LLP impact. The findings related to the mezzo level and micro level impact confirms and complements the macro level findings, which show the LLP impact in observed impact domains, with the exception of personal growth.

LLP IMPACT ON THE NATIONAL EDUCATION POLICY AND SYSTEM

Considering the relationship between the LLP and national education policy, the relevance of the LLP objectives with regard to national priorities is evident, not as an unadulterated LLP impact, but rather as the extended impact of EU education policies at the national (system) level. Relevant policy makers within the Slovenian education system expressed relatively coherent perceptions that LLP objectives are relevant for and influential within the national policy priorities. However, more than the unadulterated LLP impact, the primary policy stakeholders understand the 'LLP – national education policy' relationship as the extended impact of the EU education policies. The mechanisms and results of the internationalisation and Europeanization processes imply the context of various national priorities, thus implementing it through the same process. When Slovenia joined the EU, the establishment of national priorities was predominantly stimulated and shaped by EU goals and priorities, despite the principle of subsidiarity. This subsequently led to greater awareness and recognition of the importance of having national priorities, which in turn caused the gradual interweavement of national and programme goals and priorities (Socrates, Leonardo da Vinci, LLP) throughout the Slovenian education system. Due to the Bologna process, Erasmus goals and priorities are, for example, fairly close to the goals followed by the Ministry of Higher Education, Science and Technology (Resolucija o nacionalnem programu visokega šolstva Republike 2007–2010).

The relationship between the LLP and programmes in education and training demonstrates a high degree of overlapping, but it misses out on complementarity. Relevant policy makers and the NA focus group participants, as well as documentary sources, show that the LLP overlaps but does not complement other national and international programmes, although the straightforward and unequivocal added value is difficult to demonstrate, due to the previously described characteristics of the LLP goals. The LLP does complement national master programmes (Ministrstvo za šolstvo in šport Republike Slovenije 2007; Resolucija o nacionalnem programu visokega šolstva Republike 2007–2010). These policy documents are broad enough to either completely overlap with the LLP (Ministrstvo za šolstvo in šport Republike Slovenije 2007) or leave it completely open to interpretation. When considering programmes as financial mechanisms, programmes tend to run separately, although certain stakeholders tend to be aware of opportunities of subject complementarity. This complementarity is hindered by administrative obstacles, which became evident when trying to complement the LLP with national rules on public spending and rules on the European Cohesion Fund. Therefore, complementarity among programmes, as a financial mechanism, is rarely visible (for example the Erasmus grant and national scholarship scheme).

Both aspects of LLP complementarity to the national education system show a lack of systematic and coherent policy approach, which in turn leads to situations where primary stakeholders are left on their own to search for opportunities and to achieve their own goals. LLP goals indirectly support national goals, yet primary LLP stakeholders face difficulties when trying to follow these goals as guidelines, since they are too broad, too general, and are not prioritized, making them nearly impossible to attain. LLP goals indirectly support national goals (Ministrstvo za šolstvo in šport Republike Slovenije 2007; Resolucija o nacionalnem programu visokega šolstva Republike 2007–2010). Despite goal coherence at the EU and national levels, the empirical results showed that all LLP primary stakeholders face the same difficulty when trying to follow LLP aims as guidelines. As one focus group member said: 'Everything we found to be important for us to achieve, we also soon found within (EU) priorities.' Consequently, *lifelong learning* is considered to be a commonly accepted and often misused term, being uncritically transferred from EU to national priorities and is actually not reflected or implemented in reality.

LLP IMPACT ON END-USERS

We observe four different *competencies* dimensions: individual general competencies (such as research abilities, team work, communication, etc.), independent use of knowledge, general understanding, and developmental orientation. At the institutional level, on average, the subprogrammes and actions exhibit a comparably high positive impact (average score ranging from 4.1 to 4.3) on development of (1) cultural diversity and multiculturalism; (2) understanding of other cultures and their customs; (3) ability to work in an international environment; and (4) project leadership. The competencies on which LLP has the weakest impact (average score ranging from 3.2 to 3.3) are (1) learning how to learn; (2) competencies to work with socially disadvantaged groups (lower social classes) or different ethnic backgrounds; (3) cooperation with other stakeholders in the educational process; and (4) ability to read texts in other European languages. On the other hand, individuals perceive high positive impact (average score ranging from 3.9 to 4.3) on what we can call communication and internationalization competencies: (1) speaking European languages; (2) listening to European languages; and (3) understanding other cultures and their customs. At the individual level, the weakest impact (average scores 2.4 and 2.7) is found at (1) entrepreneurship competencies; and (2) project management. On average, positive impact on competencies is higher at the institutional level, and weak impact is lower. Individuals, it seems, tend to report fewer differences in impact on competencies. The measured impact of LLP on competencies can be partially compared to the impact of preceding programmes, such as the Leonardo da Vinci II and Socrates II programmes (Širok et al. 2007).

When observing the impact on the LLP goal of *networking,* the concept of social capital (Putnam 2000) has been applied. At the institutional level, the following impact aspects of sub-programme have been measured. Bridging social capital was measured through the observation of institutional utilisation of information sources and the tightness of its affiliation to the community. Expansion of social network size and structure was also assessed. At the institutional level, we observed LLP having an impact on institutional bridging social capital. The LLP also contributed to expansion of the end-user's social network within Slovenia. On average, the organisations that participate in LLP have increased their network by a little less than 16 organisations within Slovenia and a little

less than 15 organisations abroad. Numbers vary more in the national area; however, it is important to note that all participating institutions have established contact with at least one organisation, nationally, and at least two organisations, internationally. The increase in network size is significantly lower when the membership in international (transnational) organisations is considered. On average, the surveyed organisations entered only two new organisations in the year after mobility. On the other hand, one observes the absence of LLP impact on networking at the local level (average score 2.98). Here again, caution should be taken when interpreting the results. High variability in social network increases presumably relates to differences in the size of the organisation. At the individual level, the relatively weak impact of LLP on bridging social capital is also evident (average score 3.27). As a result of LLP participation, individuals, on average, increase their social network by 2.7 people. Statistically significant differences are observed between end-users of different sub-programmes/actions for both social capital and social network increase. This indicates that sub-programmes/actions differ in their impact in networking domain. Individual end-users do not report a significant impact of LLP on networking.

LLP impact on the domain of *European dimension* has been observed for the following aspects: presence of supranational (European) identity; recognition of common European values; frequency of behaviours and activities that indicate presence of European identity; and recognition and consciousness of opportunities and challenges within/for EU. Analysis shows that LLP significantly contributes to the end-users' European dimension. This is reflected in a direct perception of a European identity, as well as in the recognition of common European values. These behaviours indicate the existence of supranational identity and awareness of opportunities and challenges within the EU (average score 3.5). For 65–70% of individual end-users, LLP contributed to the development of a European identity. Taking part in LLP enabled almost 85% of individual end-users to apprehend common European values and they started, on average, more than two new activities that indicated supranational, i. e., European, identity. For now, there are no indications that different sub-programmes/actions exert different impacts on the European dimension domain. The current incidence of supranational organisational identity (Puusa 2006) is rather low and is present in less than 10% of participants included in the LLP projects that focused on institutions. However, 80% of those organisations perceive a positive impact of LLP on change

in their outer organisational identity in the direction of supranational identity. Considering LLP as a whole, it can be argued that organisations do change their internal European identity (average score 3.67). Similar to the LLPs effects on external identity, taking part in LLP also exerts an impact on organisational inner identity (average score 3.55). An identical average value is found by the dimension 'recognition of common values of European education area.'

The impact of LLP *tolerance* goals within organisations has been measured on the following tolerance dimensions: tolerance to disagreement; tolerance to nonconformists; tolerance as academic freedom; and lifestyle tolerance (McClosky and Brill 1983). Results show a positive LLP impact on increased tolerance to disagreement and on the increase of tolerance as academic freedom. On the other hand, no firm evidence was found for an LLP impact on social tolerance (i. e., tolerance to nonconformists and lifestyle tolerance). Statistically significant differences in impact of different sub-programmes were found; Leonardo da Vinci partnerships and Leonardo da Vinci innovation transfer reported the weakest impact.

The LLP impact on the *employability* domain was measured at the level of individual end-users with a focus on: (1) an individual's capability to gain first/new employment; (2) the capability of finding a fulfilling job (i. e., one that enables realisation of an individual's potentials); and (3) employability competence (Hillage and Pollard 1998). Considering LLP as a whole, the data can be interpreted as showing a weak positive impact on increased employability. LLP contributes to increased employability for all three employability aspects. More considerable impact has been detected in the domain of employability competences. Statistically significant differences exist between impacts of different sub-programmes with Erasmus, with individual mobility reporting the strongest and Study visits reporting the weakest impact.

We measured LLP impact on *personal growth* considering aspects of personal growth according to Jones and Crandall (1986): (1) autonomy; (2) self-acceptance and self-esteem; (3) acceptance of emotions and freedom of expression of emotions; (4) trust and responsibility in interpersonal relationships; and (5) purpose in life. Since no statistically significant differences were found between sub-programmes, and since the average scale value is near 3, we can conclude that, at the moment, we have no firm evidence for LLP having any impact in the personal growth domain.

The LPP goal of *cooperation* has been evaluated on the following sub dimensions: (1) recognition of common goals and intentions that can be accomplished through cooperation; (2) a cooperative stand, as a willingness of individuals to cooperate with other social actors; and (3) actual cooperation, monitored through following cooperation development stages, including the initial phase of establishment of communication channels, the cooperation phase of different intensity levels, and the phase of common cooperation goals establishment (Tuomela 2000).

At the individual end-users level, analysis established that LLP has an important impact on initiation of interpersonal cooperation, but predominantly at the lower, less intensive cooperation levels. We also found that the recognition of common cooperation goals and intentions among individual LLP end-users is only weakly present or is not present at all. Statistically significant differences on impact to competence development can be found within a group of competences on which LLP has the weakest impact. An average score of 2.61 shows the absence of impact or even a negative impact of LLP on recognition of common cooperation goals and intentions. This does not pose a solid foundation for cooperation since it represents the constitutive first step in cooperation. On the other hand, one recognises high willingness of individual end-users to cooperate (high average cooperation willingness of 4.24). Regarding the aspect of cooperation development (i. e., cooperation intensity and depth), less developed cooperation forms prevail (establishment of first communication contacts, information exchange without common cooperation goals). More developed forms of cooperation are otherwise present, but to a much lesser extent. This is also expressed throughout the relatively weak attainment and accomplishment of common cooperation goals (average score 3.5). A considerable number of cooperation attempts have not been successful. The results are similar on the institutional level. The number of cooperation cases decreases with the increasing quality and intensity of the cooperation relationship. From an average of 6.75 established contacts, only four cooperation cases developed to regular information exchange. In 3.6 cases, on average, the cooperation evolved to the level of preparing a new project, and only in 1.2 cases the cooperation reached sustainable cooperation beyond the existing project. In order to confirm the positive LLP impact, we have to point to the fact that all organisations established at least one contact on all observed cooperation levels. At the cross-border cooperation, a considerable number of unsuccessful cooperation attempts exist. The

scope of impact within all observed cooperation levels (contact establishment, information exchange, preparation of new projects, and cooperation beyond existing project) statistically significantly varies among LLP sub-programmes and actions. A high dispersion of survey results can be observed, which might be assigned to rather substantial differences in cooperation between large and small organisations (detailed analysis of variance still needs to be conducted).

According to opinions of relevant policy makers and NA focus group participants, the LLP does promote cooperation between participating countries. This takes place both at the secondary and tertiary education levels, although the intensity is much greater in higher education due to the corresponding goals of the LLP and the Bologna process. All changes in higher education follow the framework of the Bologna process and the LPP programme is – directly or indirectly – an EC tool for implementing the Bologna process, creating common guidelines, activities, and space to foster cooperation. The LLP thus intensified cooperation to a greater extent at other education levels and among other target groups (for instance, adult learners). As such, the LLP is a cooperation mechanism and promotes cooperation at the same time. Thus, one can consider the cooperation between participating countries as the key added-value of the LLP. Comparing the LLP to similar (in its function) financial mechanisms, the LLP is considered by relevant stakeholders as being less complicated and more efficient. On the other hand, the LLP still faces the problem of particularism as an excessive focus on benefits to individual programme end-users.

Conclusions

In this paper we have described different aspects of changes brought by EC programmes on the case of Slovenia. Impact evaluation of LLP funding programmes in education and training, shows that these programmes introduce change to all levels of social reality: national (system) level, mezzo (organisational) level, and micro (individual) level. Yet, the change seems to be different at the observed levels as well as in the different observed (target) domains.

The weakest impact seems to be present at the system level, while the highest impact is felt on the individual level. This is in accordance with our initial assumption that LLP is one of the few EC initiatives that actually induce change in a bottom-up way. These findings are to some extent similar to the few other publicly accessible evaluation studies (see

McChosan et al. 2008; Bracht et al. 2006; Ecosfera 2004; Centre for Strategy and Evaluation Services 2004; Barbier Firnault et Associés 2003; Deloitte & Touche 2001). These evaluation studies show impact mainly on younger participants' (European) language competencies, while the main impact on institutional level is the creation of networks (groups of interest) that foster cooperation and exchange of good practice. Institutional impact is detected primarily in smaller schools. An increased level of contact with foreign colleagues strengthens the European dimension, and international cooperation is in fact recognised as the top motive for participation in EC programmes.

To some extent, the results prove to be consistent with our initial expectations; however, we cannot validate the measured impact in terms of its quality or extent, for we have no study to compare our measured values with. In this regard, our research is unique and its added value will be assessable when additional or similar research is available. At the time being, its main value is to raise questions and trigger further research.

Although many questions arose throughout the process of this investigation, we chose one focus on whether or not these and/or similar instruments can be sufficiently utilised as the change agents within a national education system. How much (economic) sense does it make to exploit the LLP, and similar EC programmes, as a mechanism of national policy goals implementation? Because of the established influences and impacts that funding programmes in education and training have, one will soon have to consider a tighter integration of these mechanisms into national policies in the field of education and training. This seems reasonable because, in the case of decentralised actions, the players at the national level can search for and use the synergetic impacts of funding programmes in education and training. However, to do so, clear national policy priorities seem to be a necessary precondition.

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The Effectiveness of South Africa's Immigration Policy for Addressing Skills Shortages

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South Africa is presently experiencing a serious shortage of skilled workers. This situation is negatively influencing the economic prospects and global participation of the country. The primary purpose of the study was to determine the effectiveness of SA's immigration policy to support skills immigration. The outcome of this study indicated that South Africa's immigration policy is restrictive and has undoubtedly influenced the shortage of skills in the country. This study has confirmed the findings of similar studies undertaken by the Centre for Development and Enterprise that South Africa's skills immigration policy is very restrictive and is thus not helpful in addressing the skills shortages of the country.

Key Words: emigration, immigration, brain drain, push and pull factors, migration, globalisation
JEL *Classification:* P36

Introduction

South Africa has been a country of immigration for thousands of years. Many black people from central Africa, together with the Dutch, Germans and French settled in the country in the 17th and 18th centuries. However, the government's immigration policy during the apartheid era favoured the settlement of white people, especially skilled and professional workers (Kaplan 1998, 15). At the same time, low-wage migrant labour from surrounding African countries was allowed into the country and used largely on the mines. Added to this, the black people were confined to living in townships while the white people lived in cities and

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towns (Centre for Development and Enterprise 1997b, 3). Therefore, the immigration policy served as a form of migration control.

While the apartheid government attracted many skilled foreign white workers, this flow of skilled migrants from 1970 to 1980 turned into a major outflow in the era of democracy, in the 1990s. This movement, which is often referred to as the 'brain drain' is adding to the skills shortage that is already prevailing in the country. Primary reasons cited for loss of skilled South Africans include: crime, decline in service delivery, poor quality of life, unhappiness with the political situation, declining education standards, and inadequate government health care (Bailey 2003, 235). According to Bhorat, Meyer and Mlatsheni (2002, 23) and Bernstein (2000, 8), this shortage of skilled labour is a major impediment for growth and job creation in the country.

In contrast to this large outflow, there is a decrease in immigrant inflow. This can be largely attributed to the country's restrictive immigration policy as well as various socio-economic and political factors (Stern and Szalontai 2006, 123). When the new, democratic era emerged in 1994 in South Africa, the government amended the Aliens Control Act of 1991, which dealt with admission, control, and expulsion of foreigners (Centre for Development and Enterprise 1997a, 7). Thereafter, there was the passing of the Immigration Amendment Act No. 19 of 2004 and the Immigration Regulations of June 2005. However, the regulations set out in the policy for skills immigration were restrictive in many categories, which include: quota work permits, application backlogs, evaluation of qualifications, police clearance, business permits, intra-company transfer work permits, permanent residence permits/applications, and documentation. Therefore, the recruitment of skilled foreign workers to help reducing the skills shortages of the country proved challenging. This situation has significant economic and social implications for the country.

However, if South Africa seeks to be globally competitive, then a more expansive and robust policy approach to skills immigration can be a part of the larger solution of addressing the skills shortages of the country. The world economy has become largely global where the demand for skilled labour is increasing as compared to the lesser skilled. This global movement of skilled labour can be attributed to many factors (World Bank 2003, 343), namely:

- wage differences;
- skills are interchangeable;
- multinational companies now operate in global markets;

- travel is cheap;
- recruitment companies are more aggressive; and
- information on jobs is easily accessible.

As a consequence of the above factors, many countries compete to attract skilled labour so as to develop a competitive edge in the international labour markets. Poor countries have a two-fold disadvantage in terms of competing for skilled labour. Firstly, they have limited capital and secondly they lack the necessary skills which is a disadvantage of their economies in the global arena (Wocke and Klein 2002, 441).

Economies that have employed immigrants have achieved tremendous economic and cultural development. Examples of countries with dominant immigrant economies include the USA, Canada, Australia, and Singapore. These countries have been the leaders in economic development and have become competitors to South Africa as they continuously source skilled South Africans.

Consequently, the empirical study in this article sought to determine the effectiveness of SA's immigration policy and its role in addressing skills shortages in SA. This study was done through a review of the Immigration Act No.13 of 2002, the Immigration Amendment Act No. 19 of 2004 and the Immigration Regulations of June 2005, with specific reference to skills immigration. During this review, shortcomings of the policy were also discussed. Another purpose of the empirical study was to ascertain the views of organisations and businesses that recruit skilled foreign workers. Finally, this study offered recommendations to improve the policy.

Problem Statement

The issue of skills shortages has been receiving considerable attention by the South African government since the advent of democracy in 1994. Despite a number of education reforms, the country is still facing considerable shortages. This is highlighted regularly in the media and draws vociferous criticism from social partners such as employer bodies, trade unions and government. According to Bhorat, Meyer and Mlatsheni (2002), and Kraak (2008, 1), there appears to be consensus that skills shortages are a major obstacle to the progress of the country in terms of uplifting the economy and creating increased employment.

Consequently, skilled labour is increasingly viewed as an important element to support national economic growth. Consequently, many countries are adopting competitive immigration policies to attract talents

from the global labour market. Industrialised countries have recognised the benefits of immigration for a long time and have continued to regulate their immigration policies according to the needs of the country (Wocke and Klein 2002, 445). Therefore, it is evident that many countries are relaxing immigration controls for skilled workers. For example, the USA is offering tax cuts as a means of attracting skilled immigrants to local firms while Australia, New Zealand and Canada have well-targeted selection processes, and as a result they have been highly successful in attracting skilled workers to their countries (Stern and Szalontai 2006, 137).

While the above countries acknowledge the benefits of skills immigration, there is a tendency in some quarters in South Africa to view an expansive immigration policy as a contributor to domestic unemployment. However, evidence suggests that skilled immigrants not only contribute to economic growth, but also create jobs and reduce the costs of worker training. According to Wocke and Klein (2002 445), it is also an advantage for the country if the immigration of skilled workers is properly regulated and matches the labour market demands of the country. A further view is that importing skilled foreign workers will lead to a lack of local skills development. On the contrary, Wocke and Klein (2002, 442) maintain that this is not necessarily the case as the more skills there are, the better. Therefore, there is an opposing view that skills immigration is a form of investment for national development (ABSA 2001, 16).

Attempts to recruit foreign skills to work in local firms are proving to be a challenge. From a service delivery perspective, the Department of Home Affairs is battling to process approximately 35,200 quota work permit applications made available in 2007 to attract foreign workers to help alleviate these shortages in South Africa. To date, only 1,010 work permits have been issued in areas of scarce and critical skills. South Africa's restrictive skills immigration policy and regulations are also very problematic (Bhorat, Meyer and Mlatsheni 2002; Centre for Development and Enterprise 2008, 9; Ellis 2008, 117).

There are a lot of issues in SA's immigration policy that make it restrictive for organisations and businesses when recruiting skilled foreign workers. These include:

- quota work permits;
- application backlogs;
- evaluation of qualifications;

- police clearance;
- business permits;
- intra-company transfer work permits;
- permanent residence permits/applications; and
- documentation.

From the preceding discussion, it is evident that SA's immigration policy pertaining to foreign skills immigration is problematic. This situation is not conducive for alleviating the skills shortages of the country.

The second section of this study involves a literature review, the execution of the empirical study, followed by the discussion of the results.

Objectives

The primary objective of the study is to determine the effectiveness of SA's immigration policy to support skills immigration. The secondary objectives of this article are thus formulated to:

- review the Immigration Act No.13 of 2002 with specific reference to skills immigration;
- compile, from the literature, construct to measure the effectiveness of the immigration policy in South Africa;
- determine whether any underlying or sub-constructs exist within the identified constructs, and if so, identify them and analyse the role they play in the South African immigration policy; and to
- draw conclusions and make recommendations based on the findings of the empirical study.

South Africa's Immigration Policy

The period between 1991 and 2005 saw changes in the immigration policy of South Africa. There were restructuring and reshaping of migration issues from the Aliens Control Act of 1991 through to the Immigration Amendment Act No. 19 of 2004 and the Immigration Regulations of June 2005. Initially, the Immigration Act of 1991 did not place much emphasis on skills immigration as it focused on the importance of stimulating employment for South Africans.

However, by 2002, the government realised that there is a need in the economy for skilled foreign workers in sectors such as information technology, finance and engineering. It became evident that there is not a

shortage of job-seekers, but there is a major shortage of skilled workers (Centre for Development and Enterprise 2002, 37). Therefore, this need became a part of government's economic strategy, Joint Initiative on Priority Skills Acquisition (Joint Initiative on Priority Skills Acquisition 2006). Added to this, there appeared to be an acceptance by government that immigration of skilled foreign workers will partly help to overcome this skills shortage and subsequently integrate South Africa into the global economy. Therefore, the role of skilled foreigner workers was seen as having a dual nature:

- firstly, to enhance the economy; and
- secondly, to transfer skills and experience to the local work-force.

Having acknowledged the role of skilled foreign workers, the government still presented an immigration policy that was largely problematic for prospective skilled workers and organisations and businesses that sought to recruit skilled foreign workers. The discussion to follow will provide a critical analysis of South Africa's current immigration policy.

A CRITICAL ANALYSIS OF SOUTH AFRICA'S CURRENT IMMIGRATION POLICY

South Africa's Immigration Act No. 13 of 2002 was a subject of widespread criticism due to its lack of consultation during its drafting. Therefore, in developing and passing of the Immigration Amendment Act No. 19 of 2004 and the Immigration Regulations of June 2005, there was consultation with government and non-government bodies, which included the public and the Immigration Advisory Board (Willand 2005, 3). Although this brought about certain clarifications and positive changes to the immigration laws, this does not mean that South Africa now has a successful immigration policy (Centre for Development and Enterprise 2005, 3).

However, on a positive note, Willand (2007, 7) states that certain issues relating to requirements for work permits were abolished and financial requirements for retirees were structured more logically. There are, however, still certain elements in the law that make applications by skilled foreigners and organisations and businesses very difficult. For example, the requirements for business permits have actually become more difficult than before 2003.

The discussion to follow will focus on problems confronting organisations and businesses with regard to recruiting skilled foreign workers

as well as problems encountered by skilled foreigners with regard to their applications for working in the country.

Quota Work Permits

The Immigration Act No. 19 of 2004 stipulates the use of quota work permits. The use of this system for allowing immigrants into the country is problematic for various reasons. Skills needs are continuously changing due to the presence of newer technologies. Therefore, accurate quota predications for certain skills would be doubtful. It is also difficult to work out quotas for certain skills where work experience is a part of the skills. Furthermore, locating South Africans who are capable of doing the jobs before sourcing a certain quota of immigrants, would be too time consuming (Centre for Development and Enterprise 2005, 2). Related to the issue of calculating quotas, is the lack of correlation between the Department of Labour's (DOL) scarce skills list and the Department of Home Affairs' (DHA) scarce skill list. Therefore, this makes the importing of skills even more difficult (Development Policy Research Unit 2007, 24).

Application Backlogs

The DHA makes the entry of skilled foreign workers very difficult. According to immigration lawyers, DHA is said to have a backlog of residence permits as well as approximately 35,200 quota work permit applications that were made available in 2007 to attract skilled foreign workers to help alleviate skills shortages in South Africa. According to Ellis (2008, 79), this backlog is largely attributed to a lack of capacity in the department. To date, only 1,010 work permits have been issued in areas of scarce and critical skills. Therefore, Bhorat, Meyer and Mlatsheni (2002), Centre for Development and Enterprise (2008, 17) and Ellis (2008, 80) regard South Africa's restrictive skills immigration policy and regulations as problematic. Consequently, this makes the development of a suitable labour recruitment policy look far-fetched.

Evaluation of Qualifications

According to Pokray (2006, 2), all skilled foreign workers must have their qualifications evaluated by the South African Qualifications Authority (SAQA), irrespective of its relevance to the post being applied for. Due to the influx of applications for evaluation, which is now a statutory requirement, SAQA has been unable to keep up with the applications. Fur-

thermore, SAQA is taking approximately two months to process 'priority' applications. This is resulting in immense time delays, expenses and frustration for skilled workers as an application based on qualifications cannot be lodged unless it has been evaluated by SAQA (Pokray 2006, 2). This application process becomes more problematic if the skilled foreigner is still residing in his or her country.

Business Permits

The amount of capital investment required is very high; a comprehensive business plan is also required and five South Africans must be employed in new businesses. This is not practical as small businesses may start off with just one or two employees and later become larger (Willand 2005, 18; Centre for Development and Enterprise 2005, 12). The mentioned requirements will actually discourage prospective investors.

Police Clearance

Police clearance is another major obstacle for a skilled foreign applicant. According to the Centre for Development and Enterprise (2005, 12), he or she has to get police clearance from every country that he or she has resided in for more than a year since turning eighteen. The clearance has to accompany the application. This can be very time consuming for the prospective applicant and results in extended delays.

Intra-Company Transfer Work Permits

In terms of Section 19 (5) of the Immigration Amendment Act No. 19 of 2004, the timeframe for an intra-company transfer work permit was restricted to a period 'not exceeding two years.' This is problematic for organisations and businesses as it implies that transfer work permits cannot be extended. For this reason, careful planning is essential for staff deployment or secondment to their South African offices (Pokray 2006, 1).

Permanent Residence Permits/Applications

There is a backlog at DHA in respect of applications for permanent residence. There is an excess of 17,000 applications and this figure excludes new applications coming in. A lack of capacity in the DHA has led to this situation. It can extend to one or two years for the finalisation of applications for permanent residence (Pokray 2006, 2). This can be extremely frustrating and discouraging for prospective applicants (Centre for Development and Enterprise 2005, 15).

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Documentation

Recruitment and large business organisations experience high levels of frustration in their attempts to obtain legal documentation.

Having reviewed the rules and regulations stipulated for the recruitment process, the discussion to follow would indicate the impact of these regulations of the immigration policy in addressing the skills shortages of the country.

THE IMPACT OF THE IMMIGRATION POLICY ON ADDRESSING SKILLS SHORTAGES

As evidenced above, our immigration policy is restrictive and will undoubtedly impact the shortage of skills in the country. The discussion to follow will comment on the consequences of this policy in relation to shortages in certain sectors. Through this discussion, the importance of skills immigration will become evident.

Due to the Fifa 2010 World Cup, major infrastructural growth and development have started in the country from 2007–2010. According to McKechnie (2008), this is placing a tremendous strain on the construction industry as a result of a shortage of engineers, quantity surveyors, technicians, and architects. While the USA has 380 engineers per million people, China 225 and India 95, South Africa has only 45 engineers per million people (Engineering Council of South Africa 2007, 6; McKechnie 2008). The Engineering Council of South Africa (ECSA) views the engineering shortage as critical. According to ECSA, approximately 300 engineers emigrate every year. This is highly problematic, as the country urgently needs between 4,000 and 5,000 engineers (Engineering Council of South Africa 2007, 7). A short-term solution was to employ skilled foreigners, as our present tertiary institutions are unable to replenish these shortages in the immediate as well as short to medium term (South African Department of Education 2007, 15).

Growing labour shortages have also become a significant threat to the mining industry. Problems in retaining skilled mining staff combined with insufficient new graduates and an aging workforce are affecting the South African industry. As it is evident in the construction industry, apprenticeship in the mining industry has also been neglected in the recent past. Apprenticeship programmes, which were offered by both Eskom and Iscor, had played a role in supplying skills (Macartney 2008).

In addition, companies like Eskom are not only experiencing power generation problems, but a dearth of engineering skills has also con-

tributed to the power crisis. The inadequacies in the present education system together with the poor results in mathematics and science are definitely not going to increase the intake of engineering students. Furthermore, the apprenticeship system is on its way out with the levels of artisan training having dropped from around 30,000 registered artisan apprentices in 1975 to an estimated 3,000 in 2006 – a ten-fold drop. In addition to this situation, the Sector, Education, and Training Authority (SETAS) was also not making a sufficient contribution to addressing the skills shortages (McKechnie 2008).

Furthermore, skills shortages are affecting the economic growth of the country and thus limiting its global participation level. According to the Global Competitiveness Report (World Economic Forum 2008), South Africa's world competitiveness ranking is 45 out of 134 countries. Smaller countries such as Bahrain and Lithuania are more competitive than South Africa. Consequently, South Africa is unable to secure direct foreign investment, a vehicle necessary to drive the country forward economically.

There are a range of possible responses to alleviate the above shortages. Reviewing labour market policy, improving education and training and developing a more robust skills immigration regime are just a few. Of these, the immigration issue, which is a quicker solution, should be addressed by government, members of business organisations, and labour for the progress of the country. The need for skilled immigration was also fully supported by President Mbeki in his State of the Nation speech in 2001. The Harvard Group (2008) and Boswell, Stiller and Straubhaar (2004, 3) also recommended immigration of highly skilled people to ease skills shortages. The discussion to follow will provide insight into the results of the empirical study.

Results

This study aimed to provide insights into the difficulties that organisations/businesses encountered when recruiting skilled foreign workers to fill vacancies. In this respect, the results of the empirical research provided a valuable tool for informing policy responses to skills or labour shortages, including immigration programmes (Boswell, Stiller and Straubhaar 2004, 55).

The empirical results of the study are presented per section. As such, the following sections are subjected to exploratory factor analysis (EFA): Immigration policy issues, Immigration procedures, Department of

TABLE 1 The KMO and Bartlett Test (immigration policy issues)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.889
Bartlett's Test of Sphericity	Approx. Chi-Square	1091.153
	Df	10
	Sig.	0.000

TABLE 2 Factor loadings (immigration policy issueses)

Statements	Factor
2	0.906
5	0.897
4	0.883
3	0.841
1	0.839
Percentage of variance explained	76.38

Home Affairs, and In-Company Immigration. In each section, the suitability *t*-factor analysis is tested by means of the Bartlett Test and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) measure. The Cronbach alpha is also calculated to show the level of reliability.

SECTION A: IMMIGRATION POLICY ISSUES

The first section of the empirical analysis refers to the first section in the questionnaire. The statements in the questionnaire correspond numerically with the results shown here.

The large values for the KMO measure indicate that the factor analysis pertaining to immigration policy issues is suitable. Values between 0.7 and 0.8 are excellent. The data for this factor returned a value of 0.7, signifying a good fit for factor analysis (Field 2007, 640).

The results of the Bartlett test indicate that it is suitable to proceed with a factor analysis because the data should yield a *p*-value smaller than 0.0001. This indicates that the correlation between the variables is sufficient for factor analysis (Du Plessis 2009, 58). The datasets for this factor returned values smaller than 0.0001, and as such the factor analysis was performed (see table 1). Since only one factor was extracted, no rotational method was required (Du Plessis 2009).

Factor 1: Immigration Policy Issues

The factor analysis identified one factor. All five statements loaded heavily on this factor with all the factor loadings in excess of 0.83 (see ta-

TABLE 3 Reliability statistics (immigration policy issueses)

Dataset	Cronbach's alpha
Factor 1	0.919

ble 2). All the statements dealt with immigration policy issues as the central theme. This high loading confirmed the dissatisfaction of the respondents with the immigration policy. The factor explains a variance of 76.38% and has returned an excellent reliable coefficient of 0.92. No statement was discarded from the initial construct compiled from the literature review, and as such, the factor analysis also confirmed that only one construct exists in immigration policy analysis. The factor is thus labelled *Immigration policy issues.*

The reliability analysis of Section A: Immigration policy issues, appears in table 3. Cronbach alpha coefficients were calculated for each factor to estimate the reliability and internal consistency among the constructs (Field 2007, 666). All constructs returned an excellent reliable coefficient of 0.92%. This is well above the required 0.7, which shows high reliability and internal consistency.

SECTION B: SA'S IMMIGRATION PROCEDURES

The analysis regarding SA's Immigration Procedures is suitable for an exploratory factor analysis, as the KMO measure and the Bartlett test returned values of 0.699 and smaller than 0.000, respectively. The factor analysis identified three sub-constructs or factors within the construct identified by the literature research as SA's Immigration Policies. This means that the construct contains three separate constructs.

The second section contains data pertaining to South Africa's immigration procedures. The exploratory factor analysis (EFA) identified two statements, namely Q6 (our immigration procedures are complex) and Q13 (our immigration procedures are business-unfriendly) that did not clearly load onto a specific factor. Resultantly, these statements were deleted from the questionnaire. In addition, since more than one underlying construct is prevalent in the component matrix, it requires rotation

TABLE 4 The KMO and Bartlett Test (immigration procedures)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.699
Bartlett's Test of Sphericity	Approx. Chi-Square	1805.796
	Df	55
	Sig.	0.000

TABLE 5 Factor loadings (immigration procedures)

Statements	Factors		
	1	2	3
9	0.848	0.183	0.010
11	0.813	–0.005	–0.138
7	0.789	0.239	0.222
12	0.778	–0.113	0.287
8	0.756	–0.026	–0.268
10	0.753	0.207	0.202
18	0.030	0.897	–0.013
17	–0.164	0.831	0.134
14	0.329	0.614	0.429
16	–0.058	0.025	0.887
15	0.105	0.218	0.879
Percentage of variance explained	36. 62	23.38	12.61
Cumulative percentage	36.62	60.00	72.61

to maximise the dispersion of the factor loadings within the factors (Du Plessis 2009), and as such, a Varimax rotation proved to be the appropriate choice (Field 2007, 636). The rest of the statements loaded heavily (once again portraying factor loadings in excess of 0.8) on either one of the three identified factors.

The factor loadings of the three sub-constructs appear in table 5. The three factors identified by the analysis are discussed below.

Factor 1: Unfriendly Immigration Procedure

Statements 9, 11,7,12, 8 and 10 loaded heavily on factor one. These statements are all related to the friendliness of the immigration procedures, and the factor is thus labelled as Unfriendly Immigration Procedures. All factor loadings were above 0.75, which shows good reliability and consistency. It provides support to the view that the immigration policy of the country is problematic. The factor explains a variance of 36.62%.

Factor 2: Quota-Based Immigration Procedures

Three statements, namely 18, 17 and 14, loaded onto factor two. All three portrayed heavy factor loadings. Statement 14 had a factor loading in excess of 0.60, while statements 18 and 17 exceeded 0.80 as factor loadings.

TABLE 6 Reliability statistics (immigration procedures)

Dataset	Cronbach's alpha
Factor 1	0.877
Factor 2	0.728
Factor 3	0.811

TABLE 7 The KMO and Bartlett Test (Department of Home Affairs)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.896
Bartlett's Test of Sphericity	Approx. Chi-Square	2692.2
	Df	45
	Sig.	0.000

The statements that loaded onto factor two all relate to quotas, which indicate that many of the respondents were unhappy with the quota policy of South Africa. As part of the earlier discussion, mention was made of fixing quota work permits. The results indicate that the respondents felt likewise. The factor is labelled Quota-based immigration procedures and explains a variance of 23.38%.

Factor 3: Attitudes towards Fixed Quota-Based Work Permits

Statements 16 and 15 loaded heavily onto factor three with exceptional factor loading in excess of 0.85. Both these statements relate to issues regarding the country's policy for the quota work permits, indicating that it is not truly reflective and it is also too rigid. Resultantly, the rigidness does not help to address the skills shortages present in the country.

The three factors (thus pertaining to Section B) explain a very favourable cumulative variance of 76.62%, while the reliability of all three factors is also high (in excess of 0.8) and is shown in table 6.

SECTION C: DEPARTMENT OF HOME AFFAIRS (DHA)

The KMO measure of sampling adequacy, with regard to the Department of Home Affairs (DHA), returns a satisfactory value of 0.896, while Bartlett's test of Sphericity is also smaller than the required value of 0.000 (see table 7). It is thus suitable to continue with a factor analysis on this section of the data.

The statements pertaining to the construct DHA, as identified by the literature study, all load onto one factor. The factor analysis thus confirmed that no sub-construct exists within the construct. In addition, no statement was discarded from the analysis as a result of unsatisfac-

TABLE 8 Factor loadings (Department of Home Affairs)

Statements	Factor
21	0.884
24	0.875
27	0.872
23	0.867
25	0.853
19	0.795
26	0.788
22	0.760
20	0.757
28	0.717
Percentage of variance explained	67.13

TABLE 9 Reliability statistics (Department of Home Affairs)

Dataset	Cronbach's alpha
Factor 1	0.946

TABLE 10 The KMO and Bartlett Test (in-company immigration issues)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.716
Bartlett's Test of Sphericity	Approx. Chi-Square	929.5536
	Df	21
	Sig.	0.000

tory factor loadings (below 0.40). The statements deal with the role of the staff at the DHA. All factor loadings were above 0.7, which confirms that there are administrative problems at the DHA. The construct is thus labelled formally as Department of Home Affairs, and explains a satisfactory variance of 67.13%

The reliability coefficient of Factor 1 appears in table 9. All constructs have returned an excellent reliable coefficient of 0.95%. This is above the required 0.7, which shows excellent reliability and internal consistency.

SECTION D: IN-COMPANY IMMIGRATION

The analysis regarding SA's In-company Immigration is suitable for an exploratory factor analysis, as the KMO measure and the Bartlett test returned values of 0.716 and smaller than 0.000, respectively. The factor analysis identified two factors within the construct identified by the lit-

TABLE 11 Factor loadings (in-company immigration issues)

Statements	Factors	
	1	2
32	0.884	−0.217
31	0.879	−0.061
33	0.851	0.195
30	0.693	0.280
29	0.564	−0.292
35	0.260	0.753
34	−0.275	0.739
Percentage of variance explained	46.10	19.50
Cumulative percentage	46.10	65.60

erature research as SA's In-Company Immigration. This means that the construct contains two separate factors.

The fourth section contains data pertaining to South Africa's In-Company Immigration. All the statements had suitable loadings onto either one of the two identified factors (the results are evident in the table below). More than one factor presented itself, and as such, a Varimax rotation was used to maximise the dispersion of the factor loadings within the factors.

The factors identified by the analysis are discussed below.

Factor 1: Communication, Skills and Knowledge

Statements 32–29 loaded on factor one. These statements are related to communication, skills and knowledge of the recruitment staff. Statements 32–30 all have factor loadings above 0.7, while the statement 29 also loaded satisfactorily with a factor loading of 0.564. Interpretation of the statements loading onto the factor indicates that organisations are not adequately equipping their staff to handle the recruitment of skilled foreign workers. The staff lacks knowledge in the area of recruitment, hence their frustration during the recruitment process. The factor explains a variance of 46.10%, and shows good reliability with a Cronbach alpha coefficient of 0.853.

Factor 2: Recruitment of Foreigners

Statements 35 and 34 loaded heavily onto factor two. These statements are related to the recruitment of skilled foreign workers. Trade unions

TABLE 12 Reliability statistics (in-company immigration issues)

Dataset	Cronbach's alpha
Factor 1	0.853
Factor 2	0.332

are not making it any easier for recruitment organisations/businesses to enlist skilled foreign workers. As per the discussion in the literature, there is always the concern that these skilled foreign workers take the jobs of the locals. All factor loadings were above 0.75. The factor explains a variance of 19.50%.

The two factors explained a favourable cumulative variance of 65.60%.

The reliability of factor 2 is not satisfactory. The factor returns a reliability coefficient of 0.332, indicating that the factor should be regarded as a lower order reliable factor (Field 2007, 668). However, in defence of the lower Cronbach alpha value, Cortina states (Field 2007, 668) that even a reliability coefficient of 0.28 can be regarded as significant, especially if reverse scores (negative scores) are present within the factor (Field 2007, 669). A low Alpha coefficient simply indicates that the factor is less likely to present itself if the study is to be repeated when subjected in a different application setting. Therefore, factor two should be interpreted bearing this limitation in mind.

Conclusion

Solutions to the skills shortages in the country cannot be achieved overnight. However, introducing a flexible skills immigration policy could help to temporarily address these shortages in the form of skills transfer from skilled foreign workers, limiting the impact of HIV/AIDS on the economy, increasing the skills pool of the country and the development of new skills. In terms of policy development, South Africa can learn from policies and procedures of countries that have been successful in attracting skilled workers.

Recommendations

This section offers a set of recommendations within the context of the results obtained from the empirical survey. As is evident in the preceding discussion, South Africa is facing a huge shortage of skilled workers. This is only serving to restrict the growth of the economy and, hence, disadvantages of the country in the global markets. Added to this, our education system is unable to deliver adequate qualified workers and

our skills immigration policy is not adequately structured to address the skills shortages. Consequently, revisiting the government's skills immigration policy and procedures could offer a certain relief to the skills crisis. The following recommendations are offered:

- The policy must be simple and comprehendible.
- The policy must take into account labour market needs.
- There must be caution in the implementation of quota-based work permits so as not to disadvantage the country in terms of the actual skills it needs.
- The staff at the Department of Home Affairs must be fully briefed on the importance of skilled foreign workers so that they can have a more positive approach in the processing of work permits for the skilled foreign workers.
- The government must inform the public on how the country can benefit from imported skills.
- Freely allow the entry of skilled workers to strengthen SA's economy.
- Like other countries, it must offer certain incentives to attract skilled workers.

Summary

It is clearly evident from this study that South Africa's Immigration Policy, with regard to skills immigration, is problematic. As mentioned earlier, our country is experiencing a huge shortage of skills, a situation that cannot be resolved in short term. For this reason, looking at the success that other countries such as the United States, Canada, Australia and many others have obtained through use of skilled foreign workers, our country can no doubt follow this example. However, we can only be as successful as the others can, if we develop and adopt a more flexible and competitive skills immigration policy.

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Združitve in pripojitve pod tržno ceno v evropskih tranzicijskih državah

Josipa Višić

Namen pričujočega članka je določiti razlike med dejavniki, ki ustvarjajo investicijsko okolje in tako vplivajo na vrednost mednarodnih združitev in pripojitev v nekaterih evropskih tranzicijskih državah. Analiza skupin za leti 1999 in 2007 kaže, da je bilo v državah z neugodnim investicijskim okoljem več mednarodnih združitev in pripojitev. Edina država v skupini z zdravim okoljem za tuje investicije (Slovenija) je imela najvišji BDP na prebivalca, obenem pa tudi najnižjo stopnjo mednarodnih združitev in pripojitev glede na svoj BDP. To dejstvo je mogoče obravnavati kot pokazatelj stopnje združitev in pripojitev pod tržno ceno v večini evropskih tranzicijskih držav. V letu 2010 se je položaj spremenil in – posledicam recesije navkljub – podatki o mednarodnih združitvah in pripojitvah kažejo, da so so se tuji vlagatelji bolj osredotočili na podjetja, ki so delovala v deželah z bolj zdravim gospodarstvom. Ti rezultati kažejo, da je zdravo investicijsko okolje nujno potrebno za zagotovitev trajnostnega gospodarskega razvoja države.

Ključne besede: mednarodne združitve in pripojitve, združitve in pripojitve pod tržno ceno, trajnostni gospodarski razvoj, investicijsko okolje
Klasifikacija JEL: F21, G34
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Prispevek neposrednih tujih vlaganj, tehnologije ter raziskav in razvoja na učinke prelivanja pri razvoju industrije: raziskava na ravni podjetij v Južni Afriki

Ewert P. J. Kleynhans in Sibulele Zwedala

Pričujoči članek obravnava prispevek učinkov prelivanja pri tehnologiji in znanju na konkurenčnost južnoafriških proizvodnih podjetij. V literaturi se pogosto poudarja vloga neposrednih tujih vlaganj, tehnologije ter raziskav in razvoja pri učinkih prelivanj, vendar je njihov vpliv le redko obravnavan hkrati. Pričujoča raziskava se osredotoča na mikroekonomsko produkcijsko raven in na medsebojne vplive med temi dejavniki. Ugotavlja njihov vpliv na konkurenčnost, dobičke in morebitni razvoj industrije. V empirični raziskavi so bili uporabljeni podatki iz

raziskave, ki jo je Svetovna banka izvedla med južnoafriškimi proizvodnimi podjetji. Raziskava je pokazala, da imajo neposredna tuja vlaganja in lastniška struktura le majhen vpliv na sekundarne učinke prelivanja, ki so verjetno odvisni od absorbcijskih zmožnosti. Tehnološka razvitost ni zelo pomembna, vpliv raziskav in razvoja na povečevanje konkurenčnosti pa je odvisen od absorbcijskih zmožnosti, še posebej pri vlaganjih v človeški kapital. Mednarodni certifikati kakovosti, tuje licenciranje in izraba zmogljivosti pa vsi prispevajo k povečevanju rasti produkcije in h konkurenčnosti podjetij.

Ključne besede: produkcija, učinki prelivanj, neposredna tuja vlaganja, tehnologija, raziskave in razvoj, industrijski razvoj, konkurenčnost
Klasifikacija JEL: D24, D83, L11, L30, L60, O30
Managing Global Transitions 10 (4): 341–359

Družbena odgovornost in profesionalna etika v managementu: nekaj empiričnih ugotovitev na ravni držav

Cene Bavec

V predstavljeni raziskavi smo predstavili nekaj empiričnih ugotovitev o povezavi med družbeno odgovornostjo in etiko managementa ter ekonomskim okoljem na ravni držav. Raziskava je bila izvedena na podlagi podatkov iz sekundarnih virov za 41 evropskih, azijskih in ameriških držav. Potrdili smo hipotezo, ki povezuje višjo družbeno odgovornost in etično delovanje z večjo odprtostjo in tekmovalnostjo zaposlenih in managerjev, večjo ekonomsko učinkovitostjo, višjo ekonomsko svobodo in nižjo ravnjo koruptivnosti. Ozadje omenjenih hipotez so razprave o tem, ali družbena odgovornost podjetij in etično delovanje managementa povečujeta ekonomsko učinkovitost in dolgoročno vzdržnost. V razvitih državah je očitno družbena neodgovornost in neetičnost nesprejemljiva. V manj razvitih državah pa je dobiček tako visoko na seznamu prioritet, da je vprašanje o družbeni odgovornosti podjetij in etično delovanje managementa bolj ali manj le akademsko vprašanje. Ugotavljali smo, da podjetja zavestno izbirajo, kje in kdaj se splača biti družbeno odgovoren in etičen in kje je brezobziren način delovanja bolj dobičkonosen. Testirali smo tudi hipotezo, da družbena odgovornost povečuje ekonomsko odpornost ter jo delno sprejeli in delno zavrnili. Dotaknili smo se tudi vprašanja, ali so rezultati na ravni držav indikativni tudi na ravni posameznih podjetij. Ugotovili smo lahko le to, da imajo razvite države večji delež podjetij, ki se vedejo družbeno odgovorno in etično, iz česar smo posredno sklepali, da je tako vedenje koristno tudi na ravni podjetij.

Ključne besede: družbena odgovornost, etika managementa, ekonomska učinkovitost, koruptivnost
Klasifikacija JEL: O10
Managing Global Transitions 10 (4): 361–377

Program Vseživljenjsko učenje kot iniciator sprememb na nacionalni ravni: primer Slovenije

Klemen Širok in Katarina Košmrlj

Programi Evropske komisije (EK) na področju vzgoje in izobraževanja so nadnacionalna orodja za vpeljavo sprememb na različnih ravneh nacionalne družbene realnosti. Članek skuša prikazati celosten pogled na učinke teh orodij s predstavitvijo rezultatov evalvacije vpliva programa Vseživljenjsko učenje (LLP). Evalvacija je bila izvedena z raziskovalnim pristopom združenih metod, vključujoč fokusne skupine, intervjuje, analizo vsebin in anketo. Rezultati kažejo, da programi EK s področja vzgoje in izobraževanja povzročajo spremembe na nacionalni (sistemski), organizacijski in mikro-individualni ravni, vendar se vpliv razlikuje tako po ravneh kot po opazovanih dimenzijah. Taki rezultati porajajo vprašanje, ali je (ekonomsko) smiselno uporabljati programe EK kot orodje za implementacijo nacionalnih strateških ciljev.

Ključne besede: družbene spremembe, programi EK, vpliv, evalvacija, izobraževanje
Klasifikacija JEL: I25, D04
Managing Global Transitions 10 (4): 379–398

Učinkovitost južnoafriške politike priseljevanja pri reševanju problematike pomanjkanja usposobljene delovne sile

Fatima Rasool, Christoff Botha in Christo Bisschoff

Južnoafriška republika se sooča z resnim pomanjkanjem usposobljene delovne sile, kar negativno vpliva na gospodarske obete in vključevanje dežele v globalizacijske procese. Najpomembnejši cilj raziskave je ugotoviti stopnjo učinkovitosti južnoafriške imigracijske politike v podpori priseljevanju usposobljene delovne sile. Rezultati raziskave so pokazali, da je južnoafriška imigracijska politika restriktivna in da je nedvomno prispevala k pomanjkanju usposobljene delovne sile v deželi. Raziskava je potrdila izsledke podobnih raziskav, ki jih je opravil južnoafriški center za razvoj in podjetništvo, po katerih je južnoafriška imigracijska politika zelo restriktivna kar zadeva priseljevanje usposobljene delovne sile, in da zato ne pripomore k izboljševanju stanja na tem področju.

Ključne besede: iseljevanje, priseljevanje, beg možganov, dejavniki potiska in privlačnosti, migracije, globalizacija
Klasifikacija JEL: P36
Managing Global Transitions 10 (4): 399–418

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