

MICO APOSTOLOV*

**Foreign Direct Investments Induced Innovation?
A Case Study – Macedonia**

Abstract

This paper, while analysing innovation in Southeast Europe, and in particular the case study of Macedonia, focuses on the basic ties between foreign direct investments and innovation. Foreign direct investment is usually defined as dominant or controlling ownership of a company in one country (the host country), by an entity based in another country. The concept of industry-government-university relationships interprets the change from a dominating industry-government duo in the 'industrial society' to a growing triadic relationship between industry-government-university in the 'knowledge society'.

From the beginning of the transition process, foreign direct investments have been a priority, an essential pillar that moves the society forward towards a developed market economy. In addition, as the influx of capital increases it inevitably brings with it increased innovation. Hence we examine the possibility that these two indicators have a positive and upward ascent and facilitate the development of the economy.

Keywords: *FDI, innovation, Southeast Europe, Macedonia*

* Assoc. Prof., Ph.D, University Goce Delcev, Macedonia, e-mail: mico.apostolov@ugd.edu.mk

1. Introduction

This research focuses on examining the effects of foreign direct investments and innovation in the Southeast European economies, and in particular offers a case study of the Republic of Macedonia.

The World Bank has conducted Enterprise Surveys on many countries using firm-level data of a representative sample of an economy's private sectors. In this article we closely examine the ties between foreign direct investments (FDIs) and innovation in the national economy of a southeast European country, i.e. Macedonia. FDI is usually defined as dominant or controlling ownership of a company in one country (the host country) by an entity based in another country.

The industry-government-university relationship (Triple Helix) gives grounds for partnerships in a knowledge-driven economy, while demanding changes in the role, character, and relationship of knowledge organizations, such as research universities, corporate R&D organizations, laboratories, and government. A radically new system for creating wealth has evolved that depends upon the creation and application of new knowledge.

The basic driver of the real Macedonian economy is to be the network between FDIs and domestic technology hubs. Indeed, the question of foreign direct investment spillovers is much researched and there is a significant body of literature which covers many aspects related to the ways in which the domestic economy reacts to exogenous inputs. Thus, we will be examining the interrelationships between foreign direct investments and the innovation capacities of the businesses. Furthermore, we are interested in the way FDIs, helped by domestic innovation, shape the economy.

The academic significance contribution to the topic lies in determining the factors that influence foreign direct investments, their ties to innovation, as well as the way capital and knowledge spillovers contribute to the overall development of a transition economy.

2. Theoretical framework and the literature

The scope of the research analysing the impact of foreign direct investments on the economy is broad and relates to numerous aspects. The most common issues researched are: technology (Nelson 1991); size and competition (Nickell 1996); export propensity (Cohen 1973); productivity (Hall and Jones 1999; Keay 2000); wages (Greenaway, Hine et al. 2000); and other issues. However there are also topics where the literature reflects significant divergence

of opinion, such as the economic performance of domestic-owned firms as opposed to foreign-owned companies. While it no great surprise to see that foreign-owned firms have a superior performance in developing countries (Willmore 1986), the studies also show that there is a better performance of foreign-owned companies in developed economies, and gaps in performance are noted in growth, productivity, labour strategies, entry into a market, innovation activities, etc. These differences in performance are usually due to ownership characteristics, as well as firm distinctiveness. While both the descriptive and empirical evidence has been supportive of resource allocation in favour of foreign-owned companies, nonetheless deep analysis of market characteristics and a case-by-case approach is preferable for best determining such allocation.

There are a number of reasons for the interest in performance differences between domestic and foreign-owned companies. First, many governments, especially those in developing and transition economies, use extensive promotion to attract fresh capital from abroad, therefore much of the literature naturally points out the importance of foreign-owned capital and foreign direct investments in economic progress. As a rule it focuses on productivity and technology (innovation) questions, more precisely the direct transfer of technology and diffusion of innovation or trade (Keller 2000; Keller and Yeaple 2009). The benefits that are gained by host economies by the presence of foreign capital are deep-rooted in the notion that there is a systematic superior performance of foreign-owned firms. One of the more important questions here is whether the increased presence of foreign ownership and augmented efficiency also generates a greater social gain, and whether countries should promote foreign direct investments in order to accumulate externalities from their presence (Friedman 2007).

Second, the incursion of foreign management skills is seen as positive and contributing to overall competitive characteristics and the restructuring of domestic companies. However, there are an increased number of companies with foreign and mixed ownership operating on domestic markets, which fuzzes the lines of distinction between foreign and domestic firms (La Porta, Lopez-De-Silanes et al. 1999; Jensen 2010). Thirdly, competitiveness is considered as a major dissimilarity between foreign and domestic-owned companies. It is evident that foreign firms have a greater advantage in international transactions and trade. Fourthly, systems of corporate governance differ and there is serious impact on organizational hierarchies, which effects the further efficiency of domestic firms.

Lastly, there are divergent comparisons of economies and industries with different methodological approaches, the outcomes of which need to be further studied while contributing to general guidelines in this research field.

In light of the above, the ties between foreign direct investments and innovation capacities of businesses and countries is another topic of significant interest in the international literature. The basic paradigm used to analyze innovation is the so-called ‘triple helix’, or the industry-government-university triad. The concept of an industry-government-university triad encompasses the interpretation that there has been a change from the previously-dominating industry-government duo in the ‘industrial society’, to the growing importance of the triadic relationship between industry-government-university in the ‘knowledge society’. It is deemed that we are shifting from an emphasis on creating and transporting physical objects, such as materials and energy, to knowledge itself; from atoms to bits; and from a dependence on government policy to an increasing confidence in the marketplace to establish public priorities.

The concept of the industry-government-university relationship (Triple Helix), was initiated by a series of articles by Etzkowitz and Leydesdorff (Etzkowitz 1993; Etzkowitz 1995; Leydesdorff 2013), the pioneer works of Lowe (Lowe 1982), and Sábato and Mackenzi (Sabato, Mackenzie et al. 1982), and it interprets the shift from a dominating industry-government duality in the ‘Industrial Society’ to a growing threefold relationship between industry-government-university in the ‘Knowledge Society’. In general terms the thesis is that the potential for innovation and economic development in a ‘Knowledge Society’ lies in a more prominent role for the university and in the amalgam of elements from industry, government and university to generate new institutional and social formats for the production, transfer and application of knowledge. This vision includes not only the ‘creative destruction’ (schöpferische Zerstörung) that appears as a natural innovation dynamic (Schumpeter 2013), but also the creative renewal that arises not only within each of the three institutional spheres, i.e. industry, government and university; but as well at their intersections. Through subsequent development, a significant body of Triple Helix theoretical and empirical research has grown over the last decades and now provides a general framework for exploring the complex dynamics of innovation and for informing national, regional and international innovation and development policy-makers.

3. Common Effects from Foreign Direct Investments

The effects of foreign direct investments is a well-researched topic and there are many possible ways in which a domestic economy reacts to exogenous inputs. Generally they are grouped into two basic categories: 1) inter-industry effects (horizontal), and 2) intra-industry effects (vertical).

3.1. Inter-industry effects

The basic logic is that the entry into a country of any company with increased productivity and efficiency positively influences domestic firms and their competitiveness. On the other hand, they can also have a crowding-out effect on the domestic-owned firms which are not able to meet the competitive arrangements that foreign-owned firms impose on the market, that is, horizontal spillovers. Negative effects can occur in two ways (Aitken, Harrison et al. 1996; Aitken, Hanson et al. 1997; Aitken and Harrison 1999; Kokko 1994; Kathuria 2000): 1) foreign-owned firms can appropriate the domestic market; or foreign-owned firms attract the finest human capital, thus starving the local economy of good quality resources. The literature notes that these negative effects are usually conditioned on several factors in different parts of the world (Blomström and Sjöholm 1999; Konings 2001; Gorodnichenko 2007). Respected international companies invest a great deal into their research and indeed are at the edge of applied science. Thus it can be expected that most research and development originates in firms operating in more than one country, giving higher rates of innovation overall (Criscuolo, Haskel et al. 2010).

3.2. Intra-industry effects

Intra-industry spillovers affect the upstream and downstream, mainly within an industry or sector of economy. Domestic companies can utilize much of the increased activity generated by foreign investments, applying most of their management and technology into their own supply chain and attaching to supply chains of the more competitive foreign entity. Generally, vertical spillovers are found to be positive and quite considerable (Smarzynska Javorcik 2004; Haskel, Pereira et al. 2007; Keller and Yeaple 2009; Barrios, Görg et al. 2011). The main transfers occur in corporate governance and managerial practices, design and enforcement of marketing mix, production methods, technology, innovation, and general knowledge related to business issues (Apostolov 2013). Foreign-owned firms, more often than not, cooperate with domestic firms by acquiring quality intermediate products. In such a process, the technology and managerial know-how is transferred to the domestic firms so that they can better integrate into the supply-chain of the foreign investments. This is mainly due to the goal of the foreign firm to prevent a 'single supplier's bargaining power' (Blalock and Gertler 2008). Especially when economies in transition are taken into consideration, the foreign direct investments play a crucial role in overall enterprise restructuring and capital influx (La Porta, Lopez-De-Silanes et al. 1999; Djankov and Murrell 2002; Apostolov 2011).

4. Industry-government-university relationships

As stated above, the concept industry-government-university relationships, initiated through the articles of Etzkowitz and Leydesdorff (Etzkowitz 1993; Etzkowitz 1995; Leydesdorff 2013), the pioneer works of Lowe (Lowe 1982) and Sábato and Mackenzi (Sabato, Mackenzie et al. 1982), interprets the shift from a dominating industry-government duality in the ‘industrial society’ to a growing threefold relationship between industry-government-university in the ‘knowledge society’.

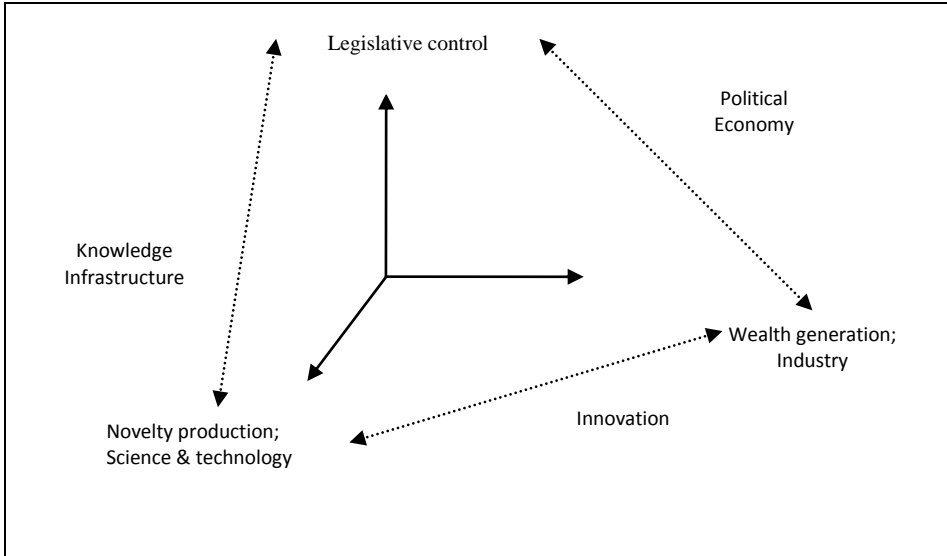
4.1. Systems of Innovation

The essential system used in innovation analysis is, as also said before, the model of industry-government-university relationships, or as it is usually referred to, the ‘triple helix’. This is a basic analytical framework that synthesizes the most important interactions and explains the ‘innovation system’ of an economy. Consequently, it is defined as a set of components, relationships and functions. Among the components of such systems, a distinction is made between (Jensen and Murphy 1990): 1) R&D and non-R&D innovators; 2) ‘single-sphere’ and ‘multi-sphere’ (hybrid) institutions; and 3) individual and institutional innovators. Interactions between these spaces are non-linear, which in such manner generates a new amalgamation of knowledge and resources that can progress innovation theory and practice, especially at the national level.

4.2. Technology Gaps

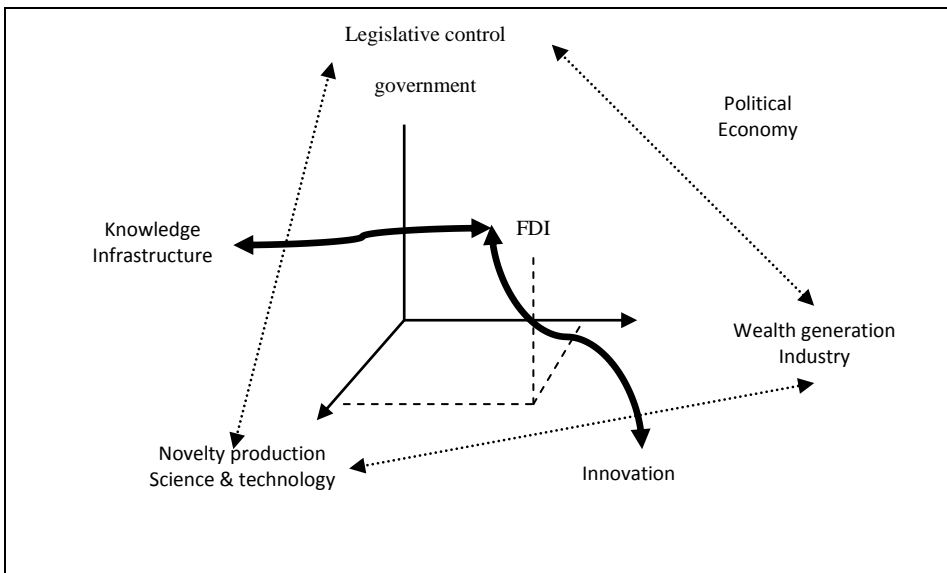
The existence of an intra-firm transfer of technology within a foreign-owned firm is common knowledge and it is frequently the cause of an R&D and innovation gap (i.e. between the R&D activities of domestic firms vs that of foreign-owned firms; Fors 1997). This leads to gaps in R&D expenditures between domestic-owned and foreign-owned firms. There is a correlation between R&D, i.e. employees in R&D and R&D sales ratios (Howenstine and Zeile 1992); and thus foreign acquisitions lead to increasing R&D intensity in acquired domestic multinationals as well as non-multinationals (Bandick, Görg et al. 2014).

Figure 1. Differentiated industry-government-university relationships within three-dimensional space



Source: Leydesdorff and Meyer 2010.

Figure 2. FDI effects and Innovation



Source: compiled by the author on the basis of Leydesdorff and Meyer 2010.

5. FDI-induced innovation

New processes or technologies come with the fine tuning of innovation resources by firms that have a competitive edge on international markets. They can move their innovation abroad through a range of channels: 1) licensing technologies; 2) foreign direct investment; or 3) imitation technology transfer by other firms. When undertaking foreign direct investment the usual practice is the establishment of a plant and operations on foreign soil in order to produce and sell on the host's domestic market or elsewhere. This imposes a two-way interaction between foreign direct investments and innovation: how foreign-owned firms influence innovation; and vice versa, how innovation influences foreign-owned firms. The two key channels through which foreign-owned firms link to innovation are resource availability and research and development (R&D) incentives.

5.1. How foreign direct investments influence innovation

Anticipated profits are used to offset costs of innovation, thus foreign direct investments are in essence driven by increased gains, reduced supply-chain inefficiencies and slimming-down the corporate structure. This means that foreign-owned firms are prepared to use increased profit levels to increase innovation activities. However, there are some studies that point out 'zero innovation', i.e. when a foreign-owned company enters market with high imitation practices (Glass and Saggi 1999). On the other hand, workers who have been exposed, through FDI, to superior technology and are educated and trained gain the capacity to embark on their own endeavours through start-ups. Domestic suppliers use foreign company's sources of information and implement them in their own business cycle (Crisuolo, Haskel et al. 2010).

5.2. How innovation influences foreign direct investments

Foreign-owned firms have an ownership advantage when deciding to operate in multiple countries. Possessing technological expertise gained through innovation constitutes, as a rule, the source of ownership advantage for multinational firms. For this reason innovation is, in a sense, a necessary precondition for foreign direct investment, in the sense that innovation will usually spur foreign direct investment (Branstetter and Saggi 2011).

6. A Case Study – Macedonia

6.1. Funding trends

The main R&D funding indicators for Macedonia for the period 2009–2011 in comparison with the corresponding EU-27 averages are presented in the table below:

Table 1. The main R&D funding indicators for Macedonia for the period 2009–2011

	2009	2010	2011	EU27
GDP growth rate	-0.9	2.9	2.8	-0.3 (2012)
GERD (% of GDP)	0.199	0.221	0.22	2.03 (2011)
GERD (euro per capita)	6.45	7.47	n/a	510.5 (2011)
GBAORD – Total R&D appropriations (€ million)	6.68	9.90	n/a	91,277.1 (EU27 total 2011)
R&D funded by Business Enterprise Sector (% of GDP)	0.042	0.025	n/a	1.26 (2011)
R&D conducted by HEIs (% of GERD)	32.5	44.6	n/a	24% (2011)
R&D conducted by the Government Sector (% of GERD)	46.4	44.2	n/a	12.7% (2011)
R&D conducted by the Business Enterprise Sector (% of GERD)	21.1	11.2	n/a	62.4% (2011)
Share of competitive vs institutional public funding for R&D	0.33	0.38	0.44	n/a

N.B. Abbreviations:

GDP – Gross Domestic product

R&D – Research and Development

GERD – Gross domestic expenditure on R&D

GBAORD – Total Government Budget Appropriations or Outlays on R&D

HEIs – Higher Education Institutions

Source: EUROSTAT, Brussels, 2013.

In 2010, GERD, as a percentage of GDP was 0.221%, lagging behind the EU average of 2.01%. The GBAORD in 2010 was €9.90m, a increase of 48.2% when compared to 2009. In the same period, R&D funded by the Business Enterprise Sector (% of GDP) decreased from 0.042 to 0.025, while the R&D funded by the Business Enterprise Sector (% of GERD) decreased from 21.1% to 11.2%. The leading performing sector in the country in 2010 was HEIs, with 44.6% of GERD, a significant increase when compared to 32.5% in 2009. The R&D conducted by the Government Sector (% of GERD) decreased from 46.4% in 2009 to 44.2% in 2010. This structure shows the low capacity of the business sector for R&D (11.2% in 2011), since the participation of the business sector in total GERD for EU countries was 62.4% in 2011.

6.2. Comparison with other Southeast Europe economies

In order to compare the basic data we examine the economies in the region of Southeast Europe (Croatia, Serbia and Slovenia), all with an established legal framework and institutional R&D infrastructure, as well as firm-level innovation capabilities. The general theory links augmented R&D with the increased foreign presence, as a consequence of investments into their own production base and also as spillover externalities to domestic firms.

In the case of Croatia the highest point of research and development expenditure (% of GDP) was in 2004 (1.05%) and the lowest is in 2012 (0.75%), which demonstrates a diminishing trend (Figure 1). The case of the other three countries was opposite, as they showed increases in R&D expenditures over time. Macedonia increased its expenditure from 0.22% in 2003 to 0.44% in 2013 i.e. the investments in R&D have doubled. As far as Serbia is concerned, there is an increase from 0.57% (2003) to 0.99% (2012), which is a more than 40% climb in the best year compared to the lowest point. Slovenia continuously has the highest numbers of R&D expenditures and has invested more than all the other three countries combined, with highest point in 2013 (2.59%).

When making a comparison of the R&D expenditures and influx of FDI of Macedonia opposed to the other three countries, it can be said that the Macedonian economy still lags behind in crucial sectors that boost innovation and research. Hence, the strategy of Macedonia is one of robustly reliance on attracting FDI, with the expectation that foreign owned firms will move the sector of innovation forward overall. In this case it is important to stress that it has the lowest starting point and has increased R&D expenditures significantly over the analysed time period (Figure 1). The relation to foreign direct investments has a gap of couple of years (for example, highest point in foreign direct investment inflow is 2007 (8.99%) and the highest point of R&D expenditures is 2013), which is also reflected in the case of Serbia.

Figure 2 compares the movements of internationally-recognized quality certification and foreign ownership in selected economies. It consists of firm-level data obtained from Enterprise Surveys of the World Bank, and it shows interesting movements of one of the basic indicators of innovation at the firm-level, that is, the standardization processes of the companies, which is essential for international competitiveness. In the case of Macedonia, Serbia and Slovenia there has been a significant increase in this indicator (Macedonia has tripled this process). The declining tendency of Croatia can only be worrisome.

If contrasted to the proportion of private foreign ownership in a firm (which is somewhat sluggish for all the analysed economies, with a tendency of rebound to the pre-crisis level) the levels of internationally-recognized quality

certification are inversely related. This indicates that domestic firms have developed a certain autonomy with respect to foreign ownership when it comes to building a competitive edge. However, the inflow of foreign direct investment, even though at early stage, is contributing to the practice of conducting business in this region.

6.3. Do Foreign Direct Investments Induce Innovation?

The data used in this research is from the Enterprise Surveys data sets specified by the World Bank Microdata Library. These surveys are firm-level representative samples that gather information from the private sector. Further, the data sets include a wide variety of business environment topics, including firm characteristics, gender participation, access to finance, annual sales, costs of inputs/labour, workforce composition, bribery, licensing, infrastructure, trade, crime, competition, capacity utilization, land and permits, taxation, informality, business-government relations, innovation and technology, and performance measures. The datasets can be individual and country specific, as well as aggregated throughout the years in order to give relevant information to the public. Hence, the questions are addressed to business owners and top managers, normally using 1200–1800 interviews in larger economies, 360 interviews in medium-sized economies, and 150 interviews in smaller economies. The surveys are derived through two instruments: the Manufacturing Questionnaire and the Services Questionnaire.

For the purposes of this research we used specifically separated data sets contained in the World Bank's Enterprise Surveys. Hence, we utilized the part of the data specifically analyzing 'Innovation and Technology': 1) percentage of firms with an internationally-recognized quality certification (firms that have an internationally-recognized quality certification, i.e. ISO 9000, 9002 or 14000); 2) percentage of firms using technology licensed from foreign companies (firms using technology licensed from foreign companies); 3) percentage of firms having their own website (percentage of firms using a website for business-related activities, i.e. sales, product promotion etc.); 4) percentage of firms using e-mail to interact with clients/suppliers (firms using email to interact with clients or suppliers); 5) percentage of firms with an annual financial statement reviewed by external auditors (firms with their annual financial statement reviewed by an external auditor). All these categories are divided into the following subcategories: 1) Manufacturing All – all manufacturing firms; 2) Services All – all services firms; 3) Small (5–19) – small firms with 5–19 employees; 4) Medium (20–99) – medium firms with 20–99 employees; 5) Large (100+) – large firms with 100+ employees; 6) Direct exports at 10% or more of sales – firms exporting more than 10%; 7) Non-exporter – non-exporting firms; 8) Domestic – domestic firms; 9) 10% or more foreign ownership – firms with more than 10% foreign ownership.

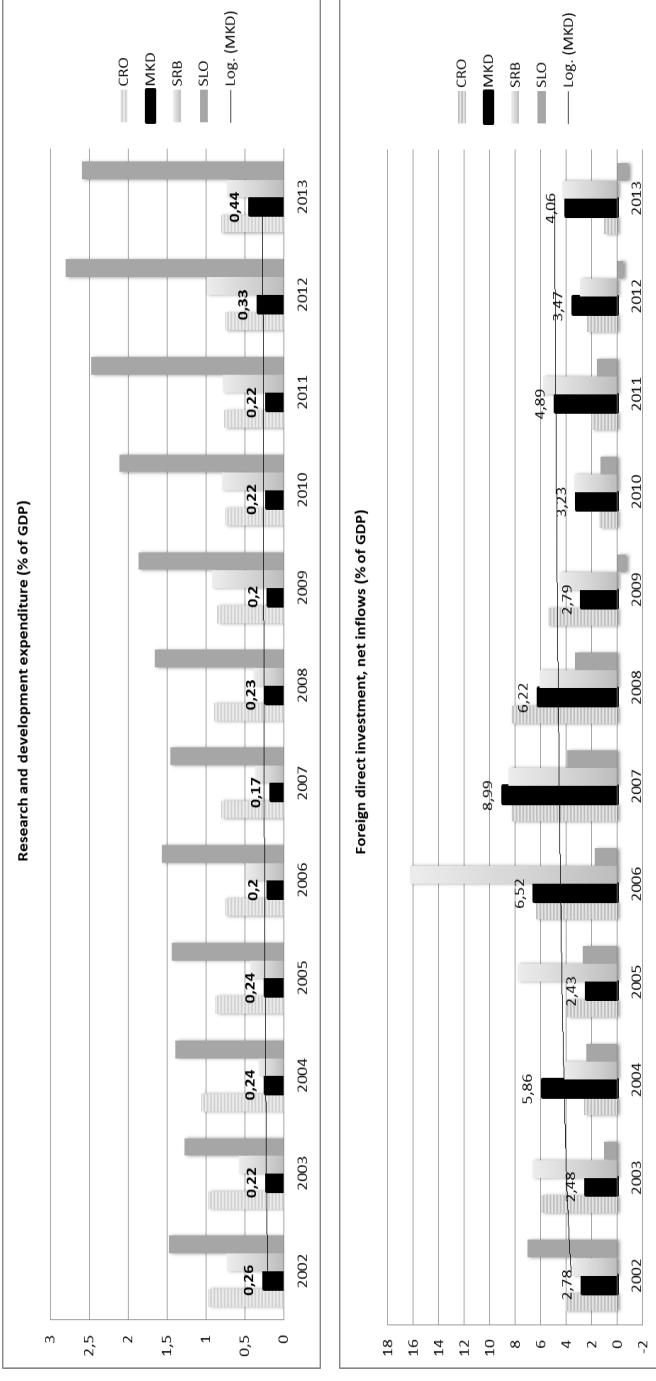
In this study we focus particularly on the difference between domestic and foreign-owned firms in relation to the inflow of foreign direct investment. Additionally, owing to our analysis we can see the change of the economy's ownership structure and/or the influence of private foreign ownership on domestic innovation.

As shown below (Figure 3) the percent of firms with an internationally-recognized quality certification is presented for both domestic and foreign-owned firms. In this area, the domestic firms had an increase from 11.7% (2002) to of 35.1% (2013), which is in line with the growth in quality certification of foreign-owned firms (15.8% in 2002 to 43% in 2013) and the increase of FDI. As far as the percentage of firms using technology licensed from foreign companies is concerned, the numbers show an increase for domestic firms from 20.1% in 2009 to 35.1% in 2013 (i.e. a jump of almost 15 percent points), and increase for foreign-owned firms from 39% to 45% for the same period.

The percent of firms having their own website might be a less vital indicator, nonetheless it is important for overall market positioning, where the domestic firms developed from 47.4% in 2002 to 58% in 2013 (with peak in 2005), while significant decrease was visible in the foreign-owned, from 73.7% in 2002 to 58.6% in 2013. Further, the percentage of firms using e-mail to interact with clients/suppliers as a measure of innovation potential has shot up from 46.3% (2002) to 86.6% (2013) for domestic firms, compared to 68.4% (2002) to 99.5% (2013) for foreign-owned firms. A negative trend can be noted in Macedonia with respect to percentage of firms with an annual financial statement reviewed by external auditors, which declined from 27.6% (2002) to 12% (2013) for domestic firms, while at the same time an increase from 29.4% (2002) to 45.5% (2013) was noted for foreign-owned firms.

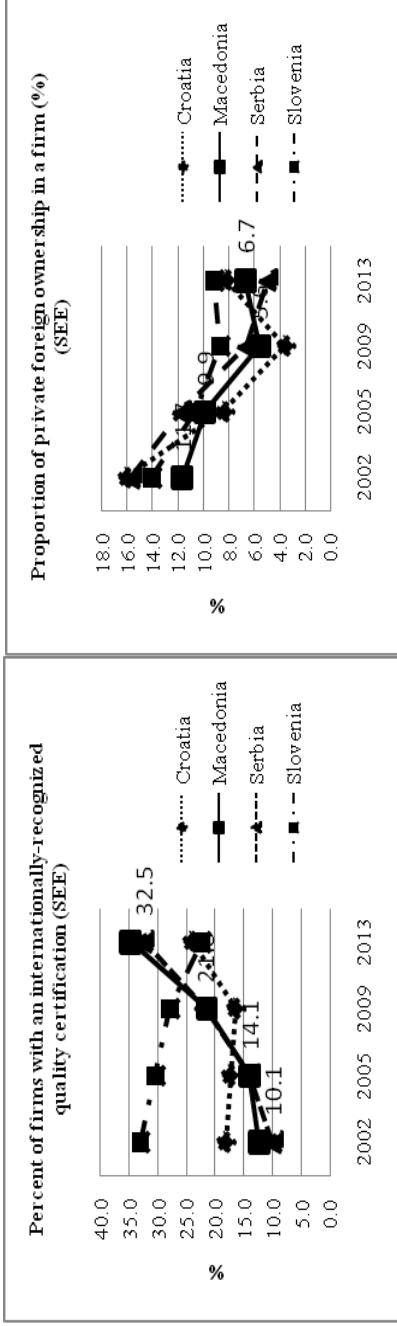
In general, there are four positive tendencies and one negative that denote a positive scenario in the sector of innovation and technology. In some cases there is a twofold increase which cannot be undermined, and in others there is still a lot to be done. Nonetheless, the impact of the foreign presence is noticeable and affirmative, i.e. an example that has to be mimicked and imposed on companies' practices.

Figure 3. R&D expenditure (% of GDP) vs FDI (net inflows % of GDP)



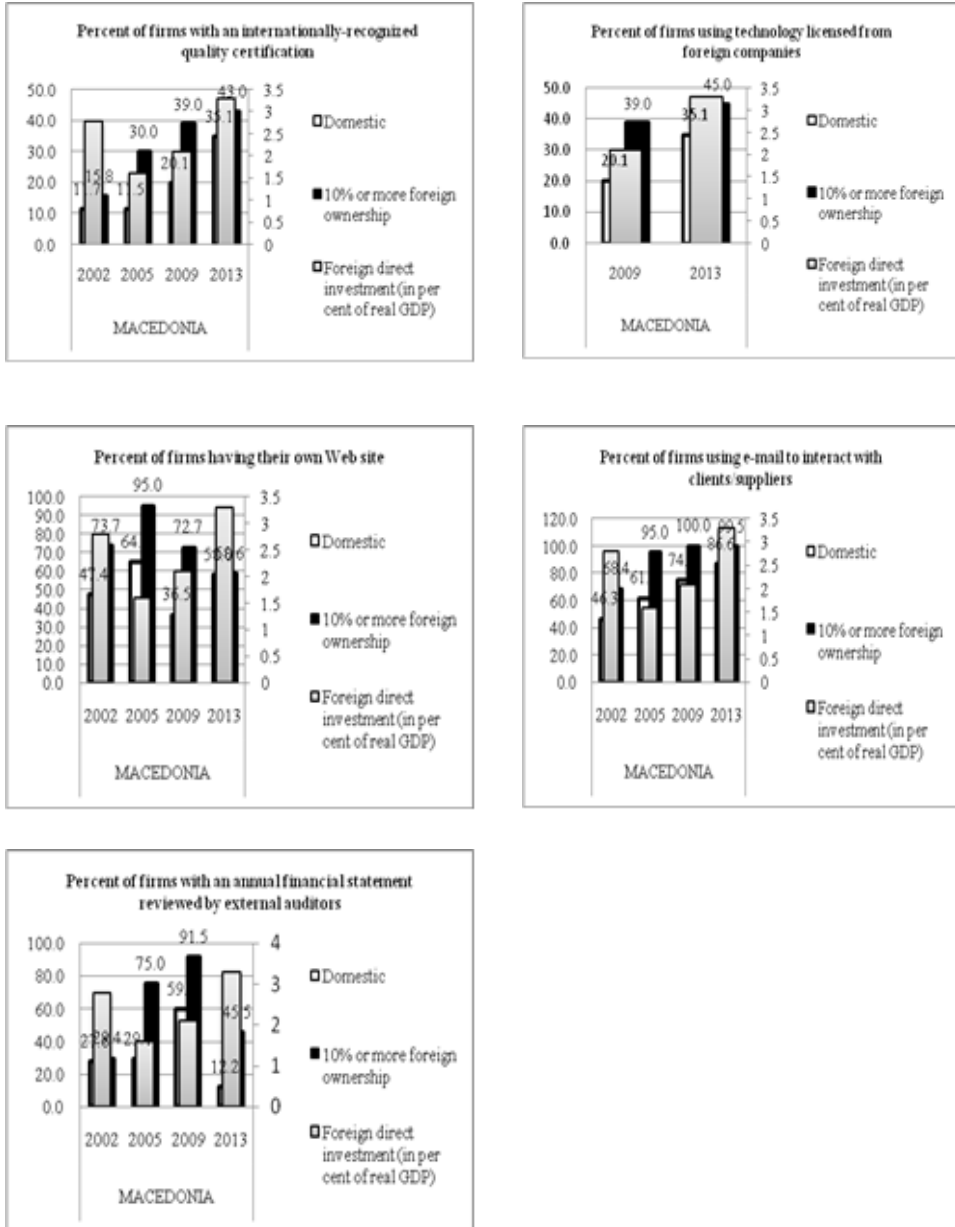
Source: The World Bank Library.

Figure 4. Movements of certifications and foreign ownership in selected countries



Source: World Bank Microdata Library – Enterprise Surveys.

Figure 5. Domestic and foreign ownership innovation capacities in relation to Foreign Direct Investments



Source: World Bank Microdata Library – Enterprise Surveys.

7. Discussion

Where to next?

Higher investment in research and development activities has to be one of the priorities in the process of gaining innovation-based competitiveness for domestic owned firms. In this respect, foreign direct investment has proven to be a suitable mechanism and stimulation.

When it comes to research and development expenditures, it is evident that Macedonia lags behind in crucial sectors that enhance innovation and research. It has lowest percentage of investment in R&D in contrast to the other three economies analysed. Nevertheless it must be pointed out the doubling of R&D expenditures over the analysed period is highest ratio of improvement. Thus the tendency is positive, but the overall numbers with respect to expenditures is not; Macedonia needs to close the gap to at least the level of Serbia, and if possible Slovenia. The second pillar of the country's strategy is to eventually induce higher rates of innovation by rapidly increasing foreign direct investments spillovers, which so far has been adequate. Certainly, there is time-lag between the inflow of foreign-owned capital and the effect on innovation.

At the firm level, compared to the other Southeast Europe economies scrutinized in this study there is a sizable activity on the part of Macedonian domestic firms centred on standardising production practices and building international long-term competitiveness. Indeed, the incursion of foreign direct investment, even though at an early stage, is already contributing to the practices of conducting business in this region.

The indicators related to innovation and technology according to World Bank – Enterprise Surveys for Macedonia – illustrate the future prospects for competitive advantage of domestic firms. Internationally-recognized quality certification of firms has tripled and is in line with the quality certification growth of foreign-owned firms. Furthermore, the firms using technology licensed from foreign companies also mirrors the rate of increase for foreign-owned firms. As far as technology indicators are concerned, such as presence on the internet presence through the basic variable of owning a website, important for overall market positioning, domestic firms have significantly increased their presence. Similarly, the indicator that measures Macedonian firms using e-mail to interact with clients/suppliers has doubled and is in line with that of foreign-owned firms. However, negative tendencies can be noted with respect to the percentage of firms whose annual financial statement is reviewed by an external auditors, which is in opposition to the increase in this indicator for foreign-owned firms.

Some limitations should be applied and future research deduced from this study. This research relies on broad indicators that helped assess the innovation of domestic and foreign-owned firms vis-à-vis the influx of foreign direct investments. Applying different measures of innovation in future analyses can help uncover other important inferences.

Another limitation of this study is that it was limited to Southeast European countries, and more specifically the case study of Macedonia. A major constraint is a lack of data availability, especially data specifically intended to analyze innovation phenomena. However, the major economic and business indicators are available on large and respected data bases, which were employed in this study.

In future projects researchers might wish to use the same (or modified) methodology as applied in this research, and apply it to other countries to test whether innovation is positively associated with foreign direct investments, in both developed and developing countries. Another possible path of research could be analyses on the impact of foreign direct investments by type of investment and sector, which might lead to valuable conclusions à propos the question: In which industries do domestic firms and innovation have the greatest influence in attracting capital inflow.

References

- Aitken B., Hanson G.H., et al. (1997). *Spillovers, foreign investment, and export behavior*. 'Journal of International Economics' 43(1–2): 103–132.
- Aitken B., Harrison A., et al. (1996). *Wages and foreign ownership A comparative study of Mexico, Venezuela, and the United States.* 'Journal of International Economics' 40(3–4): 345–371.
- Aitken B.J., Harrison A.E. (1999). *Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela.* 'American Economic Review' 89(3): 605–618.
- Apostolov M. (2011). *Governance and Enterprise Restructuring: The Case of Macedonia.* 'Transition Studies Review' 18(2): 299–309.
- Apostolov M. (2013). *Governance and enterprise restructuring in Southeast Europe: gross domestic product and foreign direct investments.* 'Corporate Governance: The international journal of business in society' 13(4): 431–438.
- Bandick R., Görg H., et al. (2014). *Foreign Acquisitions, Domestic Multinationals, and R&D.* 'The Scandinavian Journal of Economics' 116(4): 1091–1115.
- Barrios S., Görg H., et al. (2011). *Spillovers through backward linkages from multinationals: Measurement matters!* 'European Economic Review' 55(6): 862–875.

- Blalock G., Gertler P.J. (2008). *Welfare gains from Foreign Direct Investment through technology transfer to local suppliers*. 'Journal of International Economics' 74(2): 402–421.
- Blomström M., Sjöholm F. (1999). *Technology transfer and spillovers: Does local participation with multinationals matter?* 'European Economic Review' 43(4–6): 915–923.
- Branstetter L., Saggi K. (2011). "Intellectual Property Rights, Foreign Direct Investment and Industrial Development*." 'The Economic Journal' 121(555): 1161–1191.
- Cohen B. I. (1973). *Comparative Behavior of Foreign and Domestic Export Firms in a Developing Economy*. 'The Review of Economics and Statistics' 55(2): 190–197.
- Criscuolo C., Haskel J. E., et al. (2010). *Global engagement and the innovation activities of firms*. 'International Journal of Industrial Organization' 28(2): 191–202.
- Djankov S., Murrell P. (2002). *Enterprise Restructuring in Transition: A Quantitative Survey*. 'Journal of Economic Literature' 40(3): 739–792.
- Etzkowitz H. (1993). *Enterprises from science: The origins of science-based regional economic development*. 'Minerva' 31(3): 326–360.
- Etzkowitz H., Leydesdorff L. (1995). *The Triple Helix of University-Industry-Government Relations: A Laboratory for Knowledge-Based Economic Development*. 'EASST Review' 14(1): 14–19.
- Fors G. (1997). *Utilization of R&D Results in the Home and Foreign Plants of Multinationals*. 'The Journal of Industrial Economics' 45(3): 341–358.
- Friedman M. (2007). *The Social Responsibility of Business Is to Increase Its Profits*. [in:] Corporate Ethics and Corporate Governance. W. Zimmerli, M. Holzinger and K. Richter, Springer (eds) Berlin Heidelberg: 173–178.
- Glass A.J., Saggi K. (1999). *Foreign Direct Investment and the Nature of R&D*. 'The Canadian Journal of Economics / Revue canadienne d'Economie' 32(1): 92–117.
- Gorodnichenko Y., Svejnar J, Terrell K. (2007). *When Does FDI Have Positive Spillovers? Evidence from 17 Emerging Market Economies*. 'Centre for Economic Policy Research', London.
- Greenaway D., Hine R., et al. (2000). *Further evidence on the effect of foreign competition on industry level wages*. 'Weltwirtschaftliches Archiv' 136(3): 522–538.
- Hall R. E., Jones C.I (1999). *Why do Some Countries Produce So Much More Output Per Worker than Others?* 'The Quarterly Journal of Economics' 114(1): 83–116.
- Haskel J.E., Pereira S.C., et al. (2007). *Does Inward Foreign Direct Investment Boost the Productivity of Domestic Firms?* 'Review of Economics and Statistics' 89(3): 482–496.
- Howenstine N.G., Zeile W.J. (1992). *Foreign Direct Investment in the United States: Establishment Data for 1987*. 'Survey of Current Business(October)': 44–58.
- Jensen M.C. (2010). *The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems*. 'Journal of Applied Corporate Finance' 22(1): 43–58.

- Jensen M.C., Murphy K.J. (1990). *Performance Pay and Top-Management Incentives*. 'Journal of Political Economy' 98(2): 225–264.
- Kathuria V. (2000). *Productivity spillovers from technology transfer to Indian manufacturing firms*. 'Journal of International Development' 12(3): 343–369.
- Keay I. (2000). *Canadian manufacturers' relative productivity performance, 1907–1990*. 'Canadian Journal of Economics/Revue canadienne d'économique' 33(4): 1049–1068.
- Keller W. (2000). *Do Trade Patterns and Technology Flows Affect Productivity Growth?* 'World Bank Economic Review' 14(1): 17–47.
- Keller W., Yeaple S.R. (2009). *Multinational Enterprises, International Trade, and Productivity Growth: Firm-Level Evidence from the United States*. 'Review of Economics and Statistics' 91(4): 821–831.
- Kokko A. (1994). *Technology, market characteristics, and spillovers*. 'Journal of Development Economics' 43(2): 279–293.
- Konings J. (2001). *The effects of foreign direct investment on domestic firms*. 'Economics of Transition' 9(3): 619–633.
- La Porta R., Lopez-De-Silanes F., et al. (1999). *Corporate Ownership Around the World*. 'The Journal of Finance' 54(2): 471–517.
- Leydesdorff L. (2013). *Triple Helix of University-Industry-Government Relations*. [in:] Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship. E. Carayannis, Springer New York (eds.): 1844–1851.
- Leydesdorff L., Meyer M. (2010). *The decline of university patenting and the end of the Bayh-Dole effect*. 'Scientometrics' 83(2): 355–362.
- Lowe C. U. (1982). *The triple helix--NIH, industry, and the academic world*. 'Yale J Biol Med' 55(3-4): 239–246.
- Nelson R. R. (1991). *Why do firms differ, and how does it matter?* 'Strategic Management Journal' 12(S2): 61–74.
- Nickell S.J. (1996). *Competition and Corporate Performance*. 'Journal of Political Economy' 104(4): 724–746.
- Sabato J.A., M. Mackenzie, et al. (1982). *La Producción de Tecnología: Autónoma o Transnacional*, Instituto Latinoamericano de Estudios Transnacionales.
- Schumpeter J.A. (2013). *Capitalism, Socialism and Democracy*, Taylor & Francis.
- Smarzynska Javorcik B. (2004). *The composition of foreign direct investment and protection of intellectual property rights: Evidence from transition economies*. 'European Economic Review' 48(1): 39–62.
- Willmore L.N. (1986). *The comparative performance of foreign and domestic firms in Brazil*. 'World Development' 14(4): 489–502.

Streszczenie

INNOWACJE DZIĘKI BEZPOŚREDNIM INWESTYCJOM ZAGRANICZNYM? STUDIUM PRZYPADKU – MACEDONIA

Artykuł, poddając analizie innowacje w Europie Południowo-Wschodniej, a w szczególności przypadek Macedonii, koncentruje się na podstawowych zależnościach między bezpośrednimi inwestycjami zagranicznymi a innowacjami. Bezpośrednie inwestycje zagraniczne definiuje się zwykle jako większościowe lub kontrolne prawo własności firmy działającej w danym kraju (kraju przyjmującym), przez podmiot posiadający siedzibę w innym kraju. Teoria relacji państwo-przemysł-uczelnie wyższe wyjaśnia przejście od dominującej relacji przemysł-państwo w „społeczeństwie industrialnym” do rozwijającej się relacji państwo-przemysł-uczelnie wyższe w ramach „społeczeństwa wiedzy”.

Od początku procesu transformacji, bezpośrednie inwestycje zagraniczne pozostają priorytetem, niezbędnym filarem, który przyczynia się do rozwoju społeczeństwa w kierunku rozwiniętej gospodarki rynkowej. Ponadto zwiększony napływ kapitału nieuchronnie niesie ze sobą rozwój innowacji. Dlatego analizowana jest kwestia, czy te dwa procesy mogą postępować i przyczyniać się do rozwoju gospodarki.

Słowa kluczowe: BIZ, innowacje, Europa Południowo-Wschodnia, Macedonia