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**Multinational Enterprises and Spillover Effects in the National Economy:
The Case of Czech ICT Sector**

MASTER THESIS

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Abstract: Due to the significant inflow of FDI in the Czech Republic a home to a several MNEs. Significant number of these is formed by the MNEs in the ICT sector. The aim of the study is to define the major channels for spillovers of innovations, processes and knowledge and define in what way, to what extent and whether at all the spillovers in the Czech ICT sector occur. To tackle the problem, qualitative approach, based on document analysis and semi-structured interviews with relevant professionals, has been executed. The study shows that the vertical linkages in services industry aren't, as relevant as the theory would suggest. On the other hand, horizontal linkages are a carrier of spillovers, as through the local competition companies get to innovate. Other spillover channels in the Czech ICT sector include cooperation with local universities as well as transfer of knowledge through the labour mobility. The absorption capacity based on quality education system, skilled labour force and stable economic environment is the factor enabling spillovers to happen in the Czech ICT sector and MNEs are benefitting from that.

Keywords: spillover effects, ICT, multinational enterprises, Czech Republic, horizontal linkages, vertical linkages, knowledge transfer, innovation

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LIST OF ABBREVIATIONS

CEE – Central and Eastern Europe

EU – European Union

GFN - global flagship networks

ICT – information and communication technologies

IPA – investment promotion agency

FDI – foreign direct investments

MNE - Multinational Enterprises

OLI – ownership, location, internalization

R&D – research and development

US – United States

WW II – Second World War

INTRODUCTION

The spillovers are a phenomenon observed and researched for several decades (Vernon, 1966; Hymer, 1976; Kindleberger, 1969; Dunning, 1988; Dunning, 2001). Similarly as the entire political and economic system changes, even the spillovers have been a subject of change throughout the time. The biggest change in the foreign direct investments (FDI) has been noticed with the rise of information and communication technologies (ICT), leading to the creation of Multinational Enterprises (MNE), as we know them today. Entire global networks within one organization have been created, exceeding the national borders, contributing to the creation of globalized world.

So far the research of spillovers has been focusing primarily on the effects associated with the presence of MNEs on local companies in terms of sales and production of goods and services. Building on econometric quantitative studies based on Caves's (1974) production function approach, these studies don't tackle the spillovers in the services industry, such as the ICT.

The spillovers via MNEs are difficult to achieve and a lot of preconditions have to be met. The study will provide an answer to the question **whether the MNEs in the Czech ICT sector brought along technology spillovers and contribute to the regional development?**

To better understand the role of FDI and the specific aspect of MNEs as the contributor to local development, the framework of the role of MNEs will be analysed. The following questions will be asked:

- What are the reasons for the MNEs to locate themselves in the Czech Republic?
- How important is the local capacity to efficiently absorb the spillovers?
- Are the MNEs carrier of knowledge, innovations and spillover effects to the Czech Republic?

The question which is being asked throughout the study is, in what way the MNEs affect the Czech ICT sector.

The study is based on document analysis and interviews with experts and will tackle specific issues of the relation between the MNE and spillovers in the Czech Republic.

The thesis is structured as follows. In the first chapter there is explained what is the driving force behind the MNEs decisions to internalize the market in form of FDI, rather than export

its product and thus utilize the market. Different theoretical approaches have been targeting the topic of the motivation of national companies to become multinational. The general characteristics and the history of the schools of thought will be introduced, as well as basic theoretical frameworks introducing the specifics of FDI.

The economies are driven by innovations and if the right preconditions are met, the spillover effects work as a carrier of new technologies, know-how and new processes. In the second chapter will be introduced the types of spillovers and specific channels through which are the new technologies, skills, or know-how penetrating to the local ecosystem. The concept of global flagship networks (GFN) will be put into context of spillovers. As not every territory might be allowing the technology transfers to occur, the concept of factors determining under which conditions will the spillovers likely to happen, will be introduced. At the very end of this chapter will be described the way, the national economies approach MNEs and what policies and incentives are being utilised to attract FDI.

The third chapter will define the research question and specify the reasons for choosing this particular research method. The design of the empirical study will be outlined.

The fourth chapter is analysing the MNEs in the Czech Republic. First, overview of the Czech FDI inflow is given. The results of the interviews are put in contrast to the theoretical framework presented throughout the thesis. This chapter will be tackling the questions highlighted above, based on the empirical data and the interviews.

1 FDI

FDI is gaining on importance steadily over the last decades and with the rise of MNEs the need for further theoretical explanation emerged throughout the world. At the beginning the theories were based on the assumptions of classical and neoclassical theories, considering as the only way, for FDI to happen, the capital market and portfolio investments (Vernon, 1966; Hymer, 1976; Kindleberger, 1969; Dunning, 1988; Dunning, 2001). The division of labour was supposed to be linked to the specific geographic location and the changes only occurred if the domestic resources were subject to change. Under such conditions the incentive to internalize abroad and invest instead of export was very low, or none (Dunning, 1996). In other words: if market was perfect and neoclassical theories would reflect the real world situation, the FDI wouldn't ever happen (Vernon, 1966; Hymer, 1976; Dunning, 1988)

After the Second World War there was an increased need for US capital from Europe and Japan to finance their reconstruction activities. Thanks to the improvement in transport and communications infrastructure, which allowed control over the distance, economists could observe the rise of MNEs from the US to Western Europe and at this period the theories of FDI and MNE activities took off (Hymer, 1976; Nayak and Choudhury, 2014).

In the atmosphere of technological change in 1960s and the rise of the MNEs, the existing theories of international trade failed to explain the new market trends, why companies perform direct investment. All this meant a challenge for economists and an open call for an alternative theory explaining the trade flows (Leontief, 1966).

In order to explain the complexity of MNE and FDI, the theories with major influence will be introduced. Due to the reasons mentioned above we will stick to the theories based on imperfect market as it is the market imperfection, resulting in FDI, allowing the MNEs to fully utilize advantages in the host country, leaving aside theories based on perfect market.

1.1 The Reasons Which Motivate the MNE for FDI

After the Second World War, there was a new trend of growing FDI by US companies to Western Europe (Vernon, 1966). Several researchers started to pay attention to the companies establishing their production abroad, provide specific understanding to analyse the reasons for such behaviour (Ernst and Ozawa 2002).

Hymer's model, revealed already in 1960 in his dissertation and in 1976 published in a book, was based on the assumption that due to the market imperfection the MNE's tend to look for alternative ways to exploit their advantages abroad at lower costs. Therefore formed a new theoretical framework, arguing against the perfect market assumptions explaining the FDI as the capital movement based on the rates of return (Nayak and Choudhury, 2014; Latorre, 2008). Among the most discussed arguments set by Hymer (1976) is the business advantages domestic companies have in favour to the MNEs. Domestic companies usually have the advantage of access to the information¹, they are not object of discrimination by government, consumers, nor suppliers and aren't threatened by the exchange rate risk. Hymer argues that in order to overcome externalities set for international companies and become more competitive on the foreign market, the MNEs tend to establish a subsidiary, internalize, rather than license its product. The MNEs should utilize the market power advantages in order to be competitive with domestic companies and overcome the disadvantages. Among the most common market power advantages according to Hymer is the technological advantage, in form of patent protected technology and innovations², or cheaper sources of finance and economies of scale.

One of the most known theories was the Product Life Cycle Theory presented by Vernon (1966), who provided the stable ground for future authors dealing with FDI, even though Vernon later on recognised that the predictive power of his models may have weakened as the circumstances influencing the international investment changed (Nayak and Choudhury, 2014). As the demand for US manufactured products increased after the WW II, the US companies started to export their products and benefit from the advantage of advanced technology over their European counterparts. At this stage the product is rather unstandardized, there is high degree of product differentiation and to some extent the

¹ Information in Hymer's view means understanding of local economy, language, law and politics.

² In form of product innovation, but as well marketing and production processes innovation.

monopoly is present. As the product develops, the technology becomes known and final product undergoes level of standardization³. The emulation of US products and processes by the European companies follows and the domestic production starts to replace US exports. The US MNEs establish subsidiaries in the territory, to better face the competition (Vernon, 1966). The FDI is a reaction of US MNEs to the thread of losing their market share abroad. Under such conditions companies tend to look for cheaper factor costs in other locations in order to face the growing competition. Such a behaviour Vernon describes as a life cycle of a product that the companies tend to follow. Vernon (1966) has seen the outdated international trade theories and the product-cycle theory was his way for explaining the changing trends of international trade by putting them into contrast with international investment (Nayak and Choudhury, 2014; Latorre, 2008).

The market, in which the companies seek to maximize their profit, is imperfect. It is this imperfection which works as an incentive for internalization of a company production, to create internal markets within the company structures. Global internalization of markets leads to the creation of MNEs. The reasons for FDI in case of companies involved in research and development are that companies in a host country are often discouraged to trade this innovation due to high transaction costs. If such a situation occurs, then output of one subsidiary may become input or may be utilized by a subsidiary in another country. As soon as a company has its operations in more countries, we are facing FDI by MNEs thanks to the internalization of its activities (Buckley and Casson, 1976; Buckley and Casson, 2009; Hymer, 1976; Vernon, 1966; Ernst and Owawa, 2012; Ernst, 2003; Nayak and Choudhury, 2014).

Among the most important theories belongs the Dunning's Eclectic Paradigm theory, as it incorporates all the above mentioned theories and adds one of the most important aspect to the researched topic; the location. Until now there wasn't too much said about why company goes to which location and what are the reasons to open an office in a specific region (Nayak and Choudhury, 2014; Dunning, 1998). Classical and neoclassical theories of trade, where the division of labour was determined by the geographic predispositions and the changes were only presumed if the location based resources diminished, are rather insufficient. Under such conditions there was no reason for FDI to exist as there was not an incentive for companies to internalize abroad, neither to get involved in any cross-border alliances and networks. Even

³ For example the variety of automobiles produced before 1910 vs. standardized automobiles of 1930's.

more ridiculous was the treatment of technology and technology transfer by the neoclassical theories as under the perfect market conditions the technology was freely available to all companies in any location at the time (Dunning, 1996).

The theory Dunning (1988) came out with is called the eclectic paradigm and is characteristic for three basic conditions, known as OLI⁴, which have to be fulfilled in order to be beneficial for a company to perform FDI:

- O – Ownership: this point relates to the Hymer's (1976) theory as it defines the advantages the MNE owns over its competitors and may be transferred within its foreign subsidiaries, lowering production costs and becoming more competitive at local market. These advantages may be in the form of patents, know-how, superior technologies, marketing skills and economies of scale.
- L – Location: When deciding which country is the ideal destination for FDI, the location advantages determine which country is the most favourable one. Each country has its own specific advantages, such as market size, political situation, government interventions, transportation costs, or cultural diversity.
- I - Internalisation: The gains from avoiding the market transaction costs when a company trades goods and services within its subsidiaries must be higher than when the external market is used. If such a condition is met, then MNE tend to establish a plant in the host county, rather than licence its ownership advantage to others (Latorre, 2008).

The OLI are three crucial interrelated points and the FDI can't happen if one of the conditions isn't met. Dunning (1998) describes the situation as a three-legged stool, where each of the legs is essential. In other words, if there is location advantage and ownership advantage, but the internalisation advantage is lacking, the company will likely license its product to other firm. If there is both O and I present, but no L, the company will most likely prefer to produce domestically and export its product.

There are several incentives for MNE to choose a location, from resource seeking advantages to access to foreign market. Specific motivation to relocate which the MNEs seemed to be

⁴ Ownership, Location, Internalisation.

likely to follow is to imitate the FDI made by rival MNE in order not to lose their competitive advantage. The reason for such a behaviour is that due to the uncertainty of production costs in a host country to which they export, the company risks that its competitor who will decide not to export to the country, but rather establish a manufacturing plant in the country, would be able to set a better price for the final product on the market (Altomonte and Pennings, 2003).

This theory to be relevant, the industry must have an oligopolistic character, there must be a degree of production cost uncertainty and risk aversion. In case of production cost certainty, the willingness of MNE to invest abroad is considerably lower. Oligopolistic FDI reaction can be observed especially in automotive, chemical or electronic industry. Example of such behaviour could be noticed for example in India where the investment made by Korean company Daewoo Motors was followed by Hyundai Motors (Nayak and Choudhury, 2014).

2 MULTINATIONAL ENTERPRISES AND SPILLOVER EFFECTS

MNEs are often regarded as the carrier of new technologies, new marketing and managerial skills, economies of scale, access to new markets, generators of new employment, and especially technology spillovers (Nayak and Choudhury, 2014; Latorre, 2008). When we talk about the contribution of FDI to the national systems of innovation, then probably the most important role of MNEs is them being the carrier of technology spillovers, helping the regional ecosystem to absorb and cultivate the innovation in the business environment. For this reason this study will focus especially on the spillover effects, the MNEs bring along with their investment.

General understanding of spillovers is as follows (Gorodnichenko et al., 2007):

“Transfer of managerial practices, production methods, marketing techniques or any other knowledge embodied in a product or service.” (Page 3).

MNE's can influence local companies in form of horizontal spillovers, when affecting local competitors, or vertical spillovers, when affecting upstream and downstream domestic firms. Spillovers are usually affecting the local economy through various channels. Among the most important channels belong the imitation of processes and products, improvement of local products and services when facing foreign competition or becoming a supplier of MNE and thus gaining on international competitiveness. For more information about the spillover channels, take a look at the Table 2. The negative aspect might appear when local companies are unable to adapt and therefore lose their market share, or human capital (Kokko, 1994; Leshner and Miroudot, 2008). Vertical spillovers are more likely to have a positive effect on local companies, than the horizontal ones, as the MNEs have the extra incentive to improve the productivity of their suppliers, rather than of companies which might appear to be a competitor on the local market. A common hypothesis claims that negative horizontal spillovers are more likely to occur in a country with lower absorptive capacity of a local companies, mainly because of the technological gap between the domestic and foreign enterprises. Domestic companies are more likely to enjoy the technology spillovers in case that the host country is relatively developed and the local firms are technologically advanced and thus able to absorb the new technologies (Gorodnichenko et al., 2007; Leshner and

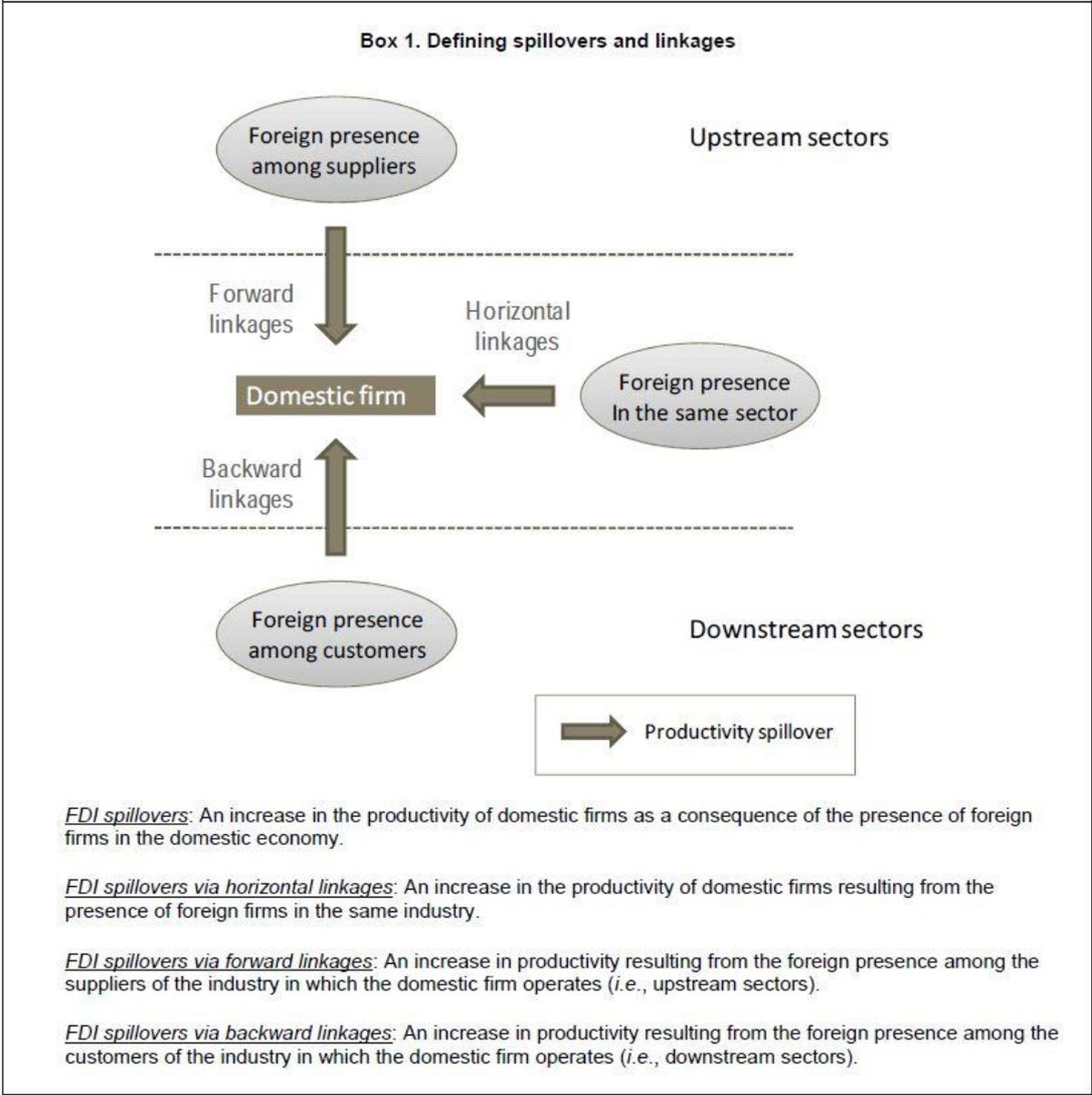
Miroudot, 2008; Lapan and Bardhan, 1973; Wang and Blomström, 1992; Perez, 1995, Kinoshita, 2000).

Table 2: FDI Spillover Channels

Skills via labour mobility	Workers gain new skills through explicit and implicit training. In particular, training in foreign firms may be of a higher quality given that only the most productive firms trade. Workers take these skills with them when they re-enter the domestic labour market.
Exports & infrastructure improvements	Because multinationals by definition trade, they lay the groundwork for domestic firms to benefit from distribution networks, logistics services and infrastructure improvements. Domestic firms can also learn about the regulatory frameworks with which exporters must comply.
Imitation	This very obvious form of spillover often takes the form of reverse engineering, whereby a domestic firm creates a similar product based on the design of a good or service that a foreign affiliate produces. Imitation is only successful if the domestic firm has the technical capacity and ability to source the necessary inputs to produce a similar product.
Competition	If the foreign firm is not a monopoly provider and it sells in the domestic economy, then it competes directly with domestic firms in the market. Since multinationals are often more productive – they have to be to trade – this forces domestic providers to become more productive to successfully compete for business.
Vertical Linkages	Backward and forward linkages are another way in which spillovers are transmitted in an economy. As foreign firms set up vertical production networks, they include domestic firms in their production chain. Since these suppliers must meet certain quality standards, they benefit from the experience and knowledge of the foreign firm.

Source: Molly Leshner and Sébastien Miroudot (2008). „FDI Spillovers and Their Interrelationships With Trade”

Vertical spillovers can occur in two ways: backward and forward linkages. Backward linkages are considered, when the transfer of knowledge flows to the local company from its customers. The forward linkages, on the other hand brings the knowledge transfer to a local company from its suppliers (Leshner and Miroudot, 2008). Graphical explanation of horizontal and vertical spillovers with forward and backward linkages, can be seen in Box 1.



Source: Molly Leshner and Sébastien Miroudot (2008). „FDI Spillovers and Their Interrelationships With Trade”

2.1 International Knowledge Diffusion

Globalization and the boom of digital information systems was a driving force in industrial dynamics of corporate sector, leading to the international knowledge diffusion in international business organisation. The cross-border networking practices are especially apparent at the global flagship networks (GFN), naturally developed from vertically integrated MNEs controlling their investment project, into more integrated networks of production, knowledge and customer bases (Ernst, 2003). The networks are therefore constructed to complement the global corporation core competences and to transfer technical and managerial knowledge to local suppliers, so they meet the technical specifications of the flagships. This incorporated as well the tacit organisational knowledge, thus higher level knowledge so much required for innovation and learning (Ernst and Kim, 2002). With the openness of the internet, there is more potential for vertical specialization, as GFN can shift from partial to systemic outsourcing, knowledge intensive services such as software development, design services, and skill transfer and training.

The GFN tend to geographically concentrate in specialized clusters. There are two types of such a clusters, distinguished by the level of knowledge intensive activities performed in the cluster:

1. Centres of excellence – Focus on R&D and are more prone to knowledge diffusion.
 2. Cost and time reduction centres – Focus on timely provision of lower cost service.
- (Ernst, 2003)

Most of the cost and time reduction centres are located within the South East Asian economies, India and CEE, where the price factor plays a significant part.

The ICT sector played an important role in the development of flagship regional network division of operations, as the ICT have enabled the split of range of manufacturing processes and product design from manufacture. Such a convergence allowed division of labour between the companies focused on system integration and design and companies focused on manufacture. Under such a conditions flagships tend to keep the specialisation in services with added value, such as software development, or product design, whereas, its less sophisticated production would move to less expensive developing countries (Pavitt, 2002).

2.2 Determinant Factors of FDI Spillovers

The extent to which the spillovers derive from FDI is dependent on the characteristics of FDI, MNEs, host country and the sector they operate in. In the following section will be highlighted the basic preconditions which define the conditions and environment under which the spillovers from MNEs occur.

One of the most observed conditions, decisive for spillovers to happen, is the absorptive capacity of local companies. It is believed that if the technological gap between the domestic companies and the MNE is higher, the spillovers will less likely happen. The spillovers will be the most efficient in case the technological gap is as small as possible, so the domestic players are advanced enough to be able to deal with the innovations and technologies brought by the FDI (Kokko, 1994; Gorodnichenko et al., 2007). There is biased view as another point raised by researchers, claim that the bigger the technological gap, the more will be the domestic companies actually affected and therefore more spillovers will take place (Blomström and Wang, 1989). The former argument is in general taken as more valid, as certain level of technological advancement is a basic precondition if the recipient is supposed to be in line to absorb the knowledge, technologies and innovations. (Lapan and Bardhan, 1973; Blomström and Wang, 1989; Perez, 1995; Kinoshita, 2000). The absorption capacity depends on the difference between the technological gap between the local company and MNE.

The scope, magnitude and even the type of innovations and technologies depend a lot on the level of technological maturity in the given territory. Thus the absorption capacity is on country level higher in those countries with better infrastructure, education facilities and most importantly human capital skills (Borensztein et al., 1995; Blomström and Kokko, 1993). MNEs will lack certain degree of motivation to invest in less developed countries and the investors will have little interest in local customers and suppliers (Rodriguez-Clare, 1996). At the same time the spillover is affected by the differentials in the salaries offered by the MNEs and the companies in developing host country. It is expected that the big multinational brands, in order to keep the attrition rate as low as possible, will pay to its employees more than the local competition. Therefore, the labour mobility and thus the knowledge diffusion, isn't as easily transferable through this channel (Lipsey and Sjöholm, 2001).

Specific role plays the size of local companies and the market those firms are targeting at. Smaller enterprises will have problems catching up in terms of scale of the production and imitation of technology. The larger companies will be therefore able to benefit from the spillovers more, than smaller domestic players (Aitken and Harrison, 1999; Crespo and Fontoura, 2007). Specific situation occurs when the company is already active on foreign markets, exporting its products and services, as under such a conditions there is a pressure directly affecting local company, which is forced to react to the pressures set by the foreign market (Leshner and Miroudot, 2008). Blomström and Sjöholm (1998) claim that the competition and standards set by the MNE in the domestic market isn't that important as if the company would be focusing on the internal market only. I believe that this view is taking into consideration only the backward linkages set by the customers and fails to address the spillovers associated with the forward linkages, as well as other spillover channels (Leshner and Miroudot, 2008). Those companies who have been exposed to the foreign competition might be on the other hand better prepared to deal with competition the MNE create on the local market as well as to absorb the new technologies associated with the FDI (Schoors and van der Tol, 2002).

External factors, such as the social and cultural differences, political situation, or higher transport costs between the host country and MNE as well contribute to the way the FDI is done. If the costs associated with the investment are higher than if performed for long distance, the MNE has an extra incentive to strengthen its presence in the host country (Rodriguez-Clare, 1996). External factors can act as double edged sword for its ambiguity and thus any generalisation might be misleading. Fosfuri et al. (2001) pointed out that the labour regulations in the country may affect easy transfer of workers from MNE to the local companies, thus restricting the transfer of knowledge and skills. The legal system is equally important and even more so, when it comes to those policies affecting the spillovers. One of the most important ones is the protection of intellectual property rights. In those countries where the intellectual property rights are weak, the MNE won't be willing to invest into joint venture projects and rather go for the fully owned investments of less technology intensive projects (Javorcik, 2004). Insufficient intellectual property rights can therefore decrease the spillover potential of the territory.

Differences in behavioural characteristics of MNEs have been noticed depending on the form of the FDI. In case of greenfield FDI there is immediate exposure of the new technology brought to the territory. Unlike that, in case of merger or acquisition is the spillover of new

technologies gradual and takes more time to fully penetrate to the market. On the other hand, the M&A being more integrated with the local ecosystem is prone to interact more with local companies (Crespo and Fontroura, 2007). In the later it is assumed that the willingness to transfer knowledge and technologies will grow with the increase of foreign ownership in the local company (Blomström and Sjöholm, 1998).

So far it was discussed that the MNE is the carrier of new technologies and knowledge and therefore was technology sourcing. MNEs are trying to compete with local market players advantages, through the input of advanced technology and innovation (Hymer, 1976). In some cases it can be even vice versa, MNE's can become technology exploiting, locating themselves in areas of advanced technology, university, or innovative company, with simple motivation; to reverse the usual spillover and transfer some of the knowledge, technology, or innovation to the parent company. Strong domestic companies who are natural competitors to the MNEs are believed to be beneficial to the territory, as they force the MNEs to use more advanced and innovative technologies within the territory and thus creating more space for spillover potential (Blomström and Wang, 1989).

2.3 National Policy Adaptation to the MNEs

The approach towards the MNEs by the host country was a subject of change throughout the recent history. What has been perceived by some host countries as suspicious or hostile behaviour of the MNEs during the 1980's appeared to be welcomed boost to the developing countries. The tribute of the shift of the attitude towards the MNEs and their broader acceptance, is given to the maturing theories on the role of MNEs in local economies and positive experiences of many developing countries focusing heavily on MNEs, whose economies were striving. On the other hand countries with restrictive regimes to MNEs faring poorly. Since the general understanding of the MNEs as the carrier of technical know-how, organisational, managerial and marketing tools, access to the global production networks and capital, has been accepted, the way to facilitate the process and support the inflow of required activities to the territory is a hot topic since then (Lall, 2000).

Most of the countries liberalised the FDI regime, but there was a general understanding that host country can't rely entirely on the liberalisation and expect that the market will have

positive effect on local economy, will bring the optimal amount of FDI and that the behaviour performed by MNEs will be as required from the host country perspective. The right set of FDI policies have to be adopted in order to overcome the market failures and attract the FDI which are good for development and act as the carrier of growth (te Velde, 2002).

3 RESEARCH METHOD

Since the spillovers occurred, quantitative and qualitative research methods to prove that FDI generates positive externalities in form of spillovers in the host economy, have been analyzed. The evidence, so far, was rather ambiguous (Leshner and Miroudot, 2008). Most econometric quantitative studies were based on Caves's (1974) production function approach. Such an approach can be utilised when trying to explain the country spillovers in manufacturing and production of goods, but it fails to explain the spillovers in services. ICT sector today, consists of both components, services as well as manufacturing and the production function doesn't bring the expected outcomes. The most of the studies on spillover effects and FDI, focus mainly on manufacturing, leaving aside ever growing services FDI, despite the fact that those are steadily growing in all the countries, becoming an important ingredient to the economy (Leshner and Miroudot, 2008).

This paper focus is on the spillovers in the ICT sector and the role the MNEs in the Czech Republic have. The study is based on qualitative research to understand, analyse and hopefully find the link between the inflow of FDI, activity performed by the MNEs in the territory and technological strengthening due to the knowledge diffusion and technology spillovers in the Czech Republic.

The study is based on document analysis and interviews. The document analysis and information about the MNE in the ICT sector was gathered via web searches, official documents and databases. Several official sources and institutions were approached, their data examined and analysed.

Empirical knowledge was collected through semi-structured in-depth interviews, in order to get the best possible information about the spillovers in the ICT sector in the Czech Republic.

The interviewees were chosen according to their expertise in the field of the MNEs in the ICT sector in the Czech Republic and represent companies, institutions, alliances and academic representatives. Conversations were held in Czech and quotations presented for the purpose of the thesis translated to English by the author of the thesis. The appointments were scheduled via email and duration varied from 30 to 60 minutes.

In total 11 interviews were carried out:

- Multinational enterprise of foreign origin representative – 4 interviews.
- Multinational enterprise of Czech origin representative – 2 interviews.
- Large Czech enterprise representative – 1 interview.
- Investment promotion agency representative – 1 interview.
- University, or research institution representative – 2 interviews.
- ICT institution representative – 1 interview.

There are 2 female and 9 male respondents in the sample.

Respondents name, professional position, institution, or company they represent are details considered as less important for the purpose of this study and won't be revealed. Interviews were codified by letters L, MNE F, MNE D, IPA, U and I, that define the category of the interviewee as follows:

L – Large Czech enterprise representative.

MNE F – Multinational enterprise of foreign origin representative.

MNE D – Multinational enterprise of Czech origin representative.

IPA – Investment promotion agency representative.

U – University, or research institution representative.

I – ICT institution representative.

4 MNES AND SPILLOVERS – THE CASE OF THE CZECH REPUBLIC

In this chapter will be described the background of the inflow of FDI and establishment of MNEs in the country. The type and amount of MNEs was changing throughout the time from manufacturing driven to services driven FDI⁵.

The rest of the chapters will analyse opinions on certain aspects of the effects of FDI, the specific role the MNEs play in Czech economy and the occurrence of spillovers.

4.1 The Background of MNE's in the Czech Republic

After the fall of the communist regime, the Czech Republic began to open its economy. First, it focused on domestic ownership, through its privatisation period. This helped to create numerous Czech owned SMEs, which often failed to face the fierce competition due to their inability to modernise and innovate. At the same time the Czechoslovakian government privatised many state owned companies, liberalised prices and opened the economy to FDI (Hanousek et al., 2004). At this period the FDI started to flow to the region and the Czech Republic was one of the prominent recipients of FDI. Since 1993 the Czech Republic was the most successful country in terms of the FDI attraction per capita, becoming home of some of the world biggest MNEs (Arnold et al., 2006).

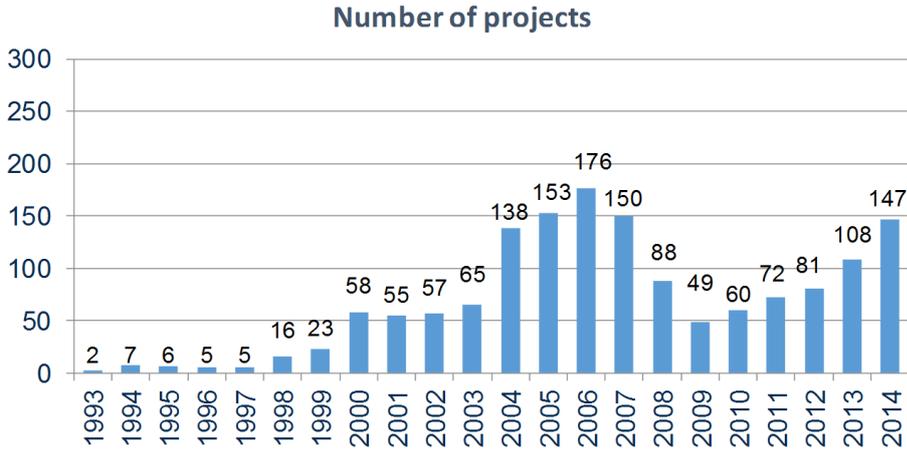
There are several factors which make the Czech Republic an ideal location for MNEs. One of those is its favourable location as the country is located in between the developed western European economies and developing Eastern European economies. The infrastructure was relatively developed and the strong industrial base of the country, skilled labour force and quality education system, laid the basic preconditions for further growth. Factor cost was another important driver which the CEE countries hold until today, as the labour force is still relatively cheap, when compared to the Western European countries⁶. The attractiveness of the Czech Republic increased in 1998, when the country introduced financial incentives to brownfield and greenfield investments, targeting the manufacturing industry, realizing that the foreign capital could boost the economy after slight recession. Macroeconomic stability and the prospects of becoming another EU member state provided

⁵ CzechInvest <http://www.czechinvest.org/data/files/di-2014-public-3832-cz.xls> (2015)

⁶ OECD https://stats.oecd.org/Index.aspx?DataSetCode=AV_AN_WAGE (2015)

an extra assurance and significant stimulus to local MNEs (Kay, 2007). This is the reason for rapid growth of FDI projects to the Czech Republic, where the increase was eminent since 1998⁷. The next breaking point could be observed once the Czech Republic entered the European Union in 2004 as most of the increase in FDI inflows to the new EU member states ended up in the Czech Republic and the FDI to the country almost doubled (UNCTAD, 2006). The incentives prepared by the policy makers were particularly welcoming for the services industry (Arnold et al., 2006). The investments peaked in 2006 with 176 projects according to the data provided by CzechInvest⁸. Due to the world economic crisis in the years to follow, the inflow of FDI slowed down and is steadily recovering until these days, yet to reach the limits set by the year 2006.

Figure 1: Number of projects mediated by CzechInvest 1993-2014



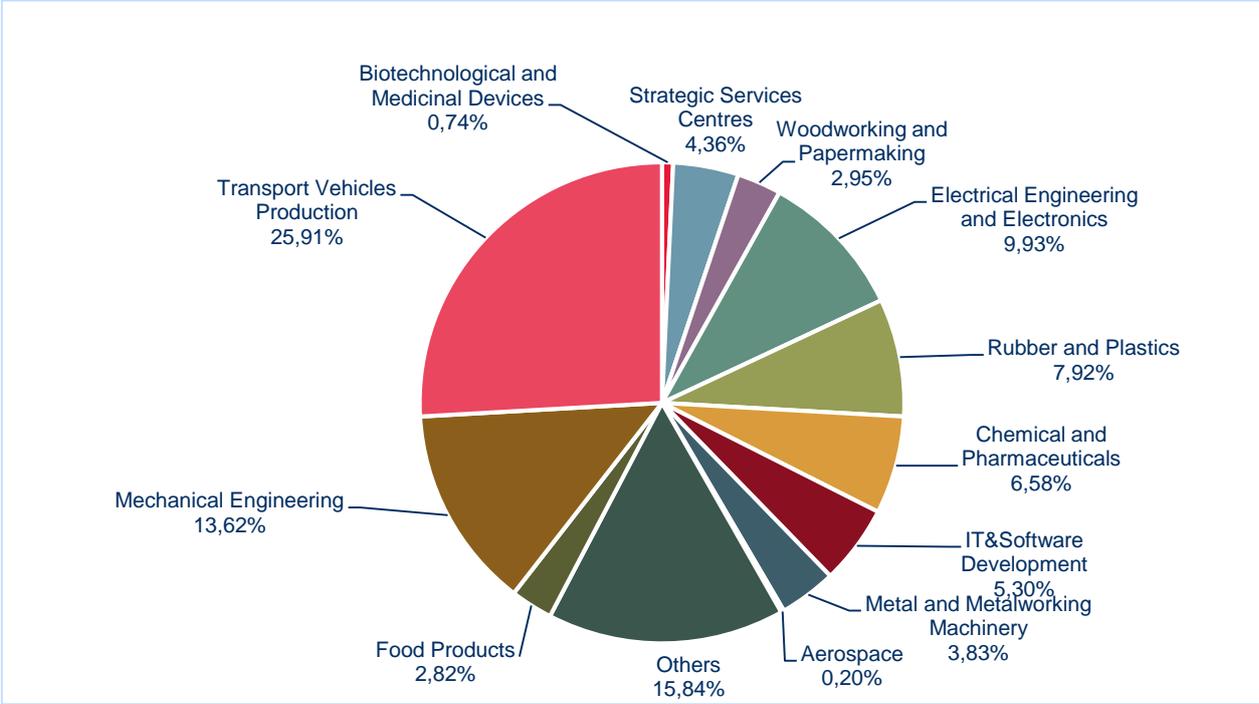
Source: CzechInvest, 2015 <http://www.czechinvest.org/data/files/di-2014-public-3832-cz.xls>

Breakdown of the FDI flows to the Czech Republic shows, that there was a shift from the investments to the manufacturing industry, towards services oriented industry, such as financial services, shared service centres and ICT services sectors. The Czech Republic, as well as other CEE countries⁹, is recognised as a strong player in the automotive sector and so the most significant investments were heading towards this direction¹⁰. Companies, such as Hyundai, located their greenfield investment in the Czech Republic and many others followed. A lot of suppliers in the automotive industry went in the footsteps of their

⁷ See Figure 1.
⁸ See Figure 1.
⁹ Especially Poland, Slovakia and Hungary.
¹⁰ See Figure 3.

customers, enriching the entire ecosystem and strengthening the links within the sector (UNCTAD, 2006).

Figure 2: The Number of Projects according to Sector (1993 – 2014)

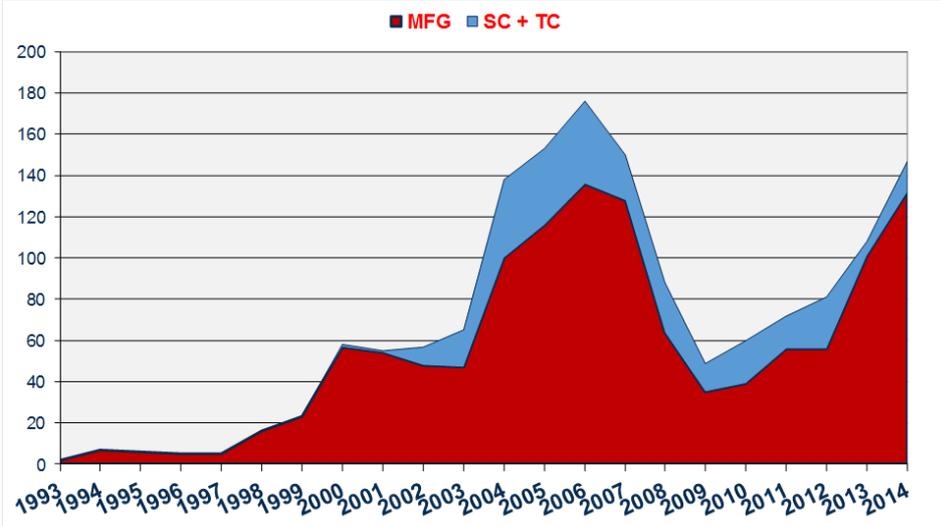


Source: CzechInvest, 2015, <http://www.czechinvest.org/data/files/di-2014-public-3832-cz.xls>

There was a steep rise in the services projects from 2000 until 2006 as shown in Figure 3. Even after that, the economy has been recovering from the economic depression and manufacturing industry steadily rose again. The services industry, on the other hand, haven't reached the levels of 2006¹¹.

¹¹ See Figure 3.

Figure 3: Number of projects by industry. 1993-2014.¹²



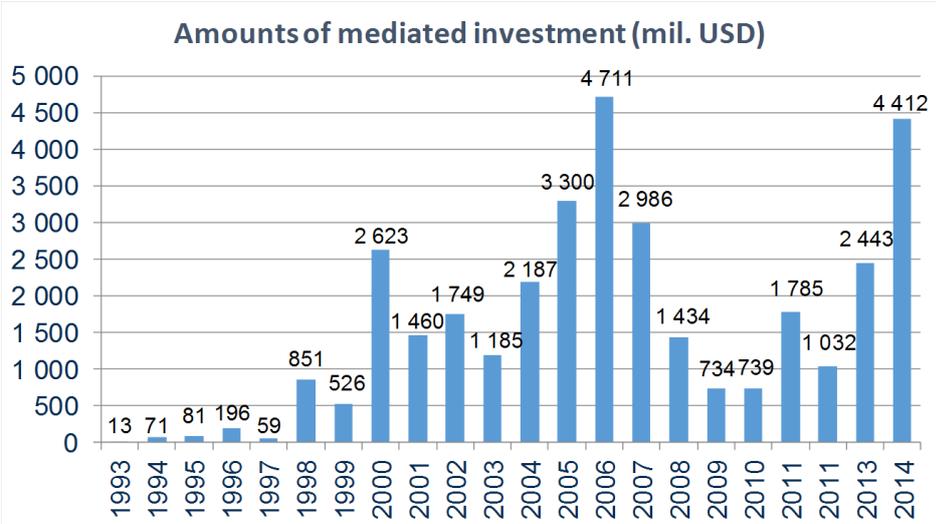
Source: CzechInvest, 2015 <http://www.czechinvest.org/data/files/di-2014-public-3832-cz.xls>

The disparity between both variables has been noticeable in the official statistics, provided by CzechInvest¹³. The amount of mediated investments in 2014 almost reached the levels of those in 2006. If we take a look at the number of projects by industry for these two years, we can clearly see that the investments into manufacturing industry almost equalled the record year 2006 in both, number of projects, as well as in amounts of investment. The number of jobs created in 2014, on the other hand, was only half of those in 2006. The difference is caused primarily by the lack of labour intensive investments into services.

¹² MFG=Manufacturing, SC = Service Centres, TC=Technology Centres

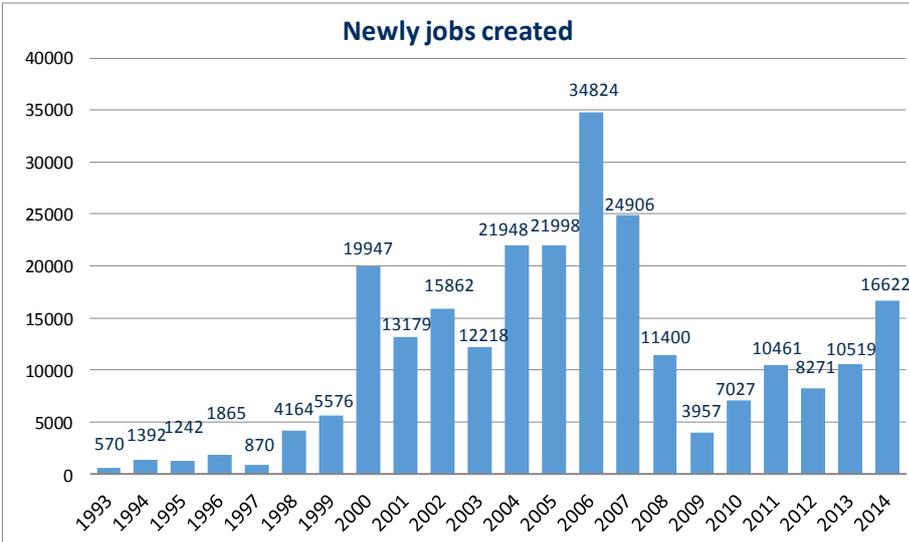
¹³ See Figures 4 and 5.

Figure 4: Amount of mediated investment (mil. USD). 1993-2014



Source: CzechInvest, 2015 <http://www.czechinvest.org/data/files/di-2014-public-3832-cz.xls>

Figure 5: Number of newly created jobs. 1993-2014



Source: CzechInvest, 2015 <http://www.czechinvest.org/data/files/di-2014-public-3832-cz.xls>

Figure 6: The map of selected MNEs and clusters in the Czech ICT sector.



Source: CzechInvest, 2015 <http://www.czechinvest.org/en/ict>

The data from local investment promotion agency CzechInvest¹⁴ clearly demonstrates that most of the investors are located in three regional clusters around three largest cities Prague, Brno and Ostrava. All these cities are benefitting from well-developed infrastructure and major technical universities in the country. The number of MNEs seems to go along with the numbers of students involved in the ICT study programmes in the regions^{15,16}. Based on the arguments of some researchers (Borensztein et al., 1995; Blomström and Kokko, 1993) and the number of MNEs, these three regions will be very likely good locations for MNEs due to the high absorption capacity, which is based on the quality of education facilities, level of infrastructure, skilled labour force and suitable economic environment.

¹⁴ <http://www.czechinvest.org/en/ict> and <http://www.czechinvest.org/data/files/di-2014-public-3832-cz.xls>

¹⁵ Prague – 12,071, Brno – 9,725 and Ostrava – 4,535.

¹⁶CzechInvest <http://www.czechinvest.org/data/files/ict-web-brozura-2014-final-98-en.pdf>

4.2 Reasons for the Company Location in the Czech Republic

In order to foster development through the FDI and attract those activities the Czech Republic considers as strategic for economic development, the financial incentives are being provided to the investors. Success stories all over the globe show that the right set of incentives can change the thinking of the MNEs and guide them towards the integration to the economic ecosystem (Kay, 2007; Lall, 2000; Oman, 2000; te Velde, 2002; UNCTAD, 2002). As mentioned in Chapter 2, the reasons behind the company entry to the local economy and the way the FDI is executed, makes an impact on the behaviour of the MNEs (Crespo and Fontoura, 2007).

4.2.1 Internal Decisive Factors for FDI

Many authors (Vernon, 1966; Hymer, 1976; Dunning, 1988, Buckley and Casson, 1976; Buckley and Casson, 2009; Ernst and Ozawa, 2002; Ernst, 2003) have been analysing the ways the MNEs decide to what territory and which activity to invest. The motivation has been changing throughout the time, depending on the technologies used, approaches developed, political situation, economic stability, or current situation in the sector. There are several factors which can influence the decision of the MNE about where to locate their investment. Among the most common ones is quality and availability of qualified labour force, stable social, institutional and political environment, or proximity to markets. All those have been mentioned by the respondents.

MNE F1: We decided to invest in the Czech Republic for three reasons. Number one is that the Czech Republic is part of the European Union. Other reason is the fact that the Czech Republic is very centralized within Europe. The last reason is the quality of education within the Czech Republic.

MNE F2: Our company entered to the Czech Republic by employing only a few single engineers, but soon discovered the potential within the people here. So we have established our new branch here, in Brno. This wouldn't be possible without quality infrastructure already in place.

MNE F3: It's not only the education system and local employees we are benefiting from. We've managed to attract employees from all over the world. Czech Republic is appealing in terms of work as well as of quality of life.

IPA: Most of the investors choose the Czech Republic for its quality labour force, based on proven track record, for very reasonable cost. The Czech Republic has a long industrial tradition. The industrial history tracks back to the industrial revolution, as there lies the basics upon which the economy depends until today. The technical universities and some major industrial players were established back then and those new sectors, such as the ICT, are benefiting from that until these days. That's the biggest difference which is in favour of us, in comparison with our biggest competitors. The suitable geographic location is another important factor. But one of the most important points, is the cost of the labour force.

One of the respondents pointed out the importance the local competition meant the strengthening of their local branch office. According to the interviewee the local competitor which was missing in other European countries, led the company to be more proactive and strengthen the position on the local market. This confirms the arguments pointed out by Blomström and Wang (1989), as they claimed the local competition is beneficial for the territory, forcing the MNE to utilize more advanced and up to date technologies in the host country.

MNE F4: The Czech market is rather small, so we only have a smaller branch office here, in the Czech Republic. Even though, our branch in the Czech Republic was among the first established in the CEE region. That's as well due to the competition from Seznam.cz. Our presence here is significantly bigger than, for example, in Hungary.

All the respondents agreed that quality universities and skilled labour force are the key to success and the biggest motivation for company to invest is availability of skilled employees. This may be considered as the biggest precondition for FDI. Stable political environment seems to be guaranteed by the fact that the Czech Republic is a member of the EU.

MNE F1: Our clients are very concerned about data privacy. The fact that the Czech Republic is a member country of the EU makes them feel protected by the EU data privacy laws.

This point suggests that the legal system set for the EU member countries is very important, as the territory gains on credibility as companies need to prove to its customers and partners that their data are safe within the MNE's network.

A bit more sceptical approach was perceived by a local enterprise, which is actively participating in several working groups on the EU level. The EU regulatory framework is according to the respondent too restrictive and is limiting companies to fully enjoy the advantages of the digital market.

L: The EU regulations are often targeting the big MNEs, creating framework which can be actually harmful to the smaller companies within the EU. I do understand that we live in a world, where the big brands in the ICT sector might enjoy some monopolistic advantages which have to be tackled by the EU, but imposing certain limits, without seeing broader context, on the other hand, can be very limiting. It's about the competitiveness, as certain regulations might be in favour of the competition, for instance from Asian countries.

The fact that the labour mobility is free within the EU countries, helps companies in the Czech Republic to fully enjoy the advantage to bring foreign employees and at the same time get the absolvents with international experience gained during their studies. Investment incentives, even though important, don't seem to be that much of a decisive factor for most of the companies.

MNE F2: We appreciate support which is provided by the state and the European Union, which greatly helps us to grow. Our branch in Brno expanded in recent years and even though being a US company, our biggest development centre is now the one in the Czech Republic. CzechInvest and its aftercare services, greatly helps in these efforts.

Stable and transparent legal system is one the most important factors. As some researchers claim (Javorcik, 2004; Fosfuri et al., 2001) claims, insufficient legal system, such as the lack

of intellectual property rights protection, might decrease the overall spillover potential the country has. The government support for existing projects then helps to strengthen the links to the country.

4.2.2 Form of FDI as a Spillover Determinant

The way the MNE chooses to enter to the foreign market is determining its possible intentions and expectations they bring along with the investment. MNEs are challenging local players by exposing them to advanced technology and innovation. There is an assumption (Crespo and Fontroura, 2007; Blomström and Sjöholm, 1998) that companies entering through the M&A will be willing to cooperate with local companies. In case of greenfield investment, the company will expose the territory to new technologies directly, but will be less prone to interact with local counterparts.

Some authors (Vernon, 1966; Ernst, 2003; Nayak and Choudhury, 2014; Latorre, 2008) emphasize the factor cost which drives a lot of the MNEs to invest in foreign country. To better face the competition, the company is motivated to lower expenses. Whether the motivation is given by the innovative potential of the territory, or the centre's main purpose is to reduce time and cost, plays an important role that determines the spillover potential of the MNE.

As argued above, the actual decision to invest is based on assumptions and certain preconditions, which then, if the expectations are met, become an important factor for subsequent growth. All of the interviewed MNEs share similar entering strategy, as all have entered to the Czech Republic by establishing new company.

MNE F2: Being a software development company, our growth is based on people. We've started our project here from scratch, but soon became one of the fastest growing companies within the region.

IPA: With software development companies we haven't noticed many MNEs coming through the M&A. That's more likely to happen in the manufacturing industry. A lot of former Czech brands, especially in more traditional sectors, now operate under foreign company flag. Even though there are requirements, every now and then, for a partner to

establish a joint venture, or M&A project, especially from Asian companies, who seem to be prone to take this approach. But it happens sometimes.

U 1: MNEs work closely with us, as we are the source of their potential employees, regardless of the investment. CISCO for instance strengthened their cooperation with us, by acquiring Cognitive Security.

I: I believe it's actually where most of the start-up companies are heading. Being acquired by the bigger players. In the digital market place it is nothing as rare, as it might seem.

Based on the interviews there isn't any difference between company opening new office and company acquiring existing Czech enterprise. The M&A projects as the way of entering to the territory seems to be rather rare. The biggest chances of being acquired have smaller ICT companies and start-ups. On the other hand there are MNEs whose FDI strategy is based on acquisitions.

MNE D1: We don't want to invent something what has been already invented by someone else. If we like some product, then we buy the company and base the research of the product on their efforts. Thus our investment strategy is through the acquisitions. We have our research teams all over the world, usually working on specific tasks based on their area of expertise. Especially successful has been our investment in Israel, where we have our branch office in Tel Aviv. Different scenario was in Germany, where we bought a company and then transferred the research and all the crucial activities to the Czech Republic.

The company performing FDI through the M&A can therefore utilize the investment as the way to acquire the technology, or solution they seek and then transfer the technology, skills and knowledge via its channels to the parent company, or even to another country. The interviewed company appears to be technology exploiting. Its motivation is to get to the product and then transfer the specific parts of the company through the global flagship network structures. It depends a lot on the type of the company and the motivation of the company for the FDI. If there is some territorial advantage which isn't as easily replaced, the MNE will build on that.

As argued before, whether the established centre is motivated by the lower costs, or the centre is focused on sophisticated and perhaps more expensive development, is one of the most crucial elements of FDI to consider, as this shows a lot about the ability and willingness to take advantage of local structures. Most of the interviewed organisations are large MNEs with broad scope of interests and activities within the Czech Republic. The companies claim the cost is an important factor and one of the reasons the company starts to consider the CEE region as a potential location. Nevertheless for subsequent growth, the cost isn't the most important argument to expand.

MNE F3: Cost is something to consider and one of the reasons our company started to look at this part of Europe ten years ago. On the other hand, it isn't the most important thing. We wouldn't grow, the way we did, only because it's cheaper.

The cost is significantly more important for MNEs, who run operations which require lower qualification. For example shared service centres focused on IT support.

MNE F1: Running the shared service centre in the Czech Republic, we try to be as efficient as possible. That includes the cost efficiency, especially if you are employing in your shared service centre as many people as we do.

Based on the interviewed sample of organisations it appears that the quality of labour force is more important than the costs associated with the investments to the ICT sector. Even though, cost is significantly more important for the centres of excellence. ICT, being a service oriented industry, isn't that much focused on the transport or maintenance costs and therefore during the interviews the costs have been associated mostly to the labour costs.

4.3 Importance of Local Ecosystem for Growth of MNEs

Many researchers (Borensztein et al., 1995; Blomström and Kokko, 1993; Gorodnichenko et al., 2007) point out the utmost importance of the level of development of the host country, as basic precondition for the spillovers. This incorporates the infrastructure, education facilities and skilled and talented professionals and is described as the absorption capacity of the territory. All these are important preconditions for MNEs to enter the market and get involved

in activities of higher added value, so much expected and supported by the national governments.

Respondents agreed on the importance of the quality of labour and local universities and mentioned those as the reason for success in the Czech Republic and throughout the years have been expanding.

MNE F2: The centre in the Czech Republic has been becoming the largest development facility of our company. None of that was originally planned. That's thanks to the skilled people we have found here.

MNE D2: Even though we have become a company with global product and activities, we still have our headquarter and development in the Czech Republic. One of the reasons for this, is the fact that there is a sufficient amount of everything we need for our growth.

MNE D1: Our headquarter moved to another country, but our development team of the core product is still here, in Brno and is growing.

Particularly important is the cooperation between the MNEs and the universities, especially for those FDI involved in development of the product. A lot of companies, not only cooperate with local university, but are located in the near vicinity of the university campus. According to Blomström and Wang (1989) that would suggest those companies are technology exploiting.

MNE F2: Since the beginning it was clear to us that if we are supposed to withhold the level of technological maturity within our future employees, as expected, we would have to cooperate closely with local universities, to have the chance to influence what will be the area of expertise of their graduates.

MNE F1: We are located in Brno, in the technology park, next to one of the major technical universities. The quality of education in the Czech Republic is an important factor.

Forms of the cooperation may vary from internship programmes within the MNE, actively participating in the lectures at the university, or establishing further strategic cooperation to secure sustainability and innovativeness.

MNE D1: We are not as active with our approach towards the universities. We do accept interns, though, and our employees are often leading their graduation thesis projects.

MNE F2: Part time jobs and internships are among the tools we use to attract students. Once they are on board, we can work with them further. Absolvents are usually capable of working in international teams and can compete with anybody else in the world.

The MNEs in the Czech Republic consider education and quality of students as one of the strengths of the Czech Republic. Even though, the universities themselves appreciate the interest from foreign companies, the inability to cooperate with local enterprises is definitely something to improve.

U2: We are very open to cooperation with foreign investors. We are already cooperating with many of them. I was pleasantly surprised when one of the very recent biggest investors in the ICT sector confessed that it was the meeting at our university which led them to believe, the Czech Republic is a good location for their investment.

U1: Usually, one of the first steps after expanding to the Czech Republic, leads the MNEs to us. Our graduates are known for their quality and diligence. And even though we don't have MIT¹⁷ here, our absolvents don't lag in quality.

The respondents from the universities seem to agree that the degree of openness towards the cooperation with the industry seems to be very welcoming. Even though there are some complains, regarding the interest from the local companies.

U1: Around 80% of our research projects with private sector are with foreign enterprises. I would wish for more cooperation with bigger Czech companies. We do have our spinoffs and start-ups within our incubator, but those are rather small enterprises.

¹⁷ Massachusetts Institute of Technology.

The ability to fully exploit the potential within local universities is required especially by the MNEs, since Czech companies lack behind in making deeper connection with academic sector.

4.4 MNEs as the Carrier of Knowledge, Innovations and Spillover Effects

It is difficult to measure the impact the MNEs have on the local territory, especially if the company is involved in the services sector, such as the software development. Researchers (Caves, 1974) used econometric approach, measuring the goods produced and sold. Such an approach fails to explain spillovers in services and therefore isn't sufficient to define the specific role the MNEs have, as the carrier of innovations. Focus on this aspect is based on the theoretical framework discussed in this study, putting it in confrontation with the experience of relevant respondents. The companies entering to the local economy have direct effect on the entire system.

4.4.1 Horizontal and Vertical Linkages

All the respondents have been dealing with MNEs, obtaining the required knowledge and experience of the companies. Those respondents who haven't been part of the MNEs have been in personal contact with those companies in the past. Researchers (Gorodnichenko et al., 2007; Leshner and Miroudot, 2008) have been discussing the impact the horizontal and vertical linkages have on local economy and spillovers. It was believed, that spillovers derived from horizontal linkages are less likely to occur, as the company entering the market in general doesn't want to strengthen its local competition, thus lose its market share.

L: We don't see any problem in having Google here. The fact that they are in the Czech Republic only strengthens the quality of our services, because we have to be competitive. Who is really benefitting from this, is the customer, because the fact there is an alternative to google services, gives him the chance to choose. We get inspired by some of their solutions and incorporate those into our products. Such an innovation was for example the Streetview in our maps.

Similarly is viewed the situation by the MNE, as they believe there is no negative effect of having two big players in the local market. On contrary, it forces the company to push forward its technologies primarily to the Czech Republic, rather than anywhere else.

MNE F4: We have an extra argument for our internal discussion, to strengthen our branch here, in Prague. It has been taken into consideration in the past. That's why some experimental applications and services have been adopted here first, before any other country in the region. Simply to test the market. The local competition is probably the reason our office in Prague has seven times more people, than is for example in Hungary. We simply must try harder in here.

What makes the company competition characteristic in the Czech ICT sector, is the relative difference between company exporting its services and company strictly focused on the domestic market. The MNE has its technologies and innovations targeting most of the world markets. The local company, on the other hand, has its products and services localized, enjoying the information advantages, making their products tailored to the needs of their local customers.

L: Our services are way more localized and adapted to the Czech customers. The fact that we are targeting the Czech market only, is our competitive advantage. This way we are capable to provide better and up to date product for our costumers. Especially visible it is with our maps, as these have more features, such as offline maps for hiking, the Czechs so much enjoy. This is one of the reasons we haven't really gone abroad yet.

According to the respondents, the linkages between the two competing companies in the ICT sector are beneficial for both entities. The MNE can strengthen the position within the territory and use it as an experimental space. The local player on the other hand gets an extra motivation to improve its services and innovate, in order to remain competitive.

Vertical linkages are considered to be more effective, as the carrier of spillovers, as the flows go from supplier to its customer, or vice versa. Either way it is in the interest of both parties to innovate and be up to date with the latest trends (Gorodnichenko et al., 2007). Taking into account the case of the Czech Republic and the specifics of the services sector, which is less

dependent on its supplier base, the vertical linkages aren't actually that important as in the manufacturing industry. Furthermore the products of local companies are easily transferable to the global MNEs anywhere in the world, due to the globalization and the very nature of the ICT sector.

L: We don't have any direct cooperation established. The software we develop, we do in house. If we want some service, which has been developed by someone else, we hire people do develop it, or buy the company. Just recently we have established our own incubator, where we work with start-ups, whose services might be integrated to our company.

Similar trend is the usual approach taken by the MNE, as it's the fastest and easiest way to get to the right talent, product and knowledge.

MNE D2: Our internal development is sufficient for our needs, so there is no need for a supplier. When we wanted to get our service for mobile devices, we bought one of the companies specializing in this area here, in the Czech Republic. We incorporated the team of 40 people and it worked very well.

MNE D1: As a global company with single product, we have our development teams all over the world. We can therefore say we are a supplier of services ourselves. Of course we use suppliers for our internal systems, but not really when it comes to the product development. In that area we are self-sufficient.

Due to the globalization and ICT technologies the MNEs in the ICT sector have developed their own vertically integrated internal networks, therefore the companies are supplying internally all the necessary services, needed for their development. Even in case the company is in need of a new development team, or solution, they prefer to internalize the solution, add it to their network. This goes along with Ernst's (2003) observation of MNEs, describing them as GFN. Entire production, knowledge and innovations are handled internally, within one integrated network.

4.4.2 Spillovers Driven by the Labour Mobility

One of the natural channels to transfer the knowledge from MNEs to local domestic companies, is via labour mobility (Lipseý and Sjöholm, 2001). The Czech Republic is not an exception, given the number of MNEs in the country, as well as the big local players, the transfer of employees is very likely to happen. Even more so, as the biggest employers in the sector tend to locate themselves in the clusters of companies, usually in the vicinity of university campus, to benefit from the cooperation with local academic sector and students.

MNE D1: Our centre is located at the office park together with other big brands. So it's only natural that the employees are moving between the enterprises. We try to work with them and incorporate them in our team.

MNE F3: We tend to employ the best IT specialists. We offer them participation on international projects, so they get professional and language capabilities they would've hardly get elsewhere. Due to our renowned brand, we manage to get the best people to our team. Furthermore, we manage to attract employees from abroad.

MNE F2: We try to approach our employees in the early stage, during their studies. Cooperation with universities is crucial if we are about to stay innovative. We've managed to establish ourselves as the employer of a choice. Actually we are growing at pretty quick pace and that puts pressure on our HR. I believe we have managed to establish that kind of a brand, everybody is keen on working for.

So far, only labour force from the home country, as the major source of employees and the carrier of knowledge, was taken into account. Several respondents from the MNEs mention the transferability of labour force from abroad, through their networks, to the local branch offices in the Czech Republic.

MNE F3: We have managed to attract some foreigners and have very international internal environment. Czech Republic maintains relatively good quality of life, thus it's easier for employees to transfer. This will be even more so, as we are transferring several software engineers from our branch, which is being closed in Russia.

MNE D1: We allow our employees to move within our corporate structures. The movement is rather from the Czech Republic to our locations abroad, than the other way around.

The spillovers through the labour force movement don't have to be between the two different companies, but as respondents suggest, knowledge transfer is commonly used via their internal channels and often overcomes national borders. This is strengthening the position of the MNE. At the same time it's relatively easy to transfer entire branch through the network from one country to another, in case the region appears to be unstable.

Local companies, who don't have such a network at their disposal, might therefore lose certain advantage, in comparison to the MNEs.

L: Even though our brand is well known in the Czech Republic, it's not that easy to find the skills we would need. Our staff is booked with their projects until the 2016 and there is a shortage of quality developers on the market.

The transfer of employees from another country is significantly less common in case of local enterprise, than in case of MNEs.

L: It doesn't really happen that employees from google would come to work for us. It's rather the other way around.

Argument set by Lipsey and Sjöholm (2001) that the MNEs, trying to keep their attrition rate as low as possible, would pay to their employees relatively more money, than the local companies ever would. This might mean an obstacle to the transfer of employees to the domestic enterprises. This is happening especially to the newly established MNEs, who want to fulfil the limits of employees hired in given time.

MNE D1: Obviously, competitive salary is something you must take into consideration if you want to keep your employees. Those extremely higher salaries are more likely to happen in case the company needs to hire quick. Otherwise we don't really approach employees in other companies. That wouldn't end up well, considering

all the competitors around us. We don't have any gentleman's agreement, everything is rather consensual.

I: There have been several MNEs entering the market in the past, shifting the HR market and overpaying skilled developers. It all affects local SMEs as it makes very hard to compete in terms of salaries with companies with bigger budget.

L: We don't try to headhunt employees from other companies. But it isn't that easy to find the required people though. The quality of university absolvents has decreased in the past years.

Newly established MNEs are regarded as those, who raise the wage, above the usual limits. Respondents are pointing out the fair behaviour of MNEs in the sector, not trying to bring employees working for another MNE. Nevertheless, it doesn't mean the movement of labour force doesn't happen.

CONCLUSIONS

An answer to the question, whether the MNEs in the Czech ICT sector brought along technology spillovers and contribute to the regional development, was intended to be delivered through this study. Theoretical part of the study is divided into two parts. First part delivers the knowledge about the evolution of theories dealing with the MNEs. What are the basic motivations behind company to actually overcome standard market procedures and rather internalize the market through the company network structures. Second part designs the major theoretical framework to build on for the analysis. Types of spillovers and the specifics of the spillovers to occur are being defined. Empirical part is based on document analysis and interviews. In total eleven interviews were undertaken with representatives of MNEs, universities, local company, investment promotion agency and one ICT institution.

To address the research question, three interconnected areas of spillovers in the Czech Republic are analysed. First, the intentions which led the MNE to select the Czech Republic as the ideal location for their investment. There are several motivation factors which drive the MNE to invest, based on which it's possible to assume the innovativeness of the project. The other important aspect is, whether MNE entered the market through the M&A, or greenfield investment. M&A investments are assumed to be keen to closer cooperate with local entities. In case of greenfield investments, the territory will be sooner and in greater quantity exposed to new technologies brought to the territory by the MNE. Second argument is focusing on the importance of local economic ecosystem for growth of MNEs. It is assumed that less developed country will be struggling to accept and adapt to the innovations transferred to the territory. On the hand well developed infrastructure and universities will take greater advantage of the spillovers due to the better absorption capacity. Third area which is being analysed is the MNE as the carrier of knowledge, innovations and spillover effects. Horizontal and vertical linkages, together with the transfer of labour force were put into contrast of the Czech Republic and local ICT sector.

The analysis comes to the conclusion that there **are spillover effects from MNEs through horizontal linkages, the university cooperation and labour mobility** in the Czech ICT sector. On the other hand the **vertical linkages**, praised so much for their spillover potential in the manufacturing industry, in the services industry **have significantly lower, or no importance.**

The horizontal linkages have been positively affecting both sides, the MNE as well as the local company. The MNE could grow and use experimental services to test the market in the local economy thanks to the local competitor. The domestic company, on the other hand, managed to imitate some products and strengthen its existing services in order to remain competitive. University cooperation and further involvement is happening and is welcomed by the universities. MNEs approach universities for cooperation with students, but as well to have better control over the curriculum taught at the university, in order to get the greatest benefit from absolvents. MNEs tend to locate in clusters, often by the universities. The labour mobility between the companies is taking place, thus the knowledge is being transferred. Interviewed MNEs even confessed that there is active labour mobility within the company network, thus allowing the know-how to migrate from and to the country.

None of the respondents entered to the Czech Republic via M&A, but the acquisitions of enterprises are not that unusual. The results for such an investment have been rather ambivalent. **The quality of employees and education facilities is one of the biggest incentives for the MNE to come to the Czech Republic and further expand.** This proves that the **absorption capacity is at very good level.**

Even though there is proven capacity to withstand the inflow of MNEs and fully utilize the spillover potential, the companies seem to interact in very different way in services industry, especially skills intensive ICT, then in the manufacturing industry. There haven't been proven any vertical linkages, which are perhaps the most important ones for spillovers for manufacturing.

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