INVESTMENT INCENTIVES IN THE ENVIRONMENT OF THE CZECH REPUBLIC

Petr Blaschke[1]

[1] Technical University of Liberec, Faculty of Economics, Department of Marketing and Trade, Czech Republic, ORCID: 0000-0002-0548-3772, petr.blaschke@tul.cz.

Abstract: *Investment incentives were originally created particularly to support the inflow of foreign capital into transforming economies. Today, they are also available in the developed countries of Western Europe, where they no longer fulfil their primary function but have become a standard and popular economic policy tool allowing the government to emphasise its impact on the country's positive economic development (e.g., falling unemployment and reductions in unemployment benefits or recovery of public finance). Like any comprehensive system, the system of investment incentives has its supporters and opponents who cannot agree on their justification. The question is, whether they are efficient from the point of view of the government, as their provider. This is even more prevalent if the given investment was realised without investment support. Using the data of investment incentives provided by CzechInvest and selected macroeconomic indicators (Czech Statistical Office), as well as regression analysis of time series dependences, the aim of this paper is to verify the impact of investment supported by incentives (independent variables) on the macroeconomic climate of the Czech Republic (dependent variables) from 1998 to 2019. Based on the research findings, investment incentives cannot be described as an effective economic policy tool that clearly leads to the regions' economic development. They contribute to an inflow of investments into (not only) structurally problematic regions (i.e., with higher unemployment or a lower economic level), but the positive impact of these investments on the macroeconomic climate is statistically negligible – not only at the regional level (NUTS 3), but also at the level of the whole economy (NUTS 1). In addition, the question remains as to whether or not the supported investments in the given region would have been implemented without the possibility of using incentives.*

Keywords: *Investment incentives, foreign direct investment, economic policy, Czech Republic.*

JEL Classification: *F21, F23, H23.*

Introduction

Investment incentives are a widely used tool of economic policy employed not only in the Czech Republic (CR) but also in other European economies. Given the ambiguous perception established by the review of the literature on investment incentives and the effects that supported investment brings to the economy, this article aims to evaluate the issue of investment incentives in the CR with the use of a time series regression analysis (1998–2019) in order to answer two main research questions:

Do investment incentives attract investment into economically weaker regions?

Do investments supported by incentives lead to the economic prosperity of these regions?

The inspiration for the article comes from a comprehensive study focused on investment incentives in the CR (Schwarz et al., 2007).

The experts' views on investment incentives are ambiguous – some perceive them positively, others criticize them and consider them undesirable. The aim of this

paper is to briefly introduce the most frequently mentioned advantages and disadvantages of investment incentives as a localisation factor that tries to influence the investors' decision process regarding the location of their investments – it tries to convince them to make their investment in that particular economy, in that particular place. Furthermore, using several selected macroeconomic indicators (dependent variables) – rate of unemployment (u), employment (emp), gross domestic product per capita ($GDPpC$) and gross value added (GVA) – analyse and verify if incentives attract investments into structurally affected regions as well as the impact of the investments inflow motivated by incentives on the host business environment of the CR (NUTS 1) and the regions of the CR (NUTS 3).

In the transforming economies of Central and Eastern Europe, after the completion of the privatisation process, there was increased pressure to attract foreign investment that would support the ongoing economic transformation. Countries have systematically addressed the problem of insufficient foreign capital. The result of their efforts was the creation of a system of investment incentives for foreign investors. Its goal was to increase the attractiveness and competitiveness of the local economy (Cedidlova, 2013; Hardy et al., 2011; Hlaváček & Bal-Domańska, 2016).

According to Thomas (2007), governments compete for investment by providing investment incentives for two main reasons: firstly, the need for the investment itself (governments face political pressure to attract investment and the associated consequent increase in employment and tax revenues) and secondly, the fact that capital is mobile, which creates a competitive environment, as the investment can potentially be made anywhere. The aim of investment incentives may not only be to attract new foreign direct investment (FDI), but also to retain existing investments. Schwarz et al. (2007) emphasises that by using investment incentives, the government can make the country more or less attractive, not only for foreign capital, but also for investment of domestic entrepreneurs.

1. Theoretical Background

According to UNCTAD (2004), there is no uniformly accepted definition of "investment incentive". It can very broadly include virtually any assistance that a country provides to investors (regardless of whether it is a domestic or foreign entity). In a narrower context, it is only government assistance that includes specific forms of support. Schwarz et al. (2007) describes investment incentives as selective support to selected investors who meet specific criteria. Burger et al. (2012) divides the tools that governments most often use to attract FDI into the following three categories:

- financial incentives (e.g., direct grants and soft loans);
- fiscal incentives (e.g., tax holidays, duty drawback, reduced tax rates, or full tax exemption);
- other incentives (e.g., subsidised infrastructure or services, and market preferences).

Ginevičius and Šimelytė (2011) point to the fact that fiscal incentives usually exceed financial ones. Developing countries often prefer fiscal instruments (paid ex-post), while developed countries (as well as investors) mainly use financial incentives (paid ex-ante). Thus, the provided incentives and their structure somewhat reflect the differences in wealth between countries and determine their degree of effectiveness; richer countries can afford to provide financial incentives, which entail direct budgetary expenditures, while developing countries prefer fiscal instruments, which entail less financial demands and burden on public budgets since they only include a waiver of part of potential budget revenues (Burger et al., 2012; UNCTAD, 2004).

Investment incentives provided by the EU Member States are subject to the rules of competition policy, which sets the framework and binding rules for their being granted (EU, 2020). Member States may provide investment incentives, in particular, to support economic growth in the most disadvantaged regions (usually where living standards are enormously low or unemployment enormously high) and this support should primarily be spent on investments that will lead to the long-term growth of the regional economy.

Theoretically, the rationale for investment incentives related to the decision-making strategy of domestic and foreign investors is relatively limited (Burger et al., 2012). However, the rationale for their benefits can already be seen in Dunning's concept of OLI. This concept emphasises the critical importance of the

attractiveness of the host market in investors' investment decisions, e.g., its profitability, growth potential, competition and the related ability of maintaining or expanding market share. Among other factors, this concept also examines a country's attitude to FDI, which is reflected in the possibility of using investment incentives and how generously this system is set up (Dunning, 1988). When analysing the attractiveness of the host market, Jáč and Vondráčková (2017) use the term investment attractiveness and define it as a set of factors that influence a company when considering an investment decision.

However, Dunning and Lundan (2008) state that until the 1990s, investment incentives were perceived as a minority determinant and were not given much attention in investors' strategic decisions on their FDI allocation. Over time, however, investment incentives have become a popular economic policy measure in many developed countries, allowing governments to highlight their added value in the country's economic growth, falling unemployment and associated reductions in unemployment benefits (e.g., decreasing the volume of transfer payments) and, conversely, the recovery of public finances through increased payments of social and pension insurance (Schwarz et al., 2007). Economic policy makers believe that a well-designed system of investment incentives will attract significant FDI, which will contribute to faster economic growth (Harding & Javorcik, 2011).

In the professional literature, the provision of investment incentives is most often reflected in connection with the inflow of foreign capital (Hlaváček & Janáček, 2019; Zamrazilová, 2007). This is also related to their theoretical anchoring, which is often associated with localisation theories, as investment incentives are by definition considered a modern localisation factor of FDI (Šimanová & Trešl, 2011). The fact that the investment incentives provided should be, in particular, a localisation factor or a motivating tool for locating FDI in problematic and structurally affected areas is also stated by Šimelytė and Liučvaitienė (2012) and confirmed by Meriküll et al. (2013). The system of investment incentives is generally perceived as an advantage by which governments may influence the localisation decisions of companies in favour of targeted regions to attract and accumulate capital in

their territory to support their economic growth (Hlaváček & Janáček, 2019).

However, plenty of authors believe that investment incentives are far from being the most important element in investors' decisions about the location of their investment. A number of studies show that investors place investment incentives far behind factors such as cheap labour, quality of infrastructure, labour productivity, the country's economy or the availability and size of the host market. Investors thus perceive incentives as a pleasant, but not decisive, factor. Kokko and Kravtsova (2008) or Blomström et al. (2003) give them a secondary role in deciding on the international allocation of investments. Investment incentives are also less important for Oman (2000) who states that they are only important if the structural factors of the host country (market and production factors) are satisfactory for investors.

Investment conditions may become more important if investors decide between several locations with a similar level of the aforementioned structural factors. However, according to Blomström et al. (2003) or Havránek and Iršová (2010), the generous setting of investment incentives may even reflect the government's efforts to compensate for certain disadvantages of the country (e.g., poorer access to infrastructure, lack of skilled labour or low labour productivity) to make it more attractive for capital inflow.

The rationale for incentives is usually associated with the potentially positive effects of FDI on the productivity of domestic firms (Burger et al., 2012; Deng et al., 2012) – productivity growth spills over from technologically strong MNCs into productivity growth in companies throughout the industry, i.e., aggregate productivity shows an accelerating upward trend (Dreyhaupt, 2006). According to Blomström et al. (2003) or Plojhar and Srholec (2004), countries should seek to attract FDI, as domestic companies operating in the host region can benefit from a range of positive externalities that MNCs bring to the host region – most often these are spillover effects in the form of technology and knowledge transfer and the emergence of sub-supply chains (linkage effects). According to Pavlínek and Žížalová (2016), spillover effects related to FDI have the character of positive externalities, therefore, their emergence is a public interest, which should be promoted by

institutional support in the form of investment incentives. This is a principle similar to the one considered in the theory of public goods (Benáček, 2000).

Also, according to Viturka (2007), the primary goal of investment incentives is to attract FDI to the domestic economy, i.e., to influence the willingness of foreign investors to invest there. According to Kincl (2003), it is an indisputable fact that investment incentives contribute significantly to FDI inflows, which is also confirmed by empirical studies of Blomström et al. (2003), Charlton (2003) or Oman (2000).

Another theoretical anchoring of investment incentives can be seen in the developmental theories of the core-periphery group, where the provision of investment incentives is often aimed at attracting capital to peripheral, structurally affected areas. The support of investments in peripheral areas naturally weakens agglomeration tendencies and, on the other hand, strengthens the dispersion of economic activities in peripheral regions, which at first glance are less attractive to investors (Květoň & Blažek, 2018).

The cost side of the investment incentive is relatively easily quantifiable (e.g., size of material assistance of economic entities, estimation of the impact of tax holidays or discounts on the state budget), but according to Teixeira and Fortuna (2010), the quantification of their benefits is problematic (due to the form of externalities and time delays) and it is the reason why investment incentives are constantly being questioned.

According to Blomström et al. (2003) or Burger et al. (2012), the provision of investment incentives is economically justifiable, especially if they attract at least one MNC to a given region, whose entry will lead to an interest in allocation of other companies' investments in the given territory (i.e., demonstration effect or follow-the-leader behaviour) and will subsequently contribute to a more efficient international distribution of FDI. According to Charlton (2003), every investment is associated with uncertainty, which is doubly true for FDI – companies often do not want to be the first to make an investment in an unknown region, so they wait for someone else to explore the market and then engage in potentially profitable investment activities.

When evaluating investment incentives, Blomström et al. (2003) rely on the argument that the presence of MNCs contributes to the economic growth of the host region. A system of investment incentives is justified if the MNC differs from domestic companies by having specific intangible assets that can spill over to businesses operating in the host economy and provide a positive effect on their productivity. In the context of technology transfer, a functioning system of investment incentives is effective, as the implementation of FDI can bring, among other things, new technologies to the host market (technology transfer). This transfer can primarily take place through the use of three basic channels – commercialisation through a licence, international trade or the implementation of FDI itself (Gorg & Greenaway, 2004). Kincl (2003) identifies the transfer of new technologies, management models and the overall cultivation of the business environment as the most significant benefits of investment incentives.

According to Viturka (2007), however, the most frequently mentioned benefit of investment incentives is their impact on employment growth. Investments benefiting from investment incentives are usually subject to the creation of a certain minimum number of new jobs, which can make a significant contribution to solving economic and social problems in regions with higher unemployment.

Plojhar and Srholec (2004) state that governments approach foreign investors as a welcome source of capital or technology, but there is a conflict between government expectations and the interests of MNCs, as MNCs use ownership control to minimize the spread of their technologies and prevent technology transfer (spillover of positive externalities) into the host economy. Also, Lenaerts and Merlevede (2018) and Li et al. (2011) point out that MNCs that have received an investment incentive do not enter the host economy in a targeted way to increase productivity in the business environment and help solve macroeconomic problems there, but rather pursue their own corporate interests.

The provision of investment incentives is also often justified by the existence of other market failures or market imperfections. This may be, for example, the entry of an investor into an imperfectly competitive market sector, which may contribute to increased competition and ultimately increase the productivity of companies throughout the sector (Blomström

et al., 2003). AlAzzawi (2012) additionally confirms the positive impact of growing competitive pressure on domestic companies, which is caused by the inflow of FDI. García et al. (2013) further perceive this competitive pressure positively, as the inflow of FDI leads to an increase in the competitiveness and production efficiency of domestic companies. However, the aforementioned competitive effect can also have liquidating consequences – financially weaker companies or companies with a smaller market share might be completely pushed out of the market by the entry of a foreign investor and might have to leave the sector. The final impact of investment incentives depends on the structure of the region or sector to which it relates.

Among other market imperfections, which can be at least partially solved by investment incentives, Velde (2001) mentions the existence of asymmetric information – foreign investors are at a disadvantage compared to domestic investors, as they usually have less information about the market situation, the bureaucracy, etc, in the host country. Gordon and Bovenberg (1996) believe that in this context, by favouring foreign investors, ceteris paribus, a state would contribute to increasing the well-being of society as a whole. Blomström and Kokko (1998) believe that in the presence of asymmetric information, foreign investors should have some significant comparative advantage to be sufficiently competitive in the new market. After they enter the host market, it can be expected that there will be spillover effects in the form of externalities, which the company will not be able to internalise, thus increasing the productivity of other companies in the area.

Conversely, for example, according to Tomsik and Kubicek (2006) or Schwarz et al. (2007), investment incentives themselves are the cause of market distortion, as granting them leads to inefficient allocation of resources; they are granted in exchange for meeting certain specific conditions (e.g., a minimum amount of investment or a minimum number of newly created jobs). The need to meet these conditions can be seen as a kind of tax; the investor must invest more capital or employ more people than they would like, which reduces their future profits. From this point of view, investment incentives represent a kind of compensation to the investor to balance the investment conditions and have no positive effect on economic development.

Thomas (2000) considers the provision of investment incentives to be an irrational step and unnecessary waste of public money, as FDI would most likely be implemented somewhere in the given economy even without the granted support. According to Mallya et al. (2004), who analysed the impact of FDI inflow to the CR, only 10% of FDI were implemented thanks to incentive programmes. Blomström et al. (2000) are also opposed to the granting of investment incentives arguing that MNCs would probably not enter the host economy without an investment incentive and realise their investment there, but it is very difficult to quantify the benefits of FDI.

The list of problematic areas of granting investment incentives does not end there. Another issue is related to their settings. It is a logical step that the larger the granted support package is, the greater the benefits and effects of regional development economic policymakers expect (Lim, 1983). Investment incentives are primarily targeted at large economic entities that have the potential to generate hundreds of new jobs and have a significant impact on the economy. Here the beckoning question is, whether such companies (i.e., strong capital equipped companies) need public support at all? Is their competitiveness not artificially promoted? Would it not be more beneficial to support, for example, start-ups with a lack of capital that need to be boosted in order to start creating their competitive advantage?

Some controversy in the system of investment incentives may also stem from the fact that achieving a given investment incentive is a stimulating factor for companies, yet certain companies do not achieve the incentive for various reasons. Favouring large companies by providing generous investment incentives may ultimately have a negative impact on small and medium-sized enterprises (SMEs) in the form of crowding out their investments (i.e., the crowding-out effect).

Although investment incentives do not discriminate between domestic and foreign investors, from the point of view outlined above, it can be assumed that they target larger companies or are at least more accessible to them. Kincl (2003) points out in this context that Czech businesses, regardless of their size, are automatically disadvantaged in the system

of investment incentives in the fight against foreign companies, as their foreign competitors are usually part of multinational groups that are very strong financially, so, in effect, they do not need further investment stimulus in the form of investment incentives.

Investment incentives in this context can serve as an attraction for large investments of MNCs but, at the same time, they can repel smaller investments and distort the competitiveness of local SMEs. Therefore, investment incentive schemes should be linked to the existence of accompanying programmes to support them. However, this is a vicious circle, as Schwarz et al. (2007) point out that such ancillary aid is merely an attempt to compensate the market distortion created by the state by providing investment incentives and will never lead to a full equalising of original market conditions.

Although, according to Hlaváček and Janáček (2019), recent effort to change this trend within the investment incentive systems can be seen, in the region of Central and Eastern Europe, support of large, capital-strong companies, whose benefits are visible earlier than is the case for smaller companies on the market, maintain a dominant position. Capital-strong companies, mostly MNCs, have already developed a conceptual framework of foreign trade strategies, organisational management, qualified expatriates and process management, which are practicable to implement in the host economy right after the completion of greenfield construction.

The vicious circle of investment incentive criticism is coming to a close: investment incentives are focused on large, capital-strong companies with significant benefits visible in a shorter time horizon in comparison with start-ups. Companies (especially domestic) with insufficient capital are promised the benefits of investment incentives much later, after the establishment and control of functional systems, management processes and effective strategies. It is, therefore, more likely that, if investment incentives are granted to capital-strong companies, the credit for those economic benefits that are easily verifiable will be reaped by the same government that decided on them. In contrast, the negative impacts, such as the crowding out effect and emergence of a dual economy, are visible with a certain delay and usually do not have to be resolved during the term of the contract.

The presented literary research dealing with the issue of granting investment incentives and their ambiguous perception led the author to conduct his own research and analyse both direct (inflow of FDI) and indirect (impact on macroeconomic indicators) effects (as well as their strength) of granted investment incentives that attracted FDI to the CR in more detail.

2. Research Methodology

The subject of this part is the analysis of investments that were supported by investment incentives and their impact on the macroeconomic environment of the CR. In this paper, two data sources were used – data on investment incentives provided to projects implemented in the CR (collected by CzechInvest – the Agency for Business and Investment Support) applied as independent variables – and macroeconomic data (collected by the Czech Statistical Office) as dependent variables.

Data on granted investment incentives have been collected since 1998, so the issue was examined in the period from 1998 to 2020. The main statistical tool used for data processing was a regression analysis of time series dependencies. The research aimed to find answers to two main research questions:

- *Do investment incentives attract investments into economically weaker regions?*
- *Do investments supported by incentives lead to the economic prosperity of these regions?*

The economic level of the regions was assessed according to two selected macroeconomic indicators (their average values in the observed period) – the unemployment rate (u) and gross domestic product per capita ($GDPpC$). In addition, the impact of supported investment projects on the regional macroeconomic climate was tested on two other macroeconomic indicators – employment (emp) and gross value added (GVA). The dependences of the time series of the monitored indicators were tested at the level of the whole CR (NUTS 1) and in the case of proving dependencies also at the regional level of NUTS 3.

To answer the aforementioned questions, the following hypotheses were tested:

- *The development of u (GDPpC; emp; GVA) is dependent on the number of supported projects.*

- *The development of u (GDPpC; emp; GVA) is dependent on the value of supported projects.*
- *The development of u (GDPpC; emp; GVA) is dependent on the average value of supported projects.*

3. Research Results

Results of the research are further presented in this chapter. Respecting the research methodology, individual subchapters are divided into those that concern the entire CR and those that deal with developments in individual regions.

3.1 Investment Incentives in the Czech Republic Regions

Although one of the reasons for the existence of the investment incentives system is its ability to primarily attract foreign capital to structurally affected regions, the data of CzechInvest (2021) shows that in the time series from 1998 to 2020, a total of 735 (i.e., more than 70%) out of 1,035 decisions to grant investment support were granted to domestic applicants and the most frequently provided incentives were tax reliefs

(a full or partial corporate income tax rebate). This result is also confirmed, for example, by Jáč and Vondráčková (2017) in their empirical study, according to which companies most often prefer investment incentives in the forms of an income tax allowance.

For a basic overview of the macroeconomic situation, Tab. 1 shows the average values of selected macroeconomic indicators of individual regions of the CR in the period 1998–2019, which are then used for statistical analysis of investment support. Although within the statistical analysis the time series of employment (*emp*) and gross value added (*GVA*) indicators were also used, only the unemployment rate (*u*) and gross domestic product per capita (*GDPpC*) indicators were used to identify the more economically problematic regions of the CR. The order of regions according to the *GVA* more or less corresponds to the order of regions according to *GDPpC*. The *emp* indicator, presented in absolute form, is, among other things, influenced by the size of the given region (population) and, in comparison with *u*, it does not have such significant explanatory power in the issue of unemployment.

Tab. 1: Regions of the CR – macroeconomic overview

Region	u (%)	GDPpC (CZK)
Central Bohemia	4.6	333,826
Hradec Králové	5.4	311,852
Karlovy Vary	7.9	258,036
Liberec	6.0	285,637
Moravia-Silesia	10.0	291,445
Olomouc	7.7	272,488
Pardubice	5.7	291,621
Plzeň	4.6	330,442
Prague	3.0	788,568
South Bohemia	4.5	304,978
South Moravia	6.4	334,987
Ústí nad Labem	10.2	276,787
Vysočina	5.3	293,921
Zlín	6.4	299,872

Source: own based on the data of CZSO (2021b, 2021c)

Note: Average values within the monitored period (1998–2019).

Tab. 2: Investment incentives in the CR regions – overview (1998–2019)

Region	Number of projects	Value of grants (mil. EUR)	Value of projects (mil. EUR)	Grant in project value	New jobs to be created	Grant per new job (EUR)
Central Bohemia	122	1,225	4,352	28%	21,782	56,256
Hradec Králové	48	463	1,418	33%	9,491	48,758
Karlovy Vary	24	195	568	34%	2,618	74,354
Liberec	47	523	1,361	38%	6,572	79,572
Moravia-Silesia	150	1,422	4,634	31%	23,907	59,485
Olomouc	66	489	1,319	37%	8,217	59,531
Pardubice	46	529	1,380	38%	10,719	49,391
Plzeň	81	514	1,549	33%	12,819	40,103
Prague	1	24	48	50%	500	48,132
South Bohemia	43	321	905	35%	5,048	63,621
South Moravia	88	634	1,568	40%	11,741	53,979
Ústí nad Labem	155	1,820	5,176	35%	26,398	68,955
Vysočina	52	582	1,565	37%	7,642	76,122
Zlín	58	432	1,175	37%	4,278	100,966
Total/Average	**981**	**9,173**	**27,018**	36%	**151,732**	60,458

Source: own based on the data of CzechInvest (2021)

Tab. 1 shows that, in terms of unemployment, the most problematic regions are Ústí nad Labem and Moravia-Silesia ($u \geq 10\%$). In terms of economic level, it is the Karlovy Vary region that has the lowest *GDPpC* value. Logically, investment incentives should largely try to attract investment to these regions.

Tab. 2 summarises the basic data on projects supported by investment incentives. The same approach was used, for example, by Burger et al. (2012). However, the research conducted in this paper abstracts from investment projects, the support of which was jointly requested by investors from different countries. Likewise, projects for which the originally promised investment support was cancelled yet the investment was implemented without investment support, or cases in which the investors completely abandoned their investment intention, are not taken into account.

It is necessary to highlight that the indicator "new jobs to be created" does not mean that the same number of unemployed people have been employed because investments are attracting workers from other companies as well.

Fig. 1 shows the regional comparison of the total number of implemented projects using investment incentives in 1998–2020 and the number of new jobs promised, which directly stems from the implementation of the investments. The processing is inspired by the analysis of investment incentives of the Ministry of Industry and Trade (Schwarz et al., 2007), but in addition, the recipients of investment incentives are divided into SMEs and others.

Looking at the graph, it can be stated that in most regions of the CR, the number of investments supported by incentives corresponds proportionally to the number of newly created jobs promised. The Hradec Králové and Pardubice regions achieved the creation of a relatively higher number of promised jobs with a relatively lower amount of investment. On the contrary, in the Zlín and South Moravian regions, the inflow of investments was reflected in the relatively lower creation of new jobs.

However, by their nature, investment incentives should mainly attract investment in economically weaker, structurally
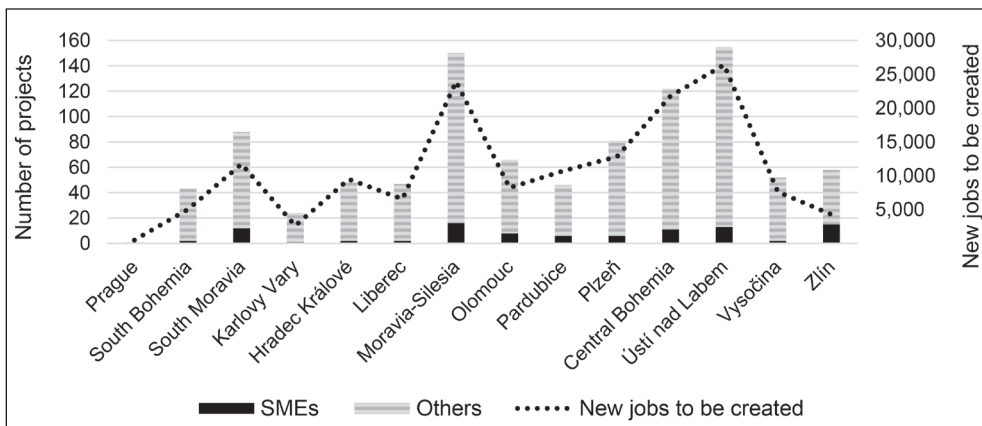
Source: own based on the data of CzechInvest (2021)

disadvantaged regions. Based on the overview in Tab. 1, the supported investments should primarily go to the Ústí nad Labem, Moravian-Silesian and Karlovy Vary regions and, as can be seen from Tab. 2 and Fig. 1, the first two regions mentioned are indeed the recipients of the largest amount of investment, which is also reflected in the creation of the largest number of new jobs.

In the context of the size of investment incentives recipients, it can be clearly seen that the share of SMEs in investment projects implemented in the CR is negligible. Relatively, the most SMEs were supported in the Zlín region (almost 26%). This finding is consistent with the conclusions presented in the literary research – that investment support is primarily targeted at large, capital-strong companies, where the positive effects stemming from their presence can be expected much faster (Hlaváček & Janáček, 2019; Schwarz et al., 2007).

3.2 Development for the Whole Czech Republic

Furthermore, the dependences of time series' values for the whole CR (except the Prague region) were tested. Prague was excluded from further analysis, as it is the most developed region of the CR, which has long been excluded from investment support. Besides, only one supported investment project was implemented

there during the entire period under review. The macroeconomic indicators already presented (u, emp, $GDPpC$, GVA) have been supplemented by monitored indicators related to the area of investment support – number of new jobs to be created, number of implemented projects and total value of the implemented projects. Moreover, from the accessible data, one more indicator having better explanatory power has been created – average value of investment.

Since at the time of the research official macroeconomic indicators for 2020 were not available, the time series 1998–2019 is used for all variables in the following analyses. Most variables were created as a sum across all regions, only the average variables (average project value and unemployment rate) were summarised for the whole CR on average. It is first necessary to test the condition of normal data distribution (Tab. 3).

Since the normality of the data was not rejected for almost all variables using the Kolmogorov-Smirnov and Shapiro-Wilk test, we consider the condition of normal data distribution for Pearson's correlation analysis to be fulfilled. As the respective pairs of dependent macroeconomic variables show a strong correlation dependence (Tab. 4), further analyses will be performed on only one of them for the sake of clarity, with all subsequently found dependences being valid for the other relevant variables.

Tab. 3: Tests of normality

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
New jobs to be created	0.151	22	0.200*	0.910	22	0.047
Number of projects	0.156	22	0.173	0.929	22	0.118
Value of investment	0.133	22	0.200*	0.942	22	0.216
Average value of investment	0.130	22	0.200*	0.925	22	0.096
GVA	0.128	22	0.200*	0.963	22	0.561
Rate of unemployment	0.218	22	0.008	0.870	22	0.008
Employment	0.159	22	0.154	0.893	22	0.022
GDP per capita	0.142	22	0.200*	0.966	22	0.609

Source: own based on data of CzechInvest (2021); CZSO (2021a, 2021b, 2021c, 2021d)

Note: * This is a lower bound of true significance; [a] Lilliefors significance correction.

Tab. 4: Correlations

		emp			*GVA*
u	Pearson correlation	−0.969**	*GDPpC*	Pearson correlation	1.000**
	Sig. (2-tailed)	0.000		Sig. (2-tailed)	0.000
	N	22		N	22

Source: own

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Between u and emp, Pearson's correlation coeff. showed a very strong although (in essence) indirect correlation (i.e., the larger emp, the lower u), so we will continue to present as a representative only the variable u. Absolute direct dependence between $GDPpC$ and GVA has been confirmed, so only the representative $GDPpC$ variable will continue to be considered.

Furthermore, the Engle-Granger cointegration test of the time series of the investigated variables was performed (Tab. 5), followed by the paired Granger test of causality, i.e., a test of the existence of conditionality between series. Cointegration tests determine whether there is any relationship between the observed series expressible by the cointegration equation. The

Tab. 5: Engle-Granger cointegration test

Dependent var.	Independent var.	Tau-stat.	Prob.*	Z-stat.	Prob.*
u	*JOBS*	−1.219778	0.8546	−5.377299	0.6623
GDPpC	*PROJECTS*	−1.078232	0.8877	−3.195251	0.8594
GDPpC	*AVERAGE VALUE*	−0.588273	0.9570	−1.642598	0.9486
GDPpC	*INVESTMENT*	0.134031	0.9927	0.718710	0.9956

Source: own

Note: * MacKinnon (1996) p-values.

test monitors the causal relationship of whether one time series is useful in predicting another, measuring the ability to predict future time series values using previous values of another time series (Kantorová, 2016).

The Engle-Granger cointegration test was performed for each respective pair of rows. For all four pairs, the null hypothesis was not rejected for the respective direction of dependence, i.e., there is no relationship for each pair of series and the pairs of series are not considered cointegrated in the tested direction. If the opposite direction was considered (the dependent variables would be investment indicators, not macroeconomic ones), then cointegration between series would exist.

Bilateral causality was tested by the paired Granger causality test (Tab. 6). For all four pairs of series, the hypothesis of the absence of causality cannot be rejected, therefore, conditionality in the tested direction was not proven in any case. Thus, time series are not mutually influenced and cannot predict each other's future values well.

Furthermore, the time series was tested using regression analysis. Although the cointegration of individual pairs of time series was not proven in the observed direction, it was proven in the opposite direction, i.e., there is some mutual relationship between the individual pairs of series. To determine the strength of this dependence between rows, a standardised regression coeff. beta from a simple linear regression can be used, which corresponds to the correlation coeff. between pairs of rows. This indicates the relative strength of the effect of each of the input variables on the output variable, regardless of the suitability for predicting other values, which are as yet unproven.

The standardised regression coeff. beta (Tab. 7) is only statistically significant for the regression dependence of *GDPpC* on the number of projects and *GDPpC* on the average

Tab. 6: Paired Granger causality tests

Null hypothesis	Obs.	F-stat.	Prob.
JOBS do not Granger-cause *u*	20	0.00815	0.9919
PROJECTS do not Granger-cause *GDPpC*	20	1.04738	0.3752
AVERAGE VALUE does not Granger-cause *GDPpC*	20	0.73803	0.4946
INVESTMENT does not Granger-cause *GDPpC*	20	0.25315	0.7796

Source: own

Tab. 7: Regression coefficients

Model	Unstandardised coeff.		Standardised coeff. beta	t	Sig.
	B	Std. error			
(Constant)	6.288	0.814		7.721	0.000
JOBS[a]	3.353E-5	0.000	0.074	0.332	0.743
(Constant)	3,226,491.447	323,290.445		9.980	0.000
PROJECTS[b]	151,90.374	6,231.439	0.479*	2.438	0.024
(Constant)	4,704,736.255	400,616.536		11.744	0.000
AVERAGE VALUE[b]	−1,168.234	510.945	−0.455*	−2.286	0.033
(Constant)	3,741,280.059	381,220.526		9.814	0.000
INVESTMENT[b]	4.224	9.467	0.099	0.446	0.660

Source: own

Note: [a] Dependent variable: *u;* [b] Dependent variable: *GDPpC*.

Tab. 8: Regression coefficients for the tested delays

Model	Time delay	Standardised coeff. beta	Sig.
Number of projects[a]	$t-1$	0.479*	0.029
Average value[a]	$t-1$	−0.478*	0.028
Average value[a]	$t-4$	−0.556*	0.016
Average value[a]	$t-5$	−0.519*	0.033

Source: own

Note: [a] Dependent variable: *GDPpC.*

value of the project. Conversely, the dependence of *u* on jobs and *GDPpC* on the total amount of investment has not been confirmed. For both dependent pairs, it is a medium (rather weaker) strength of dependence. *GDPpC* is positively dependent on the number of projects, but negatively on the average value of the project (the higher the average value of the project, the lower the *GDPpC*). This can be caused by the dependence on the number of projects and not on the value of investments, i.e., the more projects, the logically lower the average value of the project, assuming more or less constant values of investments.

Standardised regression beta coeff. were also monitored in terms of delaying the impacts of all input variables by one to five years (Tab. 8). However, only the dependences of the *GDPpC* on the number of projects and the average value of the project with a delay of *t−1* and also on the average value of the project with a delay of *t−4* and *t−5* were statistically significant.

3.3 Development in Individual Regions of the Czech Republic

The regression analysis was also performed for the average values of the monitored variables for the entire period (1998–2019) in individual regions (except the Capital City of Prague region). The regression dependence of the monitored pairs of variables was adjusted for the effect of differences between individual regions thanks to the addition of values of individual regions as dummy variables to the regression analysis, with the Central Bohemian region representing the reference category.

A statistically significant regression coefficient only came out for *GDPpC,* and only for the analysis of the variable number of projects and the average value of the project. The model with the average total number of projects annually will explain 38.4% of the variability (Tab. 9), while each additional project in the CR would mean an increase in *GDPpC* by 5,618.8 CZK on average. The constant level of *GDPpC* in individual regions differs from the Central Bohemian region (see regression coefficients for individual regions listed in Tab. 10).

The model with the average annual value of the project will explain 39.0% of the variability (Tab. 11), while each additional million CZK of the average value of the project would mean a decrease in *GDPpC* by −16,385 CZK on average in the CR. The constant level of *GDPpC* in individual regions differs from the Central Bohemian region (see regression coefficients for individual regions listed in Tab. 12).

Tab. 9: Model summary

R	R-squared	Adjusted R-squared	Std. error of the estimate
0.384[a]	0.148	0.098	69,583.586

Source: own

Note: [a] Predictors: (Constant), Projects, zl, pl, jm, kv, pc, hk, jč, vy, ms, lb, us, ol.

Tab. 10: **Coefficients**

Model	Unstandardised coeff.		Standardised coeff. beta	t	Sig.
	B	Str. error			
(Constant)	300,815.608	16,634.861		18.083	0.000
PROJECTS	5,618.824	1,427.252	0.277	3.937	0.000
South Bohemia	4,466.532	22,823.153	0.016	0.196	0.845
South Moravia	21,270.597	21,543.131	0.081	0.987	0.325
Karlovy Vary	−39,866.588	26,071.385	−0.114	−1.529	0.128
Hradec Králové	−9,442.528	22,425.723	−0.034	−0.421	0.674
Liberec	−1,363.901	22,480.504	−0.005	−0.061	0.952
Moravia-Silesia	−52,545.176	21,692.187	−0.199	−2.422	0.016
Olomouc	−27,525.683	21,454.821	−0.107	−1.283	0.201
Pardubice	−30,585.153	22,794.329	−0.108	−1.342	0.181
Plzeň	−17,953.634	22,160.660	−0.065	−0.810	0.419
Ústí nad Labem	−1,887.891	21,431.292	−0.007	−0.088	0.930
Vysočina	−30,788.917	22,091.186	−0.114	−1.394	0.165
Zlín	2,166.393	22,992.620	0.007	0.094	0.925

Source: own

Note: [a] Dependent variable: *GDPpC*.

Tab. 11: **Model summary**

R	R-squared	Adjusted R-squared	Std. error of the estimate
0.390[a]	0.152	0.103	69,406.924

Source: own

Note: [a] Predictors: (Constant), Av., zl, kv, pc, hk, vy, pl, jč, lb, ms, us, jm, ol.

The analysis of time series in individual regions had similar results as for the whole CR. The cointegration of individual pairs of time series has not been proven in the observed direction, but sometimes in the opposite direction, i.e., there is a mutual relationship between some pairs of series. To determine the strength of this dependence between rows, the standardised regression beta coefficient from a simple linear regression can again be used, which corresponds to the correlation coefficient between pairs of rows. This indicates the relative strength of the effect of each of the input variables on the output ones. Standardised regression beta coefficients were also monitored in all regions for all variants of delay of impacts of all input variables by one to five years of dependence.

The standardised regression coefficient beta is statistically significant for the regression dependence of *u* on promised jobs only in the Pardubice region with a delay of *t*−4 (regression coefficient 0.554), in addition to which it indicates a moderately strong positive dependence – the more jobs, the higher *u* (Tab. 13).

The dependences of the *GDPpC* on the number of projects were also statistically significant, but only in the South Bohemian region, with a delay of *t*−3, and in the Zlín region with a delay of *t*−1. This is a positive, moderately strong relationship (Tab. 14).

All the other statistically significant proven dependences are summarised in Tab. 15. This is the dependence of the *GDPpC* on the average value of the project, which was statistically significant in the South Moravian region, the

Tab. 12: Coefficients

Model	Unstandardised coeff.		Standardised coeff. beta	t	Sig.
	B	Str. error			
(Constant)	354,313.419	15,907.606		22.273	0.000
AVERAGE VALUE	−16.385	4.007	−0.259	−4.089	0.000
South Bohemia	−26,992.802	22,740.082	−0.095	−1.187	0.236
South Moravia	5.786	21,789.104	0.000	0.000	1.000
Karlovy Vary	−70,507.732	25,834.975	−0.202	−2.729	0.007
Hradec Králové	−34,113.998	22,194.894	−0.123	−1.537	0.126
Liberec	−22,255.604	22,092.836	−0.080	−1.007	0.315
Moravia-Silesia	−52,519.333	21,623.152	−0.199	−2.429	0.016
Olomouc	−52,987.817	21,420.315	−0.206	−2.474	0.014
Pardubice	−54,234.984	22,510.661	−0.191	−2.409	0.017
Plzeň	−37,661.228	22,327.519	−0.136	−1.687	0.093
Ústí nad Labem	1,729.599	21,263.955	0.007	0.081	0.935
Vysočina	−52,664.994	21,817.241	−0.195	−2.414	0.017
Zlín	−18,701.567	22,970.264	−0.064	−0.814	0.416

Source: own

Note: [a] Dependent variable: *GDPpC.*

Tab. 13: Coefficients

Region	Variable	Time delay	Stand. coeff. beta	Sig.
Pardubice	Jobs	$t-4$	0.554*	0.050

Source: own

Note: [a] Dependent variable: *u;* * Dependence is significant at the 0.05 level (2-tailed).

Tab. 14: Coefficients

Region	Variable	Time delay	Stand. coeff. beta	Sig.
South Bohemia	Projects	$t-3$	0.564*	0.036
Zlín	Projects	$t-1$	0.601*	0.018

Source: own

Note: [a] Dependent variable: *GDPpC;* * Dependence is significant at the 0.05 level (2-tailed).

Vysočina region and the Zlín region. Delays of $t-1$, $t-2$, $t-3$ (and in the South Moravian region also $t-4$) were also significant in these regions.

In the Plzeň and Ústí nad Labem regions, there was a significant delay in the average value of the project by $t-4$ ($t-5$).

Tab. 15: Coefficients

Region	Variable	Time delay	Stand. coeff. beta	Sig.
South Moravia	Average value	–	−0.574**	0.008
		t−1	−0.580*	0.009
		t−2	−0.563*	0.015
		t−3	−0.546*	0.023
		t−4	−0.586*	0.017
Plzeň	Average value	t−5	−0.595*	0.032
Ústí nad Labem	Average value	t−4	−0.557*	0.020
Vysočina	Average value	–	−0.565*	0.012
		t−1	−0.557*	0.016
		t−2	−0.539*	0.026
		t−3	−0.526*	0.036
Zlín	Average value	–	−0.645**	0.007
		t−1	−0.627*	0.012
		t−2	−0.589*	0.027
		t−3	−0.578*	0.038

Source: own

Note: [a] Dependent variable: *GDPpC;* * Dependence is significant at the 0.05 level (2-tailed); ** Dependence is significant at the 0.01 level (2-tailed).

There was no significant relationship between the *GDPpC* variable and the value of investments. Of all the pairs of dependences examined, only a few were significant in some regions, so the examined dependences at the regional level were not statistically proven.

3.4 Summary of Results

The performed analysis of projects supported by investment incentives confirms the targeting of the system of investment incentives to larger companies, as SMEs occupy a complete minority share in the total number of implemented investment projects in all regions of the CR. Based on the same indicator (number of projects), it may seem that investment incentives mainly contribute to the inflow of investments to economically problematic regions due to the fact that from 1998 to 2020 the most supported investments were implemented in the Ústí nad Labem and the Moravian-Silesian regions, which are economically less developed and have the highest unemployment of all the regions in the CR. However, according to a more detailed analysis of time series dependences, it is clear

that a larger number of projects (and lower average project value, potentially due to their higher number relative to the total value of investments) is located in regions with a higher level of *GDPpC,* i.e., the hypothesis of a fair redistribution between regions, would not be confirmed, rather the opposite.

The relationship and interaction of the monitored variables exist. However, the direction of dependence is problematic in all analyses performed because time series show dependence moving in the opposite direction, i.e., the level of *GDPpC* (*GVA*) affects the number of investments (average project value and investment value). The causality of time series is thus proven in this opposite direction, but the regression analysis also confirms the initially examined direction of dependence.

The analysis of time series proved the dependence of *GDPpC* (and thus also *GVA*) on the number of investment projects implemented. This dependence was statistically significant at the level of the CR (positive, medium-strong dependence – correlated coefficient 0.479), so it is possible to confirm the hypothesis that the number of implemented projects has an impact

on these macroeconomic indicators. This also applies to the $t-1$ delay. However, at the level of individual regions, this dependence has not been proven.

The dependence of *GDPpC* (*GVA*) on the average value of the project was statistically significant for the whole CR, but negative (medium-strong dependence – correlated coefficient −0.455) and was, therefore, proven in the opposite direction than expected. Thus, an increase in the average value of a project reduces *GDPpC* (*GVA*), potentially due to the dependence of *GDPpC* (*GVA*) on the number of projects, the increase of which means a decrease in the average value of the project at the same investment value). The same again applies to the delay of the average value of the project by $t-1$.

The dependence of *GDPpC* (*GVA*) on the total value of investments did not prove to be statistically significant, even at the level of the CR. In the individual regions, the investigated dependences were not statistically significant almost anywhere (except for the average value of the project), even for the investigated delays. Therefore, the aforestated hypotheses cannot be confirmed at the regional level.

Since the dependence of the unemployment rate (and thus number of employed people) on the number of new jobs promised did not emerge as statistically significant, the hypothesis that promised new jobs associated with supported investments having an impact on employment can neither be proved in the CR nor in single regions.

Conclusions

Probably the most frequently reflected justification and meaning of the existence of investment incentive systems is the expected positive impact of supported investments on economic growth or a decline in unemployment. The government thus uses investment incentives to attract investment in a specific area to contribute to solving these macroeconomic problems.

The results in this study confirm that investment incentives contribute to an inflow of investments into the host economy, but their impact on positive economic development is statistically negligible. These findings are in accordance with, e.g., Harding and Javorcik (2011), who found that general conclusions and expectations related to investment incentives prevail over definitive results based on economic analyses; governments grant incentives to attract investment that will bring some positive effects to the host economy but it is difficult to prove and measure them. The study of Yanikkaya and Karaboga (2017) even proved a negative effect on macroeconomic indicators of the Turkish economy.

In the international context of other Central European countries, this paper's findings may be confronted with the conclusions of, e.g., Bobenič Hintošová et al. (2021), who dealt with the issue of the impact of investment incentives on FDI inflows and selected macroeconomic indicators in the Slovak economy, concluding that financial incentives have a positive impact on FDI inflows, while fiscal incentives have the opposite effect. In terms of indirect effects (impact on macroeconomic indicators), a more significant impact on the decline in the unemployment rate was recorded. In Germany, Schalk and Untiedt (2000), for example, have addressed the issue of the effects of investment incentives, demonstrating the positive impact of investment incentives on employment, but not on productivity or economic growth. The system of investment incentives in Poland has been analysed, for example, by Ambroziak and Hartwell (2018) or Ślusarczyk (2018), who found that investment incentives attract foreign investment, as evidenced by the amount of capital invested, as well as being an effective tool in combating unemployment rates in the most lagging regions.

While it may seem that the two latter effects (accelerating economic growth and reducing unemployment) are actually triggered by the provision of investment incentives and rightly attributed to them – after all, the EU also sees them as the main purpose for providing public support, critics of investment incentives point out that they attract investment in economically developed regions, which have the lowest unemployment rates in the country. The analysis of the investments supported by investment incentives did not show a statistically significant effect on economic growth or a decrease in unemployment in the regions of the CR. Therefore, it is not appropriate to attribute investment incentives to reducing the gap between the more economically developed and less developed regions; moreover, they should be criticised for widening these scissors.

In terms of investment projects location, based on the analysis, it can be stated that

a larger number of projects (and a lower average value) are in regions with higher *GDPpC*. Also significant to note is that the larger the number of projects (and the lower the average value) in the whole CR over time, the higher the *GDPpC* will *be* in the whole CR over time. This would mean that in regions with a higher level of *GDPpC,* the more the *GDPpC* will increase over time compared to regions with a lower level of *GDPpC*.

The methodology presented in this paper can not only be applied to various territorial and self-governing units within one economy, but also to an international comparison. Regarding the new jobs that FDI has brought to the host region, further research can focus on how many of the new jobs promised were created by the beneficiary of the investment incentive. It would also be useful to monitor the effects that FDI, supported by investment incentives, have brought to individual regions in comparison with those carried out without this form of public support. Other macroeconomic indicators can also be used including, but not limited to, the impact of supported investments on labour productivity or the export performance of the region.

The question is, how statistically insignificant the impact of supported investments on macroeconomic indicators is, stemming from their low number or the nature of the investments themselves (e.g., investments with low added value). Therefore, analyzing the impacts of investments that were not supported by investment incentives and subsequently comparing them with those whose inflow is associated with the granting of investment support can also be seen as an area for further research.

Apart from whether investment incentives are a more or less effective tool, given the current situation, the issue of supporting investment inflows and triggering economic growth can be expected to become more important in the post-coronavirus era. As restrictive government measures to protect health has caused a significant restriction on economic freedom, it will be necessary to revive the economy. Therefore, to maintain international competitiveness, it is more than desirable for countries to not only have an attractive system of investment incentives for investors, but also to attract investments that will support this challenging economic situation.

In conclusion, one can maintain that on the basis of the data available and the analyses performed during the 1998–2019 period, it was not possible to prove a significant impact of FDI supported by investment incentives on the development of the Czech macroeconomic environment.

References

AlAzzawi, S. (2012). Innovation, productivity and foreign direct investment-induced R&D spillovers. *The Journal of International Trade & Economic Development, 21*(5), 615–653. https://doi.org/10.1080/09638199.2010.513056

Benáček, V. (2000). Přímé zahraniční investice v české ekonomice [Foreign direct investment in the Czech economy]. *Politická Ekonomie [Political Economy], 48*(1). https://doi.org/10.18267/j.polek.100

Blomström, M., & Kokko, A. (1998). Multinational Corporations and Spillovers. *Journal of Economic Surveys, 12*(3), 247–277. https://doi.org/10.1111/1467-6419.00056

Blomström, M., Kokko, A., & Mucchielli, J.-L. (2003). The Economics of Foreign Direct Investment Incentives. In H. Herrmann, & R. Lipsey (Eds.), *Foreign Direct Investment in the Real and Financial Sector of Industrial Countries* (pp. 37–60). Berlin, Heidelberg: Springer. https://doi.org/10.1007/978-3-540-24736-4_3

Blomström, M., Kokko, A., & Zejan, M. (2000). *Foreign Direct Investment: Firm and Host Country Strategies*. London: Palgrave Macmillan. https://doi.org/10.1057/9780230598614

Burger, A., Jaklič, A., & Rojec, M. (2012). The effectiveness of investment incentives: The Slovenian FDI Co-financing Grant Scheme. *Post-Communist Economies, 24*(3), 383–401. https://doi.org/10.1080/14631377.2012.705471

Cedidlova, M. (2013). The Effectiveness of Investment Incentives in Certain Foreign Companies Operating in the Czech Republic.

Journal of Competitiveness, *5*(1), 108–120. https://doi.org/10.7441/joc.2013.01.08

Charlton, A. (2003). *Incentive Bidding for Mobile Investment: Economic Consequences and Potential Responses* (OECD Development Centre Working Paper No. 203). Paris: OECD Publishing. https://doi.org/10.1787/864178271805

CzechInvest. (2021). *Investiční pobídky [Investment incentives]*. https://www.czechinvest.org/cz/Sluzby-pro-investory/Investicni-pobidky

CZSO. (2021a). *Hrubá přidaná hodnota v běžných cenách [Gross value added at current prices]*. https://apl.czso.cz/pll/rocenka/rocenka.presmsocas

CZSO. (2021b). *Hrubý domácí produkt na 1 obyvatele [Gross domestic product per capita]*. https://apl.czso.cz/pll/rocenka/rocenka.presmsocas

CZSO. (2021c). *Obecná míra nezaměstnanosti v regionech soudržnosti a krajích – roční průměr [General unemployment rate in cohesion regions and regions – annual average]*. https://vdb.czso.cz/vdbvo2/faces/index.jsf?page=vystup-objekt&katalog=30853&z=T&f=TABULKA&pvo=ZAM06&str=v95&c=v147~8__RP1998#w=

CZSO. (2021d). *Zaměstnanost celkem (osoby) [Total employment (persons)]*. https://apl.czso.cz/pll/rocenka/rocenka.presmsocas

Deng, Z., Falvey, R., & Blake, A. (2012). Trading market access for technology? Tax incentives, foreign direct investment and productivity spillovers in China. *Journal of Policy Modeling*, *34*(5), 675–690. https://doi.org/10.1016/j.jpolmod.2012.01.003

Dobrylovský, J., & Löster, T. (2008). *Přímé zahraniční investice v ČR, jejich význam a jejich účinky na českou ekonomiku [Foreign direct investment in the Czech Republic, their importance and their effects on the Czech economy]*. Tribun EU.

Dreyhaupt, S. (2006). *Locational Tournaments in the Context of the EU Competitive Environment: A New Institutional Economics Approach to Foreign Direct Investment Policy Competition between Governments in Europe*. Deutscher Universitäts-Verlag. https://doi.org/10.1007/978-3-8350-9109-2

Dunning, J. H. (1988). The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions. *Journal of International Business Studies,* *19*(1), 1–31. https://doi.org/10.1057/palgrave.jibs.8490372

Dunning, J. H., & Lundan, S. M. (2008). *Multinational enterprises and the global economy* (2nd ed). Edward Elgar.

EU. (2020). *Regional State Aid | Fact Sheets on the European Union | European Parliament*. https://www.europarl.europa.eu/factsheets/en/sheet/101/regional-state-aid

García, F., Jin, B., & Salomon, R. (2013). Does inward foreign direct investment improve the innovative performance of local firms? *Research Policy,* *42*(1), 231–244. https://doi.org/10.1016/j.respol.2012.06.005

Ginevičius, R., & Šimelytė, A. (2011). Government incentives directed towards foreign direct investment: A case of Central and Eastern Europe. *Journal of Business Economics and Management,* *12*(3), 435–450. https://doi.org/10.3846/16111699.2011.599415

Gordon, R. H., & Bovenberg, A. L. (1996). Why Is Capital So Immobile Internationally? Possible Explanations and Implications for Capital Income Taxation. *The American Economic Review,* *86*(5), 1057–1075.

Gorg, H., & Greenaway, D. (2004). Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment? *The World Bank Research Observer,* *19*(2), 171–197.

Harding, T., & Javorcik, B. S. (2011). Roll Out the Red Carpet and They Will Come: Investment Promotion and FDI Inflows. *The Economic Journal,* *121*(557), 1445–1476. https://doi.org/10.1111/j.1468-0297.2011.02454.x

Hardy, J., Micek, G., & Capik, P. (2011). Upgrading Local Economies in Central and Eastern Europe? The Role of Business Service Foreign Direct Investment in the Knowledge Economy. *European Planning Studies,* *19*(9), 1581–1591. https://doi.org/10.1080/09654313.2011.586180

Havránek, T., & Iršová, Z. (2010). On the Intensity of International Subsidy Competition for FDI. *Theoretical and Applied Economics,* *17*(2), 25–54.

Hlaváček, P., & Bal-Domańska, B. (2016). Impact of Foreign Direct Investment on Economic Growth in Central European Countries. *Engineering Economics,* *27*(3), 294–303. https://doi.org/10.5755/j01.ee.27.3.3914

Hlaváček, P., & Janáček, J. (2019). The Influence of Foreign Direct Investment and Public Incentives on the Socio-Economic Development of Regions: An Empirical Study

from the Czech Republic. *E&M Economics and Management, 22*(3), 4–19. https://doi.org/10.15240/tul/001/2019-3-001

Ják, I., & Vondráčková, M. (2017). The perception of selected aspects of investment attractiveness by businesses making investments in the Czech Republic. *E&M Economics and Management, 20*(3), 118–132. https://doi.org/10.15240/tul/001/2017-3-008

Kantorová, G. (2016). *Integrace čínského akciového trhu s asijskými a vyspělými světovými trhy [Integration of the Chinese stock market with Asian and developed world markets]* (Diploma thesis). The VSB – Technical University of Ostrava.

Kincl, M. (2003). *Investiční pobídky jako forma veřejné podpory [Investment incentives as a form of public support]*. Linde.

Kokko, A., & Kravtsova, V. (2008). Innovative capability in MNC subsidiaries: Evidence from four European transition economies. *Post-Communist Economies, 20*(1), 57–75. https://doi.org/10.1080/14631370701865722

Květoň, V., & Blažek, J. (2018). Path-development trajectories and barriers perceived by stakeholders in two Central European less developed regions: Narrow or broad choice? *European Planning Studies, 26*(10), 2058–2077. https://doi.org/10.1080/09654313.2018.1509061

Lenaerts, K., & Merlevede, B. (2018). Indirect productivity effects from foreign direct investment and multinational firm heterogeneity. *Review of World Economics, 154*(2), 377–400. https://doi.org/10.1007/s10290-017-0298-9

Li, C.-S. J., Henley, J., Ansell, J., & Dong, T.-P. (2011). Location-Specific Factors, Localisation Strategy, and Firm Performance: A Case Study of Taiwanese Manufacturing Mne Subsidiaries Investing in China. *Tijdschrift Voor Economische En Sociale Geografie, 102*(4), 426–440. https://doi.org/10.1111/j.1467-9663.2010.00646.x

Lim, D. (1983). Fiscal incentives and direct foreign investment in less developed countries. *The Journal of Development Studies, 19*(2), 207–212. https://doi.org/10.1080/00220388308421859

Mallya, T., Kukulka, Z., & Jensen, C. (2004). Are incentives a good investment for the host country? An empirical evaluation of the Czech National Incentive Scheme. *Transnational Corporations, 13*(1).

Merikull, J., Poltimäe, H., & Paas, T. (2013). International Technology Diffusion: The Case of Central and Eastern European Countries. *Eastern European Economics, 51*(2), 21–38. https://doi.org/10.2753/EEE0012-8775510202

Oman, C. (2000). *Policy competition for foreign direct investment: A study of competition among governments to attract FDI*. Paris: Development Centre of the Organisation for Economic Co-operation and Development. Retrieved from https://www.oecd.org/mena/competitiveness/35275189.pdf

Pavlínek, P., & Žížalová, P. (2016). Linkages and spillovers in global production networks: Firm-level analysis of the Czech automotive industry. *Journal of Economic Geography, 16*(2), 331–363. https://doi.org/10.1093/jeg/lbu041

Plojhar, M., & Srholec, M. (2004). Politická ekonomie investičních pobídek [Political economy of investment incentives]. *Politická Ekonomie [Political Economy], 52*(4), 449–464. https://doi.org/10.18267/j.polek.469

Schwarz, J., Bartoň, P., Bolcha, P., Heřmanský, P., & Mach, P. (2007). *Analýza investičních pobídek v České republice [Analysis of investment incentives in the Czech Republic]*. Prague University of Economics and Business.

Šimanová, J., & Trešl, F. (2011). Vývoj průmyslové koncentrace a specializace v regionech NUTS 3 České republiky v kontextu dynamizace regionální komparativní výhody [Development of industrial concentration and specialization in NUTS 3 regions of the Czech Republic in the context of dynamization of regional comparative advantage]. *E&M Economics and Management, 11*(1), 38–52.

Šimelytė, A., & Liučvaitienė, A. (2012). Foreign Direct Investment Policy–Friendly Business Environment in R&D Sectors: Baltic States versus Visegrad Countries. *Journal of East-West Business, 18*(1), 66–93. https://doi.org/10.1080/10669868.2012.663737

Teixeira, A. A. C., & Fortuna, N. (2010). Human capital, R&D, trade, and long-run productivity. Testing the technological absorption hypothesis for the Portuguese economy, 1960–2001. *Research Policy, 39*(3), 335–350. https://doi.org/10.1016/j.respol.2010.01.009

Thomas, K. P. (2000). *Competing for Capital: Europe and North America in a Global Era*. Georgetown University Press.

Thomas, K. P. (2007). The Sources and Processes of Tax and Subsidy Competition. In

A. R. Markusen (Ed.), *Reining in the Competition for Capital* (pp. 43–56). Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. https://doi.org/10.17848/9781429492065.ch2

Tomsik, V., & Kubicek, J. (2006). *Can Local Content Requirements in International Investment Agreements Be Justified?* (NCCR Trade Regulation Working Paper No. 2006/20). Bern: NCCR. https://doi.org/10.2139/ssrn.1092840

UNCTAD (Ed.). (2004). *Incentives*. UN.

Velde, D. (2001). *Policies towards foreign direct investment in developing countries: Emerging best-practices and outstanding issues.* (Working Paper). London: Overseas Development Institute. Retrieved from https://odi.org/en/publications/policies-towards-foreign-direct-investment-in-developing-countries-emerging-best-practices-and-outstanding-issues/

Viturka, M. (2007). *Regionální ekonomie a politika II [Regional economics and politics II]*. Brno: Masaryk University.

Yanikkaya, H., & Karaboga, H. (2017). The Effectiveness of Investment Incentives in the Turkish Manufacturing Industry. *Prague Economic Papers, 26*(6), 744–760. https://doi.org/10.18267/j.pep.641

Zamrazilová, E. (2007). Přímé zahraniční investice v české ekonomice: Rizika duality a role trhu práce [Risks of duality and the role of the labour market]. *Politická Ekonomie [Political Economy], 55*(5), 579–602. https://doi.org/10.18267/j.polek.614