

THE EFFECTIVENESS OF INDUSTRIAL ZONES SUPPORT IN THE CZECH REPUBLIC

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Introduction

As the transition from centrally planned economy to a market system started during the 90s, it became clear that the transition economies needed to invest heavily in order to modernize their obsolete capital stock and become competitive on the world market [10]. Investment incentives and the promotion of industrial zones has become one of the most debated issues for experts, especially in connection with the effect of foreign direct investments on economies at both the national and regional level. FDIs are frequent themes in monographs and papers mainly where a small open economy, such as the economy of the Czech Republic, is concerned, e.g. Wokoun, Tvrdon, Novotny and others [12], [17]. With due regard to this aspect, the aim of this paper is to assess the effectiveness of industrial zones support as a tool on the part of the regional development policy under current economic conditions in the Czech Republic. The assessment focuses on some industrial zones support which was provided by the Ministry of Industry and Trade in the Czech Republic (MIT) or, more precisely, the CzechInvest agency within the framework of the Programme for Industrial Zones Development Support, the Programme for Business Zones and the Infrastructure Support and the Investment Incentives System. This paper's main data source is the data set obtained by means of empirical research carried out by authors from various industrial zones Kolin-Ovcary, Nosovice, Most Joseph, Liberec South, Plzen – Borska pole, Pisek – Cizovska, Zlin East, Sumpperk and Hodonin Kapriska. Another important source of information was an overall analysis of the financial indicators arising from data observed

among all the economic subjects in the supported industrial zones mentioned above. That makes this paper significantly different in comparison with other studies [4], [13] as it provides a more real and flexible view of this issue. The final report by the Deloitte company is based on all available statistical data only and its results are extremely positive when it comes to investment incentives impacts on the creation of work places, the development of wages, its fiscal impact, export, co-operation with universities, R&D and know-how mobility. The study undertaken by Schwarz et al. [13] is also based on some available general statistical data whereby it provides a totally different assessment of investment incentives effects. In short, the results are negative in all criteria targeted in the study, i.e. that investment incentives have not contributed to a reduction in regional disparities with respect to unemployment rates, but they are effective from the viewpoint of the cost of workplaces, whereby the state budget expenditure seems to highly exceed its income, etc. Moreover, from the regional point of view, as the long-term support for economic development of regions (including privileging regions with high unemployment rates within the system of investment incentives) has not led to an anticipated improvement in their positions, it is crucial to make some necessary steps in order to ensure a serious change in their contemporary development strategy (this applies mainly to the structurally damaged regions of Karlovy Vary, Ústí n. L. and Moravia-Silesia) [16]. The overall impacts of investment depend largely on the ability of local/regional economy and society to take advantage of incoming capital flows [19].

Some Theoretical Background to Assess the Effect of Foreign Direct Investment on Regional Economies

The FDI inflow has the following effects on the host economy, both direct and indirect. Direct effects result from realization of investment and are more or less expressible. Indirect effects appear as secondary effects and may also be called externalities. It is quite difficult to quantify them. While direct effects appear in the short term period, indirect effects do not make themselves felt any earlier than in the long term.

Globalization, together with technical innovations, brings worldwide investment opportunities to companies. A foreign direct investment could be the way to expand on international or other national markets [8]. One important aspect, when assessing the effects of foreign direct investment, is its impact on the labour market. From this point of view, it results in the creation of new work places thus reducing the level of unemployment. However, direct foreign investment into already existing companies is often connected with a process of restructuring and may also result in a job reduction. In connection with the labour market, it is also possible to identify some crowding-out effects caused by limiting of domestic competitors' production and that is significant especially in the case of „market-seeking“ investments which are mostly made in order to enter an existing market or establish a new market.

The essential effect on the field of the labour market may be seen from the indirect creation of workplaces in the supply companies. A new investor may either strengthen relationships with domestic suppliers or cancel all previous cooperative relationships and prefer to import supply components [18]. In the first case, very positive effects would appear, especially in the field of employment. In the second case, there is the threat of the loss of jobs. In general, companies with foreign participation provide above-average wages. This may be considered to be a positive phenomenon only when above-average wages respond to the labour productivity rate. The presence of above-average wages in foreign companies induces an increase in wage level in domestic companies.

Another positive effect for a host economy is the technological transfer leading to higher productivity and thus the level of competitiveness of such economies. The transfer of

technology is one of the key aspects to supporting foreign direct investments [9]. Moreover, supranational companies mostly employ new technologies so they are considered tools for dissemination of progressive technologies [15]. In this context, direct and indirect technological transfers may be recognized. A direct technology transfer signifies an ongoing transfer between the headquarters and their branch offices in a host economy. The indirect transfer of technology (technological spill-over) signifies in fact the ultimate reduction of the technology gap (the difference in productivity between the domestic companies and those with foreign participation) based on the diffusion process in which a key role is played by workers changing their employer [14]. The strongest technological transfer may be identified when „market-seeking“ investments such as consultancy, logistics or distribution network are involved.

According to Dunning the transfer intensity is determined by the position of a company with foreign participation in the national corporation production chain, for example an assembly plant or a more autonomous type of production [5]. Blomström, Sjöholm claim that the level of technology transfer depends on certain characteristics specific to the host economy [2]. Fallon and Cook point out that, even though foreign direct investments are generally considered beneficial for the further development of regional economies, the final results are not so clear [7]. FDI and host country relations have their limits due to the companies' top management being distant and the decision-making autonomy is weak. Regional companies play a subordinate role, whereby the production is not so sophisticated and sales lines lie below the corporate level as a whole.

Foreign direct investments have a significant influence on the balance of payments. A current account deficit can be financed by the inflow of direct foreign investment. An extremely positive impact on the balance of payments is apparent when „cost-seeking“ investments are involved as they are essentially export-oriented. Cost-seeking investments are focused on low prices of inputs and sources (labour, natural resources, etc.). Thus, foreign direct investments encourage the subsequent penetration of the parent company markets and later ultimately those markets in which sister companies operate.

Direct foreign investments spur on the export potential of the region or state [3]. The share of reinvested earnings is the highest in the early life stages of the investment. During this period, foreign investors may also take advantage of tax holidays [11], [14].

Foreign direct investment often contributes to the strengthening of the protection and enforcement of property rights, to the streamlining of public administration, to the implementing of higher levels of entrepreneurial culture and to the opening the economy [6]. This results from the transformation of a home country's investment standard due to the introduction of international investment standards.

Direct foreign investments, in addition to their positive effects, may also give rise to negative consequences. There is, for example, the problem of the hostile takeover motivated by the elimination of competitors [1]. Direct foreign investments may also result in a unilaterally national or regional focus on the part of the economy which thereby increases the risk of economic recession. With respect to the Czech Republic, a strong dependence on the automotive industry is often mentioned in this context.

1. Assessment of Industrial Zones by Means of an Empirical Survey

The following part of this paper introduces the results of the empirical investigation within the industrial zones of Kolin – Ovcary, Nosovice, Most Joseph, Liberec South, Plzen – Bory fields, Pisek – Cizovska, Zlin East, Sumperk and Hodonin Kapriska. All industrial zones were visited several times during the empirical investigation. The sources of information came in the form of conducted interviews carried out with the management of localized businesses and local government representatives. The empirical investigation was carried out in the first half of 2010. From examination of the cases studied, the following findings relating to regional development emerged:

- **Firms in the investigated industrial zones have a positive impact on the regional labour market.**

A key regional employer, the EPCOS, is located in the industrial zone of Sumperk. The industrial zone Liberec South is crucial for its impact on the labour market not only in Liberec

but also the Frydlant. Industrial zone Borska Pole reacts to the existence of a technically oriented free labour force left behind by virtue of the no longer in existence firm of Skoda Plzen. The Nosovice industrial zone is a key location with a regional-wide impact on the labour market. Also, the industrial zones of Hodonin – Kapriska, Zlin – East or Pisek may be evaluated similarly. In these zones, firms make use of a freed up labour force. This in turn contributes to a higher possibility for the economic potential in the region.

The TPCA (industrial zone Kolin – Ovcary) company is located in a region with a limited amount of freed up labour force (this disadvantage in the labour market has been offset by other factors, such as transport accessibility). The regional market reacted to this new investor by increasing the price of labour, thereby improving considerably the level of their disposable income. On the other hand, there is a negative impact related to this, as the increase in labour costs drove out a section of economic activities (crowding-out effect). The positive effects of this industrial zone on the regional labour market are thus very limited.

The industrial Zone Joseph in Most falls short of its planned results and therefore its positive impact on increasing the regional level of employment remains behind expectations. This should be evaluated in the context that this industrial zone is located in a seriously structurally affected region that exhibits high unemployment rates and, therefore, the existence of an available labour force for a long time. The industrial Zone Joseph in Most possesses an untapped economic potential.

Despite these critical remarks concerning the industrial zones Kolin – Ovcary and Joseph in Most, the studies clearly reveal the positive impact of companies on the regional or local labour markets.

- **Companies in industrial zones contribute to technological development by means of industrial restructuring.**

The companies in the industrial zones selected for this research, may be divided into three categories according to their contribution to technological development. The first category consists of companies that are subsidiaries of a parent company and which function as assembly plants. Even though these companies

do not implement their own research, their technological contribution is quite significant. They are in fact the intermediate bodies in the process of the know-how transfer from multinational corporations to national or regional economies, thereby having an impact on their efficiency. The acquired know-how then diffuses throughout the carriers, especially in the case of employees. In this context, this may be considered an adaptive behavior according to the classical triad of Schumpeterian patterns of the innovation process, or as "invention-innovation-imitation". In general though, those companies located in the surveyed areas mostly do not become technology and innovation centres. The second category is represented by companies with their own significant research to implement innovations, for example the company Tescoma. The third type may then be defined as companies floating between the first and second categories. Often, these are subsidiaries empowered by significant autonomy.

▪ **Companies in industrial zones affect small and medium-sized businesses in a positive way.**

In industrial zones, large companies are located on a larger scale, small and medium-sized firms' representation is only very limited. To determine the nature of the relationship between small and medium-sized enterprises and large enterprises, two factors need to be taken into account; the general situation in the labour market (see the crowding out effect), and the supplier-customer relationship. The case studies dealt with large companies using mainly a freed up labour force in this regard, whereby the participation of small and medium-sized enterprises was very limited. In the framework of the completed case studies, the only exception standing alone is the situation in Kolin – Ovcary. In terms of supplier-customer relationships, it creates significant demand incentives for small and medium-sized businesses. Besides their main activities, large companies use small and medium sized businesses for service activities (such as catering, maintenance, etc.).

▪ **Industrial zones improve the business image per se**

Companies in industrial zones are positive examples of successful companies. They

create a positive model, increasing the investment attractiveness of the regions and subsequently that of the Czech Republic internationally. The image of each region is a very important complement to quantifiable localization factors.

▪ **The negative effects on the environment may be considered small**

The industrial zones are an additional burden to the environmental infrastructure (sewage treatment plants, sewers, etc.). They place considerable additional demands on the transport infrastructure (particularly when logistical centres are present). Furthermore, it should be noted that industrial zones negatively affect the landscape, but the extent of this disruption varies from case to case. In this context, however, it is necessary to point out that firms located in industrial zones should be considered environmentally friendly due to ecologically certified technologies; many of the observed firms are holders of such technologies. Moreover, no case study (or industrial zone) was found to identify situations which revealed significant deterioration of the environment.

▪ **The impact of industrial zones on the population's social cohesion may be assessed as neutral**

With regard to social cohesion in the context of the currently investigated industrial zones, no significant problems became apparent. Some cities/ regions faced increased petty crime, especially at the beginning of the firms' existence in the location (see e.g. Pisek – Cizovska). However, after the stabilizing of the workforce, the situation improved. The role of firms located in industrial zones in relation to the support provided to communities for social, cultural, and sporting activities may be evaluated as positive.

2. An Evaluation of Industrial Zones by Means of an Assessment of Firms' Financial Indicators

To assess the effectiveness of the promotion of industrial zones as a key tool for regional development support, an analysis of randomly selected firms operating in supported industrial zones was carried out in addition to the empirical investigation. The survey involved

a total of 127 companies. The analysis focused on issues relating to economic benefits existent in industrial zones (more precisely, the benefits of companies located there).

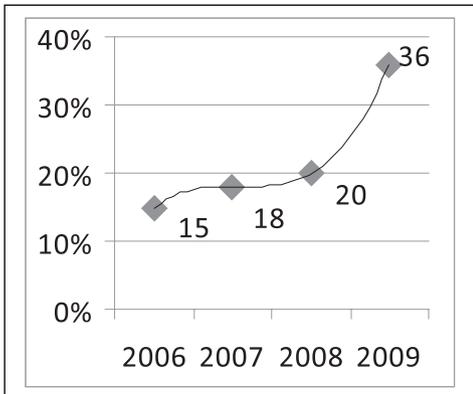
The empirical investigation was designed to show whether industrial zones contribute to the restructuring of industry, i.e. whether the firms located there are progressive in nature. Since the register of economic entities (or records of businesses) has been shown to be inaccurate and the subsequent inclusion of companies in the NACE misleading, companies were marked as progressive on the basis of the investigations of their real activities within the industrial zones. To determine the level of innovation or more precisely, that of the economically progressive companies, 3 criteria were selected:

- Environmental friendliness (e.g. certified technology).
- Introduction of new technologies, research activities, product development.
- Performance in the field of education.

An innovative company should meet the criterion of environmental friendliness in addition to one of the following two criteria.

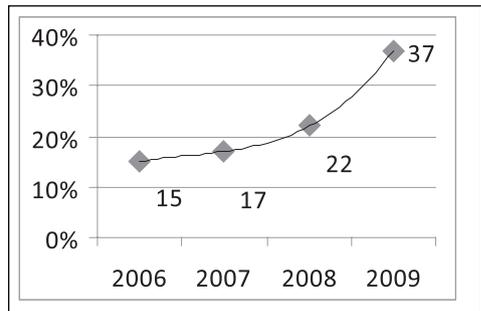
In total, according to these criteria, 39 of the 127 companies observed have been declared progressive, i.e. about 30 %, the highest proportion of these companies emanates from the automotive industry (31 %), followed by engineering (25 %). It is possible to confirm a dynamic increase in the share of progressive companies' total revenues on the total of all companies, from 15 % in 2006 to 36 % in 2009.

Fig. 1: Share of Total Revenues – Progressive Companies



Source: authors

Fig. 2: Share of Total Costs – Progressive Companies

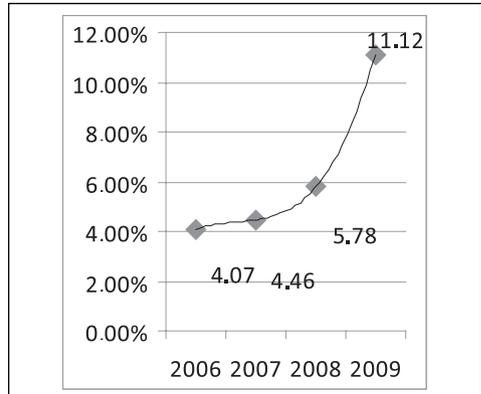


Source: authors

The average revenues growth rate of progressive companies has reached 51.6 % annually. A similar evolution may be seen when considering the share of total costs from 2006 to 2009. The share of progressive companies rose from 15 % to 37 % (Figure 2). The average growth rate of production costs reached 56.5 % annually in the case of the progressive companies.

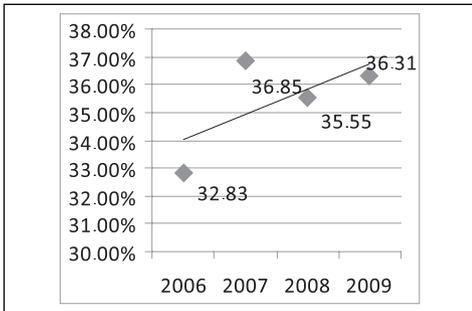
The cost efficiency also increased between 2006 and 2009. The ratio between profit / expenses has increased from an average of 4.07 % to 11.12 % (Figure 3). Under the current economic conditions, this relationship between profits and costs may be considered to be above average. The observed companies therefore contribute to the efficient use of available resources, in addition to the growth of national economy as a whole.

Fig. 3: Profit/Cost Ratio in Selected Companies



Source: authors

Fig. 4: Average Proportion of Revenues from Exports in the Total Revenues



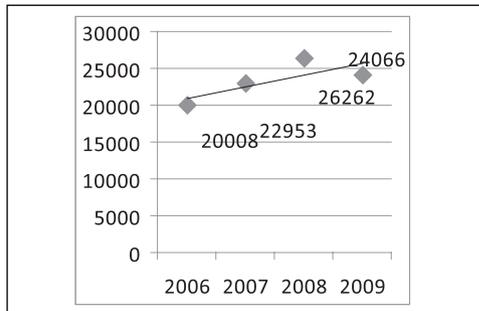
Source: authors

The average amount of exports in selected companies during the above-mentioned period rose from 323 million CZK in 2006 to 576 million CZK in 2009. The average export share of the total revenues from the companies increased from 32.83 % in 2006 to 36.31 % in 2009 (Figure 4). The peak of this ratio was reached in 2007 (36.85 %), i.e. before the peak of the global economic crisis. With regard to the conditions throughout Europe in general or that of the international economy in 2008 and 2009, the increase in the absolute level of export may be assessed very positively. The decline in the proportion of exports in the total revenues of companies in 2008 may be attributed to declining demand in the western areas of the European Union and in the USA. Figures 3 and Figure 4 illustrate significantly positive trend in this context, a success of the investments and its importance for restructuring of the Czech economy. The presented regressions

During the period from 2006 to 2009, the average wage in the companies surveyed increased from 20,008 CZK to 24,066 CZK (Figure 5). In 2009, wages, apparently due to the economic recession, fell by about 2,000 CZK. As a result of the examination of the observed data relating to the wages of employees, it is possible to maintain that the cost of labour in selected industrial companies (or zones) is generally above average. This, once again, may be assessed positively in the context of the usage of economic resources in the economy as a whole. (production factor: labour).

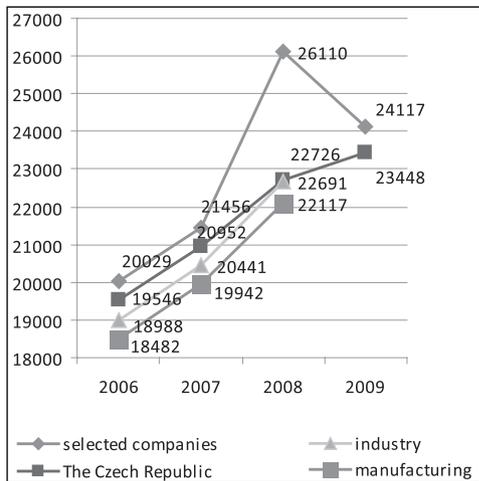
Wages in firms located in industrial zones exceeded the national average in the given period. Firms thus created upward pressure on

Fig. 5: The Average Monthly Wage in Selected Companies (CZK)



Source: authors

Fig. 6: Comparison of Monthly Wages Rates in CZK



Source: authors

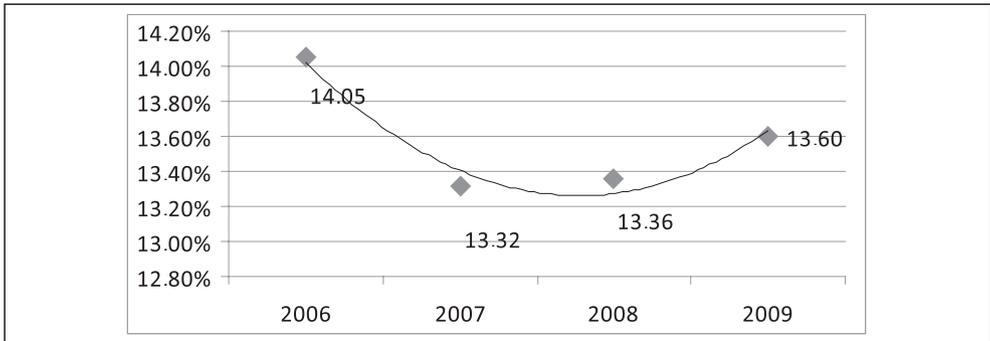
average wage in the Czech Republic (Figure 6). The difference was 1044 CZK in 2006 and 3384 CZK in 2008. Most probably due to the economic recession, the difference decreased on 669 CZK during the following year.

The proportion of university graduates among employees of the companies observed is relatively constant (Figure 7). It ranges between 14.05 % (in 2006) and 13.32 % (in 2007).

In 2006, according to CSO data, the percentage of university graduates within the total number of people employed in the national economy was 14.9 %, then 15.0 % in 2007, and 15.8 % in 2008.

Based on this data, it must be maintained that the percentage of university educated

Fig. 7: The Proportion of University Graduates Among the Employees – in Selected Companies



Source: authors

employees in 127 selected firms located in industrial zones did not reach the national average in the period from 2006 to 2008. In selected industrial zones where mainly manufacturing or transport (logistics) companies are located other services exist only to a very limited extent. The percentage of university educated employees within the sphere of research and development (R&D) may increase in the coming years, together with the further development of technology centres that have adopted support from the Ministry of Industry and Trade in the Czech Republic (MIT), indicating a total departure from "assembly plants" to more advanced subjects. The current trend in the proportion of university graduates in the total number of employees is unclear. The total number of jobs created in the research and development spheres of the observed companies may be assessed as low. During the period reported, the highest number of created jobs was 236 in 2007, the lowest was 128 in 2009. In the above context, the influence of the companies observed (or industrial zones) on the total number of jobs created in the area of research and development in the national economy is positive, but very limited. The analysis results in the following findings related to the usefulness and effectiveness of industrial zones and public support:

- given the high proportion of progressive companies in the activities implemented in the supported industrial zones, the industrial zones contribute in general to a greater dynamism with respect to the economic restructuring in the Czech Republic,

- based on the analysis of the reported companies' profit, the companies in the supported industrial zones contribute to the efficient use of all available resources,
- in the context of the economic development of the selected firms, the export growth with respect to its absolute value may be considered to be stable,
- the wages of employees in industrial zones may be assessed as above average as a result of firms trying to attract a quality workforce,
- the impact of the monitored companies (or industrial zones) on the total number of jobs created in research and development is very limited.

Regarding all the above, industrial zones may be considered to be significant accelerators of secondary sector development per se, with a positive but limited impact on the Quaternary and Quinary aspects.

3. Assessment of Effectiveness of Industrial Zones Promotion as a Key Tool for Regional Development Support

The theoretical foundations, empirical research, and the analysis of economic management (see below) illustrate the impacts of the FDIs on regional economies. Several positive effects of foreign direct investment may be taken into consideration, such as the higher dynamics of industrial restructuring and technological development, the greater use of export potential, the development of small and medium-sized enterprises, the focus on a skilled workforce,

the improvement of the region's business image and, finally, there is the undeniable positive impact on the regional labour markets. Some negatives however do exist (damping effects). These may include transfer-pricing

and the crowding-out effect in the market of production factors. Their performance in the economy, effects on the state budget in the short and medium term, and quantification possibilities are presented in Table 1.

Tab. 1: Positive and Negative Effects of Industrial Zones Support

Positive effects		Manifestation in the economy				Impact on the state budget	Possibility to quantify by expert's estimation	
Higher dynamics of restructuring in industry and technological development	⇒	Higher effectiveness of production factors' usage	⇒	Higher production volume and corporate profit	⇒	Positive – growth of income and indirect tax revenues	Good	Expert estimation resulting from comparison of profits in and out industrial zones
Higher use of export potential	⇒	Additional foreign demand	⇒	Higher production volume	⇒	Positive – indirect tax revenues growth	Difficult	Expert estimation resulting from the share of export in the production volume
			⇒	Production factors price increase causing production volume reduction	⇒	Negative – tax revenues decrease		
Small and medium-sized enterprises development	⇒	Business "mycelium" creation	⇒			Positive in long term period	Minimal	–
Focus on skilled labour	⇒	Maximum of education use	⇒	Higher income of population	⇒	Positive – growth in tax revenues from wages	Good	Expert estimation resulting from comparison of wages inside and outside of the industrial zones
Improvement in the business image of the region	⇒	Additional investments (production capacities)	⇒	Higher production volume	⇒	Positive – growth in tax revenues from both profit and indirect taxes	Minimal	–
Positive effects on both regional and local labour markets	⇒	Higher use of production factors	⇒	Additional higher use of labour	⇒	Positive – growth in tax revenues from wages	Good	Estimation of the share of unemployment with regard to the case studies
					⇒	Positive – decrease of social transfers		
Dumping effects		Manifestation in the economy				Impact on the state budget in the short and medium-term period	Possibility for quantification by expert's estimation	
Transfer-pricing	⇒	Artificial reduction of corporate profits			⇒	Negative – tax revenues decrease	Good	On the basis of case studies and expert estimation
Crowding-out effects in the labour market	⇒	Dampens above mentioned effects			⇒	Negative – tax revenues decrease	Good	On the basis of case studies and expert estimation

Source: authors

To assess the effectiveness of promoting industrial zones as a key tool of regional development support, it is crucial to consider the conditions resulting from the return of spent funds. On the basis of the above mentioned results, a model of industrial zones support impacts on the state (public) budget has been compiled:

$$TE = m \cdot TRB + RST - SBE - SAC, \quad (1)$$

where

$$TRB = f(i \cdot AP; j \cdot AP_r; k \cdot AIP) \quad (2)$$

$$RST = f(n \cdot NE \cdot STU) \quad (3)$$

$$AP = f(AP_r; IRTD; HEP; TP; COELM) \quad (4)$$

$$AP_r = f(IRT D; HEP; TP; COELM) \quad (5)$$

$$AIP = f(n \cdot NE), \quad (6)$$

while: TE – total effect of industrial zones support on the state budget, TRB – tax revenues of the budget, SBE – state budget expenditure, SAC – state administrative costs, RST – reduced social transfers (unemployment benefits), i – additional profit tax rate (direct taxes), AP – additional profit (as a result of the industrial zones' establishment and further existence), j – additional production tax rate (indirect taxes), AP_r – additional production (as a result of the industrial zones'

establishment and further existence), k – additional income tax rate of the population (including insurance), AIP – additional income for the population, m – crowding-out coefficient (1 minus share of industrial zones that would arise even without state support), IRTD – Industrial restructuring and technological development, HEP – Higher export potential, FSL – focus on skilled labour, PILM – positive influence on the labour market, TP – transfer pricing, COELM – crowding out effects of the labour market, NE – number of employees in industrial zones, n – crowding-out coefficient (1 minus proportion of employees who would seek jobs outside industrial zones), STU – social transfer to the unemployed (especially unemployment support)

The model is applied in three variants, "pessimistic", "medium" and "optimistic", for the period from 2006 to 2009. The model is based on the observed support implemented in the period 1998 to 2006. The total range of assisted areas reaches 4125 ha. The supported industrial zones created up to 133,100 jobs. The occupied area in industrial zones reaches 73 % (Table 2). The total state support for industrial zones amounts to 18.8 billion CZK (Table 3).

Tab. 2: The Size of the Industrial Zones Supported, Occupancy and Jobs Created

Year	Size of supported areas (ha)	Cumulative area (ha)	Occupancy percentage	Jobs directly created (cumulative)
2006	1,017	4,164	70 %	63,830
2007	29	4,125	70 %	88,228
2008	0	4,125	71 %	110,000
2009	0	4,125	72 %	121,000
2010	0	4,125	73 %	133,100

Source: Ministry of Industry and Trade in the Czech Republic, CzechInvest Agency

Tab. 3: State Budget Funds Spent in Support of Industrial Zones

Year	Subsidies within Programmes (mil. CZK)	Incentives to create jobs (mil. CZK)	Incentives to retraining (mil. CZK)	Total state budget expenditure (mil. CZK)
2006	1,600	214	12	1,826
2007	1,657	276	8	1,941
2008	1,600	300	10	1,910
2009	1,600	300	10	1,910
2010	1,600	300	10	1,910

Source: Ministry of Industry and Trade in the Czech Republic, CzechInvest Agency

When analysing the impact on the state budget based on empirical investigation and the following analysis, some accompanying effects could be determined such as: the "industrial restructuring and technological development", evaluated by level of the efficiency rate (profitability) of firms and higher production volume; "higher export potential",

evaluated by means of increased production; "the focus on skilled strength", determined by the difference between the average wage rate in the CR and that within the industrial zones; and the "positive impact on the labour market", determined by the effect of reducing unemployment. The consequences of this model are described in Table 4.

Tab. 4: Analysis of the Impact of Industrial Zones Support in the State Budget in 2009

Variant		Pessimistic	Medium	Optimistic
Industry restructuring and technological development	Firms are more effective (profitable) by	5 %	10 %	15 %
	Production increases by	2 %	4 %	8 %
	Profit realized in industrial zones (in thousands of CZK)	89,881,057		
	Total production (revenues) in industrial zones (thousands CZK)	691,706,046		
	Additional profit (thousands CZK)	4,494,053	8,988,106	13,482,158
	Additional production (thousands CZK)	13,834,121	27,668,242	55,336,484
	Effect on the state budget (profit from taxes, in thousands CZK) with 20% of tax rate	898,811	1,797,621	2,696,432
Effect on the state budget (indirect taxes, in thousands CZK) with 5% tax rate	691,706	1,383,412	2,766,824	
Higher export potential	Production (export) increased by	2.0 %	4 %	8 %
	Total export in industrial zones (thousands CZK)	295,057,306		
	Additional production, resp. export (thousands CZK)	5,901,146	11,802,292	23,604,585
	Effect on state budget (indirect taxes) with 5%... tax rate	295,057	590,115	1,180,229
Focus on skilled labour	Wage per employee increased by (thousands CZK/year)	8,028		
	Average wage in CR (thousands CZK /year)	281		
	Average wage in industrial zone (thousands CZK/year)	289		
	Number of jobs	133,000		
	Total additional wages (thousands CZK/year)	1,067,724		
	Effect on the state budget (thousands CZK) with 40% tax rate-expert assessment of the compound tax quota.	427,090		
Positive impact on the labour market	Estimated proportion of employees within the total number of employees in industrial zones transferred from the „unemployed“ category to „employed“	0.5 %	1.0 %	2 %
	Total additional jobs	665	1,330	2,660
	Additional wage available for taxation (thousands CZK/year)	2,309,444	4,618,888	9,237,776
	Effect on the state budget (thousand CZK) with 40% tax rate	923,778	1,847,555	3,695,110
	Social benefits savings (thousands CZK/person/year)	120		
	Effect on the state budget in thousands CZK (social benefits savings)	79,800	159,600	319,200
Total positive effects of industrial zones for the state budget (thousands CZK)		3,316,241	6,205,393	11,084,885
Total positive effect (in thousand CZK), provided that no state aid would be implemented in 75 % of industrial zones		829,060	1,551,348	2,771,221
Total costs of the state budget (thousands CZK)		2,010,000		
In particular subsidies		1,910,000		
In particular administrative costs		100,000		

Source: authors

Under certain conditions, the overall positive effect of the state support reached 0.83 billion CZK in 2009, considering the pessimistic variant; the medium variant shows the effect of 1.55 billion CZK whereby the optimistic scenario demonstrates the effect of 2.77 billion CZK. In a similar way, results for 2006, 2007 and 2008 were obtained: for the period from 1998 to 2005 and 2010 to 2030, the estimation has been achieved by extrapolation. Opportunity costs and additional opportunities are discounted by 5 %.

As far as the medium variant is concerned, the estimated revenues of the state budget will reach 35.1 billion CZK in 2030. A more pessimistic variant shows revenues to the amount of 19.1 billion CZK, and the most optimistic scenario those amounting to 62.5 billion CZK. In the case of the estimated expenditures, all three variants reach 21.5 billion CZK. Thus, in the pessimistic scenario, the state loses 2.4 billion CZK due to its support for industrial zones. In the optimistic scenario, the state receives a positive difference value of 41 billion CZK and, in case of the median variant, 16 billion CZK, which means that each CZK invested by the state results in returns valued at 1.63 times the original input.

Conclusion

Investment incentives and related support of industrial zones is becoming an increasingly debated subject for experts, especially in the context of the impact of foreign direct investment. The FDI inflow has many consequences for the host economy. The authors of this paper focus on assessing the effectiveness of promoting industrial zones as a key tool of regional development support within the economy of the Czech Republic.

The research shows that firms in industrial zones have positive effects on the regional labour market, that companies in industrial zones contribute to technological development through the restructuring of industry and affect SMEs positively, also that industrial zones improve the business image of the region as a whole. The negative impact on the environment is low and the impact of industrial zones on social cohesion may be considered as neutral.

The analysis of financial indicators of companies in industrial zones shows that,

given the high proportion of progressive companies in economic activities throughout the supported industrial zones, these companies contribute to higher dynamics of the economic restructuring in the Czech Republic. Firms contribute to the efficient use of available resources, creating greater added value per se. In the context of economic development, it is also possible to evaluate positively stable export growth in its absolute value, the wages of workers in industrial zones may be assessed as above average as firms try to attract a quality workforce. The proportion of university graduates in the total number of employees in industrial zones can be evaluated positively from the sector point of view, but the general trend is still not foreseeable. The contribution on the part of those companies observed (or industrial zones) to the total number of jobs created in R&D is very limited. According to the information provided above, industrial zones may be considered as significant accelerators of secondary sector development as such and, to a relatively lesser extent, also for the Quaternary and Quinary.

The authors assessed both the positive and negative effects of industrial zones promotion when it comes to foreign direct investment incentives. Some positive effects of foreign direct investment are the higher dynamics of industrial restructuring and technological development, the greater use of export potential, the development of small and medium-sized enterprises, a focus on a skilled workforce, the improvement of the region's business image, the positive impact on the regional (local) labour markets. With regard to some negative (damping) effects, these may include transfer-pricing and the crowding-out effect on the production factors market.

To assess the impact of the state support in industrial zones on the state budget, a complex system has been compiled to assess the level of tax revenues for the state budget, such as its expenditures, administrative costs of the state, reduced social transfers (unemployment benefits), additional profits tax rate (direct taxes), additional profit (as a result of industrial zones establishment and further existence), additional production tax rate (indirect taxes), additional production (as a result of industrial zones establishment and further existence), additional income of the population tax rate

(including insurance), additional income of the population, the crowding-out coefficient (1 minus proportion for industrial zones that would arise even without state support).

The model has been applied in three variants; "pessimistic", "medium" and "optimistic." The model has implemented data from the period of 2006 to 2009. In the medium variant, the estimated state budget revenues will reach 35.1 billion CZK in 2030. The pessimistic variant doesn't show more than 19.1 billion CZK. The optimistic scenario projects 62.5 billion CZK. Estimated expenditures seem to remain at the same level of 21.5 billion CZK for all three variants. With regard to the pessimistic scenario, the state budget loses 2.4 billion CZK with its industrial zones support. According to the optimistic scenario, the state will achieve a positive difference value of 41 billion CZK, and, in case of the medium variant, the state will gain 16 billion CZK, which means that each CZK invested by the state will result in returns at the 1.63 level.

Based on the above mentioned facts, it may be well argued that industrial zones promotion amounts to an effective tool for regional economic development support in the Czech Republic.

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References

- [1] BENÁČEK, V. *Foreign Direct Investment in an Economy of Transition – The Case of the Czech Republic: Evolution, Problems and Policy Issues*. Brusel: Science Report, 1999.
- [2] BLOMSTRÖM, M., SJÖHOLM, F. Technology Transfer and Spillovers: Does Local Participation with Multinationals Matter? *NBER Working Paper Series*. 1998, No 6816. 17 p.
- [3] BLOMSTRÖM, M., KOKKO, A. Multinational Corporations and Spillovers. *Journal of Economic Surveys*. 1998, Vol. 12, Iss. 3, pp. 247–277. ISSN 1467-6419.
- [4] DELOITTE. *Finalni zprava vyhodnoceni dopadu investic cerpajících pobidky a zhodnocení efektivity agentury CzechInvestu* [online]. Praha: Deloitte, c2010 [cit. 2010-02-15]. 7 p. (PDF). Available from: <<http://www.czechinvest.org/data/files/analyza-dopadu-pobidek-na-cr-2050-cz.pdf>>.
- [5] DUNNING, J.H. Re-Evaluating the Benefits of Foreign Direct Investment. *Transnational Corporations*. 1994, Vol. 3, Iss. 1, pp. 27–51. ISSN 1014-9562.
- [6] DVORACEK, J. *Spolecne nadnarodni podniky*. Praha: Oeconomica, 2006. 200 p. ISBN 80-245-1029-4.
- [7] FALLON, G., COOK, M. Exploring the Regional Distribution of Inbound Foreign Direct Investment in the UK in Theory and Practice: Evidence from a Five-Region Study. *Regional Studies*. 2010, Vol. 44, Iss. 3, pp. 337–353. ISSN 0034-3404.
- [8] HARRISON, M.J. Can Corrupt Countries Attract Foreign Direct Investment? A Comparison of FDI Inflows between Corrupt and Non-Corrupt Countries. *International Business and Economics Research Journal*. 2003, Vol. 2, No. 9, pp. 93–100. ISSN 1537-0754.
- [9] KOKKO, A. *Foreign Direct Investment, Host Country Characteristics, and Spillovers*. Stockholm: Stockholm School of Economics, 1992. 240 p. ISBN 91-7258-342-8.
- [10] LÍZAL, L., ŠVEJNAR, J. *Financial Conditions and Investment during the Transition: Evidence from Czech Firms*. Prague: CERGE-EI, 2000. 43 p.
- [11] MARKUSEN, A.R. *Profit Cycles, Oligopoly and Regional Development*. Michigan: MIT Press, 1985. 376 p. ISBN 97-8026-2512-206.
- [12] NOVOTNÝ, F. Foreign Direct Investment Earnings and their Division in the Czech Republic. *Politická ekonomie*. 2004. Vol. 52, Iss. 6, pp. 741–756. ISSN 0032-3233.
- [13] SCHWARZ, J. et al. *Analyza investicnich pobidek v CR* [online]. Praha: Národohospodářská fakulta VŠE v Praze, c2007 [cit. 2010-02-15]. 81 p. (PDF). Available from: <download.mpo.cz/get/32013/35445/388865/priloha001.pdf>.
- [14] SRHOLEC, M. *Prime zahraniční investice v Ceske republice*. Praha: Linde, 2004. 171 p. ISBN 80-86131-52-1.
- [15] VERNON, R. International investment and international trade in the product cycle. *Quarterly Journal of Economics*. 1966, Vol. 80, Iss. 2, pp. 190–207. ISSN 0033-5533.
- [16] VITURKA, M., WOKOUN, M., KREJČOVÁ, N., TONEV, P., ŽÍTEK, V. The regional relationship between quality of business and social environment: harmony or disharmony? *E+M Ekonomie a Management*. 2013, Vol. 16, Iss. 1, pp. 22–40. ISSN 1212-3609.
- [17] WOKOUN, R., TVRDOŇ, J., DAMBORSKÝ, M. et. al. *Přímé zahraniční investice a regionální*

rozvoj. Praha: Oeconomia, 2010. 204 p. ISBN 978-80-245-1736-0.

[18] ZAMRAZILOVÁ, E. Přímé zahraniční investice v české ekonomice: rizika duality a role trhu práce. *Politická ekonomie*. 2007, Vol. 55, Iss. 5, pp. 579–602. ISSN 0032-3233.

[19] ŽÍŽALOVÁ, P. *TPCA – Případová studie*. 1. vyd. Brno: Trast pro ekonomiku a společnost, 2008. 29 p. ISBN 978-80-254-2223-6.

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Abstract

THE EFFECTIVENESS OF INDUSTRIAL ZONES SUPPORT IN THE CZECH REPUBLIC**Milan Damborský, René Wokoun, Nikola Krejčová**

Economies and state budgets of many countries in the European Union have been calling for a change over the last decade. Expenditures of state and regional budgets should be reduced to improve their final balance. Individual sectors of the economy should review each expenditure item to make sure that funds will be spent effectively as does the Ministry of Industry and Trade in the Czech Republic. The aim of this paper is to assess the effectiveness of industrial zones support as a tool of the regional development policy under current economic conditions in the Czech Republic. This support as an important part of investment incentives was provided by the Ministry of Industry and Trade of the Czech Republic over the period of 2006–2009. The main source for the analysis is the data set obtained in empirical research carried out by the authors of this paper, accomplished economic analysis of economic performance of observed firms and also available statistical data. The observed sample of respondents consisted of firms located in the supported industrial zones.

Key Words: *Industrial zone, foreign direct investment, regional development, investment incentives, local labour market, regional economy, Czech Republic.*

JEL Classification: *O25, R10, R30, R38.*