

THE IMPACT OF INVESTMENT INCENTIVES ON CZECH REGIONAL INDUSTRY SPECIALIZATION AND POSITION IN THE GLOBAL VALUE CHAIN

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Abstract

The aim of this article is based on quantitative research of foreign multinationals using the benefits associated with investment incentives in the Czech Republic and to review the importance of this economic policy instrument for the global competitiveness of Czech regional industry. The investment incentives have been targeted on high-tech industries possessing advanced technologies since 1998. Active support for investment in high-tech industries and investment in high-tech facilities is not as sufficient for technological development as compared to the global trend of multinational companies, i.e. the process of specialization and fragmentation of the global value chain. The key manufacturing industries in terms of FDI inflows into the Czech Republic, the manufacturing of electrical equipment, optical equipment, and automobile manufacturing are evaluated.

Introduction

The Czech Republic was on the threshold of a new era of economic liberalization of the internal economy and foreign trade in 1990's. The process of integration of the Czech Republic among the developed western economies significantly influenced the direction of regional development and regional industrial structure. A lack of capital resources and the loss of traditional manufacturing in the transformation of the Czech economy have been largely solved through privatization and foreign direct investments (FDI) in existing businesses through mergers, acquisitions, joint-ventures or greenfield investment. Since 1998, the Czech Republic has provided investment incentives to local and foreign investors, particularly favoring structurally affected regions. [24] The opinions of professionals about providing public incentives are far from unanimous. Opponents consider investment incentives as a mere bribe to investors without any special value and criticize as overestimated the importance of foreign direct investment as an engine of economic growth. They often argue that foreign investment in assembly plants that have received the promise of investment incentives, in terms of their actual contribution to the domestic economy, is highly questionable in terms of an industrialized country like the Czech Republic, and that they are rather a step backwards. The camp of investment incentive supporters, on the contrary, regards them as a stimulus to economic growth, with the potential to transform states with a minimal industrial tradition into countries with a high share of high-tech production. [19], [20]

The above mentioned arguments were not based on quantitative research. After almost 15 years of the investment incentives system's existence, it is now possible to quantify and assess their impact on regional development with some precision; in order to represent a qualitative and structural change in the economy. The crucial role here is the ability to continuously create innovations. [11], [22] The aim of this paper is to quantify and evaluate the contribution to the development of regional economies at NUTS3 – based on quite extensive

research conducted on 198 foreign multinational companies receiving investment incentives in the Czech Republic.

1 High-tech industries versus fragmentation of the value chain in the global economy

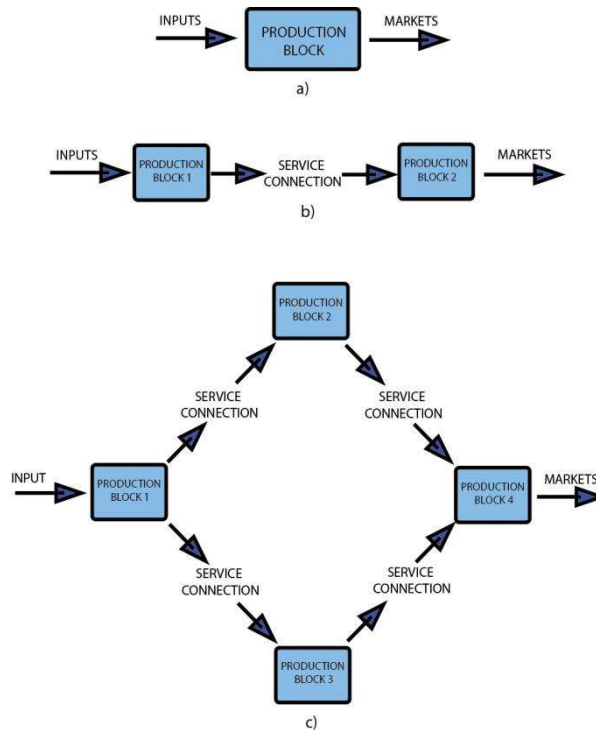
The impact of FDI supported by investment incentives for regional development can be greatly influenced by the type of production that is located in the regions. [2], [15]. Catching up with the economic level of developed countries plays a key role in bringing the level of labor productivity and the economic position in the global production (value) chain, i.e. increasing the share of technology and knowledge-intensive activities, which usually offer a wide range of beneficial effects, such as high wages and profits, the rapid growth of trade and productivity and a high degree of innovation, which is related to the dissemination of positive externalities. These industries are able to compete with quality at a relatively high price. [3], [6], [10], [11], [12]

Investment incentives are targeted at high-tech manufacturing industries. Global competition in these sectors is, however, pushing MNC's not only to search for locations with equipment best suited to their factor intensity of production, but parallel processes towards higher specialization. This leads to the fragmentation of the production chain; respectively the allocation process is divided into phases, which can be implemented in different places, by different owners. Fragmentation allows the localization of production by factor intensity of the various stages of the production chain and not the factor demands of the final product. Therefore a new concept of firms' specializations and national economies is required. [1], [11], [19]

What is important in the global economy, in terms of technological catch-up, is in which fragmented production chain phase are the companies, specialized to the industry sector, under which they fall. [1], [11], [22]

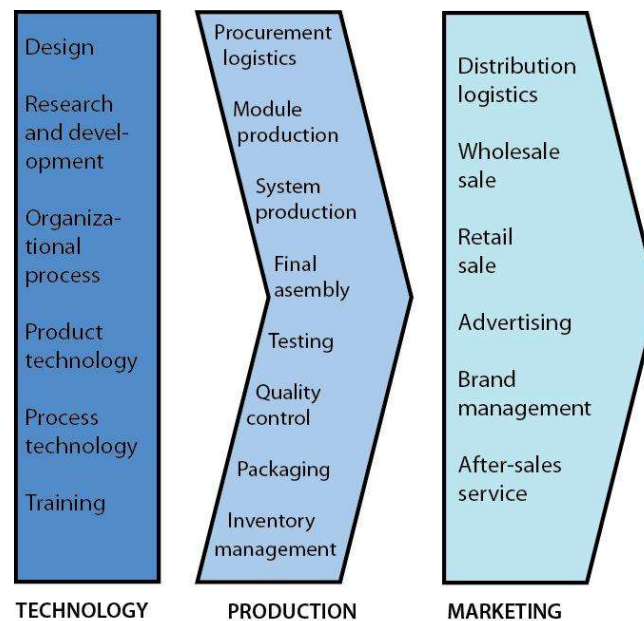
The general framework for the analysis of fragmentation were first presented by authors Jones and Kierzkowski in 1990 and it is shown in Fig. 1, where the first panel describes the traditional manufacturing process – the inputs are arranged and combined to produce the final product. All aspects of production are located in one place. There are, of course, many operations that must be organized, but spatial proximity keeps the cost of this organization at a low level. The second and third panel shows the already fragmented production, located in “blocks”, which are positioned in different locations. Coordination of activities and correlated services are implemented through service lines, which provide, e.g. freight, insurance, telecommunications, quality control and management coordination which provides the connection of production units. [1], [11], [22]

Another conception of the production chain fragmentation is associated with the value chain of production activities in the states UNCTAD World Investment Report 2002: Transnational Corporations and Export Competitiveness (see Fig. 2). From this perspective, an analysis of MNC as a whole is not sufficient, but it is necessary to evaluate activities within the company and their location. [21]



Source: Own, [1]

Fig. 1: General block diagram of the production chain fragmentation in space



Source: Own, [21]

Fig. 2: Fragmented value chain of multinational production

2 The research sources

The MNC's value chain fragmentation problem, with regard to regional development, is conceived of as a risk when the key activity of MNC supported by investment incentives is concentrated in the part of the production (value) chain with low added value, such as assembly plants. [19] This fact is, at the regional level, rather easily detectable by comparing the level of wages and labor productivity in the MNCs with average values in the regional industry. [17], [18]

This main hypothesis will be verified: *“A strong positive contribution of FDI exists, as regards MNCs with investment incentives for regional specialization based together with non-price competitiveness, with reference to specializing in more sophisticated production in manufacturing in comparison with the national labor productivity average.”*

The primary research sources are statistics from issued decisions to grant investment incentives by CzechInvest – published on the web portal <http://www.czechinvest.org>, in the period from 1998 to 1912/2011. The secondary sources are the financial statements and annual reports of foreign MNCs. In the first half of 2012, there were only financial statements and annual reports of companies in 2010 available, which corresponds to a decision on the granting of IP in 2008.

By 2008, a binding commitment to investment incentives was acquired by 244 foreign MNCs. Total FDI amounted to 310 billion CZK. For these firms, it was further examined whether the financial statements and annual reports, as other necessary resources, had been digitized and published on the portal <http://www.justice.cz> (trade register) in the section “Collection of documents”. Data in the desired range were fully or largely digitized for 198 companies, constituting 81.2% of all subjects. The important characteristic is the amount of investment which represents the company, that being 260 billion CZK, i.e. 84% of the total investment. [5]

Attention is focused on the regional manufacturing industry sectors which, in the years 1998 – 2010, had registered the highest increase in the number of employees. Expanding sectors are strongly linked with Czech export specialization and are also the highest recipients of investment incentives in the Czech Republic:

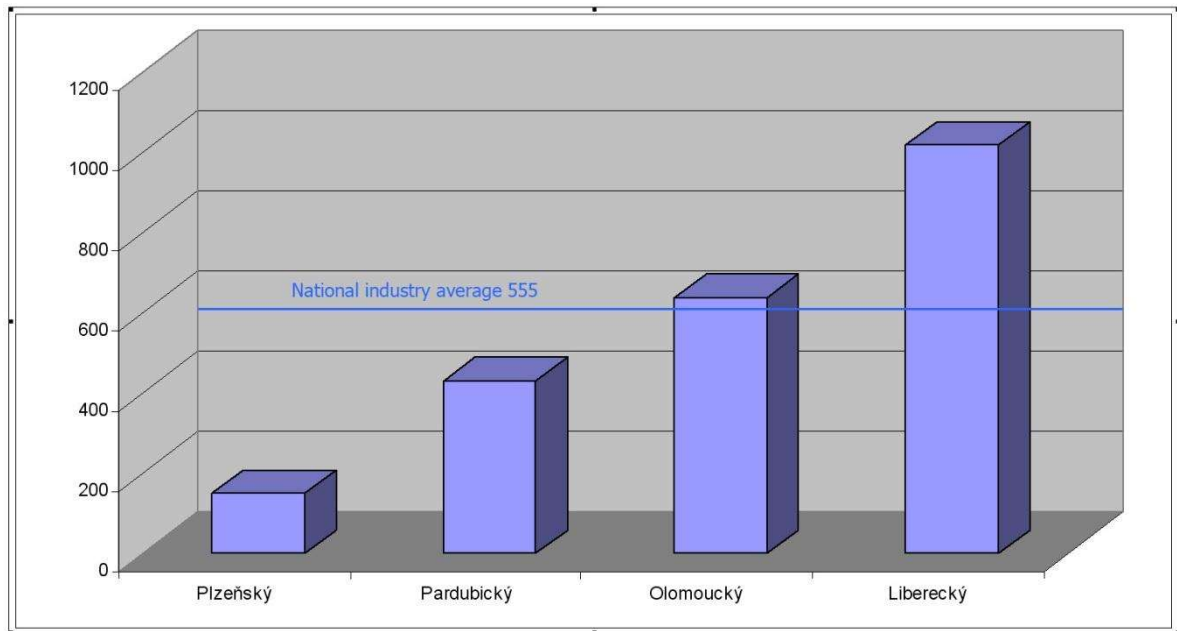
OKEC DL: Manufacturing of optical instruments and electronic equipment (16% of total FDI supported with investment incentives),

OKEC DM: Manufacturing of vehicles (52% of total FDI supported with investment incentives). [17], [18]

If the sector has a higher or increasing level of specialization in the region with regard to the concentration of branches in other regions, we could generally talk about comparative advantage. However, to address the fragmentation of the value chain, the specialization of the region can be based on the manufacturing process with low value added – thus, closely conceived comparative advantage is not sufficient. An important factor is, therefore, labor productivity based on the value added produced. [22]

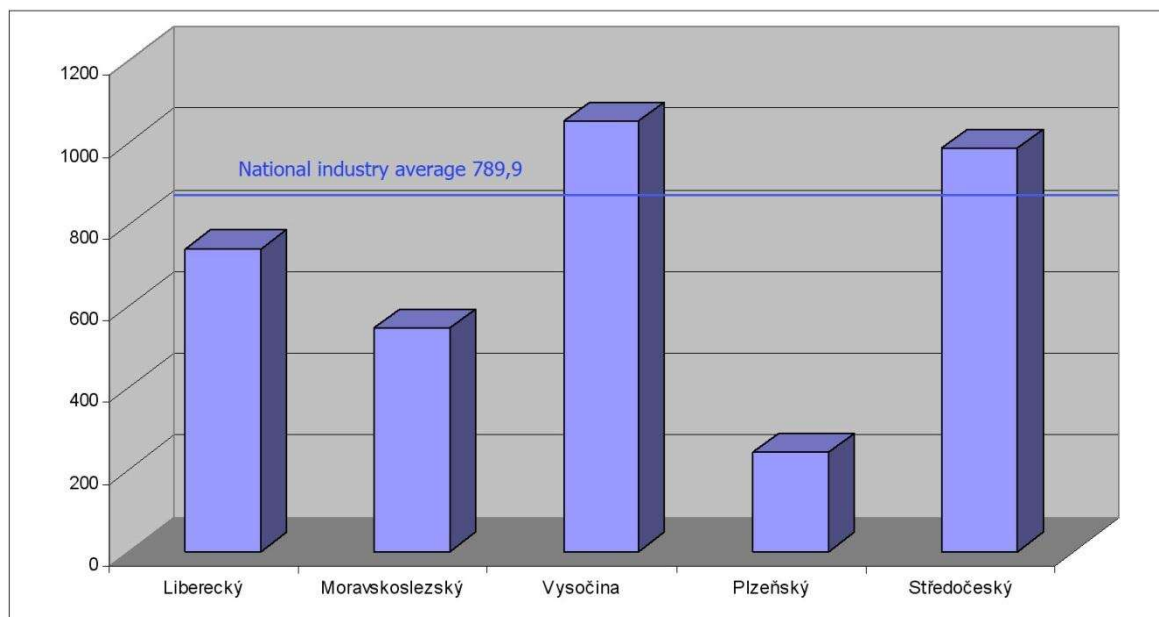
3 The research results

The most important (above average) specialization in the manufacturing of optical and electronic equipment was found in 4 regions – Plzensky, Pardubicky, Olomoucky and Liberecky. Only in the latter two regions, which show a significantly lower degree of specialization and share of FDI, was higher than average labor productivity detected (see Fig. 3). The Pardubicky region revealed an employment in industry DL of 3.25%, and the share of sectoral employment in MNCs had investment incentives amounting to 73.25% (the biggest investors are Foxconn CZ and AVX). The Plzensky region (1.02% and 18.9%) registered significantly lower sectoral productivity than the national sectoral average, (see Fig. 3). [17] [18]



Source: Own, [4], [5], [14]

Fig. 3: Manufacturing of electric and optical equipment in specialized regions: labour productivity per employee in MNCs with investment incentives in comparison with the national sectoral average of labor productivity in 2010 [thous. CZK]



Source: Own, [4], [5], [14]

Fig. 4: Manufacturing of vehicles in specialized regions: labor productivity per employee in MNCs with investment incentives in comparison with the national sectoral average of labor productivity in 2010 [in 1,000s CZK]

In the manufacturing of vehicles (DM), 5 regions with higher than average sectoral specialization were identified – Stredocesky, Liberecky, Plzensky, Moravskoslezsky and Vysocina. Higher than average labor productivity, however, was found only in the Stredocesky region (the largest investor here is Skoda, a. s.) and Vysocina (the biggest investor is Bosch Diesel) – see Fig. 4. MNCs with investment incentives in 2010 contributed to regional employment mostly in the Liberecky region at 1.84% followed by Vysocina

(1.58%), the Stredocesky region (1.35%), the Moravskoslezsky region (0.77%) and the Plzensky region (0.16%). [17], [18]

Even the industry DM region with the highest proportion of sectoral FDI (34.75%) – the Liberec region – has a lower than the national average labor productivity in the sector. Among the non-price competitive regions, concerning those with MNCs specializing in more sophisticated production in the manufacturing of vehicles in comparison with the national labor productivity average – belong to the Vysocina and Stredocesky regions.

Based on the above mentioned research, the hypothesis on the contribution of FDI, as regards MNCs with investment incentives for regional specialization based together with non-price competitiveness cannot be proven.

Conclusion

The aim of this article is based on quantitative research of foreign multinationals using the benefits associated with investment incentives in the Czech Republic and to review the importance of this economic policy instrument for the global competitiveness of the Czech regional industry. The investment incentives have been targeted on high-tech industries possessing advanced technologies since 1998. Active support for investment in high-tech industries and investment in high-tech facilities is not as sufficient for technological development as compared to the global trend of multinational companies, i.e. the process of specialization and fragmentation of the global value chain. Fragmentation allows the localization of production by factor intensity of the various stages of the production chain and not the factor demands of the final product. What is important in the global economy, in terms of technological catch-up, is in which fragmented production chain phase are the companies, specialized to the industry sector, under which they fall. Therefore, a new concept of firms' specializations and national economies is required.

In the Czech Republic, the key manufacturing sectors, in terms of export, employment growth, considering FDI, are electrical and optical equipment manufacturing (OKEC DL) and the manufacturing of vehicles (OKEC DM).

Based on the research which was conducted on the basic sample of 198 foreign companies in the Czech Republic drawing benefits associated with investment incentives, it was found that multinational firms in regions with the highest increase in FDI inflows into these sectors show lower productivity than the selected benchmark – the national sector labor productivity average. In the manufacturing of vehicles sector are the Liberecky, Moravskoslezsky and Plzensky regions. On the contrary, relatively higher labor productivity has been achieved by foreign MNCs in the Stredocesky region and Vysocina. In the manufacturing of electrical and optical equipment, the situation is similar in the four highly specialized regions – the average result of increasing specialization in FDI, labor productivity is significantly lower than the national average of the sectoral ones in the Plzensky and Pardubicky regions, although the Pardubice region noted the highest increase of employment in MNCs with investment incentives. The initial hypothesis about the positive impact of investment incentives on regional specialization and comparative advantage in non-price (or technological advantage) associated with a specialization in the value chain fragment with relatively higher value added was not established.

In general we can say that FDI granted by investment incentives still play an important role in economic growth and employment but apparently not from the perspective of economic development. Measures that could, in the future, lead to improvement, particularly regarding the implementation of a prudent decision-making authority regarding the granting of investment incentives and attracting businesses, which, while increasing employment in the

region, do not guarantee economic stability as there is a significant risk of investment outflow.

A possible solution is the linkage of investment incentives to local companies such as expenditures on research and development or the creation of local supply chains which may be very difficult because of the reduced flexibility of the multinational giants' state of business and innovation in certain regions.

Given the investment incentives decided in the years 2006-8, and the implementation of major investment projects, many of which were not yet in full operation in the year 2010, it can be assumed that the actual impact of FDI on regional development requires a longer time scale and can meet with significant changes.

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DOPAD INVESTIČNÍCH POBÍDEK NA REGIONÁLNÍ PRŮMYSLOVOU SPECIALIZACI A POZICI V GLOBÁLNÍM HODNOTOVÉM ŘETĚZCI

Cílem článku je na základě provedeného kvantitativního výzkumu zahraničních nadnárodních společností využívajících v ČR výhod spojených s investičními pobídkami, zhodnotit dosavadní význam tohoto nástroje hospodářské politiky pro globální konkurenceschopnost českého regionálního průmyslu. Investiční pobídky jsou od r. 1998 cíleny na high-tech odvětví disponující vyspělými technologiemi. Podpora vstupu investorů působících v high-tech odvětví a investice do high-tech zařízení jsou však jako dostačující podmínky pro technologický rozvoj v rozporu s globálními trendy nadnárodních společností – procesní specializace a fragmentace hodnotového řetězce. Hodnocena jsou klíčová odvětví zpracovatelského průmyslu z hlediska přílivu PZI i exportní specializace ČR – výroba elektrických a optických zařízení a výroba motorových vozidel.

AUSWIRKUNGEN VON INVESTITIONSANREIZEN AUF DIE REGIONALE INDUSTRIESPEZIALISIERUNG UND DIE STELLUNG IN DER GLOBALEN WERTSCHÖPFUNGSKETTE

Der vorliegende Artikel analysiert aufgrund einer quantitativen Untersuchung ausländischer multinationaler Unternehmen, die in der Tschechischen Republik die mit den Investitionsanreizen verbundenen Vorteile ausschöpfen, die bisherige Bedeutung dieses wirtschaftspolitischen Instruments für die globale Wettbewerbsfähigkeit der tschechischen regionalen Industrie. Die Investitionsanreize richten sich seit 1998 auf die Hightechbranche, die über hochentwickelte Technologien verfügt. Die Unterstützung beim Eintritt von Investoren, die in der Hightechbranche tätig sind, und Investitionen in die Hightechrichtungen stehen jedoch als genügende Bedingungen für die technologische Entwicklung im Widerspruch zu den globalen Tendenzen von multinationalen Unternehmen – prozessspezifische Spezialisierung und Fragmentierung der Wertschöpfungskette. Es werden Schlüsselbereiche des verarbeitenden Gewerbes unter dem Gesichtspunkt des Zuflusses FDI analysiert und auch die Exportspezialisierung der Tschechischen Republik – die Herstellung von elektrischen und optischen Geräten und die Automobilfertigung.

WPLYW ZACHĘT INWESTYCYJNYCH NA REGIONALNĄ SPECJALIZACJĘ PRZEMYSŁU I POZYCJĘ W GLOBALNYM ŁAŃCUCHU WARTOŚCI

Na podstawie przeprowadzonego ilościowego badania zagranicznych korporacji ponadnarodowych korzystających w Republice Czeskiej z korzyści związanych z zachętami inwestycyjnymi w niniejszym artykule poddano ocenie dotychczasowe znaczenie tego instrumentu polityki gospodarczej dla globalnej konkurencyjności czeskiego przemysłu regionalnego. Zachęty inwestycyjne były od 1998 roku adresowane do branż wysokich technologii dysponujących zaawansowanymi technologiami. Wsparcie wejścia inwestorów działających w branżach wysokich technologii oraz inwestycje w urządzenia wysokiej technologii są jednak jako wystarczające warunki postępu technologicznego sprzeczne z globalnymi tendencjami korporacji ponadnarodowych – specjalizacja procesowa i fragmentacja łańcucha wartości. Analizie zostały poddane kluczowe branże przemysłu przetwórczego z punktu widzenia napływu BIZ oraz specjalizacja eksportowa Republiki Czeskiej – produkcja urządzeń elektrycznych i optycznych oraz produkcja pojazdów samochodowych.