

FOREIGN DIRECT INVESTMENTS CONTRIBUTION TO KNOWLEDGE ECONOMY IN POLAND

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Abstract

The paper is aimed at presenting the new trends in foreign direct investment (FDI) incoming to Poland. The focus is on the role that FDI play in building knowledge based economy. The 2006 constitutes a year with the highest value of FDI inflow ever registered in Poland. Cumulated FDI in Poland equal to 108 bn USD. Thus it is a good time to ask questions about foreign investors' contribution to knowledge economy.

Keywords:

Foreign direct investment, knowledge based economy.

Introduction

The scientific problem research in the article relates to the role that incoming foreign direct investments play in building the knowledge economy in Poland. According to preliminary data, value of FDI incoming to Poland acceded 100 bn USD in 2006. In fact 2006 constitutes a year in which the highest value of incoming FDI was ever registered. It is estimated at 14,7 bn USD. So far, the highest value was registered in 2004 when the inflow was 12,9 bn USD. As Poland is more penetrated by FDI, it is a good time to ask what are new trends in FDI to Poland and to focus on the topic of FDI and knowledge based economy. The aims of the paper are as follows:

- to depict why Poland shall attract FDI,
- to show why technology oriented FDI are important for the Polish economy,
- to describe the changing pattern of FDI in Poland and consequences of these changes for Poland's economy move towards the knowledge based economy.

The main task of the article is to judge if the observed changes in foreign direct investments are bridging the gap between current technological advancement of the Polish economy and the goal which is far more technologically competitive economic environment.

FDI in Poland, basic facts and figures

Some years ago, at a conference on the strategy of Poland's membership in the EU (Kulakowski, Stepniak, Umiński, 1994) I formulated several reasons why Poland shall attract FDI:

- FDI's high propensity and ability to export and invest,
- their experience in operating in competitive, international markets that would reduce accession shock,
- technology transfer important for Poland's modernizing economy,
- relatively (in comparison with domestic enterprises) low energy consumption and therefore environmental friendness,
- low domestic capital resources needed for modernisation processes.

The above formulated reasons still hold. Of course Poland since 2004 is a member of the EU. Thus we cannot still say about reduction of the accession shock. There was in fact virtually no accession shock. The presence of FDI was important and beneficial for the economy:

- for most foreign direct investors there were no shock because they came to Poland just because of the anticipated EU membership,
- foreign investors were penetrating Poland's economy since the beginning of the 90 (PAIZ, 2007). Therefore the "competition effect" exerted on domestic enterprises forced them to invest and that time can be regarded as a preparation to functioning within competitive, demanding, international economic environment,
- many domestic enterprises have been cooperating with foreign investors. Thus, for them it is much easier to export as they have learned from more experienced partners and

have been using their distribution and sales channels.

As far as technology is concerned, we must realize what is Poland's position in technology rankings (Cordis, 2007). In fact, Poland's position in this respect is not tremendous. As it was stated by the European Commission in "European Trend Chart on Innovation. Annual Innovation Policy Trends and Appraisal Report. Poland 2006" it is widely acknowledged that Poland is not one of the most innovative economies in the world. However, what is extremely interesting about Poland is the fact that there are two tales to be told. On the one hand, Poland's overall performance in comparison with other countries is rather bleak. On the other, the level of investment in innovation is raising. One of the major problems is that Polish companies do not sufficiently invest in innovation. Moreover, companies focus their investments on new machinery and equipment and only small percentage is allocated for innovation activities. Furthermore, the innovation expenditures are concentrated in five metropolitan regions including Mazowieckie, Slaskie, Wielkopolskie, Malopolskie, and Dolnoslaskie. This highly correlates with the geographical pattern of incoming FDI.

Till the end of 2006 FDI in Poland reached 108 bn USD. It is relatively high value, but per capita FDI value in Poland (2,8 ths. USD) is lower than in Czech Republic (6,3 ths. USD) and Hungary (6,7 ths. USD).

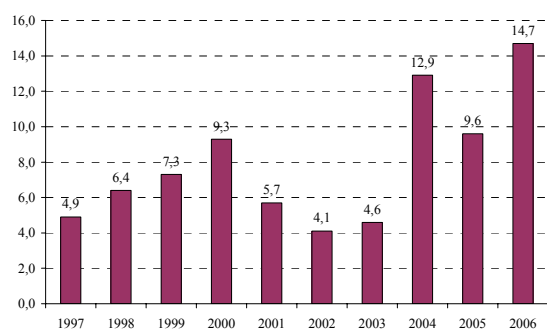


Figure 1: Yearly inflow of FDI to Poland (USD bn)

Source: National Bank of Poland, preliminary data for 2006

Trends and changes in FDI in Poland

As value of FDI invested in Poland increases year by year, their character is changing.

The main alterations are:

- rising share of greenfields,
- increasing share of service sector,
- growing reinvested earnings.

Rising share of greenfields is an important fact that shall be taken into account when we analyse FDI inflow and their influence on Poland's economy. During the conference in Kaunas in 2006 together

with dr Dorota Ciolek we presented the paper on technology transfer and FDI. We have assessed assets and labour productivity changes in Polish manufacturing as well as total factor productivity (TFP). We are continuing this research based on more actual statistical data. Our recent research based on statistical data from enterprises' financial statements F01 and F02 till 2005 proves earlier observations. Labour productivity in FOE (foreign owned enterprises) is – much – higher than in domestic ones. On the other hand, fixed assets productivity and total factor productivity are lower in FOE than in domestic enterprises. Taking this into account, we could say that inflow of FDI does not contribute to building knowledge based economy as TFP (treated as a measure of technology and knowledge creation and transfer) remains lower than in domestic enterprises. But we shall look deeper into the character of the incoming FDI. The greenfields share is rising. According to the Polish information and Foreign Investments Agency data, in 2002 greenfields share in total FDI inflow was 37 per cent, it raised to 51 percent in 2003 and 58 per cent in 2004. Greenfields generate positive results for the economy as they mean installation of new machinery, equipment and therefore technology (bringing the gap towards what we mean by knowledge based economy). In opposite to privatization-oriented FDI, greenfields are not able to generate – from the moment of foreign investor entrance – sales revenues (Umiński 2001; Ciolek Umiński 2007) . It will take time, till assets of FOEs will start to "produce" revenues (which begins with time legs, especially in greenfields). FOEs' assets are rather competitive and constitute a solid base for FOEs future business activity. A symptomatic trend of assets productivity equalization between FOEs and domestic enterprises is observed in 1998-2005 period. In domestic enterprises assets productivity was declining, in FOEs was increasing. Similar trends were observed in TFP levels.

Increasing share of service sector is another characteristic feature of Polish FDI. If we agree that knowledge based economy is the one based on services, their rising share must be reckoned as a positive trend. Moreover, observation of world trends prove FDI to be more services oriented. In fact Poland ranks high as a place for locating services FDI (see for instance A.T.Kearney's rankings). We must remember however that a shift towards services may prove to be detrimental for exports. Exports rest primarily on manufacturing, as – traditionally – services are "non-tradables". So far, in 2006 – according to the National Bank of Poland – FOE are positively contributing to good export performance of Poland. Nevertheless in the future it may constitute some risk for exports.

Growing reinvested earnings reveal good and improving financial conditions of FOE operating in

Poland. In a long time perspective it constitutes a good base for attracting further foreign investors (NPB, 2006).

The role of FDI in a move towards knowledge based economy (KBE)

United Nations Economic Commission for Europe defines KBE neither as just the digital economy (which incorporates the production and use of computers and telecommunication equipment) nor as the networked economy, which incorporates the telecommunication and networking growth. It relates to the knowledge-based economy as a multi – dimensional complex and broader phenomenon in which a rapid growth of ICT technologies is taking place, ICTs penetrate all the spheres of human activity, knowledge and information are decisive factor of social, economic, technological and cultural transformation. According to OECD, features of the KBE are: knowledge diffusion, human capital upgrades and organizational changes (OECD, 1996).

Therefore we can formulate the following questions, answer to which will tell us if FDI inflow contributes to the move towards KBE:

1. Do FDI promote transfer of knowledge to Poland and its diffusion in Poland?
2. Do FDI work in favour of creation of an open, demanding, “learning” economic environment in Poland?
3. Is the structure of incoming FDI oriented towards hi-tech sectors?
4. Do FOEs introduce new organizational schemes and upgrade human capital?
5. Do domestic enterprises benefit from FOE presence? If yes, how?
6. Do FOEs engage in innovation and research and development activity in Poland?

As we realize, there is no simple answer to any of these questions.

1. From theoretical point of view, as well from applied research we know, that FDI means not only transfer of “physical” capital but also intangible assets, technology, organizational skills and “know-how”. These are so called tacit elements, that in fact are brought with FDI. This is proved for instance in questionnaire surveys done on the population of foreign owned and domestic enterprises.
2. FDI inflow itself leads to the opening of the economy. As the national economy becomes more penetrated by FDI, it is getting open for ideas, exchange of people, knowledge etc. This process relates to both: incoming foreign investors as well as domestic enterprises that found themselves in a different, more open economic environment.

3. The structure of the incoming FDI is changing. As it was stated, FDI are becoming more service oriented. The most developed economies in the world (regarded as much closer to the KBE model than Poland) are in fact services economies. Within manufacturing in fact we observe higher share of high-tech and medium high-tech sectors in the activity of FOE in comparison with the domestic enterprises.
4. Foreign direct investors are introducing new organizational methods. This is proved by many surveys done in Poland. As far as human capital upgrades are concerned, it is difficult to unequivocally judge results of FDI inflow. They depend on economic sectors’ characteristics.
5. This question is the most difficult and complex to answer. The changes are occurring. The problem is their positive or negative influence for instance on domestic enterprises. As it was shown by D. Ciołek and S. Umiński (2006) productivity of domestic enterprises is (positively) influenced by the entrance of foreign investors to NACE. Evaluation of significance tests in the model reveals that TFP changes in domestic enterprises depend on FOEs share in NACE’s assets, sales revenues and employment. There is an interesting correlation visible if we take into account time lags in the econometric model. In the first year, when foreign capital comes to the NACE, TFP in domestic enterprises increases. But in the second year, TFP in domestic companies declines. The framework for interpretation of this phenomenon is given to us in the so called competition effect in technology transfer models. Increased share of foreign capital in the NACE mobilizes domestic enterprises in their efforts to sustain the market position. In the first year they are trying to face new competitors and are undertaking adjustment measures. But in the longer run the increased competition turns out to be serious and severe. Domestic companies – after they use simple reserves of competitiveness – are not able to stand the competition. Specific factors and development barriers differ in case of each enterprise. They include problems with access to funds (bank credit), bureaucracy, unstable law regulations or lack of knowledge on foreign markets (in this area FOEs are much better than domestic enterprises). On the other hand domestic enterprises that are cooperating with FOEs,

report important positive learning and spillover effects.

6. According to Polish Information and Foreign Investments Agency, there are about 40 research and development centers in Poland run by foreign owners. They predominantly work for automobile, chemical, air and food and beverages industries. They employ 4,5 ths. of research personnel (GUS, 2006). R&D activity is conducted in Poland for instance by: General Electric, Samsung, IBM, Motorola, Delphi, Philips, ABB Machinery, Lucent Technologies, Kroll Ontrack, Microsoft, Oracle, Pliva and Siemens. Data from GUS (Poland's Bureau of Census) reveal relatively higher expenditures on innovation activity in enterprises with foreign capital than in domestic ones. In 2004 FOEs accounted for 36,4 per cent of Poland's total innovation outlays in manufacturing, and respectively 20 percent in research and development. As we see, FOEs share in Poland's innovation outlays is lower than in R&D expenditures. This reveals the character of technology transfer to Poland by FDI, which rests mainly on import of machinery and equipment. We must remember however that it is a world wide phenomenon that foreign direct investors rather base their overseas activity on the knowledge generated in their home markets(1992). Nevertheless the character of R&D activity performed by trans-national corporations (TNCs) is changing. As Gerybadze and Reger (1999) found in their interesting survey, nowadays TNCs place R&D activity in most dynamic and leading markets or close to the markets regarded as point of sales, where the new or improved product can be tested. Also costs of R&D personnel play more important role.

Conclusions

1. As we see there are no simple answers to the question regarding conjunction between incoming FDI and the process of building knowledge based economy. One must be conscious there is no one, widely accepted definition of the KBE. But if we agree with Lundvall and Johnson (1994) that knowledge in KBE concept consists of: know-what, know-why, know-how, and know-who, we rather agree that FDI contribute to building of the KBE. Know-what and know-why are relatively formalized and easily transferable and re-produced in a form of codified information. Foreign investors show superiority in tacit elements of knowledge

transfer, which are know-how and know-who. These are firm-specific and constitute the competitive advantages that FOE rely on in their foreign expansion.

2. The role of FDI in Poland's innovations expenditures is relatively high and seems to be growing. On the other hand the question remains how to promote Poland as a place for location R&D intensive activity. It seems that stable investment climate, good economic prospects are sine qua non in this respect. As time goes by, good opinion about Poland as a favourable place for such investments, diffused by those that already invested in the country, will attract further ones.
3. KBE to which FOE contribute will be clustered around specific locations (Jensen, Sinani 2005). It is so because foreign investors like to collocate. If they like certain locations, next will come to the neighbouring locations. The consequence will be knowledge clusters of FOEs and indigenous enterprises localised most probably in Mazowieckie, Slaskie, Wielkopolskie, Malopolskie, and Dolnoslaskie regions.
4. Observation of technology transfer via FDI to Poland leads us to the conclusion that due to incoming foreign investors Poland is making a so called leap frog. Let us for instance look at changes occurring in foreign trade. Poland became a leader in for instance automobile production (incl. parts, engines and other components) and LCD TV sets production. These are not strictly high-tech activities if we take OECD classifications into consideration. Nevertheless for an economy like Polish, that not so long ago did have completely different structure of exports, this is a real leap frog or a move on a technology ladder.

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