

Foreign direct investments, modernization of production and labour market changes in Hungary

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Introduction

Since the 1989 revolution, Central and Eastern Europe has opened up for cooperation with western companies. A cooperation which is of major importance for the transition towards a more market-based society. There is, however, not much information about how this cooperation is taking place and what the effects are on the modernization of the economy.

My research focuses on Hungary. No other transition economy has attracted so much foreign direct investment (FDI). In this respect two factors are of major importance. From the beginning of the 1989 transition process Hungary conducted a privatization policy which was aimed at the fiscal potential of privatization and therefore favored direct sales of companies to foreigners. Besides this, the exceptional position of Hungary within the Comecon plays an important part. By 1968 Hungary had already started to introduce market elements into the economy. Although, according to many (BOOTE A. R. and SOMOGYI, J. 1991), the direct effects of the many reforms which have been implemented since then have been relatively limited, one can say that 'Goulash communism' has had a great influence on FDI. Both as for actual developments (before and after 1989) as well as for the perception of potential foreign investors.

But despite this 'liberal communism', Hungary was still behind in technological developments compared to western countries and was saddled with a communist inheritance. In this paper we will investigate to what extent this inheritance, in particular that of socialist production methods, is of influence for the modernization of industrial production in Hungary. In this our focus is on FDI. Foreign direct investment² can take three forms. The most well-known investment form in Hungary is the joint venture. In this case a western company obtains a share in a (former) state owned company. When a western company takes over an entire plant, one speaks of an acquisition³. Besides these options,

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2 Investments in which the foreign company has a stake of 10% or more.

3 In some cases 5–10% of the shares are allocated to employees within the framework of the employee-share-purchasing-program (MRP). Therefore investments with more than 90% foreign capital are considered an acquisition.

Socialist production methods

For a description of the basics of the Hungarian manufacturing sector we have to go back to the Soviet Union of the late twenties. Stalin was very taken with Taylor's scientific management and its practical completion by Henry Ford. Therefore the economic model of the Bolsheviks was very much influenced by their ideas. This in combination with the typical Soviet approach of the labor process and the scale of the management structure, makes that some authors even speak of Soviet Fordism (MURRAY, R. 1992). However, this seems not to be a justified naming. First because of the total different starting-points. As Fordist mass production in the west is profit-based, mass production in socialist countries is resource-based. Moreover, as a consequence of the 'Shortage economy' (KORNAI, J. 1980), socialist countries had in fact problems with maintaining the constant flow in the production process (LADÓ, M., SIMONYI, A. and TÓTH, F. 1989), a vital element of Fordist production.

In 1948, after the annexation as a Soviet satellite state, Soviet style production methods were also introduced in Hungary. Tight policy regulations from Moscow, allowed only for very limited elbowroom for the organization of social and economic life. Therefore, after World War II a forced industrialization took place to reform the under-developed economy. Emphasis was on heavy industry, because it was seen as the basis for further development. Besides this, because of central planning, production took place independently from price and market influences; production was based on meeting the goals of the plan, not to supply for consumer demand. In this context a situation could develop in which companies emphasize the fulfillment of the main purpose of the plan: fulfillment or even overfulfillment of the quantitative production norms. Objectives with regard to efficiency, quality and cost reduction, and therefore the development and introduction of new technology, which were indeed included in the plan, were taken to heart less and less. This led to the production of huge stocks of a limited range of non-salable, standardized, input consuming, qualitatively poor products, produced in long series (BEREND, T. I. and RÁNKI, GY. 1979).

Pre-1989 reforms

As from 1968 onwards Hungary had tried to implement more market elements into the economy. However, it was not until the eighties that major changes in society began to take place. State owned companies gained more autonomy and became less dependent from state budgets. Prices were partly liberalized. Moreover, reforms opened the door for the development of an extensive second economy which was tolerated by the state and even partly legalized. The second more flexible economy could develop so prosperously because of the rigidity of the state sector, which could not compensate for shortages in production, consumer goods, services and the like. Economic and political liberalization in Hungary also led to the opening up of its borders to the western world before 1989. One of the consequences was that Hungary imported a lot of western technology compared to other transition economies during the communist regime.

Technological development

Partly as a consequence of Socialist production methods, Hungary was saddled with a huge technology gap compared to western countries. Pre-1989 reforms could only reduce this gap in a limited way, which means that the technology backlog in 1989 was (and still is) a serious problem for Hungary. Low technological development in Hungary (as in other transition economies) is partly inherent to the system of central planning and can partly be explained by other factors. System related factors are (POZNANSKI, K. 1985):

1. Risk Reward explanation. In the west, technological development usually means an improvement of competitiveness and a rise in labor productivity, which in the long run results in a better profitability of the company. In a centrally planned economy, the development and introduction of new technology only means an extra risk for companies, which can endanger the constant flow of production. As became clear from the above, this constant flow had first priority for SOE's, this way trying to meet their quantitative production norms.

2. Zero price explanation. SOE's can deploy means of production against zero prices. With that a significant ground for technological development is called off, as cost reduction is an important consideration for technological development.

3. Closed economy explanation. A practically closed trade system like the Comecon blocks the way for the import of technology which comes available by integration in the world economy. In the case of Hungary, this explanation won't do entirely, because it opened its economy considerably before 1989.

Besides these system related explanations, some other factors which have had a negative influence on technological development in Hungary can be mentioned. For one, the existing research and development (R&D) potential was highly inefficient. R&D was carried out in separate research institutes which were connected with certain branches. But what failed to succeed was the actual use of the patent applications by innovative enterprises. This inefficiency can be illustrated by the fact that in 1990 Hungary had a proportionally equal number of researchers compared to countries like Sweden and Germany, but despite this there was a huge technology gap between these countries. However, this counts to a lesser extent for the sectors chemistry and plastics, pharmaceuticals, cosmetics, medical technology, food processing and lamps in which Hungarian research has made its mark (THANNER, B. 1992). Another factor negatively influencing technological development was the very slow diffusion of new technologies among other companies. This way a situation could develop in which one company produces with the latest technology and another company kept on producing using outdated equipment.

Pre-1989 reforms and the development of a second economy did not have any significant influence on the situation described above. Although characterized by a high level of (product)innovation, the second economy was characterized by a low technological level, even compared to SOE's (CSÉFALVAY, Z., FASSMANN, H. and ROHN, W. 1991). The only reform that has had a positive influence on technology in pre-1989 Hungary, was the opening of its borders, this way enabling western technology to enter the country. Therefore, compared to other transition economies, Hungary has in fact attracted a lot of western technology, this way trying to improve the quality of its export industry. However, most technology entered the country by way of machinery and other contributions in-kind. Only a small part (to an amount of 3% of total domestic R&D expenditure)

has come in the form of licenses and know how. This percentage is much lower than the one we find in western countries (15–45%; situation early eighties) (MALECKI, E. J. 1991).

Modernization within companies with foreign capital participation

FDI can contribute to and even have a leading role in the modernization of industrial production in Hungary. Research by the European Bank for Reconstruction and Development (1995) confirms this. Almost 43% of the foreign companies observed in this research introduced major new technology during the previous two years. In this, their contribution is much higher than that of local companies also observed in this study. On the other hand one may also conclude that in 57% of the cases, foreign companies in Hungary did not introduce major new technology. This makes clear that FDI does not by definition lead to modernization overnight. We shall elaborate the assumption that three kinds of firm characteristics are influencing the modernization: forms of investment, motives for investment and sectors of investment. There is a coherence between forms, motives and sectors and the speed and extent at which foreign companies are modernizing production equipment.

Forms of investment

The way in which a company establishes itself in Hungary has implications for to what extent modernization will take place in the short or middle term but, more importantly, the pace in which it can be realized. In this the Communist inheritance is of vital importance. One might say that the mode of entry sets the margins within which modernization can take place. In this respect entry mode in the case of investing in Hungary or other countries of Central and Eastern Europe, has not only to be seen as a factor influencing modernization, but certainly as a strategic choice inspired with the mother company's desires towards (modernization of) production as well. In this section we will discuss modernization within joint ventures, acquisitions and greenfield investments. As for the number of investments joint ventures and acquisitions are the dominant entry modes in Hungary. Measuring FDI by invested capital, the figure is much more positive for greenfield investments, especially as they gained importance after 1992. Although exact figures are not available, approximately half the invested capital was invested in greenfield plants.

Joint ventures have the smallest scope for modernization. Many companies start their activities in Hungary by way of a joint venture with a local company trying to limit the financial risks connected with investing in this emerging market, especially during the early stages of investment. A complete modernization of production equipment in the short term is not comparable with this strategy. Furthermore a foreign investor has to take into account the wishes of the Hungarian partner. By and large this won't be a major obstruction; even in cases where the foreign partner has a minority stake, he usually acts as the

In many cases the distinction between the two considerations is not clear, because both play a role in the investment. Something which can also be found in the theories of internationalization of companies of VERNON, R. (1966) and DUNNING, G. (1980, 1988). A local production facility in Hungary can for instance be attractive because this way a company can create a better knowledge of what is happening in that market and with (potential) consumers. Because of lower production costs in Hungary on the other hand, export to the more expensive Western Europe becomes an attractive option.

The motives for investment and the connected sales markets can be of influence for the pace in which a company modernizes its production. In this, there is a strong relation with entry modes. When the investment is mainly the consequence of market considerations, a company would generally prefer to invest by way of a joint venture or an acquisition, due to the already existing sales market which comes along with the (partial) acquisition. As already mentioned above, this means that the company has to do with old-fashioned equipment in most cases. Market developments will be a decisive factor in modernization.

With investments based on cost reductions there is no clear connection with the way of investment. In this case, the sort of products, but mainly the related labor intensity of production are of importance. With the manufacturing of products characterized by a capital intensive production process and which require high-grade technology, a greenfield investment will generally be the only suitable option. In case production consists of products characterized by labor intensive production processes, investment by way of a joint venture or acquisition might probably be the best option. The possible lower capacity of obsolete machines can in this case be compensated by lower labor costs. In this case, process innovation will not be a direct necessity.

Sectors of investment

Another factor which is of influence for the modernization of industrial production in Hungary by foreign companies is the sector of investment. In this respect a division in high tech, process and traditional industry might be useful (KUSTERS, A. and MINNE, B. 1992). High tech industry is characterized by a high knowledge intensity of production, fundamental research and high wage levels. Examples are the automobile industry, electronics (audio visual, telecom) and fine chemicals. Process industry can also be characterized by a high technology level and high wage levels in western countries. Examples of industries are oil, basic chemicals and tobacco and beverages. Finally, traditional industry can be identified by a low technological level. The production process is labor intensive and demands relatively little education. Examples: textiles, furniture, food and lamps.

From a theoretical viewpoint, FDI in high tech industries would probably contribute most to the modernization of production in Hungary. This would also be the case for investments in process industries, although to a lesser extent. Investments in traditional sectors would, even in the most positive sense, have the smallest 'modernization effect'. Considering wage levels in western countries, one would expect investments in high tech industries should be highest, because theoretically here the largest profits can be made. In

practice however this is not the case. When companies from high tech sectors invest in Hungary, they only tend to establish or move more simplistic business units. An illustration of this are the assembly lines for automobile production set up in Hungary by some major players (Opel, Suzuki, Ford). This can not be the case for process industries since they can generally less easily be divided in different production plants, all producing different elements of the final product. Therefore, activities within one company will generally not differ very much between plants in Western Europe or Hungary, meaning that actual consequences for modernization in process investments will be higher than those in high tech industries.

The division in the three above mentioned sectors cannot be made for FDI in Hungary at this moment (albeit deviations in definitions of sectoral division's). However, available figures can provide a rough indication (*Fig. 1*). In fact, most investments are in traditional industries. In one way this is not that remarkable, because these sectors contain comparative advantages for Hungary. Moreover, most investments are in privatization (joint venture or acquisition), in which most companies can be found in the traditional industry. This has implications for foreign investors' possible contribution to the modernization of the Hungarian manufacturing sector and for the (change in) demand for labor which will be discussed below.

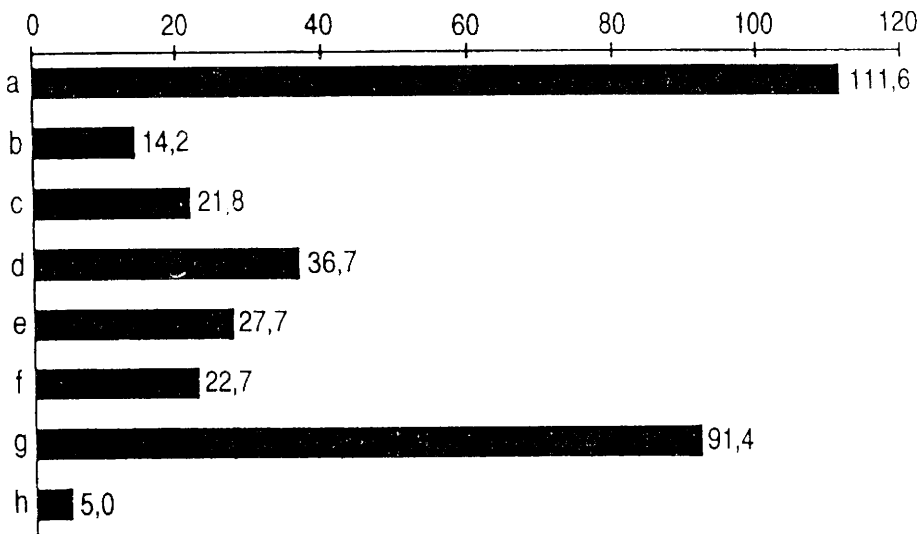


Fig. 1. Foreign direct investment in Hungary in manufacturing by sector, stock figures, end 1993, in bln forint. (Source: KSH, 1995). – a = food, beverages & tobacco; b = textiles; c = wood, paper & publishing; d = chemical industry; e = non metallic mineral products; f = metallurgy and metal products; g = machinery and equipment; h = others & recycling

But FDI in traditional industries might also lead to modernization⁵. Moreover, the diffusion of new technologies to other (local) companies will be higher in this sector for two reasons. First because of actual links, since most investments are in privatization. Second, the technology gap between Hungarian and western companies in these sectors is smaller. This means that diffusion of technology is easier. High tech industries usually prefer entering Hungary by way of a greenfield investment. Links with local companies are not existing and will not be realized in the short term because of the huge technology gap. In this way these companies can be characterized as 'cathedrals in the desert' (GRABHER, G. 1992).

Effects on the demand for labour

Modernization of production leads to a different qualification structure within companies and therefore to a different demand for labor. In addition, FDI and modernization of production in foreign companies has consequences for employment within these companies. This counts especially for Hungary. After all, SOE's were characterized by a certain amount of surplus employment. In a more broader perspective, the sharp increase in unemployment is the direct outcome of the transition and the related restructuring of the economy.

This section shows that there will indeed be a change in the quality of the demand for labor. As for the supply of labor one can say in general that employees have a relatively good education, which could only be utilized to a certain degree under communist rule because of the domination of mass production and related unskilled work. Therefore, although not recognized by most foreign companies, discrepancies in demand and supply for labor are not so much related to a lack of technical abilities, but are more a consequence of a lack of tacit knowledge. With respect to quantitative effects it is much more difficult to measure the effects of foreign investments. Though in the short term the outcome will tend to be negative, in the mid and long term they will probably have a more positive effect, due to an improvement of (international) competitiveness.

Qualitative effects

Besides low labor costs, the comparative advantage of Hungary lies in the relatively high education levels of employees. But it is striking, to say the least, that the country utilized these education levels only in a limited way during the communist era: notably because of the prevalence of mass production in all industries, employee's tasks were reduced to monotonous standardized operations.

In 1989 Hungary adopted the course towards a more market-based society. The economic transformation leads to the emergence of a service sector, a shift within manufacturing industries and the restructuring and modernization of industrial production.

5 The word 'traditional' might lead to misunderstandings. Besides, roughly 60% of employment in western countries can be found in traditional industries (KUSTERS, A. and MINNE, B. 1992)

This will cause a shift in the qualitative demand for labor, which in its turn has implications for work ethic, vocational training and education in general. This transformation of the labor market is a lengthy and radical process, which is still on its way at this moment, and will probably take even more years to come. The first six transitional years have shown that there is a lack of employees with good management and marketing skills, abilities that were practically not non-existing under highly centralized communist rule.

FDI will play an important part in the transformation of the labor market. To what extent this transformation will occur, depends largely from the place Hungary will take in the international division of labor. In other words: will a division of labor develop, whereby skilled work is increasingly concentrated in certain (western) European locations, while other areas such as Central and Eastern Europe become centers of routine, non-skilled work? Even in this case the role of foreign companies is obvious. If Hungary solely attracts foreign investors who are only interested in the country's low labor costs, and not in the relatively high education levels which come along, its effects on the demand for labor will be limited. It looks like this is not going to happen, at least not to this extent. The following quote might be illustrative for this (W. C. FORD Jr. about the Ford investment in Székesfehérvár, quoted in *The Budapest Sun*, June 20, 1996): 'Labor costs will rise over time as Hungary's economy modernizes, but that doesn't trouble me. The quality and productivity here is such that we can compete with plants anywhere in the world. (...) With many countries we have to educate the workers to a certain level, but the Hungarians are well-educated, which is a credit to their education system.' But one has to bear in mind that at the moment most investments are in traditional industries, which are characterized by a high degree of unskilled work. On the other hand market potential seems to be the main motive for investment (VAN RIETBERGEN, T. and VAN HASTENBERG, H. 1993; MARTON, K. 1993), indicating that foreign activities are not directly restricted to unskilled work.

A number of case studies shows that, especially in the case of greenfield investments, foreign companies are very cautious in selecting their employees. In this it is striking that they do not so much select people by education and experience, but more by mentality and attitude (SADLER, D. and SWAIN, A. 1994; KISS, É. 1993). For some jobs, notably executive and administrative functions, knowledge of a modern foreign language is generally a prerequisite to qualify for the job.

Because of the supposed mismatch between the demand and supply for labor within foreign companies in Hungary, many workers receive an internal education, either by courses on the spot or abroad, or by training on the job. In this, one can witness that foreign companies identify workers' low level of skills by a lack of exploitable technological knowledge. Therefore a lot of education is aimed at matters employees are already acquainted with. This considering that their biggest defect lies in a lack of tacit knowledge (SWAAN, W. 1995): hardly transferable unconscious knowledge. This is remarkable one and for all, in light of the selection of employees by mentality and attitude discussed above. Therefore, besides the transfer of capital, technology and know how, foreign investments in Hungary are of major importance in transmitting tacit knowledge, which is a decisive factor in exploiting a company's profitability (SWAAN, W. 1995).

Quantitative effects

FDI and especially the modernization of production within these companies can, apart from changes in the qualitative demand for labor, have a quantitative effect. In this respect, we can make a distinction again between joint ventures and acquisitions on one side, and a greenfield plants on the other.

SOE's were characterized by a high degree of surplus employment, which resulted in a high level of hidden unemployment. In case a SOE is (wholly or partly) sold to a foreign investor, this will lead to the dismissal of employees: both on the shop floor and in higher management levels. In this there need not be a direct link to modernization. Also (or in particular) restructuring has the same effect. However, when a company is being modernized, the loss of employment would even be higher, due to automation of production (units). For some companies this will not be the case, for maintenance of employment was stipulated by the government as part of the deal.

One might wonder if this negative effect can be attributed to the foreign investor. After all, surplus labor is part of the communist inheritance. In many cases it might even be legitimate to say that selling the company to a foreign investor has preserved employment for the remaining employees. Moreover, modernization leads to an improvement in a company's competitiveness. Therefore for future delivery, one has to reckon with a possible increase in employment.

Greenfield investments have a positive effect on employment since it signifies the establishment of a whole new company. Especially in the case of an export-based investment, the employment effect can be considerable.

Recent research by Kopint Datorg (PAPP, B. 1995), has shown that foreign firms (all sectors) accounted for almost one third of employment in Hungary, 5% in greenfield plants and 26% in joint ventures and acquisitions by foreign companies. Therefore, in absolute numbers the impact of FDI on employment in Hungary is considerable. But it is difficult to determine what is the real contribution of FDI to Hungarian employment. This counts more so as for investments in privatization, because one will never know what the situation would have been like without foreign involvement. This is even more the case for the effects of modernization on employment.

Conclusion

This paper has offered a theoretical framework that will be used for further research on modernization of production and its implications for the demand for labor in Hungary. In this, the possible role of foreign direct investments in the modernization of industrial production in Hungary was studied. This is an important issue for Hungary, since the outcome will largely determine which position Hungary will take in the European and global economy. One can conclude that filling the technological gap by modernizing industrial manufacturing is not a process that will be executed over night. This because it does not only depend on the magnitude of FDI, which is actually quite high in Hungary, but also on investment forms (joint venture, acquisition or greenfield plant) and in relation to this the communist inheritance, the intentions of foreign investors (motives, markets,

long time perspectives) and the sectors in which they invest. The following hypothesizes on modernization of industrial production came forward, which will be studied during the rest of the research:

1. Considering the forms of investment, joint ventures have the smallest scope for modernization of production, followed by acquisitions. Greenfield investments will contribute most to modernization.

2. Cost-based investments will contribute more to modernization than market based investments. In this there is a strong relation with entry modes. Market oriented investments will generally choose for investment by way of a joint venture or acquisition. With respect to investments based on lower production costs however, the entry mode will also depend on the nature of products and sectors of activity.

3. With respect to sectors of investment:

a) Investments in process industries will have the most positive effect on modernization.

b) High tech industries do have a greater potential for modernization, but they will probably only set up more simplistic, labor intensive production units in Hungary (for instance assembly lines).

c) The potential for modernization is the lowest for investments in traditional industries. However, because the technology gap is smaller in these industries, diffusion to local companies will be higher. Especially since most investments in traditional industries are by way of a joint venture or acquisition (actual links with local companies).

In order to get a complete picture it will be necessary to study modernization 'inside' the companies, especially, since the link to the demand for labor in these companies will be studied. Therefore further research will contain interviews with both local and foreign companies. Since modernization is an important issue for the international competitive position of Hungarian industry, labor market changes are of major relevance for the country's domestic economics. Furthermore, this change in the demand for labor might be the more worth monitoring, because the education and work ethics (i.e. the supply of labor) might in its turn be an important factor in attracting foreign investors and (therefore) the pace and extent of industrial modernization.

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