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Companies with foreign participation play a determining role in the Hungarian economy. This short Opinion tries to identify those factors, which determine their level of local supplies, through which they may contribute to raising the productivity in the host economy.

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Introduction

Companies with foreign participation play a determining role in the Hungarian economy. They may affect positively the economic performance of the host country. However, these positive impacts do not occur automatically.

One of the channels through which domestic enterprises can benefit from the inflow of FDI, is their links to companies with foreign participation. The level of local supplies remained below expectations in Hungary and in other transition economies as well: overall, its share is estimated to be higher than in developing countries, but it is lower compared to developed countries. Various factors determine the share of local (backward) linkages of companies with foreign participation. This short note tries to present and describe them by using Hungarian examples.

The mode of FDI entry

There are differences in local value added and use of local suppliers based on the type of investment. Understandably, some of the privatised companies retained their original domestic suppliers after restructuring, particularly if their main focus was on the domestic market.

In Hungary, in the case of Tungsram (General Electric's acquisition of Tungsram producing electric bulbs), the share of local suppliers is over 40%, or in the case of Siemens (which acquired the Hungarian Telephone company through privatisation) the corresponding share is 35%. For Electrolux (which bought the Lehel factory in the white goods sector), for certain products the share of local supplies is as high as 80%.

The targets of these privatisation transactions were Hungarian companies with a relative success (long history, tradition, intense cooperation in the field of production and/or trade with foreign partners) prior to privatisation. The special characteristics of the activity carried out in these companies made it possible for other Hungarian companies to maintain supplier relationships or to join in the supplier network of the company in question. Other companies in the group are ZF Hungária Ltd, Knorr-Bremse Ltd, ABB Ltd and Rába (current names of the companies).

Table 1. Share of local supplies in privatized companies

Company	Sector	Share of local (Hungarian) suppliers from local value added
ABB Ltd.	Energetic machinery production	45 %
Adtranz Ltd.	Diesel trains, freight trains production	55 %
BPW-Rába	Truck undercarriage production	35 %
Electrolux Lehel Ltd.	White goods production	40 %
GE Lighting Tungsram	Light source production	50 %
Knorr-Bremse Ltd.	Brake structures production	30 %
SVT-Wamsler	Consumer electronics goods production	55 %
ZF Hungária Ltd.	Gearbox production	35 %

Source: Ipargazdasági Kft. (2002A)

On the other hand, in the case of greenfield investments, it can take a considerable time to build up a local network of suppliers. Many greenfield investors have limited number of local suppliers, but in most cases, there has been an increase as the company became established over time. Examples include Audi, Flextronics, LuK Savaria, Nokia, Samsung, Temic and Visteon.

For example, in the case of Audi (automotive industry), local suppliers increased their share from less than 1 to 10% by now (including the effect of the establishment of an R&D centre). Moreover, in the case of greenfield investments in the same sector as the already mentioned Tungsram (DL), in Philips', Nokia's and Sony's network of suppliers local ones possess a less than 10 % share. Given the relatively long greenfield FDI history of Hungary, by now, there is evidence in the Hungarian economy on new networks created by greenfield investors. (Szanyi, 2002)

There is also evidence of agglomeration effects and clusters being formed in the Northern Transdanubia and Budapest agglomeration. (Buzás, 2000; Grosz, 2000) They are formed around companies with foreign participation, mainly greenfield investments. These networks are part of the international networks of MNCs, and are concentrated geographically in the part of the country that hosts the majority of FDI. These networks consist mostly of companies with foreign participation, the majority of them established through greenfield investments.

Table 2. Share of local supplies for greenfield investments

Company	Sector	Share of local (Hungarian) suppliers from local value added
Denso Ltd.	Diesel feeder pump production	0 %
IBM Storage Ltd.*	Hard disc drive production	below 5 %
LEAR Ltd.	Production of inner structures of vehicles	10 %
Opel Hungary Ltd.	Engine, cylinder head and gearbox production	below 5 %
Philips-group	Electronics goods production	10 %
Phycomp Ltd.	Assembly of condenser and	0 %
Sony Hungária Ltd.	Electronics goods production	below 5 %
Thyssen Production System Ltd.	Production of automotive goods	0 %
Tower Automotive Ltd.	Assembly of parts of bodywork	0 %
Zeuna Starker Ltd.	Production of structures of exhaust pipes	15 %
Zollner Elektronik Ltd.	Electronics parts production	6 %

**production relocated to China in 2002. Source: Ipargazdasági Kft. (2002A)*

Sectoral differences

The sectoral composition of FDI also has an impact on the extent of using local suppliers. There are some sectors with greater tendency to involve less local suppliers. (UNCTAD, 2001) Within manufacturing sub-sectors of the machinery industry, especially the automotive and electronics sectors are of that type. Among others, the subtle production networks set up in these sectors form a certain entry barrier for suppliers, which can be explained by the specifics of the product, the technology, and - for export-oriented investors - the high quality requirements.

At the other extreme, foreign affiliates in the food industry, or in the production of building materials - given the relatively closed market and a small relevant market, and/or relatively high transport costs - rely to a great extent on local supplies. However, it is important to assess the „supply capacity" of the various sectors as well: for example the rubber, plastic and metal producing sectors are able to provide spare parts or components to a number of machinery sub-sectors (electronics, automotive, general machinery production), as it is the case in Hungary as well.

The structure of supplier „pyramids" is different between various sectors using local supplies. (Ipargazdasági Kft., 2002A) Inside the machinery industry, especially in the automotive and electronics sectors, MNCs

carrying out end-assembly or producing complete main components and positioned at the top of the pyramid are present, (e.g. Audi, Suzuki, Philips, Nokia, Ericsson) together with first-supplier MNCs (e.g. LuK, VAW, Visteon, Leoni, Flextronics, Temic, Elcoteq). Moreover, numerous second and third level suppliers also invested in Hungary. Thus, supplier pyramids have also been formed in the country. However, the intensity of links varies according to the level inside the pyramid. Hungarian suppliers usually join the second, third or even lower levels of the pyramids, having little direct contacts with the top company and the first tier supplier.

The character of the activity carried out at the MNC local affiliate is related to its sector, not independently of the technological characteristics of the branch. Large assembly plants may base their activity solely on imported components. In this case the share of local value added in output is usually very low and the import ratio is extremely high. Assembly lines of this kind are located mainly in the electronics industry, and in some other engineering branches. Local contribution is mainly provided by unskilled labour employed in the assembly plant. Chances of supplies by other local companies are rather meagre, since the aim of the activity is to tap cheap unskilled labour. Local deliveries do not exceed the area of facility management, catering, cleaning and guarding (all activities belonging to the service sector). These activities are not essential from the viewpoint of the main product, and do not provide those desired positive external effects that improve local companies' technological, managerial or marketing capabilities or productivity, efficiency.

Export-oriented versus domestic market oriented investors

The main motive of investments also matters from the point of view of the extent to which domestic suppliers can be "involved" in the production of foreign owned companies. This factor is related to the sector of investment and to the mode of FDI entry. Big, export oriented greenfield projects are usually less integrated into the local economy, than their domestic oriented counterparts. Reuben et al. (1973) show for developing countries (among others) that local-market-oriented affiliates employ more local suppliers than export-oriented affiliates. The group of large, export-oriented projects in Hungary can be easily separated from other companies (Antalóczy, Sass, 2003), because in the companies in question, the share of exports is usually close to 100 % and they are among the top Hungarian exporters (*see Table 3*).

Table 3. The Top 10 Hungarian exporters, 2006

Company	With foreign share?	Sector	Share in total Hungarian exports (%)	Export/sales (%)
MOL	Yes (stock exchange)	Energy	9.98	59.0
Audi	Yes (greenfield)	Automotive	9.66	99.7
Philips	Yes (greenfield)	Electronics	4.72	99.5
GE Hungary	Yes (privatised)	Electronics	4.08	97.3
Suzuki	Yes (greenfield)	Automotive	3.10	85.1
Samsung	Yes (greenfield)	Electronics	2.94	88.0
Flextronics	Yes (greenfield)	Electronics	1.70	99.0
Alcoa-Köfém	Yes (privatised)	Metal working	1.60	84.7
Michelin	Yes (privatised)	Automotive (tyres)	1.60	99.8
Robert Bosch Electronics Ltd.	Yes (greenfield)	Electronics	1.37	99.9

Source: Based on data published by HVG (Hungarian economic weekly)

In this group, we can find investments by Audi, Philips, Suzuki, Samsung, and Flextronics to name only the biggest ones. These greenfield, export-oriented big projects had a maximum 10% share of local suppliers (including both "purely" domestic and foreign owned domestic). The above mentioned companies represent almost one-fifth of total Hungarian exports.[1]

In a questionnaire-based survey carried out among Hungarian companies (Sass, 2007), companies could also be categorised into the local market oriented and export oriented group. For the export oriented group, the share of local supplies was between 20% and 30%, though increasing over time. In the domestic market oriented group, companies sourced around 60-70% of their inputs locally.

Differences between "domestic" and "foreign" sectors

If the foreign sector differs to a great extent from the domestic one, it may affect negatively the formation of linkages between the two segments of the economy. (Hunya, 2001) In an environment, where the two groups of companies form separate segments within the economy, the evolution of forward and backward linkages may be hindered. However, as companies with foreign participation become more established over time and more familiar with the functioning of the host economy and the performance of domestic companies improves, the importance of this factor may whither.

In Hungary, the two segments differ considerably from each other. Many studies found that the most important differentiating factor among Hungarian groups of companies is their ownership (and not unrelated to this, their size). Companies with foreign participation perform better in all fields of company performance, like profitability, competitiveness, export etc. than their domestic counterparts. Labour productivity is significantly lower in domestic companies. Empirical evidence is inconclusive on the narrowing of the gap between the performances of the two groups of companies, which would give an impetus to forming more linkages between them.

The age of the investment

Foreign owned companies tend to increase the share of local inputs over time. (Blomström, Kokko, 1997) Even in the case of greenfield investments, and export-oriented investments, a gradual build-up of local supplies can be observed, even if the share of these remains relatively low. Anecdotal evidence on companies with foreign participation underlines the importance of that factor. Certain greenfield companies could increase their local supplier base considerably some years after their establishment. For example, the share of local supplies was below 1% for the Hungarian Audi affiliate in 1997, which has been increased to 10% by now. The already cited questionnaire survey (Sass, 2007) showed, that there is a few percentage point increase in the average share of local supplies in Hungary between 1998 and 2004.

Quality of (potential) local suppliers

Chances of establishing (and the quality of) supplier linkages also depend on the size and quality of local business. One major feature of Hungarian business is the lack of medium-sized companies, suitable technically and financially to supply the large scale batches at the desired technological accuracy, reliability and timing (See: Szanyi, 2003).

[1] Nokia, which does not publish data on its activities in Hungary, has similarly high export intensity and an estimated close to 10 % share in Hungarian exports, thus, together with the companies in the table, it represent close to half of Hungarian exports.

Due to the privatisation practice that preferred foreign investment, many of the better performing medium-sized companies became foreign owned. Most of the remaining firms was weaker in many aspects (products, markets, finances, management) and went bankrupt due to these weaknesses. Unlike in other transition economies, the Hungarian state did not make serious efforts at bailing out. As a result, only a few dozens of the surviving medium-sized manufacturing companies remained and were acquired by Hungarian capital owners. They have the biggest chances to become suppliers, because they can keep up with the quantity and quality requirements of foreign owned companies. According to Ipargazdaság Kft. (2002B), only 7% of Hungarian suppliers are a medium sized company.

The missing layer of medium sized companies has a detrimental impact on the building up of Hungarian networks of suppliers in another respect. The number of the so-called medium and big sized indigenous integrator companies is also relatively small compared to other countries in the region that applied different privatisation techniques (e.g. the Czech Republic). In the "surroundings" of Suzuki, there are a few of these types of companies (e.g. Bakony Művek, Imag or Videoton[2]) acting as a contract manufacturer for car producers or in the electronics industry but for other affiliates, the role of integrator companies is played by partly or wholly foreign owned companies, which results in a smaller network of local suppliers and/or more limited spillovers.

Many Hungarian suppliers have many customers; they supply electronics and automotive companies as well, using the specifics of their plastic or metal products, which can be used for many different end-products. Hungarian suppliers can be characterised by smaller series (in some cases one-off products, specifically produced for the buyer), labour intensity and lower complexity, compared to production carried out in the affiliates of MNCs.

It is not only the quality, but also the quantity of local supplies, which domestic (potential) suppliers can not meet. This also acts as a hurdle for a Hungarian company to become a supplier for an affiliate of a MNC. There is a further requirement for suppliers: the stability dimension. That is why suppliers are required to supply more than one affiliate. For example, Audi and other automotive companies require that their suppliers can not earn more than 30 % of their total revenues from one single company. (Gelei and Nagy, 2005, p. 16.) For many domestic companies, this requirement can not be fulfilled due to shortage of labour, financial means and skills etc.

The impact of the nationality of the investor

In that respect, one can distinguish the "local supplier strategy" of extra-EU export-oriented (greenfield) investors from other entrepreneurs. These are mostly American, Japanese and South Korean companies, which were established with the aim of supplying the EU markets from a relatively cheap location, which is close geographically to the targeted market (and eventually will become part of it). These companies are forced to use local suppliers in order to meet the local content requirements, if they want to qualify for the preferential tariff treatment, which is applied to products exported from Hungary to the EU-markets. In many cases these affiliates are actively pursuing a strategy of enabling local companies to integrate themselves into the supplier network.

Suzuki is a good example of a greenfield investment, which basically does not fit in the Hungarian economic environment, is export-oriented, however, in order to qualify for preferential tariffs, it had to fulfil local content requirements. This latter consists of the value added inside the factory and local supplies.

[2] Videoton is a contract manufacturer of ABB, Philips, Sony, Matsushita/Panasonic, Kenwood, AFL among others.

Global strategies of MNCs

Industries, that are most important from the point of view of recruiting local suppliers and exercising substantial spillovers (namely the automotive and electronics industries), operate more and more in the production networks of international partners. One strong partner usually dominates these international networks, which replace integrated MNCs. Longer-term supply contracts are characteristic of them. These form barriers to entry into the production network for local firms. Big automotive producers do not outsource the production of parts and components, which are the essence of the given brand. In 2002, the big automotive companies did not produce themselves about 50% of cars, but sourced from suppliers. (Gelei, Nagy, 2005)

Thus the key question in terms of the impact of FDI on local industries in a transition economy is whether companies of the host country can and to what extent they can be integrated into these production networks. In some cases, even in the case of privatised companies, domestic suppliers can be replaced by global suppliers of the parent company. At the same time, in some cases a domestic company, successfully meeting the supplier requirements of a local affiliate, may become a supplier of other affiliates of the given MNC or of other local affiliates.

Due to the method of organisation of suppliers, the number of those Hungarian companies that do not supply directly the big automotive companies, but their most important foreign suppliers, is increasing,. For example, the small-medium sized Arge 2000 company exports automotive spare parts to the foreign suppliers of the car manufacturers of Porsche, Mercedes and Volvo. It is important to note, that second and first tier suppliers of the big automotive MNCs also went through a merger and acquisition wave (due to the increased and demanding outsourcing activity of carmakers). Thus, the global market of automotive suppliers is in the process of concentration, and the number of global players may be down to less than 30. This concentration also has a limiting effect on the potential involvement of Hungarian suppliers. Similar tendencies may be present on the global market of suppliers of the electronics industry.

Affiliates' role in production networks

The extent of local linkages also depends on the affiliate's position in the network of the MNC. (Vince, 2001) Two groups of companies with foreign participation can be distinguished according to their reliance on local suppliers.

In the first group of majority foreign owned companies with tight ownership control, the owner is a big multinational company, which controls every walk of life of the affiliate. Many greenfield investments in Hungary belong to this group. Inputs and outputs are traded inside the company; production in the affiliate is centred on components and spare parts or on assembling them into final products. From industrial economics point of view, this type of activity is rather similar to subcontracting. In both cases some handling and assembling of imported components is carried out, and the total output is delivered back to the same foreign company. The share of local suppliers is low, and they are providing mainly services. A study of Majcen et al (2003) proved that these assemblers had very low level of independence in decision making and only carry out the orders of the headquarters. This means that they are effectively isolated from the local business community.

In the second group, (Vince, 2001) the foreign owner companies of Hungarian affiliates are usually "smaller-sized" MNCs. Besides some greenfield investments, there are mainly acquisitions (mostly in the framework of privatisation) with significant changes carried out in the original production structure, technology etc. The affiliates have their own products (brand names) and sell ready-made products too. These affiliates usually

rely more on domestic suppliers, they are more independent in their decisions, concerning the share of local supplies. Thus, they can be integrated more fully into the local economy and spillover effects originating from their cooperation with local suppliers may be more substantial.

For affiliates in Hungary, there are big differences in terms of their independency concerning local supplies and local suppliers. While lower local independence usually goes together with lower local supplies (e.g. in the case of Audi, Temic, Nokia), there are important exceptions to that rule (e.g. Sanyo, ZF Hungária). For these latter companies, other factors may influence more strongly the development of local supplies (e.g. for Sanyo the local content requirements). Local supply decisions may be taken first of all by affiliates, which have a regional role in production, or produce products which are exclusively produced in Hungary, or for which using local supplies is more advantageous than imports (e.g. because of prohibitive transport costs). On the other hand, on the basis of anecdotal evidence, there seem to be stages in the independency of affiliates. In the first stage of activities, affiliates usually do not take local supply decisions, while in later stages, due to their local experiences with a few suppliers, they may have more independence in choosing local suppliers.

Conclusion

Companies with foreign participation play a determining role in the Hungarian economy. On average their performance indicators are significantly better than those of their domestic counterparts. Companies with foreign participation may affect positively the economic performance of the host country; however, these positive impacts are not generated automatically.

One of the channels through which domestic enterprises can benefit from the inflow of FDI is their links to companies with foreign participation. The level of local supplies remained below expectations in Hungary, though sporadic data hinders deeper analysis. Minimum share of local suppliers is, understandably, close to zero, while the maximum is around 60% in manufacturing, and may reach 90% in the case of some services sector investments. It is also problematic to distinguish between “indigenous” domestic suppliers and those, which are themselves companies with foreign participation operating in Hungary. However, according to some estimation, the overwhelming majority of “regular” local suppliers belong to this latter category.

The Opinion tried to identify those factors, which determine the level of local supplies. These factors are interrelated to a great extent. Being aware of the factors which determine the share of local inputs, helps in designing policies, which may enable local companies to become suppliers. The differences in the propensity of companies to use local suppliers in different sectors, in export oriented or domestic oriented industries, etc. calls the attention to a more focused approach in that respect. This is also true if we consider that among indigenous companies, there are only a few which can qualify themselves with certain (not necessarily direct financial) help to become a supplier. Besides targeting a certain group of companies, it can also be important to identify the most important bottlenecks (e.g. meeting quality requirements, meeting terms and time of delivery, producing in the required volume) which hinder the company in question to become a supplier to other companies. Very general supplier programs are usually not able to adequately address these problems and reach the ultimate targets.

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