

The spillover effect of foreign direct investment – the case of Slovak beer and malt production sector

Dopady priamych zahraničných investícií – prípad vo výrobe piva a sladu na Slovensku

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Abstract: The paper deals with the FDI spillover effects in production of beer and malt in Slovakia. Malt producers have a dominant position in the market. The use of the almost monopsonistic power of malt producers is constrained by the low asset specificity of primary producers of barley, other outlets for the disposal of barley (export), and demand for high quality of malt from malt producers. Because of high dependence of malt producers for high quality and reliable deliveries of barley, malt producers provide a significant assistance of primary farmers.

Key words: FDI, spillover effect, barley, malt, beer, Slovakia

Abstrakt: V článku hodnotíme dopady priamych zahraničných investícií vo výrobe piva a sladu na Slovensku. Sladovne majú dominantné postavenie na trhu. Ich skoro monopsonistická pozícia je však obmedzená malou špecifickosťou aktív prvovýrobcov, inými možnosťami predaja jačmeňa (export) a dopytom sladovní po kvalitných a spoľahlivých dodávkach jačmeňa. Z toho dôvodu sladovne poskytujú aj podstatnú pomoc prvovýrobcovi.

Kľúčové slova: PZI, jačmeň, slad, pivo, Slovensko

Generally, prior to the reforms in the Central and Eastern European Countries, the agri-food chain in general was centrally planned and vertically integrated from the initial input supplier to final retailer and consumer (Bielik, Rajčániová 2004; Kuzma, Legesse 2001). Decision making, control and enforcement were overseen by a centralized higher authority. Disputes were adjudicated over by this higher authority with decisions being final, binding and abided to by the disputing parties. This limited the scope for contractual transgressions and provided a credible and enforceable contractual dispute mechanism. The reform of the centrally planned system and the introduction of markets broke the vertically integrated agri-food chain into separate enterprises, although the informal contracting between the previous trading partners continued. As transition economies are characterized by developing contractual dispute and enforcement mechanisms and legislation, such reforms cause hold-up problems (Swinnen, Gow 1997; Stiglitz 1993; Hart 1995). The result is that the reforms in the transitional economies are characterized by large

falls in output and by strong de-capitalization of the agri-food production system (Gow, Swinnen 1998).

Foreign Direct Investment has played an important role in the transition process of agri-food chains in the CEE Countries. In general, the effect of foreign direct investment has been seen differently in the context of the public debate on globalization. On one hand, some analysts see foreign investment as a beneficial factor that can be an important source of much needed capital, technology, and knowledge for poorer countries. On the other hand, others point at the dangers of multinational companies crowding out local companies as well as introducing practices of imperfect competition (Podolák, Serenčák 2003).

Many studies have been done on the assessment of FDI impact in different countries. Some of them focus on *horizontal spillover effects* of foreign investment on domestic firms. The conclusions from these studies are mixed: some studies find positive effects (Hu, Jefferson 2002), others no significant effect (Kokko et al. 1996; Konings 2000), and yet other studies conclude that the impact on local firms is negative

(Aitken, Harrison 1999). The difference in the findings comes from two opposing effects of FDI. On the one hand, FDI can introduce new products and technologies, and domestic companies can benefit from this through the personnel turnover, demonstration effects and knowledge spillovers. However, these horizontal spillovers are only important if the technology gap between the foreign and domestic firms is not too large (Kokko 1994). A negative FDI effect can come from the FDI cutting into the local companies' market share. Hence, the different findings of the studies reflect the relative importance of these two factors in the various countries and sectors (Ciaian, Swinnen 2006; Ciaian et al. 2005).

Other studies focus on the *vertical spillover effects*. They find that foreign firms facilitate the adoption of new technologies and can solve contract enforcement problems (Key, Runsten 1999; Gow, Swinnen 1998). Yet most studies conclude that the impact on local suppliers is mostly negative, in particular for small suppliers in developing countries (Dolan, Humphrey 2000; Swinnen 1998). The latter often cannot comply with the higher standards and grading requirements for the supplied products. Moreover, foreign investors prefer to deal with a few large suppliers to minimise transaction costs, forcing consolidation of the supplier base and hence separating many small suppliers from their traditional outlets (Lall 1980; Holloway et al. 2000; Klein et al. 1978).

DATA AND METHODS

In our analysis, we follow two objectives:

- One objective of this research is to study the impact of foreign direct investment on local suppliers, in the Slovak Republic. Many companies in Slovakia are (or were) in severe need of restructuring and upgrading of capital, technology, and management. This is especially true for such transition countries like Slovakia as among those most open to external competition, either because trade restrictions were liberalised in the transition process, or because they will very soon be integrated into the single EU market in which they will have to compete with the other EU companies. At the same time, as the country is integrated within the EU, it has received a large inflow of FDI over the past years. For these reasons, studying the impact of FDI in Slovakia can provide very useful insights.
- The second objective of our study is to analyse and understand the mechanism and process of how FDI affects the local economy, and in particular local suppliers. A major problem in countries like Slovakia

is the breakdown of exchange systems and contract enforcement mechanisms (Blanchard 1997; Konings, Walsh 1999). Case studies suggest that foreign investors have played an important role in this process through vertical integration (Gow et al. 2000). At least in some cases such FDI-induced vertical integration has contributed to the improved access to finance and inputs, and productivity growth of suppliers (Gow, Swinnen 2001).

To identify both the effects of FDI and the process, through which these effects occur, we have collected data at several levels from Slovak grain-malt-brewing sector. More specifically, based on the research experience of Dries and Swinnen (2002), a two-stage survey has been developed in this sector. This methodology consists in collecting data through a series of in-depth interviews with domestic and foreign owned companies at the level where the foreign investment took place (brewing and dairy processing and marketing) as well as through a random survey of the (potential) local suppliers (barley and dairy farms) to these companies. In combination the collected information constitutes a unique dataset on the impact of FDI on local suppliers. This paper contains the analysis of the first stage of this survey that has been already finished for Slovak Republic with 3 interviewed brewing & malting companies.

RESULTS AND DISCUSSION

Slovak farms are of a big size compared to those in other developed countries. Table 1 describes their main characteristics.

In the sector of beer and malt production, relatively big firms operate (Figure 1 and Figure 2). The biggest share of malting barley in Slovakia is supplied to big breweries. As a result, these breweries have a dominant position in the barley demand market and they are dominated by foreign companies as well. Is it possible that they could misuse their position? According to the traditional economic theories, the answer might be YES. However, the quasi monopsonistic position of breweries as barley buyers in Slovakia is limited by many other factors.

First, the malting barley that serves for the purposes of malt and beer production is not a specific product, indeed. It does not require, therefore any investment into specific assets that might be specific only to malting barley. Under non-favorable price conditions, it is not, so costly to change farm specialization from malting barley production into other commodities (other cereals, oilseeds and other).

Table 1. The structure of Slovak farms (2001)

| | Number of farms | Agricultural land (1 000 ha) | Average size (hectares) | The share in total agricultural land (%) |
|------------------------------------|-----------------|------------------------------|-------------------------|--|
| Cooperatives | 715 | 1 131 | 1 582 | 46.4 |
| Private commercial farms, in total | 722 | 723 | 1 002 | 29.6 |
| From which: limited | 627 | 550 | 877 | 22.5 |
| From which: corp | 94 | 173 | 1 842 | 7.1 |
| Legal business entities in total | 1 522 | 1 890 | 1 241 | 77.4 |
| Individual farmers | 5 473 | 215 | 39.2 | 8.8 |
| Other land* | | 335 | | 13.7 |
| In total | 6 995 | 2 439 | 349 | 100.0 |

*includes non-registered farmers, gardens and other

Source: Structural Farm Census, Slovak Republic 2001

Second, barley farmers do have other alternatives rather than supplying their product to Slovak producers. These variants include for example export and storage.

Third, big malting companies, i.e. foreign owned breweries in Slovakia, require a very high quality barley in order to reduce their production costs and increase the malt respectively beer quality. The barley

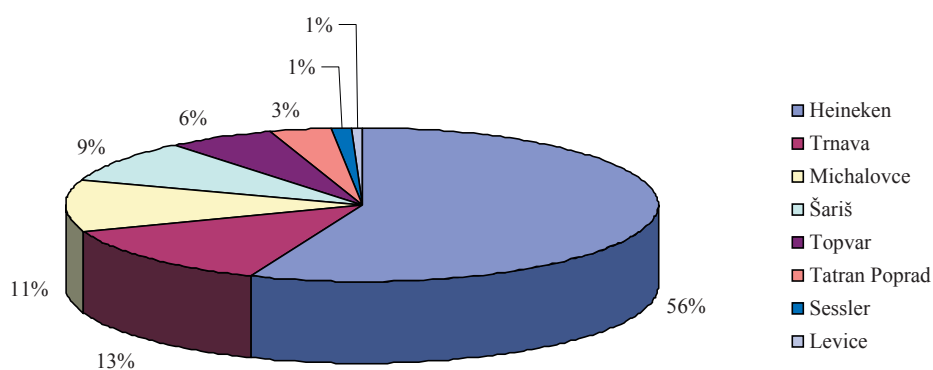


Figure 1. The shares of malt producers in the Slovak Republic in 2004 (in %)

Source: The Union of Slovak Malt and Beer Producers

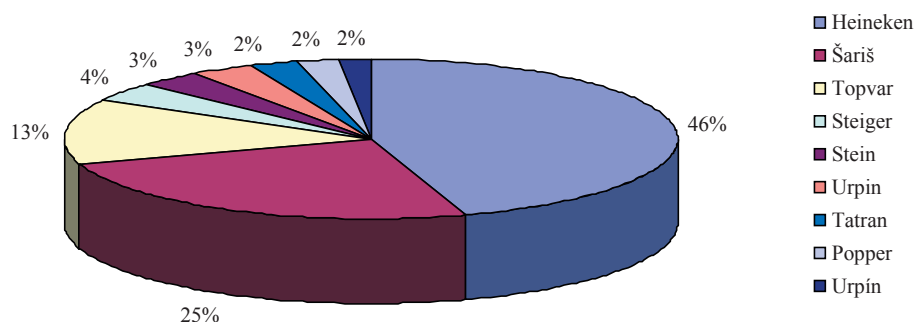


Figure 2. The shares of beer producers in the Slovak Republic in 2004 (in %)

Source: The Union of Slovak Malt and Beer Producers

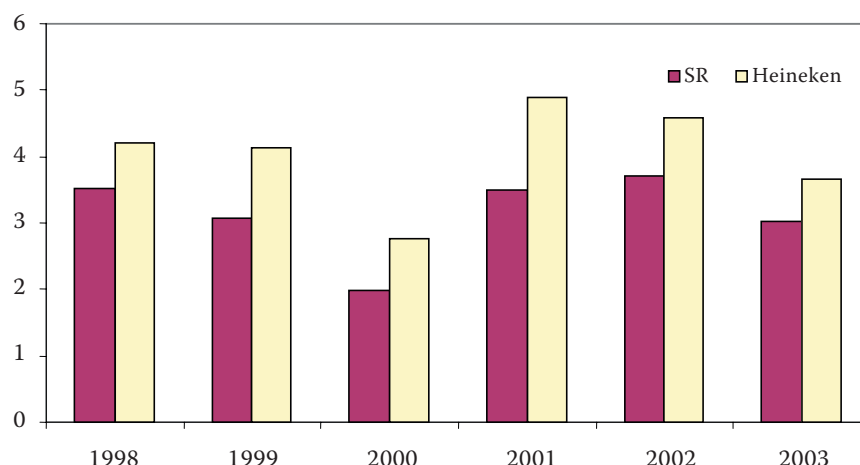


Figure 3. The comparison of average barley yields in the Slovak Republic in total and the Heineken Slovakia barley suppliers.

Source: Heineken Slovakia – Malt Production, Inc.

quality is key factor to the malt and beer production. Breweries as a consequence are very interested to cooperate with barley farmers in order to increase the quality of barley they supply. The malting companies in Slovakia (for example the Heineken Slovakia – Malting Division inc.) are quite conscious that the situation in barley farming is crucial for the improvement of productivity and efficiency in malt production so they emphasize the importance of good relationships with barley farmers. The Heineken Slovakia created the recent system of barley production and purchase in 1997. The system helps the Heineken in satisfying their needs for the high quality of barley. This system includes the selection of barley varieties, the application of modern phyto-sanitary measures and techniques, as well as the harvesting techniques and the special treatment of barley (post-harvest storage, transport, etc).

The Heineken Slovakia, like other malting companies, cooperates with barley farmers on different levels:

- Pre-financing of barley varieties, pesticides and fertilizers, where other firms included in the scheme are those that produce barley varieties, pesticides and fertilizers;
- There is a cooperation framework between the Heineken and the Agricultural University in Nitra in the field of expertise for the following aspects: the application of modern approaches in barley variety selection, soil analysis and selection of fertilizers;
- There is a cooperation framework between the Heineken and the UKSUP (the quality controlling institute) in the field of disease identification of barley varieties (the UKSUP costs of checking and control are partially covered by the Heineken);

- There is a cooperation framework between the Heineken and the Research Institute of Planting in the field of advisory services.

The cooperation of malting companies and breweries with barley farmers has been proved as fruitful. In Figure 3, we compare the average barley yields in Slovakia with those farmers that supply barley to the Heineken – malting Division. Indeed, the Heineken suppliers have higher yields than the rest of Slovakia. On one hand, this could be explained with the support system implemented from the Heineken to their suppliers. On the other hand, though, the Heineken has selected the best barley farmers among their suppliers farming in the best climatic conditions and locations.

Table 2. Barley area, production and yields in the Slovak Republic

| Year | Barley area (ha) | Production (t) | Yields (t/ha) |
|------|------------------|----------------|---------------|
| 1996 | 208 607 | 718 063 | 3.18 |
| 1997 | 228 805 | 868 538 | 3.58 |
| 1998 | 231 639 | 874 953 | 3.51 |
| 1999 | 232 680 | 879 500 | 3.06 |
| 2000 | 187 384 | 400 100 | 1.99 |
| 2001 | 174 478 | 685 200 | 3.49 |
| 2002 | 164 056 | 611 202 | 3.72 |
| 2003 | 249 098 | 734 131 | 3.02 |

Source: Eurostat – Slovakia

CONCLUSION

The positive effect of FDI is a crucial step for Slovakia malt and beer sector toward a more efficient use of the apparent comparative advantage they have. In spite of dominant position of the foreign owned breweries and their malting divisions in the Slovak market there is no need for state intervention into the matter, because of other important factors influencing the malt production sector like low specificity of assets, export opportunity of malting barley and especially the strict requirements on the side of breweries for the high quality and stability of barley supplies. For these breweries and their malting producers, there is very crucial the close cooperation with their barley suppliers that consequently has a positive effect in farmers' productivity. In this sense, the spillover effect of FDI in the brewing sector is apparent.

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Arrived on 7th June 2006

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