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IMPACT OF FOREIGN CAPITAL ON THE ECONOMIC EFFICIENCY OF FOOD INDUSTRY ENTERPRISES IN THE SLOVAK REPUBLIC

Maroš VALACH

Slovak University of Agricultural, Faculty of European Studies and Regional Development, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, Phone: +421 37 641 5654, E-mail: maros.valach@uniag.sk

Corresponding author: maros.valach@uniag.sk

Abstract

The paper is aimed at assessing the economic efficiency of food industry enterprises based on the foreign capital indicator. The decisive emphasis was placed on the hypothesis that, within the economic efficiency of groups of companies with and without foreign capital, companies with foreign capital would be more efficient. This hypothesis was not confirmed in the 2020 calculations, as some enterprises without foreign capital also achieved comparable or better results compared to groups of enterprises with foreign capital. Given that the calculation of the economic efficiency of food enterprises by the method of classifying groups of enterprises was carried out for the first time, we therefore consider the result to be a preliminary finding.

***Key words*:** *food industry, foreign capital, economic efficiency*

INTRODUCTION

Foreign investments complete the domestic investments, being a booster for economic development both at the macro and micro level in all the fields of activity, including agriculture and food industry, creating facilities for capital growth, new jobs, production increase and new financial flows to the budget. Also, they allow a higher contribution to GDP and diminish the gap of competitiveness among various countries [4, 10, 11].

Slovakia's accession to the EU opened up greater opportunities for foreign investors. Foreign capital gradually entered the crucial production branches of the food industry.

The inflow of foreign capital invested in the territory of Slovak Republic slowed down in the first half of 1995 due to various non-economic effects. The development later showed that this was rather a transitional, waiting period for foreign investors. At the end of 1995, the volume of foreign capital invested in the Slovak Republic amounted to SKK 21.9 billion. The year-on-year increase was SKK 5.3 billion, of which SKK 4.4 billion (i.e. 82 %) was realized in the second half of the year [2]. According to [5] "the total amount of foreign capital contributed, Austria, Germany, Czech Republic and USA were the largest investors in 1995. The shares of these countries in the total volume of foreign capital in the Slovak Republic range from 12.4% (USA) to 23.4% (Austria) and together they represent approximately 70% of the total volume of foreign capital in the Slovak Republic".

The UK, Netherlands, France, Sweden and Italy follow with larger shareholdings (between 5.7 % and 2.2 % of the total). The shares of other countries whose capital operates in the territory of Slovak Republic did not exceed 1% of the total volume [8].

In the sectoral structure of foreign investment, in 1995 the industrial sector came first. The share of industry in the total volume of foreign capital in the Slovak economy reached 43.4% at the end of the year, followed by trade with 32.4% and in third place with a share of 15.7% was the financial sector. In the regional distribution, the capital City of Bratislava maintains its priority position with a share of 62.1%. In 1995 there was also some intensification of investment flows to regions with a previously low share of foreign capital and high unemployment rates [7].

The use of capacities for the production of chocolate and non-chocolate confectionery and durable pastries is influenced by the

presence of foreign investors who have ensured the involvement of their Slovak acquisitions in global distribution systems [6].
According to [8], "there were considerable foreign investments in the dairy sector: there were eight different international dairy farms on the Slovak market: Sole, Italy; Meggle, Germany; Bongrain, Danone and Fromageries Bel, France; Artax, Austria; Friesland Coberco, Netherlands; and Amine Aour, Lebanon. A 2003 report by the Slovak Dairy Association states that 77% of the milk purchased in Slovakia was processed in dairy companies with foreign owners".
Several foreign companies gradually joined the dairy industry, their emergence was initially very strong, but some of them gave up the competition and gradually left Slovakia (Italian Sole, Dutch Friesland, French Danone, Czech Ollma Olomouc, and Lebanese Milex Galanta). Later in Slovakia, french companies Bongrain, Bel and Senoble, German Meggle and Austrian Lactoprot were operating. Dairy farms with foreign capital accounted for 20 % of the total number of dairy farms in 2009 and their share has increased since 2000. This group of companies has been consistently loss-making for a long time. On the other hand, a group of dairy farms without foreign capital improved the profit and was loss-making only in 2002-2003 compared to 2000. All foreign capital companies together produced products for € 225.5 million, which was 49% of the industry´s total output. Compared to 2000, the production of the products of this group increased, but this was a decrease compared to 2007-2008. From the added value of the sector, companies with foreign capital created 44.6 %, while its value increased by 2.2 times compared to 2000, while in enterprises without foreign capital 1.3 times [6].
According to media sources, two foreign investors started buying and grouping up domestic bakeries - the Delta Bakery Group, which is controlled by Luxembourg´s United Bakerie (e.g. Peza, Bratislava´s First Bakery...) and Czech Agrofert. They currently own a network of several bakeries. The bakery´s daughter of Agrofert - Penam Slovakia also owns several mills - (Bratislava, Trnava, Trebišov, Ivanka near Nitra). The company also expanded into Hungary, as its acquisition activity in the Czech Republic and Slovakia is limited by high market shares (problem with antitrust authorities) [5]. In addition, Slovak bakery leaders include Vamex, which has the latest technologies (it produces 24,000 rolls per hour while serving 3 workers). In the opinion of the owner of Vamex, the future of the bakery industry is in large-capacity operations with automation of production. Smaller plants for specialised manual production, which does not pay off for large factories (e.g. Christmas bread), also have a perspective, provided that they cooperate with large enterprises that could outsource this segment of production, which is not promising for them in terms of production costs, but customers are interested in it [8].
The restructuring changes concerned not only the use of human resources, but also the number of enterprises, which was decreasing in the poultry and freezer sectors. This was reflected in the increase in their concentration, which is currently at a high level in these sectors and at a medium level in the canning sector [9]. The increasing share of foreign capital in the fixed capital, mainly in the poultry and freezer sectors, also contributed to this development. On the contrary, its significant decrease was in the canning sector, which was due to the departure of foreign investors from the Slovak market in 2011 [1].
Slovakia´s accession to the EU and globalisation processes have brought the entry of multinational retail chains that import many competing food of foreign origin to Slovakia, which on the one hand motivates producers to produce as efficiently as possible and gives them the possibility to expand sales, including entry into the foreign market and a high standard of sales of their products, but downward pressure on prices causes a decrease in the performance of the agri-food sector and an increase in the share of substitutable commodities in the overall agri-food imports, which has increased since 2002 [7]. According to [3] "in 2006 the most economically efficient were the fish processing, sugar, starch and canning sectors.

The meat, poultry and bakery sectors have worsened their position in terms of economic efficiency".

MATERIALS AND METHODS

This paper aimed to examine the economic efficiency of groups of enterprises with and without foreign capital, sorted further according to two criteria, either economic prosperity (profitable and loss-making enterprises) or by the size of enterprises (small, medium and large enterprises).

The source of data to assess the impact of foreign capital in food industry enterprises was the Ministry of Agriculture and Rural Development.

An analysis was carried out using basic economic indicators. Emphasis was placed on groups of sorting of enterprises in the food industry of the Slovak Republic depending on the ownership or non-ownership of foreign capital. As part of this, there were two groupings of enterprises, both in terms of economic prosperity (profitable and loss-making enterprises) and in terms of size groups of enterprises according to the number of employees: small enterprises (0-49 employees), medium-sized enterprises (50-249 employees) and large (250 employees and more) enterprises.

a) In assessing economic efficiency from a community-wide point of view the following three indicators were selected:

- the share of value added in yields = value added / revenue;
-the productivity of labour from value added = value added / staff;
- the productivity of total capital = returns / total capital.

b) In assessing economic efficiency from a private-ownership point of view, the following five indicators were selected:

- the share of value added in yields = value added / revenue;
- the financial labour productivity = added value / personnel costs;
- the productivity of total capital = total capital / returns;
-the return on equity = profit / equity;
- the profitability = profit / revenue.

c)The following indicators were used in the classification of enterprises by economic creditworthiness:

- the cash liquidity = (short-term receivables + financial accounts) / short-term liabilities;
- the self-financing indicator = equity / total capital;
- the cash flow indebtedness indicator = total liabilities / (depreciation + profit).

Using the standard variable method, the order of the sorting groups was determined as follows:

In a file that had n members and an X indicator that acquired xi (i = 1.2,...,n) for each member of the file. The X indicator has been normalized to the indicator:

$$z_i = \frac{x_{i-\bar{x}}}{S_x} \quad \text{..... (1)}$$

where the average has been calculated according to the relationship:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i \quad \text{.....(2)}$$

and standard deviation according to the relationship:

$$s_x = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2} \quad \text{.....(3)}$$

While the original X-indicators could be in any unit of measurement (persons, euros, euros per person, etc.), the measuring unit of the standardized indicators ´´Z´´ is a standard deviation and in this sense they are to some extent similar.

The standard values Z1, Z2 and Z3 (respectively Z1, Z2, Z3, Z4 and Z5) were calculated from the values of relative indicators and corresponding averages and standard deviations, and their sum resulted in a synthetic indicator according to which the sorting groups were ranked according to the achieved efficiency.

RESULTS AND DISCUSSIONS

Foreign capital stood at €537 million in 2010. The volume of funds from abroad has had significant fluctuations over the years, especially in 2013, but so far it has been maintained at above €400 million and is located in 9.4% of food companies. Its share in total assets is also on a downward trend, in 2010 from 62.6% to 50.3%, in 2020, i.e. by 12.3%. There was a similar development in its share in equity, which reached 15.7% in the last evaluated year, which was 3.1 % lower than in 2010. This development was influenced by the departure of several foreign investors from the Slovak Republic. Not only large investors were leaving, but also small and medium-sized enterprises, even for lower taxes. In the food industry, there was also a regrouping of owners by selling companies. Strong domestic financial groups have shown interest in food industry. The biggest changes in previous years took place in the meat industry, dairy and brewing. The number of foreign equity enterprises in 2020 (36, i.e. 9.4 %) is the lowest during the 10-year period, but not only the departure of investors has been noted, but also the arrival of new foreign investors, but with lower capital than in the previous period (Table 1).

The highest share of foreign capital in equity at present is in the starch industry, on the contrary, in the meat, milling, freezing and fisheries industries foreign capital was absent in 2020. Although in most of the previous years (until 2018), foreign capital (excluding the freezer industry) was present in these sectors.

Table 1. Development of foreign capital (in million €) and its share on assets in food industry (in %)

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Foreign capital (in million €)	537	531	476	400	435	490	483	512	468	439	432
Share of foreign capital on capital stock (in %)	62.6	62.0	59.7	55.3	59.2	65.7	59.8	62.8	59.2	51.7	50.3
Share of foreign capital on total assets (in %)	19.8	19.4	16.9	13.3	13.8	15.9	16.2	16.0	15.8	15.6	15.7

Source: processed by authors, based on the data of Research Institute of Agricultural and Food Economics.

Within a group of enterprises sorted by size (number of employees), the most foreign capital was concentrated in large (67%) and medium-sized (30 %) enterprises. In terms of economic prosperity, 72% of foreign capital was in profitable enterprises.

In 2020, less than 10% of foreign capital enterprises achieved 42% of the total sector´s production of products as well as value added (the remainder, i.e. 58% for enterprises without foreign capital).

Almost 73 % of the total charges for supplies to the food business network were paid by foreign capital enterprises (Table 2).

As part of exports (shipment of goods to EU Member States plus exports of goods to non-EU countries), foreign capital enterprises exported up to 66% of the industry´s total goods.

Within exports (within the EU and outside the EU), exports (dispatch of goods) to EU member states predominated both in the group of enterprises with foreign capital (93%) and in the group of enterprises without foreign capital (95%).

Economic prosperity of food enterprises and enterprises by size

From the point of view of classifying enterprises according to economic prosperity (profitable and loss-making enterprises), it follows that most of the production of related indicators in financial terms (production of products, added value, turnover) was achieved by profitable enterprises (in a group of enterprises with foreign as well as without-foreign capital).

Table 2. Selected economic indicators and delivery fees into retail chain in absolute terms (in million €)

Sorting group	Production	Value added	Revenues from own products and services	Revenues from goods sale	Goods shipping to EU member countries	Goods export to non-member countries of the EU	Delivery fees into retail chain
Enterprises without foreign capital in total, therein:	**1,605**	**385**	**1,534**	**425**	**319**	**18**	**55**
- profitable	1,222	314	1,165	357	253	12	37
- loss- making	383	70	369	68	66	6	18
- small	253	56	248	61	40	4	5
- medium	838	189	788	188	159	10	30
- large	513	140	497	175	120	3	21
Enterprises with foreign capital in total, therein:	**1,178**	**281**	**1,184**	**517**	**598**	**45**	**148**
- profitable	958	261	953	338	463	25	139
- loss- making	221	20	231	179	134	20	9
- small	32	7	35	14	16	0	5
- medium	432	75	443	236	353	36	14
- large	714	199	706	267	229	9	129
Share of enterprises without foreign capital of the sector (in %)	58	58	56	45	35	28	27
Share of enterprises with foreign capital from the sector (in %)	42	42	44	55	65	72	73
Food industry of the Slovak Republic in total	**2,783**	**665**	**2,717**	**942**	**917**	**63**	**204**

Source: processed by authors, based on the data of Ministry of Agriculture and Rural Development of the Slovak Republic.

Within the classification of enterprises according to the size of the number of employees in the group of enterprises without foreign capital, medium-sized enterprises (product production) dominated more than half, large enterprises contributed more than a third and the rest fell on small (about 15-16 %) enterprises. In the group of enterprises with foreign capital, production was dominated by large enterprises (60-70%), a third by medium-sized enterprises and less (by less than 3%) by small enterprises.

In terms of percentages, the results were similar for both the export indicator and the delivery fees into retail chain indicator, namely, in both groups of companies, with foreign and without foreign capital, there was a higher share of profitable enterprises as loss-making. In terms of enterprises sorted by size in a group of enterprises without foreign capital (export indicator and delivery fees into retail chain indicator), more than half of medium-sized enterprises dominated, followed by large enterprises and the rest fell to small enterprises. In the group of companies with foreign capital, the exports were dominated by medium-sized enterprises and followed by large enterprises, with the

delivery fees into retail chain indicator 87 % paid by large enterprises, the medium-sized only 9 %. From the production of food products export (dispatch of goods to the EU plus exports to third countries) accounted for 35 %. Enterprises without foreign capital exported 21 % from their own production of products and companies with foreign capital 54 %. Within the structure of enterprises without foreign capital, the groups contributed to the export of their production as follows: profitable 22 %, loss-making 19 %, small 17 %, medium-sized 20 %, and large 24 % (Table 3).

Table 3. Selected economic indicators and delivery fees into retail chain in percentage terms

Sorting group	Production	Value added	Revenues from own products and services	Revenues from goods sale	Goods shipping to EU member countries	Goods export to non-member countries of the EU	Delivery fees into retail chain	Goods shipping + export in total
Enterprises without foreign capital in total, therein:	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
- profitable	76	82	76	84	79	65	67	78
- loss- making	24	18	24	16	21	35	33	22
- small	16	15	16	14	12	25	9	13
- medium	52	49	51	44	50	59	54	50
- large	32	36	32	41	38	16	38	36
Enterprises with foreign capital in total, therein:	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
- profitable	81	93	80	65	78	56	94	76
- loss- making	19	7	20	35	22	44	6	24
- small	3	2	3	3	3	0	4	3
- medium	37	27	37	46	59	80	9	61
- large	61	71	60	52	38	20	87	37

Source: processed by authors, based on the data of Ministry of Agriculture and Rural Development of the Slovak Republic.

Within the framework of the structure of enterprises with foreign capital, exports in the production of products participated as follows in groups of enterprises:
- profitable 51 %,
- loss-making 70 %,
- small 50 %,
- medium-sized 90 %,
- large 33%.

This means that profitable companies with foreign capital exported 51 % of their production.

Both groups of enterprises, with and without foreign capital, achieved a positive economic result, but in the group of companies with foreign capital represented up to 63 % of the level of the food sector, in case of the companies without foreign capital it was 37 % of the level of the food sector.

Table 4 presents economic and social indicators in absolute terms.

Enterprises without foreign capital predominate with a share of around 70% in the number of employees as well as in procured investments.

Table 4. Economic and social indicators in absolute terms (million €, employees as persons)

Sorting group	Profit/loss before taxation	Average registered number of employees	Therein: technical and administrative employees	Difference employees - technical and administrative employees	Sourced investments in total	Foreign capital	Obligations to primary production
Enterprises without foreign capital in total, therein:	**38**	**21,580**	**3,741**	**17,839**	**113**	**0**	**49**
- profitable	58	16,337	2,856	13,481	95	0	32
- loss- making	-20	5,243	885	4,358	17	0	16
- small	3	3,696	751	2,945	24	0	9
- medium	26	11,155	1,872	9,283	41	0	33
- large	8	6,729	1,118	5,611	48	0	7
Enterprises with foreign capital in total, therein:	**63**	**7,432**	**2,628**	**4,804**	**52**	**432**	**42**
- profitable	88	5,796	2,208	3,588	44	313	21
- loss- making	-25	1,636	420	1,216	8	119	22
- small	-4	232	102	130	2	13	1
- medium	14	1,822	567	1,255	16	128	22
- large	53	5,378	1,959	3,419	34	291	19
Share of enterprises without foreign capital of the sector (in %)	37	74	59	79	68	0	53
Share of enterprises with foreign capital from the sector (in %)	63	26	41	21	32	100	47
Food industry of the Slovak Republic in total	**100**	**29,012**	**6,369**	**22,643**	**165**	**432**	**91**

Source: processed by authors, based on the data of Ministry of Agriculture and Rural Development of the Slovak Republic.

Table 5 presents economic and social indicators in percentage terms.

The shares in primary production liabilities are relatively balanced between the two groups of enterprises (without and with foreign capital). In the group of enterprises by size, the group of medium-sized enterprises without foreign capital has the largest share of liabilities to primary production (69 %). And in case of large and small enterprises the shares are less than 20 %. In enterprises with foreign capital medium-sized enterprises have the share of liabilities to primary production at the level of 52 %, while large enterprises achieved a share of 45 % and small enterprises only 3 %.

Table 5. Economic and social indicators in percentage terms (%)

Sorting group	Average registered number of employees	Therein: technical and administrative employees	Difference employees – technical and administrative employees	Sourced investments in total	Foreign capital	Obligations to primary production
Enterprises without foreign capital in total, therein:	**100**	**100**	**100**	**100**	**-**	**100**
- profitable	76	76	76	85	-	66
- loss- making	24	24	24	15	-	34
- small	17	20	17	21	-	18
- medium	52	50	52	36	-	69
- large	31	30	31	43	-	14
Enterprises with foreign capital in total, therein:	**100**	**100**	**100**	**100**	**100**	**100**
- profitable	78	84	75	85	72	49
- loss- making	22	16	25	15	28	51
- small	3	4	3	4	3	3
- medium	25	22	26	30	30	52
- large	72	75	71	66	67	45

Source: processed by authors, based on the data of Ministry of Agriculture and Rural Development of the Slovak Republic

Economic efficiency from a societal point of view

In 2020, a group of large enterprises without foreign capital (Y) worked most socially effective. The second and third best ranked were groups of profitable foreign capital enterprises and large companies with foreign capital.

Table 6. Sorting groups of food industry in the Slovak Republic for the year 2020; economic efficiency from societal aspect

Sorting groups of food industry in the Slovak Republic	Share of value added in yields in €	Labour productivity from value added in €	Productivity from total capital in €	Z1	Z2	Z3	Y
- large enterprises without foreign capital	0.19	20,756	1.57	1.23	1.23	1.40	3.86
- profitable enterprises with foreign capital	0.20	44,955	1.62	0.97	0.94	0.49	2.39
- large enterprises with foreign capital	0.20	37,006	1.86	1.01	0.33	0.96	2.30
- profitable enterprises without foreign capital	0.19	19,235	1.38	0.71	0.72	0.42	1.85
- enterprises with foreign capital in total	0.16	37,759	1.56	0.42	0.39	0.38	1.18
- enterprises without foreign capital in total	0.18	17,818	1.33	0.28	0.24	0.16	0.68
- medium enterprises with foreign capital	0.11	41,205	1.45	-0.40	0.65	0.17	0.42
- medium enterprises without foreign capital	0.17	16,910	1.30	-0.06	-0.07	0.02	-0.11
- small enterprises with foreign capital	0.12	28,154	0.51	-0.22	-0.35	-1.68	-2.24
- small enterprises without foreign capital	0.16	15,211	1.06	-0.61	-0.64	-1.21	-2.45
- loss-making enterprises with foreign capital	0.05	12,267	1.40	-1.36	-1.57	0.06	-2.87
- loss-making enterprises without foreign capital	0.15	13,404	1.17	-1.27	-1.25	-0.64	-3.15

Source: processed by authors, based on the data of Ministry of Agriculture and Rural Development of the Slovak Republic.

The lowest efficiency from a social point of view in 2020 (in turn) was achieved by a group of loss-making enterprises without foreign capital, followed by a group of loss-making enterprises with foreign capital and small enterprises without foreign capital (Table 6).

Economic efficiency from a private ownership point of view

Taking into account indicators reflecting the private ownership aspect, the most effective in 2020 was managed by a group of profitable enterprises with foreign capital, followed by groups of large enterprises with foreign capital and profitable enterprises without foreign capital.

Table 7. Sorting groups of food industry in the Slovak Republic for the year 2020; economic efficiency from private ownership aspect

Sorting groups of food industry in the Slovak Republic	Share of value added in yields in €	Financial labour productivity in €	Productivity of total capital in €	Return on equity in €	Profitability in €	Z1	Z2	Z3	Z4	Z5	Y
- large enterprises without foreign capital	0.20	3.14	1.62	0.21	0.07	0.97	0.91	0.49	0.92	1.02	4.31
- profitable enterprises with foreign capital	0.20	2.73	1.86	0.22	0.05	1.01	0.43	0.96	1.00	0.81	4.20
- large enterprises with foreign capital	0.19	2.25	1.38	0.11	0.03	0.71	0.92	0.42	0.82	0.91	3.78
- profitable enterprises without foreign capital	0.19	2.15	1.57	0.05	0.01	1.23	0.55	1.40	0.26	0.15	3.59
- enterprises with foreign capital in total	0.16	2.76	1.56	0.11	0.04	0.42	0.46	0.38	0.41	0.54	2.21
- enterprises without foreign capital in total	0.18	2.09	1.33	0.06	0.02	0.28	0.30	0.16	0.38	0.35	1.47
- medium enterprises with foreign capital	0.17	2.07	1.30	0.08	0.02	-0.06	0.22	0.02	0.53	0.57	1.27
- medium enterprises without foreign capital	0.11	2.93	1.45	0.05	0.02	-0.40	0.66	0.17	0.07	0.28	0.78
- small enterprises with foreign capital	0.16	2.01	1.06	0.03	0.01	-0.61	-0.02	-1.21	0.11	0.05	-1.66
- small enterprises without foreign capital	0.12	1.97	0.51	-0.09	-0.07	-0.22	-0.47	-1.68	-0.70	-1.11	-4.17
- loss-making enterprises with foreign capital	0.05	1.07	1.40	-0.20	-0.06	-1.36	-1.53	0.06	-1.29	-1.00	-5.12
- loss-making enterprises without foreign capital	0.15	1.59	1.17	-0.18	-0.04	-1.27	-1.67	-0.64	-1.72	-1.68	-6.98

Source: processed by authors, based on the data of Ministry of Agriculture and Rural Development of the Slovak Republic.

The group of loss-making companies without foreign capital, but also the group of loss-making companies with foreign capital and the group of small companies with foreign capital, performed the least effectively from a private ownership point of view (Table 7).

Classification of groups by economic creditworthiness

In terms of the ability to survive economically (to meet its obligations) in 2020 and in terms of ranking, the best group was profitable enterprises without foreign capital, followed by medium-sized enterprises with foreign capital and medium-sized enterprises without foreign capital.

In terms of economic creditworthiness, the worst were managed by loss-making enterprises without foreign capital, small enterprises with foreign capital, small enterprises without foreign capital, large enterprises with foreign capital and loss-making enterprises with foreign capital.

The assumed hypothesis that foreign capital will affect the economic efficiency and creditworthiness of food industry enterprises was not confirmed to a significant extent in 2020, as some groups of food companies without foreign capital also achieved comparable, respectively better results compared to groups of companies with foreign capital (Table 8).

Table 8 Sorting groups of food industry in the Slovak Republic for the year 2020 by creditworthiness

Sorting groups of food industry in the Slovak Republic	Cash liquidity in €	Self-financing indicator in e	Cash flow indebtedness indicator in €	Z1	Z2	Z3	Y
- profitable enterprises without foreign capital	1.40	0.43	4.69	0.98	0.94	0.53	2.45
- profitable enterprises with foreign capital	1.04	0.57	5.43	1.03	1.40	-0.10	2.33
- medium enterprises without foreign capital	1.29	0.41	6.08	0.57	0.68	0.45	1.70
- large enterprises without foreign capital	1.29	0.40	6.04	0.57	0.43	0.45	1.45
- profitable enterprises with foreign capital	0.99	0.52	2.73	0.63	0.63	0.11	1.36
- enterprises with foreign capital in total	0.90	0.50	4.25	0.02	0.31	-0.01	0.33
- enterprises without foreign capital in total	1.21	0.39	6.30	0.27	0.35	0.43	0.19
- loss-making enterprises with foreign capital	0.70	0.43	-14.10	-1.45	-0.57	1.37	-0.65
- large enterprises with foreign capital	0.82	0.45	3.26	-0.57	-0.36	0.07	-0.86
- small enterprises without foreign capital	0.93	0.33	7.48	-0.81	-0.60	0.36	-1.05
- small enterprises with foreign capital	0.95	0.40	23.40	0.36	-1.09	-1.45	-2.18
- loss-making enterprises without foreign capital	0.80	0.27	41.77	-1.32	-1.45	-1.79	-4.55

Source: processed by authors, based on the data of Ministry of Agriculture and Rural Development of the Slovak Republic.

CONCLUSIONS

Foreign capital was located in 9.4 % of food businesses, which accounted for 50.3 % of their equity. The highest share of foreign capital in equity was in the starch industry, on contrary, in the meat, milling, freezing and fisheries industries foreign capital is absent.

For 2020, the best group of enterprises, taking into account the results of efficiency and at the same time the results of economic creditworthiness, was a group of profitable enterprises without foreign capital.

Despite the fact that large companies with foreign capital managed efficiently, both from a social and ownership point of view, their economic creditworthiness was lower, as they did not have sufficient solvency, i.e. prompt liquidity to cover short-term liabilities.

In each of the three calculations used (from a community-wide point of view, private ownership, economic creditworthiness), loss-making enterprises without foreign capital ranked worst.

According to the hypothesis examined for 2020, the impact of foreign capital on the economic efficiency of food business groups has not been confirmed. It cannot be said unequivocally that foreign capital firms have managed more efficiently than those without foreign capital.

REFERENCES

[1]Bezlepkina, V., Oude Lansink, A., Oskam, J., 2004, Effects of Subsidies in Russian Dairy Farming, Agricultural Economics, Volume 33 (1), 277-288

[2]Chrastinová, Z., 2018, Ekonomické aspekty poľnohospodárstva a potravinárstva vrátane

bezpečnosti potravín na Slovensku (Economic aspects of agriculture and food, including food safety in Slovakia). Štúdia č. 200/2018, Bratislava: NPPC-VÚEPP, 2018, p. 209.
[3]Chrastinová, Z., Burianová, V., 2009, Economic Development in Slovak Agriculture, Agricultural Economics, Vol. 55(2), 67-76.
[4]Costaichie, G.M., Niculae, I., 2016, The evolution and impact of foreign direct investments in Romania, 2016, Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, Vol.16(2), 111-116.
[5]Gubová, M., Ambrózyová, M., 2005, Vývojové tendencie štrukturálnych zmien v poľnohospodárskej prvovýrobe (Development tendencies of structural changes in agricultural primary production). In Slovak language.VUEPP: Bratislava, 2005, 123–138.
[6]Kravčáková Vozárová, I., Kotulič, R., 2016, Quantification of the Effect of Subsidies on the Production Performance of the Slovak Agriculture, Procedia Economics and Finance, Volume 39(1), 298-304.
[7]Naglová, Z., Vlasicová, E., 2016, Economic Performance of Conventional, Organic, and Biodynamic Farms, Journal of Agricultural Science and Technology, Volume 18(4), 881-894.
[8]Petrášová, V., Valach, M., 2012, Sociálna funkcia pôdohospodárstva po roku 1990 v SR. Ekonomika poľnohospodárstva (The social function of agriculture after 1990 in the Slovak Republic. Economics of agriculture), Vol. 7 (3), 67-79.
[9]Trnková, G., Malá, Z,.Vasilenko, A., 2012, Analysis of the Effects of Subsidies on the Economic Behavior of Agricultural Businesses Focusing on Animal Production, Agris On-line Papers in Economics and Informatic, Vol. 4(4), 115-126.
[10]Vasilchenko, M., Sandu, I., Derunov, V., 2021, Role of foreign direct investments in innovative development of the agrarian sector, Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, Vol. 21(2), 705-717.
[11]Vasilchenko, M., Derunova, E., 2021, Assessment of the contribution of the investment potential to increasing the efficiency of agricultural production, Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, Vol. 21(1), 805-816.