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## **Development of food industry in Poland in the years 1998-2007**

**Abstract.** The article presents processes of development in the Polish food industry which took place in the years 1998-2007. The aim of the paper is to investigate the impact of investments in food industry on structural transformations in two periods: that of pre-accession and the other of integration with the European Union.

**Key words:** food industry, EU integration, structural transformations, efficiency

### **Introduction**

The planned integration into the European Union forced a restructuring of food industry a few years before the accession. The changes were accompanied by a modernization of processing enterprises. The adaptive processes ran on three levels: production, organization and structure. The food industry, as being the most capital-consuming link of food chain, required greatest investments during this period. Big investment outlays influenced the financial situation of processing enterprises.

### **The aim of the study**

The relationships between investing processes in food industry and structural transformations in the years 1998 – 2007 were examined. The purpose of the study was to recognize the effects of investments and structural changes on the financial results of enterprises in the sectors recognized as ‘sensitive’, i.e. meat, poultry, dairy and fish sectors<sup>2</sup>. Structural transformations occurring in the analyzed sectors in the periods of pre-accession and integration are discussed.

### **The scope of the study**

The study covers a period between 1998 and 2007. The analysis of dynamics of production and financial situation of the food industry takes advantage of the data published by the Central Statistical Office (CSO), i.e. mass statistics, as well as some

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<sup>2</sup> The listed sectors were recognized as sensitive due to the fact that before the accession there was a concern that they would be not able to adjust to the sanitary and veterinary standards obligatory in the Common Market. That meant that many of them until 2006 would have been able to produce only for the needs of local market and then would have had to stop their production at all.

unpublished data from this source. The evaluation of financial situation of enterprises derives from the financial reports submitted by food industry enterprises. Data concerning direct foreign investments derive from the Polish Agency of Foreign Investments (PAIZ) and the National Bank of Poland (NBP). The evaluation of changes in foreign trade are based on information from the Computer Centre of Foreign Trade (CIHZ), the Ministry of Finances (MF), the Analytical Centre of Customs Administration (CAAC) and the Central Statistical Office (CSO), processed in the Institute of Agricultural and Food Economics – National Research Institute (IAFE-NRI).

### Transformations in the food industry in the pre-accession period

In years 1998-2002 a slowdown in the food industry production occurred (Fig. 1.). An average annual growth rate of food industry production in the discussed period amounted to less than 3% and in years 1998-2000 to only about 1% annually. It resulted from a lower rate of development of the whole Polish economy. As a result, processes of concentration in the food industry were accelerated. A so-called second stage of restructuring of the food industry took place.

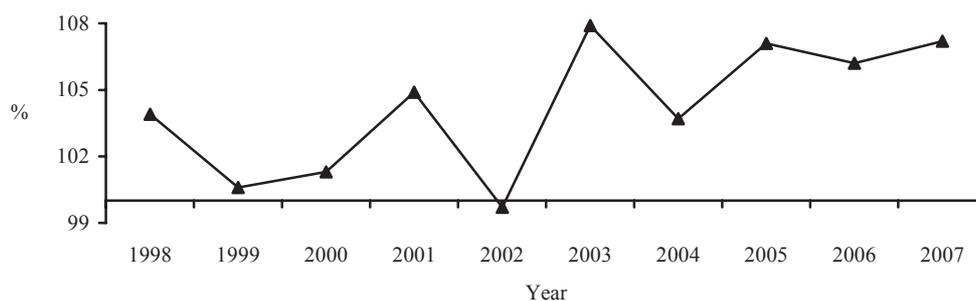


Fig.1. Dynamics of production sold in food industry in years 1998-2007 (previous year=100), %  
Source: Statistical Yearbooks of CSO 1999-2008.

The second ‘wave’ of meat industry restructuring consisted of not only a reduction in employment and changes in the subject structure but of a development of quality management systems as well. The companies, which could have problems with adjustment to the standards required in the EU market, closed out or limited their activity. At the same time, medium-size companies, which overtook a part of the market and production of closed out enterprises, were developing (Fig.2.).

Slowing down of the growth rate of production sold by food industry had an influence on decline of the level of the investments in years 2000 – 2002 (Fig 3.). Since the end of the 1990-ties investments in the food industry were connected with the modernization of production made by medium-size companies.

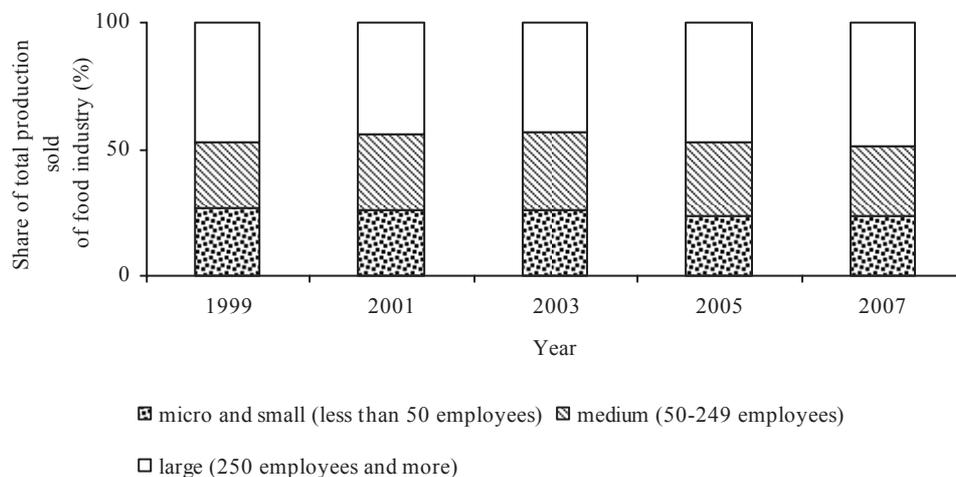


Fig. 2. Structure of production of food industry according to the size of enterprises, %

Source: calculations by the Department of Food Industry Economics of IAFE-NRI based on CSO data.

The level of investing in this period was also affected by the development of modern distribution channels; it resulted in an increase of diversity of production and an improvement of its quality in the discussed period. A dynamic development of trade networks was connected with consumers' requirements with respect to modern products in attractive package and with a need of prolonged shelf life period. The mentioned changes were also noticeable in the sensitive sectors. The level of investing was differentiated between particular branches and between enterprises (Fig. 4).

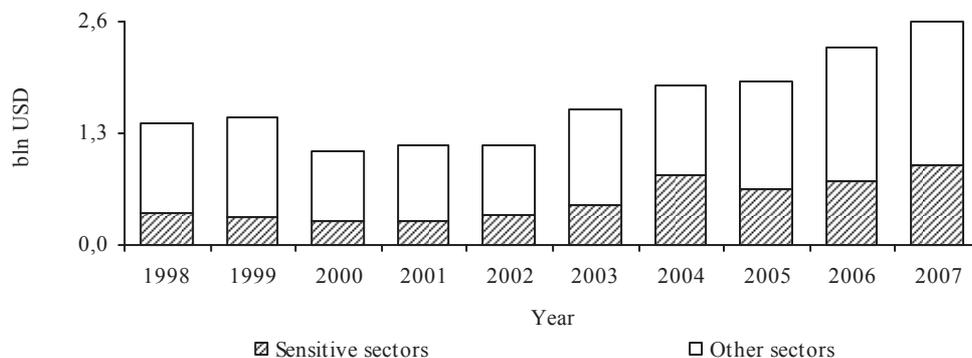


Fig. 3. Level of investments in food industry in years 1998-2007, USD billion

Source: own calculations based on unpublished data from CSO and NBP.

Investments in the poultry and the meat industry were connected with the establishment of strong capital groups. Restructuring in these industries consisted of a decrease in employment, narrowing of the manufacturing profile and a creation of a

common marketing strategy. In capital groups, a centralization of management, development and distribution took place.

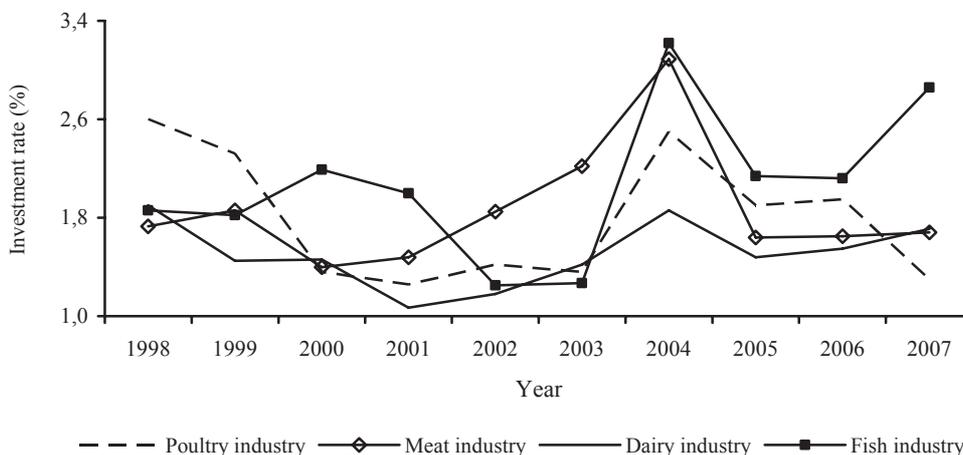


Fig. 4. Investment rate in the enterprises of sensitive sectors of food industry in years 1998-2007, %

Source: calculations by the Department of Food Industry Economics of IAFE-NRI, based on unpublished CSO data.

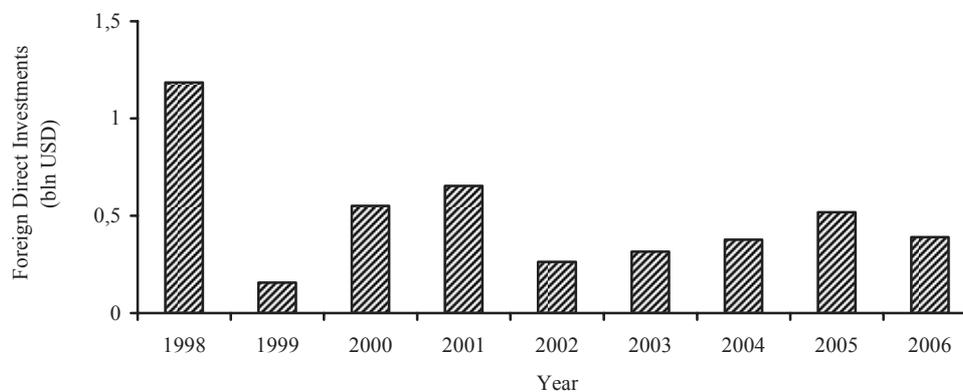


Fig. 5. Inflow of foreign direct investments in the Polish food industry in years 1998-2006, USD billion

Source: data for 1993-2004 from PAIZ; data for 2005-2006 from NBP.

One of the sources of investments in food industry in years 1998-2002 was the foreign capital. The greatest inflow of foreign direct investments (FDI) was recorded in 1998 (Fig.5). The highest inflow of foreign capital to sensitive branches occurred in the poultry industry and in selected segments of milk processing (production of cheese, ice-cream and milk drinks). The inflow of foreign capital to the food industry included this sector into global processes (most of FDI were financed from the capital of trans-national

corporations) and had a significant impact on acceleration of transformations in the food industry. FDI have contributed to a consolidation and a concentration of capital. Discussed processes had a favourable effect on the improvement of competitiveness of Polish food industry in domestic and foreign markets. The foreign capital was, therefore, significant not only as a source of financing the modernization of food processing enterprises but also as a factor inducing changes in the activity of national companies. Slowing down of the food industry development in years 1998-2002 had an unfavourable effect on the financial situation of enterprises (Fig. 6.). During this period, only dairy enterprises, from among the analysed sectors, obtained small profits. The after-tax profit margin in the poultry industry was in 1998 equal to 1.2%, however since that year the poultry enterprises have started to bear losses and were found in the worst situation. The net profitability dropped also in the fish processing sector. It dropped below zero. Since the end of 1999 a program of preferential credits was an additional source of investments in the fish industry. The aim of the program was to support financing of processes of preparing enterprises for adjustment to the EU standards.

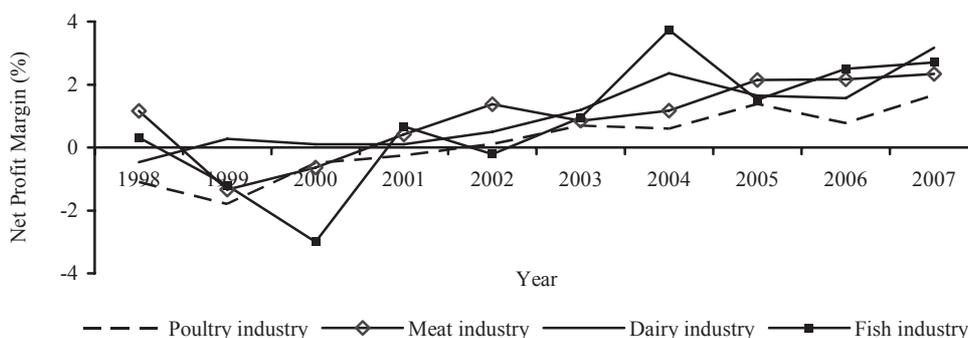


Fig. 6. Net profitability of enterprises in sensitive sectors of food industry in years 1998-2007, %

Source: analyses by the Department of Food Industry Economics of IAFE-NRI based on unpublished CSO data.

Big differences in the economic results of enterprises occurred within particular branches. It concerned, inter alia, meat industry. The decreasing profitability was affected by a lower dynamics of rise of prices of meat products, a strong competition and an ineffective utilization of production capacities. In spite of these, the net profitability of meat industry in 1998 was equal to 1.1% and its liquidity was found on a level being recognized as safe.

The current liquidity of fish and poultry industries was found below the safe level. The situation of enterprises remained, however, differentiated between the branches (Fig. 7.).

Greater and greater problems concerning liquidity were recorded in the meat and the poultry industries. They resulted from intensified investing processes in the discussed sectors. The dynamic development of production and consolidation processes required big capital outlays. In years 1997-1998, the capacity to generate cash in the poultry industry dropped down which caused lowering of investing activity in the successive years. In spite of a quick turnover of capital, resulting from a short production cycle, the poultry sector had serious problems with liquidity since 1999 (its coefficient was found below 1) and the enterprises brought losses.



Fig. 7. Current liquidity indicator for enterprises in the sensitive sectors of food industry in years 1998-2007

Source: calculations by the Department of Food Industry Economics of IAFE-NRI.

## Integration of food industry into the EU market

The accession of Poland to the European Union was connected with an economic animation which had an effect on production increase, also in the food industry. Since 2003 an increase of production sold in the food industry has been observed (Fig. 1.). In 2004 was it higher by 17% and in 2007 by 43% as compared to 2000. The animation in food industry recorded in the discussed stage of its development resulted from the growing exports and the internal demand [Urban et al. 2008].

During the period preceding Poland's accession to the European Union, a successive investment animation was recorded; it lasted until 2007 (Fig.3.). A high investing activity of enterprises in the sensitive sectors (Fig. 4.) resulted from the necessity of their adapting to the EU standards. The investments consisted, first of all, in modernizing the technology, purchasing of transportation means, developing and improving the state of technical infrastructure of enterprises, so as they could act in accordance with the EU hygienic and veterinary requirements.

Tab.1. Investments in sensitive sectors in the years 2001 – 2007 (mln USD)

Investments	Year				
	2003	2004	2005	2006	2007
Total	466.1	810.1	661.5	750.7	934.6
Subsidies from SOP budget	0	0	4.6	72.6	105.7
Subsidies from SAPARD budget	29.5	123.0	176.6	125.7	0

Source: own calculations based on unpublished data from the CSO, the Agency for Restructuring and Modernization of Agriculture (ARMA) and the NBP

During the pre-accession period the food industry enterprises could obtain a financial aid from the SAPARD program. After the accession of Poland to the European Union, the

support for food processing was continued from budgets of the Sector Operational Programs (SOP) 'Restructuring and modernization of food sector and development of rural areas' and 'Fisheries and fish processing 2004-2006'. Subsidies to investments from the mentioned programs in the period of 2002-2007 constituted about 17% of the total investment outlays (Table 1.). The total value of supported investments constituted even ca. 35% of total investment outlays in the sensitive sectors [Gradziuk 2007]. The mentioned programs have greatly contributed to an effective adaptation of the enterprises to the EU standards. Some of the enterprises would not be able to make such investments just by themselves, or they would take a considerably longer period of time.

The most of investments in the sensitive sectors, supported from the EU funds, was strictly connected with an adaptation to the sanitary and veterinary requirements of the EU. Before the 1st of May 2004, there was a concern that the meat industry enterprises would not be able to adjust to the required standards and many of them, until 2006, would be able to produce only for the needs of local market and then would stop their production at all. According to the data of Veterinary Inspection only 60 meat plants satisfied in May 2002 the Community standards and only 43 enterprises possessed an export license. The same number of poultry companies could sell their products abroad (the state as of September 2002).

In years 2002-2007, almost two billion USD were invested in the meat and poultry sectors. The adaptive processes have run especially intensively since 2004, i.e. after the accession of Poland to the European Union. The number of enterprises acting in accordance with the EU standards increased in 2004 to 566 plants, dealing with the meat production (slaughter, carcass dressing and storage), 331 acting in the field of meat processing and 158 companies involved in the poultry production. By the end of 2006 there were 1107 enterprises entitled to trade in the European Union, including 896 companies in the red meat industry and 211 companies in the poultry meat industry.

In the meat industry, the adaptation to the EU market requirements had an effect of acceleration of industrialization of slaughters. Their share in the market increased up to 82% in 2006. The concentration processes ran even quicker in the poultry processing; in 2005 more than 90% of the industrial production of poultry meat and its products derived from the companies which employed above 50 employees. During the period of Poland's integration with the European Union a development of remaining sensitive sectors was also recorded. A significant increase of the level of production resulted not only from the growing industrialization of the processing branches but also from the rise of their exports after the accession of Poland to the EU.

More than USD billion was invested in the dairy enterprises during the period of 2001-2007. The greatest outlays were born in the year of Poland's accession to the EU, which resulted from the acceleration of adjustments in the dairies. 47 enterprises satisfying the EU sanitary and veterinary requirements operated in Poland at the end of January 2003. The successive 160 companies were preparing to meet them before the 1st of May 2004. An adaptation to the EU standards before May 1st 2004 enabled the enterprises to take advantage of the possibilities of appearing in the new outlet markets on the day of the accession. According to the data from 2006, almost all enterprises of the dairy industry could export their products. However the mentioned changes did not influence a significant improvement of the technical efficiency of Polish dairies [Gradziuk 2009].

During the mentioned period, more than 240 USD million were invested in the fish processing. The number of enterprises possessing a license for trading in the common

market increased from 54 in 2001 to 236 in 2007 (it stood for about 80% of enterprises). In the fish processing branch, the adjustments to the EU standards have accelerated a consolidation process. Some small companies which were not able to conduct the necessary adaptations had to stop their activity. After the accession of Poland to the European Union, further proprietary changes were carried out in the discussed sector. The results of recent studies indicate that in spite of the meaningful investments supporting the changes in the fish industry sector, its economic and technical efficiency remained low and the level of concentration is still insufficient [Hryszko, Kuzebski et al. 2008].

The unfavourable financial situation of meat and poultry enterprises improved during the period of integration with the European Union (Fig. 6.) in spite of the rise of long-term and short-term debts. The financial condition of the sector was affected by the adaptive investments. The investments in meat and poultry industries, as being connected with the adaptive processes to the EU sanitary and veterinary standards and with the restructuring of the sector, had an effect of a short-term deterioration of financial situation of enterprises. According to the principles of co-financing the investments, the entrepreneurs had to finance the project by their own before obtaining the support. The deterioration of financial situation, caused by the great investment outlays, was transitory (Fig. 6.). Payments received from the EU programs, after completing the projects, allowed for paying back the credits and an improvement of financial conditions of enterprises. Many companies financed their investments with new obligations which resulted in a deterioration of their liquidity. The situation changed in 2005. The enterprises, which obtained a support from the structural programs, received payments which could be used for repayment of credits on investments. The relation of financial costs to the revenues decreased from 1.17% to 0.75% [Gradziuk 2008]. The structure of financing the operational activities and the index of current liquidity have improved (Fig. 7.).

Changes in the financial situation of dairy sector in years 2002-2007 occurred with a simultaneous concentration of production. The financial results of the dairy industry in the discussed period were positive (the net profitability indicator was equal to 2.7% in 2007). Financing of adaptive processes caused a rise of the short-term debts in the analysed enterprises. A part of obligations was paid back, similarly as in the remaining sensitive branches, with subsidies from the EU funds, obtained after the financial clearing of projects. During the discussed years, the structure of liabilities in the dairy enterprises was improved; it meant that the big investment outlays were not a threat to financial situation of the dairy industry. In spite of the increasing short-term debts, the dairies were able to regulate their obligations. Big financial outlays and the increase of short-term debts did not deteriorate the liquidity of the sector. An increase of exports, being possible owing to an efficient adaptation of the enterprises to the EU requirements, had a positive effect on the results of the dairy industry.

In years 2002-2007, the net profitability of fish industry enterprises was improved. Simultaneously, the index of current liquidity was increased. The high rate of investing and the highest capital outlays since the beginning of the nineties have caused an improvement of the financial situation of the sector. The relation of the financial costs to the revenue has also decreased. It was possible owing to a considerable increase of revenue from the sales (the value of sales was in 2007 almost twice higher than in 2003).

## Results of foreign trade in food industry products

The greatest changes in results of foreign trade in agri-food products occurred during the period of integration of Polish economy with that of the European Union. A higher rate of growth in sales of Polish products abroad in comparison with imports was an evidence of successful adaptive processes of food enterprises (Fig. 8.). It is univocally concluded that the improvement of the results of trade resulted from the growing exports due to Poland's integration with the EU [Rowiński & Roguska 2006]. The EU countries were for Poland the most important partners in the foreign trade in discussed products during the whole transformation period. The share of the EU-15 amounted to more than 50% of exports. In two years after the EU enlargement, in 2006, the exports to the market of 24 member states constituted almost 80% of the whole foreign sale of agri-food products. The enterprises not only maintained their share in the local market but also gained a foreign outlet. The strong position of food industry is confirmed by the fact that the rise of sales of Polish products in the common market occurred in the years 2005-2006, in spite of the appreciation of PLN in relation to EUR.

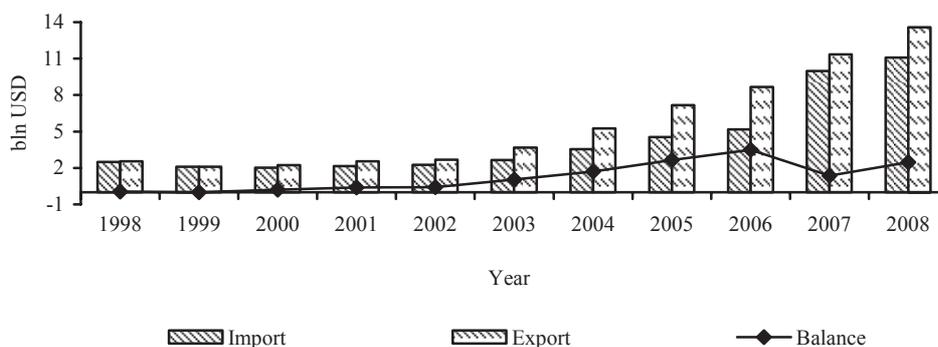


Fig. 8. Foreign trade in food industry products in years 1998-2008, USD billion

Source: calculations by the Department of Food Industry Economics of IAFE-NRI.

The adaptation of meat and poultry industries to the Community sanitary and veterinary requirements enabled a considerable increase of their exports at the time of entrance of Poland to the European Union. The value of revenue from direct sales for export increased four times in the enterprises which employed more than 9 persons. The greatest increase occurred in 2004. The share of exports in the sales of meat and its products (including poultry) increased to more than 18% in 2007. The increase of exports and their considerably higher share in the sales had an influence on improvement of the results of meat industry.

The enterprises of the dairy industry took also advantage of the chances resulting from the opening of the common market. During the examined years, the volume of exports of dairy products and its value have considerably increased. The exports of the dairy products in 2002 were equal to 352 million EUR (the volume amounted to 1 296 million litre in milk equivalent). In 2004, it amounted to 618 million EUR and in 2007 to 1.1 billion EUR. In the dairy sector enterprises, the share of exports in the sales increased from 12% in 2003 to 22% in 2007.

The analyses of foreign trade indicate that an increase of the role of exports in the sales in the particular sectors had an influence on the pro-export orientation of the whole food industry. The share of exports in the sales increased from 13.7% in 2003 to almost 22 % in 2007. The improvement of results of the trade in food products confirmed the ability of Polish producers to function in the common market [Szczepaniak 2008].

## Conclusions

Two stages of development of Polish food industry were distinguished in the studied period. They differed with respect to the directions of changes in the level and the structure of production. In both of the discussed stages, transformations, specific for the given period, had place and the investing activities of enterprises differed. All the mentioned changes affected the financial situation of enterprises of the analyzed sectors and the results of trade in agri-alimentary products.

A quick increase of the number of enterprises which met the EU standards before the 1st day of May 2004 enabled the food industry enterprises to pick up a chance which was the opening of common market. It was confirmed by an increase of revenues from the sales, including significant direct exports, which had an influence on the improvement of profitability indicators. Integration with the European Union was one of the most important factors that influenced the development of Polish food industry in the last decade. However it has to be stressed that it was preceded by fifteen years of structural transformations which started after 1989.

During the analysed period the food processing sector was developing rather via an increase of production capacities than via an improvement of productivity. Therefore further investing as well as other actions aimed at the improvement of efficiency are necessary. Further concentration of production, especially in the dairy and meat industries, will facilitate obtaining the scale effects.

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