

FEATURES OF THE LITHUANIAN MANUFACTURING INDUSTRY DEVELOPMENT IN THE CONTEXT OF GLOBALIZATION

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Abstract

The main features of the current period of globalization are the formation of integrated markets on the regional and global level, the dissemination of information due to the development of information technology, technology diffusion on a global level, intense development of multinational firms in different countries and decreasing barriers for movement of goods, services, capital and people. Due to the influence of these processes, global trade is growing faster than global output and the flow of foreign direct investment is growing even faster than international trade.

The Lithuanian economy, influenced by the globalization process, is becoming increasingly integrated into the global economy. The structure of the Lithuanian economy has undergone drastic changes over the past two decades, and manufacturing is becoming more and more important. Assessing the impact of the manufacturing sector on the country's economy in terms of generated value added or employment in the sector is under-estimated. Many other sectors are closely related to the manufacturing sector – many are involved in international integration processes of manufacturing indirectly but through an interface with the products of manufacturing.

Globalization processes of the manufacturing industry directly and indirectly influence the country's economic development and globalizing trends. Therefore, it is important to evaluate the peculiarities of the development of Lithuanian manufacturing in a context of the modern global economy.

In order to evaluate the development of Lithuanian manufacturing and to highlight its features, the analysis of economic indicators reflecting the sectors development - added value, gross output, number of employees, labour productivity, foreign direct investment and international trade indicators, is presented in this article.

The analysis of economic indicators has presented the trends in the globalization process in Lithuanian manufacturing, which manifests itself differently in different sectors of manufacturing. Lithuanian manufacturing was the most important factor in the country's economic recovery and growth after the global financial crisis, which had shocked the Lithuanian economy and caused a massive decline in production. The impact of different sectors of manufacturing on the country's economic development is varied, but it can be stated that such a large part of the gross output of manufacturing has never been exported, in other words, international trade has never made up such a large portion of total manufacturing output.

The type of the article: Empirical study.

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JEL Classification: F60, F63, L60.

1. Introduction

The globalization of economies and markets is a noticeably prominent tendency in recent decades. The globalization process manifests itself in all spheres of life - economic, political, social,

cultural and environmental. Economic globalization is mostly understood as a dynamic and multidimensional process of economic integration, where national resources are becoming more and more mobile internationally, and national economies become increasingly interconnected and dependent on each other.

The term “economic globalization” has been widely used to describe the increasing integration of markets for goods and services, the financial system, corporations and industries, technology, and competition (Organisation for Economic Co-operation and Development [OECD], 2005). Economists, political scientists, sociologists and scientists in various other fields identify globalization as one of the most important trends of the last two decades. However, globalization cannot be defined unambiguously, its influence can have both positive and negative aspects. Casi and Resmini (2012) believe that globalization has advantages as well as disadvantages, and its impact can differ depending on the country, region, or economic sector.

Based on the global economic development after survival of the economic crisis, the effects of which will be felt for a long time, the strategic priorities of economic development are changing. The new European Union (EU) model of economic growth is increasingly focused on industry. The European Commission (2010) presented a new approach to industrial policy, focusing on the EU's industrial competitiveness and sustainability. It is necessary for all sectors to apply a tailored approach, since the globalization process is expanding, and the division of labor across the whole globe is intensifying, but the concept of globalization for national sectors or industries tangential to other sectors or other parts of the world is becoming less relevant. Considering the entire value and supply chain, from access to energy and raw materials to after-sale services and the recycling of materials, it is necessary for all industries to have a ‘globalization reflex’ since some parts of this chain are bound to be outside of Europe.

During the past two decades the structure of the Lithuanian economy has changed drastically during the integration process into the global economy. The share of wholesale and retail trade, transportation services and other services significantly increased, whereas the share of industry (especially during the period of 2004–2009) dramatically decreased. Since 2010, the share of value added created by Lithuanian industry has had an upward trend. Currently, Lithuanian industry creates a quarter of the whole country's value added (24.9% in 2012). Analysis of statistical data of European countries shows that the share of value added generated by Lithuanian industry in the year 2010 (22.0%) was higher than the EU average (20.1%), and also higher than in Latvia (16.7%), but lower than in Estonia (23.1%) and in the Eastern European Union Member States, such as the Czech Republic (29.4%), Romania (29.0%), Slovakia (25.9%), Hungary (27.2%) or Slovenia (24.6%) (Eurostat, 2013). Lithuanian and Polish industry generated very similar parts of national value added. In 2010, Polish industry generated 24.5% of gross value added, and in 2012, industrial sectors in both Lithuania and Poland produced the same part of each country's value added – 25%.

The fact that manufacturing is a very important sector of economy and its importance is becoming more and more significant cannot be left out. According to the European Commission's (2010) data, the manufacturing industry accounts for a quarter of the jobs in the EU private sector, and at least another quarter of the jobs are in the services sector related to industry (as a supplier or a customer). The EU industry makes up 80% of all private sector research and development (R&D) activities – it is a driving force of innovation and helps overcome the challenges facing our society. Manufacturing itself accounts for 75% of EU exports.

Lithuanian manufacturing generates 80% of all value added generated by the Lithuanian industry and 20% of the gross value added in Lithuania. Lithuanian manufacturing is very significant in the labor market – the sector employs 14% of all workers in the country and 88% of industrial workers.

In the opinion of Sutcliffe and Glyn (2003), the importance of the manufacturing sector is under-estimated, considering only value added generated or employment in the sector. Many other sectors are closely related to the manufacturing sector. Parts of agricultural, mining, energy, construction, transportation, and financial, as well as many other business services, are highly dependent on manufacturing results. Therefore, some of these sectors also participate in

manufacturing markets. Many other sectors are involved in manufacturing processes indirectly, through integration with manufacturing products. This is especially applicable for services related to international trade, such as international transportation, international finance, consulting activities, etc.

As such, the globalization processes in manufacturing directly and indirectly influence the entire country's economic development and globalizing trends. Therefore, it is very important to appropriately evaluate the features of the development of Lithuanian manufacturing in a context of the modern global economy, which actively influence the key factors of globalization.

Foreign scientists analyze various aspects of the links between the globalization process and individual economic sectors, performing both theoretical and empirical studies to determine the extent to which a country's economy or its sectors are involved in international integration processes and the impact of global processes on the development of the country's entire economy or individual sectors.

Makhija, Kim and Williamson (1997) have tried to assess the degree of globalization in individual manufacturing industries in the United States, Japan, Great Britain, Germany and France, and to evaluate the impact of foreign direct investment (FDI) on globalization processes in different sectors of the economy. Kumari (2012) conducted empirical studies to determine how economic globalization process affects growth in manufacturing. The empirical study determined that manufacturing growth is positively affected by such factors of globalization as imports of capital goods, which include the acquisition of technologies, and development of exports. Importing technology changes the industry environment and therefore affects not only individual firms, but the entire industry as well. Meanwhile, Markussen (1995) argues, that foreign companies will have an incentive to transfer technology, products and expertise and to cooperate in the field of R&D if they have a goal of internationalizing their activities. In this way, the transfer of technology fosters industrial firms' growth and increases their productivity (Keller, 1997). Kokko (1994), using empirical studies, verified that foreign equity participation increases the productivity of industrial enterprises.

Maddison (1995) points to the fact that in today's global economy, an increasingly greater portion of production is exported to other countries, and international trade has never made up such a large portion of gross output. Therefore, expansion of markets can be identified as one of the preconditions promoting national industry growth. It is the process of globalization which increases the opportunities for development of exports and the market, promotes industrial development beyond the boundaries that were formed by market demand.

Lithuanian scientists also analyze the impact of globalization on economic development; however, a greater portion of the research is related to the global services market: Cepinskis and Masteika (2010) studied the influence of technology, value of time changes, and that of growing of global competition on the global logistics market, Navickas and Malakauskaite (2009) analyzed trends in the tourism sector (which is highly globalized by nature), Sliburyte and Masteikiene (2010) studied the factors of the globalization process affecting the business environment. Gylys (2008) identified the factors that motivate and obstacles that create barriers to the globalization process in individual economic sectors. Tvaronaviciene and Kalasinskaite (2010) analyzed the impact of FDI on economic development in the context of globalization. Authors of the article (Pekarskiene & Susniene, 2011) conducted empirical research assessing the level of globalization in individual economic sectors in the Baltic States.

The study of the features of development in the Lithuanian manufacturing industry in a global context will provide a more complete understanding of the impact of the globalization process on individual economic sectors and economic development of the country in general.

The purpose of the article is to analyze the features of development in the Lithuanian manufacturing industry in the context of globalization.

The research methodology is a systematic comparative and logical analysis of academic literature, analysis, generalization and interpretation of statistical data.

2. Method

The study of the characteristics of development in Lithuanian manufacturing was carried out by analyzing Lithuanian manufacturing data provided by Statistics Lithuania. The analytical framework consists of 24 divisions of economic activities assigned to manufacturing and fall under the second level of NACE (statistical classification of economic activities in the European Community). Scientists and practitioners, while analyzing the trends of manufacturing, take into account the relationship and mutual connectivity of economic activities and classify the divisions of economic activities into sectors or groups. The Lithuanian Confederation of Industrialists quarterly presents Lithuanian manufacturing industry expectations index – an analysis of the opinion poll and forecast by top-level management of Lithuanian manufacturing. This index classifies the divisions of economic activities in manufacturing into five sectors, without distinguishing rubber and plastic products as a separate sector and by adding this division to the chemical industry (Lietuvos pramonininkų konfederacija, 2013). However, the manufacturing activities reflected in this index do not include the entire manufacturing sector and do not express the expectations of firms of all economic activities. All of the divisions of economic activities in manufacturing analyzed in this paper are grouped into six key sectors (see Table 1). Such grouping is chosen based on the six major manufacturing sectors presented by the Lithuanian Ministry of Economy evaluating the competitiveness of Lithuanian manufacturing (Lietuvos Respublikos Ūkio ministerija, 2009).

Table 1. Manufacturing sectors

Manufacturing sector	Division of manufacturing economic activities	Manufacturing sector	Division of manufacturing economic activities
Food and beverage industry	C10 Manufacture of food products C11 Manufacture of beverages C12 Manufacture of tobacco products	Chemical industry	C19 Manufacture of coke and refined petroleum products C20 Manufacture of chemicals and chemical products C21 Manufacture of basic pharmaceutical products and pharmaceutical preparations
Textiles and apparel industry	C13 Manufacture of textiles C14 Manufacture of wearing apparel C15 Manufacture of leather and related products	Rubber and plastics industry	C22 Manufacture of rubber and plastic products C23 Manufacture of other non-metallic mineral products
Wood and furniture industry	C16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials C17 Manufacture of paper and paper products C18 Printing and reproduction of recorded media C31 Manufacture of furniture C32 Other manufacturing C33 Repair and installation of machinery and equipment ¹	Metals, machinery and equipment industry	C24 Manufacture of basic metals C25 Manufacture of fabricated metal products, except machinery and equipment C26 Manufacture of computer, electronic and optical products C27 Manufacture of electrical equipment C28 Manufacture of machinery and equipment n.e.c. C29 Manufacture of motor vehicles, trailers and semi-trailers C30 Manufacture of other transport equipment

¹ In Statistics Lithuania databases of indicators, C32 and C33 activity indicators are presented in combination with the indicators of C31 Manufacture of furniture; therefore, the economic indicators of these two divisions are analyzed in conjunction with the wood and furniture industry indicators.

The company data of two divisions of economic activities, namely C12 Manufacture of tobacco products and C19 Manufacture of coke and refined petroleum products, are not presented officially due to confidentiality; therefore, the trend of these divisions of economic activities is not analyzed.

The diversity of periods for study data is determined by objective reasons: some of the data available is from 1995, while other data is available only since 2004, when Lithuania joined the EU. The latest published data on Lithuanian industry and manufacturing sector is for 2012, and for separate divisions of economic activities it is available only for 2011.

Different kinds of indicators reflecting economic globalization are described in scientific articles. Morrison and Roth (1990) suggest using the indicators that reflect the level of international trade, the intensity of international competition, and the degree of product standardization to assess the level of globalization of the industry. OECD (2005) has identified the key drivers of economic globalization and indicators of its manifestation, such as international trade, FDI, the economic activity of multinationals, the internalization of industrial R&D and international diffusion of technology.

Many authors, Maddison (1995), Hirst and Thompson (2003), Feenstra (1998), Sutcliffe and Glyn (2003), refer to international trade as one of the most important forms of integration into the global economy. An economic sector is more globalized, the greater the portion of its output is exported. Therefore, in order to assess the development of an individual economic sector in the context of globalization, it is important to analyze the indicators of international trade (exports, imports, international trade balance) that show the level of the economic sector's integration into the global economy. In this article, the importance of the Lithuanian manufacturing sector is estimated considering not only the value added generated and employment in the sector, but the international trade indicators of exports, imports, and international trade balance of Lithuanian manufacturing industry as a whole and of individual manufacturing sectors are analyzed as well.

The indicators of FDI flows are also very often used to measure the level of economic globalization. Gersbach (2002), Cusi and Resmini (2012) emphasize the impact of FDI on the process of economic globalization. These indicators assess the extent of international investment in the context of its impact on economic development and enable a comparison of the impact of FDI on different sectors of the economy. The level of FDI shows the importance of globalization to the host country or to one of its individual economic sectors. Short-term economic indicators of FDI reflect an economic sector's development, and long-term indicators reflect the attractiveness of the host economic sector in the global market and the competitiveness of the participants in the FDI process. Increasing FDI flows mean additional capital injections into an economic sector and have an impact on its development. Meanwhile, increasing flows of the economic sector's investment abroad shows the expanding penetration of the sector's investors into foreign markets.

3. Results

For evaluation of Lithuanian manufacturing and highlighting its features the following economic indicators were analyzed: value added, gross output, number of employees, labor productivity, FDI, export and import flows, and the balance of international trade.

The value added. As already mentioned, the Lithuanian industry generates for about 25% of total value added and manufacturing sector generates for about 80% of the value added of the Lithuanian industry. The growth tendencies of manufacturing show that relative share of value added generated by manufacturing sector tends to increase: in 1995 accounted for 77%, and in 2012 – 84% of total industrial sector's value added. This share was reduced in the periods of economic shocks - the Russian economic crisis (77% in 1999) and the global financial crisis (79% in 2009).

Lithuanian manufacturing generates up one fifth of the total value added of the country and the relative share tends to increase (18.6% in 1995, during the crisis in 2009 the manufacturing share reduced to 16.8%, in 2012 it already accounted for 20.9% and it was the highest share in the entire period of 1995-2012).

The tendencies of manufacturing growth rates (see Figure 1) indicate that Lithuanian manufacturing is more sensitive to economic shocks than other economic sectors: during the Russian crisis in 1999 the country's value added rates of growth (-1%) were less slower than these of manufacturing (-3.1%), and in 2009, when total value added of the country decreased by 14.8%, manufacturing decline was again higher (16%).

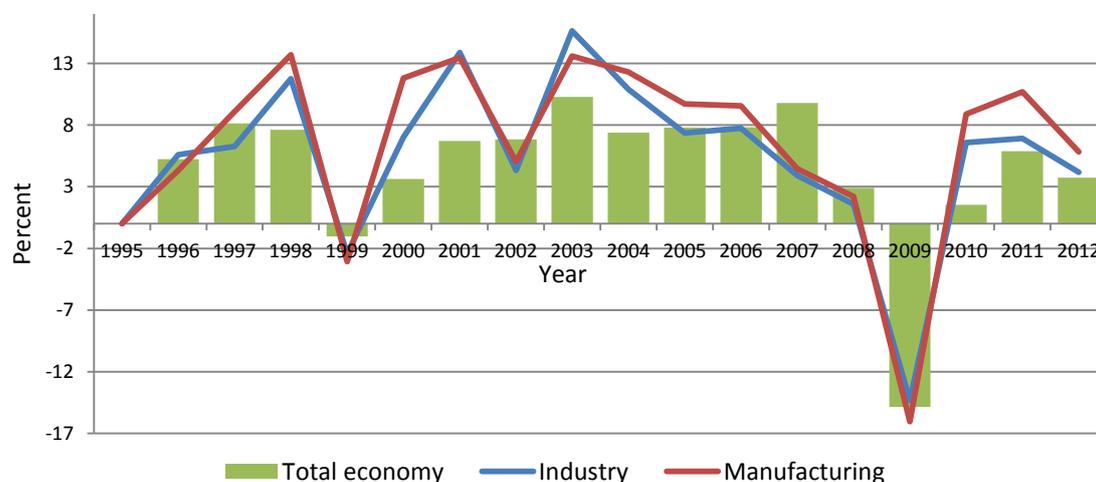


Figure 1. The growth rates of value added of total economy, industry and manufacturing of Lithuania in 1995-2012, in percent

Source: compiled by the authors based on Statistics Lithuania (2013) data

However, the rapid growth rate of manufacturing after the economic recessions in the post-1999 crisis (11.8 % in 2000 and 13.5% in 2001) and after the global financial crisis caused by the economic downturn in 2008-2009 (8.9% in 2010 and 10.7% in 2011) influenced economic recovery of national economy more than other sectors. After the economic crisis manufacturing has been growing faster than the overall economy of the country (3.6% in 2000, 6.7% in 2001, 1.5% in 2010, and 5.9% in 2011).

Lithuanian manufacturing, being closely linked to the global market, is extremely sensitive to the ongoing global economic shocks, however, recovers much faster from the economic downturn and crisis, being integrated into the global economy and exploiting the international markets.

In individual sectors of manufacturing the tendencies are notable (see Table 2), that the food and beverage industry (an average of 4.5% of total manufacturing value added) and the wood and furniture industry (3.8%) generate the maximum of gross value added of manufacturing sector, so it means that growth in these sectors affect the growth of all manufacturing the most. Though the food and beverage industry rates of generated value added growth were slightly slower than the rates of total manufacturing sector, however, the orientation of this sector to the domestic market slowed the decline of total manufacturing caused by global economic crisis. The share of value added, generated by the food and beverage industry, had a tendency to lessen from 5.9% in 1995 down to 3.4% in 2008, however, from 2009 it increased up to 4.7% in 2011. Whereas the wood and furniture industry became more globalized throughout the period and its share of value added generated was increasing (from 2.8% in 1996 up to 4.9% in 2011). Chemical industry created an average of only 1.4% of total value added of the country, but it has very high growth rates and its contribution to the manufacturing sector's development is also increasing (at least - 0.9% in 2003, and the most - 2.6% in 2011).

Table 2. Value added generated by Lithuanian manufacturing and individual sectors in 1995-2011, in billion LTL

Manufacturing sector	Year																
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
<i>MANUFACTURING IN TOTAL</i>	4,5	5,4	6,5	7,1	6,6	7,7	8,4	8,5	9,5	11	13	15	16	18	14	16	20
Food and beverage industry	1,4	1,7	1,9	2,0	1,8	1,9	2,0	2,0	2,1	2,2	2,5	2,7	3,3	3,4	3,7	3,9	4,4
Textiles and apparel industry	0,8	1,0	1,2	1,4	1,4	1,5	1,7	1,6	1,5	1,6	1,6	1,5	1,5	1,4	1,1	1,3	1,5
Wood and furniture industry	0,8	0,9	1,0	1,2	1,2	1,3	1,5	1,7	2,0	2,5	2,9	3,3	3,8	4,1	3,4	3,8	4,7
Chemical industry	0,3	0,4	0,5	0,5	0,4	0,5	0,4	0,4	0,5	0,6	0,7	1,0	1,6	2,2	1,5	1,9	2,5
Rubber and plastics industry	0,3	0,3	0,4	0,5	0,5	0,5	0,7	0,7	0,9	1,0	1,4	1,8	1,9	1,8	1,1	1,4	1,7
Metals, machinery and equipment industry	0,6	0,7	0,9	1,0	1,0	1,1	1,2	1,3	1,6	2,0	2,2	2,4	2,7	2,9	2,0	2,4	2,7

Source: compiled by the authors based on Statistics Lithuania (2013) data

The share of value added generated by the textiles and apparel industry (an average of 2.7%) has a tendency to decrease. Until 2004, when Lithuania joined the EU, textiles and apparel industry's share of total value added average was 3.5%, but since 2004 the share of value added generated by this sector began to decline and in 2011 it was the lowest (1.6%) value added creating sector in manufacturing.

Gross output. The tendencies of gross production trends of Lithuanian manufacturing are very similar to those of value added. Manufacturing total output has grown an average of 7% per year during period from 1999 until global economic crisis in 2008. In 2009 compared to 2008, manufacturing gross output decreased by 17% and reached the pre-crisis level in 2011, when reached 66.8 billion LTL. After the crisis manufacturing gross output growth was very rapid: in period 2010-2012 it grew by an average of 10% per year.

Lithuanian manufacturing sector's gross output growth was mainly influenced by the wood and furniture industry as well as metals, machinery and equipment industry. Until 2009 downturn gross output in these sectors grew by an average of 12% over the year and the influence of the crisis began to manifest in these sectors in 2009, while the gross output in the other sectors began to decline in 2008, and in rubber and plastics industry - even in 2007.

The textiles and apparel industry and the rubber and plastics industry experienced the largest decline during the crisis. Though after the crisis gross output volume growth rates were quite rapid in these sectors (approximately 17% and 15% per year respectively), however, by 2013 they have not yet reached pre-crisis level. The other sectors have reached the pre-crisis level of gross output in 2011. Metals, machinery and equipment industry gross output since 2010 increased by an average of 17% per year, while the wood and furniture industry - 15% per year.

The number of employed. The share of the workers employed in Lithuanian manufacturing in 2012 consisted 14% of total number of country's employed workers and 88% of total industrial workers. The number of employed workers in manufacturing slightly increased from 242 thousand in 2000 up to 256 thousand in 2005 and remained stable until crisis in 2008, which caused the decline in the number of employees in almost all sectors of the economy. The decreasing tendencies of the number of employees are most prominent in the textiles and apparel industry. This process started in pre-crisis period, since 2004 and within a decade almost halved, from 66 thousand in 2000 down to 37 thousand in 2010. Whereas the number of employed in wood and furniture sector has steadily increased (from 58 thousand in 2000 up to 84 thousand in 2008). A half of all workers employed in manufacturing are employed in these two sectors - wood and furniture industry, and textiles and apparel industry. The share of employees of textiles and apparel sector decreased from

28% of all employed in manufacturing in 2000 down to 18% in 2010, whereas the share of employed in wood and furniture industry increased from 24% up to 33% in the same period. A quarter of employed in manufacturing (22% in 2010) are working in the food and beverage industry.

FDI. The growing internationalization and global corporate relocation of business promote FDI and business cooperation in Lithuania. FDI is one of the most important factors of rapid pace of globalization and international economic integration process.

In period of 2004-2012 manufacturing sector had an average of 30% of total FDI of the country. The manufacturing share of FDI increased and reached 39% in 2007, however, the foreign companies have invested in manufacturing less than in other sectors of the economy during the economic crisis: in 2008 manufacturing had 22% of total FDI of the country. Since 2009 investments in manufacturing started to increase again and reached 27% in 2012. Accumulated FDI in manufacturing at the end of the year were growing rapidly from 2004 until 2007 (see Table 3). At the end of the year 2007 the amount of manufacturing FDI reached 12.5 billion LTL. FDI rapid growth in manufacturing in period 2004-2007 was caused by rapidly increasing FDI in the chemical industry.

Table 3. Accumulated FDI in Lithuanian manufacturing and individual sectors in 2004-2012, in billion LTL

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Manufacturing sector									
<i>MANUFACTURING IN TOTAL</i>	5370	9327	11335	12451	7115	8077	9262	10121	11096
Food and beverage industry	1670	1618	1434	1522	1553	1450	1328	1197	1116
Textiles and apparel industry	356	477	428	444	404	377	372	374	439
Wood and furniture industry	1255	1173	1274	1377	1376	1413	1416	1664	1796
Chemical industry	1327	4819	7385	8111	2684	3976	5347	6105	6917
Rubber and plastics industry	113	687	240	293	310	312	315	303	313
Metals, machinery and equipment industry	650	552	574	704	787	548	484	477	515

Source: compiled by the authors based on Statistics Lithuania (2013) data

The chemical industry has an average of 53% of FDI in manufacturing and the 16% of FDI in total economy. Investments in the chemical industry increased from 2004 to 2007; in that period it had as much as 65% of FDI in manufacturing and 23% of the total FDI of the country. However, the FDI in the chemical industry significantly (67%) decreased in 2008 compared to 2007, influencing the overall decline of FDI flows in all manufacturing. Whereas FDI in wood and furniture industry has been steadily increasing, it increased even in the period of economic crisis, and especially since 2010. Wood and furniture industry had an average of 16% and the food and beverage industry had 17% of total manufacturing FDI. In a period of 2004-2012 downward tendencies are prominent in the volume of FDI in the food and beverage industry and the textiles and apparel industry. In the end of 2012 the accumulated FDI in manufacturing were 11 billion LTL and they did not reach the pre-crisis level.

The major part of the total FDI in Lithuanian manufacturing comes from Poland (in a period of 2008-2012 Polish FDI averaged 39% of total FDI in Lithuanian manufacturing) and Russia (averaged 9% in the same period). Since 2012 the Lithuanian manufacturing has got increased FDI flows from the Netherlands, Cyprus and Denmark. FDI flows from the Scandinavian countries and Latvia were significantly reduced.

Lithuanian investment into manufacturing abroad grew rapidly until the economic crisis. In 2008 Lithuanian manufacturing enterprises invested 788 million LTL (in 2004 - 259 million LTL). However, in a period 2008 - 2009 manufacturing FDI abroad declined, and Lithuanian investment abroad started to increase again in 2012 and reached 908 million LTL. In 2012 Lithuanian manufacturing firms invested mainly in Poland (318 million LTL), Russia (129 million LTL), and Ukraine (78 million LTL).

Labor productivity. One of the most important manifestations of the process of globalization is labor productivity growth. Increasing importance of foreign trade for manufacturing firms makes to deploy new technologies, to reduce production costs and increase productivity. The average labor productivity in Lithuania is significantly lower (63%) than the EU average. Labor productivity in Lithuanian manufacturing (48.6 LTL/working hour in 2011) is higher than the country's labor productivity level (37.6 LTL/h.). Very high productivity is in the chemical industry. In 2011 it was generating value added of 211 LTL within 1 working hour in chemical industry, while in the sector of lowest productivity, textiles and apparel industry, there were accounted for just 22.1 LTL/h. Relatively low labor productivity is in the wood and furniture industry, this sector generated value added for 35.3 LTL/h. in 2011. One of the most promising economic divisions in manufacturing sector is manufacture of computer, electronic and optical products, where labor productivity has increased significantly since 2008 (51.8 LTL/h.) and continues to grow (89.3 LTL/h. in 2011).

Exports. The Lithuanian manufacturing is a lot exporting sector of the economy. Lithuania manufacturing export growth is one of the main guarantors of country's rapid growth and involvement in the global economy. The Lithuanian manufacturing enterprises export volumes expanded until economic crisis in 2008, then they were reduced in 2009, and since 2010 again intensively increased (see Table 4).

Table 4. Foreign trade indicators of Lithuanian manufacturing firms in 2005-2011, in million LTL

Year	2005		2006		2007		2008		2009		2010		2011	
	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp	Exp	Imp
MANUFACTURING IN TOTAL	13,9	8,9	15,8	10,7	19,2	12,6	20,4	14,2	15,4	9,3	18,8	11,5	22,4	15,0
Food and beverage industry	2,3	1,4	2,7	1,8	3,5	2,2	3,7	2,7	3,4	2,2	4,0	2,5	4,5	3,1
Textiles and apparel industry	2,6	1,6	2,6	1,6	2,5	1,6	2,1	1,2	1,5	0,8	1,8	1,1	2,1	1,3
Wood and furniture industry	2,4	1,0	2,9	1,3	3,4	1,6	3,4	1,6	2,9	1,1	3,7	1,4	4,5	1,9
Chemical industry	1,7	1,2	2,1	1,8	4,0	3,0	5,4	4,6	3,5	2,7	4,4	3,2	6,0	4,7
Rubber and plastics industry	1,0	1,0	1,2	1,1	1,4	1,3	1,4	1,1	1,0	0,8	1,3	1,1	1,7	1,5
Metals, machinery and equipment industry	3,9	2,6	4,3	3,1	4,3	3,0	4,4	3,0	3,1	1,7	3,6	2,1	3,7	2,5

Source: compiled by the authors based on Statistics Lithuania (2013) data

In period of 2005-2011 three main manufacturing export sectors were the metals, machinery and equipment industry, which had an average of 22% of total Lithuanian manufacturing exports, the chemical industry (20.7%) and food and beverage industry (19.1%), i.e. traditionally exported products. The share of metals, machinery and equipment industry is diminishing: this sector accounted for 28.3% of total manufacturing exports in 2005, but in 2011 it fell down to 16.5%. An increasing share of manufacturing exports is in the wood and furniture industry, this sector accounted for one fifth of total manufacturing exports in 2011. The furniture manufacturer contracts with large furniture retail chain IKEA had a significant impact on the furniture industry's steady increase in the volume of exports. This manufacturing sector is becoming increasingly globalized.

The global textiles and apparel industry product markets are intensively penetrated by Asian companies, which are improving the quality of consumer products. There is a large share of China's textile products and this adversely affects the Lithuanian textiles and apparel industry changes in exports: textiles and apparel industry's export volumes has been steadily declining from 2.6 million LTL in 2005, 2.1 million in pre-crisis 2008, and during the economic recovery the tendency remained similar. It can be stated that the Lithuanian textiles and apparel industry is facing fierce international competition and a lack of production capacity. Variation of export flows in 2005-2011 persisted in the food and beverage industry. During the crisis period the volume of the export in this sector has suffered the smallest decline.

The manufacturing exports structure changed significantly during the period 2005-2011: in 2005 the largest shares of the manufacturing exports had metals, machinery and equipment industry (28.3%) and textiles and apparel industry (18.7%), however in 2011 the shares of the export of above mentioned sector's declined down to 16.5% and 9.3% respectively. The share of the exports in the chemical industry was growing from 11.9% in 2005 up to 26.6% in 2011. Chemical sector is exporting more than 80% of total output of chemical industry, and its growth is influenced by its better position in foreign markets. The chemical industry is one of the most globalized economic sectors in Lithuania and its prospects are favorable. The majority of the owners, managing and research units of big chemical companies reside abroad.

Imports. The most importing manufacturing sectors are the chemical industry (in period of 2005-2011 it had an average of 24.9% of total manufacturing imports and the percentage is growing), metals, machinery and equipment industry (22.4%, however the share of imports in this sector is declining) and the food and beverage industry (19.2%) (see Table 4). Downward tendencies occur in the textiles and apparel industry: in 2005 this sector accounted for 18% of total manufacturing imports, and it declined to 8.9% in 2011. The share of the imports in metals, machinery and equipment industry significantly reduced under the influence of economic crisis in 2009: in the period of 2007-2009 import flows in this sector fell twice and did not reach the pre-crisis level in 2011.

Exports-imports balance. To assess the tendencies of globalization of manufacturing and individual industries it is important to note, that the level of interconnectivity in the global economy is reflected not only in the flows of export growth, though it is very important for the country's economic development and international competitiveness. The very important aspect of international trade is the international trade balance. Lithuanian manufacturing firms export more products and services than import. In the period of 2005-2011 foreign trade balance in all industries in manufacturing (except rubber and plastics industry in 2005) was positive.

The share of Lithuanian manufacturing products sales and services abroad in period of 1998-2011 accounted for 54.6% averaged and has a tendency to increase (60.5% in 2011). This tendency confirms the statement that the Lithuanian manufacturing becomes increasingly focused on foreign markets and is linked to the global economy. The chemical industry and metals, machinery and equipment industry are the sectors focused on foreign markets the most. The sectors' sales and services in foreign markets accounted for about 80%. The same is true of the textiles and apparel industry, but this industrial sector meets difficulties to compete with the growing dominance of Chinese products in international markets. Food and beverage industry was the most oriented to the domestic market: in 2011 this sector distributed 30% of food and 16% of beverage production in the foreign markets.

4. Discussion

Lithuanian manufacturing is a very important sector of the Lithuanian economy. The manufacturing sector generates 20 percent of the entire country's value added. However, the relative rate of value added generated by manufacturing directly does not reflect its impact on the country's economic development. Lithuanian manufacturing was the main factor contributing to the country's economic recovery and growth after the global financial crisis, which shocked the Lithuanian economy and caused a massive decline in production. The speed of recovery in manufacturing is dependent very much on the orientation of manufacturing toward domestic or foreign markets. The economic sectors which were less dependent on domestic consumption and were more globalized, more integrated into the global economy, recovered more quickly.

Globalization tendencies are most prominent in Lithuanian wood and furniture industry, which is one of the most important manufacturing sectors. This sector is characterized by an increasing share of generated value added, an increasing number of employees in this sector, and an increasing volume of exports. The wood and furniture industry's increasing integration into the global economy is influenced by the international spread of the value chain and long-term contracts

with foreign partners.

Extremely rapid growth and international integration processes are taking place in the chemical industry, which is becoming increasingly globalized. The share of value added generated by this industry is increasing and the trade of high-tech products is expanding. The food and beverage industry is more focused on the local market, and the recession experienced during the economic crisis has been milder. This can be explained by the fact that the output of this sector mainly includes products for daily consumption, and the demand is therefore less influenced by market fluctuations. On the other hand, the specificity of the sector's output (restricted products and the like) stimulates the diversification of risk and necessity of looking for new markets for export and international cooperation.

The textiles and apparel industry's development trends can be linked to unsuccessful competition in international markets with Chinese manufacturers. An increasing level of globalization in the sector means that the textiles and apparel industry is very closely linked to international markets. In the past, EU countries had a prominent advantage in quality of products over Asian textile producers, but now the situation has changed dramatically. Asian companies still have very cheap labor, but they can also produce high-quality products. Many Asian textile producers use modern equipment, which is not inferior to the technology in industrialized countries. The analysis of the indicators of this sector, such as gross output, FDI, labor productivity and indicators of international trade, clearly points to the fact that the Lithuanian textiles and apparel industry is unable to compete successfully in international markets.

Although the contribution of individual manufacturing sectors to the economy of the country is different, it can be stated that there such a large share of gross output has never been exported, in other words, international trade has never had such a high share of total manufacturing output. Manufacturing has almost 90 per cent of country's total exports.

The world is undergoing rapid growth of productivity determined by new management techniques, modern technologies and work automation. Productivity growth is promoted by globalization of business and especially direct investment, which opens the way for new technologies and new forms of operation. Lithuania has a few large multinationals, and the cumulative FDI per capita in the country is in the last place among the EU countries. Properly harnessed the growing internationalization of business and global tendency of corporate relocation may have a positive impact on foreign direct investment and business cooperation in Lithuania. Whereas, over detailed regulation of the labor market relations, too bureaucratic and complicated land acquisition and issuance of construction permits downgrade Lithuania's potential in competition with neighboring countries for foreign investment.

FDI is one of the most important elements of rapid pace of globalization, and hence the international economic integration process. FDI provides a framework for direct, stable and long-term relations between the manufacturing sectors in different countries. FDI can inspire the development of local firms in manufacturing sector and strengthen the competitive position of the whole manufacturing sector acquiring investment. FDI are particularly important in encouraging the exchange of technology and "know-how". Investments help host manufacturing of Lithuania to get their products into wider international markets. FDI is a source of additional capital and has stimulating effect on development of international trade in Lithuanian manufacturing. Growing FDI flows in manufacturing sector are a significant factor of globalization process of Lithuanian manufacturing, being one of the driving forces of globalization, and its main consequence at the same time. An increasing liberalization of goods and services market has enabled manufacturing firms to split their value chain geographically and to penetrate new markets. In this way manufacturing sectors in different countries are interacting while spreading and receiving information and technology, and further increasing integration in regional and global level.

The impact of FDI on Lithuanian manufacturing sector is transferred through various channels, i.e. impact on the structure, the employment and development of technology. Technology transfer manifests in copying of the processes, manpower training, competitive tools and supply relationship. FDI effect on manufacturing sector is highly dependent on the degree of

interoperability and substitutability of local and foreign capital, the level of the development of the whole manufacturing sector, the ability to absorb technology and knowledge acquired from foreign firms, the level of entrenchment of foreign firms in Lithuanian manufacturing, and as well as the other factors, such as governmental activities regulating manufacturing sector and general business environment.

The globalization process promotes the development of R&D activities and spreading new technologies in Lithuanian manufacturing. This increases not only the competitiveness of manufacturing enterprises in the local market, but the competitiveness of Lithuanian manufacturing in international markets as well.

The important aspect of the diffusion of international trade and technology is the fact that a large part of total sales and especially sales of technology products takes place between parent companies and their subsidiaries, so it is important to assess not only the international trade, the exchange of technologies and products in international markets of entire sector, but especially to access the intra-firm trade between subsidiaries of the company in different countries. In this regard, it is complicated to properly evaluate two aspects of globalization, i.e. international trade and technology diffusion, because the Statistics Lithuania (as well as all statistical organizations in many other countries) does not present data on intra-firm trade. OECD raises the issue at international level and this is the reason to expect that this kind of data will be collected and processed in the future. This will enable to analyze in detail and compare the tendencies of globalization process on the level of individual economies and economic sectors.

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