COMPETITIVENESS OF LATVIAN MACHINERY AND METALWORKING INDUSTRY IN THE SITUATION OF GLOBAL CRISIS

Egils Vītols
Ventspils University College, Latvia

Abstract
Latvian Machinery and Metalworking Industry (the LMMI) is one of the key sectors of the processing industry. Its average share in total manufacturing output is 25%. Statistical analysis outlines that the downturn has affected LMMI more deeply compared to other manufacturing sectors. Within last year, its share of manufacturing output felt down to 19% and exports in 2009 compared to 2008 dropped by 43%, respectively, the biggest decline among all manufacturing sectors. This trend is extremely critical as export accounts average of 70% of the total LMMI output. The aim of this study is to determine the key aspects of the decrease of LMMI competitiveness in a situation of global downturn. One of the reasons might be sharp decline of productivity in 2009 – by 42% compared to 2008, but substantial impact has had the EU industry downturn because LMM main export markets are EU countries.

Keywords: *Latvian Machinery and metalworking industry, competitiveness, productivity, added value, sustainable growth.*

Introduction

Every country wishes to have a competitive economy in the global market. If we are considering twenty most competitive countries in the world according to "The Global Competitiveness Report 2009-2010", they all have strong, high value-added manufacturing. LMMI is one of the most important Latvian manufacturing components. Its total output makes an average of 25% of the total manufacturing output. According to statistics, the crisis has affected LMMI more than other manufacturing sectors. During the year, its share in total manufacturing output has dropped to 19%. Following a strong growth over past five years, total export in 2009 experienced a drop of 42% compared with 2008. It is the biggest decline between manufacturing sectors. This trend is especially dangerous because exports average is 70% of the total output of LMMI. Aim of this study is to clarify main aspects of LMMI decline in competitiveness in global crisis conditions. The main methods **of the work** - analysis of scientific literature, statistical data analysis, interviews with business executives.

Background of LMMI

Global crisis has seriously affected global economy and is a serious challenge to national competitiveness. After rapid GDP growth in period from 2003 to 2007, in 2009 Latvia experienced the largest fall in GDP in the world: "-17.8%" compared to 2008 (115^{th} place – last between the countries that data are available about[1]). Just as quickly Latvia has lost its place in national competitiveness ranking. According to global competitiveness report "The Global Competitiveness Report 2009-2010" Latvia has fallen to 68^{th} place from total 134 countries included in the ranking. Comparatively, in 2006 Latvia was in 36^{th} place. In Figure 1 we can see author's summary of Nordic countries, Finland and Baltic States places in the overall ranking according to Global Competitiveness Index (GCI) during time period from 2007 to 2010. Author chose these countries because they are neighbouring countries and for last ten years have been between top twenty countries in the competitiveness ranking.

From Figure 1 we see that the crisis has not seriously affected competitiveness of Nordic countries and Finland but it has a significant influence in Baltic States positions in overall ranking. So the Baltic economies have no strong competitive advantage. What are the main pitfalls of Latvia?

National competitiveness is determined assessing their global competitiveness determining factors, or so-called pillars of competitiveness. There are twelve following

[1] GDP - real growth rate (%) 2010 Country Ranks, By Ran: http://www.photius.com/rankings/economy/gdp_real_growth_rate_2010_0.html

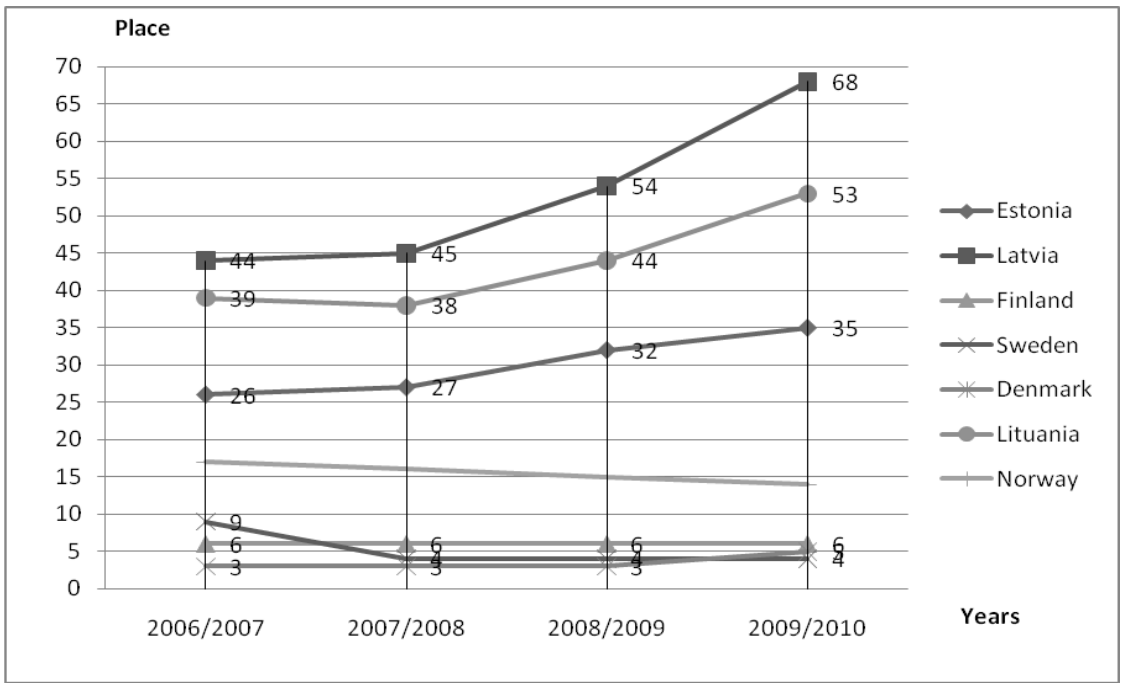

Figure 1: Nordic countries, Finland and Baltic States layout in overall ranking according to GCI in time period from 2006 to 2010 – compiled by author[2]

factors (pillars of competitiveness) distributed in annual Global Competitiveness Report for years 2009-2010: **Basic requirements** (Institutions, Infrastructure, Macroeconomic stability, Health and primary education), **Efficiency enhancers (**Higher education and training, Goods market efficiency, Labor market efficiency, Financial market sophistication, Technological readiness, Market size), **Innovation and sophistication factors (**Business sophistication, Innovation).

In Figure 2 we see average rates of Latvian performance compared to other countries whose economy has reached a level that they can be considered as innovation-based economies.

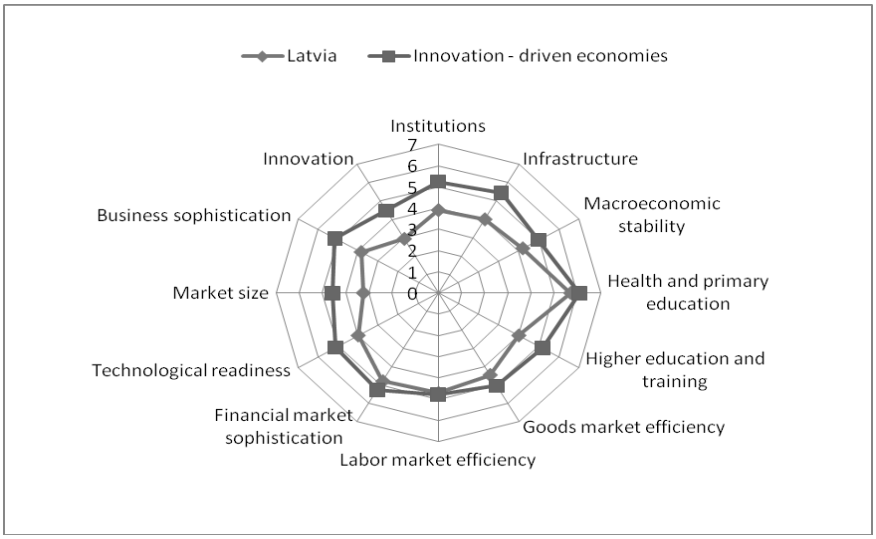

Figure 2: Average Latvian indexes of competitiveness factors compared to countries that can be counted as innovation-driven economies *(Author prepared the information following "The Global Competitiveness Report 2009-2010").*

From the above factors we can note those, in which we have practically reached the most competitive national averages. In basic requirements, despite low funding, it is level of

[2] http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/PastReports/index.htm

health and primary education. Latvia has also made good progress in the following areas of efficiency enhancers – goods market efficiency, labor market efficiency and financial market sophistication. If we take into consideration not only the absolute index values but also position in national ranking, we can notice a large gap in innovations, business sophistication and macroeconomic stability, which was largely influenced by the governments destructive activities, resulting in unpredictability impression. For instance, in November 2008 businessmen and investors did not know which taxes could be paid in 2009. At the end of 2009 situation was the same.

LMMI general description

EU is the world's largest mechanical equipment manufacturer and exporter. Its role and importance in European growth context is precisely described in the European Economic and Social Committee opinion 2005 – "Industrial changes in engineering":

"Mechanical engineering is a sector in its own right but, as a supplier of capital goods and common technologies used by different industries, it acts also as a cross-fertiliser, causing a knock-on effect on a much greater number of European sectors. It is a key innovative industry and, as such, any European industrial policy must consider mechanical engineering a strategic sector. The sector fits perfectly well into a concrete programme of fixed objectives at regional, national and EU level aimed at the realisation of the Lisbon agenda. This requires both horizontal and sector-specific policies, as well as an adequate mix of the two. Any such policies should help the sector to excel not only across Europe but also worldwide.

Machinery and metalworking is a strategic sector (further MMS) with high added value. Its operations require wide knowledge and deep skills. MMS supplies all sectors of national economy with machines, equipment, spare parts and manufacturing systems and related services, as well as needed technologies and human capital and knowledge. [3]"

Following the general classification of economic activities, sector business activities correspond to listed NACE codes: 24. Metal Production, 25. Finished metal products, except machinery and equipment, 27. Manufacturing of electrical equipment, 28. Manufacturing of elsewhere non classified equipment, machinery and working machines, 29. Manufacturing of motor vehicles, trailers and semi-trailers, 30. Manufacturing of other transports, 32. Other kind of manufacturing, 33. Machinery and equipment repair and installation.

NACE code 22 – manufacturing of rubber and plastic products, only partly refers to industry scope and is considered as industry operating margin. In fact, beneath these large NACE codes there are separate industries, therefore, in terms of competition, we can only partially look at LMMI as united form. That is because outlets for each industry according to NACE 2.2 have their own versions but sectors within each individual industry is competing between themselves for skilled labor, raw materials and financing. Unfortunately, for the same resources must compete with builders.

Latvian statistical data collection system does not provide required information about individual industries, therefore macroeconomic forecasts of state institutions are quite incomplete due to lack of necessary information for specific industries.

LMMI was one of the fastest growing industrial sub-sectors until 2008. After Russian crisis 1999, in the period from year 2000 till 2009, the output growth in current prices was up to 2008 (included) (see Figure 3). Largest relative increase was in 2004 – 35.6%.[4]

LMMI represent about 80% of industrial value added (Latvian Mechanical Engineering and Metalworking Industry profile, 2007). 70% of industry's total production is exported. Industry is dominated by small and medium size companies. The products they offer are

[3] European Economic and Social Affairs. Opinion "Industrial Engineering Changes", May 11, 2005.
[4] Latvia joined EU.

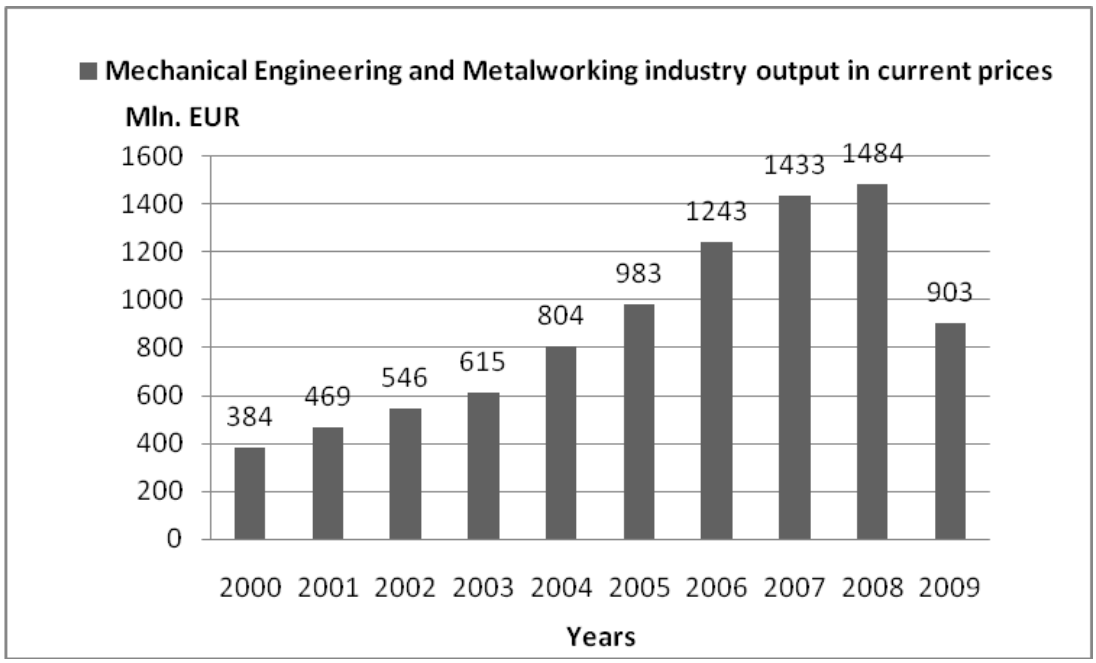

Figure 3: Latvian Mechanical Engineering and Metalworking industry output in current prices in time period from 2000 till 2009[5]

specialized and individualized. Even small businesses successfully compete in the global market. Industry has a significant role in the supply of capital goods to other economic sectors. In the same time it is industry's problem, because, if the total volume of industry declines, there is no demand for LMMI production. In Figure 4 we see that in EU industry totally fell throughout 2009 and a slight growth only started in the January, 2010.

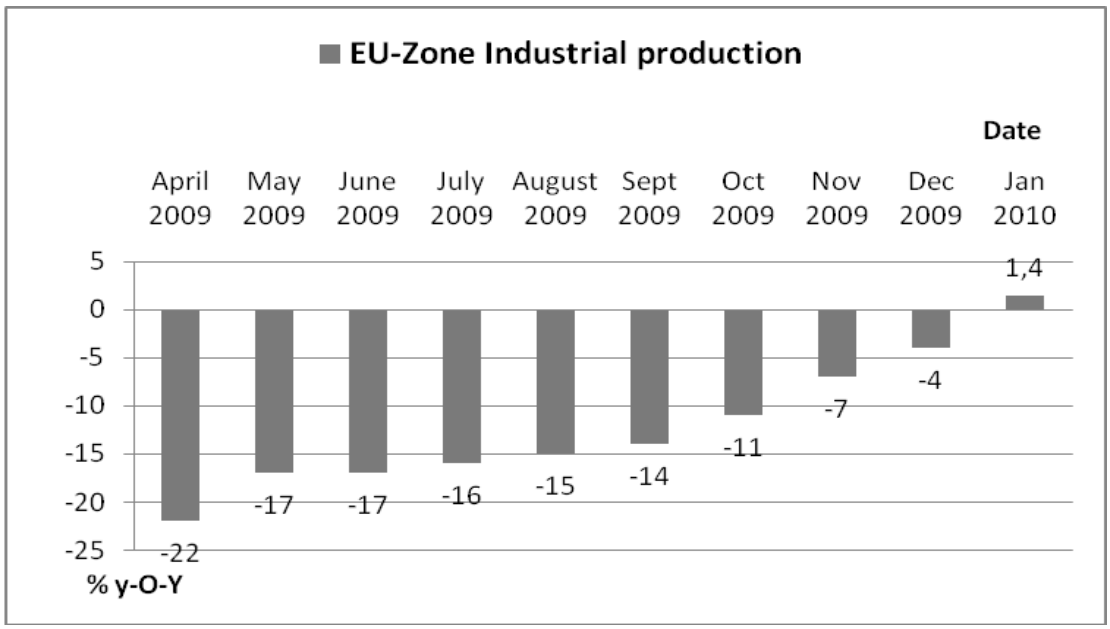

Figure 4: EU industry total relative change in the period from April 2009 until January 2010[6]

Manufacturing industry, according to data from 2009, constitutes ~ 15% of the Gross Domestic Product (GDP), which is little compared to other European countries where it forms

[5] Source: Association of Mechanical Engineering and Metalworking Industries of Latvia, 2010
[6] http://www.eurometal.net/index.php?option=com_docman&task=cat_view&gid=40&Itemid=31

an average of 25%. LMMI makes ~ 4% of total Latvian GDP, what is a significant part, besides, one workplace in the industry provides at least three to five workplaces in other industries and service sector, indirectly resulting in creating approximately 15% of Latvian GDP. Up to 2008, including, productivity per worker continued to increase, however it was about two times lower than the EU average.

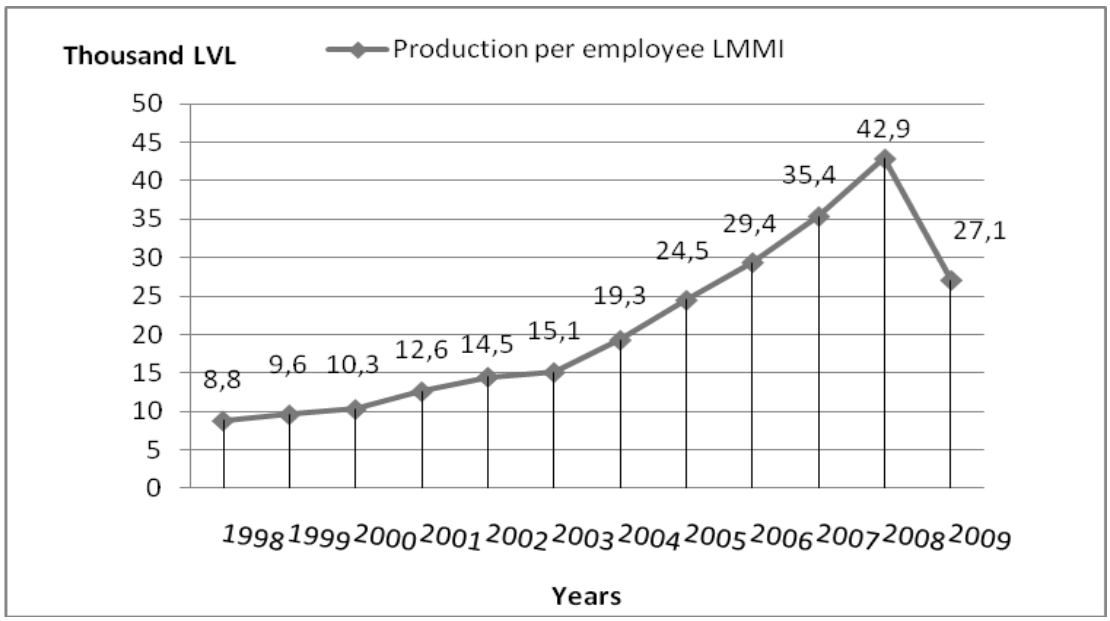

Figure 5: Production per employee LMMI[7]

In 2009 there was a dramatic drop in productivity because of decrease in total volume of production due to decrease of prices and output reduction. Specific features of the sector also have to be taken into account – businesses do not produce essential goods, sector employs a highly skilled workforce. Consequently, productivity has declined because production has decreased much faster than the number of employees in the sector. Companies seek to retain skilled staff because, restoring production levels, it would be difficult to find equivalent professionals.

However, industry trends, such as growth of innovative business number, change of assortment of products etc, shows that LMMI, like Latvia as a whole, gradually shift from competitiveness of the investment phase to innovation stage. This puts additional requirements for companies, as it is necessary to address the challenges more seriously that are focused on sustainable development of companies:

- Enterprise ICT competence promotion;
- Development of further education system for workforce;
- Investments and comprehensive solutions for scientific and applied research;
- Building of business corporate excellence.

After Latvia joined EU, there was a significant increase in export volume, followed by a dramatic drop in 2009 for about 43% of total exports of 2008 (see Figure 5). Particularly strong growth was recorded in exports to the EU.

Following the structure of export by countries (see Figure 6), we see that about 70% of total exports makes export to EU countries. Consequently, the industry recovery is possible if EU overcomes the crisis, as LMMI companies mostly provide outsourced services.

[7] Source: Association of Mechanical Engineering and Metalworking Industries of Latvia, 2010

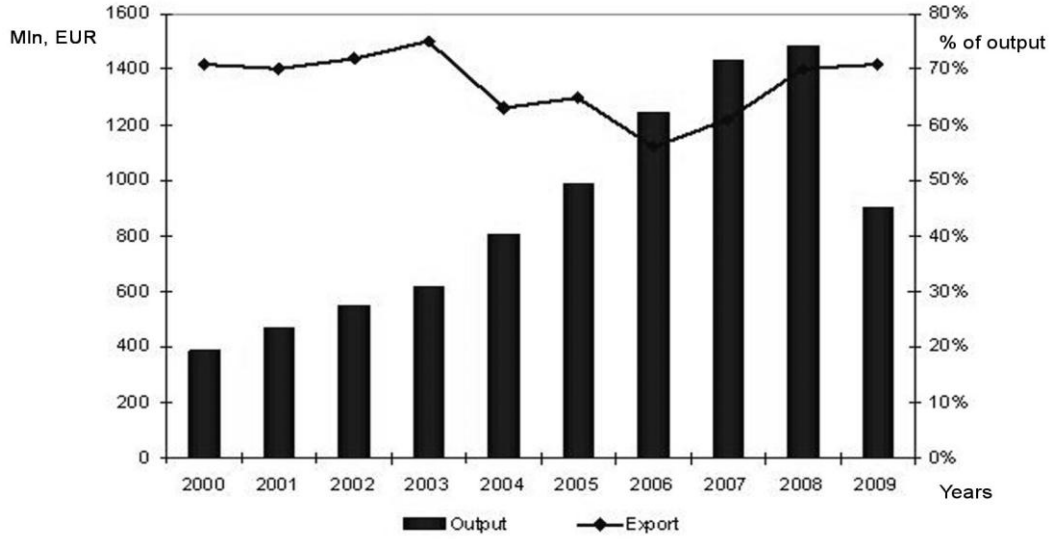

Figure 6: Export dynamics of Latvian Mechanical Engineering and Metalworking industry in prices of FOB[8] and its share in total output per period from 2000 till 2009[9]

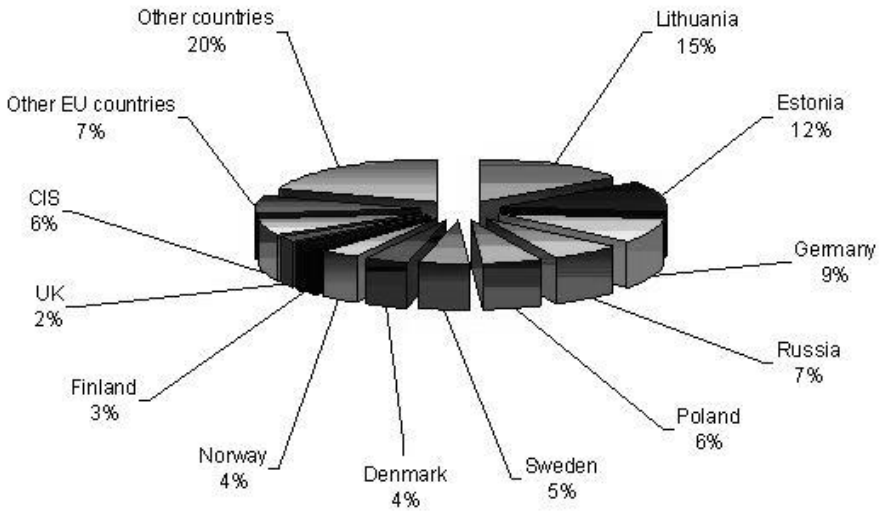

Figure 7: Main export countries for Latvian Mechanical Engineering and Metalworking industry in year 2009 % of the industry's total exports in FOB prices[10]

In a medium term (approximately 3-7 years) it can be predicted that 2/3 of all LMMI companies can become technologically uncompetitive because their used manufacturing equipment will be inadequate for today's competitiveness requirements or morally outdated. Therefore it is necessary to carry out very carefully the restructuring of enterprises, putting emphasis on specific skills needed to function in mechanical engineering and metalworking industry and create a competitive advantage. To ensure sustainable development of the sector, investments should be carefully evaluated. Advantage over companies that have made

[8] "FOB price" means the spot price paid or payable for the shipment of products contained in quantity, including the cost of the shipment loaded in the vehicle at the place of origin and other costs incurred in this country. FOB price does not include any costs borne by the seller from the moment the products are loaded on the vehicle.

[9] Source: Association of Mechanical Engineering and Metalworking Industries of Latvia, 2010

[10] Source: Association of Mechanical Engineering and Metalworking Industries of Latvia, 2010

investments in the past, lies in the fact that it is possible to buy and implement currently most advanced technologies in the world.

EU carried out a study of 2004 "Competitive Analysis of EU Mechanical Engineering". MMI put forward the following criteria for the future competitiveness - Ability to solve customer problems; Individualized knowledge; Technological excellence; Quality and reliability; Labor quality and costs; Education and training; Investments in capital goods.

One possibility to improve these figures is successful acquirement of EU structural funds for the new programming period from 2007 to 2013, what is still hampered by government failure to co- or pre-finance this acquisition. Total amount acquired by programs "Entrepreneurship and Innovation" and "Human Resources and Employment" draw up 230.5 millions of LVL. The main emphasis is placed on developing new products, technologies and cooperation of scientific institutions with enterprises of applied research. Several businesses have gained support in programs for "High added value investments", "Development of new products and technologies":

Development of new products and technologies – support to establish new products and technologies in production (contracts 17.2 mln. LVL (7,1 mln. LVL EU finance) LMMI 3.6 mln. LVL (1,5 mln. LVL EU finance) or 21% of total funds);

Development of new products and technologies – support to establish new products and technologies in production (contracts 6.1 mln. LVL (1,7 mln. LVL EU) LMMI 3.6 mln. LVL (1,5 mln. LVL EU finance) or 16% of total funds);

High added value investments (contracts 179.4 mln. LVL (67.5 mln. LVL EU finance) LMMI 71.9 mln. LVL (27.2 mln. LVL EU finance) or 16% of total funding)

Conclusions

- Summarizing the above research results and analyzing the economic situation of the sector's competitiveness, we can conclude:
- The factors were identified that LMMI companies can not affect or may affect a little, but which has a significant impact on the competitiveness of the sector – particularly in national economic policy. This relates also with "The Global Competitiveness Report 2009-2010";
- Since 70% of total industry output is exported, industry recovery is possible only if industrial growth resumes in EU;
- LMMI output is not priority goods, so the volume increase is possible if demand of other industries increases;
- Productivity decline is temporary, because LMMI sector workers require special skills, so the companies kept the number of employees, which in combination with the overall industry output price drop caused a significant drop in labor productivity;
- Crisis might be used as an opportunity – there are EU structural funds available, that allow to invest in new technologies, research and development, and prepare for the moment the EU economy recovers (67% of sectors export in 2009 was to EU countries) and target markets become accessible.In 2007, many entrepreneurs of industry were not ready to think about innovation. The crisis is now forcing to act creatively.

References

1. Society "Mechanical Engineering and Metalworking Industries Association (MASOC) unpublished statistics
2. Opinion of the European Economic and Social Committee on Industrial Change in the Mechanical Engineering Sector (own-initiative opinion).Brussels, 11 May 2005
3. E. Rompczyk. Gribam ilgtspējīgu attīstību. Rīga: Friedrich-Ebert-Stiftung 2007., 152 lpp.
4. EUROMETAL ECONOMIC OUTLOOK MARCH 2010, http://www.eurometal.net/index.php?option=com_docman&task=cat_view&gid=40&Itemid=31 (accessed April 26, 2010)

5. GDP - real growth rate (%) 2010 Country Ranks, By Rank: http://www.photius.com/rankings/economy/gdp_real_growth_rate_2010_0.html (accessed April 26, 2010)
6. I.Vanags, T.Pļevako, O.Beliha, I.Katkovska. Rūpniecības nozaru konkurētspējas struktūras pamatprincipi. Ekonomikas ministrijas pasūtītais pētījums EM Nr. 2004/119, http://www.em.gov.lv/em/2nd/?cat=21086 (accessed April 22, 2010)
7. Latvijas Mašīnbūves un Metālapstrādes Rūpniecības nozares attīstības stratēģija. MASOC, 2005., http://www.em.gov.lv/em/2nd/?cat=21086 (accessed April 17, 2010)
8. Latvijas Mašīnbūves un metālapstrādes rūpniecības nozares apraksts. Projekts "Vienotas metodikas izstrāde profesionālās izglītības kvalitātes paaugstināšanai un sociālo partneru iesaistei un izglītošanai". Izglītības un zinātnes ministrijas Profesionālās izglītības administrācija, Rīga, 2007, http://visc.gov.lv/saturs/profizgl/metmat/aprobacija/1-NO/1-NO-MetalapstradesNozare/1-NO-M-NozaresApraksts.pdf (accessed April 25, 2010)
9. Pētījums „Cilvēkresursu potenciāla noteikšana Latvijas mašīnbūves un metālapstrādes nozarē un stratēģijas izstrāde jauno speciālistu piesaistei šajā nozarē, lietojot reklāmas pasākumus un motivēšanas shēmas", MASOC, Rīga, 2005. g. oktobris
10. Classification of Economic Activities in the European Community *NACE* Rev. 2 , http://test.csb.gov.lv/csp/content/?cat=4469&cl_cat=0&p_cid=70&p_vid=1011&p_action=2&p_list_type=2&p_list_level=0#62633 (accessed April 17, 2010)
11. The Global Competitiveness Report 2005-2006; http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/PastReports/index.htm (accessed April 24, 2010)
12. The Global Competitiveness Report 2006-2007; http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/PastReports/index.htm (accessed April 24, 2010)
13. The Global Competitiveness Report 2007-2008; http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/PastReports/index.htm (accessed April 24, 2010)
14. The Global Competitiveness Report 2008-2009; http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/PastReports/index.htm (accessed April 24, 2010)
15. The Global Competitiveness Report 2009-2010; http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/index.htm (accessed April 24, 2010)
16. Report on the Economic Development of Latvia. Riga, LR EM, December 2009, http://www.em.gov.lv/em/2nd/?cat=137 (accessed April 24, 2010).

About the author

Researcher, MBA Egils Vītols
Ventspils University College
Major research subject(s) - Latvian Machinery and metalworking industry competitiveness (Management Science)
E-mail: vitolse@venta.lv