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IMPORTANCE OF INNOVATION AND DYNAMICS OF CHANGES IN COMPETITIVENESS ENHANCEMENT PRODUCTION PROGRAMS OF MACEDONIAN COMPANIES

Abstract

Innovation and successful internationalization of companies on the global market are closely related to competitiveness. Any form of innovation, technology innovation (process and product innovation), organization innovation, service or process innovation has influence on the competitive capacity of modern companies to offer competitive products or services.

Regarding competitiveness, the Republic of Macedonia belongs to the group of countries whose economies are efficiency-driven, and from the perspective of business sophistication, companies/exporters mainly rely on traditional industries and uncompetitive products with low value added. There is a lack of innovation and new product development, as well as of quality, design, branding, promotion, etc.

One of the main reasons for such situation is in that the Republic of Macedonia entered the independence period with negative tendencies in technology development, with inappropriate structure and obsolete technology and technical equipment in production processes, especially in leading industries, mainly labor intensive and on low technology development level. Country's technology development weaknesses came mostly to the fore in the product policy area. In a large number of companies, rapid production program changes have not been a permanent component of their business strategies, which added considerably to low competitiveness on the global market.

Keywords: competitiveness, new products, innovation, technology development

JEL classification: M31, O31

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Introduction

Survival and growth of an economy in a globalizing environment is not possible without market orientation of companies, more exactly orientation toward consumer needs and desires. Real market orientation by winning and retaining certain market segment can be accomplished merely by achieving appropriate competitiveness, which will be based on innovation, development, and improvement of the products or services offered.

The unfavorable foreign trade exchange standing of the Republic of Macedonia is a result of the low competitiveness of Macedonian companies on foreign markets. Low competitiveness also constitutes a kind of deterrent to a more serious market relations development, whereas adding value to Macedonian products is the only way of export competitiveness improvement.

Competitiveness is largely determined by development specificities and stages of individual national economies, product nature, and market conditions. In an era of economy of knowledge, economic growth depends mainly on the capability to implement new technologies and on innovation in developing new products and services, which has an effect on competitiveness maintaining and improvement in global realms.

Technology development constitutes one of the fundamental drivers of overall economic development, and is an outstandingly important factor of the global economy and international economic cooperation. Technology development by its effects causes a number of structural changes in the material production as a whole, and allows social productivity increase and higher efficiency in using all available resources. The effects of technology development are also recognizable in company activity and development, especially with the view to equipment modernization and introduction of new production processes, as well as in the area of product policy.

1. OVERVIEW OF COMPETITIVENESS OF THE MACEDONIAN ECONOMY

Competitiveness is a concept which must be inevitably adopted and one must insist on its incorporation in any deliberation on creating policies and strategies of both companies and national economies. Thereby, its complexity needs to be considered as being multilayered, interdisciplinary, multidimensional, and intersectoral a category.

Competitiveness can be observed on multiple levels: macro, meso-, and micro. Micro aspects of competitiveness are related to factors and mechanisms of competitive adjustment on company level, meso-aspects on sectorial level, whereas macro aspects refer to the national economy. However, it has to be emphasized that this is a conditional division, because competitiveness is mostly a combination of company, industry, sectoral, and national performance, and constitutes an aggregate indicator

on national economy's rating on the global market. Competitiveness enhancement on company level inevitably leads both to higher competitiveness of the respective sector and the country's economy as a whole, and vice versa.

Competitiveness is also multidimensional a concept. Its multidimensionality results from the vast number of factors which determine it, and the even larger number of tools which are used in competitive adjustment.

In different time periods and under different conditions prevailing both in individual national economies and globally, the impact and relative importance of competitiveness factors undergo changes. However, not all national economies and all producers are able to follow such trends.

Technology progress and technology process improvements have allowed companies to reduce production-, organization-, and distribution- costs to the minimum, and to increase the price-based competitive advantage. However, under current conditions non-price factors get higher importance for competitiveness enhancement, mostly of which quality, technology advantages, industry specialization, business environment, marketing practices, etc.¹⁾ Thereby, quality is considered to be integrative of all other non-price competitiveness factors and it can sublimate their subsequent effects.

Developed countries consider competitiveness as an issue of aggregate expression of specific global features of a national economy. As a foreign trade phenomenon, it is a structural characteristic of an economy, and good criteria basis for identifying problems on company, sectorial, and national economy level.

According to the Global Competitiveness Index (World Economic Forum – WEF), since 2007 the Republic of Macedonia has been in the group of countries that are in the second development stage regarding their national economy's competitiveness, i.e. countries driven by factors which increase production efficiency (**Table 1**).

In the area of innovation and business sophistication, in 2011 Macedonia was ranked 105th. Business sophistication takes into account the quality of country's overall business networking, as well as the quality of companies' activities and strategies (branding, marketing practices, presence of value chains, production of unique and sophisticated products), which lead to sophisticated and modern business processes. An analysis of the structure of this index allows one to conclude that regarding business sophistication, Macedonian companies/exporters are mainly active in resource extraction or production industries (metals and textile), unlike developed countries, where companies are focused in product design, marketing and sales, logistics, and after-sales services.

¹⁾ J. Monteagudo and F. Montaruli, European Commission, Directorate General for Economic and Financial Affairs, Analysing non-price competitiveness in euro area countries, www.tesoro.it/export/sites/sitodt/modules/documenti_it.., (15.11.2011)

Table 1

WEF'S RANKING OF REPUBLIC OF MACEDONIA BY THE GCI

WEF	2007 (131)	2008 (134)	2009 (133)	2010 (139)	2011 (142)
The Global Competitiveness Index	94	89	84	79	79
Subindex: Basic requirements	72	68	73	70	69
Institutions	102	90	83	80	81
Infrastructure	85	89	90	91	86
Macroeconomic environment	53	31	49	47	37
Health and primary education	47	55	60	69	80
Subindex: Efficiency enhancers	98	92	85	83	87
Higher education and training	75	73	70	72	80
Goods' market efficiency	98	98	76	57	63
Labor market efficiency	112	113	86	71	72
Financial market development	83	83	75	87	82
Technological readiness	90	83	52	64	67
Market size	106	104	103	106	107
Subindex: Innovation and sophistication	101	105	93	97	104
Business sophistication	108	107	96	96	105
Innovation	92	99	92	97	105

WEF's ranking of Republic of Macedonia by the GCI

In the stage of efficiency-driven economies, where the Republic of Macedonia has to transit, competitiveness does not rely on low prices, but rather on product quality, enhanced productivity, and innovation. Since productivity has already increased the labor price, in this stage one has to also increase technology processes efficiency, and products and services quality. This is a preparation for proceeding to the third stage of innovation-driven economies, where competitive advantages are a result of production processes sophistication and production of new, sophisticated products and services with maximum value added.²⁾

2. FOREIGN TRADE EXCHANGE DYNAMICS AND STRUCTURE AND FOREIGN MARKETS COMPETITIVENESS

Trade competitiveness is often a verification of competitiveness on foreign markets. It is a priority for Macedonia as a small, open economy, which must constantly enhance its export potentials.

Total trade exchange figures (**Table 2 and Graph 1**) show the growth dynamics of export and import, as well as of the trade deficit, which is an important indicator for measuring economy's competitiveness. In the past two-year period, it is observable that export and import have constant growth, which is particularly accentuated in the last 5-6 years, notwithstanding the 2009 data, when economic crisis had negative

²⁾ Национален извештај за конкурентност 2010, p. 10-11

Table 2

FOREIGN TRADE EXCHANGE OF THE REPUBLIC OF MACEDONIA

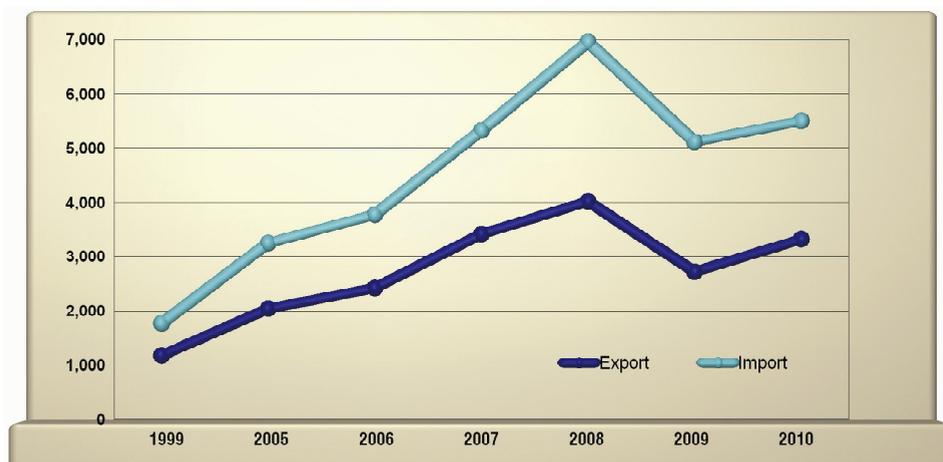
In USD mil.

	1999	2005	2006	2007	2008	2009	2010
Export	1,191.3	2,042.3	2,415.2	3,398.3	3,990.6	2,708.5	3,301.8
Import	1,776.1	3,232.8	3,752.3	5,280.6	6,882.7	5,072.8	5,450.7
Total trade exch.	2,967.4	5,275.1	6,167.4	8,678.9	10,873.3	7,781.3	8,752.5
Trade deficit	-584.9	-1,190.5	-1,337.1	-1,882.3	-2,892.0	-2,364.3	-2,148.8

Source: State Statistical Office of RM

Graph 1

FOREIGN TRADE EXCHANGE OF THE REPUBLIC OF MACEDONIA



Source: State Statistical Office of RM

effects on the overall foreign trade exchange. As the growth of import is higher than the growth of export, a constant and ever increasing trade deficit has been created.

Graph 1 indicates that both export and import grow constantly. Export and import trends are almost parallel, and the rate of export growth is equal to the rate of import growth, which points to import dependency of the export.

In order to analyze trade competitiveness, it is necessary to analyze the production structure of Macedonian export and import. This is indicative of the sustainability of export growth, which is directly dependent on global trends and on the existence of export products with higher value added, which in fact constitutes economy's export competitiveness.³⁾

³⁾ Мајсторска Јасмина, Извозната промоција како еден од инструментите на индустриската политика (докторска дисертација), Скопје 2011, p.179

Foreign trade exchange structure is usually analyzed from multiple aspects. For labor purposes it is analyzed according to economic function of products, by industries and products.

Table 3 shows the export structure according to economic function of products, i.e. the level of finalization, which allows for identification of the value added in products of this category as well.

Table 3

**MACEDONIAN EXPORT ACCORDING TO ECONOMIC
FUNCTION OF PRODUCTS**

	<i>In USD mil.</i>						
	1999	2005	2006	2007	2008	2009	2010
Total	1,191.27	2,042.3	2,415.2	3,398.3	3,990.6	2,708.5	3,301.8
1. Reproduction goods	565.11	1,110.4	1,398.9	2,086.1	2,444.1	1,369.3	1,949.3
Crude materials and semi-products	432.01	787.7	1,003.8	1,694.9	1,868.3	971.5	1,504.0
Power generation fuels	20.16	161.9	223.7	164.2	310.6	201.6	256.2
Final reproduction goods	112.94	160.8	171.4	227.0	265.1	196.2	189.1
2. Instruments of labor	37.16	39.9	51.5	76.6	133.9	125.8	105.5
Plant machinery	2.6	1.0	0.7	1.6	2.0	4.7	0.6
Agriculture machinery	0.23	0.6	0.3	0.8	0.8	0.7	0.8
Metal processing machinery	0.59	0.7	0.7	0.8	0.8	0.4	1.1
Other machines and devices	5.29	7.7	10.9	18.9	23.4	24.8	49.3
Electric machines and devices	8.2	10.1	13.3	17.4	28.4	36.0	11.7
Transportation means	6.57	7.4	2.1	2.6	2.3	3.1	4.8
Other investment related goods	13.68	12.3	23.6	34.6	76.2	56.1	37.3
3. Consumer goods	563.7	891.2	964.7	1,235.6	1,412.6	1,213.3	1,247.0
Food products	63.16	163.5	188.5	245.6	309.3	276.8	326.6
Beverages and tobacco	81.98	74.3	100.0	121.8	121.3	109.0	107.1
Garments and footwear	351.88	535.7	552.3	707.0	775.8	641.9	615.8
Furniture	6.32	8.1	10.8	18.3	24.1	21.9	23.3
Textile (except garments)	17.91	28.7	21.2	22.8	24.4	16.8	27.1
Medical and pharmaceutical cosmetics	25.24	44.7	46.6	58.2	77.9	74.6	78.1
Other consumer goods	17.2	36.3	45.3	61.8	79.8	72.3	69.0
4. Unknown	25.3	0.8	0.0	0.0	0.0	0.0	0.0

Source: State Statistical Office of RM

Data of the foregoing table lead to the conclusion that Macedonian export grows mainly as a result of the export of reproduction goods and instruments of labor. Consumer goods, which are characterized by higher value added, brands, and recognizability, contribute less to export growth.

Further to **Table 4**, export structure by industries confirms the foregoing conclusions on export growth dynamics. It can be noticed that the share of crude materials and mineral fuels is increasing, whereas the share of final products is dropping.

Table 4

EXPORT STRUCTURE

SITC sectors	<i>In %</i>						
	1999	2005	2006	2007	2008	2009	2010
Food products	5.6	8.2	8.0	7.4	7.8	10.5	10.0
Beverages and tobacco	13.4	8.0	8.0	6.2	5.5	7.3	6.1
Crude materials except fuels	4.3	3.3	4.7	5.1	6.8	6.4	7.9
Mineral fuels, lubricants	1.9	8.0	9.4	4.9	7.9	7.5	7.8
Animal and vegetable oils and fats	0.0	0.1	0.1	0.1	0.3	0.3	0.3
Chemical products	4.6	4.4	4.2	3.9	4.6	6.4	11.6
Manufactured goods classified by material	29.7	33.4	35.5	44.8	40.2	28.6	30.0
Machinery and transport devices	7.0	5.4	4.9	4.5	4.6	5.3	4.6
Miscellaneous manufactured goods	31.3	28.9	25.2	23.1	22.3	27.5	21.7
Transactions and commodities n.e.s.	0.0	0.2	0.1	0.1	0.1	0.0	0.1
TOTAL	100.0						

Source: State Statistical Office of RM and estimates by authors

With a view to the nature of Macedonian export over a longer period of time, it is observable that its growth is actually a result of the export of larger quantities of ever the same (traditional) Macedonian export products. Namely, over a period of nearly 20 years, and even in the past 30 years or so, Macedonian export has mainly relied on more or less 10 products, which account for about 2/3 of the total: iron and steel, garments (i.e. ready-to-make production and finalization), and to a lesser extent fruits and vegetables (fresh, not processed), beverages (this includes wine), tobacco (unprocessed), metal scrap, medical and pharmaceutical products, processed metal goods, parts for electric machines, and footwear, and in the last few years export of petroleum is present (to Kosovo).

This suggests that Macedonian export growth is not in fact a result of embarking on production of goods with higher value added, which have higher prices on foreign markets, but rather of the production and export of larger quantities of the traditional textile products (made by finalization and processing), as well as metals (iron, steel, and alloys), which in the last few years experience price growth on the world market (i.e. on commodity exchanges). In addition, the structure of Macedonian export is characterized by weak innovation and production programs' changes, which is one of the main reasons for the low trade competitiveness. The export structure based on production of goods with low degrees of processing and low value added (eg. ready-to-make production of textiles, metals etc.), cannot make a foundation for rapid and sustainable economic growth.

The structure of Macedonian export in the period after declaration of country's independence points to the following two conclusions, which are affirmative of the low level of export competitiveness:⁴⁾

- *The structure of Macedonian export products has experienced very few changes during the 20-year period of transition, and*
- *Macedonian export products have a very small component of value added.*

According to this analysis, in a period of about 20 years there has been no significant change in the production structure of the Macedonian economy, mostly as a result of the absence of an active and efficient industrial policy. Furthermore, Macedonian economy's export competitiveness is based on three product groups (clusters): crude materials/metals, textile/clothing, and food products/beverages. Thereby, the majority of crude materials/metals cluster products are either primary or semi-products, intended for further processing and finalization. The majority of companies that manufacture textile and clothing have contracts with foreign partners for providing sewing services by using law-skilled female labor. In the case of food products/beverages, Macedonian export products include mostly primary agriculture goods, which are distributed on regional (neighboring) markets. The export of petroleum/chemical products is growing in volume in the last few years due to the sales of oil derivatives of the OKTA Refinery to Kosovo.⁵⁾

It may be concluded that the Republic of Macedonia is still a traditional economy that is not restructured, and with no diversified and competitive production base. With a purpose of raising the Republic of Macedonia to a higher stage of economic development compared to other countries in the world, it is necessary to provide support for development, as well as to enhance the competitiveness of Macedonian products and services through knowledge, implementation of new technologies, innovation, and production programs modification.

3. INNOVATION AND MODIFICATION OF PRODUCTION PROGRAMS OF MACEDONIAN COMPANIES – TRENDS AND RECENT DEVELOPMENTS

Production range improvements, by introducing new and modification of the existing products, are of great importance for operation efficiency, and particularly

⁴⁾ Узунов Ванчо: Конкурентноста на македонската економија во текот на транзициониот период (1991-2011), труд презентирани на меѓународната конференција на тема: Регионалната трговска интеграција на земјите од Југоисточна Европа: придобивки и предизвици, одржана на 12.12.2011, Скопје (во фаза на објавување)

⁵⁾ Ibid

for company's competitiveness on the global market. Companies are trying various innovation strategies to enhance and ensure their competitive ability.⁶⁾

Specialization may bring high competence and highly achieved competitiveness level of the leading products. However, this is not a characteristic of the leading export products of the Republic of Macedonia, and the stated situation is more a result of the weak performance of the economy, and its inability to diversify its supply. Furthermore, a highly simplified export program is very sensitive to market fluctuations. In that regard, in the case of Macedonian economy it is about structural problems of a longer-term character, and the present export focus in several leading products may be defined as negative.

Should one also consider the even greater concentration of exports by countries, it becomes even more clear that the problems are more complex and that solutions need to be searched in profound and thoughtful long-term strategic interventions. Identifying the reasons for, and finding the ways out of the unfavorable situation need thorough analyses by the "country by country" and "product by product" approach.

The goal of ensuring good product or service in absolute terms, and being better than the competition, assumes making a competitive advantage and keeping it in place. Strategic competitive advantage understands achieving certain supremacy compared to the competition, which must meet the following three criteria:⁷⁾

1. Such advantage or supremacy must refer to product's (or service's) properties that are important to consumers;
2. The advantage must be noticed by consumers; and
3. The advantage is not to be achieved quickly by competitors, i.e. it has to be of permanent character, to be "sustainable" or "defendable" on a long term.

Macedonian economy was increasingly less able to offer complete production programs on foreign markets, particularly products of higher degrees of processing. Negative consequences of the absence of marketing oriented product policies have their manifestation primarily in the relatively narrow, insufficiently thorough and consistent production programs, as well as in the slow dynamics of changes regarding introduction of new, modification of existing, and abandonment of outdated products. Majority of products have carried the attribute "new" only from the perspective of particular companies. The innovation process has got local character, since products

⁶⁾ Eg. preferences in the US are placed in product innovation, in Japan in process innovation; in Germany, on the other hand, a focus in the technological side of innovation is evident, whereas it is supposed that Italians strongly focus their innovation toward the market and consumers.

⁷⁾ H. Simon: Management strateischer Wettbewerbsvorteile, Zeitschrift für Betriebswirtschaft, April, 1988, p. 465, (Cited according to: Prof. R. Senik PhD: Inovativnost kao izvor konkurentske prednosti savremenog preduzeka, "Poslovna politika", januari / 1992, Beograd, p. 53)

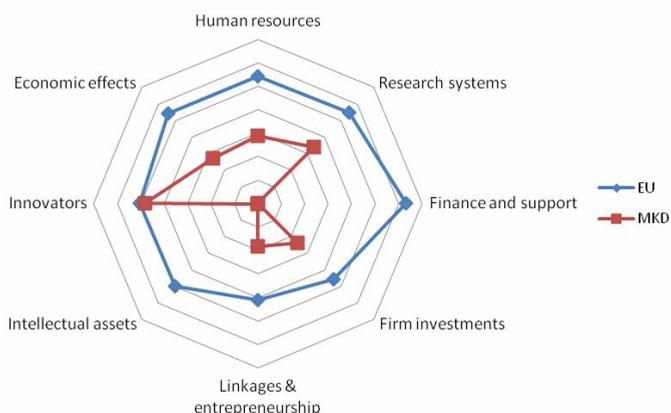
have not been achieving the quality that would promote them as new, highly competitive products.

Analyses made in the European Union regarding the interrelation of internationalization and innovation show that internationally active enterprises introduce more process and product innovation than enterprises that are not internationally active. Almost half of internationally active enterprises introduce certain kind of innovation in the recent three years (the average for all active enterprises is about 20%), and 60% of internationally active enterprises develop their innovation internally. Here is strongly emphasized the effect of “learning from internationalization/export”, which opens possibilities for access to new knowledge and technologies that are not available on the national market, but this is also a result of exposure to strong competition and constant pressure to keep the position on the market. The role of foreign companies as catalysts on the national market that encourage national companies’ innovation should not be disregarded as well. It is also interesting that enterprises which have developed internationalization plans are more innovative in their activities compared to enterprises with no such ambitions.⁸⁾

According to the Innovation Union Scoreboard’s (IUS) [previously known as European Innovation Scoreboard (EIS)] analysis of the 25 indicators (based on eight groups of factors), compared to EU-27 the Republic of Macedonia is on the bottom regarding company investments for introducing new products or production processes. The same analysis states that one of the greatest weaknesses is low spending on companies’ R&D (**Graph 2**).

Graph 2

2010 INNOVATION INDEX FOR EU-27 AND MACEDONIA



Source: *Innovation Union Scoreboard 2010 Database*

⁸⁾ EU Commission, DG Enterprise and Industry (2010), Internationalisation of European SMEs, Final Report

Table 5 presents the results of the research of Macedonian companies which have introduced various types of innovation in the period between 2008 and 2010. GfK's research finds that 56% of the companies are innovative, 19% are very innovative, 2% are extremely innovative, and only 23% are insufficiently innovative.⁹⁾

Table 5

INNOVATION TYPES OF MACEDONIAN COMPANIES

Country	EU-27		Macedonia	
	CIS	CIS (1980 companies)	CIS (1980 companies)	GfK (492 companies)
Innovation type introduced by companies in the recent three years				
New product or service	34%	39.2%	17%	34.6%
Process innovation			19%	23.2%
Marketing innovation	39%	30.8%	32%	33.3%
Organization innovation			29%	23.8%

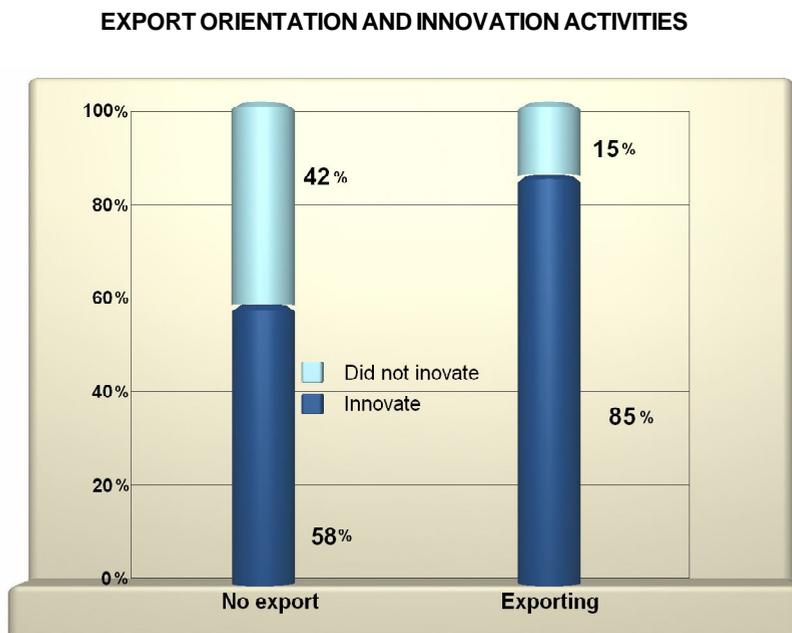
Source: OECD: review of the National Innovation system of RM, 2010, p.45

During recent three years, more than half of the companies have introduced certain innovation, which improved their competitiveness performance on the market. Analyses show that micro companies have limited access to innovation activities, and almost half of them do not introduce any form of innovation. It is significantly characteristic that export companies innovate more often than those oriented merely toward the national market. About 85% have at least one innovation in the period 2008-2010, whereas only 58% of those that do not export have made innovation in the same period (**Graph 3**). Innovation is crucial for enhancing company efficiency and productivity, and creates possibilities for higher differentiation and competitiveness on export markets.

To increase their interest in, and need for, introducing innovation and new items in production programs, companies also need government support, through implementation of measures and policies for advancement and improvement.

⁹⁾ "OECD Questionnaire on innovation activities of private companies" – internal document for the purposes of the Regional Competitiveness Initiative, a three year project funded by the European Union with focus on Development of Macedonian Innovation Policy 2012-2020

Graph 3



Source: OECD: *Review of the National Innovation system of RM, 2010* p.47.

CONCLUSION

An analysis of the export structure of Macedonian companies leads to the conclusion that this structure is not sufficiently competitive. Namely, export mainly relies on traditional industries and products, with low value added, of which majority are not competitive. Innovation and development of new products is absent, as well as quality, design, branding, promotion, and there is high dependability on imported raw-materials, which make Macedonian exports more expensive and uncompetitive.

In the production structure dominate products of low degrees of processing, and there is also weak company orientation toward innovation or new product development, which would differentiate them on the market. Products of low degrees of processing (primary and homogeneous) and standardized commodity exchange products (which are mainly goods for reproductive consumption), do not allow the possibility of making differential advantages against competition. Such structure is a consequence of numerous legacies from the past, which linger for decades. These are: low volume of investments and R&D activities, obsolete production equipment, outdated technology processes, low production capacity usage, low productivity, etc. With a purpose of creating a possibility for inclusion of the Macedonian economy in the global competitiveness arena on an equitable level, it is necessary to first resolve the problems that result from the aforementioned developments.

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Economy's orientation toward knowledge and innovation provides long-term competitiveness, diversified production, and active participation on the international market. Further to the Lisbon Strategy, and the new EU 2020 strategy, commitments to increasing investments in innovation and R&D up to 3% of GDP remain unchanged. This implies increase of public and private support to R&D and innovation, whereby two thirds of R&D investments have to come from the business sector, i.e. from the companies themselves.

Certainly, innovation development needs regulation which is predictable, supportive of new products and services development, and which provides protection of intellectual property and operation standards. The industrial policy of the Republic of Macedonia, beside its other measures, supports innovativeness, applied research, and innovation development. Basically, from innovation perspective, as an integrated policy it is focused in awareness raising for promoting innovation development and applied R&D of innovation-driven industries.

An important role in innovation support belongs to clusters, as a form of linking companies, which helps in promoting cooperation between business, research, and financial sources. Clusters stimulate productivity, attract investments, promote research, strengthen industrial foundations, develop particular products and services, and become a front for developing special skills.

An important prerequisite for technology innovation success is social innovation. It means that not any technology innovation focused in production process improvement will have an ultimate success, unless company's organization structure undergoes innovation. It means that it is necessary to make significant changes in the overall production organization.

Innovation contributes to brand development and to attracting new consumers, as well as to keeping the existing ones. Because of this, one needs to stimulate creativity at any level, which will result in new ideas and new projects for innovative products and services with higher value added, which, on the other hand, also opens the possibility for extending the markets and the competitive opportunities of Macedonian companies on the global market.

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