

NATIONAL COMPETITIVENESS REPORT  
OF THE REPUBLIC OF MACEDONIA

**2007**

**“KNOWLEDGE ECONOMY AS THE BASIS FOR  
ECONOMIC GROWTH”**



**BUSINESS ENVIRONMENT  
ACTIVITY**



*Government of the Republic of Macedonia*



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# **1. Background**

## **1.1. Global aspects of the competitiveness**

„The United States retains their leadership position as the most competitive economy in the world, before Switzerland, Denmark and Sweden. The United States have this position due to the excellent education system and strong cooperation between the educational and business sector in the area of research and development. This features, supplemented with the wide range of opportunities that derive from the size of the local economy, result i.e. enable the United States to be the country with greatest productive and innovative potential”. This ascertainment from the Annual Global Competitiveness Report points out to the leading role of the “knowledge” in any economy (knowledge based economy) and the know-how for cooperation between the educational and business sector for the development of competitiveness of any economy. In other words, in the recent times there is increased interest for the contribution that the knowledge can provide in the growth of the overall factor productivity as well as for the contribution of the knowledge towards the sustainable economic development on long term. Taking this into account, the knowledge based economy is also topic in the Annual Competitiveness report developed by the Center for Economic Analyses – CEA for the NCEC. The OHRID Institute for Economic Strategies and International Affairs is financially supporting the English edition of this report as well as the printing of both English and Macedonian print. The analysis was financially supported by the USAID Business Environment Activity Project.

## **1.2. Why do we need the Report?**

The National Competitiveness Report represents an annual product of the NCEC and the CEA which analyzes and comments the key indicators of the competitiveness. This Report has the purpose to continue the process of analysis and reporting about changes regarding the competitiveness of the Macedonian economy. The OHRID Institute joined this team in order to make the Report accessible to all the relevant stakeholders and the ordinary Macedonian citizens in form of a written publication in Macedonian and English language.

The National Competitiveness Report should present a comprehensive picture of the existing level of Macedonian economy competitiveness, and thus help to define the possible strategies for further improvement of domestic firms' competitiveness. The analyses, consultations, information exchanges, as well as the proposals and suggestions which are an integral part of the production and publication of the National Competitiveness Report, proceed also from the need to:

- Publish a Competitiveness Index, as an extremely important tool in measuring both the economic development of a given country and the level of that country's capability to integrate into the globalizing world economy developments;
- Determine Macedonian economy's current regional and global position;
- Highlight the priorities in the creation of the national economy competitive performances, i.e. define the preconditions to be met in order to ensure a sustainable economic development and growing prosperity for the citizens;
- Draw attention to the Competitiveness Index as one of the key factors in attracting foreign direct investments.

### **1.3. What should the Report show?**

In addition to presenting the Competitiveness and other Indexes for the Republic of Macedonia, the National Competitiveness Report also highlights the general economic indicators on:

- national economy's strengths and weaknesses;
- existing economic and socio-political factors directly or indirectly affecting the economic development;
- action courses and guidelines in developing a general economic strategy which would, in a long run, lead to a stable and rapid economic development.

## 2. Summary

Since 2007 Macedonia is in the group of countries that, in relation to the competitiveness of their economies are in the second phase of development, when this development is driven by factors that increase the production efficiency. In this phase, the competitiveness is increased with education and training, efficient commodities market, well functioning market for labor force, sophisticated financial markets, ability to distribute the production to large local or foreign market as well as the ability to use the benefits of the latest technology. Because of the above said the efficiency driven factors has the greatest impact on the calculation of the Global Competitiveness Index for Macedonia. Furthermore, it is essential that the country has good performances in the five pillar of the Sub-Index for efficiency enhancers.

However, due to the slow transition from planning towards market economy, although we are ranked in the group of countries whose competitiveness is driven by the efficiency, we also need to mention the following:

1. The value of the Global Competitiveness Index (GCI) for Macedonia in 2007 has been reduced so now we are on 94th position, compared to the 84th position in 2006.
2. The lower ranking this year is also due to the fact that last year we had higher weights in the pillars where we were more competitive, which is not the case this year. This year Macedonia is in the second group of countries where we have higher weights exactly in the areas where our relative competitiveness is lower i.e. this year we are competing with economies that are more competitive from the group of countries where we used to be last year
3. The new economies that got involved in this years' ranking impacted the position of Macedonia. In other words, at the very start Macedonia is ranked lower compared to three (from a total of six) newly included states in the ranking (and the dissolution of Serbia and Montenegro in two separate states).
4. Although the competitiveness is measures through 12 pillars, these pillars i.e. factors are not independent from each other. On the contrary – they are very depending on each other. Hence, the innovations (pillar 12) will not be possible unless there are strong institutions (pillar 1) that has reputation and that will guarantee the right on intellectual property and these innovations are usually impossible without well educated labor force (pillar 5).

5. Still, the Macedonian economy is vulnerable. It still relies on a cheap labor force, low productivity reflected through low salaries and the public and private institutions are still weak. In order to be sure that we will remain in the phase of competitiveness that is driven by the efficiency factors we have to aim towards more quality higher education, efficient markets (both financial and labor markets), strong exports and ability to use the advantages of the existing technologies – all these things should be implemented in parallel with the improvement of the public and private institutions.

Regarding the **sub-index of basic requirements**, Macedonia is ranked on 72 place (from a total of 131 countries). Its ranking is worse when it comes to institutions (102 place) and the best in health and elementary education (47 place). According to the infrastructure, it is ranked on 85 place and according to macro-economy it is ranked 53<sup>rd</sup>.

The institutions were topic that was selected and analyzed by CEA following the previous report of competitiveness of the Macedonian Economy. In this Report it was concluded that, in parallel with the efforts to improve the quality of institutions (just and impartial institutions) and the rule of law with uncompromising dealing with corruption elements are the basic for increased competitiveness of the local economy and for improved ranking in relation to other countries. This year the private institutions have worse ranking compared to the public institutions which is an indicator of bad corporate ethics and accountability of the private companies. On the other side the public institutions are the weakest when it comes to protection of property and the impact of the judiciary. In infrastructure terms, Macedonia is ranked worst about its airports and best about its telephone lines and quality of electricity supply. The macroeconomic stability is the second strongest competitive advantage of Macedonia after the health sector and elementary education. The ten years history of stable foreign exchange rate of the denar and the fifteen years history of low inflation made an environment in which the economic entities have stable macroeconomic expectations. This creates favorable climate for the business and the investors. Taking this into account the local economic policy makers should continue the policy of low budget deficit, increase of the national savings and attraction of foreign capital that resulted in convergence of the interest rates towards the euro zone.

As it was already mentioned, starting from 2007 Macedonia is the group of countries that have second phase of development – where the development is guided by factors that increase the efficiency of the production. In this **subindex of efficiency enhancers**, Macedonia is ranked on 98 place (from a total of 131 countries). Its ranking is worst when it comes to the labor market efficiency (112 place) and the market size (106 place). The ranking is better with regards to the higher education and training (75 place). Macedonia is also well ranked on 98

place regarding the market efficiency and on 83 place regarding the financial market efficiency.

Speaking about efficiency of the markets, the best results are achieved in the time needed to start-up business and the import participation in the GDP. Worst results are realized in the foreign investments in the local economy and the level of foreign direct investments, policy for competitiveness protection as well as the sophistication of the buyers. When it comes to the labor market efficiency the most competitive conditions exist in the costs for firing of workers and flexibility in the determination of the salaries. Less positive are the results when it comes to taxation of salaries. The worst is the situation regarding the salary contributions, the low level of institutional dialogue and bargaining between the employers and employees, low level of involvement of women in the labor force, neglecting the professional management and high level of brain drain from the country. In the financial markets efficiency the best result has been achieved in the area of legal rights while the worst result has been achieved in the accessibility of loans and stability of the banks. The low ranking exists in the restrictions of movement of the capital, sophistication of the financial market, financing through the capital market and capital markets regulation. Regarding the technological readiness we can see that the best achievements are in the use of personal computers and the use of mobile phones. Our country is almost at the bottom of the table with regards to the foreign direct investments and technology transfer, including acceptance of the new technologies by the companies. These not competitive results used to exist in 2006 as well so Macedonia should undertake urgent measures to improve the situation in these areas.

Regarding the **subindex of innovations and business sophistication**, Macedonia is ranked 101 (from a total of 131 countries). In business sophistication Macedonia is ranked on 108 place and in innovation it is 92nd.

The business sophistication takes into account the quality of the overall business networks in the country as well as the quality of activities and strategies of individual companies. This pillar is especially important for the economies that are in innovation-guided phase of their development. When the companies are linked with the suppliers in clusters than the efficiency is very evident, thus creating greater opportunities for innovations and reduction of barriers for entry of new companies. The activities and strategies of the individual companies (brand, marketing, presence of the value chain, production of unique and sophisticated products) result in sophisticated and modern business processes. If we go deeper into the structure of this index we can conclude that, regarding the situation of business sophistication in Macedonia, the local suppliers almost do not exist and they are almost inefficient, plus they do not have the appropriate technological capacity. When it comes to the sophistication of the companies, their production process is mainly labor-intensive, the scope of marketing activities is limited

whereas only limited marketing instruments and techniques are used. The international distribution (where we have the best results in this pillar) is mainly controlled by foreign companies and there is also no great readiness among the top management to delegate the authorities neither to shift the control regarding the adoption of the important decisions. We have especially bad results in the area of exports (the ranking is 127) where we continue to rely on the cheap local natural resources instead of the unique products and processes. The exporting companies in Macedonia mainly exploit the resources or production which is not the case in the developed countries where the companies are focused on the product design, marketing and sales, logistics and post-sales services.

In the area of innovations we can see that we have relatively good offer of research and engineer staff as well as certain improvement in the quality of the scientific-research institutions. There is negative influence by the amount of funds allocated by the companies for research and development, especially the Government procurements for advanced technology products.

Exactly in this direction of improvement of the overall economic situation and seen through the eyes of the competitiveness, this Report, when analyzing every pillar individually, makes recommendation for each and every pillar separately.

The recommendations are summarized as follows:

1. Continuity in the cycle for economic policy management that is independent from the political cycle;
2. Integrated approach towards the resolution of the problems related to the Macedonian competitiveness;
3. Parallel work in order to further strengthen the factors from the subindex for basic requirements and the subindex for efficiency enhancers as well as strong Government support of the factors from the subindex for innovations and business sophistications.

### **3. Methodology used for development of the Global Competitiveness Index according to the World Economic Forum (WEF)**

#### **3.1. Changes in the methodology for development of the Global Competitiveness Index**

The World Economic Forum (WEF) analyzes the factors that enable sustainable economic development and long-term prosperity of the world economies since 1979. By defining the competitiveness as a series of measures, policies and factors that determined the level of productivity of the country, the competitiveness includes static and dynamic components. In other words, the high productivity determines the capacity of the state to realize high revenues and in the same time it is the key factor in the yield from the investments which, on the other side, is one of the factors that determines the potential for growth of the particular economy.

The many-years experience of the World Economic Forum point out that the factors that impact the competitiveness of the given economy are numerous and complex. In the same time with the methodology that is used to develop the indicators for ranking of the world economies was subject to change and evolution in the last 27 year period, catching up with the development of the economic theory. By trying to allocate numerical values to the factors in order to enable comparison and ranking of the world economies, the World Economic Forum in the recent years is using the Global Competitiveness Index. This Index is a comprehensive composite indicator for competitiveness measurement. It is established from a large number of macro and micro indicators of economic development.

The data used to calculate the Global Competitiveness Index are obtained from two sources:

- Statistical information systems of the countries and the international organizations, and
- Executive Opinion Surveys.

Hence, the Global Competitiveness Index combines quantitative hard data and qualitative subjective information reflecting personal perceptions of economic situation by surveyed competent persons at top executive positions in the local business world.

To avoid any risk of partiality usual in surveys of this kind, the WEF undertakes measures to minimize results subjectivity. This year the greatest novelty is the use of the so called “variable average values” approach that is consisted of inclusion of indicators of averages from the survey implemented in the recent years, with the latest results. This results in findings that are more independent than they used to

be in the time when the actual survey was carried out, the pressure on the people surveyed has been increased and better picture is obtained about the attitude of the business community during the entire year.

In the context of the structure of the Global Competitiveness Index, different to the last year when the nine-pillar index used to be implemented, this year the Index is consisted of 12 pillars which is because of the following two changes: First, the pillar that includes the market efficiency has been segmented into three individual pillars. In other words, the efficiencies of the markets for labor, finances and goods are now considered separately. This enables maximum transparency of the changes in these pillars i.e. areas of the analyzed economies that used to be hidden in the summary results before. Secondly, the size of the market has been separated as separate pillar which emphasizes the importance of the access to large local of international market which, in turn, enable economies of scale.

### **3.2. Structure of the Global Competitiveness Index-GCI for 2007**

Global CI is a composite index based on twelve pillars which represent the factors critical to driving any economy's competitiveness. These are:

1. Institutions
2. Infrastructure
3. Macroeconomy
4. Health and primary education
5. Higher education and training
6. Goods market efficiency
7. Labor market efficiency
8. Financial market sophistication
9. Technological readiness
10. Market size
11. Business sophistication
12. Innovations

These twelve pillars are further grouped into three sub indexes:

1. Basic requirements,
2. Efficiency enhancers, and
3. Business sophistication and innovations

The basic requirements subindex is consisted of 4 pillars:

1. Institutions,
2. Infrastructure,
3. Macroeconomy,
4. Health and primary education

These pillars encompass the basic requirements without which an economy cannot normally function and develop.

The efficiency enhancers subindex is composed of the following pillars:

5. Higher education and training
6. Goods market efficiency
7. Labor market efficiency
8. Financial market sophistication
9. Technological readiness
10. Market size

These pillars are conducive to a more efficient use of national economy resources.

The innovation and sophistication factor sub index is composed of the following pillars:

11. Business sophistication, and
12. Innovations

These are in essence the most sophisticated factors of the competitiveness of a national economy.

The sub indexes are of different importance for different countries, depending on the stage of their economic development. Thus the model on which the Global Competitiveness Index is based separates the economies into three specific stages of development:

- *Phase in which the economies are driven by the traditional production factors,*
- *Phase in which the economies are driven by the efficiency and*
- *Phase in which the economies are driven by the innovations.*

Economies in the ***factor-driven stage*** compete based on low prices. These economies rely on low-cost labor and readily available natural resources. At this stage of development, competitiveness arises from strong institutions, adequate infrastructure, healthy macroeconomic environment, basic health system and elementary education level.

As economies move into the ***efficiency-driven stage***, their competitiveness is no longer driven by low prices, but rather by product quality. At this stage efficient goods and services, labor and financial markets are crucial, as well as knowledge acquired through higher education, specialized training and access to latest technologies.

In the third, *innovation-driven stage* the competitive advantages of the economies arise from their capability for innovation, production processes' sophistication, production of new, value added sophisticated products and services.

The Global Competitiveness Index (Global CI) respects the concept of different stages in the different economies' development, weighting each of the sub indexes differently, depending on the stage of a given economy. The criterion used in determining the stage of a given economy is the data on the gross domestic product (GDP) per capita expressed in US\$.

According to this classification, included in the group of economies in the factor driven stage are the countries with GDP per capita below US\$ 2.000. The efficiency-driven stage includes countries with GDP per capita between US\$ 3.000 and US\$ 9.000. The innovation-driven stage includes countries with GDP per capita higher than US\$ 17.000. The countries with GDP per capita between US\$ 2.000 and US\$ 3.000 and between US\$ 9.000 and US\$ 17.000 are the countries in transition from one development stage into another. This is the manner used to follow their gradual development transition from one into the other – higher phase of development.

For the countries at the first stage of development most weight is placed on the first sub index - 60%, with 35% on the second sub index, and 5% on the third sub index. For countries at the second stage of development the weights are 40%, 50% and 10% for all three sub indexes. For the countries at the third stage the weight placed on the first sub index is 20%, 50% on the second sub index and 30% on the third sub index.

**Table 1: Weights of the sub indexes at each stage of development**

<b>Weight</b>	<b>Basic requirements</b>	<b>Efficiency enhancers</b>	<b>Innovation and sophistication factors</b>
Factor-driven stage	60%	40%	20%
Efficiency-driven stage	35%	50%	50%
Innovation-driven stage	5%	10%	30%

*Source: Global Competitiveness Report 2006-2007*

#### 4. Country profile for Macedonia – measurement of the competitiveness of Macedonia by using the GCI

From the table below it can be seen that the competitiveness of the Macedonian economy has dropped from 84<sup>th</sup> place in 2006<sup>1</sup>, to 94th place in 2007. Here it is important to note that the improvement of the local competitiveness is not a key successes if the other economies are improving their competitiveness much more quickly. In 2007 Macedonia was ranked the best in the subindex for basic requirements and worst in the subindex for innovation and business sophistication. The health and education, together with the Macroeconomy, have the best ranking. The ranking is the worst for the efficiency of the labor market, business sophistication and the market size. We will consider in details all these sub indexes for 2007 in the text below.

*Table 2: Ranking of Macedonia according to the WEF sub indexes for global competitiveness for 2005 (from a total of 114 countries), 2006 (122 countries) and 2007 (131 countries).*

	2005	2006	2007
<b>Global Competitiveness Index</b>	<b>81</b>	<b>84</b>	<b>94</b>
<b>Sub-indexes</b>			
<b>Sub-indexes according to the basic requirements</b>	<b>67</b>	<b>69</b>	<b>72</b>
Institutions	97	102	102
Infrastructure	80	80	85
Macroeconomic stability	28	40	53
Health and primary education	55	46	47
<b>Subindex of efficiency enhancers</b>	<b>89</b>	<b>89</b>	<b>98</b>
Higher education and training	64	67	75
Goods market efficiency	97	100	98
Labor market efficiency	94	103	112
Financial market sophistication	87	74	83
Technological readiness	90	91	90
Market size	93	92	106
<b>Subindex of innovations and sophistications</b>	<b>86</b>	<b>86</b>	<b>101</b>
Business sophistication	94	91	108
Innovations	79	79	92

<sup>1</sup> This result is about the ranking in 2006 by using the old methodology that includes 9 competitiveness pillars. After revision was made by using the new methodology, Macedonia is ranked on 86 place in 2006.

## **Topic: Knowledge based economy as a basis for economic development**

Since the appearance of the Model of Growth by Robert Solow, the search does not stop for as much as possible information from the existing residue. In the past decade there was a lot research on the economic development that is based on the productivity and its determinants. The main reason is the widely spread opinion that the economic development which is result of the accumulation of the production factors is prone to reduction in the yield thus it is not sustainable anymore. Hence, in the recent time the interest for the yield (contribution) and the role of the knowledge on the total factorial productive growth is increased as well as on the long-term sustainable economic development.

The knowledge includes multiple forms and it is about non-permanent manners. Contrary to the visible (real) resources of the industrial economy, there is very little shared understand of the knowledge as economic factor, beside its huge importance in the global economy. In the recent times the knowledge based economy is on a rise. It is stimulated from the revolution in the IT and communication technologies which result in core changes in all areas of life.

There is a large number of factors that are behind the knowledge transformation, including:

- Globalization of the communication and trade;
- Wider use of the ICT
- Increased role of the scientific research of innovations;
- Advance, integrative IT infrastructure;
- Modularization, vertical disintegration and outsourcing; and
- Expanded chains of added values and clusters with new categories of stakeholders.

From the above mentioned factors, Macedonia at the moment shows signs of activity in the building of basis for IT society, mainly through Government interventions. In the area of stimulation of innovations, Macedonia in 2007 became member of the EURECA program which created conditions for participation of economic entities in application/ innovation projects in cooperation with other EURECA member states. Currently in preparation is the Conference on the opportunities to use the CIP program (framework program for competitiveness and innovations). Furthermore the Government stimulates the “cluster” instrument as very efficient tool of the industrial policy by developing a Program for stimulation and development of the cluster associations. Also established are cluster for agricultural mechanization and automobile industry tools. The Ministry of Economy provides annual program for 2008 in which the clusters will apply with their programs and there will be delivery and coordination trainings. It will also focus the donations and the international assistance. The Macedonian clusters from international assistance will benefit from computers for networking both with the regional and EU clusters.

Various researches determined the today's global economy as an economy that is in a process of transit towards "knowledge based economy" i.e. "IT society". Therefore, the rules and practices that determine the success of the industry economy the XX century should be reconsidered because the role of the know-how becomes much more essential compared to the other economic resources.

In accordance with the KAM<sup>2</sup> methodology developed by the World Bank<sup>3</sup> (it has four pillars), according to the calculation of the knowledge-based economy index, Macedonia is ranked on 58 position (from a total of 140 countries). Macedonia has significantly improved its performances related to the economic and institutional regime. The best results can be seen in the area of IT and communication technologies. If we want to benchmark ourselves in relation to other countries of South-Eastern Europe we can conclude that best performances exist in Slovenia, Greece and Croatia. We are better only from Albania and Serbia and Montenegro.

### **I. Pillar of KAM: Educated and qualified labor force**

Well educated and qualified labor force is important for significant increase, acquisition, dissemination and use of the relevant knowledge, with a tendency to increase the total factorial productivity as well as the economic growth.

The elementary education is necessary in order to increase the human capacity to learn and use information. On the other side, the technical secondary education and the higher education in engineering and scientific areas are necessary for technological innovations. It is necessary to emphasize that the generation of new knowledge and its adaptation to the economic trends is usually accompanied with higher level of education and research. For example, in the developed economies the university research is most of the local research and development. The secondary technical education is something that is necessary in order to perform technological adaptation of the foreign technologies to the local needs in the production processes. Permanent trainings are needed in order to catch up with the technological trends, evaluation of the needs of the company or economy as well as the use of the new technologies. The more educated population is relatively technologically more sophisticated. This will generate locally qualitatively sensitive demand for more sophisticated products which, on the other side, will stimulate the local companies towards innovations and designing of technologically sophisticated goods and production techniques<sup>4</sup>.

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<sup>2</sup> Knowledge Assessment Methodology

<sup>3</sup> KAM has been designed by the Knowledge for Development Program for evaluation of the readiness of the countries for competition in the area of knowledge based economy, by using 83 structural and qualitative parameters. The comparison was done for a group of 140 countries which includes almost all OECD countries and 90 development countries. In order to enable benchmarking between these countries, every parameter is available both in its nominal and relative value (ranked on a scale from 0 to 10 in relative comparison with the other countries in the group).

<sup>4</sup> Chen, Derek H. C. and Dahlman, Carl J., "The Knowledge Economy, the KAM Methodology and World Bank Operations", Washington DC, October 2005, p. 5

Macedonia is ranked 66 (from a total of 140 countries) when it comes to education. The key parameters that have impact in the area of education and qualified labor force are the following: the education rate in adults (5,97), inclusion in the secondary education (4,82) and in the higher education (4,85). The final result for Macedonia is 5,21. On a global scale the best are the results of New Zealand (9,30), Denmark (9,22) and Finland (9,20). Compared to the region of South-Eastern Europe, Macedonia can not say that it has achieved significant results.

## **II. pillar o KAM: Effective innovations system**

The economic theory shows that the technical progress is the key source of the productive growth and the effective innovative system if the key component of such technical improvement. The innovative system is about network of institutions, rules and procedures that impact the manner in which the country acquires, spreads and uses knowledge. The institutions in the innovative systems include universities, public and private research centers and think-tanks that create policies. The NGOs and the Government are also part of the innovative system. An effective innovative system is the one that provides an environment in which the research and development are stimulated, which generates new products, new processes and new knowledge, hence it is the key source of the technical progress. There is large number of studies that show that the innovations i.e. the generation of the technical knowledge has important positive effects on the economic growth and increase of the productivity.

The key parameters that impact the effective innovative system are: research and development, patent applications approved by the Office for Patents and Trademarks of the United States, scientific and technical publications and magazines. Macedonia has certain improvements in this area in 2007 – it ranked 65<sup>th</sup> from a total of 140 countries.

## **III. pillar of the KAM: Adequate information infrastructure**

The infrastructure of the information and communication technologies (ICT) in one economy is about the accessibility, reliability and efficiency of the computers, telephones, TV and radio sets as well as the various networks that connect all of them. The World Bank Group defines the ICT as a summary of hardware, software, networks and media for collection, storage, processing and presentation of information in the form of voice, data, text and pictures. The ICT are made of telephones, radio and TV, including Internet.

The ICT relies on the knowledge based economy and in the recent years they are recognized as effective tool for promotion of the economic growth and sustainable development. With its relatively low costs of use and the ability to bridge the distances in a short time, the ICT has revolutionized the transfer of information and

knowledge all over the world. In the last decade there are series of studies that show that the ICT products and the very use of ICT contribute to the economic growth. The production sectors of the ICT are faced with large technological improvements which show large contributions for the total factorial productivity on the economy level. The investments in the ICT impact other production sectors by increasing their capital and thus increasing the productiveness of the labor force.

Macedonia, according to KAM 2007, is ranked on the 55th place when it comes to ICT. This sector is dependent from three parameters: Telephones on 1.000 people, computers on 1.000 people and internet users on 10.000 people. Macedonia has very big results in the first two parameters: 6,50 and 7,27, respectively. Unfortunately the results are not so good when it comes to the Internet use where we have only 4,70 points. However, we expect that this result will be much greater next year considering the positive activities undertaken by the Government in this area during 2007.

#### **IV. pillar of KAM: Favorable economic and institutional environment**

The last pillar in the knowledge economy is the economic and institutional environment of the economy. The economic and social environment of the economy should be such that the economic entities undertake initiatives for economic use and creation of knowledge and, accordingly, it is necessary to have well-grounded and transparent macroeconomic, competitive and regulatory policies.

The economic environment which leads towards knowledge is the one that has minimum number of price distortions. For example, it is necessary to open towards international trade, without using various protection policies, all with a purpose to strengthen the competition which, on the other side, will strengthen the entrepreneurship. The Government consumption and the budget deficit should be sustainable and the inflation should be stable and low. The local price level should be fully free from control and the exchange rate should be stable and reflect the true value of the currency. The financial system should be capable of allocating resources towards secure investment points and re-allocate the funds towards profitable projects.

Features of favorable institutional regime include effective, accountable and non-corrupted Government and legal system that supports and strengthens the property rules that should be protected and improved. If these rights are not sufficiently protected and supported than the researchers will have less initiatives to create new technological knowledge, even in cases when the knowledge was created, the lack of protection of the intellectual property rights will to a great extent prevent the dissemination of such knowledge.

Macedonia is on the 63rd place, according to KAM 2007, with 5,25 performance points. Macedonia has still a lot of work to do in this area.

## 4.1. Subindex of basic requirements

In the basic requirements subindex Macedonia is ranked 72nd (from a total of 131 countries). Its ranking is least positive in relation to the institutions (102 place) and the best in health and primary education (947 place). Regarding infrastructure it is ranked on 85<sup>th</sup> place and in macroeconomic stability on 53<sup>rd</sup> place.

With respect to the region, Macedonia, in relation to the main requirements, is ranked better than Albania, Serbia and Bosnia and Herzegovina and worse than Croatia and Montenegro.

**Table 3: Ranking and value of the subindex for basic requirements of Macedonia and the countries of South-Eastern Europe**

	Subindex of main requirements		I pillar - Institutions		II pillar - Infrastructure		III pillar - Macroeconomy		IV pillar - Health And elementary education	
	Index	place	Index	place	Index	place	Index	place	Index	place
Macedonia	4,25	72	3,34	102	2,90	85	5,04	53	5,70	47
Albania	3,83	99	3,14	114	2,05	124	4,69	79	5,46	65
Bosnia and Herzegovina	3,78	104	3,14	113	2,26	117	4,56	90	5,16	87
Croatia	4,60	53	3,86	65	3,95	53	4,80	73	5,78	44
Montenegro	4,47	59	3,69	78	3,69	78	5,40	33	6,00	33
Serbia	4,19	78	3,37	99	2,72	92	4,61	88	6,04	31
SEE average	4,17	-	3,44	-	2,80	-	4,81	-	5,69	-
Average 25 EU member states	5,26	-	4,86	-	4,80	-	5,20	-	6,10	-
Average 2 new member states	4,15	-	3,33	-	2,82	-	4,90	-	5,60	-

### 4.1.1. Pillar 1: Institutions

#### 4.1.1.a. Statistical analysis of the present situation – Index in relation to the average values for all countries (2007)

The institutions play the key role in the equal allocation of the benefits from the economic development in any society. The owners of the capital, regardless whether the capital is in a form of land, securities and even intellectual property, are not keen to invest in improvement and maintenance of their property unless their title to the rights are certain. The importance of the institutions is not limited only with the legal systems. The attitude of the Government to the markets, their liberalization and efficiency are extremely important: the large bureaucracy and the manner in which such bureaucracy is regulated, corruption, dishonesty in the signing of public contracts, the lack of transparency and loyalty or political obeying by the judiciary system impose significant economic cost on the businesses and cause slowing down of the economic development process.

In this sub-index, Macedonia is very badly ranked (102 place out of 131 countries). What is typical is that the private institutions are ranked worse than the public institutions which points out to bad corporate ethics and accountability of the private companies. On the other side, the public institutions are the weakest in the protection of property and the influences in the judiciary.

**Table 4: Values of the integral elements of the first pillar - institutions**

	2007	
	Index value	Ranking
<b>Pillar 1: Institutions</b>	<b>3,34</b>	<b>102</b>
<b>A. Public institutions</b>	3,20	99
1. Property rights	3,34	106
The property rights	3,72	105
Protection of the intellectual property	2,58	116
2. Ethics and corruption	2,89	74
Diversion of public funds	3,78	59
Public trust of politicians	2,00	96
3. Undue influence	2,71	103
Judiciary independence	2,54	110
Favoritism in decisions of government officials	2,88	80
4. Inefficiency of the Government	3,11	96
Wastefulness of government spending	2,90	95
Burden of government regulation	2,98	75
Efficiency of legal framework	2,75	111
Transparency of government policymaking	3,82	85
5. Security	3,94	102
Business costs of terrorism	4,52	111
Business costs of crime and violence	3,83	92
Organized crime	3,43	123
Reliability of police service	3,96	78
<b>B. Private institutions</b>	3,75	108
1. Corporate ethics	3,55	108
Ethical behavior of firms	3,55	108
2. Accountability	3,96	100
Strength of auditing and reporting standards	4,11	87
Efficiency of corporate boards	3,99	118
Protection of minority shareholders' interests	3,78	105

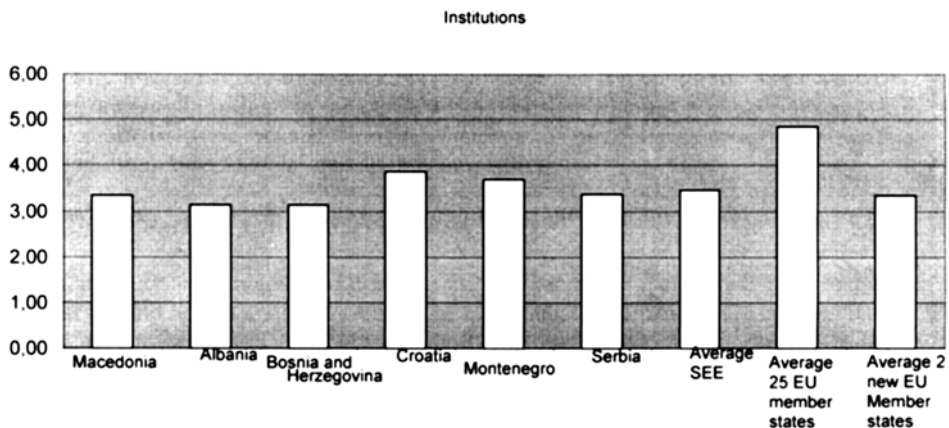
### 4.1.1.b Separation of the extremes

The range of the parameters in this subindex is quite extensive – from 59 place for diversion of public funds to 123 place (from a total of 131 countries) for organized crime. It is quite disappointing that, beside the perception that the negative practices are mainly present in the public institutions, still the least good performances in this subindex were related to the efficiency of the management board and protection of minority shareholders in the companies.

### 4.1.1.c Benchmarking against the region and the EU

In the institutions subindex Macedonia is ranked lower compared to Croatia, Montenegro and Serbia and better compared to Albania and Bosnia and Herzegovina. The institutions were topic in the previous Report on Macedonian Competitiveness and the conclusion was the parallel work on improvement of quality of the institutions (just and impartial institutions) and the rule of law with non-compromise fight against corruption are the basis for increased competitiveness of the local economy and for better ranking in relation to the other countries.

*Graph 1: Value of the Institutions subindex in Macedonia, the Western Balkans and the EU*



### 4.1.1.d Recommendations

The Government should continue creating an environment for efficient regulation of the market in Macedonia and for impartial and non-discriminatory enforcement of the legal provisions. This is of core importance for elimination of any type of discretion and obstacles in the market work. Here it is especially important to mention the further reduction of the transaction costs for entry and exist from the markets (registration and bankruptcy procedure) and acceleration of the regulatory guillotine activities. The establishment of the Administrative court where it is

expected that the administrative disputes will be resolved, is to be commended. One of the priorities should be the de-politicizing of the administration and its reform by standardizing the procedures and reducing the time needed to provide services. In the same time it is necessary to continue the reform of the Cadastre as a first step towards protection of the private property. Improve the role of the State Audit until full court processing of the audit reports that have identified illegal spending of the budget funds. Also very important are the efforts towards building of the institutional capacity of the local government. It is necessary to stimulate the separation of the functions shareholder – manager and shareholder – worker and improve the good corporate government as well as the knowledge about the capital market.

#### **4.1.2 Pillar 2: Infrastructure**

##### **4.1.2a Static analysis of the present situation – Index in relation to the averages for all countries (2007)**

One of the basis for competitiveness is the developed and high quality infrastructure that has significant impact on the economic development. In this regard, a well developed transport and communication infrastructural network are the conditions for efficient functioning of the markets as well as for connections between the rural areas and education institutions with the important economic activities. The high-quality infrastructure reduces the problem of remote regions, resulting in integration of the national markets and their connection with the markets in other countries and regions. The effective means of transport of goods, people and services enable the entrepreneurs to safely and timely distribute their goods on the market and this also facilitates the movement of the field workers. The economic development also depends on the electricity supply, free from failures and gaps which, in turn, ensures smooth work of the business and factories. Finally, a solid and well spread telecommunication network enables quick and free information exchange thus contributing to the overall efficiency of the economy, making sure that the decisions made by the economic entities are based on all available relevant information.

**Table 5: Value of the own elements in the second pillar – Infrastructure**

	2007	
	Index value	Rank
<b>Pillar 2: Infrastructure</b>	<b>2,90</b>	<b>85</b>
<b>A. General infrastructure</b>	<b>2,88</b>	<b>85</b>
Quality of the overall infrastructure	2,88	85
<b>B. Special infrastructure</b>	<b>2,93</b>	<b>83</b>

Roads quality	3,22	72
Railways quality	2,18	75
Ports quality	3,47	82
Air transport quality	3,03	120
Available seat kilometers	1,00	122
Quality of electricity supply	4,34	73
Telephone lines	3,27	50

In this subindex Macedonia is ranked as 85th (from a total of 131 country). The situation is not quite good in the specific infrastructure (airports) and it is better in the roads infrastructure.

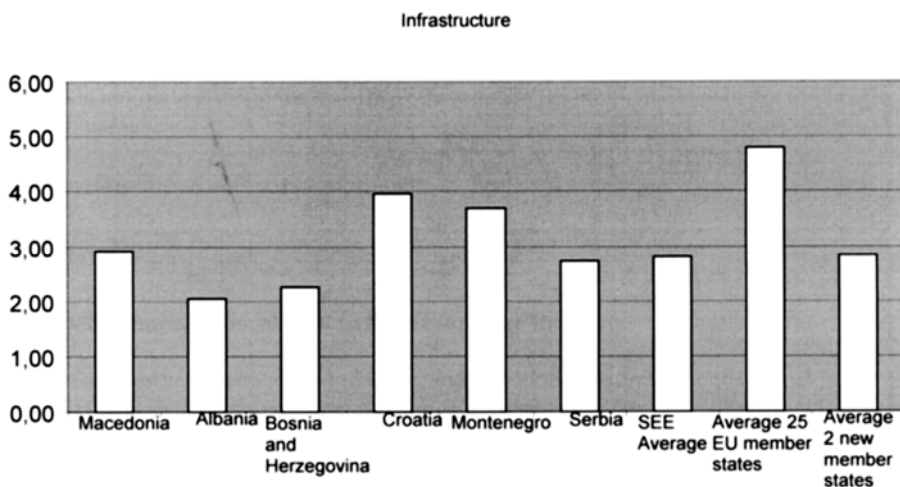
#### 4.1.2.b Separation of the extremes

Macedonia has the worst ranking in the air transport infrastructure and the best in telephone lines and quality of electricity provided.

#### 4.1.2.c Benchmarking in relation to the EU and the Region

Macedonia is lower ranked compared to Croatia and Montenegro and better compared to Albania, Serbia, Bosnia and Herzegovina. Macedonia is better than the average in the SEE but worse compared to the two new member states of the EU.

*Graph 2: Value of the infrastructure subindex in Macedonia, Western Balkans and the EU*



#### **4.1.2.d Recommendations**

The Government of the Republic of Macedonia shows initiative regarding the resolution of the infrastructural problems so the recommendations are focused towards improvement and timely implementation of these initiatives. In the area of road infrastructure we would mention: the overhaul of the bridges on the Highway M-1 (E-75), construction of third traffic lane on the regional road R – 106, the Gradsko-Prilep section. After the tender has been finished and the consultancy company has been selected to develop the study for the concession model for development of the “Alexander the Great” airport (Skopje) and the “St.Paul the Apostle” airport (Ohrid), the consultancy company NAKO BV (Holland) started to analyze the situation and develop the study. However, we would like to mention that investments are needed in the production of electricity, for finalization of the gas pipeline construction, further improvement of the roads pay toll collection, resolution of the railway sector problems as well as start of construction works for the airport in the Eastern part of the country.

#### **4.1.3. Pillar 3: Macroeconomic stability**

##### **4.1.3.a Statistical analysis of the present situation - index and ranking in relation to the average values for all countries (2007)**

No economy can have sustainable growth without stable macroeconomic environment. In this respect, the macroeconomic stability is important factor for the competitiveness of any country. With the index of 5,04 Macedonia is on the 53<sup>rd</sup> place i.e. in the first half of the list that includes 131 countries.

From a total of five indicators in this pillar, Macedonia in two indicators (budget deficit and inflation) is at the end of the first half of the list while in three indicators (national saving, range of interest rates and the Government debt) is at the beginning of the second half of the list. In the frames of this pillar the country is characterized with quite uniform level of competitiveness so that the range of the five indicators is from 43<sup>rd</sup> place (for the inflation) until 73<sup>rd</sup> place (for the national savings).

The macroeconomic stability is the second strongest competitive advantage of Macedonia, after the health and elementary education.

**Table 6: Values of the integral parts of the third pillar - Macroeconomy**

	2007	
	Index value	Rank
<b>Macroeconomy</b>	<b>5,04</b>	<b>53</b>
Government surplus/ deficit	5,80	61
National savings rate	3,26	73
Inflation	6,98	43
Interest rate spread	6,86	68
Government debt	6,02	66

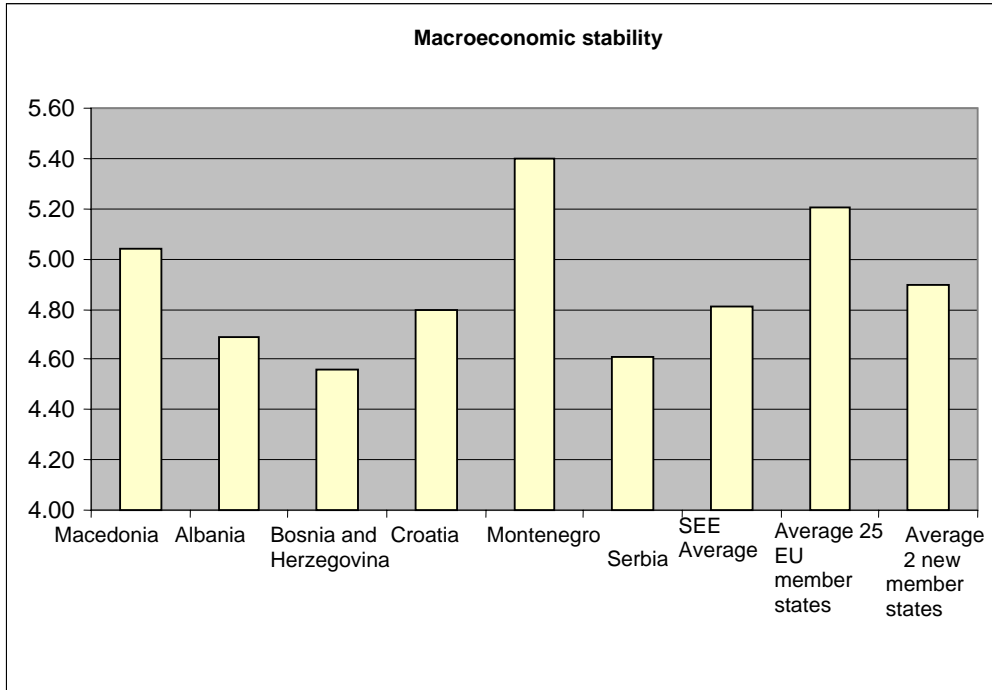
#### **4.1.3.b Separation of the extremes**

Macedonia has remarkably high values of the index in four indicators. The highest value is for the inflation (6, 98) while the lowest is for the national saving (3,26). It is interesting to mention that the second highest index value of 6,86 (out of possible seven) is for the interest rates, which is contrary to the general perception in the country that the banks have high differences between the active and passive interest rates.

#### **4.1.3. c Benchmarking in relation to the EU and the Region**

Macedonia is ranked second according to the macroeconomic stability in the group of six countries from South-Eastern Europe, behind Montenegro who is on the 33<sup>rd</sup> place. Its competitiveness index is significantly above the average of the other five countries. Compared to the 27 EU countries, the Macedonian index of 5,04 is behind the EU average of 5,20. In this regard Macedonia has better index than 12 EU member states which is an indicator for the solid performances of the country in the area of macroeconomic stability. It is a result of many-years building of credibility of the Central Bank, the high level of its independency, the conservative fiscal policy as well as disciplined compliance to the IMF recommendations.

Graph 3: Value of the Macroeconomy subindex in Macedonia, Western Balkans and the EU



#### 4.1.3.d Recommendations

Since statistics from previous year are used for the third pillar and we are about to have the statistics for 2007 that will be used to calculate the Index for 2008, instead of recommendations we will just ascertain that Macedonia will have significant progress in the following year. It is very obvious that significant improvements were achieved in four indicators: the Budget deficit from 0,6% has been transformed into surplus of 0,6%; the inflation has been reduced from 3,2% to 2,3%; the denar interest rate spread has been reduced to 4,9%; the Government debt has been reduced by around 6 percentage points as a result of early repayments of credits, in large amounts, to the Paris Club, IBRD and the IMF. We are still missing information about the national savings rate.

The ten year history of stable exchange rate of the denar and the fifteen years of low inflation rate created and environment in which the economic entities have stable expectations. It creates favorable environment for the business and the investors. Because of these reasons the economic policy makers should continue their policy of low budget deficit, increase of the national savings and attraction of foreign capital that result in convergence of the interest rates towards the euro zone.

#### 4.1.4. Pillar 4: Health and primary education

##### 4.1.4.a Statistical analysis of the present situation - index and ranking in relation to the average values for all countries (2007)

In this pillar, beside the importance for health of the people, focus is also on the quality and quantity of the elementary education that was acquired by the people. The absence of people from work due to the illness generates costs for the company. The primary education increases the efficiency of work of every individual which makes the economy more productive. Besides, the labor force that has formal education is capable of performing only the basic tasks and these people have difficulties adjusting to the fast development of technology and of production processes. The lack of qualified administrative staff can have negative impact on the total performances of the business.

**Table 7: Values of the integral elements of the third pillar – Health and elementary education**

	2007	
	Index value	Rank
<b>Pillar 4: Health and primary education</b>	<b>5,70</b>	<b>47</b>
<b>A. Health</b>	<b>6,09</b>	<b>56</b>
Impact of malaria on the business	5,69	88
Malaria incidence	0,00	1
Impact of the TBC on the business	5,31	93
TBC presence	6,77	49
Impact of the HIV/ AIDS	4,81	91
HIV prevalence	7,00	1
Infant mortality rate	6,45	56
Life expectancy	5,70	56
<b>B. Primary education</b>	<b>4,81</b>	<b>48</b>
Primary education quality	3,98	53
Enrolled in primary education	6,12	70
Education expenditure	4,90	40

In the frames of the Global Competitiveness Index, Macedonia has the best ranking in the subindex for health and primary education – 47<sup>th</sup> position from a total of 131 countries. In health Macedonia is ranked on 56<sup>th</sup> place and in primary education in 48<sup>th</sup> place.

#### 4.1.4.b Separation of the extremes

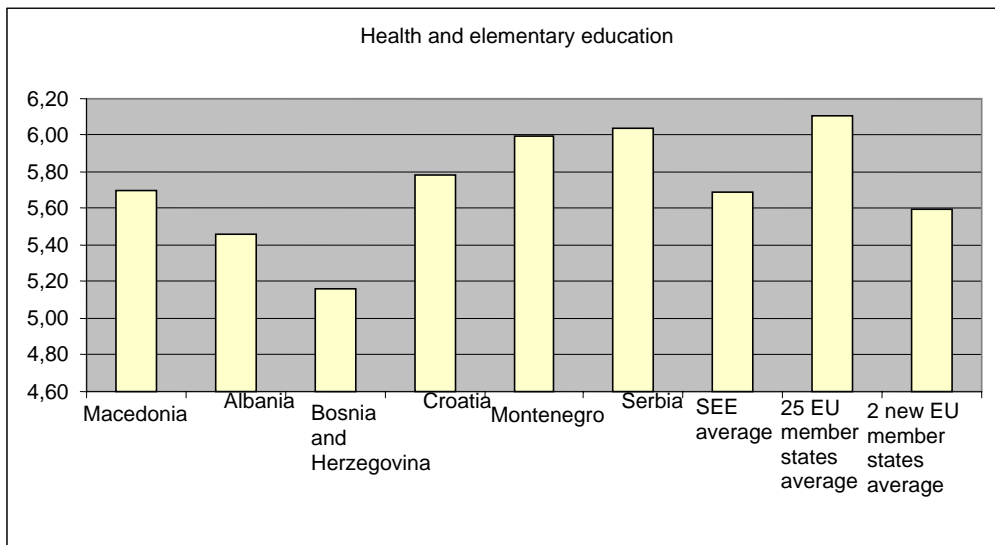
As it was already noted in the last year Report, although Macedonia has the highest result in the pillar for health protection and primary education still it is necessary to have in mind that it includes certain key benefits of the modern life. Hence, the good result should be understood as a success in the fight against malaria (ranked 1 from a total 131 countries), TBC (ranked 49<sup>th</sup>) and the still low level of HIV (ranked 1). In no way should this information be equalized with the quality of the health system. On the contrary – the weaker results in the value of the index of mortality in infants and the life expectancy point out that the health system in Macedonia is relatively inefficient. However, the last activities of the Government in the health sector provide hope that, on a middle term, shifts should be expected towards higher ranking of Macedonia in this subindex.

In the area of primary education there is still lowest ranking of enrollment of pupils while the ranking of consumption for education is better.

#### 4.1.4.c Benchmarking in relation to the EU and the Region

Macedonia is ranked lower than Serbia, Montenegro and Croatia and better than Albania and Bosnia and Herzegovina. The rank that Macedonia has is almost equal with the average in the SEE but greater than the average of the two new EU member states.

*Graph 4: Value of the subindex for Health and primary education in Macedonia, Western Balkans and the EU*



#### **4.1.4.c Recommendations**

Health is the sector in which the Government initiated many reforms: investments in the amount of 40 million euros to improve the level of equipment in the hospitals have started with implementation by publishing international tender for procurement of equipment, the project for flat rate pricing of drugs all over the country, the agreement with foreign consultancy company that is engaged in the planning and implementation research of health service costs in the Republic of Macedonia, drafting of the Law on Health Institutions, expert debate regarding the new manner of payment to the hospitals with the introduction of diagnostically related groups (DRGs). At the same time there are complex reforms in this complex system so strong monitoring of this implementation is necessary in order to be able to react in a timely manner.

In the area of primary education the key challenge was to resume the activities in relation to the start of the compulsory nine-year elementary education and the introduction of English language from the first grade. The National Budget for 2008 plans a special item of around 6,5 million denars for financing of two extremely important and urgent needs of the education system: procurement of new school desks and reconstruction of the school toilets.

#### **4.2. Subindex for efficiency enhancers**

Beginning with 2007, according to the WEF, Macedonia is in the group of countries that are in the second stage – when the development is driven by factors that increase the production efficiency. In this phase the competitiveness is increasing with education and training, efficient market of goods, well functioning labor market, sophisticated financial market, the possibility to distribute the production to large local or foreign market and the possibility to use the benefits from the latest technology. Because of the above said, the factors that increase efficiency have the greatest weight in the calculation of the global competitiveness index for Macedonia. It is of crucial importance for Macedonia to have good performances in the five pillars of the subindex of efficiency enhancers.

When it comes to the efficiency enhancers subindex, Macedonia realized an Index value of 3,45 in 2007 which ranks the country on 98 place. From the total of five pillars in this subindex, the best ranking is for the higher education and training (75), then for the financial markets efficiency (83) and the least good ranking is for the labor market (112) and the market size (106).

In relation to the rest of the countries in the SEE region, Macedonia is better only compared to Albania. Croatia is the leader (ranked 61<sup>st</sup>) while Albania is the country with lowest ranking in the SEE region (105<sup>th</sup>). Macedonia is significantly lagging behind the average EU index which is 4,72.

**Table 8: Ranking and the value of subindex of efficiency enhancers of Macedonia and the SEE countries**

	Subindex of efficiency enhancers		V pillar - Higher education and training		VI pillar - Goods market efficiency		VII pillar - Labour market efficiency		VIII pillar - Financial market sophistication		IX pillar - Technological readiness		X pillar - Market size	
	index	rank	index	rank	index	rank	index	rank	index	rank	index	rank	index	rank
Macedonia	3.45	98	3.55	75	3.77	98	3.86	112	3.98	83	2.77	90	2.54	106
Albania	3.33	105	3.15	103	3.51	117	4.12	88	3.66	103	3...	74	2.53	107
Bosna and Herzegovina	3.48	95	3.26	98	3.59	113	4.21	77	4.23	71	2.49	110	3.12	80
Croatia	4.00	61	4.31	46	4.10	71	4.38	56	4.27	68	3.46	49	3.45	64
Montenegro	3.60	87	3.71	79	3.89	91	4.42	52	4.75	43	3.53	48	1.31	130
Serbia	3.56	88	3.65	82	3.53	114	3.86	111	3.73	98	3.34	57	3.23	75
Average SEE	3.59	-	3.62	-	3.72	-	4.20	-	4.13	-	3.24	-	2.74	-
Average EU 25	4.72	-	5.05	-	4.86	-	4.46	-	5.11	-	4.73	-	4.24	-
Average 2 new EU members	3.91	-	4.07	-	3.97	-	4.19	-	4.07	-	3.46	-	3.94	-

#### 4.2.1. Pillar 5: Higher education and training

A quality higher education and training are the key factors for the economies that like to progress along the value added chain and leave behind the production processes and products with low added value. In the global world, it is a must for development of any economy to establish a base of well educated staff that are capable to adjust to the constantly changing environment. This pillar measures the level of inclusion/ participation in the secondary and tertiary education as well as the quality of education evaluated as such by the business community.

##### 4.2.1.a Statistical analysis of the present situation - index and ranking in relation to the average values for all countries (2007)

The index on this pillar is calculated by using nine parameters. Macedonia has an index value of 3,55 and is ranked as 75<sup>th</sup> with regards to the competitiveness in higher education and training. This index is segmented into three groups: level of education, quality of the education system and on-job training.

##### 4.2.1.b Separation of the extremes

Macedonia shows the best results in the area of quality of education in mathematics and natural sciences (4,49) and the participation in the secondary education (4,28), where the country is ranked on 71<sup>st</sup> and 51<sup>st</sup> place, respectively. A bit worse are the results regarding the internet access in the schools (ranked 101<sup>st</sup>) and the accessibility of services for specialized research and training in the country (rank 96).

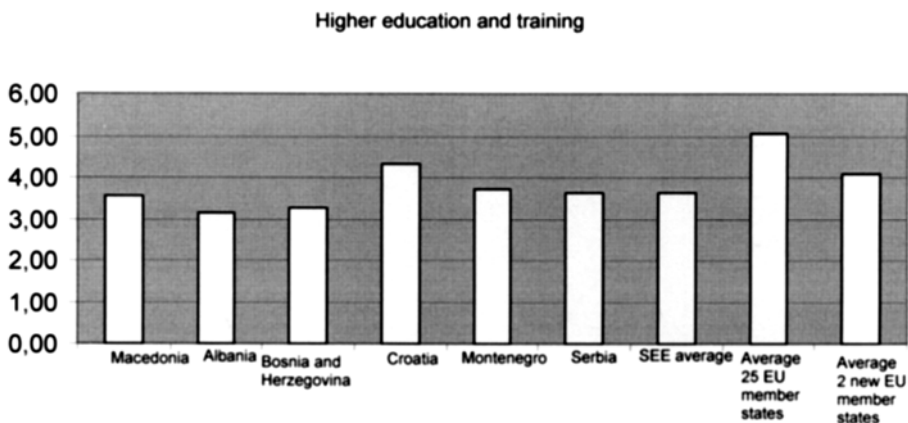
**Table 9: Values of the integral elements of the fifth pillar – Higher education**

	Index value	
	2007	Rank 2007
<b>Higher education and training</b>	<b>3,55</b>	<b>75</b>
<i>Quantity of education</i>		
Total enrollment in secondary schools	4,28	71
Total enrollment in the higher education institutions	2,81	65
Education expenditure	3,82	40
<i>Education system quality</i>		
Quality of the education system	3,74	57
Quality of the education in science and mathematics	4,49	51
Quality of the management schools	3,56	94
Quality of the management schools	2,58	101
Internet access in the schools		
<i>On-the-job training</i>		
Availability of specialized research and training services	3,33	96
Extent of staff training	3,55	79

#### 4.2.1.c Benchmarking in relation to the EU and the Region

As we can see from the graph below, Macedonia in 2007 has achieved better results compared to Albania (3,15) and Bosnia and Herzegovina (3,26). The leader in the SEE region is Croatia (4,31). In relation to the regional results and the 25 EU member states average, as well as compared to the two new EU member states, we have weaker results although in the last year we had certain improvement.

*Graph 5: Index value of the higher education and training in Macedonia, the SEE region and the EU*



#### 4.2.1.d Recommendations

Following the models of the most competitive economies in the area of education and training, in Macedonia there is a need to introduce the lifelong learning concept. The latest motto of the Government is “Education is Power” so it is reasonable to expect that the latest efforts in this area will yield better and greater results next year regarding the education process. What continues to exist as a gap is the improved links between the business community and education, especially the higher education institutions. These institutions should respond to the needs of the business environment with regards to the knowledge they are supposed to give to their students. In this way our companies will be able to quickly adjust to every new situation in the business environment. On the other side, the companies should invest more in training and improvement of their staff.

#### 4.2.2. Pillar 6: Goods market efficiency

##### 4.2.2.a Statistical analysis of the present situation - index and ranking in relation to the average values for all countries (2007)

An efficient market means existence of solid market competition that contributes to the survival of the most efficient producers and results in growth of productivity. With the index of 3,77, Macedonia is on the 98<sup>th</sup> place i.e. at the end of the third quarter of the list.

The index in this pillar is calculated from a total of 16 indicators segmented into two groups: competition and demand quality. Macedonia has better results in the competition group (3,94) where it is 92<sup>nd</sup> while the demand quality ranks Macedonia on 108<sup>th</sup> place with a result of 3,43. The “competition” group includes 14 indicators segmented in two subgroups: domestic competition and foreign competition. Macedonia is on the 91<sup>st</sup> place in the two subgroups which means that status of its factors that determine the domestic and foreign competition is similar.

**Table 10: Values of the integral elements of the sixth pillar – Efficiency of the market of goods**

	2007	
	Index value	Rank
<b>Efficiency of the market of goods</b>	<b>3,77</b>	<b>98</b>
A. Competition	3,94	92
1. Domestic competition	3,96	91
Intensity of local competition	4,34	100
Extent of market dominance	3,13	100
Effectiveness of anti-monopoly policy	3,07	105
Extent and effect of taxation	3,32	69
Total tax rate		
Number of procedures required to start a business		

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Time required to start a business	6,38	58
Agricultural policy costs	4,18	65
Prevalence of trade barriers	6,86	25
Trade-weighted tariff rate	3,82	70
Prevalence of foreign ownership	3,87	91
Business impact of rules on FDI	4,27	83
Burden of custom procedures	8,40	81
Imports as a percentage of GDP	4,25	110
B. Quality of demand conditions	4,14	117
Degree of customer orientation	3,51	76
Buyer sophistication	5,45	32
	3,43	108
	4,00	103
	2,86	105

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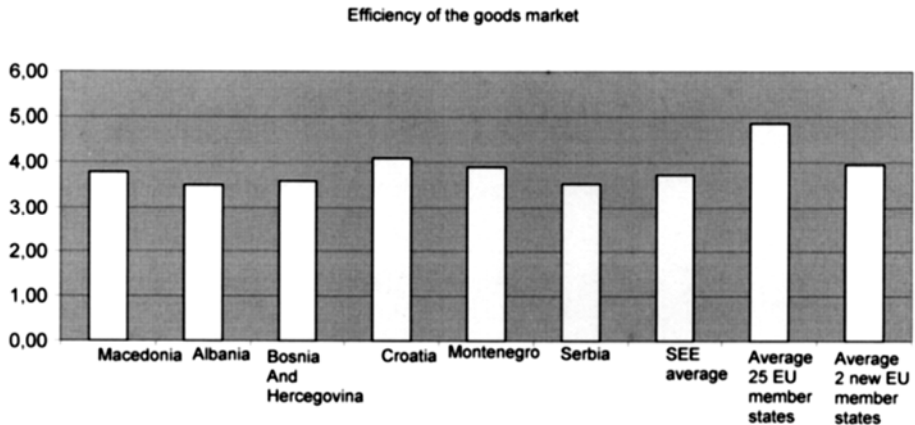
#### **4.2.2.b Separation of the extremes**

Macedonia has quite uneven results of the sixth pillar indicators. The best results are in the time needed to start a business and the participation of the imports in the GDP where Macedonia is 25<sup>th</sup> i.e. 32<sup>nd</sup>, respectively (in the first quarter of the list). The worst results are in relation to the participation of foreign investments in the local economy and the level of foreign direct investments, policy for competition protection as well as the sophistication of the consumers where Macedonia is in the last quarter of the list.

#### **4.2.2.c Benchmarking in relation to the EU and the Region**

Macedonia is ranked third according to the efficiency of the market of goods in the group of six countries from SEE region, behind Croatia who is 71<sup>st</sup> and Montenegro who is 91<sup>st</sup>. Its competitiveness index is a bit higher than the average of the remaining 5 countries with 3,72. Compared to 27 EU member states, the Macedonian index of 3,77 is lacking behind the EU average of 4,86. In this regard Macedonia has index that is lower than all 27 member states of the EU and is very close to Bulgaria who is on the 90<sup>th</sup> place with index of 3,98. These results show serious lagging behind in this area.

**Graph 6: Value of the subindex for Efficiency of the market of goods in Macedonia, Western Balkans and the EU**



#### **4.2.2.d Recommendations**

Taking into account the obsolete time information that are used, we can ascertain that Macedonia already made significant progress in the area of time and procedures necessary to start a business, in the increase of the imports participation in the GDP, simplification of the custom procedures and the weighted custom tariff, the level of tax rate and the amount of foreign direct investments. However, work remains to be done in several areas where probably longer time will be needed for realization of results. In this respect, our recommendations are the following:

1. Strengthen the institutional framework for protection of competitiveness and prevention of monopolistic behavior, proper staffing and efficient use of the available measures.
2. Continuation of the activities started for elimination of the administrative custom barriers, increased credibility of the custom officers, introduction of the one stop shop system in the customs and acceleration of the procedures.
3. Continuation of the active policies to attract foreign direct investments, improvement of the legal framework and increase of the administrative capacity of the institutions that provide services to the foreign investors.
4. Increase of the sophistication of the demand that is mainly related to the increase of purchase power of the people. In this regard, these indicators can be improved only with economic growth and increase of the living standard of the people.

### 4.2.3. Pillar 7: Efficiency of the labor market

#### 4.2.3.a Statistical analysis of the present situation - index and ranking in relation to the average values for all countries (2007)

An efficient and flexible labor market has the key role in the appropriate allocation of the workers per economic activities as well as in the adjustment of the salaries in accordance with the economic cycle. Equally important is up to which level is the salary related to the productivity of the worker and was there equal treatment of men and women in the business in the business environment. In this way, the labor market will contribute to quick adaptation of the business to the market fluctuation. Macedonia index is 3,86 and is ranked on 112 place which is the lowest place on the list compared to all twelve pillars.

The index of this pillar is calculated from a total of 12 indicators that are divided into two groups: flexibility and efficient use of the talents. The first group includes eight indicators while the second group includes four. For the first group Macedonia has a result of 4,24 and ranked on 95<sup>th</sup> place and in the second group it is on the 109<sup>th</sup> place with a result of 3,47.

**Table 11: Values of the integral elements of the seventh pillar – Efficiency of the labor market**

	2007	
	Index value	Rank
<b>Efficiency of the labor market</b>	<b>3,86</b>	<b>112</b>
A. Flexibility	4,24	95
Cooperation in labor-employer relations	3,95	109
Flexibility of wage determination	5,56	38
Non-wage labor costs	3,47	112
Rigidity of employment	2,74	98
Hiring and firing practices	3,75	73
Extent and effect of taxation	3,32	69
Total tax rate	6,38	58
Firing costs	6,70	32
B. Efficient use of talent	3,47	109
Salary and productivity	4,09	75
Reliance on professional management	3,62	112
Brain drain	2,04	125
Female participation in labor force	4,75	93

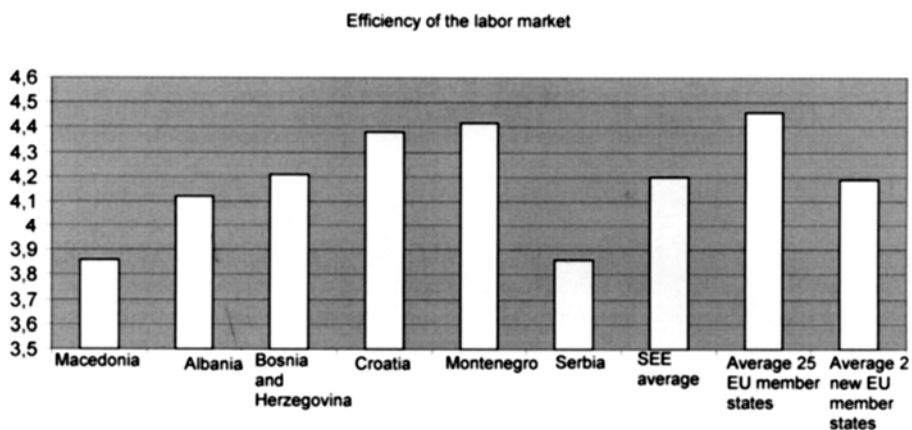
### 4.2.3.b Separation of the extremes

With a few exceptions, in most of the indicators in this pillar Macedonia is in the third and last quarters of the list. The most competitive conditions exist in the costs to sack a worker and the flexibility to determine the salaries where Macedonia is ranked on 32 and 38 place, respectively. The results are lower when it comes to taxation of the salaries. The worst is the situation with high costs for salary contributions, low level of institutional dialogue and bargaining between the employers and employees, the low level of involvement of women in the labor force, no reliance on professional management and the high level of brain drain from the country. Speaking about this last point, Macedonia is on the 125<sup>th</sup> place which is almost at the bottom of the list of 131 countries which speaks by itself about the seriousness of the problem.

### 4.2.3.c Benchmarking in relation to the EU and the Region

The index value for Macedonia is 3,86 making it the lowest ranked country according to the labor market efficiency in the group of six countries of the SEE and is lagging behind the average of 4,20. In this regard, beside Serbia, who is one place lower on the list, all other countries in the region have significantly improved their competitive position in this area. Compared to the 27 EU countries, the Macedonian index of 3,86 is lagging behind this average of the EU (4,46). However, it is surprising to see that two EU member states (Italy and Greece) are placed on 120<sup>th</sup> and 128<sup>th</sup> place i.e. they are below Macedonia.

Graph 7: Value of the subindex for Efficiency of the labor market in Macedonia, Western Balkans and the EU



#### **4.2.3.d Recommendations**

It is obvious that Macedonia is seriously lagging behind with regards to efficiency of the labor market and, as a consequence, the country has extremely high percentage of unemployment. The new Law on Labor Relations was adopted in 2005 and brought some improvements with regards to flexibility in sacking workers and the introduction of flat rate in relation to the taxes on salaries. However, there is much more to be done.

1. Shifting to the gross salaries system and consideration of the possibility to reduce the salary contribution rates.
2. Greater cooperation between the associations of employers and employees in setting realistic demands in their negotiations.
3. Elimination of the nepotism and the influences of political parties in employment. Respect of the knowledge and abilities as the only criteria for hiring and career progress. Open the country to foreign direct investments. All these things will create conditions that will make the educated workforce stay in the country.
4. To resolve the negative effects from the management-workers privatization that concentrated the functions owner and manager in a same person. It is necessary to stimulate the secondary privatization i.e. establish favorable conditions for greater entry of institutional investors and acquisitions that will result in engagement of professional management in the companies.

#### **4.2.4. Pillar 8: Sophistication of the financial markets**

##### **4.2.4.a Statistical analysis of the present situation - index and ranking in relation to the average values for all countries (2007)**

The efficient financial sector enables the link between the savings and investments in the economy. It focuses the available financial resources towards the best projects that create investments, increase productivity, jobs and economic growth. Macedonia is ranked 83<sup>rd</sup> with an index of 3,98.

The index of this pillar is calculated from a total of 9 indicators that are segmented into two groups: efficiency and trustworthiness and confidence. The first group includes six indicators while the second group includes three. In the first group Macedonia is ranked 91<sup>st</sup> with a result of 3,48 and in the second group is ranked 76<sup>th</sup> with a result of 4,48.

**Table 12: Values of the integral elements of the eight pillar – Efficiency of the financial market**

	2007	
	Index value	Rank
<b>Financial market efficiency</b>	<b>3,98</b>	<b>83</b>
A. Efficiency	3,48	91
Sophistication of the financial market	3,14	93
Financing through local equity market	3,97	88
Ease of access to loans	2,45	108
Venure capital availability	3,15	59
Restriction on capital flows	4,08	93
Strength of investor protection	5,00	65
B. Trustworthiness and confidence	4,48	76
Soundness of banks	4,67	109
Regulation of securities exchanges	4,16	88
Legal rights index	6,00	27

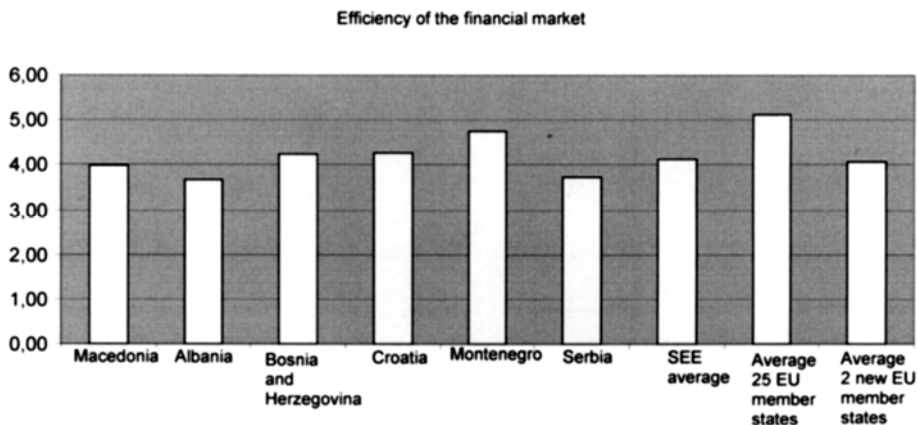
#### **4.2.4.b Separation of the extremes**

With small exceptions, Macedonia is mainly in the third quarter of the list for most of the indicators. The best result of 6,00 and ranking as 27<sup>th</sup> is in the area of legal rights while the worst places are 108<sup>th</sup> and 109<sup>th</sup> is for the accessibility of loans and soundness of the banks, respectively. Low ranking of around 90 places is also in the restriction of the capital flows, sophistication of the financial markets, financing from the capital market and regulation of the capital markets.

#### **4.2.4.c Benchmarking in relation to the EU and the Region**

Macedonia is fourth according to efficiency of the financial market from a total of six SEE countries. Macedonia has an index value of 3,98 and is lagging behind the average index from the remaining five countries from SEE (4,13). In this regard, Macedonia has better ranking only to Albania and Serbia. Compared to 27 EU member countries, the Macedonian index of 3,98 lag significantly behind the EU average of 5,11.

Graph 8: Value of the subindex - Efficiency of the financial market in Macedonia, Western Balkans and the EU



#### 4.2.4.d Recommendations

The low efficiency of the financial markets in Macedonia is mainly due to the insufficient competition in the financial sector, the incomplete liberalization of the capital transactions between the residents and non-residents and the weak regulatory framework for operation of capital markets. Although there were some significant improvements in 2007, especially the entry of several foreign banks, including Societe General, activities are needed in several areas.

1. Easier access of foreign banks and institutional investors in the remaining banks with dominant local capital, especially in the problematic banks. This will strengthen the banking sector and increase the competitiveness that will have positive impact on the availability of loans.
2. Harmonization of the Law on Banks bylaws with the EU member states best practices.
3. Establish legal framework for more active role by the Macedonian Bank for Support of Development in financing of new businesses and higher risk sectors, such as the agriculture. This will fill in certain gaps on the financial market and will increase the number of businesses that have access to loan support.
4. Faster liberalization of the remaining constraints on the capital transactions with non-residents, especially the portfolio investments.
5. Adoption of the appropriate legal infrastructure for doing business of the investment funds, especially in the terms of precise regulation of the role of the banks custodians and custodian accounts.
6. Adoption of the legal framework for doing business of the non-banking credit institutions.

## 4.2.5. Pillar 9: Technological readiness

The ninth pillar, technological readiness, measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries. This is critical because technological differences have been shown to explain much of the variation in productivity between countries. In fact, the relative importance of adoption of technology for the national competitiveness has grown in recent years, following the progress in knowledge dissemination and the increasing use of information and communications technologies (ICT).

We need to make distinction between the level of technological readiness of the companies from the ability of the country to introduce innovations and expand the borders of its knowledge. Because if this reason we are going to make distinction between the technological readiness and the innovations.

### 4.2.5.a Statistical analysis of the present situation – index and ranking in relation to the average values for all countries (2007)

The global competitiveness index provides the following summary of the technological readiness of Macedonia:

**Table 13: Values of the integral elements of the ninth pillar – Technological readiness**

	Index value	
	2007	Rank 2007
<b>Technological readiness</b>	<b>2,77</b>	<b>90</b>
Availability of latest technologies	3,10	114
Absorption of technologies at companies level	3,38	128
Laws related to the ICT sector	3,16	88
FDI and technologies transfer	3,93	124
Mobile telephones	3,39	53
Internet users	1,53	83
Personal computers	2,53	37
Broadband Internet	1,14	69

We can see from this table that Macedonia is ranked 90<sup>th</sup> from a total of 131 countries regarding the technological readiness with an index value of 2,77 in 2007. This index has been calculated from eight parameters.

### 4.2.5.b Separation of the extremes

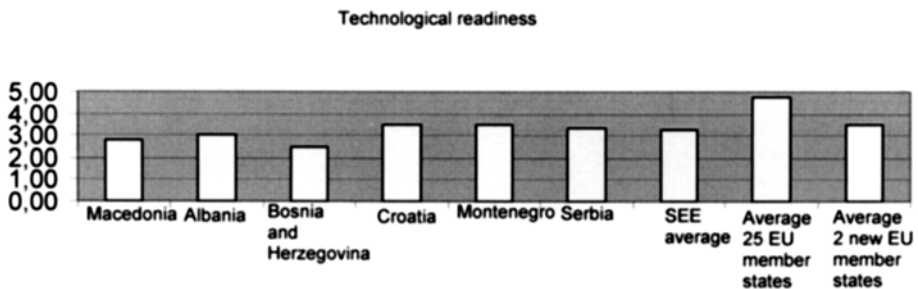
If we analyze the very structure of the technological readiness index we can see that the performance is the best in the use of personal computers (ranked 37<sup>th</sup>) and the use of mobile phones (ranked 53<sup>rd</sup>). Macedonia is almost at the bottom of the

table with regards to the foreign direct investment and technologies transfer (ranked 124<sup>th</sup>) and the adoption of technologies on the company level (ranked 128<sup>th</sup>). These bad results are also present in 2006 so our country should implement immediately measures to improve the situation in these areas.

#### 4.2.5.c Benchmarking in relation to the EU and the Region

As we can see from the statistics, the results for Macedonia regarding the technological readiness are below the averages in the EU and the region. Macedonia has better results only compared to Bosnia and Herzegovina. Other countries in the region are far ahead of us.

**Graph 9: Value of the subindex of for technological development for Macedonia, SEE and EU**



#### 4.2.5.d Recommendations

In order for our companies to be more competitive, it is necessary to increase the percentage of use of modern technologies in production and other activities of the companies. Although the number of mobile operators in our country has been increased still the prices are on a quite high level considering the fact that there is competition in this field. It is necessary to continue the efforts aimed to improve the internet connectivity and the price for the internet services.

#### 4.2.6. Market size

##### 4.2.6.a Statistical analysis of the present situation – index and ranking in relation to the average values for all countries (2007)

The market size has an impact on the productivity since the large markets allow the companies to use the economies of scale. In the times of globalization the international markets substitute the national market which is especially valid for the small countries. In order to avoid discrimination of those geographic areas (such as, for example, the European Union) which is divided into many countries that have common market, two types of markets are included – local and

international as measures for the size of the markets when it comes to establishment of the tenth pillar of the competitiveness: the market size.

**Table 14: Values of the integral elements of the tenth pillar – Market size**

	2007	
	Index value	Rank
<b>Pillar 10: Market size</b>	<b>2,54</b>	<b>106</b>
<b>A. Domestic market size</b>	<b>2,47</b>	<b>104</b>
Index of the domestic market size	2,47	104
Value of the GDP at PPP	15.74	112
Imports as percentage of the GDP	65,80	32
Exports as percentage of the GDP	43,80	65
<b>B. Foreign market size</b>	<b>2,76</b>	<b>103</b>
Foreign market size index	2,76	103

Macedonia is ranked 106th on the basis of this subindex.

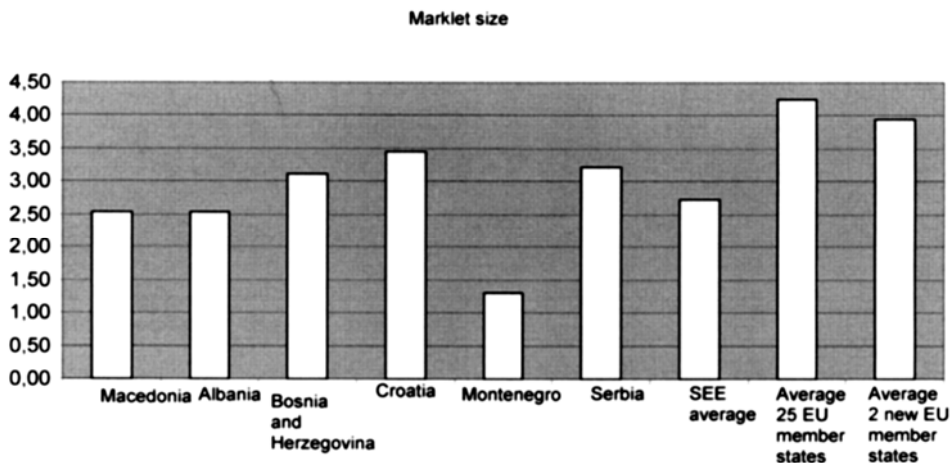
#### 4.2.6.b Separation of the extremes

According to export and import values Macedonia stands well in the ranking but quite bad when it comes to the GDP at PPP.

#### 4.2.6.c Benchmarking in relation to the EU and the Region

In this subindex Macedonia is ranked better compared to Albania and Montenegro but worse compared to Bosnia and Herzegovina, Croatia and Serbia.

*Graph 10: Value of the subindex of the market size in Macedonia, Western Balkans and the EU*



#### 4.2.6.d Recommendations

There is no doubt that the geographic size has the impact on the competitiveness of the economy (through the economy of scale). However, good number of small countries managed to find ways how to improve their economy in order to be globally competitive. Macedonia should continue working in its competitive advantages by becoming integrated in the global trends and improve its export capacities in order to manifest higher growth rates.

#### 4.3. Subindex for innovations and business sophistication

In relation to the subindex for innovation and business sophistication for 2007 Macedonia is ranked 101<sup>st</sup> (from a total of 131 countries). The value of the coefficient in 2007 is 3,12. This value was derived by calculating the two indexes: for business sophistication and innovations.

With regard to the countries from the region, Macedonia has better results in relation to Albania (ranked 125th) and Bosnia and Herzegovina (ranked 123rd). Leader in the SEE region is Croatia that is ranked 53<sup>rd</sup>). In relation to the regional average (3,17), Macedonia is just slightly lacking behind. The results from the 25 EU member states and the two new EU members can be seen from the following table.

**Table 15: Ranking and value of the subindex for innovations and business sophistication of Macedonia and the SEE countries**

	<i>Subindex for innovation and business sophistication</i>		Rank in 2007	11 pillar Business sophistication	Rank in 2007	12 pillar Innovations
	Rank	Index				
Macedonia	101	3,12	3,35	108	2,88	92
Albania	125	2,72	3,35	109	2,10	131
BiH	123	2,86	3,20	119	2,53	121
Croatia	53	3,77	4,11	64	3,43	50
Montenegro	97	3,18	3,68	90	2,69	104
Serbia	88	3,30	3,53	95	3,08	78
SEE average	-	3,17	3,74		2,76	
25 EU average	-	4,50	5,07		4,09	
2 EU average	-	3,40	3,85		3,03	

##### 4.3.1 Pillar 11: Business sophistication

The business sophistication contributes towards greater efficiency in production of goods and services which influences on higher productivity, thus increasing the

national competitiveness. The business sophistication takes into account the quality of the overall business networks in the country and the quality of activities and strategies of the individual companies. This pillar is especially important for the economies that are in the phase of development driven by the innovations.

When the companies and the providers are connected into geographically close groups (clusters) then their efficiency shows, contributing towards greater opportunities for innovations and reduction of the barriers for entry of new companies. On the other side, however, the activities and strategies of the individual companies, such as branding, marketing, presence of the value chain and the production of unique and sophisticated products result in sophisticated and modern business processes.

#### **4.3.1.a Statistical analysis of the present situation – index and ranking in relation to the average values for all countries (2007)**

The global competitiveness index shows the following status regarding the sophistication of doing business in Macedonia:

**Table 16: Values of the integral elements of the eleventh pillar – Business sophistication**

	Index value	
	2007	Rank 2007
<b>Business sophistication</b>	<b>3,35</b>	<b>108</b>
<b><i>1. Networks and supporting industries</i></b>	<b>3,57</b>	<b>107</b>
Local suppliers quantity	4,24	103
Local suppliers quality	3,80	99
Clusters development status	2,67	117
<b><i>2. Sophistications of firms operations and strategies</i></b>	<b>3,12</b>	<b>113</b>
The nature of the competitive advantage	2,52	127
Value chain breadth	2,97	97
International distribution control	3,75	89
Sophistication of the production process	2,85	105
Extent of marketing	3,37	107
Willingness to delegate the authority	3,02	111
Reliance on professional managers	3,62	112

As it can be seen Macedonia was ranked 108<sup>th</sup> in 2007 with a coefficient of 3,35. This coefficient is consisted of two groups: networks and supporting industries (ranked 107<sup>th</sup>) and sophistication of the business and strategies of the companies (ranked 113<sup>rd</sup>).

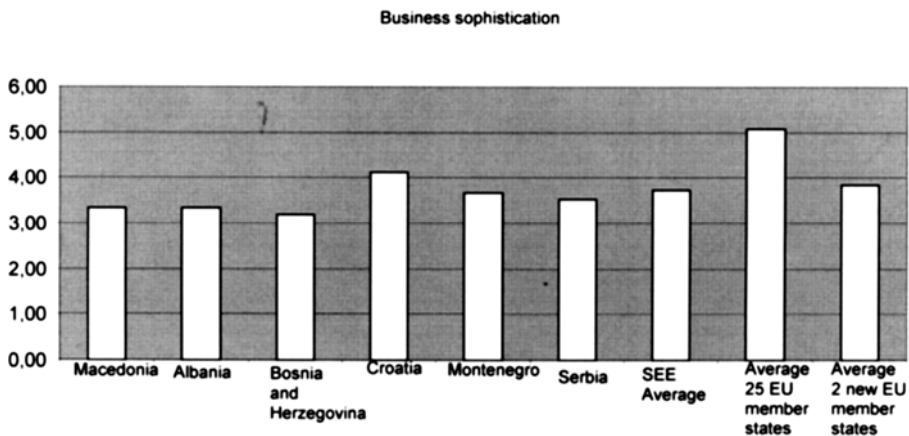
### 4.3.1.b Separation of the extremes

If we go deeper into the structure of this index we can conclude that, regarding the business sophistication in Macedonia, the quantity of local suppliers is unsatisfactorily low while their quality is low due to the insufficient technology capability. When we talk about sophistication of the companies, their production processes are mainly labor intensive, their marketing activities are limited and employing only limited marketing tools and techniques. The international distribution, where we show the best results in this pillar (ranked 89<sup>th</sup>), is largely controlled by foreign companies and the top management is not inclined to delegate either authority or control over important decisions. The results are especially bad with regards to the competitive advantage in exports (ranked 127<sup>th</sup>) and Macedonia continues to be largely based on local low cost natural resources, rather than on unique products and processes. The exporting companies in Macedonia are generally involved in resource extraction or production, unlike developed countries where companies concentrate on product design, marketing and sales, logistics and after-sales services.

### 4.3.1.c Benchmarking in relation to the EU and the Region

As far as the business sophistication is concerned Macedonia is again below the average of the SEE region (3,74). The highest results are achieved in Croatia where the Index is way above the SEE average (4,11). In the frames of the 25 EU member states the best are the results in Germany (5,96), Sweden (5,83) and Austria (5,72). The two new EU member states – Bulgaria and Romania – have an average of 3,85.

*Graph 11: Value of the subindex of Market size in Macedonia, Western Balkans and the EU*



#### **4.3.1.d Recommendations**

The recommendations for Macedonia in the area of business sophistication are in two directions – towards improvement of the internal business processes in the companies and focusing of the local companies towards supplying a product and services with higher added value. In this regard it is necessary to investigate the international market and adjust the production towards their tastes and needs, in the same time using more advanced techniques in the production process – all with a purpose to achieve greater efficiency and effectiveness and also to achieve greater competitiveness on the global level. In the same time, the state institutions should be part of the marketing process of the Macedonian products and the Agencies that should represent Macedonia abroad should start really implementing their role and liaise the interested parties in order to achieve greater cooperation.

With regards to the internal business processes, the recommendation is to stimulate the delegation of some of the decision making on the lower level managers. From institutional perspective it is recommended to become full member of the European Committee for Standardization and of the European Committee for Electro-technical Standards.

#### **4.3.2. Pillar 12: Innovations**

The last pillar of competitiveness is the innovation. Although significant improvements can be made through improvement of the institutions, building of the infrastructure, reduction of the macroeconomic instability or improvement of the human capital, these factors, in time, produce reduced yield. The same goes for the labor efficiency, financial markets and markets of goods. In this regard, on a longer term, since all these factors produce reduced yields, the standard of living can be improved only with technological innovations. The innovations are especially important for those economies that become closer to the limits of the knowledge and where the possibility to integrate and use external technologies is large. While less advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas, for countries that have reached the innovation stage of development, this is no longer sufficient to increase productivity. The companies in these countries must design and develop cutting-edge products and processes to maintain a competitive advantage. This requires an environment that is conducive to innovative activity, supported by both the public and the private sectors. In particular, this means sufficient business investment in research and development, high-quality scientific research institutions, collaboration in research between universities and industry, and protection of intellectual property.

### 4.3.2.a. Statistical analysis of the present situation - index and ranking in relation to the average values for all countries (2007)

Compared to 131 countries in 2007, the Republic of Macedonia is ranked 92<sup>nd</sup> with regards to innovations in the economy and individual coefficient of 2,88.

**Table 17: Values of the integral elements of the twelfth pillar - Innovations**

<b>Innovations</b>	<b>Index value</b>	
	<b>2007</b>	<b>Rank 2007</b>
<b>Innovations</b>	<b>2,88</b>	<b>92</b>
Capacity for innovations	2,90	84
Quality of scientific-research institutions	3,44	89
Company spending on research and development	2,69	107
Research cooperation between the universities and the industry	2,88	81
Government procurements of advanced technology products	3,05	107
Availability of scientists and engineers	4,38	64
Utility patents in 2006	1,00	89
Protection of the intellectual property	2,58	116

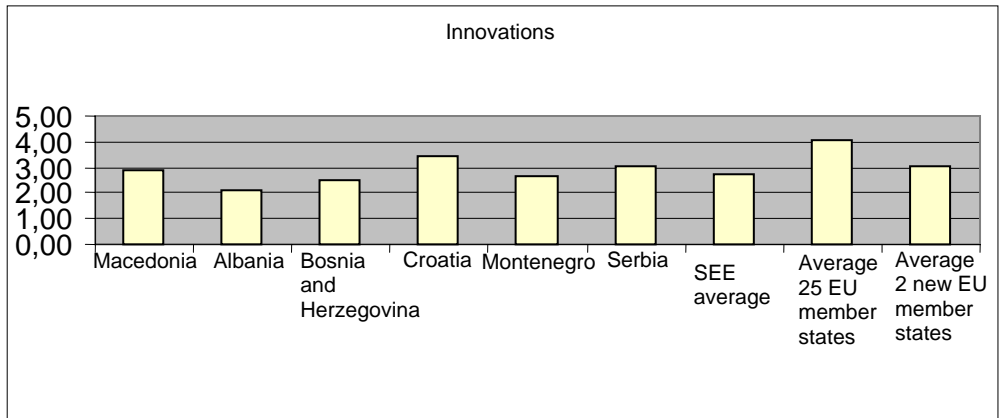
### 4.3.2.b. Separation of the extremes

If we consider the qualitative aspect of this issue we can ascertain that we have relatively good offer of researchers and engineers as well as particular improvement of the quality of the scientific-research institutions. Negative impact on this present status regarding innovations have the amounts of funds the companies allocate for research and development as well as the low level of Government procurements of cutting-edge technology products. Although there is some improvement if we see the results regarding the protection of intellectual property, Macedonia is still faced with this problem, especially in the manner and success i.e. lack of success to cope with the piracy. According to this criteria Macedonia is on the bottom of the list (ranked 116<sup>th</sup>).

### 4.3.2.c Benchmarking in relation to the EU and the Region

If we compare ourselves against the SEE region we can say that our performances are better than Albania, Bosnia and Herzegovina and Montenegro. The Republic of Macedonia also has better result from the region average (2,76). The average of the 25 EU member states is 4,09 while the average of the two new EU member states is 3,03. It interesting to mention the performances of the countries with best results in innovations - Finland (5,57), Sweden (5,46) and Germany (5,43).

**Graph 12: Value of the subindex for innovations for Macedonia, SEE and EU**



#### **4.3.2.d Recommendations**

The logical conclusion from the analysis is that there is definite need for innovations project that will involve the Government, the private sector and the educational institutions. The introduction of tax incentives for the companies that finance research and development and use innovations in their work can stimulate the private investments in innovations and new technologies. In the same time there is a definite need to improve the protection o the intellectual property with greater sanctions for the perpetrators. However, the inspectors and the prosecution still do not have the necessary expertise and equipment to identify and punish the perpetrators.

## **5. Macedonia, the EU and the competitiveness**

Macedonia is moving towards full EU membership so it is very important for Macedonia to compare the trends in the EU with the trends in Macedonia in the area of competitiveness.

In 2006 the total competitive performances of the EU economy were significantly improved. The European Competitiveness Report for 2007 underlines the key role of the productivity as a long-term source of growth and consideration of the cooperation between various economic sectors, with improved performances, including the role of the policies which are those under the umbrella of the macroeconomic pillar of the Lisbon Strategy. The research and innovations compared against the education and training, are better and have strong impact on the competitiveness. The economy reforms which improve the overall business environment and facilitate the structural changes and reallocation of resources are also very important i.e. have decisive impact on the economy. The liberalization of the industrial network, either through open trade, improvement of the single market or through reforms on the market of goods and services, continues to be the main carrier of the increase of the economy efficiency. The coordinated efforts in these areas in the EU level create better benefits, compared to acting individually.”<sup>5</sup>

### **5.1. The engines of the EU competitiveness**

The microeconomic reforms contribute to greater growth of productivity in the EU:

1. The investing in ICT enables return on investments in environment of productivity, accompanied with appropriate organizational changes and improvements through investments;
2. The competitiveness is important engine for greater productivity and innovation;
4. incentives for entrepreneurship and improvement of the conditions the small and medium sized enterprises also has positive effects on the productivity;
5. The improved management with the available resources and bureaucracy reduction contribute to significantly greater production and consumption;
6. The open trade and productivity go hand in had; and
7. Improvement of the skills becomes the key factor for competitiveness.

The increase of the potentially long-term economic development, together with the increase of productivity, is one of the fundamental goals of the updated Lisbon Strategy as important answer to the changes caused by the globalization, demographic ageing, quick shifts in the technology progress and the need to

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<sup>5</sup> MEMO/07/445 BRUSSELS, 5TH NOVEMBER 2007.

manage the climate changes. The microeconomic pillar from the Lisbon Strategy covers a lot of political areas that are relevant for improvement of the productivity.

## **5.2. The engines of competitiveness in Macedonia**

Last year the competitiveness of the Macedonian economy was driven by the traditional factors of production that are competitive with low price i.e. economies that rely on cheap labor force and cheap natural resources. In this phase of development the competitiveness steers from the strength of the institutions, the good infrastructure, the stable macro-economic environment, primary health care and the elementary education level.

This year the Macedonian economy is ranked in the group of countries whose competition does not rely anymore on the low prices but on the quality of products. In this phase the key words are efficient markets for goods and services, for labor force, the financial market, the knowledge that is acquired from higher education and specialized training and access to latest technologies.

However, due to the slow transition from planned towards efficient market economy, although we are ranked in the group of countries whose economy is driven by efficiency, we need to point out to five things.

First, the Global Competitiveness Index for Macedonia 2007 is worse and now we are ranked on 94th place, compared to 84th place in 2006.

Secondly, the Macedonian economy is still vulnerable, it relies on cheap labor force but it is also featured with low productivity and, accordingly, with low level of salaries. The public and the private institutions are still weak. In order to be successful in the competition phase that is driven by the efficiency factors we need to aim towards more quality higher education, efficient markets, sophisticated financial market, strong exports, more foreign direct investments and the ability to use the benefits of the existing technology, improvement of the public and private institutions.

Third, the lower ranking for this year compared with the previous year is also due to the fact that last year we had greater weight (values) in this pillars in which we were more competitive, which is not the case this year where Macedonia is ranked in the second group of countries where we have greater weight exactly in the areas where our relative competitiveness is lower i.e. this year we compete with economies that are more competitive compared to the group of countries we used to be with last year.

Fourth, from the six new countries and dissolution of Serbia and Montenegro into two separate states, Macedonia is in the very start ranked worse from three of these countries.

Fifth, although the competitiveness is measured by using 12 factors, these factors are not independent from each other but they are in interrelated interaction. In this regard, the innovations (factor/ pillar 12) will not be possible unless there are strong institutions (factor/ pillar 1) which have credibility and will guarantee the right on intellectual property which, in turn, requires appropriate environment for development of innovations that are, generally, impossible to happen with insufficiently educated labor force (factor/ pillar 5).

In addition, the two tables below show the factors where Macedonia is ranked in the ¼ of the list of countries, according to WEF and factors where Macedonia is ranked in the last quarter of the list, according to WEF.

The factors that rank the Macedonian economy towards greater competitiveness (the first quartile from ranking of more than 100 parameters for 131 countries by using the WEF methodology) for this year are the following:

<b>Pillar, parameter</b>	<b>Parameter name</b>	<b>Competitiveness ranking of Macedonia from a total of 131 countries</b>
4,02	Malaria presence	1
4,06	HIV presence	1
6,07	Time needed to start a business	25
8,09	Index of legal rights	27
10,04	Imports as percentage of the GDP	32
7,06	Fire damages	32
9,07	PCs	37
7,02	Flexibility in the determination of salaries	38
4,11	Education costs	40
3,03	Inflation	43
4,04	Tuberculosis presence	49
2,08	Telephone lines	50
5,04	Quality of the mathematics and science education	51
9,05	Mobile telephone subscribers	52
4,09	Elementary education quality	53

4,07	Infants mortality rate	56
4,08	Life expectancy	56
5,03	Educational system quality	57
6,05	Total tax rate	58
1,03	Misuse of public funds	59
8,04	Availability of venture capital	59
3,01	Government surplus/ deficit	61
12,06	Availability of scientists and engineers	64
5,02	Enrollment in tertiary education	65
6,06	Number of procedures necessary to start a business	65

The factors that rank the Macedonian economy towards lower competitiveness (the fourth quartile from ranking of more than 100 parameters for 131 countries by using the WEF methodology) for this year are the following:

<b>Pillar, parameter</b>	<b>Parameter name</b>	<b>Competitiveness ranking of Macedonia from a total of 131 countries</b>
12,03	Company investments in research and development	107
12,05	Procurement of latest technology products by the Government	107
1,15	Ethical behavior in the companies	108
8,03	Easy access to loans	108
7,01	Employer-employee cooperation	109
8,07	Sustainability of the banks	109
1,05	Independent judiciary	110
6,11	Presence of foreign ownership	110
1,09	Legal system efficiency	111
1,11	Business insurance from terrorism	111
11,09	Readiness to delegate authority	111
7,03	Unpaid labor costs	112
7,08	Trust in professional management	112
10,03	GDP value in the PPP	112
7,08	Trust in professional management	112
9,01	Access to cutting-edge technologies	114
1,02	Protection of intellectual property	116

6,12	The business under the influence of the FDI rules	117
11,03	State development of local groups	117
1,17	Corporate boards activity	118
2,05	Road-air transport infrastructure quality	120
2,06	Kilometers available per airplane seat	122
1,13	Organized crime	123
9,04	FDI and technology transfer	124
7,09	Brain drain	125
11,04	Features of the competition products	127
9,02	Technology development absorption on company level	128

**NOTES:**



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