

# COMPETITIVENESS POSITION OF SLOVAK REPUBLIC - VARIOUS MEASURES COMPARISON.

Tomáš ŠOLTÉS

Department of Regional Sciences and Management  
Faculty of Economics  
Technical University in Košice  
tomas.soltes@tuke.sk

## Abstract

*Is Slovakia competitive within the European area? Since other European countries represent the main and direct competitors of Slovak republic, this paper analyzes the competitive position of Slovak republic from the view of 4 competitiveness measures. It takes into consideration two competitiveness indices prepared by renowned international organizations active in the field of national competitiveness measurement (WEF, IMD), as well as two characteristics identified by most theoretical and practical approaches to be the most suitable measures of a country's competitiveness – GDP growth and productivity. Based on these 4 measures, the paper presents a simple ranking of Slovak republic for each of the measures.*

**Keywords:** *Competitiveness, competitiveness measures, economic growth, GCI, productivity, ranking, regions, WCY.*

**JEL:** *O57 - Comparative Studies of Countries.*

## INTRODUCTION

The today's world is getting more and more globalized. This sentence was and probably still is very popular in many fields. The truth, however, may be that the today's world has been almost fully globalized for some time now. This always creates more competition among individuals, companies, nations, regions, etc. In order to be successful in any field, one must always be a step ahead of the competition. Countries and regions in most parts of the world represent fully open entities interacting with other countries or regions and trying to be successful in order to ensure prosperity and high living standards for their citizens. Therefore, national and/or regional competitiveness is a very current topic. Efforts in the field of increasing production efficiency and consequently ensuring the competitiveness of countries have been especially active in time of the still ongoing global economic crisis, but have been in

one form or another present even before the crisis. The reason for the sudden increase in efforts is the fact that countries are now more than ever trying to be successful in an intensive manner, trying to enhance the performance without the need for any additional resources. Since the concept of competitiveness, as will be shown later in the paper, is mostly defined as the ability to achieve economic growth, the efforts of national and regional governments are aimed on the support of all of the aspects that can improve the performance of the economy. For these purposes it is important to know how to measure competitiveness and what factors influence competitiveness, and so to know what aspects to improve in order to enhance competitiveness.

Slovakia is no exception in analysis and enhancement efforts in the field of national and regional competitiveness. Enhancement of Slovak competitiveness is set in many programming and strategic documents as one of the most important priority areas aimed on the achievement of the targeted growth in living standard and ensuring of sustainable development of Slovak republic. Therefore, the analysis undertaken in this paper will show the perception of competitiveness from the viewpoint of the most relevant theoretical approaches, renowned international institutions active in the field of competitiveness measurement, as well as the perception of competitiveness by the main strategic documents of Slovak republic in the field of competitiveness enhancement. The aim is to present a theoretical background overview in order to better understand the basis of competitiveness, the factors that affect it and to better analyze and understand the position of Slovakia from the view of international competitiveness.

This paper in the light of above mentioned facts tries to compare European countries from the viewpoint of several competitiveness measures and proposes a simple ranking based on these measures. It helps to show the competitive position of Slovak republic among European countries and analyze which of the measures should be considered by different Slovak governance levels in order to assess competitiveness in the most suitable way and prepare policies and strategic documents with respect to the measures, where Slovak republic has the most powerful position.

## **1 THE CONCEPT OF COMPETITIVENESS**

The concept of competitiveness has a long history, which was, however, mainly focused on the analysis in the field of businesses (individual companies). Despite that, we can find throughout the economic theory various examples of studies that try to identify and analyze various aspects of the success of countries in international comparison. This shows that even though the term competitiveness was not originally intended for or used in the case of countries, we can somehow find synonyms of this term also on the level of countries. The following text shows only a brief extract of the author's previous efforts in the field of competitiveness understanding. It should provide the reader with an insight into the theoretical background of competitiveness. However, since the theory behind competitiveness is not the main issue of this paper,

we will try not to bother the reader with too many and detailed theories, approaches, definitions, etc., but rather present conclusions and/or conjunctions.

### **A short overview of theoretical approaches to competitiveness**

The theoretical approaches to competitiveness can be, based on previous research undertaken by the author, broadly divided into two large groups. The first group understands competitiveness as the ability of a country to achieve some kind of an advantage over other countries. This group is represented mainly by the classical economics and approaches and theoretical schools based on classical economics. On the other hand, the second group is based on the ability of countries and their economies to successfully capitalize its products in international markets environment (e.g. New Trade Theory). The joint idea of both of the two groups is the identification of productivity as the source of success of countries, and thus, in a figurative meaning also the source of competitiveness of a country.

As mentioned above, the first group of theoretical approaches is largely characterized by classical economics. Among the most influential classical authors who have directly examined the "advantages" of countries were in particular Adam Smith and David Ricardo. Especially Ricardo's theory on comparative advantage was indeed an early attempt to understand how nations compete. The Ricardian model assumes that countries differ in their production technology and that each country has a comparative advantage in the production of at least one good. Then, by exploiting this advantage the country can maximize its possible output. Competitiveness would then be a function of production technology, or in other words the added productivity that the enhanced technology provides.

The second group focuses on the success of a country's production on international markets. This assumption is quite understandable. We will, however, use this group as an opportunity to present a critique of national competitiveness. It can be illustrated by the example of the New Trade Theory and the work of its most famous representative Paul Krugman. Krugman, in his theory criticizes the concept of competitiveness. Krugman goes even further and calls the concept of national competitiveness a dangerous obsession. According to his work, Krugman bases his critique on three key aspects. First of all, there is no limit for a country, not like in the case of companies, which would clearly represent the bankruptcy of a country (meaning the end of existence). Another complication is that the success of one company is the loss to another (loss in revenues, sales, market share etc.). But this does not apply to country level, where even the success of one country or region creates opportunities for other countries or regions. Finally, according to Krugman, if competitiveness is of any importance, then only in the sense that it is only another way how to express productivity. (Krugman, 1994)

This part is, however, only a short extract of many theoretical studies and approaches to national competitiveness that were analyzed in the former efforts of the author. As the main aim of this article is not the theoretical concept of national competitiveness,

this part is intended only as an insight into the issue of theoretical basis of competitiveness on the level of nations. The most important fact of the previous short preview is the identification of productivity as the main driving force of competitiveness.

In the following part we will apply the same to the empirical studies of competitiveness and we will present some of the most popular and most comprehensive approaches to monitoring and/or measuring international competitiveness.

### **Understanding of competitiveness by international organizations**

This part will show the definitions and understanding of national competitiveness from the view of international organizations that have a long tradition in analyzing and/or monitoring, measuring and ranking of competitiveness on national level. As mentioned above, this is only a brief description with the aim to identify possible measures for the international comparison of the competitive position of Slovak republic.

#### *Organization for Economic Cooperation and Development*

If we would like to get an exact definition of competitiveness according to the OECD, we would have to search for it earlier reports and documents published in the various departments of the OECD. Such definition can be found in the OECD's project focused on the Framework Conditions for Industrial Competitiveness. This document defines competitiveness as "... the capacity of firms, sectors, regions, countries or supranational regions to generate, in an environment exposed to international competition, relatively high factor income and factor employment on a sustainable basis. "

#### *World Economic Forum*

World Economic Forum (WEF) since 1979 publishes the annual Global Competitiveness Report, which is one of the most comprehensive sources of information on comparative advantages, weaknesses and opportunities of economies around the world. The Global Competitiveness Report for 2009/2010 defines the concept of competitiveness as "... set of institutions, policies and factors that determine a country's level of productivity. The level of productivity then predetermines a sustainable level of prosperity that can be achieved by the economy." In other words, more competitive economies can produce higher revenues for its citizens. The most important fact in this context is the identification of productivity as a source of competitiveness.

#### *Institute for Strategy and Competitiveness at the University of Harvard*

A report prepared for the Council on Competitiveness by Michael Porter (Porter, 2007), which was dedicated to the understanding of competitiveness and its causes, defined the aim of competitiveness as the prosperity of nations, or alternatively the per capita standard of living. The aim of various competitiveness policies should therefore be to maximize productivity in order to ensure that production of a certain country will be able to compete in international markets with products of other countries. This will

ultimately ensure a rising per capita standard of living. The main source of long-term prosperity is the productivity with which a country can use its human, financial and natural resources in the production of goods (Porter, 2007).

#### *European Union*

European Union on an annual basis publishes its European Competitiveness Report (ECR). In its 2009 version, competitiveness is directly defined as: "Competitiveness is seen as a sustainable growth in living standards of the country or region at the lowest possible involuntary unemployment rate." The main objective of the ECR is to analyze and evaluate the competitiveness of European countries with emphasis on the examination of productivity as the most reliable indicator of long-term competitiveness. In addition, the 2009 report also says that "competitiveness represents the overall economic performance of a country measured by the country's ability to provide all of its citizens with increase in their standard of living on a sustainable basis and with a broad access to working positions for those who are willing to work."

#### *International Institute for Management Development*

International Institute for Management Development annually publishes the World Competitiveness Yearbook (WCY). It is a comprehensive annual report on the competitiveness of countries published since 1989. WCY provides analysis, comparison, trends, statistics and opinions on the competitiveness of the most economies of the world. WCY analyzes and evaluates how nations manage their competencies and resources to achieve greater prosperity. WCY for the year 2010 states that "competitiveness of the economy cannot be understood only in relation to GDP and productivity, because firms must also overcome political, social and cultural dimensions. Therefore, countries must create an environment with the most appropriate structure, institutions and policies to support business competitiveness." As the definition clearly states, national competitiveness is based according to WCY on microeconomic foundations, but mentions also GDP and productivity as important factors.

### **Understanding of competitiveness in terms of Slovak Republic**

Despite the orientation of Slovak strategic documents on the increasing of the competitiveness of Slovak republic, these documents do not directly define the very concept of competitiveness. However, we can assume that in the preparation process of such important documents the authors considered the most important known concepts and theoretical approaches to competitiveness.

*National Strategic Reference Framework (NSRF)* is the basic document of the Slovak Republic in the field of economic development, competitiveness and innovation for the programming period of 2007 - 2013. Despite the fact that this document is the basic document for the identification of economic and performance priorities of Slovakia, it does not contain a specific and comprehensive definition of competitiveness. The main objective of NSRF is to raise the standard of living of Slovak citizens to progressively and sustainably catch-up on the more advanced Western European countries. Competitiveness is not directly defined, but from the overall context of the document it

is obvious that this term is understood in particular as the ability to achieve economic growth and as Slovakia's ability to successfully place its products in international markets.

The program document for the *Operational Program Competitiveness and Economic Growth* (OP CEG) also does not contain a clear definition of the term competitiveness. The objective of the OP CEG is to maintain and further develop the competitive and effectively producing potential of Slovak industrial production, energetic sector, tourism and other selected services potential. The aim is to contribute to the long-term sustainable improvement of economic performance of Slovakia as a whole and reduce disparities in economic performance across the regions in Slovakia. From this we conclude that competitiveness is understood as the ability to maintain or increase the level of economic growth (performance) SR.

*National Lisbon Strategy - Competitiveness Strategy of Slovakia until 2010* was adopted as an economic strategy of Slovakia until the year 2010. The strategy aimed to make until the year 2010 from the Slovak economy one of the most competitive economies able to catch up as quickly as possible to the living standards of the most European Union countries. The strategy defined that its goals "can be achieved only through rapid and long-term growth." The national government can support economic growth by creating favorable conditions for growth of competitiveness of the economy. The National Lisbon Strategy is based on the Lisbon Treaty, and therefore is focused on the overall goal of the European Union to be "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion."

The understanding of competitiveness in terms of Slovak republic is very important from the view of competitiveness measures analysis. It is important to identify key measures by which the Slovak republic perceives its competitiveness internationally and try to analyze and rank Slovak republic mostly among other European countries for which we can obtain the same type of data.

## **2 COMPETITIVENESS MEASURES**

In this chapter the paper will propose some of the most popular measures of competitiveness analysis and international comparison. First of all, the paper shows the position of Slovak republic and selected European countries from the view of indices constructed to express country competitiveness, namely the Global Competitiveness Index and the World Competitiveness Yearbook country ranking. Consequently, based on the analysis of theoretical approaches to territorial competitiveness and on the analysis of the most important documents concerning the enhancement of the competitiveness and performance of Slovak Republic, we will analyze the position of Slovak Republic among other selected European countries from the view of GDP growth and productivity.

## 2.1 Global Competitiveness Index

The Global Competitiveness Report (GCR) measurement methodology and the expression of competitiveness are based on twelve pillars of competitiveness. These represent various characteristics, which assesses the impact of competition from the view of institutional environment, infrastructure, education, health, macro-economic indicators, market efficiency, innovation and technology, market size and business environment. WEF clearly links competitiveness of a country to an effective institutional environment, effective policies and other factors, and by this combination of factors aims on increasing productivity and consequently the prosperity of a country. Table 1 shows the results of the competitiveness ranking of Slovak republic and other European countries within the European area. The position of each country represents its ranking in comparison to other European countries based on the ranking it achieved in the worldwide context according to the results as obtained by methodology developed by the World Economic Forum. This will show us, where Slovak republic ranks among European countries based on the values of the Global competitiveness index.

**Table 1: Competitiveness position of Slovak Republic and other European countries by the Global Competitiveness Report – European context**

<i>Country/Year</i>	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
<b>Austria</b>	10	9	9	9	10	9	8	8	10	10
<b>Belgium</b>	11	13	16	13	16	11	11	11	11	11
<b>Bulgaria</b>	26	26	28	27	28	30	30	30	30	28
<b>Cyprus</b>	n.a.	n.a.	n.a.	21	18	25	25	17	16	17
<b>Czech rep.</b>	20	21	22	23	20	16	16	16	14	15
<b>Denmark</b>	7	5	3	3	3	4	2	2	3	6
<b>Estonia</b>	17	14	12	10	9	14	14	15	17	14
<b>Finland</b>	1	1	1	1	1	2	5	4	4	4
<b>France</b>	12	17	15	15	15	10	10	10	9	9
<b>Germany</b>	9	7	7	8	8	5	4	5	5	3
<b>Greece</b>	19	19	20	20	25	26	28	28	28	31
<b>Hungary</b>	16	16	19	22	21	23	23	27	25	24
<b>Ireland</b>	5	12	17	16	13	12	12	12	13	13
<b>Italy</b>	15	20	24	26	26	24	22	22	22	22
<b>Latvia</b>	24	22	21	25	24	19	21	25	27	27
<b>Lithuania</b>	23	18	23	19	23	22	17	20	24	21
<b>Luxembourg</b>	n.a.	n.a.	11	14	12	13	13	13	12	12
<b>Malta</b>	n.a.	n.a.	10	17	19	21	26	23	23	23
<b>Netherlands</b>	3	8	6	7	6	6	7	6	6	5
<b>Poland</b>	22	24	26	28	27	27	24	24	20	16
<b>Portugal</b>	14	11	14	12	11	18	19	19	19	20
<b>Romania</b>	25	27	29	30	30	29	29	29	26	26
<b>Slovak rep.</b>	<b>21</b>	<b>23</b>	<b>25</b>	<b>24</b>	<b>22</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>21</b>	<b>25</b>
<b>Slovenia</b>	18	15	18	18	17	17	18	18	18	19
<b>Spain</b>	13	10	13	11	14	15	15	14	15	18
<b>Sweden</b>	4	2	2	2	2	3	3	3	2	2
<b>UK</b>	6	6	8	6	7	7	6	7	7	7
<b>Croatia</b>	n.a.	25	27	29	29	28	27	26	29	29
<b>Macedonia</b>	n.a.	n.a.	30	31	31	31	31	31	31	30

Norway	2	4	5	4	5	8	9	9	8	8
Switzerland	8	3	4	5	4	1	1	1	1	1

*Source: Own, data from Global Competitiveness Reports 2002 - 2011.*

The table shows, that Slovak Republic ranks somewhere in the range from 20<sup>th</sup> to 25<sup>th</sup> position. This shows both a narrow interval and the consistency in competitiveness ranking of SR. On the other hand, we can view the most recent ranking from the year 2011 as a negative fact. The figure for the year 2011, as being the most recent one, should best describe the actual competitiveness position of SR within Europe. Therefore, it is unpleasant to say, that from the view of Global Competitiveness Index this is the worst ranking of Slovak republic among European countries so far. If we compare the position of SR among all countries in the world to the position of Slovak republic exclusively only among the selected group of other European countries we can see similar trends but with a smoother development in the case of EU ranking. The world ranking shows that the changes in the position among the whole world are more dramatic than in the case of changes in the European area viewpoint.

## 2.2 World Competitiveness Yearbook

The International Institute for Management Development (IMD) through its World Competitiveness Center (WCC) has for a long period been a pioneer in the field of competitiveness of nations and enterprises. It is dedicated to the advancement of knowledge on world competitiveness by gathering the latest and most relevant data on the subject and by analyzing the policy consequences. The WCC conducts its mission in cooperation with a network of 54 partner institutes worldwide and provides various stakeholders in the field of national competitiveness with its World Competitiveness Yearbook, special country/regional competitiveness reports and workshops on competitiveness. In this paper, we will focus on the World Competitiveness Yearbook (WCY), where we can find, on an annual basis, the ranking of world economies according to their competitiveness as estimated by the IMD.

As in the case of Global Competitiveness Report, also in the case of World Competitiveness Yearbook we analyze the ranking of Slovakia purely in the context of other European countries. So again, the ranking each country achieved by WCY is used to rank the country among other European countries (Table 2).

**Table 2: Competitiveness ranking of Slovak Republic and other European countries by the World Competitiveness Yearbook – European context**

Country/Year	2007	2008	2009	2010	2011
Austria	6	8	9	7	9
Belgium	13	13	12	12	11
Bulgaria	22	21	19	24	24
Croatia	26	26	25	26	26
Czech rep.	16	14	13	13	13
Estonia	12	12	18	15	14



<b>Finland</b>	10	9	4	9	8
<b>Denmark</b>	2	3	2	6	5
<b>Hungary</b>	18	20	22	19	20
<b>Germany</b>	9	10	8	8	3
<b>Greece</b>	19	22	24	21	25
<b>Ireland</b>	8	7	10	10	12
<b>Italy</b>	23	25	23	18	18
<b>Luxembourg</b>	1	2	7	4	4
<b>Lithuania</b>	15	18	14	20	19
<b>Portugal</b>	20	19	17	17	17
<b>Poland</b>	25	23	21	14	15
<b>Netherlands</b>	4	5	5	5	7
<b>Norway</b>	7	6	6	3	6
<b>Slovenia</b>	21	16	15	23	23
<b>Slovak rep.</b>	<b>17</b>	<b>15</b>	<b>16</b>	<b>22</b>	<b>21</b>
<b>Romania</b>	24	24	26	25	22
<b>Switzerland</b>	3	1	1	1	2
<b>Sweden</b>	5	4	3	2	1
<b>Spain</b>	14	17	20	16	16
<b>UK</b>	11	11	11	11	10

*Source: Own, data from World Competitiveness Yearbooks 2007-2011.*

In the analyzed period, the position of Slovak republic among other European countries according to the methodology of WCY has been a little better if compared to the Global Competitiveness Report. The best position, 15<sup>th</sup> best rank in Europe, was achieved in the year 2008. Unfortunately, since this year up to the most recent ranking, the position has dropped 5 ranks. We can also identify different development trends in the two methodologies. While the GCR ranking shows more consistent development, the WCY ranking shows a declining trend in the position of Slovakia. As can be seen from the table above, the position started out around the 16<sup>th</sup> rank, but has dropped in recent years below the 20<sup>th</sup> rank.

### **2.3 Economic growth**

Many of the theoretical approaches, international organizations methodologies and strategic documents of Slovak republic show that one of the main features perceived to enhance the overall competitiveness of a country as a whole is the ability of the particular country and its economy to achieve growth of its economic performance. Therefore, this chapter will focus on the measure of GDP growth and will analyze the competitiveness position of Slovak republic in the European context from this viewpoint. The analysis will be carried out at the country level as well as regional level (NUTS 2). The aim is to identify the position of the Slovak republic in Europe not only as a country, but also in terms of its regions. This analysis was not possible in the case of the competitiveness indices presented in the previous chapter and can show a more

detailed breakdown with the aim to identify the driving regions of Slovak competitiveness.

### 2.3.1 GDP growth ranking – EU country level

First, let us analyze the competitive position from the view of GDP growth, of Slovak republic among other European countries based on data from the national level. In this case we see on the next table that Slovakia places as the 35<sup>th</sup> country in Europe in the year 2000 and from this point continuously rises up to the achievement of the absolutely best position in the year 2007. Since 2007 we can see a decline in the position, and thus the decline of competitiveness from the viewpoint of its ability to achieve economic growth. In the period from 2002 to 2008, Slovak republic has almost always placed among the 10 best countries (with the exception of the year 2004), meaning it achieved one of the 10 best GDP growth rates in Europe. But, in the year 2009, mostly due to the consequences of the shift of the economic crisis from USA to Europe, Slovakia has dropped from the 5<sup>th</sup> best position to the 26<sup>th</sup> position in 2009 and 24<sup>th</sup> in 2010.

**Table 5: Ranking of European countries according to GDP growth.**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Austria	25	33	23	26	28	26	25	20	13	15	12
Belgium	23	31	26	27	24	32	30	27	21	11	10
Bulgaria	7	10	9	7	9	8	9	10	4	23	26
Croatia	21	14	8	8	20	15	16	16	14	25	30
Czech rep.	26	20	21	14	14	9	8	11	12	17	9
Denmark	28	32	29	28	30	27	26	33	31	20	11
Estonia	2	1	1	2	8	2	2	5	35	33	13
Finland	8	21	22	21	21	23	19	15	23	31	7
France	24	25	27	25	27	31	31	32	29	10	16
Germany	32	28	34	32	34	34	28	30	22	18	5
Greece	13	9	15	6	16	28	14	18	20	7	32
Hungary	5	11	11	12	12	19	35	35	25	27	22
Iceland	16	13	32	18	5	6	18	13	19	28	31
Ireland	1	5	4	11	13	10	12	14	33	29	29
Italy	22	26	30	30	33	35	33	34	32	21	19
Latvia	4	2	5	3	2	1	1	2	34	35	28
Lithuania	30	3	3	1	7	4	7	4	10	34	18
Luxembourg	3	18	12	23	15	12	15	9	18	13	6
Netherlands	18	24	33	29	31	30	27	19	16	16	14
Norway	29	22	24	24	22	24	32	28	26	5	25
Poland	17	29	25	13	10	20	10	8	7	1	4
Portugal	19	23	28	34	32	33	34	31	27	9	17
Romania	33	6	6	9	3	16	6	12	2	32	23
<b>Slovak rep.</b>	<b>35</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>11</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>26</b>	<b>24</b>
Slovenia	15	17	13	16	17	14	11	7	9	30	21

Spain	10	15	16	15	23	21	22	23	24	14	27
Sweden	14	27	18	20	18	22	20	25	30	22	3
Switzerland	27	30	31	31	29	25	24	22	15	6	8
UK	20	19	20	17	26	29	29	29	28	19	20

Source: Own, data from World Bank.

### 2.3.2 GDP growth ranking - EU regional level

When we break down the analyzed territory into regions, we can see only figures up to the year 2008, as the last available in the time of the analysis execution. However, the position of Slovak republic is still good. Since the year 2003, Slovak republic has always had one or more regions in the top 10 regions with the highest GDP growth among all of the 243 analyzed regions in Europe. In the year 2003, the SK 02 region, Western Slovakia, had the highest GDP growth rate in Europe. If not only focusing on top regions, we can also state a positive fact that none of the Slovak regions has ever in the entire analyzed time period placed in the bottom 10 places among all of the regions. The worst position was achieved by the SK02 region in the year 2001. But, as already mentioned, this region went in two year from the 121<sup>st</sup> place to the 1<sup>st</sup> place.

Also a very interesting fact is that we can see a shift in the recent years, as the more advanced regions of Slovak Republic, namely SK01 and SK02 are being overran by the less developed regions of Center Slovakia (SK03) and Eastern Slovakia (SK04). This can be a positive fact also in the efforts in the field of regional disparities reduction.

**Table 6: Ranking of European regions according to GDP growth.**

Rank	2000	2001	2002	2003	2004	2005	2006	2007	2008
1	RO32	HU32	HU10	SK02	RO22	RO32	RO42	LV00	NL11
2	LV00	HU10	PT30	GR41	RO31	RO31	RO12	RO11	RO32
3	PL61	PL12	CZ02	RO41	RO42	RO42	LV00	RO32	PL33
4	RO12	PL34	HU33	SK01	SK02	RO11	RO41	RO12	SK04
5	PL41	RO21	HU22	GR21	RO32	RO12	RO31	RO42	SK03
6	PT30	HU31	CZ01	EE00	RO11	RO21	RO32	RO21	PL32
7	PL34	FI20	HU23	GR14	SK01	PL12	RO11	RO41	PL31
8	LT00	GR41	HU31	SK03	RO41	RO22	SK02	SK01	PL52
9	PL21	PL31	CZ04	GR22	CZ08	RO41	RO22	SK03	PL22
10	PL42	RO42	HU32	SK04	PL52	SK01	EE00	RO31	CZ06
12					SK04			SK04	
13							SK03	SK02	
14					SK03				
16			SK01						
18	SK01								
21			SK03						
22									SK02
25							SK04		SK01

28			SK04						
34						SK02	SK01		
36			SK02						
37	SK03								
41	SK04								
42						SK04			
47	SK02	SK04							
60		SK03							
70						SK03			
98		SK01							
121		SK02							
234	DE80	UKG2	PL61	PL11	DE12	UKL2	DEA1	DEF0	UKD5
235	DE30	SE32	RO41	PL31	DE92	DE24	GR11	DE60	UKH3
236	DE91	UKD1	PL43	PL22	DE93	DEA2	UKJ4	ITG1	UKH1
237	GR11	SE23	PL31	PL51	NL12	UKD1	DE60	SE32	UKM2
238	FI20	SE33	PL12	PL63	DE73	DE25	UKH2	PT30	UKE1
239	GR14	SE12	UKC1	PL43	NL13	DE11	HU32	FR62	UKF1
240	GR12	SE21	PL42	PL61	GR41	UKE2	HU33	UKG1	UKJ2
241	GR41	SE22	PL52	PL34	DE11	UKC1	HU23	DE92	UKE3
242	GR13	SE11	DE91	PL52	ITF1	SE21	HU31	SE33	UKG3
243	GR24	SE31	PL41	PL42	DE30	UKF3	HU21	NL11	UKI2

Source: Own, data from Eurostat.

## 2.4 Productivity

Unlike GDP, in which case it is not possible to compare countries and their using absolute values of the reference indicator, the indicator of productivity enables to analyze country competitiveness based on absolute, as well as relative (growth rates), values. In this paper we will use both absolute and growth values of productivity to establish the competitiveness position of Slovak republic within the European area.

Productivity will be represented by total labor productivity - gross domestic product per employee. The goal of each country should be to maximize this indicator, in order to achieve long-term economic growth. Productivity therefore clearly represents the degree of competitiveness of a country. Increasing productivity represents intensive and qualitative growth and therefore the achievement of an advantage over other countries. As in the case of GDP growth evaluation, also for productivity measures we will analyze both national and regional levels.

### 2.4.1 Productivity ranking – EU country level

Table 7 shows the position of Slovakia in European context from the view of absolute values of productivity. Since the year 2000 Slovak republic has constantly placed around the 23<sup>rd</sup> position. This shows consistency, but also a low ranking of Slovakia. Since productivity is a measure enabling to compare countries in absolute values, we can see that in this sense there are still many countries with competitiveness higher than Slovak republic. A positive fact is that in the years 2007 and 2008 Slovakia has achieved the best position so far. These figures, however, are not the most recent due to insufficient statistical data in the time of analysis realization, so we cannot make any stronger assumptions and state a positive development trend.

**Table 7: Ranking of European countries based on absolute values of productivity**

Country Name	2000	2001	2002	2003	2004	2005	2006	2007	2008
Austria	10	10	9	9	8	9	9	9	9
Belgium	2	2	3	3	3	3	3	3	2
Bulgaria	31	31	31	31	31	31	31	31	31
Croatia	28	26	27	26	28	29	29	30	30
Czech Republic	26	28	28	29	29	28	27	27	27
Denmark	9	9	10	10	10	10	10	10	11
Estonia	21	19	18	17	17	16	15	14	15
Finland	8	8	8	7	7	7	6	7	7
France	3	3	4	4	4	4	4	4	3
Germany	15	13	13	13	14	15	14	15	16
Greece	19	18	19	18	18	18	18	18	18
Hungary	27	27	26	27	27	27	28	29	29
Iceland	16	16	16	14	13	13	13	13	13
Ireland	4	4	2	1	1	1	2	2	1
Italy	6	6	6	8	11	11	11	12	12
Latvia	24	24	24	24	24	24	23	23	24
Lithuania	29	29	29	28	26	25	25	25	26
Luxembourg	1	1	1	2	2	2	1	1	4
Netherlands	11	11	12	12	12	12	12	11	10
Norway	5	5	5	5	5	5	5	5	5
Poland	25	25	25	25	25	26	26	28	28
Portugal	22	22	22	22	22	22	22	24	23
Romania	34	34	33	34	34	34	34	34	34
<b>Slovak Republic</b>	<b>23</b>	<b>23</b>	<b>23</b>	<b>23</b>	<b>23</b>	<b>23</b>	<b>24</b>	<b>22</b>	<b>22</b>
Slovenia	20	21	21	20	19	19	19	19	19
Spain	13	14	14	16	16	17	17	17	17
Sweden	12	12	11	11	9	8	8	8	8
Switzerland	14	15	15	15	15	14	16	16	14
United Kingdom	7	7	7	6	6	6	7	6	6

*Source: Own, data from World Bank.*

When we switch our focus from absolute values of productivity to its growth rates, we can see an entirely different position and development for Slovak republic. If we perceive competitiveness of a country not only by its ability to achieve a high level of productivity, but also a high productivity growth rate in order to stay ahead of its competitors, we can identify a much more pleasant position of Slovakia. In this case Slovakia belongs to the leaders within Europe. The worst position for Slovakia was the 13<sup>th</sup> place in 2001, with most of other years being in top 10 best countries. Especially positive is the position in 2007, where in absolute values Slovak republic was only the 22<sup>nd</sup> best country in Europe, but in the case of productivity growth in this year Slovakia was the absolutely best country. In the last of the analyzed years the position has slightly dropped, but Slovakia still remains among the best countries.

**Table 8: Ranking of European countries based on productivity growth.**

Country Name	2000	2001	2002	2003	2004	2005	2006	2007	2008
Austria	13	24	15	28	14	29	29	28	22
Belgium	25	30	17	24	25	30	22	23	25
Bulgaria	4	8	10	19	16	12	13	9	6
Croatia	33	2	22	10	22	13	7	18	14
Czech Republic	8	16	20	9	12	6	8	10	8
Denmark	16	28	27	22	21	21	24	34	31
Estonia	1	4	4	5	6	4	9	6	32
Finland	17	20	25	21	19	22	12	15	26
France	29	23	28	23	24	24	25	29	20
Germany	28	21	26	26	32	28	19	25	23
Greece	14	9	21	13	17	18	14	12	9
Hungary	9	10	9	14	9	11	11	19	10
Iceland	22	15	18	17	5	10	33	32	7
Ireland	7	12	11	15	27	27	27	16	30
Italy	26	27	34	33	31	32	30	31	29
Latvia	2	6	6	6	7	1	3	3	33
Lithuania	3	1	12	3	8	7	6	4	4
Luxembourg	18	32	24	30	23	16	16	24	34
Netherlands	27	25	33	25	20	19	23	22	19
Norway	19	18	23	18	18	20	34	33	27
Poland	5	11	8	8	13	25	15	14	17
Portugal	24	22	30	29	30	26	28	17	24
Romania	32	5	1	7	3	5	4	5	3
<b>Slovak Republic</b>	<b>12</b>	<b>13</b>	<b>7</b>	<b>11</b>	<b>10</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>5</b>
Slovenia	15	14	13	12	15	9	10	8	18
Spain	31	26	31	31	34	34	31	27	11
Sweden	23	31	14	16	11	14	17	30	28
Switzerland	21	29	32	27	26	17	26	21	16
United Kingdom	20	19	19	20	28	23	18	11	13

*Source: Own, data from World Bank.*

If we analyze the trend in the development of the competitive position of Slovak republic from the view of productivity measures, we can see completely different trends when comparing the position estimated by absolute values of productivity and by productivity growth. The position is almost constant in the case of absolute values of productivity. On the other hand, when analyzing productivity growth rates, we can see that the position of Slovak republic is much more volatile, but still better as in the case of absolute values.



226										
227	SK02							SK03		
228		SK02			SK03					SK04
229							SK04			
230	SK03			SK02			SK03			
231			SK02		SK04				SK04	
232	SK04									
233				SK03						
234	LV00	SK03	PL31	LV00	PL32	LV00	PL32	PL32	PL11	PL33
235	LT00	SK04	SK03	SK04	LV00	PL32	PL33	PL33	RO12	RO42
236	RO32	PL31	SK04	PL31	PL31	PL31	PL31	RO42	PL32	PL32
237	RO42	RO12	RO42	RO42	RO42	RO42	RO42	PL31	PL33	RO12
238	RO12	RO42	RO12	RO12	RO12	RO12	RO12	RO12	RO11	PL31
239	RO22	RO22	RO22	RO11	RO11	RO11	RO11	RO11	PL31	RO11
240	RO11	RO11	RO11	RO22	RO22	RO22	RO22	RO22	RO22	RO22
241	RO31	RO31	RO31	RO31	RO31	RO31	RO31	RO31	RO31	RO31
242	RO41	RO41	RO41	RO41	RO41	RO41	RO41	RO41	RO41	RO41
243	RO21	RO21	RO21	RO21	RO21	RO21	RO21	RO21	RO21	RO21

Source: Own, data from Eurostat

Table 10: Ranking of European regions according to productivity growth

Year/ Rank	2000	2001	2002	2003	2004	2005	2006	2007	2008
1	PL22	FR83	HU10	RO41	RO22	RO32	RO41	RO11	NL11
2	RO32	PL41	HU33	RO42	HU21	RO31	RO42	RO12	RO32
3	FR83	PL51	RO11	FR41	RO41	RO42	RO21	RO32	PL43
4	LV00	PL32	HU23	GR41	RO31	RO11	ES63	LV00	PL33
5	PL51	PL11	RO31	SK02	RO42	RO21	RO12	RO41	PL41
6	LT00	HU10	RO21	HU22	RO11	RO12	RO31	RO22	PL31
7	PL42	PL12	CZ04	RO12	SK01	PL12	RO11	RO42	CZ07
8	PL34	PL33	HU32	GR21	SK04	RO22	UKD1	RO21	SK04
9	PL63	PL34	RO22	SK03	SK03	RO41	GR42	SK03	PL61
10	PL12	PL52	PT30	RO11	HU31	PL61	LV00	SK01	CZ06
11				SK01			SK02		SK03
12								SK02	
13					SK01				
14								SK04	
15									
16			SK01		SK02				
18	SK03								
21	SK04								SK01
23	SK01								
24	SK02								
25			SK03						
28							SK03		SK



										0
										2
34		SK02								
37		SK04			SK02					
39								SK01		
42					SK04					
50		SK04								
56		SK03								
58		SK01								
65								SK04		
100					SK03					
126		SK02								
234	GR11	FR43	NL12	PL22	UKK3	DE22	FR21	BE31	UKK4	
235	GR14	SE32	PL31	UKL1	ITF1	UKD1	DEA1	FR61	UKM2	
236	FR63	SE12	DE91	PL32	ITF5	DE13	HU23	FR81	UKH2	
237	FR62	SE23	UKC1	PL43	UKD1	DEF0	DE91	SE32	UKH1	
238	GR12	SE31	DE13	UKL2	FR83	DE94	DE60	DE50	UKK2	
239	ES63	SE33	UKK4	PL42	ITF3	UKF3	HU33	FI20	UKE2	
240	GR13	SE21	GR24	PL41	ITF6	DE11	HU32	DE92	UKI2	
241	GR24	SE11	FR21	FR25	ITD2	FR41	HU31	SE33	UKJ2	
242	FI20	SE22	PL32	FR26	GR41	DE80	HU21	FR82	UKF1	
243	GR41	DE30	FR81	FR83	ITG2	DEA2	FR83	NL11	UKF3	

Source: Own, data from Eurostat.

Table 9 shows the absolute values of productivity ranking on regional level in the EU. From the table we can see an unpleasant state of the regional level in Slovakia. Not even the SK01 region, the region represented by the most developed and capital city in Slovakia – Bratislava, can be viewed from this perspective as competitive within Europe. All of the other regions achieve lower absolute values of productivity than the SK01 and none of the Slovak regions is even in the upper half of the ranking. The best position was achieved in the 2008 by the SK01 region, but it was only the 162<sup>nd</sup> position among all of the 234 regions. What is positive though, is the development trend of productivity values. Despite a bad position, all of the regions are slowly improving their position. Even the least developed regions in Slovakia, the SK03 (Central Slovakia) and SK04 (Eastern Slovakia), have left the group of the worst 10 regions that they achieved in the period 2000 – 2002, and are constantly rising in the ranking.

A completely different situation of Slovak regions among other European regions is from the view of productivity growth comparison. In this ranking there has never been, for the entire analyzed period, a Slovak region that would place in the last 10 places of the ranking. The worst period was in the years 2000 – 2002, where Slovak republic had no regions in the 10 best ranks or at least near these ranks. Since 2003, some of the Slovak regions have always been ranked either among the 10 best regions in productivity growth, or have placed just outside this group. What is more important, not like in the case of absolute productivity values, in case of productivity growth characteristic not only the most developed region (SK01) has placed among the best regions in Europe, but also the less developed regions of Slovakia are achieving productivity growth that ranks them among the best regions.

## CONCLUSIONS

What competitiveness measure is the best one? What measure should the Slovak republic focus on in order to exactly identify factors of competitiveness and support their positive development? These are the questions the paper aimed to help formulate answers to by providing a preview of theoretical background of territorial competitiveness and ranking of European countries according to various competitiveness measures. In order to fully interconnect the analysis to the conditions in Slovak republic, the paper analyzed the most important strategic documents in Slovakia and in each analysis it considered mainly the position of Slovak republic.

As the analysis identified, strategic documents of Slovak republic do not directly define the term competitiveness. They only state various factors on which to base long-term competitiveness of Slovakia, but do not link them into a comprehensive definition of description of the concept of competitiveness. However, the overall understanding and focus of the strategic documents shows that the attention is given to economic performance factors – economic growth and productivity. These measures were therefore selected to analyze the competitiveness position of Slovak republic in Europe. The other two used measures, ranking by World Economic Forum and the International Institute for Management Development, are to a high extent more qualitative measures taking various broader factors into consideration, such as political situation, law system, administration, environment, etc. On the other hand, the economic measures can simply and effectively identify the actual state of country performance and provide a quantitative comparison to other countries.

From the analysis of the selected competitiveness measures we can see different results of the Slovak republic ranking. The best overall position is in the case of economic growth, followed by the measures of productivity. As for the regional aspect, only two of the four measures allowed analysis to be conducted on regional level. It was the case of GDP growth and productivity. From the view of these two measures, we can see, that Slovak republic is ranked better in the case of GDP growth. In case of absolute productivity values is the position worst, with even the best regions not competitive enough to rank at least in the upper half of the overall ranking (among the better 50% of the regions). A better position can be concluded for productivity growth ranking. In this ranking, in the most recent years at least some Slovak regions rank annually among the best 14 regions in Europe. This can show us that despite lower values of productivity, the higher rate of productivity growth can ensure that Slovak regions can slowly catch-up on the more developed regions in regions.

The field of competitiveness shows high potential for further investigation. Understanding of theoretical foundations and clear definition of the conceptual framework as well as identification of competitiveness factors is a crucial part in preparation of development policies on national and/or regional level in order to support overall territorial development. We hope that this paper helped to cast some

light on the issue of competitiveness measures and provided the reader with an insight into the position of Slovakia from various perspectives of competitiveness analysis.

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