

## **POSITION OF THE CZECH REPUBLIC IN COMPETITIVENESS RANKINGS**

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### **Abstract**

Competitiveness of the Czech economy as a whole follows from enterprises' ability to identify, apply and create the competitive advantage. In the context of economic recession and the process of globalization, the pace of real convergence of the Czech economy towards the advanced EU economies is influenced by the changed competitive conditions. It is no longer sustainable to rely on applying the formerly traditional competitive advantage of Czech exporters based on lower costs. Czech economy is being stimulated by global changes to searching sources of competitive advantage in qualitative intensive production. Assumptions and real effects of changes in companies' behaviour with the aim to maintain and gain the competitive advantage are connected with innovative behaviour of all economic subjects, or with innovative potential of the economy. The first aim of this article is to reflect on the methodology used in assessment of competitiveness of the economy based on international comparison (we focus on three rankings: World Competitiveness Yearbook, Global Competitiveness Report, European Innovation Scoreboard). The second aim is to describe the recent competitive position of the Czech economy and to identify strengths and weaknesses of the Czech Republic resulting from these international rankings.

**Key words:** competitiveness, innovation performance, international comparison

**JEL Code:** E20, O11, O30

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### **Introduction**

In the first part of this paper we mention difference between the traditional concept of competitiveness and global competitiveness with regard to the roles of firms and national states. Then we will focus on the methodology of three most frequently mentioned international comparisons of competitiveness (World Competitiveness Yearbook, Global Competitiveness Report, European Innovation Scoreboard) and on the current position of the Czech Republic according to these comparisons.

The competitiveness of firms is characterized as the ability to continually reach growth in productivity, which means to achieve higher output with limited inputs of labour and capital. The competitiveness of firms is reflected in acquiring, maintaining and increasing national and international market share. According to the OECD definition competitiveness of national economies is defined by the ability to produce goods and services that will stand the test of international competition, and at the same time by the ability to maintain or increase GDP. In the broader concept competitiveness can be characterized as a set of preconditions for achieving sustainable growth performance of the economy, thereby even increasing the economic level in terms of internal and external balance.

The specific ranking of countries according to competitiveness can be seen as a way to assess the country's future economic potential and opportunities for its further development and growth. In international studies, there is therefore a tendency to capture the future economic consequences of non-economic activities, decisions and policies which determine long-term growth of countries, therefore, to assess how the company cares about the environment, which is critical for the proper function of the economic sphere. The methodological problems (which indicators choose, what weight attribute to them, etc.) results from the facts mentioned above, using of soft data based on impressions of the respondents need not objectively describe the state of the economy. The other problem follows from differences between competitiveness of firm and competitiveness of national state. While competitors in the traditional sense are enterprises and it results in more demanding conditions for the activities of the enterprise sector, a prerequisite for success in the global competition for competitiveness is to adapt states to the requirements of multinational companies (low taxation, investment incentives, etc.) and pressure on public finances connected with it. „Competitiveness is basically in all multi-criterial evaluations of the country's attractiveness to global operating investors ... both the choice of indicators and the manner of their implementation express the ideas, wishes and requirements of the business sphere, especially of foreign investors towards the nation states ....“ (Klvačová, 2008). So the question is whether an excessive emphasis on the best possible position of the country in these rankings is consistent with the overall long-term prosperity of the economy measured not only by increasing GDP per capita, but also by a satisfactory state of public finances and social and political stability.

## **1 Competitiveness of the Czech Republic in international comparison**

Three major competitiveness charts, which we are going to compare (World Competitiveness Yearbook, the Global Competitiveness Report, European Innovation Scoreboard), differ in the level of utilization of hard and soft data and their weights during the construction of aggregate indicators of competitiveness. While the WEF relies more on questionnaires (four fifths of individual parameters), the IMD uses only one third of the indicators based on the results of surveys. The reason for the diversity of approaches is the absence of a clear consensus on the importance of individual factors and their impact on competitiveness.

### **1.1 World Competitiveness Yearbook**

Evaluation of countries' positions in the concept of the International Institute for Management Development (IMD) is based on the 327 criteria – two-thirds hard (statistical) data are observed and one-third of the data is obtained through surveys. Ranking of 58 countries is specified on the basis of evaluating quality of environment for domestic and global competitiveness of companies operating in the economy. World Competitiveness Yearbook (World Competitiveness Yearbook – WCY) is published since year 1989.

Criteria, that enables to evaluate the competitive position of the country, are divided into the following four groups:

**1. *The economic performance of the domestic economy*** - characterized on the basis of the evaluation criteria, describing the domestic economy (size, growth, wealth, developmental prognosis).

The evaluation of economic performance is based on the following assumptions: the current prosperity of the country is a reflection of the previous economic performance, market competition improves economic performance, stronger competition in the domestic economy determines the competitiveness of domestic companies abroad, the success of countries in international trade results from the competitiveness of domestic firms, openness to international economic activities improves the economic performance, international investment allocate economic resources more efficiently, export-based competitiveness is linked to the growth orientation of domestic economy.

**2. *Government Effectiveness*** - characterized on the basis of evaluation of criteria (public finance, fiscal policy, institutional framework (central bank, the state's effectiveness, justice, security), business legislation (openness, regulation of the competition, labour market and

capital market). Following recommendations are essential for a favourable evaluation of the effectiveness of government - state intervention in the corporate sector should be minimized, the government should create predictable macroeconomic and social conditions, thereby reduce external risks for businesses. The government should flexibly adapt the economic policy to changes in international environment, provide adequate, affordable educational opportunities of a high quality and support the development of knowledge-based economy.

**3. Efficiency of enterprises** - characterized on the basis of the evaluation criteria, describing the firms' productivity and quality of the labour market, the quality of the financial sector (the efficiency of banks, stock market, and company's own financial resources), management practices, impact of globalization.

**4. Infrastructure** - characterized on the basis of the evaluation criteria, describing the basic, technological, scientific infrastructure, health and the environment, value system of society.

The Table 1 shows the changes in the evaluation of the Czech Republic in the last five years (IMD, World Competitiveness Yearbook 2011).

**Tab. 1: Competitiveness of the Czech Republic**

<i>Key Factors of Competitiveness (rank)</i>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Overall Competitiveness</b>	28	32	28	29	29
<b>Economic Performance</b>	23	29	20	25	29
<b>Government Efficiency</b>	29	41	33	31	33
<b>Business Efficiency</b>	30	36	34	36	40
<b>Infrastructure</b>	25	27	24	25	26

Source: World Competitiveness Yearbook , 2011

The table shows that compared with the previous year a deterioration in the position of the Czech Republic occurred in all four dimensions of competitiveness of the countries. The availability of basic infrastructure, a relatively stable currency, the price level development and participation in international trade can be referred as relative strengths of the Czech Republic in the last two years according to the evaluation of the IMD. Weak points are identified primarily in government and enterprises' efficiency - particularly in the slow pace of economic and social reforms and the restricted access to external sources in the financial markets.

## **1.2 Global Competitiveness Report**

Global Competitiveness Report (Global Competitiveness Report - GCR) ) is published annually by the World Economic Forum (World Economic Forum - WEF). The annual report

of competitiveness increasingly works with soft data, which allows us to watch more countries than in the World Competitiveness Yearbook. In the current issue of the report 139 countries are evaluated on the basis of 111 qualitative and quantitative indicators describing the macroeconomic and microeconomic factors of competitive advantage. Values of individual indicators are ranging from 1 (worst) to 7 (best result). These indicators are grouped into 12 categories (pillars). Positive results in the group of factors identified as essential prerequisites (requirements) are a prerequisite for positive results in the group called efficiency enhancers and innovative factors. The evaluated countries are divided into three groups → the criterias for dividing the countries are: GDP per capita and the share of exports of primary products in total exports (see Table 2). Different economic performance of compared countries is reflected in the calculation of the index in the different weights assigned to three groups of factors of competitiveness (see Table 3).

**Tab. 2: Income tresholds for establishing stages of development**

<i>Stage of development</i>	<b>GDP per capita (in USD)</b>
<b>Stage 1: factor driven</b>	< 2,000
Transition from stage 1 to stage 2	2,000-3,000
<b>Stage2: Efficiency driven</b>	3,000-9,000
Transition from stage 2 to stage 3	9,000-17,000
<b>Stage 3: Innovation driven</b>	> 17,000

Source: WEF – The Global Competitiveness Report 2010-2011

**Tab. 3: Weights of the free main subindexes at each stage of development**

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

Source: WEF – The Global Competitiveness Report 2010-2011

The Czech Republic is in terms of GDP and the share of exports of primary products in total exports included among the economies driven by innovation. In 2010, the Czech Republic ranked on the 36th location of the 139 countries under comparison, which means a deterioration of 5 bars compared to 2009. In terms of individual groups of factors of competitiveness the best relative position of the Czech Republic is in the field of higher

education – 24th place - and the Innovation (27th place, 25th place in previous year), the worst location in the field of pillars has been achieved in the evaluation of the quality of institutions – 72nd position. From the individual indicators a competitive advantage can be seen in the level of higher education (24th place) and labour market efficiency (33rd place).

The best position on the level of individual indicators determination competitiveness of the economy "pulled by innovation" was recorded in the evaluation of mathematics and science education's quality - Quality of Math and Science Education (25th place), but there is necessary to mention the deteriorating trend.

From the perspective of international comparisons these are also positively evaluated: local availability of research and training services (17th place), capacity for innovation (24th place) a quality of scientific research institution (21st place). On the contrary, the relatively weakest part is the institutional environment - (72nd position in 2010 - a deterioration of 10 bars compared with the previous year), in which other factors play an important role: the barriers imposed by government regulations (118th place), favouritism in decisions of government officials – 121st place, insufficient transparency of government policy (102nd place), and the factor resulting from all public trust of politicians which puts the Czech Republic on the 121st position among compared countries.

The following figure taken from the Global Competitiveness Report summarizes the current evaluation of the position of the Czech Republic by the Global Competitiveness Index<sup>1</sup>.

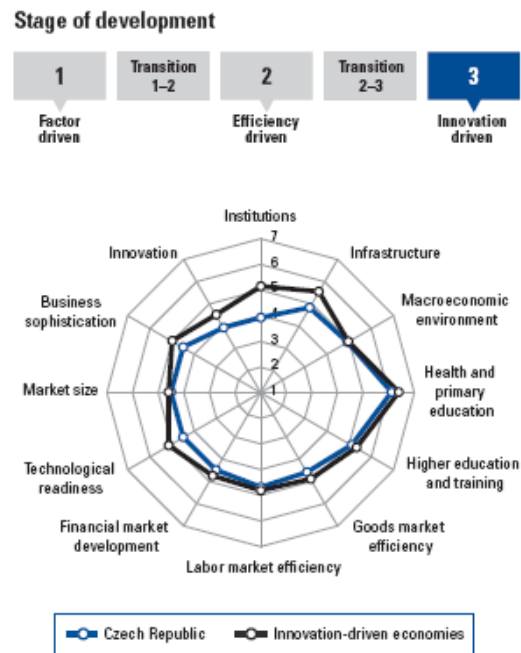
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<sup>1</sup> National Economic Council of the Government based even the final report Framework for a Strategy of competitiveness of the Czech Republic on the WEF's competitiveness evaluation methodology (WEF, 2011). In the so-called pyramid of competitiveness, the individual pillars are used and arranged so that the determination of indicators, included in an effective and innovative sub-index by quality of factors included in the sub-indices of basic assumptions, is obvious - the basic assumptions are placed at the bottom of the pyramid. Colour coding indicates the success of the Czech Republic in this area.

**Fig. 1: Global Competitiveness Index –rank of the Czech Republic**

**Global Competitiveness Index**

	Rank (out of 139)	Score (1–7)
<b>GCI 2010–2011</b> .....	<b>36</b>	<b>4.6</b>
GCI 2009–2010 (out of 133).....	31	4.7
GCI 2008–2009 (out of 134).....	33	4.6
<b>Basic requirements</b> .....	<b>44</b>	<b>4.9</b>
1st pillar: Institutions.....	72	3.9
2nd pillar: Infrastructure.....	39	4.8
3rd pillar: Macroeconomic environment.....	48	4.9
4th pillar: Health and primary education.....	43	6.1
<b>Efficiency enhancers</b> .....	<b>28</b>	<b>4.7</b>
5th pillar: Higher education and training.....	24	5.1
6th pillar: Goods market efficiency.....	35	4.6
7th pillar: Labor market efficiency.....	33	4.7
8th pillar: Financial market development.....	48	4.5
9th pillar: Technological readiness.....	32	4.5
10th pillar: Market size.....	42	4.5
<b>Innovation and sophistication factors</b> .....	<b>30</b>	<b>4.2</b>
11th pillar: Business sophistication.....	34	4.5
12th pillar: Innovation.....	27	3.9



Source: WEF – The Global Competitiveness Report 2010-2011

**1.3 Innovation Union Scoreboard**

The main tool for international comparison of innovation environment and innovation performance at the level of European countries is considered Summary Innovation Index compiled annually since 2001. Summary Innovation Index actually consists of 25 indicators that are arranged into three main groups (activators, firm activities, outputs) and 8 categories. Considering changes in the methodology (an important change in year 2008 and 2010) and monitored indicators we cannot pronounce definite conclusions about the development of our economy in time.

When constructing the index for year 2010 category “Open, Excellent and Attractive Research Systems“ was newly added to the group of activators and it includes following three indicators:

- International scientific co-publications per million population,

- Scientific publications among the top 10 % most cited publications worldwide as % of total scientific publications of the country,
- Non-EU doctorate students as % of all doctorate students.

The category of innovative activators include human and external financial resources and newly indicators, which measure international competitiveness in Science and Research (see above), too. The category of corporate activities involves inward companies' investments, innovation links, cooperation, entrepreneurship and the protection of industrial property. The group of innovative outputs includes indicators focused on potential great sources of innovations (for example a number of innovating small and medium enterprises) and on economic effects of innovations.

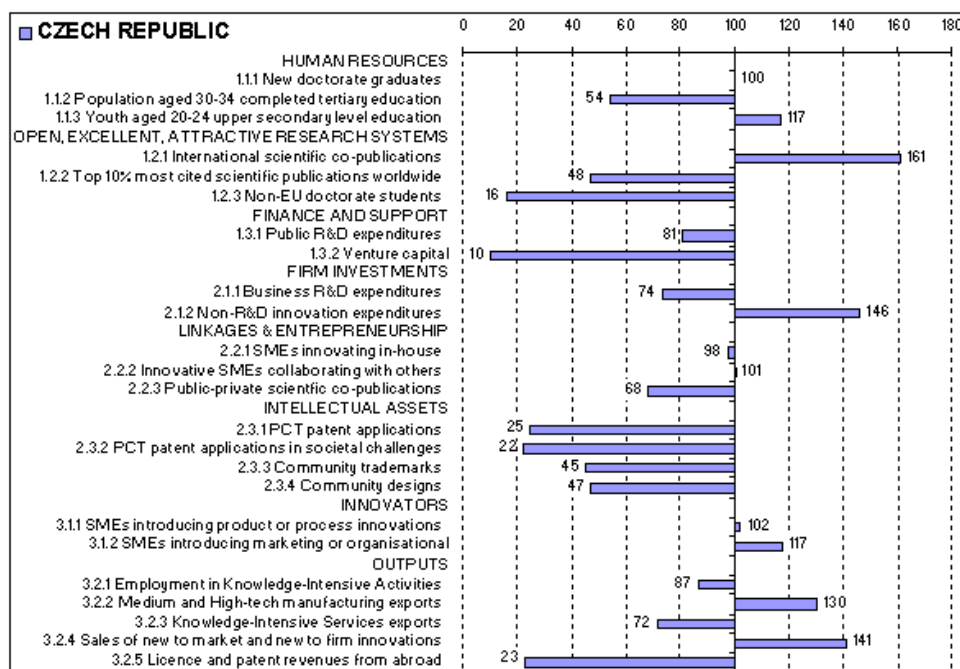
In year 2009 the Czech Republic belonged according to the rating of the dynamics of innovation performance (calculated on the basis of development of particular indicators making up SII in previous five years) with an average annual growth of 4.8% was among the country's well above average (annual average growth of EU-27 amounted to 1.8%), in year 2010 the average annual growth in innovative performance of the Czech Republic is lower - only 2.6%, while an annual average growth of EU countries amounted to only 0.85 %. Reducing the growth rate of innovation performance is caused by the impact of economic crisis on the rated country.

It can be stated that according to the evaluation by the innovation index is the position of the Czech Republic in the EU stable, but slightly below average.

On the fig. 2 there is the position of the Czech Republic in particular components of SII compared to EU 27 average.

**Fig. 2: Indicator values CR relative to the EU27 (EU27 = 100 %)**





Source: Innovation Union Scoreboard 2010 (2010), available at : <http://www.proinno-europe.eu/innovation-metrics/page/czech-republic>

According to the fig.2 there are very few indicators, in which CR is average, there are prevailing indicators, which is 60 % or less of the average values. Substandard placement in the area of human resources is determined by a relatively low proportion of population with tertiary education in the total population aged 25-64 years, in the area of funding the lagging behind the EU is determined primarily by very low level of venture capital investments and low volume of commercial loans for businesses. In the field of industrial rights, the Czech Republic is lagging behind primarily due to lower than average number of patent applications at the European Patent Office. On the other hand, there are several indices in which it has an above-average values – it is an interesting fact, that these are indices focused on outputs. In addition to international scientific co-publication a non R&D innovation expenditures, the Czech Republic is above the EU average in evaluation of number of innovators - in the category of small and medium enterprises implementing product or process innovation (102 % of the EU-27 average) and in category of small and medium enterprises implementing marketing or organizational innovation (117 % of the EU average).

The Czech Republic also reached an above-average result in the EU-27 in the category of the economic effects of innovation - especially in the export category of middle high-tech and high-tech products (the proportion of these products in total exports is being evaluated),

and in the category of sale of products - new ones on the market and for the company (141 % EU average).

Above average position of the Czech Republic in the fields of mentioned effects results mainly from the relatively high employment in high-tech and medium high-tech industries as well as from relatively high share of these branches in total export.

## **Conclusion**

The international comparison shows that the Czech economy's advantages include the relatively low level of public sector debt, both education and qualification of the workforce (on the international level, we have an above-average share of employment in the qualification demanding jobs). It is necessary to reflect these advantages in practice, both at government level by an active support of the innovation process and creation of pro-innovation environment, and at the level of the enterprise sector as well.

The innovative potential of the Czech Republic measured by Summary Innovation Index ranks the Czech Republic among moderate innovators. By analyzing the index we can mark weaknesses in the Czech innovation environment, which are mainly on the input side - low levels of intellectual property, insufficient funding of R & D and access to capital. On the other hand, the Czech Republic is successful in implementing some of the outputs on the support of which it should focus in the future – it includes especially products of hi-tech industry.

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