CONCEPTS OF FIRM AND NATIONAL COMPETITIVENESS
AND CHANGES IN COMPETITIVENESS OF VISEGRAD
GROUP COUNTRIES

Marta Nečadová

Abstract

The term competitiveness is traditionally associated with the success of firms in competition with other firms. In macroeconomic context, this term began to be applied in the 1980s in connection with the change of the nature of international trade relations. The specific assessment of countries according to their competitiveness can be seen as a way to evaluate their future economic potential and opportunities for further development and growth. The first objective of this article is to describe the basic approaches to firm level competitiveness. The second aim is to briefly analyse the changes in national competitiveness of Visegrad group countries in the years 2006 - 2014. To demonstrate differences between evaluation of competitiveness based on traditional macroeconomic indicators and evaluation of competitiveness based on results in international rankings of competitiveness (The Global Competitiveness Report), we will summarize the classical hard criteria for evaluating the competitiveness and critically evaluate the methodology of international competitiveness ranking. The last part of this article deals with the changes in strengths and weaknesses of Czech national competitiveness according to GCI.

Key words: Firm Competitiveness, National Competitiveness, Visegrad group (V-4 countries), Global Competitiveness Report, Global Competitiveness Index.

JEL Code: E20, F00, F6

Introduction

While firm competitiveness (in the economic literature) is most commonly linked to the firm’s productivity growth (measured as revenue per employee), the concept of national competitiveness - although the term “national competitiveness” is used frequently - does not have clear and uniform definition. In this paper we will first briefly explain how we understand the competitiveness of a firm. The following part of our theoretical analysis of concept “competitiveness” deals with the relations and assumptions which are important for
multidimensional measurement of competitiveness. Finally, we try to answer how the concepts of firm competitiveness and the concept of national competitiveness differ.

In the analytical part of this paper, we will evaluate the competitiveness of the Visegrad group countries using the Global Competitiveness Report (GCR), which is published annually by the World Economic Forum (WEF). This part of our article -using the changes in countries’ ranking according to GCI -shows the changes in national competitiveness of the V-4 countries and enables us to define the strengths and weaknesses in national competitiveness of Czech Republic. For the analysis of the changes in competitiveness and for the description of strengths and weaknesses, methods of comparison and evaluation will be used.

1 Firm level competitiveness – two approaches

The theory of “firm competitiveness” implicitly assumes that “competitiveness of nations” is not simply based on country-specific factors, but heavily influenced by firm-specific factors as well. The main argument is based on the fact that competitiveness of a nation stems from companies within that nation and therefore firm’s specific factors leading to competitiveness should be identified. Business theory provides two basic concepts of competitiveness on the firm level: the market-based-view and the resource-based view. The market-based view points out environmental factors of companies to explain competitive advantages and goes back to the structure-conduct-performance-hypothesis based on ideas of industrial organization theory (Porter, 1981). This approach shows that the structure of a market has an influence on the companies and their conduct, which further leads to their different performances (Berger, 2008).

According to the resource-based view, firm-level competitiveness is based on successful utilization of internal resources. To gain competitive advantage, companies must ensure that their relevant resources are specific and cannot be easily imitated by their rivals. Table 1 summarizes the two different concepts explaining firm competitiveness and compares them to each other.

Tab. 1: Comparison of Market-based view and resource-based View

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Market-based view</th>
<th>Resource-based view</th>
</tr>
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<tbody>
<tr>
<td>Level of analysis</td>
<td>Industry (processes as a black box)</td>
<td>firm (environment as black box)</td>
</tr>
<tr>
<td>Source of competitiveness</td>
<td>Product-related costs for differentiation advantages,</td>
<td>Utilization of core competencies, ability to create</td>
</tr>
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<td></td>
<td></td>
<td>future products</td>
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</table>
Sources of firm competitive advantage can be divided into quantitative sources (price, resp. costs, increase of market share, growth productivity) and qualitative sources (research and development, application of innovations, technological progress, personnel policy, learning, increase of the proportion of knowledge workers). If we perceive a firm's competitiveness as a constant or long-term ability of firms to maintain or increase productivity and market share, the competitive advantage must be sustainable\(^1\). Using conditions for sustainability of competitive advantage, we can clearly describe the difference between competitive and uncompetitive firms. Uncompetitive firm is not able to offer goods and services, which customers are willing to buy, and therefore fails to fulfil its financial obligations\(^2\).

### 1.1. From firm level competitiveness to multidimensional models of competitiveness

A lot of studies about competitiveness try to find a convenient connection between different levels of competitiveness. The unit of analysis in the famous Porter’s study (Porter, 1990) was industry in a given nation. His work was based on the in-depth study of circa 100 industries in 10 nations which were regarded as internationally competitive. This analysis shows that sources of competitiveness of certain industry in a certain nation is not the total amount of factors endowment in that particular nation, but the specific factors which nation possesses

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\(^1\)The key factors for sustainable competitive advantage should be:
- Value: factors should increase a firm's efficiency, enable it to use the opportunity or to eliminate external threats, while creating value for customers and shareholders;
- Rare: only one firm or a few firms use these factors;
- Imperfectly substitutable;
- Costly to imitate (imitation) – the possibility of imitation depends primarily on the material (physical) uniqueness of the competitive advantage sources, capability to identify the sources and economic difficulties of their acquisition.

\(^2\)Many authors evaluate firm competitiveness using financial indicators derived from accounting statements. Scholleova, Camska tried to prove whether commonly used financial indicators have an impact on the competitiveness of firms in terms of economic value added (EVA). ROC curves and AuROC measures were used for quantification of the discriminatory power of detected scale variables. Their results enable them to partly predict future competitiveness according to the previous results of factors derived from the financial statements. (Scholleova, Camska, 2015)
and offers to firms. Porter’s model is composed of four determinants of national advantages: factor conditions, firm strategy, structure and rivalry, related and supporting industries, and demand conditions. The advantage of this model is that it incorporated firm-specific, industry-specific, and country-specific factors. According to Porter (Porter, 2000), specialisation leads to sticky (not easily moveable) location advantages, which are the true sources of sustainable competitive advantage of countries. There are basically three reasons why specialisation takes place and thus why location matters: resource-driven specialisation, economies of scale at the firm level, and the existence of external economies as a result of local clustering. Porter characterized clusters as being geographic concentrations of interconnected firms, including specialized suppliers, service providers, firms in related industries and associated institutions in a particular field. These firms both collaborate and compete with each other. It is possible to find the three following important concepts related to industry clusters: (1) firms need to be specialized and co-specialized in a particular product or group of products characterized by the common attributes in production chains, (2) firms need to be inter-linked in a way that generates something beyond mere agglomeration economies, and (3) firms need to be geographically concentrated.

However, some authors (see Cho, 1998) find the disadvantage of Porter’s attitude in the fact, that his model was primarily designed to explain the economies of advanced nations which have completed the cycle of industrial revolution. According to the model constructed by Cho (Cho, 1998), the level of competitiveness can be measured for entities with different domains – product, firm, industry, nation, bloc or the globe. To identify sources of competitiveness, Cho (Cho, 1998) proposes the nine-factor model, which incorporated physical, human, and external factors. These nine factors are divided into four categories – subject, environment, resources, and mechanism. This classification is different for different entities. There is a similarity between Porter’s model and the nine-factor model: four of the nine-factors are the same – endowed resources, related and supporting industries, domestic demand, and chance events. The difference is that the Cho’s model emphasizes “human resources, using the word politicians and bureaucrats in place of government, and identifying

\[ \text{Wewouldbeable} \]

\[ \text{to verifyPorter'sconclusionsabouttheeffectivenessofclustersifwewereendowedwithindicatorswhichcouldmeasurethe} \]

\[ \text{additionalvalueaddedresultingfromthecluster. H. Scholleová (Scholleova, 2013) proposestheNCE indicator} \]

\[ \text{thenetcluster efficiencyindicator} \]

\[ \text{and the cluster homogeneityindicator. Her analysiswasfocused on thecluster} \]

\[ \text{in theagriculturalproduction in the Czech Republic (the case study Nutripol). This analysisbased on} \]

\[ \text{mentionedindicatorsdidn'tconfirmtheeffectivenessofthisgroupoffirms.} \]
entrepreneurs, professional managers and engineers as uniquely independent components”. (Cho, 1998)

1.2. National level competitiveness – the traditional criteria of measurement and concept

TiVA

According to the OECD definition, economy is competitive when it produces goods and services which stand the test of international competition, and at the same time is able to maintain or increase GDP. In the broader context, competitiveness can be characterized as a set of preconditions for achieving sustainable growth performance of economy, thereby even for increasing the economic level in the condition of the internal and external equilibrium.

There is no single accepted criterion to answer our question about national (un)competitiveness. According to Bris, competitiveness is best understood as a country’s ability to generate prosperity by using all the resources and competencies of its economy. (Bris, 2014)

On the example of transition countries Sereghyova (Sereghyova, 2005) showed the contradiction between the assessment of national competitiveness according to international rankings and actual (real) competitiveness. This contradiction is caused mainly by the fact that among the great number of criteria, on which conclusions on national competitiveness are based, most of the classical, theoretically founded criteria of competitiveness are missing.

4 This model suggests to build five categories of analysis of competitiveness (firm, industry, country, bloc, and globe) and to distinguish four determinants of the business performance (subject, environment, resource, and mechanism). Cho’s model emphasized that nine factors play different roles in determining the level of competitiveness according to the entity of analysis. The model implies the following: various subjects should be aware of different sources of competitiveness at different domains of entities and develop an appropriate mechanism for each domain.

5 Traditional “classic” indicators of price-based and non-price-based competitiveness include these indicators of competitiveness:

- Development of export performance
- Development of unit export prices in comparison with competitors' unit export prices
- Relation between growth of country exports and growth of their foreign sales area
- Relation between country export growth and world export growth
- Import intensity of production and the size of the value added in the export sectors
- Development of export profitability
- Development of real interest rates
- Changes in unit labor costs in manufacturing industry
- For differentiation between external influences and changes resulting from business processes inside firms, the following indicators are monitored:
  - Changes in exchange rate in relation to competitors' exchange rates
  - Changes in exchange rates in relation to changes in competitors' exchange rates
  - Changes in price levels in the major market of goods and subsequent changes in the terms of trade. (Usually, we take real exchange rates, which are defined with the help of the producer price index, unit labor cost, and terms of trade. The problem of real exchange rate development in Central European economies is described in detail e.g. by Pošta (Pošta, 2010).)
These traditional indicators generally determine the monetary policy decision-making process and allow quantifying the impact of changes in the external environment to the economy of the country. However, the traditional measures are based on the assumption that all activities in the production of a good take place in the domestic economy and use domestic input only. Timmer et al. point out that with the increasing fragmentation of production across borders and the increasing use of foreign inputs, traditional measures of countries’ competitiveness can no longer be maintained. Timmer et al. emphasize higher importance of interconnection between economies (Timmer et al., 2013). The rise of global value chains is posing new challenges to analyses of international trade and countries’ competitiveness. The novelty of Timmer et al. approach is that they trace the value added by all labour and capital that is directly and indirectly used for the production of final goods. The result of this approach is global value chain income.

First attempt to measure global value chain income was executed by OECD and WTO. This initiative resulted in concept named Trade in Value-Added (TiVA). TiVA indicators (e.g. domestic value added embodied in gross exports, re-export intermediates as % of total intermediate imports, foreign value added embodied in gross exports, etc.) are designed to improve awareness of the policy makers by providing new insights into the commercial relations between nations (OECD, 2013 b).

2 Competitiveness of Visegrad Group countries according to Global Competitiveness Report

2.1 Changes in national competitiveness – the results of Visegrad Group countries (2006-14)
Global Competitiveness Report (GCR) is published annually by the World Economic Forum (WEF). This annual competitiveness report is based mostly on soft data (four fifths of individual indicators), which allows monitoring a larger number of countries. In the current issue of the report, 144 countries are evaluated on the basis of 114 qualitative and quantitative indicators (these indicators are grouped into 12 pillars) describing the macroeconomic and microeconomic factors of competitive advantage.

The following figure shows the changes in the rating of the Czech Republic and the other V-4 countries in the Global Competitiveness Report in the last nine years.
Fig. 1: Competitiveness of the V4 countries according to GCI (2006-2014)

The figure 1 shows that the Czech Republic achieves the best position from the V-4 countries (with the exception of the 2013 ranking). If the changes in the economic performance of the V-4 countries are to be rated in years 2008-2013 (economic crisis and recovery) only on the basis of the trend of real GDP, the result of the Czech Republic cannot be considered as being positive – the economic performance of the Czech Republic in 2013, as opposed to Poland and Slovakia, was below the pre-crisis level (97.8% of GDP of 2008, at the constant prices of 2010), indicating that by 2013, Czech economy, as opposed to neighbouring countries, did not completely overcome the recession.

The impact of the economic crisis was shown in the relatively significant fall in the scoreboard for Slovakia – according to the GCR, the worsening trend was not interrupted until the current scoreboard. On the contrary, Poland’s position improved after 2008 and stagnated in the last two ratings. Poland is the only V-4 country whose rating in the last edition is significantly better than in 2008. As for Hungary, its worsening position in the pre-crisis period was caused by long-term problems with external balance and very weak growth in the pre-crisis period. The improvement of its position in the conditions of the recession is – despite the fall of real GDP by 6.8% - associated with the decline of small open economies – the new EU member countries.

In the GCR, all the V-4 countries are the most successful in the group of pillars that rate the strengthening of efficiency. Positive ranking is achieved thanks to the existing quality of higher education and technological readiness – the V-4 countries have low trading barriers, Slovakia and the Czech Republic are still attractive for direct foreign investment and technological transfer (Slovakia is on the 5th position, the Czech Republic on the 15th
position), Poland has a big internal market (20th position in the index of the size of the domestic market). Common to the V-4 countries is the low trust in the political representation and its activities, which are projected in the negative rating of the indicators of the quality of public institutions and state administration.

Next part of this paper will focus on the results of the Czech Republic in more detail.

2.2 Czech Republic – changes in national competitiveness according to GCI (2006-14)

The following figure shows more detailed view on the determinants of changes in the Czech Republic’s rank in the Global Competitiveness Report in the last nine years.

Fig. 2: The Czech Republic - changes in GCI and changes in subindices of competitiveness

![Graph showing changes in GCI and subindices of competitiveness](http://reports.weforum.org/global-competitiveness-report-2014-2015/online 25.4.2015, own processing)

By the last edition of GCR, the Czech Republic succeeded in reversing a five-year downward trend. The position of the Czech Republic in the GCR is positively affected by the rating of foreign trade, level of prices (it is projected in the cost benefits of exporters), and quality of the basic infrastructure. The trend of domestic demand (trend of consumption expenditure, trend of investments), firms’ worsened access to financial resources, and the results of expert investigations (soft data) in the area of criteria rating the conduct of management (management practices) had a negative impact on the country’s rank in the years of the economic recession.

Traditionally, the results of soft indicators have a negative effect on the result in the Institution pillar, which rates trust in politicians, quality and transparency of decision-making processes in the government, and public sector (in the area of the public’s trust in politicians, the Czech Republic received the worst rating in the last edition – 138th place out of 144
monitored countries). WEF data also show improvements in health and primary education, thanks to a higher primary enrolment rate, as well as gradual improvements in the labour market (62nd), albeit from very low levels. While cooperation in labour-employer relations and the flexibility of wage determination are perceived more favourably, regulations are rigid (121st) and the country’s capacity to attract and retain talent remains limited. For going forward, the following indicators need to be improved: technological readiness and the results in sophisticated and innovative activities. The country’s competitiveness would be further enhanced by improvements to its higher education system, where the Czech Republic, at rank 35, features among the 10 lowest ranked EU economies. Compared to the EU-15, the Czech Republic lags behind mainly in pillars characteristic for the knowledge economy. Above all, the Czech Republic suffers from badly set financing of public research institutions and negative entrepreneurial environment for the business of innovation.

### Tab. 2: Strengths and weaknesses according to GCR – the Czech Republic

<table>
<thead>
<tr>
<th>GCI 2014-15</th>
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<tbody>
<tr>
<td>strengths</td>
<td>Weaknesses</td>
<td></td>
</tr>
<tr>
<td>Higher education and training (35.)</td>
<td>Institutions (76.)</td>
<td></td>
</tr>
<tr>
<td>Business sophistication (35.)</td>
<td>Labour market efficiency (62.)</td>
<td></td>
</tr>
<tr>
<td>Innovation (36.)</td>
<td>Goods market efficiency (50.)</td>
<td></td>
</tr>
<tr>
<td>Health and primary education (37.)</td>
<td>Financial market development (44.)</td>
<td></td>
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<tr>
<td>GCI 2006-07</td>
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<td></td>
</tr>
<tr>
<td>strengths</td>
<td>Weaknesses</td>
<td></td>
</tr>
<tr>
<td>Higher education and training (27.)</td>
<td>Health and primary education (57.)</td>
<td></td>
</tr>
<tr>
<td>Business sophistication (27.)</td>
<td>Institutions (55.)</td>
<td></td>
</tr>
<tr>
<td>Higher education and training (27.)</td>
<td>Financial market development (50.)</td>
<td></td>
</tr>
<tr>
<td>Technological readiness (27.)</td>
<td>Market size (40.)</td>
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</tbody>
</table>


The comparison of the strengths and the weaknesses of Czech position (Table 2) shows that indicators with positive impact on Czech competitiveness are the same in the last edition GCR as in the first year of our analysis. However, the position of the Czech Republic in these indicators is worse in the last edition. It indicates that other countries have higher pace of improvement in individual aspects of competitiveness.

### Conclusion

The results of countries in the Global Competitiveness Report (published by the World Economic Forum) are determined not only by hard data, but also by the results in soft data. In our opinion, a large representation of soft data in the GCI has a negative impact on the rating of the V-4 countries due to the more critical attitude of evaluators from these countries in comparison with evaluators from other countries, especially from the developed countries. According to GCR, a common weakness of the V-4 countries is the low trust in the political
representation and its activities. All V-4 countries are most successful in the group of pillars evaluating the strengthening of efficiency. By the last edition of GCR, the Czech Republic succeeded in reversing a five-year downward trend. The position of the Czech Republic in the GCR is positively affected by the rating of foreign trade, level of prices (it is projected in the cost benefits of exporters), and quality of the basic infrastructure. Compared to the EU-15, the Czech Republic lags behind mainly in pillars characteristic for the knowledge economy.

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References

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