# COMPETITIVENESS II.

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***Abstract***

*The term competitiveness is used in connection to firms, industrial branches, regions, states etc. However, perhaps only on the level of a firm it is sufficiently defined. There are even opinions which regard competitiveness as an economic attribute which has sense solely on the firm/enterprise level. If however, competitiveness of a country were defined using the same concepts and procedures of measurement as regarding an enterprise, it might not be meaningful enough and there would be a considerable simplification. It issues from the different goals of firms and states as well as the features of competitiveness in both cases. For a firm/enterprise, the main goal is to survive and to reach a strong positron in the field of international economic competition, i.e. to reach profit and a certain share in the market. For a country, which does not consider the question of existence or non-existence (at lest regarding the economic side of the matter), the main goal is to sustain and improve the living level of its inhabitants and to increase it as well as their welfare.*

**Key words**: competitiveness, measuring based on resources, real efficient exchange rate, price and costs competitiveness.

## INTRODUCTION

### Measuring based on resources

Into this group, there belongs a wide spectrum of factors. Some of the elements of thus measured competitiveness are quantifiable, while other, usually of a qualitative character, are very often not directly measurable.

One of the basic divisions of the criteria (indicators) of competitiveness on the economy level usually is the division into price and non-price ones. Among the criteria describing or influencing price competitiveness belong for example unit labour costs, the development of consumers prices and the real effective exchange rate, which are followed by OECD, and other.

The problem of these indicators is that they might be ambiguous, in the sense, that their development might be the reason of competitiveness as well as its consequence. That means, that the development of relative costs might mean deterioration of competitiveness of the country, or it might be, on the opposite, the consequence of a good competitive ability in the non-price sphere, leads to the increased welfare of the country and creates a wider space for wages increase.

### Reer

REER (Real Efficient Exchange Rate) is one of the most often used indicators if international competitiveness. It is registered by many international institutions as the IMF, OECD and other, and also by central banks. The advantage of this indicator is its topicality, compared with most of the other indicators.

The most often used approach to its definition is based on the purchasing power parity theory, which issues from comparing the domestic and foreign prices expressed in one currency and their development in time and includes thus a number of important factors influencing price competitiveness. In its simplest form, i.e. in case of two countries, this relationship, which in the macro-economy textbooks is called the real exchange rate, is expressed as follows:

$$R \quad E\frac{Pz}{Pd}$$

where E = nominal exchange rate
Pz = abroad price level
Pd = domestic price level

Real exchange rate expresses the amount of goods, which can be acquired abroad per one unit of the domestic currency, compared to the amount of goods, which can be acquired in the home country. If then the domestic level increases compared to abroad (if it grows more quickly), then, under otherwise identical conditions, there occurs the decrease of the real exchange rate indicator and the domestic currency therefore really valuates. Domestic goods then appear, from the foreign subjects viewpoint, as more expensive and price competitiveness decreases. A similar situation occurs with evaluation of the nominal exchange rate under otherwise the same conditions.

The question is, whether it is possible to deduce from the movements of this indicator at the development of competitiveness. The relationship might be quite the opposite, since the shift of the real exchange course might occur on the base the change in competitiveness in other that price area. It is, therefore, important to know what influences are behind the movement of the real exchange rate.

Thus computed real exchange rate is often called also the ERDI (Exchange Rate Deviation Index). The REER is then computed as the weighted average of those ERDI for a certain group of countries and their changes. This absolute form of the REER is used rather less often because of the problems with the accessibility of the relevant data and the possibilities of their international comparation. The more often used index form s usually expressed as the geometrical average of the multiplication product of the indices of nominal exchange rate changes and price levels at home and abroad compared to the base period.

$$REER \quad \left(\frac{E_t^l}{E_l^l} * \frac{P_{iz}}{P_{iD}}\right)^{W1} \ldots\ldots\ldots \left(\frac{E_t^n}{E_l^n} * \frac{P_{iz}}{P_{iD}}\right)^{Wn}$$

where $E_t^l$ = nominal exchange rate in the period t (towards the currency i)

$P_{iz}, P_{iD}$ = abroad (for the country n) and domestic price index

$W_i$ = weight of the selected currency.

In the index form of the REER, there is important the choice of the base year in which the value of the indicator equals 1. If the REER value is lower than 1, the currency is really devaluated compared with the base period and price competitiveness is lower and vice versa.

An important part of the REER computation is the choice of the price level development index and the choice of the weights of currencies, as well as the choice of the currencies, which will be included. Most often, there are selected price indices of consumer prices (CPI); producer prices indices (PPI, often limited only to the processing industry producers), export prices or unit labour costs. Each of these indicators has its advantages as well as disadvantages and also different comparability.

Another mentioned problem is the weight of the individual currencies and the question which currencies should be included into the computation at all, i.e. towards which currencies the competitiveness should be compared. Most often, this issues from the data on the territorial structure of the given country foreign trade. It is thus possible to use weights based on the share of the given country as an export territory. However, this brings about a simplification regarding the supposition that domestic producers should compete with the foreign ones only in their market. To solve this, it is possible to issue further also from the domestic import territorial structure and thus in complex from the foreign trade turnover. The problem then is, that besides the competition of domestic producers towards the foreign producers in domestic and their abroad markets, there is also the phenomenon of competition in the third countries markets where both domestic and foreign producers export to. This is solved by the double-weights method, which is for example utilised by the OECD[1]. If we go still further, we can presuppose also the potential competition in the markets to which the countries export, what is solved by the global weights. There exist of course also other methods. The most often used ways are the following:

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|---|---|
| Export or import weight | Computed on the base of the shares of individual countries in the export or import of the home country |
| Bilateral trade weight | Computed as weighted arithmetic average of the import and export weight, when the weights are the shares of the home country imports and exports in the foreign trade turnover |
| Global export weight | Computed on the base of the individual countries share in the total world export, excluding export to the home country market |
| Average export weight | Computed as the simple arithmetic average of the export and global export weights |
| Average trade weight | Computed as the simple arithmetic average of the import and export weight |
| Double weight | Computed as the weighted arithmetic average of the import and export weight, when export weight takes into consideration the share in all other markets where the producers of the home country export |
| Model computed weight | (For example MERM*) Computed as the change in the domestic country trade balance, which is the consequence of the home currency changes towards the domestic prices by 1%. These changes are mutually compared in the case of the individual currencies and according to their relative level, the currencies are ascribed the relevant weights. |

*MERM – Multinational Exchange Rate Model – the methodology used by the IMF

1 Fro every year, there is computed for every country its relative share in each of the followed markets, the second step then is ascertaining the relative weight of the individual markets for the given country export. It is a matrix 28*30 (24 OECD countries + 4 ANIZ times 30 folowed markets, i.e. 24 OECD members + 6 non-members). The relative shares of countries in the markets are expressed for the processing industry markets according to the SITC. As price indices, there are used consumer prices indices of the individual countries.

**Price and costs competitiveness**

Another criteria used in connection with price competition are the indices of price and costs development, which are otherwise closely connected with the relative efficient exchange rate.

One of the price indices is the export prices index issuing from the values registered by the customs office. Its advantage id that is includes commodities which really enter the international competition in international markets, but, on the other hand, there are not included the potentially exported commodities which have lost their competitiveness. This index also omits the domestic market, where the foreign competition also meets with the domestic one, and it also usually omits the prices of services, which are traded on the international level. Moreover, international comparability is disturbed by different structure of export.

Further often used price index is the consumer prices index (CPI), which is often published and is well accessible. Its disadvantage is that it contains a number of non-tradable commodities the price movement of which is different. International comparability and the index itself are also influenced by the differences in consumers' taxes, subsidies and price regulations. It does not include investment commodities, which is not the object of final consumption but presents an important item in the frame of foreign trade. More closely than by the CPI, tradable commodities are covered by the product prices index (PPI). However, the problem is in its international comparation and its more difficult accessibility.In difference from price indicators, the real competition position of the individual producers from different countries is described by cost indices, which can be in the frame of international competition better pushed to the comparable level. The problem is, that they are much less accessible, so that regarding evaluation of cost indicators, there are at present usually used labour costs, namely wages. In this case, there should be better followed the total unit labour costs, i.e. including non-wage costs, for example social and health insurance etc. Following the labour costs indicators is important also because labour costs usually represent the biggest cost item in the value added. So that the followed changes in costs were meaningful, there should be simultaneously considered also the changes in labour productivity. The indicator which considers this might be the unit labour costs development indicator – UCL, which is computed as the rate of the nominal wages growth (W) to the real growth of labour productivity index (LP) and is presented for the given period, eventually as an index:

$$ULC \quad \frac{I_w}{I_{LP}} \quad 1$$

where the labour productivity growth index is given as the rate of the real output growth index (Y – e.g. GDP, production of the sector etc.) to the growth of employment index (L):

$$I_{LP} \quad \frac{I_Y}{I_L}$$

It is desirable that labour productivity should grow more quickly than costs, therefore that the indicator value is negative. The problem is that the labour productivity growth might be, and often also is, the consequence of the substitution of labour by capital and leads to the decrease of unit labour costs, i.e. seemingly a good omen which is, however, followed by the increase of capital costs. Then it seems that labour productivity grows more quickly than wages, what might lead to the reasoned claims of wages increase at the collective negotiations, the result of which might be a worsened competitive position.

Another indicator of cost competition is the **real unit labour costs** development – RULC, which regards the development (index) of average wages in producers' prices divided by the labour productivity index. It can be simply computed by deflation of the unit labour costs index (ULC) by the prices of production index. If they grow in the long run, it can be supposed that, together with decreasing the unit profit, they would lead to the growth of production prices and thus will reflect negatively in price competitiveness.

Of course the optimum would be if it is computed from the total real unit costs, which would include not only capital costs, but also other cost categories as the costs of research and development, distribution costs, negotiation costs etc. If, however, ascertaining and comparing of labour costs is problematic, still more is this valid regarding other cost items, what might limit the cost indicators relevance considerably.

**Non-price competitiveness**

Price competitiveness plays a more important role at the comparable products, and that namely at those more simple ones, where non-price factors do not play such an important role. From the structure of export and price relations of countries it then issues, that there these products will play a lesser role and therefore it is important to follow also other than price factors of competitiveness.

This conclusion is supported by the Belgian study of the University of Antwerp, where the scientists followed how the ability of export (namely the development of the share in the export of 12 OECD countries) is influenced by the factors of relative labour costs and further also by the innovation and marketing indicators in production sectors. Innovation indicators were represented by the level of expenditures for research and development and also by the share of the country in the patent applications in the USA, marketing indicators by the share in registration applications of the given country in the USA.

The results of the study strongly support the theory of the technological gap in the international trade flows, when a new product exported from the given country has comparative advantage (i.e. is competitive and able of export) to the time when another producer is able to start its production on a competitive level. As important, there emerged the indicators of the share in patents and also of the share in trademarks, while the relation of the research and development expenditures was found to be weaker. On the opposite, cost indicators

had a weak expressing ability, often they even grew with the growing share in export, what testifies to the former assertion on their ambiguity.

As well as in developed countries, obviously also in our country it is not possible to concentrate, from the long term development of competitiveness viewpoint, only on its price side and therefore it is important to orient also on other than price factors and their following.

**Competitiveness according to the IMD**

Research and following of competitiveness, respectively the ability of countries to secure a suitable environment supporting competitiveness of "ones own enterprises" according to a wide spectrum of factors is already for a long tome one of the tasks of the International Institute for Management Development (IMD). The IMD defines competitiveness as:

*"the ability of a country to create added value and thus to increase national welfare by management of the assts and processes, attractivity and aggresivity, global and local approach and incorporation of these relationships of the economic and social model."*

The activities are understood here as the feature acquired in past, which are characterised e.g. by unit costs, static quantities like direct investments, governmental debt etc., and further also by the scope, e.g. the size of enterprises. Competitiveness then is based on consumption, utilisation of these assets, while in the case of processes it regards the transformation of assets into economic results, i.e. creating value added on the base of the decision of governments, enterprises and households. They are described e.g. by expenditures and investments, growths, flows, but also legislation. Attractivity includes the criteria explaining the will of the rest of the world to make trade with the given country or to invest in it. It regards for example the characteristics of cultural openness, labour costs, and fiscal policy. Aggresivity, ion the other hand, explains the international present of the country e.g. through exports, direct investments abroad, management internationalisation etc. In local and global approach, it regards the level to which the country is able to balance the abilities of local economy, where producers of commodities and services are in proximity of the final consumer, with the area of global economy with management of the supra-national chains.

This wide scope issues, among other, from the fact that economic entities do in fact move and work in the environment of the country, which is influenced by the various dimensions, like the political, socio-cultural, human, educational etc. All these factors are thus taken into consideration in measuring the competitiveness of the country. At the same time, there is also underlined the difference in competitiveness measured and perceived. Economic decisions are done by human beings, and even if the aim is to use rational thinking, subjective perceiving also influences the final decision. Different aspects of competitiveness are described with the help of 8 factors (areas), in which there are followed in total 259 criteria, 223 from which are used for evaluation. These criteria are defined based on 2 types data - "hard" and "soft". The total of 172 (36 for evaluation), i.e. 2/3 of criteria are defined based on the so-called "hard" data, i.e. data taken over from different national and international statistics. The remaining 1/3 is ascertained on the base of questionnaires sent to leading workers with the aim to get the overview of the individual aspects of their country and the data which are not qualified, but are nevertheless important for evaluation of competitiveness.

In 1996 (for the results published in 997), there were sent around in total over 21,000 questionnaires to the leading top and middle management workers if all the followed countries, their return rate was, however, only about 15%. In 1997, there were already returned about 4,000 questionnaires of the mentioned number. The main function of such a questionnaire is, besides evaluation of the non-measurable aspects of competitiveness, to supply an actual view on the state of the country. Getting of the "hard" data takes, namely if they are collected on the internationally compatible level, certain time and they are thus at least one year old. On the opposite, a questionnaire supplies an actual outlook at the state of the country. Experiences show that the opinions expressed in the questionnaire often forecast statistical data of the following years. However, the primary weak point of all kinds of questioning is that it is based on opinions and perceiving, which have a tendency to change quickly. The second big problem is that the questioned individuals need not be always representative, not to speak of those who really answered.

At present, the Institute follows the state and development of competitiveness in 46 selected countries, since 1994 also in the Czech Republic. Among these 46 countries, there are 26 OECD countries, further Russia, the "Asian tigers" and some other Asian and Latin America countries. It publishes every year a considerably extensive overview on competitiveness including all the criteria and the sequence according to the individual regions as well as in total.

This Yearbook (The World Competitiveness Yearbook) might supply a base for evaluation of the entrepreneurial environment of the given country, for support of the international investment decisions or for evaluation of the impact of economic policies etc.

The evaluation is done basically by 223 criteria, base don which both the total position of the country, as well as the sequence according to the partial 8 factors (spheres) is done. Besides this, it supplies also the overview of the string and weak points of the countries in the individual regions.

Such an aggregate might hide in it certain distortions. It is not fully clear, what is in fact the influence of the individual factors, the important ones might then be overcome be the less important ones. Moreover, there is the danger of the influence by the non-representative participants of the questionnaire research, the more so that e.g. in 1997 the return rate was only 15% ("soft"

**Tab. 2. :** Eight factors of the entrepreneurial environment evaluation

| **Area**<br>**Share of soft data** | **Sub-areas** |
|---|---|
| Strength of economy, its growth 16,7 % | Value added, capital creation |
| Internationalisation (opening of the economy to the world) 26,7 % | Balance of payments, export of goods and services, import of goods and services<br>Exchange rate, investment portfolio, FDI, national protectionism, openness |
| Economic policy of government 46,3 % | National debt, government expenditures, fiscal policy, efficiency of the state,<br>State ingerence, justice and security |
| Finances, financial services 45,7 % | Price of capital, accessibility of capital, dynamics of stock exchange,<br>Efficiency of bank system |
| Infrastructure, its level of development 21,7 % | Basic infrastructure, technical infrastructure, energetic self-sufficiency,<br>environment |
| Firm management level 54,0% | Productivity, labour costs, performance of the firm,<br>Efficiency of management |
| Science and technology 30,9 % | Expenditures on research and development, workers in research<br>And science, technological management, scientific management,<br>Intellectual ownership |
| People 37,5 % | Characteristics of population, characteristics of labour<br>Employment, unemployment, educational structures,<br>level of living, value system. |

data represent in several factors a very considerable part and in evaluation of the management level even more than half). Nevertheless, it is surely an interesting outlook at competitiveness, the more so if, on the other hand, we can, besides the complex evaluation, judge the position of economy according to the individual factors and criteria by out own approach.

## CONCLUSION

Evaluation of competitiveness emerges still more often in evaluation of the macro-economic development of countries. Nevertheless, there exist a number of approaches and also discussions on the meaning of this phenomenon. It is then important to realise, what is possible to imagine under the notion of competitiveness. It even is sometimes regarded as a matter rather of international economic policy. From the neo-classical economy viewpoints and its stress on the absolute profits, competitiveness is still often reduced at the questions of productivity and following of its growth. Competitiveness, as it is understood, is then regarded as one side of economy, which is influenced by a wide scale of factors, not, all of which could be expressed simply in numbers. The approaches to it are very different and are the object of the permanent research both from the side of international and national institutions.

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