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METHODOLOGICAL ASPECTS OF THE ECONOMY COMPETITIVENESS. MICRO AND MACRO ECONOMIC APPROACHES

1. Introduction

In the economic literature, the concept of competitiveness, particularly international competition, has evolved during the last several years. The concept of competitiveness embraces different elements depending on what is emphasized in a given research. Thereby, the competitiveness may concern both static elements (in a given moment), as well as dynamic and long-term ones, factors allowing to improve competitive ability.

International competitiveness of the national economy of a given country is always the final result of international competitiveness of various economic entities operating on the area of the country. These entities (companies) have to keep up with the competing enterprises and therefore make appropriately high profit on business. It would be difficult to regard international competitiveness of economy to be the sum of competitiveness of entities functioning on its area, because the competitiveness of each of them is characterized by different conditions of the internal and external environment. From this point of view, the external conditions are particularly important – domestic and foreign (international) economic policy. This regards mainly entities involved in the process of international exchange of goods and production factors.

The aim of this paper is an attempt to review the definitions of international competitiveness in micro and macroeconomic scale, as well as specification of determinants and measurement methods in terms of this phenomenon.

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2. Definitions of competitiveness

The studies on competitiveness have been influenced by three factors: strategic trade theory, clasic trade theory and economic practices, as well as Porter's work on competitiveness (as a member of the American Industry Competitiveness Presidential Commission). Initially, Porter's investigations had more practical than theoretical nature. In the closing report, the above mentioned, Commission states that "competitiveness can not be identified with positive trade balance or regarded only as processes related to international exchange"[1]. In later works, Porter deepened his research on competitiveness and observed that the most important factor in winning the competition among different entities on the domestic or international market is the improvement of efficiency of management. According to Porter, competition exists on the level of companies, nevertheless, there have to be some deeper reasons causing that companies from one country are more often succeeding in this competition. Such observations lead him to the conclusion that one can and should research competitive advantages of nations (Porter 1990).

At the microeconomic level, a company can be regarded as competitive when it improves quality of offered goods and services in a way that is higher than the average or when reduction of relative costs allows a company to increase its profit or share in the market (see: Dunford 2001, pp. 109–110).

The more a company reduces its costs at a given level of quality (through the increase of productivity, reduction in wages, in social security, in improvement of working conditions or in organizational abilities) or the faster the quality of its products increases at the assumed level of costs, the more competitive this enterprise is. Moreover, long-term competitiveness, apart from ability to sell goods allowing to make profit, requires from market players the ability to keep up with changes on the market.

As follows from the above mentioned definition, the measurement of company's competitiveness is not only the level of generated profit but, also is more important, its share in the market. Each company has some competitive abilities which determine the process of flow of demand between the company and its competitors. The demand cannot be seized by the company, nor by its competitors, it can be only gained or lost in favour of competitors. Increase of company's market share be obtained from increasing these competitive abilities and keeping them on the higher level than the abilities of competitors. The basis for creating competitive abilities are resources and skills accumulated by the company and confronted with market chances. Nevertheless, it is obvious that

[1] See. President's Commission on Industrial Competitiveness, in: Global Competition: The New Reality, U.S. Government Printing Office, Washington D.C. 1985 pp. 6–7.

companies do not compete with each other by means of resources and skills but by means of competition instruments (product, price, etc.).

Assuming that the competitiveness at the macroeconomic level is being observed, there is a need to define it. According to the simplistic approach, competitiveness of economy is identified by means of active trade balance or current surplus of balance of payments (see: Lubiński, Michalski, Misala, 1995, pp. 8–9). The definition presented in such a way, forejudges at the same time the method of measurement. However, most definitions are more complex than that.

As for the way of defining the competitiveness of economy, two main approaches can be distinguished. The first one has more or less direct reference to the place in the country, in the global economy and results of international trade. In such a case, competitiveness is regarded as the ability to maintain or even increase market share. These macroindicators can be evaluated, among others, on the basis of trade balance, terms of trade, relative prices, share in global trade, etc. (Lubiński 1995, p. 8).

The second approach puts more emphasis on general and periodical results of the national economy, e.g. the definition suggested by the OECD, where competitiveness is defined "as the ability of a country to produce goods and services which under conditions of free and fair trade are accepted on the global market, with maintaining and increasing of long-term, real revenues of population at the same time".

According to another definition of the OECD "competitiveness means both, ability of companies, industries, regions, nations or international organizations to keep up with international competition, as well as maintaining relatively high rate of return on used production factors, as well as relatively high level of employment based on solid foundation". In the long run, increased competitiveness leads to the growth of global productivity. This is particularly important for the improvement of competitiveness on markets open to international competition, because it aims at long-term improvement of quality of life and creation of new jobs. Finally, the growth of productivity results in better utilization of competitive advantages which will not be limited natural resources in economy and in global competition (see: Wysokińska 2001, pp. 37–38).

Definition suggested by the OECD indicates three aspects of competitiveness:

- ability to create and maintain high incomes of production factors through the increase of productivity,
- ability to create new jobs and increase employment,
- maintaining high level of openness to foreign competition.

Such a definition of competitiveness allows for considering not only traditional quantitative measurements but also qualitative factors related to structure of the economy, technological development and functioning of the production factors' market.

In the definitions suggested by the OECD it is pointed out that "competitiveness is the ability to generate as a result of exposition to international competition, relatively high incomes derived from production factors, as well as high level of employment based on solid foundation".

Another definition which deserves attention is a definition suggested by the World Competitiveness Report in 1994. Here competitiveness is the ability of a country or company to create more wealth than the competitors on the global market. According to the mentioned report, competitive ability of a given country is a result of conversion of the country's resources, both already existing (natural resources) and generated (infrastructure, human resources) by means of processes, e.g. production, into economic results which then are verified during a competition on international markets[2].

Particular attention, with respect to synthetic approach, deserves the definition suggested by L. Tysson. According to her, "competitiveness of a country means the ability of the country to produce goods and services which are accepted on the international market and citizens to attain growing and sustained improvement of living standard" (see: Wysokińska 2001, p. 38).

The most important issue related to competitiveness is maintaining and improvement of long-term competitiveness. A fairly important factor influencing the long-term improvement of competitiveness is the openness of economy. That is why the notion of competitiveness should be understood as – "the ability of the economy, or perhaps the ability of entities operating in the economy to adapt with regard to changing conditions, allowing for maintaining or improving their position on the global market" (see: Żurkowska 1995). This definition is corresponding to the one suggested by W. Bieńkowski: "competitiveness is the ability to fight for economic survival within the environment of increasing competition. Economic entities possessing this quality are those which are able to maintain their position on the market for a longer period (micro approach). The competitive ability according to the macro approach, that is with respect to the whole open economy, profit increase (positive accumulation), which effect will be such a structure of economy and the structure of its export, which corresponds to, or keeps up with, relevant changes in global economy and global export" (see: Bieńkowski 1995, pp. 60–62).

While analysing international competitiveness one should not forget about the two concepts closely related to this issue. These are namely:

- international competitive ability,
- international competitive position.

International competitive ability – is defined as a competitiveness of the factor type and it determines long-term ability of the economy to keep up with

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[2] See: The World Competitiveness Report 1994, World Economic Forum, Lausanna 1994, p. 18.

international competition. It is related to relative evaluation of potential possibilities of enterprises and taking actions increasing chances for obtaining in the future, better results than the competitors. Therefore the notion of international competitive ability regards not only real phenomena but also economic system and economic policy.

The competitive ability of economic entities is determined not by accumulated outlays and results, but by realistic and development plans.

The change of competitive ability is expressed as an aggregated change of value of factors which are attributable to it. Ability to compete is determined by:

- ability to sell produced goods and services to other countries,
- ability of the goods and services produced on the area of a given country to compete with imported goods and services,
- ability to prevail investors to choose the country as a location for their investment (see: Hildebrandt 2002, p. 69).

Much more narrow notion is the international competitive position. It concerns mainly the participation of a given country's economy in the broadly understood international economic exchange, that is exchange of products (goods and services), as well as production factors (workforce, capital and know-how). The competitive position is to the great amount determined by the situation on the current account, the level of international debt and foreign currency reserves. In case of companies, competitive position is determined, besides the market position, also by financial results, including indebtedness, obtained net income, cash flow, level of ownership capital, quality of management, technological intensity, and capital links.

3. Determinants

In general, the issue of economy's competitiveness stems from the exchange or growth theory and what follows economic growth. Position of a country in global economy depends largely on the condition of the whole economy. One can agree that a country with high inflation rate or level of unemployment will not be able to maintain high position in the global economy. On the other hand, all contemporary theories of growth consider the level of commitment of the country in the international division of labour. Foreign trade or even the whole economic relations with the environment are regarded to be the tool for obtaining development goals. Competition regards not only the marketplace but concerns also technologies which determine the shape of future economic activity, as well as capital and investments.

Competitive advantage of economy is of the secondary nature and it is an important factor influencing competitiveness at the level of a company. Analysis of gaining international advantage, aims at answering the question: how does a given national economy create, for entities operating in this economy, an environment allowing for improvement of their activity (introduction of innovations, new technologies, etc.) and what follows, winning the international market competition more often than their foreign competitors?

M. Porter shifted concepts, methodology, and a theory of competitive advantages from the level of a company to the level of national economy. He distinguishes four determinants of obtaining international competitive advantage by a country:

- equipping with production factors,
- demand factors, formation of appropriate level and structure of demand,
- formation of appropriate structure of trades (supporting and related trades),
- conditions of creating, functioning, organizing and managing companies (see: Gorynia 1996, p. 344).

Equipping a country with production factors includes: human resources, tangible resources, knowledge, capital, and infrastructure. Ratios in which these factors are applied differ significantly among the traders. Changes in technology contribute to changes in ratios of factors ensuring obtaining technological advantage. Globalisation often weakens the significance of availability of specific factors in a given place. Human resources, knowledge, and capital are characterised at present by substantial mobility – they can be shifted between countries.

Production factors can be divided from the point of view of their specificity. One can distinct universal factors, concerning many traders and specific factors. They have very narrow utilisation and can be applied only within a certain trade. The origin of production factors is also of importance. A country may be equipped with some factors (natural resources, location) whereas others are created in this country by means of certain mechanisms. Insufficiency of particular production factors in a given country can influence creation of competitive advantage through e.g. technological changes.

The second determinant consists of demand factors of the domestic market of the country. Features of domestic demand may allow companies proper perception, interpretation, and fulfilling needs of clients. The most important, from this point of view, features of the domestic demand are: its structure according to the contribution of respective segments, volume of demand, initial time of demand for a given product, as well as the time point when the domestic demand is fulfilled.

Another determinant of obtaining the international advantage is the existence of appropriate structure of traders in a given economy. The existence of competitive suppliers is particularly important in comparison with foreign competitors. They can enable fast and sometimes preferential access to tangible resources. The advantages related to location can be also of great importance. Proximity of suppliers in relation to the marketplace has a positive influence on stimulating innovative processes. The existence of the appropriate set of related traders is, in a given economy, of similar importance. There can be complementary or related traders, whose existence is likely to influence synergy effect, e.g. in the field of technology or marketing.

Conditions of creation, organization, and management of a company, as well as the nature of competition on the domestic market constitute the fourth and the last determinant of obtaining the international competitive advantage. Strategies and structure of companies vary in different countries. There is not a universal and optimal system of management. Differences between countries are so strong that it is often referred to national management systems. In order to create a competitive advantage of a given trade on the international market, the nature of competition on the domestic market is of great importance. We may assume that the ability to succeed on the international market is closely related to the intensity of competition on the domestic market. In return, pressure of domestic competitors depends, among others, on the conditions of establishing new enterprises.

While analysing competitive advantage of a given country, particular traders are considered. There is no national economy which would possess competitive advantage in comparison with another economy in all spheres of activity. There are, however, countries which win with others within particular traders, whereas within other traders do not obtain such advantages. Usually, the competitive advantage does not exist in only one trade, but in groups of linked traders (there are horizontal and vertical correlations).

The four discussed factors determining international advantage are defined as the "Porter's Diamond". These factors should be regarded as a system. The impact of each of these factors alone is of no importance, only it combined they allow for obtaining desirable effect. These factors can weaken or support each other. The optimal situation is when all factors determine international competitiveness. There can also be a situation when only one or two factors can decide about obtaining the advantage, but it is very risky and can lead to the loss of market position.

Two years later, that is in 1992, Porter's considerations were extended and supplemented with following factors by J. H. Dunning (see: Misala 2000, p. 111). He suggested the following two factors:

- more or less favourable external and internal coincidences (chances),
- international economic activity, e.g. big foreign corporations on the area of a given country, as well as domestic ones abroad.

Relations and references among all mentioned factors are presented on the picture 1.

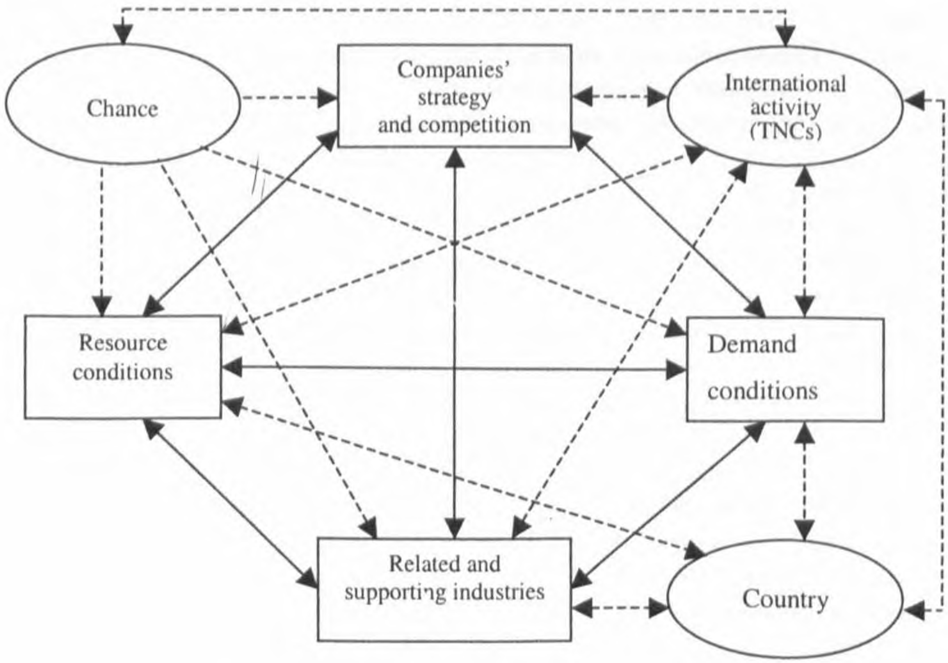

Fig. 1. Determinants of competitiveness of countries (nations) according to M.E. Porter, extended by observations of J. H. Dunning

S o u r c e: J. Misala (2000, p. 112).

The above mentioned factors determining creation of international competitive advantage are additionally influenced by a factor called chance (coincidence, luck, or opportunity), as well as impact of the government on the market (economic policy). Only the appropriate combination of these factors, also allowing for interaction with large foreign corporations, may contribute to obtaining competitive advantage on the international level. Significance of these factors, intensity of their influence and configuration change in time. Once obtained competitive advantage should be developed, supported and protected in order to prevent its erosion.

Beside the observations of Porter and Dunning, the so called "Pyramid of Competitiveness" suggested by The European Committee is of great importance for the issue of competitiveness (see: picture 2). Various models of competitiveness on many levels are created on the basis of this pyramid. As we can see in the pyramid of competitiveness, there is much place devoted to competitiveness on the level of company, which suggests that the long-term competitiveness of a company translates to competitiveness of the economy in which the company operates. Among the factors determining competitiveness of companies, we can distinguish: intangible investments – particularly in R&D

base, innovations, investments in fixed assets, and form of financing of these investments where of great importance is capital from inflow of direct foreign investments, as well as public infrastructure – particularly taxes.

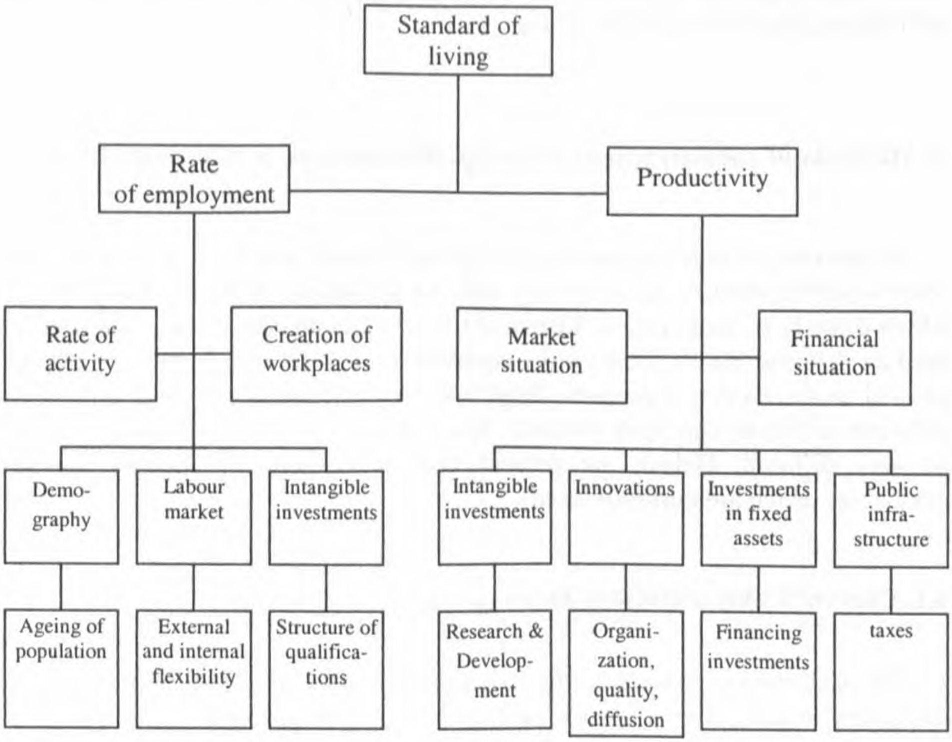

Fig. 2. The pyramid of competitiveness suggested by the European Committee in 1997
Source: Benchmarking the Competitiveness of the European Industry, COM (96) 463, Brussels, 9.10.1996.

The pyramid of competitiveness presents a set of factors determining competitiveness, where at the top we can see one of the most important – a standard of living. This factor has already appeared several times in the above presented definitions of competitiveness. Standard of living can be regarded as synthetic indicator of competitiveness of a given economy (GDP for a citizen). This factor is influenced by two determinants – rate of employment and productivity, these in return decompose further into factors determining both values. Rate of employment is influenced by: rate of professional activity, creation of workplaces, labour market, demographic aspects of a society and intangible investments, first of all as investments in human resources (improvement of qualifications).

One should notice that the above mentioned tools determining competitiveness of economy aim at reaching significant economic growth, which finally should lead to higher standard of living of the society. Foreign direct investments have positive important impact on high economic growth, as well as on a higher standard of living.

4. Methods of measurement of competitiveness on a macro scale

Evaluation of competitiveness of a given country and its comparison with other world economies is not an easy task. As we can see, there are many factors which directly or indirectly influence the level of competitiveness. Considering the fact that one has to compare the competitiveness of both, highly developed, as well as developing countries, large and small economies, which encounter different problems and have different structure, uniform measurement seems to be very difficult. Below, we present unified methods of competitiveness' evaluation which are currently used.

4.1. Current Competitiveness Index (CCI)[3]

The CCI measures factors which determine maintained level of productivity of a given country. These factors are divided into two categories:

1) factors influencing the level of competition among companies in a country (knowledge, technology, strategic and managing abilities, as well as tangible assets) all of which are linked to GDP per capita, from the statistical point of view,

2) factors influencing the whole economic environment in the country:

- quality of flow among companies (information availability, labourforce etc.),
- availability and quality level of local suppliers and services (availability of technologies),
- level of demand for advanced products and processes,
- principles of management (particularly with regard to competition among companies).

The CCI levels constructed on the above mentioned factors, for chosen countries are presented in the Table 1.

[3] "The Global Competitiveness Report 2000", World Economic Forum, Oxford 2000, p. 16.

Table 1. Competitiveness of chosen countries measured by means of the CCI (Current Competitiveness Index)

Country	Position in the ranking (year 1999)	Position in the ranking (year 2000)
Finland	2	1
USA	1	2
Germany	6	3
Holland	3	4
Switzerland	5	5
United Kingdom	10	8
Singapore	12	9
Austria	11	13
Japan	14	14
France	9	15
Spain	23	23
Hungary	33	32
Czech Republic	41	34
Rep. of Slovakia	48	36
POLAND	37	41
Russia	47	51
Bulgaria	54	55
Ukraine	56	56

Source: Own elaboration, based on the Global Competitiveness Ranking Report, 2000.

As we can see, Poland took the 41st place in the ranking of 2000. It means that the Polish position was by four places lower than in the previous year and worse than positions of competitor countries from Middle-Eastern Europe. Countries qualified for the highest places are characterised by the highest level of development.

4.2. Growth Competitiveness Index (GCI)[4]

The GCI measures factors which influence the value of the GDP per capita growth rate. It is calculated as the arithmetical mean based on three values:

- economic productivity of innovations and technological changes,
- productivity of public finances' system (comprises rate of savings and investments),
- impact of a given economy on global economy.

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[4] *Ibidem*, p. 17.

Competitiveness of chosen countries measured by means of the GCI has been presented in the Table 2. As in case of the previously presented index, countries which qualified for the highest places are characterised by relatively higher development. In the year 2000 Poland reached 35^{th} position in the ranking, which, in comparison to the previous year, was higher by 8 places. Similar increase of position in the ranking was shown by the remaining countries of the Middle-Eastern Europe. Last places in the ranking were occupied by the countries which emerged after the decomposition of the USSR: Russia and Ukraine.

Table 2. Competitiveness of chosen countries measured by means of the GCI

Country	Position in the ranking (year 1999)	Position in the ranking (year 2000)
USA	2	1
Singapore	1	2
Luxembourg	7	3
Holland	9	4
Ireland	10	5
Finland	11	6
United Kingdom	8	9
Germany	25	15
Austria	20	18
Japan	14	21
France	23	22
Spain	26	27
Hungary	38	26
Czech Republic	39	32
POLAND	43	35
Rep. of Slovakia	45	39
Russia	59	55
Ukraine	58	57

Source: As same as Tab. 1.

4.3. National Competitiveness Score (NCS)

Competitiveness measured by the NCS (see: Dunning 1998, p. 7) is considered to present the ability of a given country to "generate" more wealth for its citizens than its competitors on the global market. The value of this indicator is influenced by eight components (each of them measuring in a specific way the level of productivity of analysed economy):

1) national economic strength (level of competitiveness within the economy),

2) "internationalisation" (degree to which the economy participates in the international trade and investments),

3) management of the country (degree to which the government and its policy support competitiveness),

4) condition of finances (level of capital market and quality of financial services),

5) infrastructure (degree to which the system is adequate to basic needs represented on the micro economic level),

6) method of managing companies,

7) level of science and technology,

8) people (availability and education on work market).

In the Table 3 we present results concerning competitiveness of chosen countries measured by means of the NCS.

In the year 1996 (according to the NCS) the US economy was most competitive and therefore the level obtained by this economy was accepted as the maximum level – that is 100 points. It is easy to see that as in case of previously presented indexes better developed countries were also highly qualified in the ranking. Also in this case, Poland was situated below its competitors from the group of Middle-Eastern European countries (except Russia) and took the 43rd place in the ranking.

Table 3. Competitiveness of chosen countries measured by means of the NCS method (situation for the year 1996)

Country	Level of the NCS index	Position in the ranking
USA	100.0	1
Singapore	88.6	2
Hong Kong	78.6	3
Japan	75.0	4
Denmark	72.9	5
Holland	71.4	7
Luxemburg	71.3	8
Germany	71.1	10
Austria	64.3	16
United Kingdom	60.7	19
France	60.6	20
Spain	38.6	29
Thailand	37.9	30
Czech Republic	32.1	34
Hungary	25.7	39
POLAND	21.4	43
Russia	5.0	46

Source: Own elaboration, based on the J. H. Dunning 1998, p. 8.

4.4. National Competitiveness Index (NCI)

In order to calculate the NCI (Dunning 1998, p.10), one should consider GDP growth, growth of export volume and inflow of direct foreign investments. The index focuses on factors which are the consequence (not the reason) of the level of competitiveness in a given country. Openness of economy, government sector's role, productivity of the financial sector, and flexibility on the work market is more important in this case than the quality of infrastructure, technology, political institutions are and the level of companies management in a microeconomic scale.

In the Table 4 we present the value of the NCI obtained by chosen countries.

Table 4. Competitiveness of chosen countries measured by means of the NCI (situation for the year 1996)

Country	Level of the NCI index	Position in the ranking
Singapore	2.19	1
Hong Kong	1.89	2
New Zealand	1.57	3
USA	1.34	4
Luxemburg	1.29	5
Japan	0.65	13
United Kingdom	0.63	15
Austria	0.40	19
Germany	0.27	22
France	0.24	23
Spain	-0.57	32
Czech Republic	-0.64	35
POLAND	-1.15	44
Hungary	-1.48	46
Russia	-2.36	49

S o u r c e: Own elaboration, based on the J. H. Dunning 1998, p. 11.

In this ranking Poland obtained the 44th position, while the Czech Republic was classified by 9 positions higher and Hungary by 2 positions lower.

5. Final remarks

Despite various methodologies used for the purpose of establishing competitiveness of countries on the global market, results obtained through all methods presented above are significantly related to each other. Highly developed countries and young and dynamic Asiatic economies, play the leading role whereas countries of Middle-Eastern Europe are classified on a distinctly much lower level.

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METODOLOGICZNE ASPEKTY POMIARU KONKURENCYJNOŚCI GOSPODARKI W UJĘCIU MIKRO I MAKROEKONOMICZNYM

Pojęcie konkurencyjności jest powszechnie stosowane w literaturze ekonomicznej, chociaż termin ten nie zawsze traktowany jest jednoznacznie. Autorka podejmuje próbę przedstawienia różnych sposobów definiowania konkurencyjności w ujęciu mikro- i makroekonomicznym. Określone zostały również determinanty konkurencyjności gospodarki i metody jej mierzenia. Szczegółowo zaprezentowano następujące mierniki: indeks bieżącej konkurencyjności (ang. CCI), indeks konkurencyjności rozwoju (ang. GCI), indeks konkurencyjności narodowej (ang. NCI) i wynik konkurencyjności narodowej (ang. NCS) oraz przykłady ich zastosowań dla Polski, krajów Unii Europejskiej, USA, Rosji i innych wybranych krajów świata.