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Competitiveness and Its Relationships with Productivity and Sustainable Development

Abstract

The aim of this paper is to present the relationship between the competitiveness of the economy & its individual sectors and productivity & sustainable development. In many definitions of industrial competitiveness, it is stressed that higher productivity is the synonym of improved competitiveness. Higher productivity provides funding for an organisation's expansion plans. The people benefit from better and cheaper products available on the market in the short term, and from growing employment in the medium term. Another effect is constant growth in wages in real terms. The results of an analysis of the index of labour productivity per employee in the textile and clothing sectors in EU and CEE countries are also presented in this paper.

Key words: competitiveness, productivity, textiles, clothing.

implementation of opportunities offered by computers, technology and IT will revolutionise the whole economy. Enterprises struggling for market positions have to join this process.

Poland's prospective membership in the European Union obliges it to complete the task of building an efficient market economy and coping with the competitive pressure and market forces on the Single European Market. This is especially important for the **Polish textile and clothing industries**, which after a period of breakdown concerned with the economical and social transformations of the Central and East European countries and the pressure of competition, hitherto from imports from the Far East and Turkey, **should create their own competitive strategy in production, export and import.**

The creation of a knowledge-based economy is becoming an indispensable element in Poland's adjustment to these future challenges. This objective is also urgent within the context of the activities being undertaken by the European Union, as the European Commission has decided that establishment of a knowledge-based economy should be one of the priorities of EU policy. At the summit in Lisbon in March 2000, the European Council confirmed that "the strategic objective of Europe for the forthcoming decade is to become the most competitive and dynamic knowledge-based economy, capable of sustained economic growth accompanied by an improved number and quality of jobs and better social conditions." For Polish enterprises, this translates into essential endeavours aimed at en-

hanced competitiveness, which can be interpreted as an enterprise's ability to steadily stimulate development, increase productivity and enlarge its markets in the face of strong competition.

With respect to the macro-economy, competitiveness is identified with a steady upward trend measured by GDP growth, productivity of resources and factors of production growing in macro-terms, and economic expansion onto the international market (enlargement of the existing markets as well as entry into new markets) - that is, with the capability of offering new, better and cheaper services in a competitive environment. M. E. Porter equated competitiveness with productivity, and stressed the importance of identifying their determinants. The primary factor cited as a determinant of competitiveness in macro- as well as micro-terms is human resources.

According to the OECD's definition, competitiveness denotes the ability of firms, industries, regions, nations or transnational groups to confront international competition and to secure the sustainability of a relatively high rate of return on the factors of production, and of a relatively high level of employment. In the long term, improved competitiveness yields a growth in total productivity. Higher productivity is particularly important for more successful competitiveness on markets open to international competition, as it brings about a long-term improvement in the quality of life and in the creation of jobs. Finally, higher productivity offers a better use of competitive advantages, which are thus no longer limited to the availability of

■ Competitiveness - Definitions

The progressing globalisation of the economy, the mobility of capital, and the ever shorter periods in which innovations and products are developed oblige all nations and social groups face new challenges. Today, the prerequisite to economic development and improved competitiveness is a knowledge-based restructuring of the economy. The affirmation of knowledge in the social dimension and of knowledge management in enterprises represents a system of communicating 'vessels' which should result in a high degree of innovativeness and economic competitiveness. Nowadays knowledge is treated not just as a factor of productions; it is in fact a major economic resource that determines the competitive advantage of enterprises, NGOs, regions, nations and societies. The field of knowledge that has been growing most dynamically, and which will have the greatest impact on the functioning of economies in the world of the future, is the sector of information. E-business based on the practical

natural resources in the economy and global competition [1]. A further OECD definition stresses that competitiveness is the ability to generate sustainable and relatively higher revenues from the factors of production and high employment as a result of exposure to international competition [2]. Being competitive is understood as steadily growing real incomes and living standards of regions or countries, with employment available for all willing job-seekers [3].

Competitiveness and Productivity

Higher productivity is the synonym of improved competitiveness. Enterprises are competitive when their productivity of labour and all production factors grow consistently, which situation allows them to reduce the unit costs of their output, etc., but also affects other enterprises at the national and international levels. Higher productivity provides funding for an organisation's expansion plans. In the short term, citizens benefit from the better and cheaper products available on the market, and in the medium term from growing employment. Another effect is constant growth in wages in real terms. As a result, a country's living standard goes up when its productivity growth (in macro-terms) is sustained. Therefore, an enterprise plays the primary role in generating revenues and employment, and contributes to a lasting and balanced economic and social development.

Productivity growth depends on a number of factors, among which **innovations and investments in the ICT sector and on development of human capital** are the most important. Economic development and productivity growth result from an educated workforce. Human capital, especially in technological sectors, makes productivity rise thanks to the accumulation and dissemination of knowledge. Knowledge and the skill of its efficient application are the key to the competitiveness of economies. It is practical to develop and pursue activities aimed at providing people in Europe with sufficient knowledge, appropriate strategies and workable methods to accelerate teaching available for everyone [4]. Consequently, higher productivity determines both the improved competitiveness of the economy as a whole and its balanced social and economic development [5].

It is possible to measure the competitiveness of different branches of the economy. For example, the analysis of the index of labour productivity per employee in light industry in Poland in 1996-1998 shows that this indicator was about 20% higher than the CEFTA average, but was characterised by a declining tendency in the period surveyed. Slovenia and the Czech Republic had higher labour productivity in the manufacture of fabrics than Poland (see Table 1). From the comparison of the labour productivity per employee index in the EU, it follows that the Polish index in 1998 was almost 7 times lower than in the EU in the case of the manufacture of fabrics, and 9 times lower in the manufacture of clothing (see Table 2). The data shown in Tables 1 and 2 is given only an example; for current studies up-to-date data is necessary.

Regarding enterprises, it is important to ensure the comparability of particular organisations with respect to micro-productivity as a significant factor which contributes to the improvement of the competitive position of enterprises operating in a market-economy environment [6]. One of the basic determinants of an enterprise's competitiveness and productivity is the workforce. It is emphasised that a well-organised and motivated workforce is productive and

efficient. Therefore, the most important component of an enterprise's total productivity is the productivity of its labour, which demonstrates the efficiency and efficacy of human resource management [7]. A special role in the development of an enterprise's competitiveness is played by the manager, who builds improved productivity in the enterprise expansion strategies, creates a relevant productivity measurement system, implements technological progress to cut the manufacturing costs and improve the quality of goods to be offered on the market, and encourages the workers to constantly seek reserves in order to increase productivity. The manager's creativity is a primary factor behind the productivity of labour in an enterprise.

Investigations also stress that a high level of micro-productivity can be ensured by focus in an enterprise's activities on doing the right things in the right way. This approach combines the inward and outward orientations of an organisation in defining and implementing its objectives, and gives a strategic dimension to the notion of productivity [8].

Research on enterprise productivity emphasises a very close causal relationship between measures of productivity and a firm's performance. The hard measures

Table 1. Labour productivity in the textile and apparel industries in the EU, 1996-1998 (in USD) measured in sales per employee.

Industry	1996	1997	1998
Fabrics	118585	110913	114593
Clothing	74176	88728	85527

Table 2. Labour productivity in the textile and apparel industries in CEFTA countries, 1996-1998 (in USD) measured in sales per employee. Source: Author's calculations based on official national statistics of the countries analysed and on *Panorama of EU Industry, Brussels, 1998, Textile and Clothing*.

Country	Industry	1996	1997	1998
CEFTA	Fabrics	14276	13918	15801
	Clothing	8201	8167	7533
Czech Republic	Fabrics	23272	21174	25832
	Clothing	11489	7162	5216
Hungary	Fabrics	16153	15407	16263
	Clothing	7748	7629	8433
Poland	Fabrics	17515	17425	16607
	Clothing	10253	10381	9261
Romania	Fabrics	5268	4979	6250
	Clothing	3510	3956	3589
Slovakia	Fabrics	14130	13044	14642
	Clothing	8735	5738	5678
Slovenia	Fabrics	34358	37305	39211
	Clothing	22408	25762	27225

are as follows: effective allocation of resources, rational investments, streamlining business processes, consistency of decisions, and effective quantitative assessment of past events. On the other hand, economic results are evidenced by the level of costs, the amount of inventories, sales volume, the level of profits, the return on capital allocated to the firm's operations, return on stock, market share, and the degree to which the needs of individual groups of buyers are met.

Among the soft measures, the following are mentioned: trust in and motivation to initiate actions in a firm, knowledge, skills and experience, understanding and acceptance of the firm's mission and strategic goals, corporate culture, internal communication, qualitative evaluation of past events, organisational flexibility and external qualitative determinants. These measures significantly impact upon the opinion of a product or service, a firm's image, prestige and reputation, the qualitative attributes of products or services offered by a firm; they contribute to the satisfaction of groups of customers, and also influence labour and management's motivation to undertake successive actions [9].

An enterprise's efforts to increase its productivity, combined with the rationality of its operations, earns the approval of its workforce. These efforts are feasible provided that value is added first inside an organisation, and then offered to external buyers [10].

From the macro-economic point of view, total and partial productivity can be distinguished. One is presented by the ratio of revenues to total costs of assets, including equity. Total productivity is measured using the following indicators:

- productivity of costs = revenue from sales/costs of production sold;
- productivity of assets = revenue from sales/value of assets,
- productivity of equity = revenue from sales/equity.

Partial productivity measures are most frequently related to productivity of labour, fixed capital, supplies, inventories, working assets and costs at various levels: direct, intermediate and fixed [11]. An enterprise's productivity evaluation can be based on a bi-level audit:

- 1) general (examination of an enterprise as a whole), and
- 2) detailed (covering lower levels in an enterprise).

The general audit attempts to assess the productivity of an enterprise as a whole and, if possible, of its financially autonomous units. It focuses on the identification of the key areas of productivity improvement. The starting point is to conduct analyses of the production cost structure and asset structure.

Analysis of the productivity within the general audit includes inter-enterprise comparisons of the basic productivity indicators, as well as examination of trends revealed by the productivity indicators. It allows the competitive position of an enterprise within an industry to be identified, and its strong and weak points with respect to the industry to be evaluated. It also maps the major trends characterising the use of the firm's basic resources. The comparison of results achieved by a given enterprise with those of other organisations (benchmarking) is an important instrument allowing both productivity and quality to be improved. A steady follow-up of trends is possible, provided that a database of major indicators has been set up.

A detailed audit assesses the productivity of an enterprise's subsystems, down to the level of key jobs if sufficiently detailed root data is available. The same procedure is applied to all subdivisions at various levels: departments inside an enterprise, shops, production lines within shops and key jobs inside manufacturing sections at higher levels. This audit tries to identify any inefficiencies that impede the improvement of the enterprise's competitiveness, and to find manufacturing reserves in the major areas located during the general audit.

The World Bank's Methodology of Benchmarking in the Knowledge-based Economy

Other countries' experience shows that dissemination of benchmarking, i.e. a program of comparisons between enterprises, not only improves the condition of enterprises that implement various techniques for productivity betterment, but also upgrades overall productivity throughout the national economy. However, it is extremely difficult to gather

data for such comparisons. As we know, in other countries special consulting companies are involved in this activity which keep databases and make them available for a fee under a consulting service.

At the end of the 1990s, a World Bank methodology was developed aimed at benchmarking a given country's economy on the macro-level against the world economy. A relevant analysis focuses on four key subject areas:

- An economic and institutional system represented by regulatory policy and a macroeconomic environment that determines a free flow of knowledge, supports investments in information and communications technologies, and stimulates entrepreneurialism.
- A system of education covering educated persons, who additionally possess the skills necessary to create, transfer and apply knowledge in practice.
- An informational infrastructure that allows efficient communication and processing of information; the informational infrastructure includes both traditional technologies used mainly for communication purposes (radio, TV, telephone), but increasingly often advanced information and communications technologies, for instance the Internet. These technologies are the most effective means of processing and transmitting information.
- A system of innovations covering aspects such as development of science and technologies, R&D activities in the private sector and in academic centres, as well as governmental policy with respect to the generation of new knowledge and innovations. The existence of innovation centres determines not only the effective adaptation of already available knowledge, but also - and most importantly - the generation of new knowledge.

The World Bank experts proposed a method for measuring and evaluating the major variables that evidence the degree of progress in those countries which were examined and compared (Knowledge Assessment Methodology (KAM) 2002). This method was aimed at benchmarking countries against each other, as well as estimating a given country's capacity and advancement in building a Knowledge-Based Economy.

The indicators distinguished were as follows:

1. average annual GDP growth in years 1990/99, in percent,
2. Human Development Index 1999,
3. rate of gross capital accumulation as a percentage of GDP (1990/99 average),
4. tariff and non-tariff barriers,
5. ownership laws,
6. legal framework,
7. number of scientists involved in research and development projects in 1999,
8. share of manufactured products in trade as a percentage of GDP,
9. number of scientific publications per million of persons in 1997,
10. 1999 reading and writing skill index (as a percentage of population aged 15 years plus),
11. 1998 secondary school enrolment ratio,
12. 1997 higher school enrolment ratio,
13. total number of telephones per 1000 of population in 1999,
14. computers per 1000 of population in 2000,
15. number of connections to the internet per 10 000 of population in 1999.

Experts of the World Bank Institute (WBI) measured a number of indicators showing the degree to which the economies of the CEE countries (including Poland) that are applying for EU membership have integrated into the global knowledge-based economy.

Among them there are indicators that show an already complete integration of Poland's economy into the knowledge-based economy at this time, namely:

- the index of reading and writing skills (among population aged 15 years plus) of a very high level (99.7%),
 - the Human Development Index,
 - the rate showing the number of telephones (regular and mobile) per 1000 of population of the level of 6.12,
 - indicator of compliance with the intellectual property law,
 - the degree of the economy's openness (the level of tariff and non-tariff barriers),
 - the number of technical publications per 1 million of population,
- as well as those that reveal the distance Poland's economy has to cover in order to integrate into the world knowledge-based economy:
- scientists' involvement in R&D,
 - a share of trade in manufactured goods that accounts for only 40% of GDP,

- a general level of economy measured by the annual rate of GDP growth in the period 1990-1999 of 4.5%, and now fallen to approx. 1%,
- export of high tech products as a percentage of exported manufactured goods of 3%,
- Internet connections per 10 000 of population [12].

Conclusions

- Within the ongoing globalisation process, a strong correlation is observed between the sustainable competitiveness of the economy and the growing productivity of its different sectors on the global market.
- The progressing globalisation of the economy, the mobility of capital, the shorter periods in which innovations and products are developed oblige all nations and social groups to face new challenges. Today, the prerequisite to economic development and improved competitiveness is a knowledge-based restructuring of the economy.
- Higher productivity is the synonym of improved competitiveness. According to an OECD definition of sustainable competitiveness, higher productivity is particularly important for more successful competitiveness on markets open to international competition, as it brings about a long-term improvement in the quality of life and in job creation. Finally, higher productivity offers a better use of competitive advantages, which are thus no longer limited to the availability of natural resources in the economy and global competition.
- Productivity growth depends on a number of factors, among which innovations and investments in the ICT sector and on development of the human capital are most important. Economic development and productivity growth result from an educated workforce. Human capital, especially in technological sectors, makes productivity grow due to the accumulation and dissemination of knowledge. Knowledge and the skill of its efficient application are the key to the competitiveness of economies.
- The experience of various countries shows that the dissemination of benchmarking, i.e. a program of

comparisons between enterprises, not only improves the condition of enterprises which implement various techniques for productivity betterment, but also upgrades overall productivity throughout the national economy.

- At the end of the 1990s a World Bank methodology was developed which aimed to benchmark a given country's economy against the world economy on the macro-level. A relevant analysis focuses on the following areas: the economic and institutional system, the system of education, the informational infrastructure, the system of innovations with special reference to R&D activities in the private sector and in academic centres, as well as governmental policy with respect to the generation of new knowledge and innovations.

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