PROSPECTS OF POLAND'S SOCIO-ECONOMIC DEVELOPMENT IN LIGHT OF STATISTICAL DATA

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Abstract

The objective of this paper is to evaluate, in light of statistical data, Poland's capacity for dynamic development in the future and its possibilities for the attainment of its ambitious economic and social goals.

The analysis was based on the latest available data drawn primarily from Eurostat. They concern a number of EU countries, chosen as the reference countries in the paper.

The author discusses different measures for the evaluation of the economic and social processes to assess Poland's development opportunities in the coming years. For the sake of simplicity of presentation, the author has divided the measures into short- and long-term indices. Short-term analysis shows that Poland is successful in the short run. Unfortunately, long-term indices, which are rarely discussed by the public, reveal a grim picture of the performance of Poland in comparison with the reference EU countries.

The author concludes that Poland is a country which does not pay much attention to its long-term socio-economic development.

Introduction

The 20th anniversary of Poland's systemic transition provokes reflection on Poland's achievements over the past two decades and on their assessment. Poland has attained one of the highest economic growth rates in Europe, except for the years at the turn of the century. In the years 1995-1997, Poland even earned for itself the name of the "European Tiger". Such a GDP growth rate met the expectations of the economists, who recommended that it should either be maintained at the annual level of 6-7% (Mujżel, 2001, p. 39) or sizably exceed the EU average over a long period of time (Sadowski, 2001, p. 11). These goals were attained to a large extent, and Poland also managed to effectively curb inflation. While in 1990 the price index soared to 658.8, 1989 = 100, (Central Statistical Office GUS, 2007), the forecast for 2010 predicts that it will amount to 102.5, 2009 = 100, (National Bank of Poland, 2010).

Obviously, these facts should be regarded as a success and no one denies the socio-economic development accompanying this growth. Significant progress has been achieved in nearly all areas of life. Many everyday-life problems still remain, but it is obvious that the gap between Poland (or other former socialist bloc countries) and the developed world could not have been bridged over such a short period of time.

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The question is whether this success results only from the exploitation of Polish economic reserves, which may now be running out (Kleiber, 2009), and whether some foundations for continuing socio-economic growth in the coming decades have been created. It seems that in the future the present advantageous conditions may be found to have been temporary. It is feared that Poland lacks effective and long-term strategies in many fields, which, in the Author's opinion, include research and development, and the implementation of information and communication technology (ICT). The necessity for stimulating these areas, as well as related ones, such as technological progress, innovation, and modern management systems *"(...) results primarily from the global civilization breakthrough, consisting in the replacement of the industrial civilization, which lasted for several hundred years, by the new, still undefined, knowledge-based civilization"* (Mączyńska, 2009, p. 6). Ignoring or underestimating these processes may prevent the GDP growth rate from attaining high sustainable levels in the long term. The present low level of GDP growth in Poland is commonly thought to be the consequence of the 2008 global economic crisis. Yet, the question is whether the country will be able to return to the path of fast (or even faster than before) economic growth, ensuring satisfactory long-term development after the effects of the crisis have abated. The final outcome should be a considerably diminished gap between Poland and the wealthiest EU members as well as keeping up with the neighboring countries with similar histories, cultures and development levels.

The objective of this paper is to evaluate, in light of statistical data, whether Poland has created sufficient foundations for dynamic socio-economic development based on an innovative economy to fulfill the above aspirations.

Methodology

The analysis of statistical data was based on the latest available figures, primarily drawn from Eurostat, the main statistical institution of the European Union. To maintain comparability of Poland's achievements against other countries, the author decided to single out a subset of countries which he defined as "reference countries". This choice was not random and was subject to certain criteria. Thus, the reference countries include those with developed, stable market-based economies, such as Germany and Great Britain. Another set consists of Ireland (which is perceived by Polish people as the largest beneficiary in the history of the European Union), as well as of Sweden and Finland, which are currently regarded as European leaders in terms of economic growth and technology. Portugal and Greece were chosen to represent countries which are thought by many Poles to have failed to benefit from their accession to the EU. Finally, there are some of Poland's close neighbors, that is, Hungary, the Czech Republic and Slovakia, which have a lot in common, e.g., relatively large economies (relative to other countries accepted to the European Union in 2004), similar history, and the fact that Poland is often compared to them.

Some of the terms frequently used in this paper are "economic growth" and "socio-economic development". As they have many different definitions, for clarification purposes the author accepts that "economic growth is a continuous improvement of economic results over time (over successive periods) manifested by the value of goods and services produced" (Jarmołowicz, 2008, p. 69).

Socio-economic development is a wider term connoting not only positive qualitative changes in production, but also structural and institutional transformations, which should result in improved working and living conditions of the country's population (Jarmołowicz, 2008, p.

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79). At times, an intermediate term of "economic development" is used, which does not extend to social issues (Marciniak, 1997, p. 55). As the author believes that it is difficult to separate economic and social development in practice, the term "socio-economic development" is used in the paper.

So far, no indicator has been developed which could be used as a perfect stand-alone measure to unambiguously evaluate all economic growth or development issues. Consequently, institutions engaged in producing national statistics as well as those who use the results of their work employ a great number of measures related to the various areas of socio-economic life. Forecasts are made, policy implementation is assessed, and countries are ranked by the quality of solutions implemented in various areas (Office for Official Publications, 2006). The huge diversity of indices is manifested by the fact that the complete list of all indices—divided into different sets and subsets under the uniform Eurostat methodology—is displayed on as many as 166 PDF-format pages (Eurostat Data Navigation, 2010). Thus, it is necessary to select the right measures according to their information capacity and research objectives. For example, one study defines two sets of indices: short-term and structural ones (EFTA Secretariat Geneva, 2007, p. 5), while another study provides three sets of indices: short-, medium- and long-term ones (Rudel, Baruffini and Baruffini, 2007, p. 18). The Polish Central Statistical Office (GUS) classifies them into four categories, including structural, short-term, sustainable growth, and Euro indices (GUS, 2010).

For the purpose of this paper, the author has adopted two sets of indices for the analysis of short-term and long-term issues. Short-term indices demonstrate a considerable volatility over a short period. They are crucial for analyzing current economic policy issues or evaluating the economic climate in a specific field over one year or even shorter periods of time. Such measures include the rates of economic growth, industrial output, and foreign trade growth, as well as the inflation index. The common characteristic of these measures is their volatility resulting from economic processes taking place in a given country as well as global and regional economic trends. In many cases, regular access to short-term statistics is a prerequisite for analyzing current economic conditions and economic policy-making. The first two indices are the subject of further considerations.

This study also analyzes long-term indices, whose values are subject to smaller fluctuations, while significant changes may be expected to take place over a long period of time. The processes described by them are characterized by substantial inertia and invulnerability to current decisions or the current situation in the financial markets, in contrast to many short-term indices (e.g., the inflation index is sensitive to the decisions of the Monetary Policy Council, while foreign trade indexes are influenced by exchange rates, etc.). The pace and developments of these processes result from the long-term policies adopted by particular countries. The following indices were ranked in this set: the unemployment rate, PPS GDP per capita, gross domestic expenditure on R&D (GDP %), the number of patent applications per million inhabitants and the synthetic NRI index designed by the World Economic Forum experts.

The following abbreviations are used in the paper: LP – position among the reference countries, P27 – position among EU members, UE-27 – all EU member countries, AM – arithmetic mean over the period in question, SD – standard deviation over the period in question. The table rows concerning Poland and the columns by which the data have been sorted are bold-faced.

Short-term indices

Prior to the crisis, Poland was recognized as a relatively fast-developing country and in 2009 Poland's economy was the only European economy to have recorded growth, which is shown in table 1.

Analysis of the data presented in table 1 reveals that the crisis, which began in 2008, hindered economic growth in many countries, including Poland. The average growth rate for EU countries fell from 3.2% in 2006 to -4.2% in 2009, while for Poland the figure was 6.2% and 1.7%, respectively (with Poland's maximum being 6.8% recorded in 2007). Poland is still characterized by a high rate of economic growth and is ranked 2nd among the reference countries and 7th in EU-27 in terms of the average growth rate in the years 2000–2009.

Table 1: GDP growth rates in selected EU countries in the years 2000-2009 (in %)

No	Country	P27	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	AM	SD
1	Slovakia	5	1.4	3.5	4.6	4.8	5.1	6.7	8.5	10.5	5.8	-4.8	**4.6**	4.2
2	**Poland**	**7**	**4.3**	**1.2**	**1.4**	**3.9**	**5.3**	**3.6**	**6.2**	**6.8**	**5.1**	**1.7**	**4.0**	**2.0**
3	Ireland	8	9.7	5.7	6.5	4.4	4.6	6.0	5.3	5.6	-3.5	-7.6	**3.7**	5.2
4	Czech Rep.	10	3.6	2.5	1.9	3.6	4.5	6.3	6.8	6.1	2.5	-4.1	**3.4**	3.1
5	Greece	11	4.5	4.2	3.4	5.9	4.4	2.3	4.5	4.3	1.3	-2.3	**3.3**	2.3
6	Hungary	15	4.9	3.8	4.1	4.0	4.5	3.2	3.6	0.8	0.8	-6.7	**2.3**	3.5
7	Finland	16	5.3	2.3	1.8	2.0	4.1	2.9	4.4	5.3	0.9	-8.0	**2.1**	3.9
8	Sweden	17	4.5	1.3	2.5	2.3	4.2	3.2	4.3	3.3	-0.4	-5.1	**2.0**	2.9
9	Great Britain	19	3.9	2.5	2.1	2.8	3.0	2.2	2.8	2.7	-0.1	-5.0	**1.7**	2.6
10	Portugal	24	3.9	2.0	0.7	-0.9	1.6	0.8	1.4	2.4	0.0	-2.6	**0.9**	1.8
11	Germany	26	3.2	1.2	0.0	-.0.2	1.2	0.8	3.4	2.7	1.0	-4.7	**0.9**	2.3
	EU-27		3.9	2.0	1.2	1.3	2.5	2.0	3.2	3.0	0.5	-4.2	**1.5**	2.3

Source: Own work based on Eurostat 2010. The average values for 2000-2009 range from the minimum for Italy at 0.5% to the maximum for Estonia at 4.8%

Forecasts offered by Eurostat demonstrate that until 2011 Poland will remain in the group of countries with the highest rate of economic growth (5th place in the European Union at 3.3%) in relation to the EU average of 1.7% (Eurostat, 2010). To sum up, in comparison with EU countries, Poland's economic growth rate is high and relatively stable (a very low standard deviation of 2).

Analysis of the data given in table 1 reveals the short-term nature of the economic growth rate index as measured by GDP increase. The current crisis resulted in a great number of revaluations in the outlooks for specific countries. In 2009, Ireland (-7.6%), Slovakia (-4.8%) and Romania (-7.1%)[2] were no longer among the economic growth leaders. In particular years of the 2000–2009 decade, Poland was neither a frontrunner nor recorded high values of the index, unlike Ireland (9.7% in 2000), Slovakia (10.5% in 2007), Latvia (12.2% in 2006), or Romania (8.5% in 2005).[3] Clearly, due to its short-term nature, this popular measure should be replaced by some more stable gauges to evaluate long-term development prospects. Standard deviations given in table 1 are very high for many countries.

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[2] Not included in the table (Eurostat 2010).

[3] The last two countries not included in the table (Eurostat 2010).

The Harmonized Indices of Consumer Prices (HICPs) presented in table 2 are used to compare inflation rates between countries. They are official measures employed by a number of institutions, including the European Central Bank (Eurostat, 2010).

Table 2 provides information on inflation in the years 2000-2009. Since 2001, the inflation rate in Poland has been one-digit, in contrast to the previous decade. The lowest index of consumer prices (0.7%) was recorded in 2003.

Table 2: Inflation rate (HICP) in selected European Union countries in the years 2000-2009 (in %)

No	Country	P27	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	AM	SD
1	Germany	1	1.4	1.9	1.4	1.0	1.8	1.9	1.8	2.3	2.8	0.2	**1.7**	0.7
2	Finland	2	2.9	2.7	2.0	1.3	0.1	0.8	1.3	1.6	3.9	1.6	**1.8**	1.1
3	Sweden	3	1.3	2.7	1.9	2.3	1.0	0.8	1.5	1.7	3.3	1.9	**1.8**	0.8
4	Great Britain.	4	0.8	1.2	1.3	1.4	1.3	2.1	2.3	2.3	3.6	2.2	**1.9**	0.8
5	Czech Rep	12	3.9	4.5	1.4	-.01	2.6	1.6	2.1	3.0	6.3	0.6	**2.6**	1.9
6	Portugal	13	2.8	4.4	3.7	3.3	2.5	2.1	3.0	2.4	2.7	-0.9	**2.6**	1.4
7	Ireland	16	5.3	4.0	4.7	4.0	2.3	2.2	2.7	2.9	3.1	-1.7	**3.0**	1.9
8	Greece	19	2.9	3.7	3.9	3.4	3.0	3.5	3.3	3.0	4.2	1.3	**3.2**	0.8
9	**Poland**	**20**	**10.1**	**5.3**	**1.9**	**0.7**	**3.6**	**2.2**	**1.3**	**2.6**	**4.2**	**4.0**	**3.6**	**2.7**
10	Slovakia	23	12.2	7.2	3.5	8.4	7.5	2.8	4.3	1.9	3.9	0.9	**5.3**	3.5
11	Hungary	25	10.0	9.1	5.2	4.7	6.8	3.5	4.0	7.9	6.0	4.0	**6.1**	2.3
	EU-27		1.9	2.2	2.1	2.0	2.0	2.2	2.2	2.3	3.7	1.0	**2.2**	0.7

Source: Own work based on Eurostat 2010. The average values for 2000-2009 range from the minimum for Germany at 1.7% to the maximum for Romania at 16.4%

While in 2006 Poland was among the countries which managed to beat inflation to its lowest level (1.3%), in 2008 and 2009 inflation rates were up again. Consequently, Poland is ranked 20th in EU-27 and 9th in the group of reference countries, respectively. As regards Poland, it is difficult to interpret these results. The 20th place in the European Union, the 9th place among the reference countries, and the highest standard deviation among the countries given in Table 2 shows that Poland finds it difficult to keep inflation under control. However, it should be remembered that the years 2000 and 2001 mark the end of an over 10-year period of quenching the inflation rate, which was running at 585% in 1990 and at 27.8% in 1995 (GUS, 2007). If the inflation rates from the years 2000-2001 were excluded as outliers, Poland's average inflation and standard deviation would stand at 2.6% and 1.3%, respectively. Then, Poland could be recognized as a country which has managed to keep inflation in check.

The index under study is also a short-term one, as a low inflation rate recorded in one year does not imply that it will continue to be low in future. This thesis is supported by fluctuations in inflation levels observed in a large number of countries.

In 2004, Poland's inflation running at 3.6% gave the country 23rd place in EU-27, according to Eurostat. In the previous year, the 0.7% rate would have given Poland 3rd place, after Lithuania and Czech Republic, which recorded deflation (-1.1% and -0.1%, respectively).[4] This fact demonstrates that inflation is prone to changeability, particularly in new EU member countries, where economic systems are still unstable. These countries are characterized by

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[4] Data for Lithuania not included in the table (Eurostat 2010).

larger liability in this respect, which is demonstrated by the relatively high standard deviations. In these terms, old EU member countries are definitely more reliable. However, on a positive note, Poland has managed to keep inflation in check at single-digit levels. Hopefully, these successes will be accompanied by greater sustainability of Poland's good results.

These two short-term measures demonstrate that in comparison to the other countries Poland is doing quite well. This good performance is a prerequisite for rapid socio-economic development in future. However, it would be appropriate to assess whether the advantageous course of short-term processes is sufficient to ensure dynamic development of Poland in the future. To answer this question, the author intends to refer to long-term indices.

Long-term indices

Unemployment rates given in table 3 show the share of the unemployed in the working age population (Eurostat, 2010). The average unemployment figure gives Poland 2nd place in the European Union (15.0%) with the figure considerably higher than in Greece (9.7%), Germany (8.6%) and even the Czech Republic and Hungary (7.2 and 7.0%, respectively). At the 2009 unemployment rate, Poland comes 7th among the reference countries and 12th in EU-27 (8.4%)[5].

Table 3: Unemployment rate in selected EU countries in the years 2000-2009 (in %)

No	Country	P27	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	AM	SD
1	Slovakia	1	18.8	19.3	18.7	17.6	18.2	16.3	13.4	11.1	9.5	12.0	**15.5**	3.7
2	**Poland**	**2**	**16.1**	**18.3**	**20.0**	**19.7**	**19.0**	**17.8**	**13.9**	**9.6**	**7.1**	**8.2**	**15.0**	**5.0**
3	Greece	7	11.2	10.7	10.3	9.7	10.5	9.9	8.9	8.3	7.7	9.5	**9.7**	1.1
4	Germany	10	7.5	7.6	8.4	9.3	9.8	10.7	9.8	8.4	7.3	7.5	**8.6**	1.2
5	Finland	11	9.8	9.1	9.1	9.0	8.8	8.4	7.7	6.9	6.4	8.2	**8.3**	1.1
6	Czech Rep	14	8.7	8.0	7.3	7.8	8.3	7.9	7.2	5.3	4.4	6.7	**7.2**	1.4
7	Hungary	17	6.4	5.7	5.8	5.9	6.1	7.2	7.5	7.4	7.8	10.0	**7.0**	1.3
8	Portugal	18	4.0	4.1	5.1	6.4	6.7	7.7	7.8	8.1	7.7	9.6	**6.7**	1.8
9	Sweden	19	5.6	5.8	6.0	6.6	7.4	7.6	7.0	6.1	6.2	8.3	**6.7**	0.9
10	Great Britain	21	5.4	5.0	5.1	5.0	4.7	4.8	5.4	5.3	5.6	7.6	**5.4**	0.8
11	Ireland	22	4.2	3.9	4.5	4.6	4.5	4.4	4.5	4.6	6.3	11.9	**5.3**	2.4
	EU-27		8.7	8.5	8.9	9.0	9.1	8.9	8.2	7.2	7.0	8.9	**8.4**	0.8

Source: Own work based on Eurostat 2010. The average values for 2000-2009 range from the minimum for the Netherlands at 3.8% to the maximum for Slovakia at 15.5%

To sum up, a relatively high rate of economic growth did not lead to a lower unemployment rate, except in the years 2006-2008 when Poland recorded a very high rate of GDP growth and a noticeable drop in unemployment. As regards the EU average, the gap is still substantial (15% and 8.4%) and the gap between Poland and the leaders is even wider: Netherlands (3.8%), Luxemburg (3.9%) and Austria (4.4%).[6] Standard deviation is relatively stable and low in almost all countries, which means that unemployment rates in the countries given in Table 3 remain nearly constant, except for Poland and Slovakia, where these values amount to

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[5] Not included in the table (Eurostat 2010).
[6] Not included in the table (Eurostat 2010).

5.0 and 3.7, respectively as a result of the largest drop in the unemployment rate in those countries.

Another long-term index is GDP per capita. The author decided to analyze this measure taking into consideration Purchasing Power Standard (PPS).

The changes in the GDP growth shown in Table 1 provide little information about the financial standing of households, as their disposable income varies relative to the market prices in particular countries. This relationship can be analyzed by the application of Gross domestic product (PPS per inhabitant).

Table 4: Gross domestic product (PPS per inhabitant) in the years 2000-2009 (in '000)

No	Country	P27	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1	Ireland	3	25,0	26,2	28,2	29,2	30,8	32,3	34,4	36,8	33,3	29,8
2	Sweden	6	24,3	24,2	25,0	25,7	27,4	27,4	29,1	31,2	30,8	28,0
3	Germany	8	22,6	23,1	23,6	24,2	25,2	26,3	27,5	28,9	29,0	27,4
4	Finland	9	22,3	22,8	23,5	23,3	25,1	25,7	27,0	29,3	29,5	26,6
5	Great Britain	10	22,7	23,7	24,7	25,2	26,8	27,4	28,5	29,0	28,7	26,5
6	Greece	15	16,0	17,1	18,5	19,2	20,3	20,6	22,1	22,9	23,5	22,1
7	Czech Rep	17	13,0	13,9	14,4	15,2	16,3	17,1	18,2	19,9	20,2	19,2
8	Portugal	19	15,4	15,9	16,3	16,4	16,7	17,8	18,6	19,6	19,5	18,8
9	Slovakia	20	9,6	10,4	11,1	11,5	12,3	13,5	15,0	17,0	18,1	17,2
10	Hungary	21	10,6	11,7	12,6	13,0	13,7	14,2	14,9	15,6	16,2	15,3
11	**Poland**	**23**	**9,2**	**9,4**	**9,9**	**10,1**	**11,0**	**11,5**	**12,3**	**13,6**	**14,1**	**14,3**
	EU-27		19,1	19,8	20,5	20,8	21,7	22,5	23,7	25,0	25,1	23,6

Source: Own work based on Eurostat 2010. The average values for 2009 range from the minimum for Bulgaria at 10.2 to the maximum for % Luxembourg at 63.7 and the Netherlands at 30.7%

Purchasing Power Standard (PPS) works as an artificial currency unit with which one can purchase a similar set of goods and services in particular countries, thus enabling a comparison of the relative wealth of societies. Using this measure, one can determine the purchasing power of the country's population in relation to its GDP and reliably compare different regions or countries (Eurostat, 2010).

Preliminary analysis of data shown in table 4 demonstrates that except for 2009 all the countries recorded growth of that index over successive years. The tendencies and disparities observed between specific countries are relatively permanent. Changes in the ranking are exceptional and include the facts that the Czech Republic outdistanced Portugal in 2007 and Slovakia outdid Hungary in 2006.

This measure shows that Poland is ranked only 23rd in the European Union (14.3), behind Bulgaria (10.2) and ahead of Lithuania (12.5), Latvia (11.4) and Romania (10.7).[7] Obviously, the leaders are the member countries of the so-called "old" European Union.[8] What is noteworthy is the distance between Poland and its neighbors, which is relatively short

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[7] Eurostat 2010 data not shown in the paper.
[8] Luxembourg is the leader. However, its result is also distorted because it is employees from neighboring countries who contribute to Luxemburg's GDP growth. Thus, Netherlands' result is definitely more reliable.
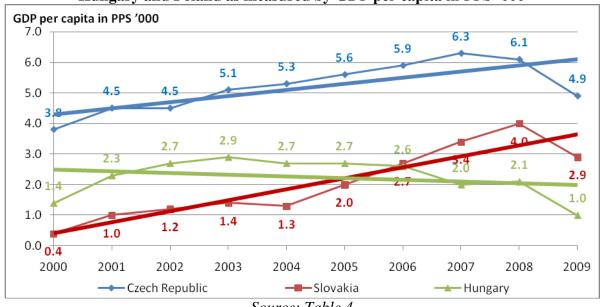
between Poland and Hungary (14.8) but much longer as regards the Czech Republic (18.9) and Slovakia (16.8). This gap was even wider in 2008, when the crisis hit Europe.

Analysis of the data demonstrates that in the years 2000-2009 the gap between Poland and its neighbors widened and they frequently recorded higher rates of economic growth, which is revealed in diagram 1.

Diagram 1: Changes in the wealth of the population of the Czech Republic, Slovakia, Hungary and Poland as measured by GDP per capita in PPS '000

Source: Table 4

The data displayed in diagram 1 are derived from the data given in table 4. They show absolute differences between the values of the index for the Czech Republic, Slovakia, Hungary and Poland provided in table 4. Based on these data, trend lines were determined to show the tendencies in the period under study. Analysis of trends marked by bolded lines reveals that the growth of social wealth in Poland was not as rapid as in the Czech Republic or in Slovakia.

In the European Union, science, technology and innovation are thought to be the primary factors of economic growth and, consequently, socio-economic development. This is supported by a large number of official documents prepared to encourage activities supporting those areas.[9] Angel Gurria, Secretary-General of OECD, spoke about their significance with reference to Poland: "*To sustain high economic growth and follow Ireland and Finland, Poland should support enhancement of competitiveness. I mean the investment in research, education and implementation of new technologies. This should be a permanent process, which, however, requires funds and patience. Investment in education and science shall not bring immediate economic effects. It takes at least a few years to benefit from them.*" (Omachel, 2006).

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[9] E.g. the 2000 Lisbon Strategy, amended in 2005, the so-called Barcelona Objective (2002), the European Council Initiative "Working Together for Growth and Jobs" of 2006 concerning the need to invest in knowledge and growth, and the Green Paper "The European Research Area: New Perspectives" adopted by the European Commission in 2007.

The above data demonstrate that R&D funding was not subject to substantial fluctuations over successive years, which is manifested by the low values of standard deviations for all the countries under analysis. Sweden (3.76%) and Finland (3.46%) are EU leaders in terms of R&D expenditure, considerably exceeding the European average. High R&D expenditure ensures creative development, contributes to the growth of social wealth and reduces unemployment levels.

Table 5: The percentage share of gross expenditure on R&D in GDP in a number of EU countries over the period 2000-2008

No	Country		2000	2001	2002	2003	2004	2005	2006	2007	2008	AM	SD
1	Sweden	1	n/a	14.7	n/a	3.85	3.62	3.60	3.74	3.61	3.75	**3.76**	0.20
2	Finland	2	3.35	3.32	3.37	3.44	3.45	3.48	3.48	3.48	3.73	**3.46**	0.12
3	Germany	4	2.45	2.46	2.49	2.52	2.49	2.49	2.53	2.53	2.63	**2.51**	0.05
4	Great Britain	8	1.81	1.79	1.79	1.75	1.68	1.73	1.75	1.82	1.88	**1.78**	0.06
5	Czech Rep	12	1.21	1.20	1.20	1.25	1.25	1.41	1.55	1.54	1.47	**1.34**	0.15
6	Ireland	13	1.12	1.10	1.10	1.17	1.23	1.25	1.25	1.28	1.43	**1.21**	0.11
7	Portugal	17	0.76	0.80	0.76	0.74	0.77	0.81	1.02	1.21	1.51	**0.94**	0.27
8	Hungary	18	0.79	0.92	1.00	0.93	0.87	0.94	1.00	0.97	1.00	**0.94**	0.07
9	Greece	20	n/a	0.58	n/a	0.57	0.55	0.59	0.58	0.58	n/a	**0.58**	0.01
10	**Poland**	**21**	**0.64**	**0.62**	**0.56**	**0.54**	**0.56**	**0.57**	**0.56**	**0.57**	**0.61**	**0.58**	**0.03**
11	Slovakia	24	0.65	0.63	0.57	0.57	0.51	0.51	0.49	0.46	0.47	**0.54**	0.07
	EU-27		n/a	n/a	n/a	1.86	1.82	1.82	1.85	1.85	1.90	**1.85**	0.03

Source: Own work based on Eurostat 2010. The average values for 2000-2008 range from the minimum for Cyprus at 0.36% to the maximum for Sweden at 3.76%

In this ranking, Poland is at the bottom of the Table, ranked 21st in the European Union and 10th among the reference countries. This result reflects the poor interest in innovation investment in Poland. Similarly, R&D expenditure is below the EU average in all the new EU member countries, but in the Czech Republic (1.34%) and Hungary (0.94%) it is much more substantial than in Poland (0.58%).

Table 6: Number of patent applications per million inhabitants in selected EU countries in the years 2000-2007

No	Country	P27	2000	2001	2002	2003	2004	2005	2006	2007
1	Sweden	1	258.0	236.2	224.7	221.2	246.2	260.1	280.0	**298.4**
2	Germany	2	267.8	264.4	260.8	263.3	276.2	283.7	283.6	**290.7**
3	Finland	3	274.6	266.3	24.1.9	241.3	264.0	247.1	248.6	**250.8**
4	Great Britain	10	102.1	94.5	92.9	91.5	90.9	88.5	89.8	**89.2**
5	Ireland	12	54.3	63.6	57.5	55.4	64.6	63.7	64.4	**66.8**
6	Hungary	17	11.8	9.7	11.8	12.6	15.4	13.4	16.0	**17.2**
7	Czech Rep	18	6.5	7.0	8.6	11.2	11.1	10.4	14.7	**15.8**
8	Portugal	20	4.1	4.0	4.0	6.1	5.6	11.0	10.1	**11.4**
9	Greece	21	5.1	6.5	6.8	7.9	6.1	9.9	9.3	**9.8**

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10	Slovakia	23	2.1	2.3	4.5	5.9	3.8	5.7	7.3	**7.8**
11	**Poland**	**24**	**1.1**	**1.5**	**2.1**	**3.0**	**3.2**	**3.2**	**3.6**	**3.8**
	EU-27		106.4	105.1	104.1	106.1	111.6	112.6	113.9	**116.5**

Source: Own work based on Eurostat 2010. The average values for 2007 range from the minimum for Romania at 1.0% to the maximum for Sweden at 298.4%

The obvious effects of R&D activities include the implementation of modern technology and patent applications. In Poland, the number of patent applications per million of inhabitants is the smallest among the countries under study (table 6). As regards P27, Poland is ranked only 24th. While the EU-27 average is 116.5 patent applications per million, it amounts to only 3.8 in Poland. Slovakia, the Czech Republic and Hungary show better results over the whole period under study and in 2007 the number of patent applications per million inhabitants amounted there to 7.8, 15.8 and 17.2, respectively. Romania is the outsider with only 1 patent application per million inhabitants, but the distance between Poland and Romania is rather short. As regards the reference countries given in table 6, the leaders are those that allocate the largest funds for R&D in terms of GDP share (table 5): Sweden (298.4), Germany (290.7), Finland (250.8) and Great Britain (89.2). They rank similarly among EU-27 countries in the last two tables. Sweden's performance deserves particular attention, as it outdistanced Finland in 2005 and Germany in 2007. As regards the countries with the lowest index, changes in their ranking order were also insignificant, with Poland coming at the bottom of the table over the whole period under study. A comprehensive evaluation of Poland's capacity for the absorption and application of information and communication technologies confirms the country's long-term weakness, as a high potential for the absorption and application of sophisticated solutions in this area is of key importance for social development (Schwarb, 2009, p. 3).

Table 7: Evaluation of the quality of investment in IT infrastructure and capacity for its creative use in selected countries in the years 2009-2010 (NRI)

No	Country	P133	P27	**NRI**
1	Sweden	1	1	**5.65**
2	Finland	6	3	**5.44**
3	Great Britain	13	5	**5.17**
4	Germany	14	6	**5.16**
5	Ireland	24	11	**4.82**
6	Portugal	33	16	**4.41**
7	Czech Republic	36	18	**4.35**
8	Hungary	46	20	**3.98**
9	Slovakia	55	23	**3.86**
10	Greece	56	24	**3.82**
11	**Poland**	**65**	**26**	3.74
	World (133)			**3.87**
	EU-27 average			**4.57**
	EU-11 average			**4.58**

Source: Own work based on Dutta, S., Mia, I., ICT for Sustainability. Global Information Technology Report 2009-2010 World Economic Forum 2010, the index ranges from 5.69 in Sweden to 3.66 in Bulgaria (The European Union) and 2.57 in Chad (133 countries under study)

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A study conducted in 2001 by the World Economic Forum demonstrates that Poland lags behind other countries. NRI was applied to compare the strengths and weaknesses of the ICT sector across many countries.[10] The index is computed on the basis of three evaluations, concerning (Dutta and Mia, 2010, s. 8):

1) the quality of conditions for ICT sector development,
2) capacity of individuals, enterprises and public authorities for exploiting the opportunities provided by the ICT sector,
3) the degree of ICT use by individuals, enterprises and public authorities.

Analysis of the figures given in table 7 shows Poland's poor performance in the area of investment in telecommunications infrastructure (e.g. access to the Internet, computerization of enterprises and public administration) as well as its weak ability to exploit such infrastructure, as compared to the majority of the countries.

The population of countries studied by the World Economic Forum was very large (133 countries). Poland's 65th place falls short of expectations for rapid and sustainable socio-economic development.

Poland's place has not changed substantially for years. Over the period 2001-2010, the study involved populations of 75 to 133 countries. Poland remained approximately in the middle of the ranking, but always below the other reference countries (World Economic Forum Reports, 2001-2010).

Conclusions

Analysis of short-term indices in particular years frequently reveals data that might be considered optimistic for Poland. They include e.g. the rate of economic growth and inflation. Obviously, if these indices continue to be satisfactory over a long period of time, the outlook for long-term socio-economic development will be positive, as long-term growth and low inflation are prerequisite for future socio-economic growth. However, it seems that the good performance in those areas over the last decade does not translate into encouraging long-term prospects, as evidenced by the conclusions concerning GDP per capita, where the gap between Poland and Slovakia and the Czech Republic widened. Also the unemployment rate, which is now slightly below the EU average, was one of the highest in the European Union during the decade under study. As regards expenditure on R&D, the number of patent applications and ITC, the distance between Poland and developed countries has grown. In the studied period, no changes were observed which might indicate an upcoming transformation in many other areas that are key to socio-economic development.[11] Thus, one can argue that while the relatively high rate of economic growth and low inflation are necessary for rapid socio-economic development, they are insufficient to ensure that it actually takes place.

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[10] Networked Readiness Index (NRI).

[11] Analysis of many other long-term indices also supports these conclusions. More in: 1989-2009. *20 Years After the Collapse of the Socialist Economy. Transformation, Economic Growth and Convergence in Poland and Other Central and Eastern European Countries*. Conference held by the National bank of Poland on 5-6 June 2009, Statistical annex; Luciński, W. (2009). *Możliwości stymulowania rozwoju polskiej gospodarki poprzez fundusze private equity wspierane przez sektor banków komercyjnych*. Łodź: Technical University of Łódź; Pangsy-Kania, S. (2004). Konkurencyjność polskiej gospodarki przez pryzmat międzynarodowych rankingów. In: Manikowski, A. (eds.), Psyk, A. (eds.), *Unifikacja gospodarek europejskich: szanse i zagrożenia*. Warszawa: Wydawnictwo Naukowe Wydziału Zarządzania UW, http://www.konferencja.edu.pl/ref8/pdf.pl/pangsy-kania-gdansk.pdf.

Yet, the debate about Poland's future tends to focus on the short-term indices. As they are quite optimistic, the public does not ask questions about Poland in 2020 or 2030. The media seem to be preoccupied only with current issues and do not pay attention to the many projects addressing Poland's distant future (Kleiber, 2009). Unfortunately future-oriented ideas provoke disputes only in narrow academic circles and the public opinion is generally unaware of them. At the same time, long-term forecasts about economic and social development are made in other countries, which is exemplified by the Lisbon Strategy—the international long-term forecast for Europe. Despite the initial failures, the strategy does shape social awareness in European Union countries and provides a basis for further considerations about the future.

Thus, there is an urgent need to define Poland's course for the future. "*If we do not improve our educational system and science, if we do not boost entrepreneurship, and especially small and medium enterprises, if we do not develop efficient administration, make an effective use of modern telecommunications technologies or enhance social creativity in all fields of life, we will never be able to leave the ruts in which we are currently stuck*" (Kleiber, 2009). Analysis of statistical data presented in this paper demonstrates that, unlike in other countries, no real basis for dynamic socio-economic development has been developed in Poland. Long-term thinking about Poland's prospects does not seem to bring any practical implications. Consequently, the vision of Poland with a fast-developing innovative economy may not actually come into being. This, in turn, will slow down bridging the gap between Poland and the most developed countries of the European Union and hinder the fulfillment of its social aspirations.

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