European Union in the Global Growth Prospects

Abstract: *The aim of the study is to evaluate the EU economic position in 1995-2013 as well as a perspective growth potential in the global dimension up to 2025. The subject of the research are real and projected data including: GDP growth rate, main growth factors (labour, labour productivity and Total Factor Productivity), and their input to the GDP growth. The analysis was conducted for the years 1995-2013 and 2014-2025. The authors' basic conclusions are: 1) the technological and economic gap between the European Union and the United States has been deepening, 2) the increasing polarisation of world economic powers and low GDP growth in the European Union limit its chances of maintaining the position of the second centre in the world economy, 3) economic growth forecasts indicate a deepening of the economic gap between the largest EU countries and the US.*

Keywords: *European Union, economic growth, productivity, global position.*

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1. Introduction

Research on the world economy growth prospects was intensified in the late 1990s when technology revolution accelerated growth processes of economic interdependence in a global dimension. In the beginning, it was mostly carried out by the OECD, while nowadays all major international organizations and research institutes conduct this kind of analysis. Increase in OECD activity was a result of a belief that this organization could play a crucial role in strengthening multilateral rules of trade and capital flows liberalization leading to intensified economic relations between developed and developing countries, which should stimulate the creation of new demand (provided that there is a sufficient inflow of capital, technology and knowledge), and in turn would contribute to structural changes and the growth of per capita income (OECD, 1997). H. Giersch accurately predicted that most important forces of economic development would be: growing competitiveness, capital resources and qualifications of the workforce (Giersch, 1996: 61-65). Moreover, the OECD position on international economic order in the late 1990s was explicitly oriented on widening multilateral rules, meaning further liberalization of trade and investment, labour markets, financial markets, tax regulations as well as structural and social reforms. An important argument in favour of the labour market liberalization was cushioning the negative effects of population aging in Europe and decreasing the burden on public finances caused by increased transfers to retirement funds.

Asian financial crisis (1997) showed the pressing necessity of implementing multilateral rules for international banking and finance, including banking supervision.

OECD experts assumed that in a global economy with two main centres – the United States and the European Union – competing to gain enough influence to become the sole world leader, the role of OECD was to create favourable conditions for the development of the global economic system. As it turned out 20 years later, strengthening of the global economic order hasn't been progressing enough despite growing interdependence in all areas of the world economy. Even multilateral trade policy, highly promoted by the WTO and the EU, lost its momentum. Since the beginning of the new millennium the United States have been conducting a competitive strategy of trade liberalization signing agreements with selected countries, mainly bilateral in nature.

This policy allows them to create strong ties and make developing countries dependent on the US market, as well as obtain market access for American exporters and build coalitions within the WTO. Thus the United States gain a growing impact on international trade policy and global economic relations. Such strategy weakens the global position of the European Union.

OECD forecasts from the end of the 1990s concerning the change in the world economy line-up materialized. Position of China, India and Brazil improved due to the high economic growth as well as Russia's. Weakening of the economic role of Japan resulted in China becoming the country with the highest potential in Asia. The world economic triad evolved into a multipolar system. Growing polarization of economic interests makes global cooperation more difficult. It raises questions about economic prospects of the European Union and its influence on the global policy. The authors attempt to answer this question in the paper using the analysis of data such as: GDP rate of growth as well as input to the GDP growth of labour, labour productivity and Total Factor Productivity (TFP). The sources of data are: Eurostat, OECD, The Conference Board and European Commission forecasts.

2. Theoretical framework

Economic growth is the result of many factors' input. Their impact on GDP dynamics changed with technological progress and structural transformations, which was reflected in economic theory. In the theoretical and empirical analyses at the earlier stages of economic development the resource approach and the traditional concept of growth factors were used, which included: natural resources as well as labour and capital resources. Along with the ongoing research other determinants of economic growth were taken into account and greater importance was attached to the factors affecting an increase in labour productivity, such as capital inputs, technological progress and human capital.

The neoclassical Solow model based on endogenous factors had a major influence on the development of modern theories of economic growth. Its author pointed to the savings (investment rate) as an important factor of economic growth in the short-term (1957). The representatives of neoclassical economics attach great significance to the accumulation of production factors and their productivity. The impact of technological progress on the long-term growth is not analyzed in detail in this model because it is of exogenous nature. Occurring in the model the so-called Solow residual, explaining an increase in production under fixed labour and capital inputs, is interpreted as Total Factor Productivity. Changes in TFP are caused by technical and organizational progress, and many other factors, i.e. an increase in workers' skills, the discov-

ery of natural resources, investments in human capital, or immigration (Craft, 2008: 1-10). An important supplement to the Neoclassics' method of proving was introducing a breakdown of investments into investments in physical capital and human capital, which significantly increased the utility of the theory in the analyses of economic growth. Human capital is understood as skills and know-how of employees, acquired in the process of education (Petrakos *et al.*, 2007: 7). Research confirming that the higher level of education increases country's capacity to economic growth have been conducted, among others, by: R. Barro and X. Sala-I-Martin (Barro & Sala-I-Martin, 1995), E. Hanushek and D. Kimko (Hanushek & Kimko, 2000).

In parallel with research on human capital the subject of economic theorists' attention is the impact of innovation and research and development activity on the increase in Total Factor Productivity. The strong relationship between innovation and economic growth has been empirically proven in many studies, among others conducted by the International Monetary Fund (Ulku, 2004). Progress in the interpretation of technological factor's impact on economic growth lies in including the possible spillover of scientific and technical knowledge at the international level, which is facilitated by the liberalization of trade, capital movements and migrations of population.

The above-mentioned growth factors are used in contemporary analysis and long-term GDP growth projections carried out, inter alia, by teams of analysts in the OECD and the Conference Board. The methodological basis is the Cobb-Douglas production function. OECD applies the supply side analysis in long-term forecasts of global economic growth, using a standard aggregate Cobb-Douglas production function with constant economies of scale. According to this concept, economic growth is a function of physical capital, human capital and labour as well as technological progress, the so-called multifactor productivity (OECD, 2014: 216-217). The Conference Board's methodology is similar, the contribution of production factors to GDP growth is determined by inputs of labour, capital and TFP (representing the impact of technological progress on the efficiency of all production factors). In recent years, many authors have used a method based on the production function for forecasting economic growth of countries and groups of countries, including, among others: W. Easterly and R. Levine[1] (Easterly & Levine, 2001) and J. Fouré and others (Fouré *et al*., 2010).

J. Fouré emphasizes that there is a need for better understanding of TFP and the factors that determine its growth in order to model the long-term economic growth more accurately, and to implement economic policy in the most optimal way (Fouré *et al.*, 2010). The number of factors taken into account to calculate the overall productivity of all production factors is of crucial importance.

TFP concepts are not uniform, the selection of measures used to determine changes in individual factors of production is particularly significant. In practice, TFP is understood as the real product of combining all production factors. Changes in TFP are considered to reflect, among others, technological improvements, structural changes in the industry or adapting lower cost production methods. In connection with narrower or wider view of TFP and used measures of changes in stocks of individual production factors, the results of research and empirical verification of the impact of TFP changes on economic growth can be varied and not fully adequate to economic realities. (Fouré *et al.*, 2010).

3. Evaluation of the EU's economic position in 1995–2013

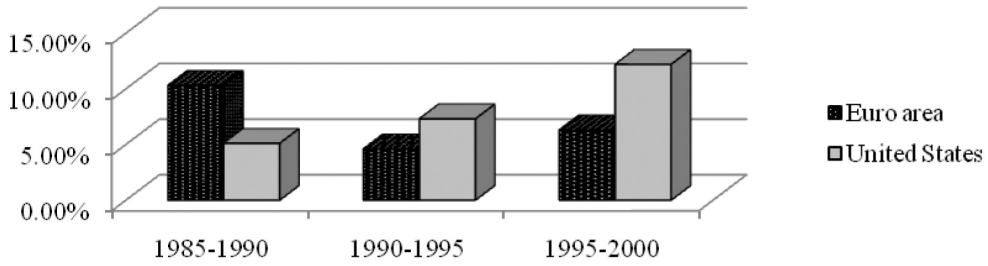
The factors that above all influenced economic development of the European Union countries in 1995-2013 were: 1) development of ICT technologies, 2) structural changes in the economy, especially the growing role of services sector in GDP and employment, 3) effects of the Single European Market and the GATT Uruguay Round, 4) macroeconomic policy aimed at fulfilling the treaty criteria of the Economic and Monetary Union, 5) introduction of the euro and the effects of the common monetary policy in countries with high and low inflation rates, 6) bursting of the Internet bubble on the New York stock exchange (2001) and later the real estate bubble, financial, economic and public debt crisis. The aforementioned factors point out the changing conditions for economic activity and growth. They were favourable in the years 1994-2000 mainly due to the fast technological progress. The centre for computer, semiconductor and software production was in the United States. Investment in the ICT sector didn't become European specialty (with the exception of Finland, Sweden and the United Kingdom) and since the mid 1990s the technological gap between the US and the EU began to grow. The proof of that was a decrease in the rate of growth of labour productivity, TFP and GDP. The data confirming the regressive tendencies in the EU economy is presented in table 1 and figure 1.

Table 1. Growth of GDP, labour input and labour productivity in the European Union and the United States in 1991–2000.

Years	GDP		Labour input		Labour productivity	
	EU	US	EU	US	EU	US
1991–2000	2.1	3.6	0.3	1.9	1.8	1.7
1991–1995	1.5	3.1	-0.9	1.8	2.4	1.3
1995–2000	2.6	4.1	1.2	2.0	1.4	2.0

labour input = annual number of hours worked, labour productivity = GDP per hour
Source: Sapir et. al., 2004: 32.

Figure 1. Total Factor Productivity in the EU and the US in 1985-2000, cumulative growth over 5-year periods (in percentage).

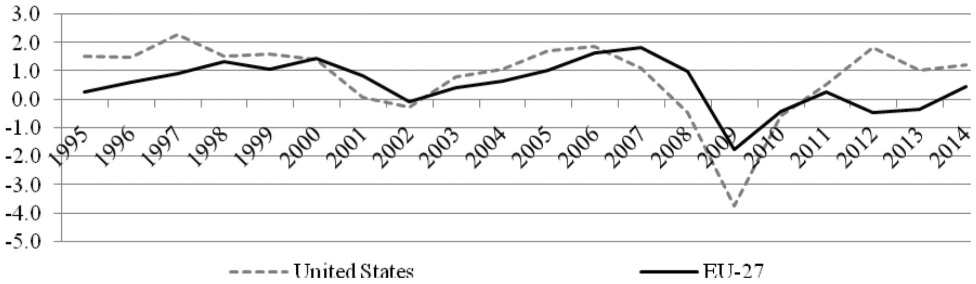


Source: EEAG, 2002: 60.

Data in table 1 shows that in the early 1990s the rate of labour productivity growth in the EU was significantly higher than in the United States. The reversion of that tendency occurred in the second half of the decade. Since the 1970s till the mid 1990s there had been a periodic decrease of labour input to the GDP growth or maintaining the number of working hours on the unchanged level as well as a decrease in the employment rate. In 2000 all European coun-

tries had a lower number of working hours per employee than the US (below 90%) (Sapir *et. al*., 2004: 29). This situation was caused by the employment policy focused on improving the labour market by the creation of new jobs and the part-time employment. Furthermore, new jobs caused the decrease in labour productivity due to lower technical equipment per employee. The figure 2 shows that in 1995-2006 (except for 2001-2002) an increase in employment in the EU-27 was lower than in the US. During the economic downturn (2001-2002) and the recent recession a decline in employment in the US was significantly higher (2007-2010), reflecting the protection of jobs in the EU. The higher GDP growth rate after 2010 in the US contributed to the rise in employment, especially after 2011.

Figure 2. Employment growth (annual average, percent).



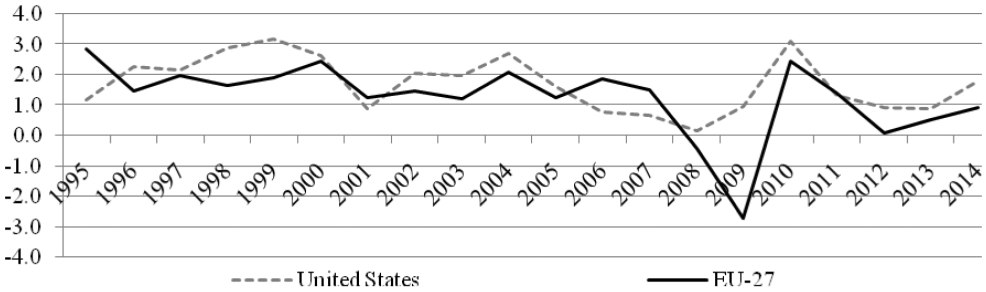
Source: The Conference Board, 2014.

Analyzing labour productivity growth one should consider sectoral changes. In 1995-2005 there was a significant growth of services share in the economies of the EU countries and employment grew mainly in this sector, which is characterized by a lower productivity than manufacturing. Sectoral analysis including the influence of ICT technologies on aggregated rate of labour productivity growth in the EU, euro area and the United States led to the same conclusions. R. Gomez-Salvador, A. Musso, M. Stocker and J. Turunen (Gomez-Salvador *et. al.,* 2006) based their breakdown of industries on the intensity in the use of ICT technologies. They distinguished three sectors: ICT-producing, ICT-using and non-ICT to assess their individual impact on the overall growth of labour productivity in the euro area. Sector I encompassing production of computers, software, telecommunication equipment, electronic valves and tubes, scientific equipment etc. had a strong influence on the growth in productivity in the US and was insignificant in the euro area. Sector II was also important factor of labour productivity growth in the US, especially the usage of ICT in retail, wholesale and financial services. These dynamically growing services not only didn't have a positive impact on productivity growth in the euro area, but in 1996–2002 caused a decrease of 1 percentage point in the rate of the overall labour productivity compared to the United States (Gomez-Salvador *et. al.,* 2006: 21). However, most of the decline in euro area aggregate labour productivity growth was explained by sector III, which consisted of the industries remaining outside the ICT technology production or use, including manufacturing and other economic activity. There was a negative correlation between the growth of employment and labour productivity in the non-ICT sector, because an increase in employment diminished the effects of capital deepening.

Similar analysis was performed by the Center for Economic Studies in Munich for the years 1985-2000. The authors evaluated input of various sectors (depending on the intensity in the use of ICT technologies) into aggregated growth of labour productivity in the EU and the

United States. B. van Ark, R. Inklaar and R.H. McGuckin analyzed 51 industries in the EU and the US (Ark van, 2003: 295-318; Mucha-Leszko, 2007: 263). Their results allowed to identify causes of a higher growth of labour productivity in the United States: 1) significantly higher share of employment in the ICT-producing sector compared to the European countries, 2) higher labour productivity growth in ICT-using services, 3) lower productivity of wholesale, retail and financial services contributed considerably to the decrease in total labour productivity in the EU. In conclusion, in 1995-2005 the United States increased their economic advantage over the EU due to investment in ICT technologies that resulted in the labour productivity growth of the whole economy, especially the service sector. During the same period the EU productivity growth rate was falling or remained stable on a much lower level than the US due to the increasing technology gap. Further research by B. van Ark, M. O' Mahonay and M. P. Timmer (Ark van, 2008: 25-44) confirmed high impact of low labour productivity in the EU services sector on the weakening of EU's economic position compared to the US. Increase in commercial services labour productivity in 1995-2004 in the US was 3.2% (per annum) while in the EU it was only 0.9%, and in financial and business services the disproportion was especially strong: 0.1% in the EU and 1.2% in the United States (Ark van, 2008: 40).

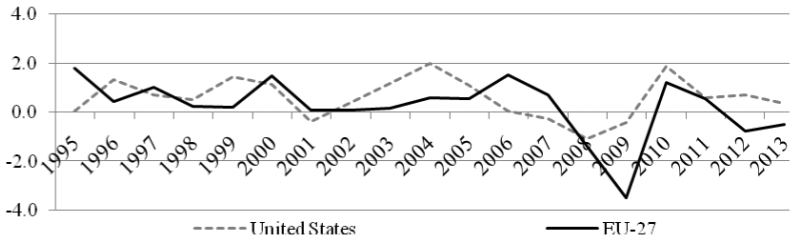
Figure 3. Labour productivity growth (GDP per person, annual average, percent).



Source: The Conference Board, 2014.

The growth rate of the overall labour productivity in the years 1996-2013 (fig. 3) was higher in the US, with the exception of a short-term lowering in 2001 and in the period preceding the last recession (2006-2007). Taking into consideration the fundamental role of labour productivity for the economic growth and the huge regress in that area in the EU during the peak of ICT technologies development it is important to point out the main causes of that phenomenon. The rate of labour productivity growth depends on capital input and the Total Factor Productivity. TFP can be defined as a real product per unit of all production factors and is considered a measure of technological progress and structural changes in the economy. The slump in labour productivity growth was the result of both factors but impact of TFP decrease on European Union productivity was stronger after 2000, as illustrated in figure 4, with periodic improvements in 2006 and 2010.

Figure 4. TFP growth (annual average, percent).



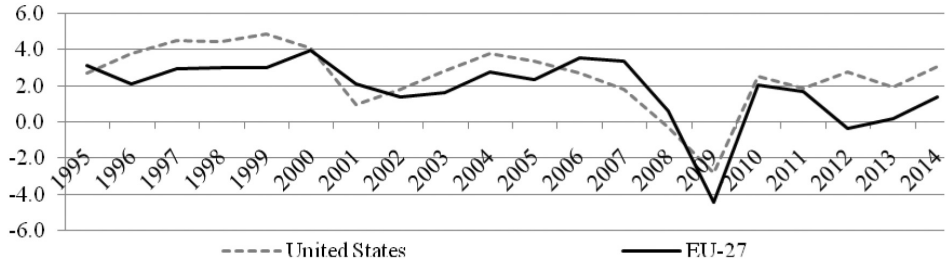
Source: The Conference Board, 2014.

The role of other internal and external factors influencing the economic growth and structural changes in the EU and its position in the global economic policy was less significant. However, it is possible to point out which of them had the positive impact and which ones the negative. The factor that encouraged economic activity and contributed to the economic growth was the progressing liberalization on the EU internal market (Single European Market Project) as well as the multilateral liberalization (implementation of the results of the Uruguay Round). Another positive factor in 1996-2000 was a growing foreign demand as an outcome of favourable economic conditions in the United States, China and the emerging markets. On the other hand, the macroeconomic policy of most European countries was not aimed at economic growth, but focused on fulfilling the criteria allowing for the entering the European Economic and Monetary Union. The goal of the monetary policy was to lower inflation and stabilize exchange rate, while fiscal policy was focused on reducing budget deficits and public debt. Introducing the common currency and single monetary policy was a significant change in the functioning of the economies and market participants. There is one interest rate for the whole euro area and because of that countries with the highest inflation rates gained access to cheap money, while countries with low inflation, such as Germany or France, incurred costs of falling GDP rates. Thus both countries, aiming at counteracting regressive economic tendencies, raised their public expenditure. European Central Bank policy was also too restrictive for Austria and Belgium. So there was a problem of the impossibility to adjust the interest rate to the economic conditions of each country, which is caused not only by the differentiation of inflation rates, but also by the lack of sufficient synchronisation of economic cycles. Monetary Tension Index (MTI) is used to evaluate the adjustment of optimal EMU interest rate to country's economic situation. Positive value of MTI means that monetary policy is too restrictive for the economic cycle of a given country, while negative result points to a loosening of monetary policy and an easy access to cheap money which can cause a credit boom. In the period of 1999-2003 MTI was negative for Finland, Spain, the Netherlands, Ireland, Portugal and Italy (although in the case of Finland and Italy it was relatively low). Thus real interest rates had pro-cyclical impact increasing internal demand and inflation in Ireland, the Netherlands, Portugal and Spain (Fernandez & Gonzalez, 2004: 25; Mucha-Leszko, 2007: 163-165). Credit boom is dangerous because it leads to the growth of demand, prices, wages and unit cost of products and in consequence to the decrease in competitiveness and the rise in current account deficit. Joining the monetary union causes risks of growing prices and costs in less advanced euro area economies which is expressed by the appreciation of effective exchange rate. This occurred mostly in Spain and Portugal. Giving up own currency and adopting the euro didn't improve the trade position of Portugal. On the contrary, there was even further decrease in the comparative advantage

caused by the following factors (Mucha-Leszko & K[1]kol, 2011: 615): 1) diminishing rate of labour productivity, 2) disadvantageous relations between costs and prices, 3) export specialization based on labour-intensive production, 4) high concentration of exports on the EU market (over 70%) where the growth of turnover is much lower than the world economy average, 5) increase in competition on the world market, especially in the labour-intensive products, 6) a drop of international corporations share in Portuguese exports (from 39% in 2000 to 11% in 2008), as a result of diminishing attractiveness of Portugal for foreign investors. Diversity of trade competitiveness in the euro area deepened until the financial and economic crisis of 2008-2009. The slump in the demand and imports contributed to lower trade deficits of the least competitive countries (Spain, Portugal, Italy, Greece). However such improvement of balance is ostensible, crucial conditions of a lasting balance are innovativeness and increase in labour productivity. Largest economic gains in the euro area were realised by countries with the highest competitive advantage: Germany, Finland, Austria and Belgium.

Since 2000 factors of fundamental significance affecting economic processes and the global position of the European Union are the common currency and effective functioning of the euro area, including conducting the policy of preventing macroeconomic imbalances as well as external conditions, such as economic situation in the United States and China, state of financial markets and prices of fuels. Lowering of the economic growth rate in the EU occurred in 2001 and persisted until 2004. It was the result of the collapse of the technology boom in the United States (fall in ICT stock prices, Standard & Poors 500 and Nasdaq indexes). The terrorist attack in New York on September 11th 2001 had a negative impact on the US capital market and economy, but it didn't cause the recession that was under way since March 2001, which can be proved by falling employment. A slowdown in GDP growth in the EU was prolonged, GDP growth didn't surpass 2% until 2004, and grew to over 3% in 2006-2007 (see fig. 5). The economic recovery was weakened by growing oil prices, stagnation of merchandise exports (intra and extra EU) (WTO, 2011: 12-17) and the low growth rate of individual consumption (European Commission, 2004: 32-33). The low increase in employment and wages, the rise in unemployment rates and the growing saving propensity caused by the reform of social security systems (European Commission, 2004: 32-33) were barriers to consumption growth while investment was mainly hindered by high oil prices and growing production costs. The decrease in GDP growth rate in the European Union, preceding the recession, started from the second quarter of 2008 and in the fourth quarter the rate of GDP growth was already negative and dropped to – 4.3% in 2009 (European Commission, 2013: 112). In 2010–2011, in many EU countries there has been a restoration of economic prosperity and the average GDP growth rate remained at around 2%. Countries that have achieved high growth rates of GDP were: Sweden (6.6%, 2.9%), Slovakia (4.4%, 3.0%), Germany (4.0%, 3.3%), Poland (3.9%, 4.5%) and Estonia (2.6%, 8.6%) (European Commission, 2014: 134). However, the recovery turned out to be unstable and in 2012 the GDP rate of the EU-27 has fallen below zero again (by 0.4%), with a large divergence of economic situation between member countries.

Figure 5. Real GDP growth (annual average, percent).



Source: The Conference Board, 2014.

4. Selected economic growth forecasts up to 2025

The OECD, the European Commission and the National Intelligence Council (US) forecast that economic growth during the next 30 years and by 2060 will occur under the following conditions (Mucha-Leszko, 2013: 435-436): 1) the increasing demand for energy, 2) intensive urbanization in areas of high GDP growth, mainly in Asia and Africa, 3) the growing importance of the middle class and its impact on the global demand, 4) the aging of the population of European countries, 5) higher economic growth in non-OECD countries, but the range of growth rates between this group and the OECD countries will decrease, 6) large differences between countries in terms of income and standard of living will persist, 7) the multipolarity of economic forces will deepen due to the rise in significance of China, India, Indonesia, South Korea, Brazil, Mexico, South Africa, Nigeria and Turkey, 8) the United States and Europe will remain important in the system of the major centres of the world economy due to the high share in the global GDP, international trade and because of the power of corporations and investments, 9), there are concerns whether multilateralism and multipolarity of the world economy will be adequately balanced by the development of global governance. The fundamental question from the point of view of Europe's position pertains the future of the European Union, an economic efficiency of this group of countries as well as the degree of centralization of economic policy and decision-making. Progress in the federalization of the EU is an important condition for the strengthening of its position as a global economic centre. In view of the anticipated growing demand for energy the common energy policy of the Union is particularly important. However, the crucial issue is the removal of all barriers to free competition in the EU internal market, which reduce the benefits of market integration, in particular the efficiency of the common market as a lever to reinforce the competitive advantage in a global dimension.

Forecasts of long-term economic growth are developed on the basis of the assessment of growth opportunities arising from the resources and the quality of labour force, the abilities of raising capital and technological base. Long-term growth paths are affected by supply and demand shocks. Depending on their strength, the deviation of the real economic growth rate from the potential may be large. Such situation occurred as a result of the deep recession in the period 2008-2009, which makes the projection of long-term growth trend more difficult.

Table 2. Projection of GDP trend growth and its components (%).

Country	Average growth 2007–2013	Average annual growth 2014–2019 (trend growth projection)					Average annual growth 2020–2025 (trend growth projection)				
		GDP	Labor Quantity	Labor Composition	Capital Services	TFP	GDP	Labor Quantity	Labor Composition	Capital Services	TFP
United States	1.1	1.7	0.3	0.1	1.1	0.2	1.7	0.2	0.1	1.4	0.0
France	0.4	1.0	-0.1	0.2	0.8	0.1	0.9	0.0	0.2	0.7	0.1
Germany	1.1	2.0	-0.4	0.1	1.4	0.9	1.4	-0.6	0.1	1.1	0.7
United Kingdom	0.3	1.1	0.1	0.1	0.9	-0.1	1.2	0.1	0.1	1.0	-0.1
Japan	0.4	0.9	-0.6	0.2	0.9	0.4	0.6	-0.4	0.2	0.6	0.3
China	9.7	5.3	-0.1	0.1	3.9	1.4	3.5	-0.1	0.1	2.8	0.7
India	7.1	4.7	0.8	0.2	3.1	0.7	3.5	0.6	0.2	2.4	0.3
Argentina	3.7	3.0	0.5	0.2	1.8	0.6	2.7	0.5	0.2	1.7	0.4
Brazil	3.2	3.2	0.6	0.2	1.6	0.8	2.8	0.3	0.2	1.6	0.7
Russian Federation	3.0	1.4	-0.4	0.1	0.9	0.7	1.2	-0.4	0.1	1.0	0.5

Source: Erumban et. al., 2013: 18-19.

In table 2 we present medium-term forecasts of GDP growth and the contribution of the following factors of growth: quantity of labour, quality of labour (depending on the level of qualifications), input of capital services and TFP for selected developed countries and rapidly growing large developing economies. Within the group of five developed countries, Germany and the United States had the highest average annual GDP growth rate of 1.1% each in 2007-2013. The economic gap (to the leaders as well as the deviation of real from potential growth) widened in the United Kingdom, France and Japan. In the second group of dynamically developing countries (emerging economies) the highest positive deviation from growth trend incurred in China and India. The economic gap to the developed countries shrank in Argentina, Brazil and Russian Federation. GDP growth forecasts for the years 2014-2019 are best for Germany and the US from the first group, and in the second group China and India will remain leaders of growth, but their average GDP growth rate will fall to about 5%. Brazil is expected to remain on a growth path maintaining the same annual average GDP growth rate of 3.2%, in Argentina the growth rate will slightly decrease and a large drop in economic growth is expected in Russia. In the next period of 2020-2025 the United States will maintain the highest average annual growth rate (at the same level as in 2014-2019), the growth rate will remain low in France (0.9%) and the UK (1.2%), while it will fall from 0.9% to 0.6% in Japan. The downward trend of GDP growth will deepen in the second group of countries, from 3.5% in China and India to less than 3% in Argentina and Brazil and 1.2% in the Russian Federation. The demographic factor will have the greatest impact on reducing the rate of economic growth in Germany, Japan, Russia and China.

5. Conclusion

The conducted analysis showed that the development of ICT and intense globalization of economic processes have contributed to a greater diversity of GDP growth rates and changes in the line-up of major powers in the global economy. China has become the new economic cen-

tre. Economic importance of India and other Asian countries is growing. On the other hand, the technological and economic gap between the European Union and the United States has widened. The increasing polarization of world economic powers and low GDP growth in the European Union weakens its chances of maintaining the position of the second centre of the world economy. Economic growth forecasts to 2025 indicate a widening of the economic gap between the largest EU countries and the US. This also applies to the economic leader of the EU–Germany, which will incur population losses.

Note

[1] Three-factor function of production: labour, capital and energy, and two forms of technological progress.

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