Economic Estimation of European Union Expansion

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Abstract. The formation of the European Union (EU) is the one of the biggest political – economic events of the last 50 years. EU development and optimization process is still incomplete, with still evolving EU economic foundations and financial system. The aim of this study is to explore the effects for EU member states that were created by the EU enlargement processes. The paper focuses on such indicators as GDP, employment, public debt, and reflects its dynamics in periods of the years 1995, 2004 and 2010. The study uses traditional mathematical, statistical and economic analysis methods, such as data grouping, comparison, average level and trends detection, as well as visual analysis (graphical) method. Study result – author divides EU countries into several groups, based on their economic specifics; (it is possible to use similar development politics for these groups).

Keywords: European Union, integration, GDP, employment, debt, international trade, investments.

1. Introduction

After formation of the European Union (EU) enough time has passed to make conclusions, as to what member countries gained from the accession to the Union. The EU has definite advantages: free trade, free movement of labour force and capital. Participation in the union involves other Member States' support during the times of economic difficulties. Despite the advantages, the crisis in 2008 underscored the union’s problems: some states do not fulfill the basic financial and economic conditions, some try to improve their internal well-being at the expense of others. These conditions have highlighted actuality of the study; they require defining functioning economic models of EU, as well as defining the differences and similarities of these models.

In the paper researched problem is related to economic evaluation of EU member states.

Paper’s novelty element is related to quantitative evaluation of the impact of political - economic union formation on its member states' economies. At the present, union formation process is topical not only for EU countries; the integration processes take place worldwide: CIS, etc. Paper’s results could be used in planning union, regional public policies, economics, as well as for academic and scientific purposes.

The research object is EU economical integration. The research subject is the changes of EU member states’ economies, which have occurred as a result of EU enlargement.

Paper’s aim is to estimate the main economic indicator changes in EU countries since the EU enlargement. To achieve this aim, the following tasks are set: 1) to analyse the GDP dynamics of the EU countries, 2) to analyse employment level dynamics of the EU countries, 3) to analyse public debt dynamics of the EU countries, 4) to analyse foreign trade dynamics of the EU countries, 5) to analyse investment dynamics of the EU countries.

The study will use traditional mathematical, statistical and economic analysis methods, such as data grouping, comparison, average level and trends detection, as well as visual analysis (graphical) method.

As the information base of study the European Community’s, Eurostat data (2012) are used. Some materials are taken from experts, news agencies, newspapers and the Internet. Methodological basis of research is based on the world top scientist’s works on the international economic theory - MacConell C. and S. Brue (2003).

The study focuses on the EU expansion in 2004, and its results; it is the limitation of the paper.

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It is important to highlight that, by statistical analysis of data, the timeline has been divided into three main periods: year 1995 - the year of the EU formation, year 2004 when the most significant enlargement of the EU took place, and year 2010 when the EU formation is completed (and it is possible to see the results of the expansion in 2004). So the further analysis reflects the dynamics over the years.

2. European Union Main Economic Indicator Analysis

Traditionally, the state economy is measured by several most relevant indicators, including GDP, number of employed, amount of investment, exports and public debt. Evaluating the EU's national economies, the author has combined both absolute and relative indicators. This approach makes it possible to assess the scale of each individual country in the EU context, and to compare the development of the countries.

2.1. GDP Dynamic Analysis in EU Countries

The first indicator analysed, which reflects the economic development of EU countries, is GDP. GDP in general is measured by a relative indicator "GDP per capita". The dynamics of these development indicators displays the Fig.1, but Fig.2 displays the latest available results in 2010.

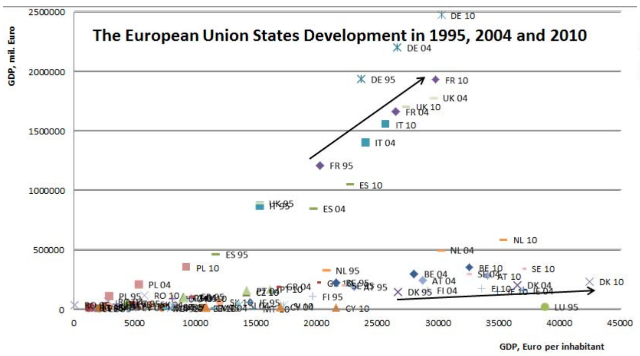


Fig. 1: The EU States Development Dynamic.

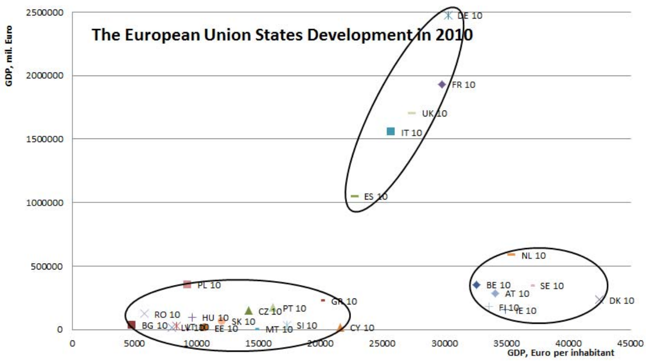


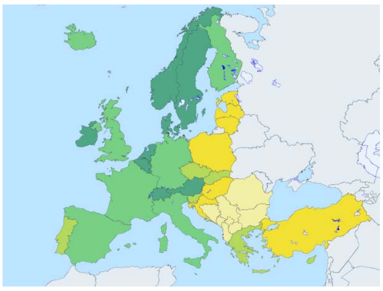
Fig. 2: The EU States Development in 2010.

After analyzing the development of the EU countries and their dynamics, the following conclusions could be drawn:

- Countries could be grouped according to the dynamics of development: economically larger countries (Germany, France, United Kingdom, Italy, and Spain) increase the size of their economies and at the same time increase the income per capita, while the smaller countries do not fundamentally change the economic level, but increase their per capita income.
- Countries could be grouped according to the level of their population wealth (welfare). By this feature "rich" countries differ significantly from the middle class countries, middle class countries differ significantly from the "poor" countries, and the "rich" countries significantly suppress the "poor" countries. To the "rich" countries could be added economically relatively small countries such as Denmark, Belgium, Netherlands, etc. Middle class forms the biggest EU economies - Germany, France, United Kingdom, Italy, and Spain. It is important to note that by the wealth (welfare), middle-level countries could be close to an existing group (e.g., Spain by the welfare level is closer to Greece, Germany to Belgium), but the scale of these economies could differ 2-6 times. The group of "poor" countries mainly consists of new EU member states, an exception there could be Greece.

Analysing the reflected development dynamics of the countries from the point of view of system dynamics, it could be said that the EU is characterized by a self-reinforcing economic growth processes. All the countries use it to increase their standard of living, but some also to expand their economic power. Larger countries are unable to provide higher improvement of well-being, but smaller countries can not significantly develop their economic capacity. These specifics of the economic development need to be considered for the development of the EU economic system dynamics model.

The EU economically geographic structure is also interesting, which is shown in the Fig.3. EU economically-geographic structure is observed here to test the hypothesis: the EU, depending on the stages of its development, was divided into the rich Western Europe and the poor Eastern Europe (Deacon, 2002). But recently there are thesis that the EU is composed of rich, stable northern countries and unstable southern countries (Alderman, 2010).



Where: 28 - 46 46 - 65 65 - 99 99 - 118 118 - 271 N/A

Fig. 3: GDP per capita in PPS in 2010.

The Fig.3 shows that, comparing countries by the level of GDP per capita, rich northern countries and poor eastern countries can be clearly distinguished. Southern countries do not significantly differ from the average EU level.

2.2. Population and Labor Force Dynamic Analysis in EU Countries

Country's economic power is also characterised by population and the proportion of the employed population. These indicators for EU countries are shown in Figure 4.

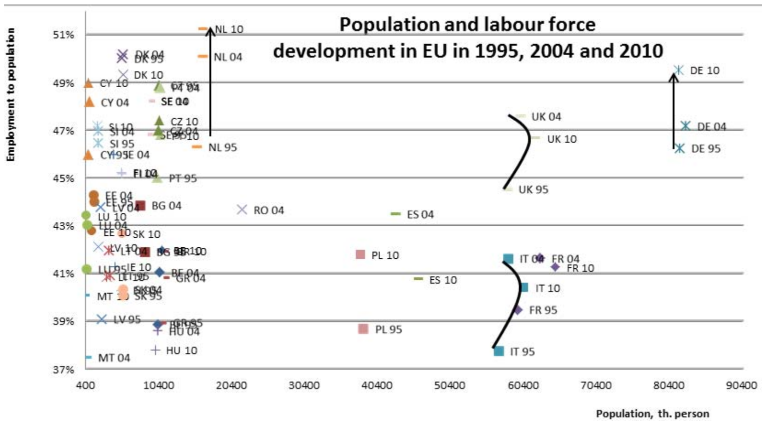
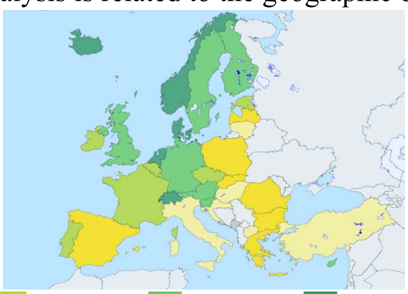


Fig. 4: Population and labor force dynamic in EU.

Analyzing the labour and employment dynamics, two groups of countries can be pointed out: countries with employment growing steadily throughout the test period (Germany, the Netherlands) and the states, which due to the 2004 -2010 crisis had a reduction in employment (UK, Italy, France, Spain). EU countries do not have common employment policy, e.g., Germany is sharply criticized for its cheap labour policy, which increases the competitiveness of the country compared to other EU countries (ILO 2011), destabilizes less capable EU countries, but develops domestic economy and promotes internal employment growth.

Analyzing the Fig.4 data, individual countries have an increase in population at the same time with a reduction in employment level (see Fig. 4 bows). This could be the result of the free movement of labour, which got a new impetus in 2004.

The next phase of employment analysis is related to the geographic breakdown of employment, see Fig.5.



Where: 43.5 - 57.8 57.8 - 59.7 59.7 - 65.6 65.6 - 72.7 72.7 - 78.6 N/A

Fig. 5: Employment rate in age group 15-64, in 2010, %.

When analysing geographical breakdown of employment, Fig. 5 clearly shows that central and northern European countries (Germany, Sweden, Finland) hold leading position in comparison with other EU countries. Employment level outsiders are Eastern and Southern European countries.

2.3. Debt Dynamic Analysis in EU Countries

The state's welfare can also grow by living on account of credit means. The EU public debt and its ratio to GDP are analyzed in Fig.6.

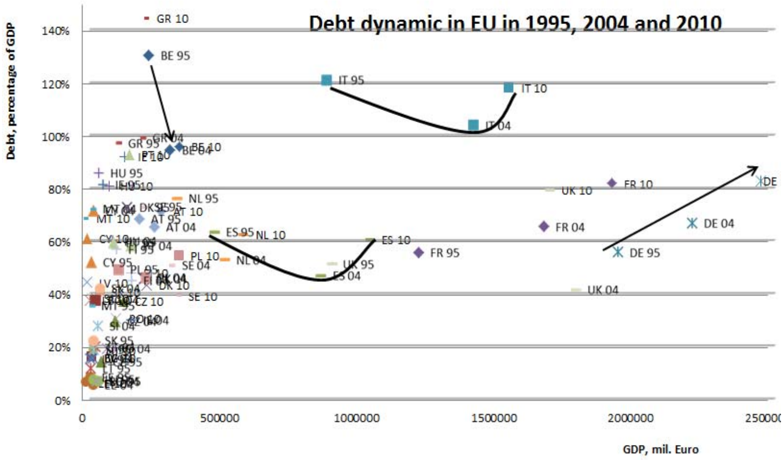


Fig. 6: Debt dynamic in EU.

Public debt dynamics are different in the EU countries. On the one hand, there have been found positive dynamics in countries such as Belgium, the Netherlands, which, by increasing GDP, reduced the debt to GDP ratio, but on the other hand some countries (for example, Germany) have growing public debt and its ratio to GDP. Some countries (Italy, Spain) in a stable stage of development (1995 - 2004) have showed an increase in debt, while decreasing its ratio to GDP. This development could be described as balanced, with GDP growing faster than the growing debt. But during the crisis GDP growth came to a halt, causing an increase in the debt to GDP ratio.

It is believed that the debt is one of the major causes of economic destabilization in Europe (Featherstone, 2011). Analysis the reflected statistics, it is evident that some countries are able to deal with their mounting debt problems. There are obvious problems in Greece and Italy. But more anxiety causes the fact that economically most important EU countries (Germany, France), without limitation, continue to increase the public debt, as well as growing its ratio to GDP.

2.4. International Trade Analysis in EU Countries

In today's world the fastest way to economic development is connected to the export promotion, the introduction of cheap resources from other countries, i.e., the international economic development. The Figure 7 describes the EU's external trade.

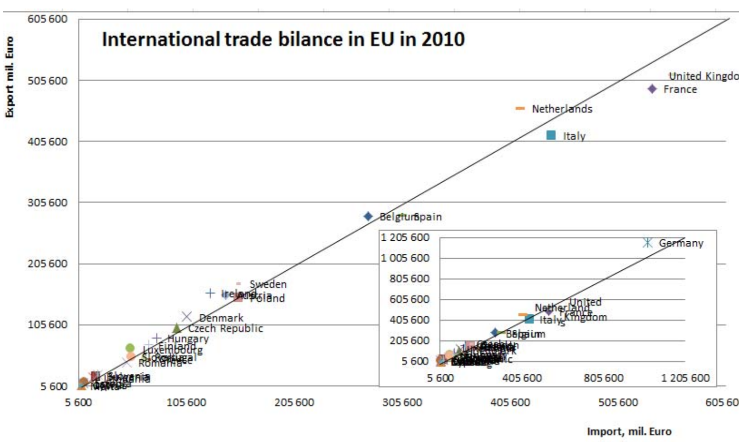


Fig. 7: International trade balance in EU in 2010.

Fig. 7 shows that the largest external turnover is in Germany, it's nearly two times higher than in the closest countries, France and United Kingdom. Unlike them, German export amount exceeds the volume of imports. It is important to note that in the major countries, where export volumes are higher than import volumes (Germany, Netherlands) (from the Fig.7) the employment rate is higher than in the countries, where imports are exceeding exports (UK, France, Italy) (see the Fig.4).

2.5. Investments Dynamic Analysis in EU Countries

Sustainability of national development is characterized by the amount of investment and its proportion of GDP. These indicators and their dynamics are analyzed in the Fig.8.

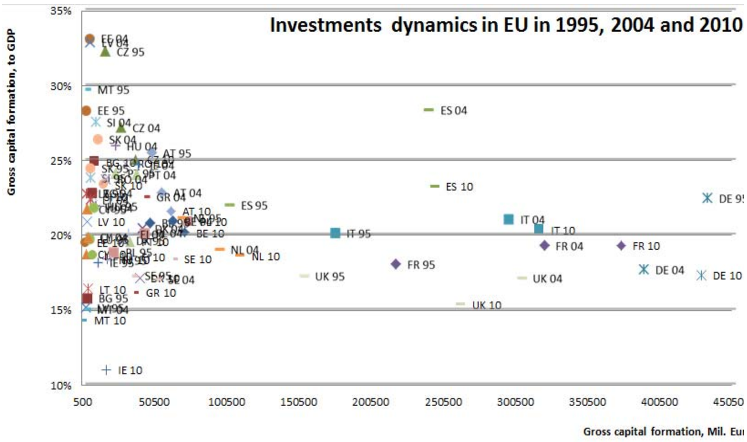


Fig. 8: Investments dynamic in EU.

2008 economic crisis has affected the amount of investments in EU countries more significantly than the EU enlargement. Very positive is the French experience, which in turn increases the investment amounts and gradually its proportion in GDP. It shows a sustainable development. During the crisis, for the major group of countries the investment ratio to GDP decreased (Germany, Spain); this means that countries are trying to solve the current problems by not implementing programmes of sustainable development.

3. Acknowledgements

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