ECONOMIC GROWTH IN THE EU'S EaP COUNTRIES: DETERMINANTS AND PROSPECTS

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Abstract: *Economic growth is one of the main targets of economic policy of any country around the world. By strengthening the process of economic development, we can bring the state on the path of sustainable growth and ensure stability and security in it. Economic growth is influenced by various determinants. Of particular interest is the endogenous and exogenous nature of these factors. The main purpose of this paper is to determine the endogenous and exogenous factors that affected economic growth in the EU's Eastern Partnership countries in the 2000-2015 period. We examined and determined the significance and robustness of various endogenous and exogenous factors influencing the economic growth in these countries, like investment, human capital, research and development, economic policies and macroeconomic conditions, openness to trade, geography, political factors and others. Based on the results of research, we outlined the prospects of economic growth in the countries investigated. To address the research questions and objectives this study was based on quantitative and qualitative research methods, using SPSS software.*

Keywords: *economic development; economic growth; Eastern Partnership*

Introduction

Countries of Eastern Europe and the region as a whole have always been an area of interest to world powers which did still not lost its relevance nowadays. Thus, following the historic fifth round of enlargement, the EU started to rethink its external relations with bordering countries and launched the European Neighbourhood Policy (ENP) which spans 16 neighbouring countries to the south and east of the EU. At the initiative of Poland and Sweden, the Eastern Partnership (EaP) was launched in May 2009 during the EU Prague summit as an offshoot of the ENP. The Eastern Partnership is a joint initiative of the EU and its Eastern European partners: Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine. It supposed to bring Eastern European partners closer to the EU, supporting and encouraging reforms in the EaP countries for the benefit of

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their citizens. The main goal of the Eastern Partnership is to create the necessary conditions to accelerate political association and further economic integration between the European Union and interested partner countries (European Council, 2009). One of its main objectives is formation of a "ring of friends" to the eastern and southern borders of the EU, i.e. Post-Soviet republics sharing European values and models of economic and political system (Vlah, 2015).

On June, the 27th of 2014 Association Agreements / Deep and Comprehensive Free Trade Areas were concluded with Georgia, Republic of Moldova and Ukraine and the provisional application of the DCFTA has already led to the successful development of trade with the EU. A visa-free regime has already been in place since April 2014 for citizens of the Republic of Moldova holding biometric passports and expected soon for Georgia and Ukraine. Regarding the other three countries, namely Armenia, Azerbaijan and Belarus, the Association Agreements / DCFTA were not concluded with the EU. Moreover, Belarus and Armenia have chosen a different integration project – the Eurasian Economic Union.

All these countries shared the same history for about 70 years. With independence and the transition of these countries towards a market economy, all these countries took their own path of development. All of these countries have had to create their own economic and political system, legislation framework, financial and other institutions. In fact, create the entire system from scratch. Having initially the same conditions, in period of almost 25 years, they have succeeded differently, what was influenced not only by physical and human capital, but also by other determinants like economic policies and macroeconomic conditions, openness to trade, geography, political factors, research and development activities and others. Our task is to determine their exogenous and endogenous nature and check these factors for correlation with economic growth in EaP countries and assess their significance. Determination of exogenous and endogenous growth factors will enable to outline prospects for further development of countries studied. Of course the basis of this study are the works of representatives of the neoclassical (exogenous) growth theory (Solow, 1956 and others), as well as representatives of the endogenous growth theory (Romer, 1986, 1990; Lucas 1988; Grossman and Helpman, 1991 and others).

1. Endogenous and Exogenous Nature of Economic Growth

The economy's ability to grow depends on many factors which can be classified differently according to various criteria, but of particular interest is the endogenous and exogenous nature of these factors. An exogenous variable is a factor that is outside of a given economic model. It often has an impact on the outcome of the model or how certain situations turn out, but it isn't usually determinative in its own right and the changes in the model do not usually impact it. These variables are sometimes referred to as independent variables as opposed

to dependent or endogenous variables, which are usually explained by the mathematical relationships in the model. While endogenous variables can be manipulated, exogenous ones are generally uncontrollable.

Neoclassical or exogenous theory of growth starts from the neoclassical model of Solow (1956). The basic assumptions of the model are: constant returns to scale, diminishing marginal productivity of capital, exogenously determined technical progress and substitutability between capital and labour. As a result, the model highlights the savings or investment ratio as important determinant of short-run economic growth. Technological progress, though important in the long-run, is regarded as exogenous to the economic system and therefore it is not adequately explored by this model. Turning to the issue of convergence divergence, the model predicts convergence in growth rates on the basis that poor economies will grow faster compared to rich ones.

Rather than a direct investment in the education of the workforce, the exogenous model relies on producing a workforce trained to do the jobs that are required. The idea is that those people capable of researching and developing new ideas for the economy will do so anyway and without encouragement.

Romer (1994), whose articles (1986, 1990) initiated the introduction of Endogenous Growth Theory (or New Growth Theory) states:

> The phrase "endogenous growth" embraces a diverse body of theoretical and empirical work that emerged in the 1980s. This work distinguishes itself from neoclassical growth by emphasizing that economic growth is an endogenous outcome of an economic system, not the result of forces that impinge from outside.

The theories, known as endogenous growth theories, propose that the introduction of new accumulation factors, such as knowledge, innovation, will induce self-maintained economic growth. Triggered by Romer's (1986) and Lucas's (1988) seminal studies, work within this framework highlighted significant sources of growth: new knowledge (Romer, 1990, Grossman and Helpman, 1991), innovation (Aghion and Howitt, 1992). As a result, and in contrast to the neoclassic counterpart, policies are deemed to play a substantial role in advancing growth on a long run basis.
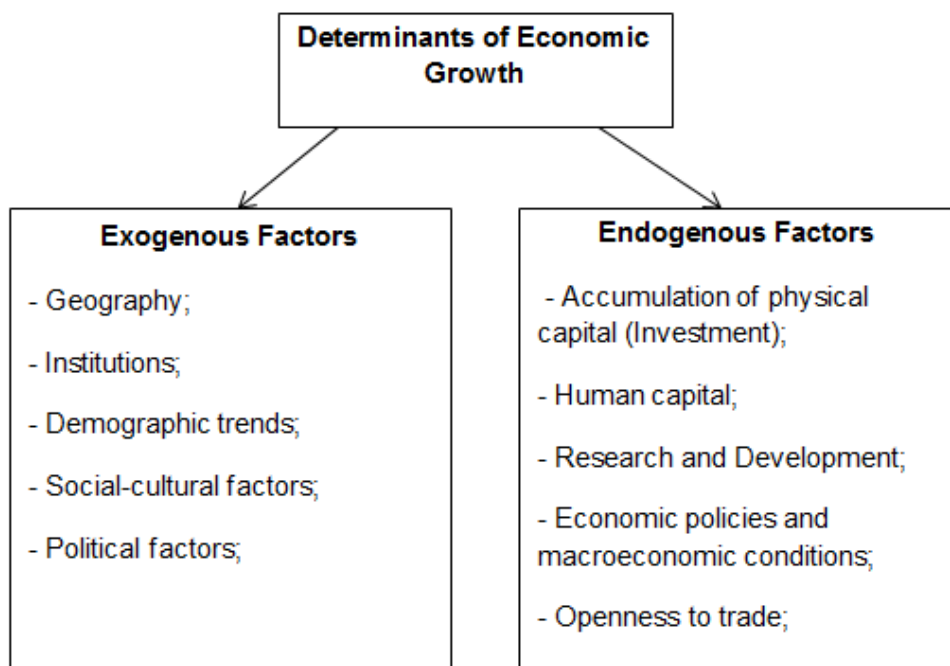
Barro and Sala-i-Martin (1995) state: "The determination of long-run growth within the model, rather than by some exogenously growing variables like unexplained technological progress, is the reason for the name 'endogenous growth'."

A cornerstone of endogenous growth is education, new knowledge, innovation, R&D. Great investment in education will result in a highly skilled workforce. This workforce will then move on into employment in research positions, developing a new and more efficient economy and creating sustained domestic growth.

The idea of promoting the next generation goes hand-in-hand with investment in technology and the "ideas" economy. Throughout history, economic growth has been driven by the development of new technologies. The industrial revolution in the now-developed world saw groundbreaking discoveries that led such countries to become economic powers.

Figure 1. Determinants of Economic Growth

Determinants of Economic Growth

Exogenous Factors

- Geography;

- Institutions;

- Demographic trends;

- Social-cultural factors;

- Political factors;

Endogenous Factors

- Accumulation of physical capital (Investment);

- Human capital;

- Research and Development;

- Economic policies and macroeconomic conditions;

- Openness to trade;

Source: Authors'representation

The Endogenous Growth Theory is helping to understand the ongoing change from resource-based economy to a knowledge based economy. Thus, Romer and Griliches (1993) state:

> No amount of saving and investment, no policy of macroeconomic fine-tuning, no set of tax and spending incentives can generate sustainable economic growth unless it is accompanied by the countless large and small discoveries that are required to create more value from a fixed set of natural resources.

A crucial feature of Solow's model is that a variation in the endogenous variable, savings rate, affects the tilt of the growth trend in the short run but not in the long run. In the long run, it can only bring about a lift in the level of the trend

because of the diminishing marginal productivity of capital. The new growth theory has attempted to prevent diminishing marginal productivity or to slow its decline through introduction of accumulation of human capital, knowledge, experience, acceleration of R&D, inventions and innovations, increasing the number of intermediate capital goods of new designs and the number of final goods and their varieties with quality improvements and consideration of expansion of the size of markets.

In the observed economic literature, the terms exogenous and endogenous are used mainly in relation to technological progress (or 'residual' in exogenous theory) i.e. knowledge, innovations, human capital, R&D. Determinants of economic growth usually classified as direct and indirect factors; economic and non-economic factors; intensive and extensive factors and etc. Nevertheless, in Figure 1 we have classified the main determinants of economic growth by dividing them into exogenous and endogenous ones. Basically, many of these determinants here in some extent can belong to both groups of determinants. At division, we adhered to the principle that exogenous factors are generally predetermined, and while endogenous variables can be manipulated, exogenous ones are generally uncontrollable.

2. Determinants Affecting Economic Growth

As we all know from the economic growth theories, one of the basic determinants of growth is physical capital. The rate of accumulation of physical capital is one of the main factors determining the level of real output per capita. Capital is the oldest known determinant of economic growth. In any economy, the production of goods and services happens every day. Physical capital is part of the production process; what economists call a factor of production. It includes things like buildings, machinery, equipment, computers and etc. Investment in capital plays a crucial role in accumulation of physical capital. Thus, investment is the fundamental determinant of economic growth identified by both neoclassical and endogenous growth models. Many scientific works and empirical studies devoted to examining the relationship between investment and economic growth (Kormendi and Meguire, 1985; Levine and Renelt, 1992; Mankiw *et al.*, 1992; Auerbach *et al.*, 1994; Barro and Sala-i-Martin, 1995; Sala-i-Martin, 1997; Podrecca and Carmeci, 2001).

Foreign Direct Investment has played a crucial role of internationalizing economic activity and it is a primary source of technology transfer and economic growth. This major role is stressed in several models of endogenous growth theories. The empirical literature examining the impact of FDI on growth has provided more-or-less consistent findings affirming a significant positive link between the two (e.g. Borensztein *et al*., 1998; Hermes and Lensink, 2003; Lensink and Morrissey, 2006 as cited in Petracos and Arvanitidis, 2008).

Human capital is the key source of growth in endogenous growth models and one of the extensions of the neoclassical model. In the classical theory of economic growth, labour productivity is regarded as an exogenous factor which depends on the ratio between workforce and physical capital, plus other factors (technical progress), but the riole of education on potential growth of productivity was not taken into account. The new endogenous theory of economic growth developed in the early 80s took into account this shortcoming of the classical theory emphasizing the importance of education and innovation in long-term economic growth.

Given the term 'human capital' refers principally to workers' acquisition of skills, knowledge and know-how through education and training, the majority of studies have measured the quality of human capital using proxies related to education (e.g. school-enrolment rates, scientific skills and etc.). On these bases, a large number of studies have found evidence that an educated labour force is a key determinant of economic growth. Thus, Barro (1992) notes "Countries that start with a higher level of educational attainment grow faster for a given level of initial per capita GDP and for given values of policy-related variables." He also adds "Another dimension is health status. Measures of life expectancy-a proxy for health status-turn out to have substantial explanatory value for economic growth and fertility…". He also notes that the faster a country grows, the greater its current level of human capital growth, since physical capital expands rapidly to match a high contribution of human capital.

Nelson and Phelps (1966) highlight "…the rate of return to education is greater the more technologically progressive is the economy". Here they stress that a country with more human capital would be more adept at the adaptation of technologies that were discovered elsewhere, hence the higher the country's growth rate. There have been other scholars stating that increase in human capital would result in rapid transitional growth (Sachs and Warner, 1997). Paul Romer in his work Endogenous Technological Change (1990) highlights "…the stock of human capital determines the rate of growth…" and "…having a large population is not sufficient to generate growth". It is worth noting the works of Barro and Lee (1993) investigating the effects of educational attainment on economic growth.

Bassanini and Scarpetta (2001) studying a series of data for the period of 1971 to 1998 concluded that increased duration of schooling by one year leads to an increase in GDP per capita by 6%. Blundell *et al.* (1999) by reviewing and summarizing the existing literature and empirical works on the returns to education and training for the individual, the firm and the economy at large, confirmed strong positive correlation between education level and economic growth.

Other works have aslo studying the human capital as one of the main determinant of economic growth (e.g. Barro and Sala-i-Martin, 1995; Benhabib and Spiegel, 1994; Hanushek and Kimko, 2000).

Expenditure on research and development (R&D) can be considered as an investment in knowledge that translates into new technologies, innovations as well

as more efficient ways of using existing resources of physical and human capital. Innovation and R&D activities can play a major role in economic development increasing productivity and growth, due to increasing use of technology that enables introduction of new processes and products. First works devoted to R&D, considered as a factor of economic growth belong to the main Endogenous Growth theorists: Romer (1986; 1990), Grossman and Helpman (1991), Aghion and Howitt (1992). In general, these scientists state that introduction of new factors, such as knowledge, innovation, and the like, will induce self-maintained economic growth. A key factor in the endogenous growth theory of Paul Romer (1986; 1990) is the variable called "knowledge". It assumes that the information contained in the inventions and discoveries are available to everyone and can be used at the same time. Thus, the rate of economic growth is in theory of Romer directly dependent on the value of human capital, focused in obtaining new knowledge. Grossman and Helpman (1991), on the example of two countries trading with each other, have shown that subsidies for R&D in a country that has a relatively scientific and technical excellence, there will be recorded an increase in the overall rate of economic growth. According to Aghion and Howitt (1992), economic growth is driven by technological progress, which in turn is ensured by competition between research firms, generating and implementing long-term products and technological innovation.

It is necessary to emphasize the role of the government in attracting investments to R&D and its regulation. Thus, Nadiri (1993) relates underinvestment in R&D with spillover effects, which expands with increasing globalization of the world economy. The investment to R&D can be influenced by government intervention, both through direct provision and funding, and also through indirect measures such as tax incentives and protection of intellectual property rights to encourage R&D (Cameron, 1998).

Economic policies and macroeconomic conditions are also considered as one of determinants of economic growth. Economic policy refers to the actions that governments take in the economic field. It covers the systems for setting levels of taxation, government budgets, the money supply and interest rates as well as the labour market and etc. Thus, in general economic policies can be divided into fiscal and monetary policies. On how wisely a state uses economic policy determines the macroeconomic condition in the country. According to Fischer (1993) macroeconomic conditions are regarded as necessary but not sufficient conditions for high economic growth. In general, a stable macroeconomic environment may favour growth, especially, through reduction of uncertainty, whereas macroeconomic instability may have a negative impact on growth through its effects on productivity and investment.

The following issues have generally been considered as being related to economic policies and macroeconomic conditions: the benefits of establishing and maintaining low inflation, the impact of government deficits on private investment, and the possibility of negative impacts on growth from a too large government

sector (with associated high tax pressure to finance high government expenditure). Several macroeconomic factors with impact on growth have been identified in literature, but considerable attention has been placed on inflation, fiscal policy, monetary policy (budget deficits). Arguments for lower and more stable inflation rates include reduced uncertainty in the economy and enhanced efficiency of the price mechanism. A reduction in the level of inflation could have an overall effect on the level of capital accumulation. Moreover, uncertainty related to volatilities in inflation can discourage firms from investing in projects due to a higher degree of risk. Evidence on the relationship between inflation and growth is somewhat mixed: while there is evidence that investment suffers in cases of high inflation, the relation is less clear in cases of moderate or low inflation (Edey, 1994; Bruno and Easterly, 1998).

With regard to fiscal policy, government expenditure and the required taxes may reach levels where the negative effects on efficiency, and hence growth, starts dominating. These negative effects may be more evident where the financing relies heavily on more "distortionary" taxes (excess burden of taxation) and where public expenditure focuses on "unproductive" activities (Bassanini and Scarpetta, 2003).

Many empirical works scholars are devoted to the study of these determinants of economic growth. Thus, Fisher (1993) finds that growth is negatively associated with inflation, large budget deficits, and distorted foreign exchange markets. Kormendi and Meguire (1985) found no evidence that the growth in the ratio of government consumption to output has any adverse effect on economic growth. Grier and Tullock (1989) find a strong negative correlation between growth of government consumption as a fraction of GDP and real GDP growth rate. Barro (1991) found that per capita GDP growth rate and investment-GDP ratio, are negatively correlated to government expenditure as a share of the GDP. Barro suggested that government consumption induces distortions in the economy and provides no offsetting stimulus to GDP and investment. Easterly and Rebelo (1993) did not find a significant correlation between growth and government consumption share of the GDP. They also concluded that the effects of fiscal variables on economic growth are statistically fragile.

Openness to trade is also considered in the literature as one of the determinants of economic growth. Openness can affect economic growth through several channels such as exploitation of comparative advantage, technology transfer and diffusion of knowledge, increasing scale economies and exposure to competition (Petracos and Arvanitidis, 2008). Openness is usually measured by the ratio of exports to GDP. Sachs and Warner (1995) attempted to construct another openness variable that combined five different indicators: nontariff barriers to trade, average tariff rates, a black market premium, whether the economy is socialist, and government monopolies on export. They also found that openness had s significant positive influence on growth between 1970 and 1989. Dollar and Kraay (2004) concluded that globalization leads to faster growth in poor countries. Dollar (1992) attempted to demonstrate a significant relationship between outward

orientation and growth. Likewise, there are many empirical researches investigating the relationship between openness and growth. Many of them have found that economies that are more open to trade have higher GDP per capita and grow faster. But, there are several scholars who have criticized the robustness of these findings especially on methodological and measurement grounds. Thus, Rodriguez and Rodrik (2000) re-estimated Sachs and Warner's regressions and suggested that only two out of the five indicators account for the bulk of the variation in the data. They also criticized the robustness of Dollar's findings on the relationship between outward orientation and growth.

Although the important role institutions play in shaping economic performance has been acknowledged long time ago, it is not until recently that such factors have been examined empirically in a more formal way (see Knack and Keefer, 1995; Mauro 1995; Hall and Jones, 1999; Acemoglu *et al*., 2002; Rodrik *et al*., 2004). Rodrik (2000) highlights five key institutions (property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance and institutions of conflict management), which not only exert direct influence on economic growth, but also affect other determinants of growth such as the physical and human capital, investment, technical changes and the economic growth processes. On these grounds Easterly (2001) argues that none of the traditional factors would have any impact on economic performance if there had not been developed a stable and trustworthy institutional environment (Petracos and Arvanitidis, 2008).

Political factors and economic growth. Many scientific works are devoted to the study of effects of political factors on economic growth (Lipset, 1959; Kormendi and Meguire, 1985; Grier and Tullock, 1989; Lensink *et al.*, 1999). It is not a secret that a highly unstable political regime brings on uncertainty, discouraging investment and, consequently, hindering economic potential. But it is not only the stability of the regime that influences growth dynamics; it is also its type. For instance, the level of democracy is found to be associated with economic growth; though this relation is much more complex. Democracy may both slow and enhance economic growth depending on the various channels that it passes through (Alesina *et al.*, 1994, as cited in Petracos and Arvanitidis, 2008). In the recent years a number of researchers have made an effort to measure the quality of the political environment using variables such as political instability, political and civil freedom, and political regimes. Brunetti (2002) distinguishes five categories of relevant political variables: democracy, government stability, political violence, political volatility and subjective perception of politics.

Recently there has been a growing interest in how various social-cultural factors may affect growth (see Granato *et al*., 1996; Temple and Johnson, 1998; Inglehart and Baker, 2000; Zak and Knack, 2001). Trust is an important variable that belongs in this category. Trusting economies are expected to have stronger incentives to innovate, to accumulate physical capital and to exhibit richer human resources, all of which are conductive to economic growth (Knack and Keefer,

1997). Ethnic diversity, in turn, may have a negative impact on growth by reducing trust, increasing polarization and promoting the adoption of policies that have neutral or even negative effects in terms of growth (Easterly and Levine, 1997). Several other social-cultural factors have been examined in the literature, such as ethnic composition and fragmentation, diversity in language or in religion, beliefs, attitudes and the like, but their relation to economic growth seems to be indirect and unclear. For instance, cultural diversity may have either a negative impact on growth due to emergence of social uncertainty or even to social conflicts, or a positive effect since it may give rise to a pluralistic environment where cooperation can flourish (Petracos and Arvanitidis, 2008).

The important role of geography on economic growth has been long recognized. Though, over the last years there has been an increased interest on these factors since they have been properly formalized and entered into models (Gallup *et al*. 1999). Researchers have used different variables as proxies for geography like soil quality and disease ecology, distances from the equator, average temperatures and average rainfall, proportion of land within certain distance from the coast. There have been a number of empirical studies (Sachs and Warner, 1997; Bloom *et al*. 1998; Masters and McMillan, 2001, as cited in Petracos and Arvanitidis, 2008) affirming that natural resources, climate, topography and 'landlockedness' have a direct impact on economic growth affecting (agricultural) productivity, economic structure, transport costs and competitiveness.

Demographic trends, like population growth, population density, migration and age distribution, is believed to play the major role in economic growth (Kelley and Schmidt, 1995; Bloom and Williamson, 1998; Bloom and Finlay, 2009 as cited in Petracos and Arvanitidis, 2008). High population growth could have a negative impact on economic growth influencing the dependency ratio, investment and saving behaviour and quality of human capital. The composition of the population is believed to have vital effect on growth. Large working-age populations are believed to positively affect economic growth, in contrast to populations with many young and elderly dependents.

3. Economic Growth in the EU's EaP Countries and Its Correlation with Determinants (methodology and data description)

One of the main indicators of economic growth of the country is the nominal GDP and GDP per capita. In terms of the size of economy the largest one is Ukraine with a GDP of about 131 Bn. US$. Comparable in economy size are Azerbaijan and Belarus with a GDP of about 76 Bn. US$ each. The other three countries: Armenia, Georgia and Moldova are relatively smaller in size of the economies with a GDP between 8 and 16 bn. US$. A moderate growth of GDP is observed in the three countries. More rapid GDP growth is observed in Azerbaijan and Belarus. In Ukraine, there are periods of sharp economic downturn during the

world economic crisis and the current conflict in Ukraine.

When considering the GDP per capita dynamics (Figure 2), the picture becomes slightly different. In this case Azerbaijan and Belarus are better positioned, with a GDP per capita with more than 8 thousand US$. The second group of countries with a GDP per capita of 3 to 4 thousand US$ includes Ukraine, Georgia and Armenia. Moldova's GDP per capita as of January 1, 2015 was of 2.24 thousand US$. Thus, we can highlight Azerbaijan and Belarus as relative leaders among EU's EaP countries.

Figure 2. GDP Per Capita Dynamics in the EaP Countries in 2000-2014 (current US$)
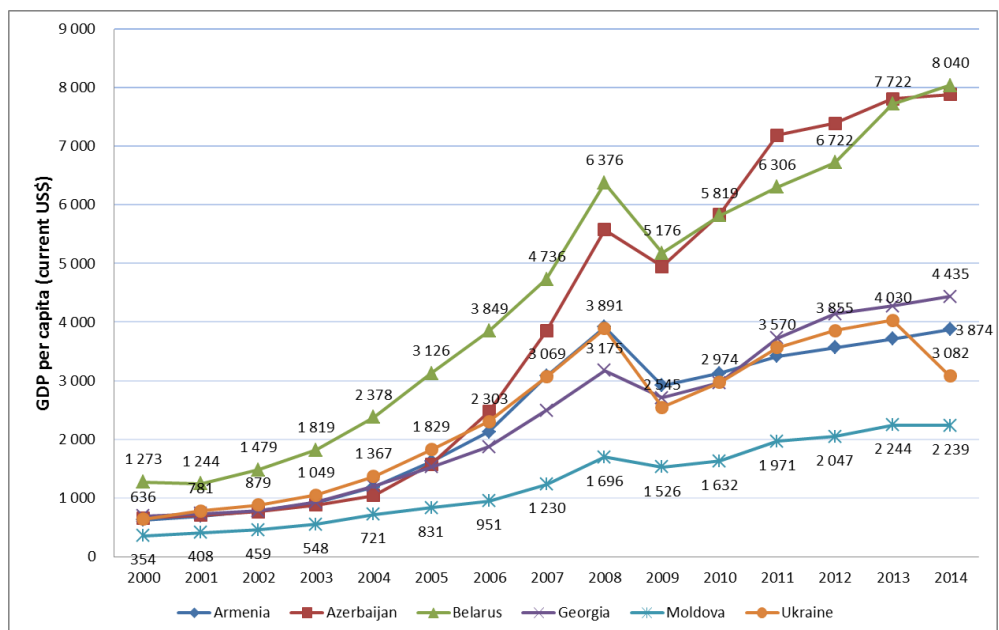
Source: World Bank database

In regards of determinants affecting economic growth, many of them are not backed up by precise definition and statistical data, and concepts like human capital, institutions, political factors, economic policies mentioned above are of amorphous nature and are not easily amenable to statistical handling. These are compound and complex variables and have to be approximated by proxies.

Thus, in order to determine the correlation of the determinants with economic growth we selected the following independent variables (sets of data) for the period 2000 - 2014 from World Bank database (Table 1):

Table 1. Selected Independent Variables Related to Determinants of Economic Growth

Determinants of Economic growth	Indicators	Description
Accumulation of Physical Capital	- FDI inflows; - GFCF;	- Foreign direct investment, net inflows (% of GDP); - Gross fixed capital formation (% of GDP);
Human Capital	- Tertiary education; - Labour force;	- Enrolment in tertiary education per 100 thousand inhabitants; - Labour force (total, number of persons);
R&D	- R&D expenditure; - Hightech exports;	- R&D expenditure (% of GDP); - High-technology exports (current US$);
Economic Policies and Macroeconomic Conditions	- Inflation;	- Inflation, GDP deflator (annual %);
Openness to Trade	- Exports;	- Exports (% of GDP);
Institutions	- Government effectiveness; - Rule of law; - Control of corruption;	- Government effectiveness (estimate); - Rule of law (estimate); - Control of corruption (estimate);
Political Factors	- Political stability and absence of violence/terrorism;	- Political stability and absence of violence/terrorism (estimate);
Geography	- Natural resources rents;	- Total natural resources rents (% of GDP);
Demographic trends	- Population growth; - Active population share;	- Population growth (%); - Population of age 15-64 (% of total)

Source: Selected by author from World Bank database

The most common measure of correlation in Statistics is the Pearson Correlation. Sets of data were analysed by using SPSS software. The results can be observed in Annex 1 to the paper.

4. Analysis of results

According to the results obtained (Annex 1) we found significant and strong correlation of almost all variables except variables related to Economic policies and macroeconomic conditions (Inflation), except Moldova which showed strong negative correlation. Openness to trade (Exports) showed strong positive correlation for Georgia and strong negative correlation for Moldova and Ukraine. Unexpectedly variables related to Accumulation of physical capital (FDI inflows; GFCF) showed moderate negative correlation for Azerbaijan, strong positive correlation for Belarus and no correlation for the rest countries. However, some of the variables related to Human capital (Tertiary education) showed both strong positive correlation for Armenia, Belarus, Moldova and Ukraine, and negative for Azerbaijan and Georgia, which partially can be explained by small number of observations. Strong positive correlation can be observed with variables related to Demographic trends (Population growth; Active population share). Also, strong positive correlation of economic growth can be observed with variables related to Political Factors (Political stability and absence of violence/terrorism) and variables related to Institutions (Rule of law; Government effectiveness) which is in line with initial hypothesis and empirical results obtained in other studies. Variable "Control of corruption" showed strong positive correlation for Georgia and moderate correlation for Belarus.

Determinants related to Geography (Natural resources rents) have positive correlation for Armenia, Georgia and Ukraine and negative correlation for Belarus. Unexpectedly for Azerbaijan this variable does not correlate with economic growth which is strange taking into account that the country is a relatively resource-based economy. Variables related to R&D (Hightech exports) showed strong positive correlation with economic growth. However, another variable (R&D expenditure) did not show or even showed negative correlation with economic growth, which somehow contradicts with our hypothesis and theories. However, taking into account the insignificant amount of R&D expenditure in these countries that was predictable.

Conclusions

Literature on economic growth showed that there are many factors affecting economic growth and having reviewed it we have determined the most important determinants affecting economic growth and have classified them by dividing into exogenous and endogenous ones. Thus, as exogenous ones we have chosen Geography, Institutions, Demographic trends, Social-cultural factors and Political factors. And as endogenous: Accumulation of physical capital, Human capital, Research and development, Economic policies and macroeconomic conditions, and Openness to trade. Basically, many of these determinants here in some extent can

belong to both groups of determinants. At division, we adhered to the principle that exogenous factors are generally predetermined, and while endogenous variables can be manipulated, exogenous ones are generally uncontrollable. This classification in certain extent contributes to determination of internal and external economic growth reserves (factors) of country. At the same time, according to the author, economic growth based on endogenous factors is more sustainable and long-term.

Having considered GDP per capita dynamics in EU's EaP countries in the period 2000-2014, a rapid economic growth can be observed in Azerbaijan and Belarus with GDP per capita around 8 thousand US$ and moderate growth in Georgia and Armenia with GDP per capita from 3.8 to 4.4 thousand US$. In Ukraine there is a decrease in this indicator since the beginning of the recent conflict. In Moldova the growth of the indicator is also moderate. Thus, we can highlight Azerbaijan and Belarus as relative leaders among EU's EaP countries.

Having selected independent variables (proxies) related to determinants of economic growth we checked them on correlation with economic growth (GDP per capita) and have come to the following results (Annex 1) and conclusions. We found significant and strong correlation of almost all variables except variables related to Economic policies and macroeconomic conditions (except Moldova). Openness to trade (Exports) showed strong positive correlation for Georgia and strong negative correlation for Moldova and Ukraine. Unexpected insignificant correlation of Accumulation of physical capital determinants in most EU's EaP countries as well as other determinants deserve further research.

Strong positive correlation can be observed with variables related to Demographic trends. Also, strong positive correlation of economic growth can be observed with variables related to Political Factors and variables related to Institutions which is in line with initial hypothesis and empirical results obtained in other studies. Variable "Control of corruption" showed strong positive correlation for Georgia and moderate correlation for Belarus.

Given the experience of developed countries and resource-based orientation of economies of many Post-Soviet countries, including EaP countries, it seems necessary to move from a resource-based economy to knowledge based economy with the strengthening of the role of the endogenous determinants of economic growth like Human capital, R & D and others.

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Annex 1. Result of Analysis of Sets of Data (independent variables) Related to Endogenous and Exogenous Determinants of Economic Growth

Correlations			Armenia	Azerbaijan	Belarus	Georgia	Moldova	Ukraine
Determinants of growth	Variables / Indicators	Coeficients	GDP_percapita _currentUS$	GDP_percapita _currentUS$	GDP_percapita _currentUS$	GDP_percapita _currentUS$	GDP_percapita _currentUS$	GDP_percapita _currentUS$
Accumulation of Physical Capital	FDI inflows	Pearson Corr	,184	-,582	,640	,030	-,133	,319
		Sig. (2-tailed)	,513	,023	,010	,917	,636	,246
		N	15	15	15	15	15	15
	GFCF	Pearson Corr	,439	-,580	,873	-,433	,497	-,023
		Sig. (2-tailed)	,102	,023	,000	,107	,059	,936
		N	15	15	15	15	15	15
Human Capital	Tertiary education	Pearson Corr	,748	-,911	,815	-,550	,577	,622
		Sig. (2-tailed)	,001	,001	,000	,034	,031	,013
		N	15	9	15	15	14	15
	Labor force	Pearson Corr	,153	,976	-,903	-,962	-,913	-,676
		Sig. (2-tailed)	,587	,000	,000	,000	,000	,006
		N	15	15	15	15	15	15
R&D	R&D expenditure	Pearson Corr	,135	-,670	,192	-,799	,253	-,819
		Sig. (2-tailed)	,646	,009	,510	,017	,453	,000
		N	14	14	14	8	11	14
	Hightech exports	Pearson Corr	,580	,594	,920	-,490	,852	,857
		Sig. (2-tailed)	,023	,020	,000	,064	,000	,000
		N	15	15	15	15	15	15
Economic Policies and Macroeconomic Conditions	Inflation	Pearson Corr	,348	-,040	-,386	-,236	-,614	,063
		Sig. (2-tailed)	,203	,889	,155	,397	,015	,824
		N	15	15	15	15	15	15
Openness to Trade	Exports	Pearson Corr	-,423	,246	-,083	,802	-,777	-,835
		Sig. (2-tailed)	,116	,376	,769	,000	,001	,000
		N	15	15	15	15	15	15
Demographic trends	Population growth	Pearson Corr	,688	,620	,855	-,612	,869	,920
		Sig. (2-tailed)	,005	,014	,000	,015	,000	,000
		N	15	15	15	15	15	15
	Active population share	Pearson Corr	,942	,955	,868	,941	,931	,905
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000
		N	15	15	15	15	15	15
Geography	Natural resources rents	Pearson Corr	,810	-,351	-,798	,715	-,215	,524
		Sig. (2-tailed)	,000	,200	,000	,003	,442	,045
		N	15	15	15	15	15	15
Institutions	Government effectiveness	Pearson Corr	,529	,618	,086	,966	,580	-,087
		Sig. (2-tailed)	,052	,018	,771	,000	,030	,766
		N	14	14	14	14	14	14
	Rule of law	Pearson Corr	,262	,533	,774	,959	,742	,551
		Sig. (2-tailed)	,365	,050	,001	,000	,002	,041
		N	14	14	14	14	14	14
	Control of corruption	Pearson Corr	,447	,076	,547	,913	,197	-,076
		Sig. (2-tailed)	,109	,797	,043	,000	,500	,796
		N	14	14	14	14	14	14
Political Factors	Political Stability and absence of violence/terrorism	Pearson Corr	,486	,815	-,365	,791	,538	,063
		Sig. (2-tailed)	,078	,000	,199	,001	,047	,831
		N	14	14	14	14	14	14

Notes:

Strong correlation (r= 0,6-1)
Moderate correlation (r= 0,4-0,6)
Weak, no correlation and/or insignificant (r= 0-0,4)

Source: Author's calculation