

Gentimir, Irina-Elena

Article

In the Globalization Era, Which Are the Determinants of Growth?

CES Working Papers

Provided in Cooperation with:

Centre for European Studies, Alexandru Ioan Cuza University

Suggested Citation: Gentimir, Irina-Elena (2015) : In the Globalization Era, Which Are the Determinants of Growth?, CES Working Papers, ISSN 2067-7693, Alexandru Ioan Cuza University of Iasi, Centre for European Studies, Iasi, Vol. 7, Iss. 1, pp. 60-79

This Version is available at:

<https://hdl.handle.net/10419/198362>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

IN THE GLOBALIZATION ERA, WHICH ARE THE DETERMINANTS OF GROWTH?

Irina-Elena GENTIMIR*

Abstract: *This paper aims to present the factors that determine the economic growth nowadays, in the globalization era. From geography and climate to innovation and training, these factors diversified depending on the evolution of the economy and economic thought. Because of enhanced mobility as a result of globalization, some of them have lost their importance, others have become fundamental. During the last two decades, hundreds of empirical studies have tried to identify the determinant factors of economic growth. Many researchers have tried to explain economic growth based on changes in these factors, but the results leave room for future analysis.*

Keywords: Economic growth, factors, theory, economy, research, development

JEL Classification: E20; O10, O30, O40

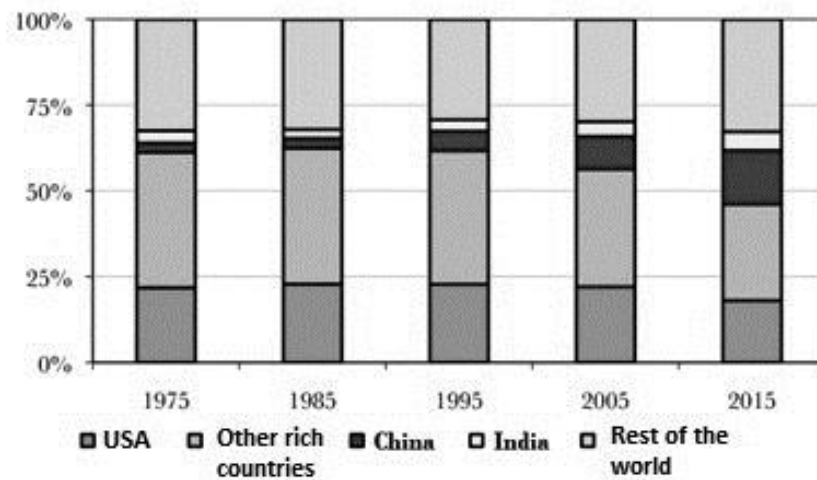
Introduction

Nowadays, world economy is still being dominated by rich countries. If we sum up the whole value of the goods and services produced in 2012 in the rich countries and compare it to the value of the world production, we will notice that almost 70% of this value is created in the high-revenue states in the OCDE. Even if we would adjust the calculations in order to eliminate the price differences, so that the rice would have the same price both in the US and China, this percentage of the countries with high revenues maintained to more than 50% in 2012.

This percentage is quite impressive, given that less than 15% of the world population lives in these countries. The production asymmetry towards Western Europe and the USA, and, more important, the persistence of this revenue distribution for more than 120 years, has determined the analysts to adopt the concepts of Core of developed economies and Periphery of the developing countries. This is about to change.

The world economy passes through a unique historical change. We are about to reach the moment when, for the first time in 120 years, the Periphery would produce much more goods and services than the Core. The economic power transfer can be only compared to the discovery of the New World and with the subsequent growth of the United States as an economic power center. But, as Ben Bernanke, the president of the FED, stated, the inclusion of the USA in the Core has lasted for centuries, while the recent economic power change began in the '80s and just 30 years later, we already see a significant change of the world economic environment.

* PhD Student, Doctoral School of Economics and Business Administration, "A.I. Cuza" University, Iasi, e-mail: gentimir.irina_elena@yahoo.com

Figure 1 - Global GDP composition by countries and groups

Source: Fatas, A., Mihov, I., 2013, p.2

The Determinants of Economic Growth

During the last two decades, hundreds of empirical studies have tried to identify the determinant factors of economic growth. Moreover, the theories of economic growth do not totally explain this phenomenon. The problem is that the growth theories are, using a concept belonging to Brock and Durlauf, (2001), insufficient. This means that various growth theories usually are compatible with each other. For example, a theoretical approach assuming that commercial openness counts for economic growth is not logically contradictory to another theoretical approach that emphasizes the role of geography for economic growth. This theoretical opinions diversity makes it hard to identify the most efficient growth stimulation policies. The process that lays at the basis of economic performance is inadequately conceptualized and less understood due to the lack of a generalized or unifying theory and the blind way traditional economy approaches the problem (Artelaris, Arvanitidis, Petrakos, 2007).

Although this unifying theory is missing, there are more incomplete theories that discuss the role of different factors that determine economic growth. Two main theories can be distinguished: the neoclassical one, based on Solow's growth model, has emphasized the importance of investments, and, more recent, the theory of endogenous growth, developed by Mankiw, Romer and Weil (1992) has pinpointed the innovation capacity and human capital. Moreover, other explications have emphasized the non-economic significant influence (the conventional meaning) the factors have on economic performance. These evolutions have led to an approach that distinguishes between the "close" and "fundamental" (or "final") growth sources. The first one targets aspects such as capital accumulation,

work force and technology, while the last ones, target institutions, judicial and political systems, socio-cultural factors, demography and geography.

A wide range of studies have investigated the factors that lay at the basis of economic growth. By using various conceptual and methodological approaches, these studies have emphasized a different explanatory parameters set and have offered different perspectives on the economic growth sources.

Table 1 - Stages of economic development

Characteristics	Stages of economic development		
	Preindustrial, agricultural stage	Industrial stage	Postindustrial stage, based on knowledge
Dominant economic sector	Agriculture	Industry	Services
The nature of prevalent technologies	Labor and natural resources intensive technologies	Capital intensive technologies	Knowledge intensive technologies
The main consumed products	Food and handmade clothes	Industrial goods	Services and information
The nature of the production processes	Human-nature interaction	Human-machine interaction	Human-human interaction
Determinants of growth/welfare	Natural productivity (soil fertility, climate, biological resources)	Labor productivity	Innovation/intellectual productivity

Source: World Bank (2004), *Beyond Economic Growth - An Introduction to Sustainable Development*, Second Edition, <http://www.worldbank.org/depweb/english/beyond/global/chapter9.html>

Investments are fundamental for the economic growth, identified by the both growth theories, the neoclassic and the endogenous. However, within the neoclassical model, investments have an impact in a period of transition, while the endogenous growth model supports the permanent effect. The importance given to the investments by these theories has led to a high volume of empirical studies that examine the relation between investments and economic growth (for example, Kormendi, Meguire, 1985; De Long, Summers, 1991; Levine, Renelt, 1992; Mankiw, Romer, Weil, 1992; Auerbach, 1994; Barro, Sala-i-Martin, 1995; Sala-i-Martin, 1997a; Easterly, 1999; Bond et al, 2001; Podrecca, Carmeci, 2001). However, the results are not conclusive.

Foreign direct investments (FDI) have played a crucial role in the internationalization of the economic activity and represent one of the main sources of technological transfer and economic growth. This major role is emphasized in several models of the endogenous growth theory. The empirical literature that examines the impact of FDI on economic growth has given more or less consistent findings, revealing a positive significant connection between the two ones (for example Hermes, Lensink, 2000; Lensink, Morrissey, 2006).

Human capital is the main growth source in most endogenous growth models, as well as one of the key extensions of the neoclassical growth model. Knowing that the “human capital” concept

mainly refers to the accumulation by the workers of competences and know-how through education and training, most of the studies have evaluated the quality of human capital by using education-related variables (for example, the rates of school registration, Mathematics tests and scientific capacities, etc.). Numerous studies have given proofs that suggest that the educated population is a key determinant of economic growth (see Barro, 1991; Mankiw, Romer, Weil, 1992; Barro, Sala-i-Martin, 1995; Brunetti, Kisunko, Weder, 1998; Hanushek, Kimko, 2000). Though, there were other researchers that have doubted these findings, and, as a result, the importance of human capital as a determining factor of economic growth (for example, Levine, Renelt, 1992; Benhabib, Spiegel, 1994; Topel, 1999; Krueger, Lindahl, 2001; Pritchett, 2001).

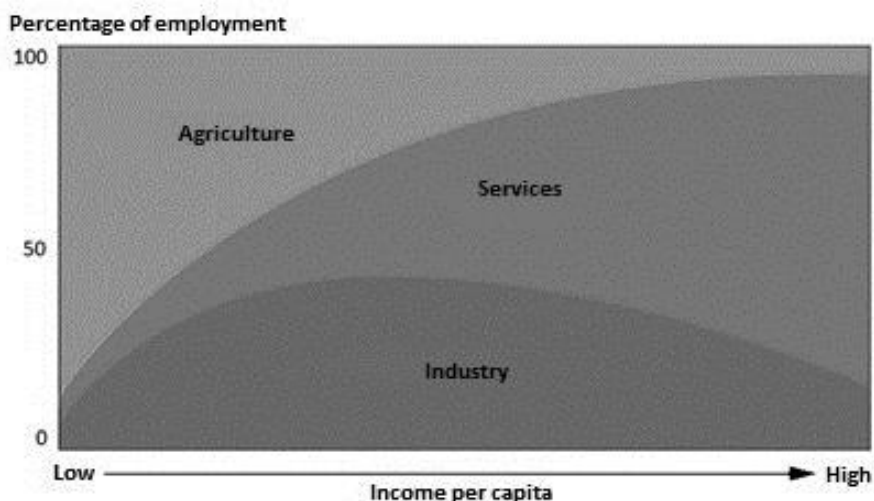
The simple idea behind the theory of factor accumulation is that greater inputs mean greater outputs. The capital is the oldest known determinant of economic growth: accumulation of capitals is translated as sustainable growth. But in the 1960s and 1970s, before the opening of the global economy, several emerging economies, especially India and China, next to Russia and the countries in Latin America, have shown that investments without openness, or investments without competition, lead to an immediate growth, but they have a negative long-term impact. In the mid of the 1990, the general belief was that the success of East Asia is due to factor accumulation (Young, 1995; Krugman, 1994). Recent studies show that this conclusion is incorrect: There were numerous capital investments in these countries, but it is more important that the commercial openness and towards investments and more than competitive exchange rates have supported productivity growth.

Another production factor (and the second growth principle of Lewis) is the human capital – knowledge and education. The theory of the important role of education has been developed just in the 1950s; empirical studies have been carried out just in the 1960s. Now, it is shown that the personal benefit of education is high, frequently very high. But nobody has claimed that education is not necessary for economic growth and development. In the middle of the 1980s, a special attention had been given to social revenues from education, especially from Romer (1986). Though its various production models have emphasized the fact that education generates positive results within the economy, at a lower scale it is difficult to determine which the effects are.

Despite these antitheses – there are moments when too much capital does not mean additional growth and when education does not have significant effects – a key aspect of the empirical analysis on growth is the establishment of the determinants of the accumulation of human and capital factors. What does attract investments and determines the enrichments of countries? Could the reallocation of work from traditional agriculture to the modern industry be one of the factors?

Agriculture has always been the starting point of economic growth, both for the western countries on the brink of the industrial revolution, and for the emerging economies of the 20th century. Lewis (1955) stated that the transition of one economy from agriculture to non-agriculture is a sine qua non condition of economic transformation and growth.

Figure 2 - Reallocation of labour during economic development



Source: World Bank (2004), *Beyond Economic Growth - An Introduction to Sustainable Development*, Second Edition, <http://www.worldbank.org/depweb/english/beyond/global/beg-en.html>

Cheap and unlimited resources are available in most of the countries right before the beginning of economic growth. In this moment, the ecosystem is balanced; the growth of productivity in agriculture is low, with individuals working in farms. The technological progress, in its interior or the exterior of agriculture, liberates the work. If this progress happens outside the economy, emigration determines the reduction of work in agriculture. In exchange, internal technological progress from the industry makes the work force leave the farm. In both cases, growth is accompanied by a decrease of the agriculture in the GDP economy.

The whole literature concludes that, in the incipient development stages, any additional growth in the economy is due to the reallocation of work from the agricultural sectors with low productivity towards non-agricultural sectors (industry and services) with high productivity. Barely in the last development stages, the accumulation of factors and technological changes started to contribute to a greater growth. This reallocation of factors was estimated by Robinson (1976) to reach 16-18% in the first stages of the emerging economies.

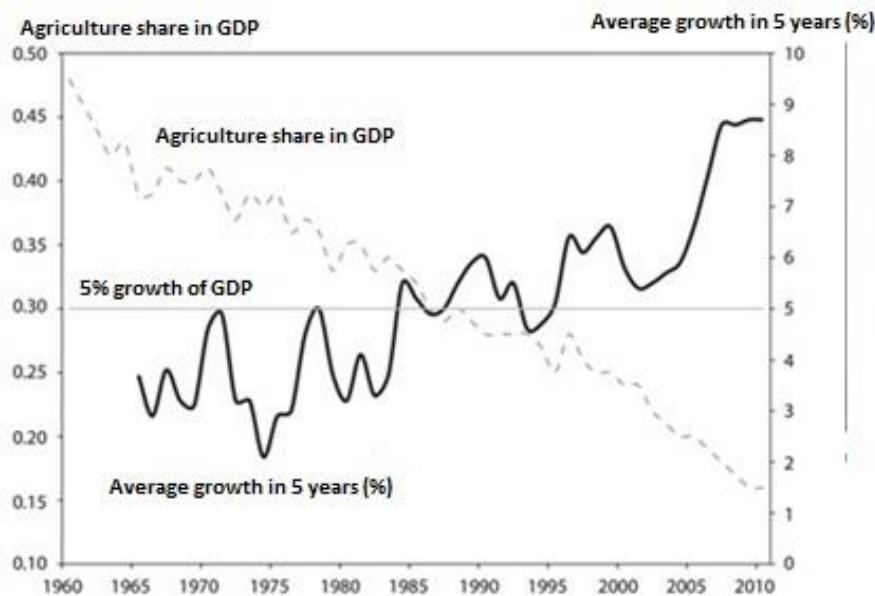
The theory of reallocation presents numerous implications for the evolution of economic growth and, thus, of the living standards. This reallocation of work force generates an S-shaped flow of revenues growth (and a revenue flow). In the beginning, the workforce in the low-productivity

agricultural sector (agriculture presents a yearly growth rate of 3%) gradually migrates towards high-productivity sectors (industry and services, with a yearly growth of 6%).

Initially, agriculture represented 60% of the output. Meanwhile, productivity growth and factors' movement determines the reduction of the percentage to barely 20% or less. At this level, the reallocation of the workforce ensures a reduced growth, and, while the decrease towards the lower curve of S is steep, it flattens at the base. This is the S-evolution of the revenues' level.

Within the reallocation theory, growth is modeled as a moderate average of the growth rates in industry and agriculture, the modelling being given by the percentage of each sector in the economy.

Figure 3 - Growth in India according to the theory of labour reallocation



Source: ***, (a.n.), Determinants of growth, Peterson Institute for International Economics, p.20

The figure above displays a simulation for India. In the first year, 1960, it is assumed that 55% of the real production came from agriculture, and the yearly growths of agriculture and non-agricultural sectors are 2.75% and 6% (these values are close to the ones found in the Indian economy in that period). These differential growth rates predict the evolution of agriculture and the whole GDP growth. In 2011, the percentage of agriculture was 17% and the GDP increased by 5.5%. Nowadays, these percentages are 16% and 8%. These applications of the reallocation theory show that India would have reached a GDP growth rate of 5% in 1983, with or without economic reforms.

Innovation and research-development activities can have an important role in the economic progress by increasing the productivity. This is due to the increase of technology use which allows the introduction of new and superior processes and products. This role has been emphasized by various

endogenous growth models, and the strong relation between innovation/R&D and economic growth was empirically confirmed by more studies (see Fagerberg, 1987; Lichtenberg, 1992; Ulku, 2004).

Economic policies and macroeconomic conditions have sparked interest as determining factors of economic performances (see Kormendi, Meguire, 1985; Grier, Tullock, 1989; Barro, 1991; Barro, 1997; Fischer, 1993; Easterly, Rebelo, 1993; Barro, Sala-i-Martin, 1995) as they can establish the frame where economic growth happens. Economic policies can influence many aspects of one economy through human capital and infrastructure investments, by improving political and judicial institutions and so on (though there is a debate on the policies that are more appropriate for growth). The macroeconomic conditions are seen as necessary conditions, but not sufficient, for economic growth (Fischer, 1993). Generally, a stable macroeconomic environment can favor economic growth, especially by reducing uncertainty, while macroeconomic instability could have a negative impact on economic growth, through its effects on productivity and investments (such as a greater risk). More macroeconomic factors which influence growth have been identified in the literature, but there is a special focus on inflation, fiscal policies, budgetary deficits and fiscal burden.

The analysis of the contribution of policy changes to growth is significant. It is generally accepted that the results of adopting negative policies, such as high inflation, are a major obstacle for growth. Another frequent recommendation in developed and emerging countries is the decrease of the financial deficit. Expected benefits vary, including a higher production efficiency, lower losses in the state owned enterprises and a lower eviction of private investments. The reduction of deficits is needed for the macroeconomic stability and sustainable growth. High financial deficits, financed through public credits, also determine an increase of the interest rate, creating an unfavorable environment for foreign investors.

Commercial openness has been largely approached in the economic literature as a major determining factor of growth performances. There are solid theoretical reasons to claim that there is a strong and positive connection between openness and growth. Openness influences economic growth through more channels, such as exploiting the comparative advantages, technology transfer and knowledge spreading, scale economies and competition exposure. The openness usually is evaluated through the proportion of exports in the GDP. There is a significant and growing empirical literature which studies the relation between openness and growth. Most of the literature has noticed that the economies which are more open to trade and capital flows have a higher GDP/capita and have developed faster (Dollar, 1992; Sachs, Warner, 1995; Edwards, 1998; Dollar, Kraay, 2000). But, more researchers have criticized the lustiness of these findings, especially due to methodological and

evaluation reasons (for example, see Levine, Renelt, 1992; Rodriguez, Rodrik, 1999; Vamvakidis, 2002).

As mentioned, trade has been long time considered a significant factor, if not the most significant, that supports growth: the comparative advantage offers security, and revenues maximization can be reached by improving trade. More emerging economies have adopted an autarchic, closed, soviet-like model after their independence, hoping for a rapid development. These countries have failed, having to open to foreign trade in order to recover from the disastrous situation caused by themselves. As many of them have grown faster than before, it has been concluded that “trade causes growth”.

The opposition to this assertion, came from some researchers such as Rigobon and Rodrik (2004), assumes that as openness can ease trade and trade can ease growth, the revers can easily be accepted. As economy grows, the demand for different products grows, causing the evolution of trade (more imports, thus more exports to finance imports). Thus, econometric models claiming that they show an increase of growth caused by growing trade could in fact show the reverse.

This problem can be econometrically solved by using identification techniques for the direction of the causality connection, by using instrument variables – variables that are correlated to one of the independent variables (trade) but not with the other (growth). The word “econometric” supposes an estimation of reality. Estimations are amenable to errors, and the existence of a possible error, no matter what its size is, allows both sides to claim victory. Protagonists claim that they have identified the problem, opponents say that the means are scarce. And the debate continues.

Commercial policy can be evaluated through its effects – trade percentage in the GDP – or through the instruments that influence the trade. These instruments refer to indicators and tariffs’ policy, strongly supported by statistics. In many cases, though tariffs were reduced and import protection was lowered, growth did not speed up. In other cases, growth was reported, though tariffs were high. Yet, no study has emphasized the fact that high tariffs lead to rapid growth after the Second World War.

The more external-oriented economies are, the richer they become – observation that is available no matter how deep we search in history. Though, the openness as an empirical concept has barely been studied in World Development Report from 1991, issued by World Bank. Starting from that year, numerous articles have been written and various indexes for the evaluation of economic openness have been developed.

Approaching economic openness is also debated. Researchers and politicians are afraid that reducing import tariffs would allow foreign companies, with modern methods and low costs, to

dominate their competition and delay industry development and national expertise. As proofs of the paid price, these present the experience of emerging economies from the colonial era. During that era, free trade was predominant, yet the emerging economies had revenues lower than their colonial masters. Furthermore, there are proofs that high tariffs have helped developed economies grow faster.

Sachs and Warner (1995) developed an evaluation method for openness, subsequently also treated by Wacziarg and Welch (2003). Others proposed some variants, amongst we can mention Hall and Jones (1999), and, more recently, Chinn and Ito (2008). None of these variants of openness evaluation is not statistically significant for most of the growth models. The importance of the openness variable grows after the introduction of exchange rate evaluation variables. This is consistent with the theory: openness doesn't have a strong effect if the exchange rate is over appreciated. But if the economy is open and the exchange rate is competitive, then growth will be reported.

Balassa (1964), counsellor of the World Bank and academician, has emphasized the advantages of export-based growth, due to competitive exchange rates, politically correct term for an under evaluated currency. There are differences between the export based growth strategies and the ones based on the under evaluation of the national currency. In the first case, it is about a classic industrial policy, when certain companies or sectors are chosen by the government to become internationally competitive (to be successful exporters). The effects of currency under evaluation do not limit themselves just at certain exporting companies or sectors, but they spread across the whole economy. The regularization of the market is carried out through trade and by exposing the national companies on international markets, thus cancelling the possible political and economic distortions that might emerge as a result of public favoritism or state intervention.

Theoretically, it is difficult to apply a deliberate devaluation policy of the national currency as it implies changes of the balance of trade, and not only on short term. It is practically impossible for the rich countries to apply such a policy taking into account the volume of the exchange market, but emerging economies can modify their exchange rate by operating on this market. There is a series of problems regarding the influence of authorities on an exchange market of billions of dollars carried out through selling and buying low amounts of money. Even if they influence the nominal exchange rate, they will not influence the rate that counts – the real exchange rate.

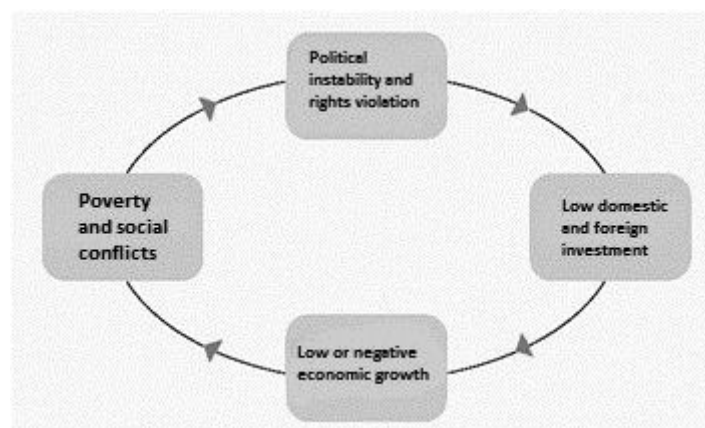
And the theory regarding the impact of a competitive exchange rate on growth raises problems. The debates target the methodology used in order to calculate a balanced exchange rate, the first step in evaluating the competitiveness of an exchange rate. Furthermore, the balanced exchange rate is not constant – it modifies with the passing of time and from one development stage to another.

An important growth source emphasized by the literature is the institutional frame. Though the importance of the role institutions play in modelling economic performance has been recognized many years ago (Lewis, 1955; Ayres, 1962), such factors have been recently empirically examined in a more consistent way (see Knack, Keefer, 1995; Mauro, 1995; Hall, Jones, 1999; Rodrik, 1999; Acemoglu, Johnson, Smon, Robinson, 2002). Rodrik, 2000 emphasizes five key-institutions (ownership rights, regulating institutions, macroeconomic stabilization institutions, social insurance institutions and conflict management institutions), which do not only directly influence economic growth, but which influences other growth determinants, such as physical and human capital, investments, technical changes and the economic growth processes. The quality of institutions is frequently evaluated in the literature based on the repudiation of the contracts by the government, of expropriation risk, of corruption, of ownership rights, of the rule of law and bureaucratic quality (Knack, Keefer, 1995).

The theory which states that institutions play a significant role for growth is based on two arguments. First of all, political freedom (ownership rights) reduces uncertainty and supports entrepreneurship, amongst others, causing a higher efficiency and a high growth. Second, political freedom allows the making of more sensitive decisions. But the Eastern Asia states have strongly developed under authoritarianism. On other side, for each Eastern Asian dictator whose economy reported growth, there are 10 African or South-American dictators whose state economy did not grow.

The relation between political factors and economic growth has been brought to the fore by Lipset, (1959), who examined the way economic development affects the political regime. Ever since, research regarding these aspects has proliferated, emphasizing the fact that the political environment has a significant influence on economic growth (Kormendi, Meguire, 1985; Grier, Tullock, 1989; Lensink, Bo, Sterken, 1999; Lensink, 2001).

Figure 4 - The vicious circle of political instability



Source: World Bank (2004), *Beyond Economic Growth - An Introduction to Sustainable Development*, Second Edition, <http://www.worldbank.org/depweb/english/beyond/global/beg-en.html>

Elementary, political instability would grow the uncertainty degree, discouraging investments, and, in the end, hampering economic growth. The democracy degree also is associated to economic growth, even if the relation is much more complex. Democracy can baffle or support economic growth, depending on the various channels through which it operates (Alesina, Grilli, Milesi-Ferretti, 1994). During the last years, a series of researchers have tried to evaluate the quality of the political environment, by using variables such as political instability, civil and political freedom and political regimes. Brunetti (1997) distinguishes four revealing political variable categories: governmental stability, political violence, political volatility, and the subjective understanding of policy.

Recently, a rising interest has been expressed on the way different socio-cultural factors can affect economic growth (see Granato, Inglehart, Leblang, 1996; Huntington, 1996; Temple, Johnson, 1998; Landes, 2000; Inglehart, Baker, 2000; Zak, Knack, 2001; Barro, McCleary, 2003). Trust is an important variable that can be included in this category. Trustful economies are expected to pose stronger incentives for innovation, physical capital accumulation and rich human resources development, all of them being essential for economic growth (Knack, Keefer, 1997). Ethical diversity might in charge have a negative impact on economic growth by reducing trust, increasing polarity and promoting the implementation of policies with neutral or even negative effects on growth (Easterly, Levine, 1997). Other various socio-cultural factors have been examined in the literature, such as ethnic structure and fragmentation, language, religion, beliefs, social/ethical conflicts and attitude, but their relation with the economic growth seems to be indirect and unclear. For example, cultural diversity can have a negative impact on growth as a result of social uncertainty emergence or even of social conflicts, or a positive effect, by creating a pluralist environment in which cooperation can develop.

For example, these theories postulate that Eastern-Asia countries have gained success due to the adoption of Confucianism, or that some western economies are wealthy due protestant ethics. In his studies, Sala-i-Martin (1997a, 1997b) finds that Confucianism was appropriate for the higher growths, placing it on the second position as a determining factor after economy openness. Yet, this hypothesis is confusing: Confucianism is associated to authoritarianism and economic freedom. In Bhalla (1997) book, Confucianism is also associated to an impaired exchange rate. As a result, though cultural and religious theory can be interesting, it has rarely been empirically strong. If the world would be separated in four groups according to the existing religions (Catholicism, Protestantism, Islamism and the others), the preponderant catholic and Islamic societies have a reduced growth rate (lower than the world average by 0.9%). Protestant societies have an increase lower than the world average by 0.5%,

but the percentage is not statistically significant. But the religious variables become insignificant when other variants are introduced in the analysis.

Nobel Prize Laureate Kuznets Simon (1955) has made the study of the growth effect on economic equality popular again. He claimed that, alongside development (growth), inequality has accentuated in the beginning, in order to get lower subsequently, effect known as Kuznets' Curve. Testing this theory has sparked the interest of growth economists, especially in the 1970-1980s. The conventional conclusion is that inequality is not statistically fickle, but it influences growth.

For 42 emerging countries, in whose cases data regarding inequality for at least 2 years during the 1970 was analyzed, it has been noticed that there are proofs supporting the conclusion that initial high inequality leads to the reduction of the subsequent growth. These preliminary results must be carefully treated, as data about inequality is not available in a consistent base for the same country. Moreover, for certain countries, there is just data regarding consumption inequality, while for others, the only available data regards revenues inequality, difference that can influence the results of the analysis.

The important role geography has in economic growth has long time been recognized. Yet, during the last years, there has been a high level of interest in these factors, though they were accordingly formalized and integrated into models. Researchers used numerous variables for geography, including the latitude absolute values, the distances from the Equator, the area up to maximum 100 km from the seashore, medium temperatures and rainfalls, soil quality and ecology of diseases (Hall, Jones, 1999; Rodrik, Subramanian, Trebbi, 2002; Easterly, Levine, 2003). A series of recent empirical studies (Sachs, Warner, 1997; Bloom, Sachs, 1998; Masters, McMillan, 2001; Armstrong, Read, 2004) claim that natural resources, climate and topography have a direct impact on economic growth through the effects on (agricultural) productivity, on economic structure, transportation costs and competitiveness. However, other researchers (for example, Rodrik, Subramanian, Trebbi, 2002; Easterly, Levine, 2003) noticed the lack of the geography impact on growth based on the analysis of institutions.

Table 2 - Average increase of income per capita in a number of economies in 1960-2012 (%)

Country	1951-2012 (%)
<i>World</i>	3,2
<i>Developed economies</i>	2,3
Germany	2,9
Japan	4
United Kingdom	1,9
USA	2
<i>Developing economies</i>	3,4

IN THE GLOBALIZATION ERA, WHICH ARE THE DETERMINANTS OF GROWTH?

Brazil	2,4
China	5,2
India	3,2
Korea	5,1

Source: ***, (a.n.), *Determinants of growth*, Peterson Institute for International Economics, p.16

The problem represented by the lack of growth in Africa in the postcolonial era (after 1960) has led to the hypothesis that “geography is to blame for” (Landes, 1998). This thesis claims that the countries close to the Equator have a natural disadvantage compared to the ones that are far from the Equator, which are richer as they have a more tempered climate and a better soil, which determines a higher productivity, thus growth. The tropical climate is favorable to diseases and less appropriate to work, slowing down the economic development. In other words, these economies inherit an impediment which explains the reduced growth during sub-Saharan Africa’s history.

Variants of this theory use various geographical variables, such as latitude, tropical weather number of days, the number of days with freezes, minimum temperature, minimum monthly rainfalls and maximum temperature. These variables are not the empirical constant - sometimes they are significant, but not always very important. The most frequently met variable is the latitude and there are numerous examples of economies with significant growth located near the Equator which could make the whole theory doubtful. Singapore, which is located on the Equator, has one of the greatest growth rates. Kerala, the most southern state in India (10 degrees northern latitude) is the most developed state, with social indicators comparable to the western economies. Even in Africa, Ghana and Uganda grow faster than Lesotho and Mali, though they are closer to the Equator. The list can go on, with results showing that latitude (and other geographic variables, such as temperature and rainfalls) is not important when explaining the short or long term growth differences.

The relation between the demographical trends and economic growth has sparked interest, especially during the last years. Yet, numerous demographical aspects still remain unexplored. Amongst the examined ones, population growth, population density, migration and age distribution seem to have a major role for the economic growth (Kormendi, Meguire, 1985; Kelley, Schmidt, 1995; Barro, 1997; Bloom, Williamson, 1998; Kelley, Schmidt, 2000). The fast rhythm of population growth, for example, could have a negative impact on economic growth through the effect on the investment and saving behavior and on the quality of human capital.

Although population growth could represent an impediment for growth, the volume of active individuals (workers’ ”stock”) is a positive fact. The argument is simple and direct. In a period of growing population, the future workers “stock” quickly rises. During the transition period, when birth

rate decreases, the number of the depending ones lowers. The lowering of the births also supposes a higher percentage of the employed women, a growth of savings and investments, thus growth.

There are two hypotheses that lay at the base of the above mentioned theory. First of all, and the most important, the workplaces' development rhythm gets faster in order to answer to the employment needs of the workers. Second, the female labor force participation rate can vary from a country to another. In India, the female labor force participation in the urban area is just 25%, though higher than the last decade, when it was just 15%. The growth of the female labor force participation is a positive phenomenon for the emerging economies, which determines the adoption of macroeconomic policies for economic growth and occupation.

Population structure also has significant influences on the economic growth. A numerous active populations is considered to be determining for growth, while a population with many ones depending on, young and old persons, is seen as an impediment. Population density in change can be positively related to economic growth, as a result of specialization improvement, knowledge spreading and so on. Migration would affect the growth potential of both receiving countries and the left ones. Again, results are not conclusive, as there have been no studies to report a (strong) correlation between economic growth and demographical trends (for example, Grier, Tullock, 1989; Pritchett, 2001).

The importance of the middle class has been studied by Aristotle, and, further, by John Stuart Mill, Thomas Malthus, Karl Marx and Barrington Moore (though the last two ones had a different approach of the subject compared to the first three ones). Briefly, middle class positively influences through its engagement to economic reforms and the equitable competition conditions. Middle class supports the for its interest: the safest way to benefit from them is by recognizing their worth, and the sine qua non condition of the middle class mentality is its engagement to education and work.

Who represents the middle class? According to Bhalla (2002), the line that separates the middle class, like the poverty threshold, is absolute and identical for all countries. It is calculated as a weighted average of the highest poverty thresholds or the poverty thresholds in the western rich economies (and Japan). Within these economies, by definition, the poverty threshold separates the poor ones from the "unpoor" ones. Furthermore, the limits of the middleclass are the ones that separates the "unpoors" from the rich ones, the rich ones being the ones with 10 times more revenues than the "unpoor" ones.

In 1996, based on prices, the daily poverty threshold/capital in the developed countries was 8,19\$. In 2011, this threshold reached 11,20\$; for a four individuals family, the revenue reached 16350\$. The rich ones are the ones with revenues that are at least ten times than the poverty threshold, namely 163500 \$, for a family with four members.

Does the size of the middleclass have effects on growth? Yes, and it is emphasized by the analysis of the 1980-2011 period. Each 10% growth of the middleclass since 1980 determined a yearly growth of 0.3%. And panel data for a period of 5 years display the same effect.

Conclusions

Economic growth has been evaluated from simple to complex, depending on the evolution of society. From simple models, explained by geography, to econometrical models, that include a rising number of variables, researchers have tried to emphasize which are the factors that support economic growth, but also its effects on society and environment.

Even though economic growth supposes the rise of living standards, some researchers contest its effects on the environment. Policymakers target a sustainable growth, which is to ensure high revenues for individuals, but they must also take into account the needs of future generations. Thus, resources used for the actual growth must be carefully managed so that the future generations would succeed in satisfying their own needs. A balance between growth and consumption must be maintained for the future society not to be affected.

Acknowledgement

This work was cofinanced from the European Social Fund through Sectorial Operational Programme Human Resources Development 2007-2013, project number POSDRU/159/1.5/S/142115 „Performance and excellence in doctoral and postdoctoral research in Romanian economics science domain”.

References

- Acemoglu, D., Johnson, S. and Robinson, J. (2002), “Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution”, *Quarterly Journal of Economics*, Vol. 117, Issue 4, pp. 1231–1294.
- Alesina, A., Grilli, V. and Milesi-Ferretti, G. (1994), *Capital Mobility: The Impact on Consumption, Investment and Growth*, Cambridge University Press, Cambridge.
- Armstrong, H., Read, R. (2004), ‘The Economic Performance of Small States and Islands: The Importance of Geography’, *Paper presented at Islands of the World VIII International Conference, Taiwan*.

- Artelaris, P., Arvanitidis, P. and Petrakos, G. (2007), "Theoretical and methodological study on dynamic growth regions and factors explaining their growth performance", *Paper presented in the 2nd Workshop of DYNREG in Athens, 9-10 March*.
- Auerbach, A. (1994), *The U.S. Fiscal Problem: Where We Are, How We Got Here, and Where We're Going*, NBER Macroeconomics Annual, National Bureau of Economic Research, Cambridge, MA.
- Ayres, C. (1962), *The Theory of Economic Progress: A study of the fundamental economic development and cultural change*, Schocken, New York.
- Balassa, B. (1964), "The Purchasing Power Parity Doctrine: A Reappraisal", *Journal of Political Economy*, Vol. 72, pp. 584–596.
- Barro, R., Sala-i-Martin, X. (1995), *Economic Growth*, MIT Press, Cambridge MA.
- Barro, R. (1991), "Economic Growth in a Cross-Section of Countries", *Quarterly Journal of Economics*, Vol. 106 pp. 407-443.
- Barro, R. (1997), *Determinants of Economic Growth: A Cross-Country Empirical Study*, Cambridge MA, MIT Press.
- Barro, R., McCleary, R. (2003), "Religion and Economic growth among countries", *American Sociology Review*, Vol. 68, issue 5, pp. 706-781.
- Benhabib, J., Spiegel, M. (1994), "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data", *Journal of Monetary Economics*, 34, pp.143-173
- Bhalla, S. (1997), "Economic Freedom and Growth Miracles: India is Next," *paper prepared for a panel discussion on South Asia: The Next Miracle?, World Bank - IMF Annual Meeting, Hong Kong 1997*.
- Bhalla, S. (2002), *Imagine there's no country: Poverty, Inequality and Growth in the Era of Globalization*, Institute of International Economics
- Bloom, D., Sachs, J. (1998), *Geography, Demography, and Economic Growth in Africa*, Harvard Institute for International Development.
- Bloom, D., Williamson, J. (1998), "Demographic transitions and economic miracles in emerging Asia", *World Bank Economic Review*, Vol. 12, pp. 419-455.
- Bond, G., Kromer, B., Beer, J. and Muscheler, R. (2001). "Persistent Solar Influence on North Atlantic Climate During the Holocene", *Science*, 294, pp. 2130–2136.
- Brock, W., Durlauf, S. (2001), "Growth empirics and reality", *World Bank Economic Review*, Vol. 15, Issue 3, pp. 229–72.

- Brunetti, A. (1997), "Political variables in cross-country growth analysis", *Journal of Economic Surveys*, Vol. 11, pp. 163–190.
- Brunetti, A., Kisunko, G. and Weder, B. (1998), "Credibility of Rules and Economic Growth: Evidence from a Worldwide Survey of the Private Sector", *World Bank Economic Review* 12, pp. 353-384.
- Chinn, M., Ito, H. (2008), "A New Measure of Financial Openness", *Journal of Comparative Policy Analysis*, Vol. 10, Issue 3 (September), pp. 309 – 322.
- De Long, B., Summers, L. (1991), "Equipment Investment and Economic Growth", *Quarterly Journal of Economics*, Vol. 106, issue 2, pp. 445-502.
- Dollar, D. (1992), "Outward-oriented developing economies really do grow more rapidly: Evidence from 95 LDCs, 1976–1985", *Economic Development and Cultural Change*, Vol. 40, pp. 523–544
- Dollar, D., Kraay, A. (2000), *Growth is good for the poor*, Development Research Group, The World Bank.
- Easterly, W. (1999), "The Ghost of Financing Gap: Testing the Growth Model of the International Financial Institutions", *Journal of Development Economics*, Vol. 60, Issue 2, December.
- Easterly, W., Rebelo, S. (1993), *Fiscal Policy and Economic Growth: An Empirical Investigation*, NBER working paper.
- Easterly, W., Levine, R. (1997), "Africa's Growth Tragedy: Policies and Ethnic Divisions", *Quarterly Journal of Economics*, Vol. 112, Issue 4, pp. 1203–50.
- Easterly, W., Levine, R. (2003), "Tropics, Germs, and Crops: How Endowments Influence Economic Development", *Journal of Monetary Economics*, Vol. 50, pp. 3-39.
- Edwards, S. (1998), "Openness, Productivity and Growth: What Do We Really Know?", *Economic Journal*, Vol. 108, March, pp. 383-398.
- Fagerberg, J. (1987), "A technology gap approach to why growth rates differ", *Research Policy* 16, pp. 87-99.
- Fischer, S. (1993), "The role of macroeconomic factors in growth", *Journal of Monetary Economics*, Vol. 32, issue 3, pp. 485-511.
- Granato, J., Inglehart, R. and Leblang, D. (1996), "The Effect of Cultural Values on Economic Development: Theory, Hypotheses, and Some Empirical Tests", *American Journal of Political Science* 40, no. 3, pp. 607-631.
- Grier, K., Tullock, G. (1989), "An empirical analysis of cross-national economic growth, 1951-1980", *Journal of Monetary Economics*, Vol. 24, Issue 1, pp. 259-276.

- Hall, R., Jones, C. (1999), "Why Do Some Countries Produce So Much More Output per Worker than Others?", *Quarterly Journal of Economics*, Vol. 114, Issue 1, pp. 83–116.
- Hanushek, E., Kimko, D. (2000), "Schooling Labour Force Quality, and the Growth of Nations", *American Economic Review*, Vol. 90, pp. 1184-1208.
- Hermes, N., Lensink, R. (2000), "Foreign Direct Investment, Financial Development and Economic Growth", *SOM Research Report 00E27*, University of Groningen, The Netherlands.
- Huntington, S. (1996). *The Clash of Civilizations and the Remaking of World Order*, Simon & Schuster, New York.
- Inglehart, R., Baker, W. (2000), "Modernization, cultural change and the persistence of traditional values", *American Sociological Review*, Vol. 65, Issue 1, pp. 19-51.
- Kelley, A., Schmidt, R. (1995), "Aggregate Population and Economic Growth Correlations: The Role of the Components of Demographic Change", *Demography*, Vol. 32, Issue 4, pp. 543-555.
- Kelley, A., Schmidt, R. (2000). *Economic and Demographic Change: A Synthesis of Models, Findings and Perspectives*, Oxford University Press.
- Knack, S., Keefer, P. (1995), "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures", *Economics and Politics*, Vol. 7, pp. 207-227.
- Knack, S., Keefer, P. (1997), "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation", *Quarterly Journal of Economics*, Vol. 112, Issue 4, pp. 1251-1288.
- Kormendi, R., Meguire, P. (1985), "Macroeconomic Determinants of Growth: Cross-Country Evidence", *Journal of Monetary Economics* September 1985, Vol. 16, pp.141-63.
- Krueger, A., Lindahl, M. (2001), "Education for Growth: Why and for Whom?", *Journal of Economic Literature* 39, pp.1101-1136.
- Krugman, P. (1994), "The Myth of East Asian Miracle", *Foreign Affairs* 73 (No. 6), pp. 28-44.
- Kuznets, S. (1955), "Economic Growth and Income Inequality", *American Economic Review*, Vol. 65, pp. 1–28.
- Landes, D. (1998), *The Wealth and Poverty of Nations*, W.W.Norton&Co., New York and London
- Landes, D. (2000), "Culture makes almost all the difference" in *Culture Matters. How Values Shape Human Progress*. New York, Basic Books, pp. 2-13.
- Lensink, R., Bo, H. and Sterken, E. (1999), "Does uncertainty affect economic growth? An Economic Analysis", *Weltwirtschaftliches Archive*, Vol. 135, No. 3, pp. 279-396.
- Lensink, R. (2001), "Financial development, uncertainty and economic growth", *De Economist*, Vol. 149, N°3, pp. 299-312.

- Lensink, R., Morrissey, O. (2006), "Foreign Direct Investment: Flows, Volatility, and the Impact on Growth", *Review of International Economics*, Vol. 14, pp. 478-493.
- Levine, R., Renelt, D. (1992), "A sensitivity analysis of cross-country growth regressions", *American Economic Review*, Vol. 82, pp. 942–963.
- Lewis, A. (1955), *The Theory of Economic Growth*, George Allen&Unwin, London.
- Lichtenberg, F. (1992), "R&D Investment and International Productivity Differences", *NBER Working Paper No. 4161*.
- Lipset, S. (1959), "Some Social Requisites of Democracy: Economic Development and Political Legitimacy", *The American Political Science Review*, Vol. 53, pp. 69–105.
- Mankiw, G., Romer, D. and Weil, D. (1992), "A Contribution to the Empirics of Economic Growth", *The Quarterly Journal of Economics*, Vol. 107, No. 2. (May, 1992), pp. 407-437.
- Masters, W., McMillan, M. (2001), "Climate and Scale in Economic Growth", *Journal of Economic Growth*, Vol. 6, Issue 3, pp. 167-186.
- Mauro, P. (1995), "Corruption and Growth", *Quarterly Journal of Economics*, Vol. 110, No. 3, pp. 681–712.
- Podrecca, E., Carmeci, G. (2001), "Fixed Investment and Economic Growth: New results on Causality", *Applied Economics*, Vol. 33, pp.177-182.
- Pritchett, L. (2001). "Where has all the education gone?", *The World Bank Economic Review*, Vol. 15, Issue 3, pp. 367-391.
- Rigobon, R., Rodrik, D. (2004), "Rule of Law, Democracy, Openness, and Income: Estimating the Interrelationships", *NBER Working Paper no. 10750*.
- Robinson, S. (1976), "A Note on the U Hypothesis Relating Income Inequality and Economic Development", *American Economic Review*, Vol. 66, pp. 437-440.
- Rodrik, D. (1999), "The New Global Economy and the Developing Countries: Making Openness Work", *Overseas Development Council, Washington, DC*.
- Rodrik, D. (2000), "Participatory Politics, Social Cooperation, and Economic Stability", *American Economic Review*, Papers and Proceedings, May.
- Rodrik, D., Subramanian, A. and Trebbi, F. (2002), "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development", Harvard University. Unpublished paper, <http://www.ksghome.harvard.edu/f.drodrik.academic.ksg/institutionsrule,%205.0.pdf>
- Rodriguez, F., Rodrik, D. (1999), "Trade Policy and Economic Growth: A Skeptic's Guide to Cross-National Evidence", *National Bureau of Economic Research Working Paper, WP/99/7081*.

- Romer, P. (1986), “Increasing returns and long-run growth”, *Journal of Political Economy*, Vol. 94, pp. 1002–1037
- Sachs, J., Warner, A. (1995), “Natural resource abundance and economic growth”, National Bureau of Economic Research Working paper No. 5398, Cambridge, MA.
- Sachs, J., Warner, A. (1997), “Sources of slow growth in African economies”, *Journal of African Economies*, Vol. 6, Issue 3, pp. 335-376.
- Sala-i-Martin, X. (1997a), “I Just Ran 2 Million Regressions”, *American Economic Review*, May, (Papers and Proceedings), Vol. 87, Issue 2, pp. 178–183.
- Sala-i-Martin, X. (1997b), ‘Transfers, Social Safety Nets, and Growth’, *IMF Staff Papers*, Vol. 44, No 1.
- Temple, J., Johnson, P. (1998), ‘Social Capability and Economic Growth’, *The Quarterly Journal of Economics*, Vol. 113, Issue 3, pp. 965-990.
- Topel, R. (1999), *Labor markets and economic growth*, Handbook of Labor Economics (Elsevier Science, Amsterdam), pp. 2943-2984.
- Ulku, H. (2004), “R&D, Innovation, and Economic Growth: An Empirical Analysis”, *IMF Working Paper*, WP/04/185.
- Vamvakidis, A. (2002), “How Robust is the Growth-Openness Connection? Historical Evidence,” *Journal of Economic Growth*, Vol. 7, pp. 57-80.
- Wacziarg, R., Welch, K. (2003), “Trade Liberalization and Growth: New Evidence”, *NBER Working Paper No. 10152*.
- Young, A. (1995), ‘The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience’, *Quarterly Journal of Economics*, Vol. 110, pp. 641–80.
- Zak, P., Knack, S. (2001), “Trust and Growth”, *Economic Journal*, Vol.111 (470), pp. 295-321.