KEY FACTORS FOR ECONOMIC GROWTH

Julia G. Dobreva

VUZF University, 1 Gusla str., Sofia, Bulgaria

Abstract

Economic development in the 21 century differs in many aspects form the development we have aimed at in previous periods. The paper discusses the key factors for economic growth of modern economies. It highlights the main drivers of growth and explains how they can be appropriately used to achieve economic development. Some examples are provided to illustrate the main points.

Keywords: *economic development, drivers of growth, economic growth, developing economies*

1. INTRODUCTION

Ever since the late 80s humanity has gone through a major shift in its understanding of what factors matter for sustainable economic growth and development. The role of such factors as education, healthcare, institutions, property rights, and technology is becoming more and more debatable with regard to their contribution to the advancement of modern societies.

This paper overviews the key factors which trigger economic growth in modern day economies. It examines human resources, education, healthcare and energy resources as the main drivers in the process of economic development. The paper discusses the major issues which boost economic development and facilitate economic growth in modern-day economies.

In the late 70s and early 80s development thought was overtaken by the debt crisis of many developing countries and was centered around programs of economic stabilization and structural adjustment, led by the World Bank and by the International Monetary Fund [1]. The first result of these programs was the social aspect of development.

Furthermore, a major change in development thinking was the experience of the industrialized countries themselves and particularly the United States. This experience demonstrated that economic growth could take place together with social ills, among which: income inequalities, the persistence of poverty and increasing homelessness, the disintegration of the family, high rates of divorce, environmental pollution and destruction, the spread of violent crime and drug abuse, and the appearance of other social illnesses. In both developed and developing economics the Gross National Product (GNP) and other indicators of economic performance rise but only joined indispensably by the rise of undesirable social trends. This type of economic growth was neither desirable nor sustainable in the long run.

It is already widely acknowledged that the major problem of GNP as a measure of welfare is that it measures the commercial transactions taking place in the economy while the welfare of the individuals depends on many other non-transactional aspects. This paper distinguishes four major factors that contribute to economic growth, while at the same time they neutralize the disadvantages of GDP (GNP). More specifically, the combination of well-developed human capital in the form of human resources along with their education and healthcare, as well as the availability of energy resources provides the required means to achieve sustainable levels of economic development beyond the growth registered through the GNP.

2. KEY FACTORS FOR ECONOMIC GROWTH

2.1. Human resources

Human development has important effects on economic growth. An increase in the capabilities and functionings available to individuals should allow more of them to pursue occupations in which they are

most productive. These capabilities of the human capital are increased mainly through education and health and we will consider these to factors as contributing to economic growth. Most certainly, human development can be seen as the relaxing of constraints which may have interfered with profit maximization and hence leading to income generation and economic development. Furthermore, although human development represents a broader concept, many of its elements overlap significantly with the more traditional notion of human capital.

More specifically, each of the various components of human development is likely to have a distinct impact on economic growth. Education, for instance, has a strong effect on labour productivity. In addition to its direct effect on productivity, education also affects the rate of innovation and technological improvements. The quantity and quality of investment, domestic and foreign, together with the choice of technology and overall policy environment, constitute other important determinants of economic performance [2]. Health has also demonstrated positive effects on economic growth beyond its inherent desirability as an end in itself. Strauss and Thomas (1998) review a large literature documenting how improvements in health and nutrition improve productivity and incomes [3]. Education and health may also have strong indirect impacts on economic growth through their effect on the distribution of income, and education even more so through its impact on health. As education and health improve and become more broadly based, low income people are better able to search for economic opportunities.

Furthermore, evidence shows that only a portion of the growth of output over time can be statistically explained by changes in the quantity of conventional factors of production. The residual growth must be explained largely by changes in the quality of the labour force, that is, by the development of human resources. Empirical work relating to the improved education of labour and to entrepreneurship, only reinforced this now widely accepted proposition (e.g., [4], [5], [6]). The importance of human resources development for overall economic growth has been further documented by the more recent experience of the so-called newly developed countries, such as those of East Asia and particularly China.

It has become clear that social problems that may accompany economic growth cannot be left aside until economic development has taken place, because development is a neverending process and cannot be sustained in the long run while social ills are increasing. Furthermore, social problems are best and most economically solved when economic development is taking place and not after it is a fact. Solving the problem of crime at its beginning is exceedingly easier than after it has taken root or become organized. Most importantly, it is often the pursuit of the single goal of maximizing income growth that causes the social problems in question. The geographic location of industry and other economic activities on purely economic principles may result in the concentration of these activities in and around the major city which necessitates labour movements that disrupt family life with attendant social problems. It may increase the marginalization of certain regions and groups of the population that are not directly touched by this concentrated investment, increasing the gap between rich and poor within the nation. It may also result in a deteriorating physical environment and in a social environment that causes social unrest which ultimately destroys the fruits of economic growth.

On the contrary, social development, in terms of greater participation of the population in decision-making and in the execution of development activities, that minimizes poverty and promotes equity, advances the status of women and integrates youth in the development process, itself plays a major positive role in the intensity and sustainability of economic development.

The first step in this direction is for the policy makers to consider the social implications of every public investment project. Secondly, it is important to establish a system of incentives and disincentives to make private investment more responsive to social needs. In laissez-faire conditions industries and other economic activities tend to congregate in and around major towns which causes environmental problems and overcrowding in the affected urban area and possibly the depletion of the countryside with a negative effect on agricultural production. By bringing work opportunities to the people instead of the other way around, such a policy will help to maintain and strengthen the institution of the family and the structures of the local communities.

The third and, perhaps, the most important step towards the implementation of a human development approach is in the design of specific policies that lead to the empowerment of people and their participation in development, particularly those that are marginalized because of limited income, their place of living, disability, gender or age. For example, youth unemployment always keeps high levels in both developed and developing economies. Human development cannot take place except in a free and democratic environment where the civil society is invited to participate in the design and implementation of policies directly affecting people and local communities. It is incompatible with increasing inequality, marginalization and lack of freedom, even if they are accompanied by rapid economic growth and increasing income.

2.2. Education

Education is one of the major factors in developing human capital and therefore it plays a major role in the economic development of any country, developed or developing one. Many resources play a part in the growth of a country's economy one of which and perhaps the most important is human capital, which means the workforce of the country. Thus, a good and productive workforce by making use of other resources can lead an economy to growth and prosperity. Therefore education is one of the most important factors that leads a given economy to sustained economic growth. Education has become a very important part of every government policy and much effort has been done with respect to improving education in many developing countries (e.g. India, Pakistan, Bangladesh, Afghanistan, etc.). Many studies have been conducted in the past to examine the relationship between education and the economic development of a country.

Hanushek (2010) posits that education has long been viewed as an important determinant of economic well-being [7]. He notes that despite the theoretical predictions, the empirical evidence on the impact of education on economic growth has long been mixed due to measurement problems. According to his findings, most people would acknowledge that a year of schooling does not produce the same cognitive skills everywhere and they would also agree that families and peers contribute to education. Health and nutrition further impact cognitive skills. Yet, until recently, research on the economic impact of education has almost uniformly ignored these aspects.

The theoretical growth literature emphasizes three mechanisms through which education may affect economic growth:

- *First - education can increase the human capital inherent in the labor force*, which increases labor productivity and thus transitional growth toward a higher equilibrium level of output (as in augmented neoclassical growth theories, [8]);
- *Second - education can increase the innovative capacity of the economy, and the new knowledge on new technologies, products, and processes promotes growth* (as in theories of endogenous growth, e.g., [9], [10], [11]); and
- *Third - education can facilitate the diffusion and transmission of knowledge needed to understand and process new information and to successfully implement new technologies devised by others, which again promotes economic growth* (e.g. [12], [13]).

Furthermore, Hanushek (2010) [7] claims that primary schooling turns out to be the most robust influence factor on growth in GDP per capita in 1960–1996 in the extensive robustness analysis of 67 explanatory variables in growth regressions on a sample of 88 countries by Sala-i-Martin et al. (2004) [14], as represented in Figure 1. It provides a basic representation of the association between years of schooling and economic growth on the most recent version of available data. This research suggests that each year of schooling is associated with long-run growth that is 0.58 percentage points higher.

The educational provisions within a given economy represent one of the main determinants of the composition and growth of that country's output and exports and constitute an important ingredient in a system's capacity to borrow foreign technology effectively. Health and nutrition, and primary and secondary education all raise the productivity of workers. Secondary education facilitates the acquisition of skills and managerial capacity. Tertiary education supports the development of basic science, the

appropriate selection of technology imports and the domestic adaptation and development of technologies.

Secondary and tertiary education represent critical elements in the development of key institutions, of government, the law, and the financial system, among others, all essential for economic growth. Empirical evidence available at both micro and macro levels further illuminate these relationships: at a micro level, numerous studies indicate that increases in earnings are associated with additional years of education, with the rate of return varying with high level of education ([15], [16]).

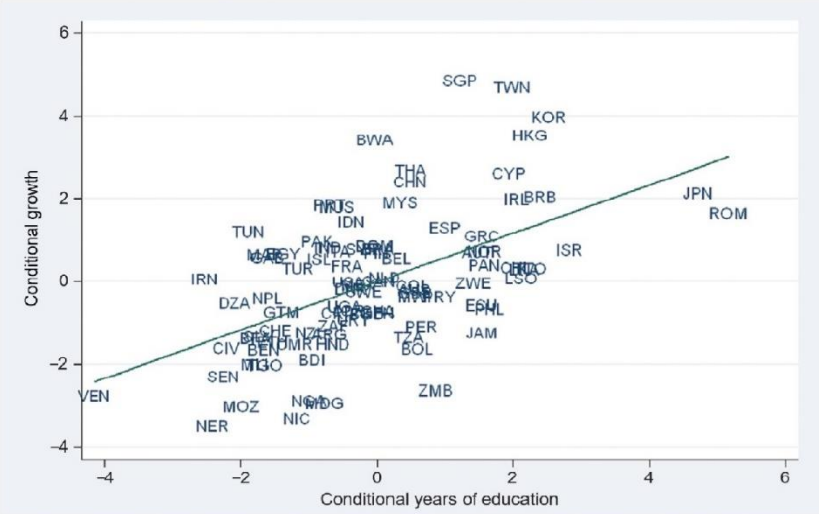

Figure 1 Association between years of schooling and long-run economic growth. Added-variable plot of a regression of the average annual rate of growth (in percent) of real GDP per capita in 1960–2000 on average years of schooling in 1960 and the initial level of real GDP per capita in 1960.

2.3. Healthcare

Healthcare is not only a desirable, but also an essential priority, ensuring the development of most societies. However, modernday health systems face complex challenges, which are partially derived from new global pressures, such as ageing population, growing prevalence of chronic illnesses, and intensive use of expensive but vital health technologies.

Moreover, the expectations of citizens are also growing, while in some parts of the world there are still persistent inequities in access to healthcare and in health conditions among different social groups. The issue of how to ensure the financial sustainability of health systems, while making a positive contribution to macroeconomic performance, has moved to the top of the policy agenda in many countries. A basic message is that investments in health and the design of health financing policies should be addressed in terms of the interaction between health and economic growth. It is acknowledged that growth, income, investment and employment are a function of the performance and quality of the economic system, its regulatory frameworks, trade policies, social capital, labour markets, etc. The same refers to healthcare conditions (like mortality and disability) – they depend not just on standards of living, but on the actual performance of health systems themselves.

Health performance and economic performance are deeply interlinked. Wealthier countries have healthier populations and also poverty, mainly through infant malnourishment and mortality, adversely affects life expectancy in developing countries. National income has a direct effect on the development of health systems, through insurance coverage and public spending.

Furthermore, the effects of health on development are clear. In some countries with weak health and education conditions it is hard to achieve sustained economic growth. Economic evidence provided by the WHO proves that a 10% improvement in life expectancy at birth is associated with a rise in economic growth of some 0.3-0.4 percentage points a year. This evidence is available at the micro-disease level as well: a 10% decrease in malaria is associated with an increased annual economic growth of 0.3%. An

example to this are Asian countries such as Malaysia, China, South Korea and Thailand. Plotting their economic growth along two key health indicators reveals an astounding fact - they have succeeded in improving health as well as attaining sustained economic growth.

Additionally, data over decades reveals that health improvements, illustrated through the infant mortality rate and life expectancy, actually preceded their economic surge. This can be observed most dramatically in China, where both infant mortality and life expectancy improved significantly in the 1960s, before the beginning of the dynamic changes in Chinese economic performance. This points to the fact that countries improve their health status before they become wealthy.

On another level, disease hinders institutional performance as lower life expectancy discourages adult training and damages productivity. Also the emergence of deadly communicable diseases has become an obstacle for the development of important economic sectors like tourism [17].

It is acclaimed that healthier workers are physically and mentally more energetic and robust, they are more productive and earn higher wages. Also they are less likely to be absent from work because of illness. It is a major belief that illness and disability reduce hourly wages substantially, with the effect especially strong in developing countries, where a higher proportion of the work force is engaged in manual labor than in developed industrial countries. Several research works comment on many of these effects [3]. Also, health in the form of life expectancy has appeared in many cross-country growth regressions, and investigators generally find that it has a significant positive effect on the rate of economic growth ([18], [19]).

2.4. Energy resources

Both developed and developing economies are dependent on energy supply. Both heavy and light industry require energy, it is necessary to build and to light new homes, to transport goods, to practice modern intensive agriculture, and for practically every aspect of modern society. As societies develop, their demand for energy grows, requiring some sort of national energy policy in order to maintain the rate and level of development. Since energy use results to some extent in an environmental effect, a nation's environmental goals are meant to affect its energy and economic policies and vice versa. Many developing economies are pressured by developed economies to exhibit a high degree of environmental awareness and protection. This also has an effect on a nation's economic growth as well as its energy policies.

Energy policies can serve one or more of the following main purposes:

- Reducing reliance on imported energy
- Environmental protection via reduced emissions
- Environmental protection via reduced mining and drilling
- Environmental protection via reduced spills in transoceanic shipment of fuels (especially petroleum and its refined products)
- Support and/or protection of domestic energy industries
- Protection of domestic jobs that require energy inputs
- Protection of domestic tax revenues
- Encouraging alternative energy uses (e.g. use of renewable energy resources instead of fossil fuels)
- Encouraging preferred practices (e.g. use of mass transportation or ridesharing)
- Encouraging development of preferred companies or economic sectors
- Personal and/or political gain on the part of powerful national or industrial figures
- Furthering a government's political aims (i.e. buying energy from a less developed neighboring country to assist their economy, or withholding energy from a perceived competitor)

- Furthering a government's national security interests (i.e. withholding energy from a military rival or stockpiling fuel for a nation's military)

There are various ways to create intelligent and efficient energy policies. In order to attain high levels of efficiency it is important to consider the following: utilizing existing energy sources in more efficient ways, distributing energy to all people fairly, creating rules which facilitate wise energy use, problems involved in creating such rules (both within countries and throughout regions within and between countries), creating new energy sources and supplies, transitions to utilizing new energy sources, creation and upkeep of infrastructure for an energy source, using energy for economic gain, countries' interests in possessing its own energy, and concerns for the environment in using energy.

It is often the case that a particular country lies in a region which has few natural resources, or resources which have been depleted (like the Aral Sea in Kazakhstan). It is then necessary for that country to use what they do have to the best of their ability. For example, Japan has little in the way of energy-producing natural resources. To help reduce Japan's dependence on imported petroleum, the Japanese government began emphasizing the use of nuclear power to the extent that well over half of Japanese electrical energy is supplied by nuclear reactors. This energy policy has helped to significantly improve the quality of Japanese air. Another resource-poor nation, Lithuania, relies on nuclear power for nearly eighty percent of its energy production as well as selling extra energy as a major source of hard currency.

One of the most obvious ways to reduce energy consumption by nations or individual consumers is to implement improvements in energy efficiency. In some nations, this is used as an alternative to constructing new energy production capability and, in fact, there are some instances in which utilities or governments will help to pay the cost of replacing old light bulbs, air conditioners, refrigerators, and so forth with more energy efficient models. The rationale behind this charity is that paying for these replacement costs is often less expensive than building a new power plant, with the added benefit that the replacements are a one-time cost for the utility, which does not then have to maintain a new power plant on a continuing basis. Hence, improving energy efficiency helps a nation to do more work with the same amount of energy, freeing up more money to use for other purposes. In addition, this practice makes less use of irreplaceable fuels, results in less environmental degradation, and generates less waste.

There is, however, a limit to what can be accomplished by reducing energy consumption; any society can reduce its energy use only so far before beginning to cut into vital services such as transportation, health care, and basic household needs. There will always be a baseline level of energy consumption needed to maintain a given standard of living, and a society that drops below that level of energy consumption is likely to begin to see a drop in the quality of life its citizens enjoy.

In addition, attempting to implement efficiency improvements may result in only temporary impacts to a nation's energy use practices. In the beginning of the Arab oil embargo, consumers in the US became very energy conscious, and many buying habits (particularly automobile purchase) changed dramatically. However, within a generation, the ready availability of cheap petroleum encouraged a resumption of old buying habits, and before the year 2000, many US consumers had again begun purchasing large, fuel-inefficient vehicles. In the case of more energy-efficient light bulbs or appliances, many consumers are unwilling to replace their new, energy efficient equipment with similarly efficient replacements because of the higher cost, so many programs such as those described above result in only temporary reductions in energy usage. In order to give such measures lasting impact, it may be necessary to pass laws or to conduct on-going incentive programs to encourage citizens to continue their "good" behavior over a prolonged period of time.

3. CONCLUSIONS

This paper analyzed the major factors which contribute to the growth of modern economies. It highlighted four major factors ensuring economic growth and development, i.e.: human resources, their education and health, as well as energy resources. Furthermore, the paper focused on the major issues which boost economic development and generally set the environment for economies to thrive. It stated

clearly that these key factors are vital for both developed and developing economies and affect both in many cases.

A significant proposition, discussed in the analysis, is that the combination of well-developed human capital in the form of human resources along with their education and healthcare, as well as the availability of energy resources provides the required means to achieve sustainable levels of economic development beyond the growth registered through the GNP.

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