

A REVIEW OF THE ECONOMIC GROWTH AND DEVELOPMENT THEORIES

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SUMMARY

The analysis of economic growth and development is coeval with economics. The importance of it is shown by the constant development of theories concerning economic growth during the ages. In my paper I introduce the most important models of the field.

I summarise the change from the early development models which depended on the homogenous factors of production - land, labour, capital - to the current ones which depend on the human capital growth and development. Nowadays there are two paths in the mentioned research. One of them is dealing with the Solow growth model and think toward and explain the developing countries economic growth with the human capital and its characteristics. The other line of analysis deals with the distribution of income between the factors of production.

In the second part of the last century a new wave of theories appeared. According to them in the globalised world it is unwise to deal with economic growth in a narrow way - within the borders of a country - because the international trade, distribution of labour and dependence relations have a big effect on it (Girco and Keohane in: Bartha et al., 2013). Institutional economics marks new ways of research as well, so the education becomes the centre of attention during the research of economic development.

The main goal of the review of the literature of growth and development economics is to lay the foundations of my research modelling on the relation of future economic growth and the higher education system.

INTRODUCTION

The development as a general concept means the process that turns from a lower quality to a higher level. (Szentes, 2011) The separation of the development and growth concepts is necessary, the former means a qualitative change, than the latter which means a quantitative expansion, and furthermore the growth is necessary part of the development in many cases but at the same time it can be opposite. (Meyer & Solt, 1999; Szentes 2011)

THE BEGINNING OF THE MODERN GROWTH THEORIES

The physiocrat and mercantilist theory

The representative of the French physiocrats, Quesnay (1694-1774) held an opinion of the value and value making that form in the agriculture, and he identified the agriculture as the only source of the generation of income and for this the land as a factor of production.

According to the standpoint of the physiocrat group the economic life without governmental intervention is natural. The view of the French mercantilist group was that the economic power of the country is determined by the money and the accumulation of precious metals, and they wanted to reach that with active foreign trade. (Sikora, 2004)

The theory of Smith and Ricardo

The role of the human capital – thus indirectly the education – in the economic growth was pointed out by the two prominent figures of classical economics: Adam Smith (1723-1790) and David Ricardo (1772-1823). Smith in his book *The Wealth of Nations* (1776) resisted to the physiocrat and mercantilist philosophy. He rejected that the trade or the natural factors would be an unilateral building blocks of the economy, and economic growth. In the view of Smith the productive human work was the source of richness. With the help of Ricardo's Labour theory of value the price of the good can be determined and the relationship between them accordingly how much labour was used during the production, hereby he categorised them to cheap and expensive categories. Ricardo's theory has contributed significantly to the analysis of the economic relations in 19th century. According to the theory the country's welfare, so in the mean of the initial theoretical examinations the economic growth based on trade, which depend on the exploitation of the comparative advantages and not to make any administrative obstacles in front of the international flow of goods. (Smith, 1992; Samuelson & Nordhaus, 2009; Bartha et al., 2013)

The Marxist theory and it's afterlife

Karl Marx (1818-1883) extended Ricardo's Labour theory of value, and according to it the value of different goods is determined by the inherit amount of work (expense), so the work is the value holder, that's why the physical work is the only value making working activity. Marx's view that the intellectual work is unproductive, it does not create value. Today we know that is not true, the value made by the unproductive workers usually intangible – for example increase the reputation of the company or can improve the general social esteem – nevertheless if it is difficult to quantify but we talk about a value-crating process. Jean-Baptiste Say opposed to Marx's theory and he emphasised the intellectual labour's ability to create value-added against the physical labour. He thought that the intellectual activity, the thinking provided the conditions of the physical work so that's why the physical work make value. (Deane, 1997)

Theory of Schumpeter

Joseph Schumpeter (1883-1950) was significantly differed from the previous growth theories. According to him, which was explained in his work, *The theory of economic development*, that the innovative, the initiative, and the enterprising people have a key role. (Sikora, 2004; Mátyás, 2003)

Then after the Second World War the research that dealt with economic growth has two significant groups. One of them emphasized the endowment of physical capital, while the other one examined the effect of the human capital on economic growth. (Sikora, 2004)

Economic growth theories based on physical capital

The economic growth theories which are based on physical capital related to two economic schools, to the growth theories which are based on Keynesian theory and to the neoclassic economic theory. The model which is based on the Keynesian theory related to the American Evesy Domar and the English Roy Harrold. According to the theory the output is depended on the capital, therefore on the supply of machines. According to the Harrod-Domar theory the market developed with the result of investments so the Gross National Product (GNP) growth is the result of investment in physical capital. As the result of it the production function is a linear function (Mátyás, 2003; Harrod, 1948; Domar 1957):

$$Y_t = aK_t,$$

where Y is the output, K capital supply, MPK is the marginal productof capital

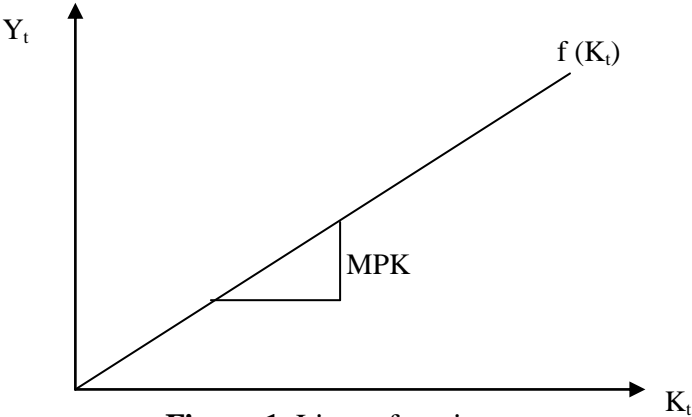
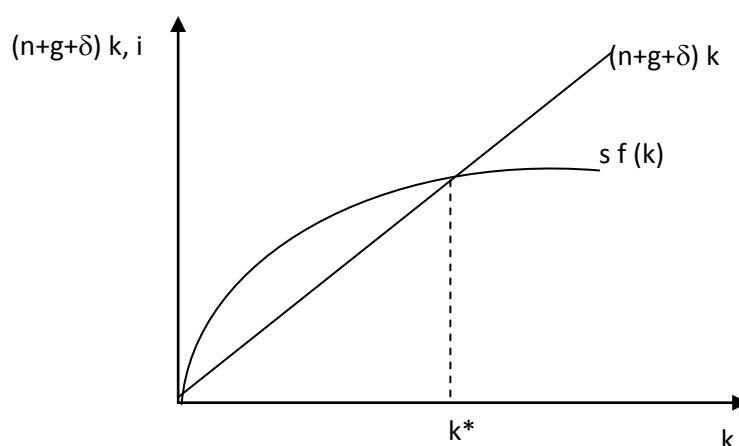


Figure 1. Linear function
Source: own editing

Hicks separated the investments into two groups, one of them was the autonomous investment, and the other one was the induced investment. The first one is the independent variable of the growth model. According to Hicks’ economic theory which was published in 1950 the autonomous investment triggers the growth process, so that’s why it can be the source of economic growth. According to the theory that was made by Harrod-Domar pair of authors, the given period’s output is determined by the capital which is available at the beginning of the period. This causing the capital based production function’s marginal capital will be a constant value. The model is dealing with only the physical capital as a factor of

production because, the evolving economic crisis (1929-1933) resulted in rich labour force. The capital created the bottleneck as a factor of production, and this effect could developed the Leontief production function. (Szentés, 2011; Sikora, 2004; Deane, 1997; Mátyás, 2003) The neoclassical economic growth theory of the American Solow, which is a supply-side approach assumes substitutability of factors of production. The technological progress, the population growth and the depreciation connected to the national economy production function, and with the help of it the economic growth can be determined. According to empirical research, between the years of 1909 and 1949 the labour productivity doubled, which is only one-eighty part attributable to the expansion of physical capital, the residual – major – part resulted because of the technological progress – according to him. (Solow, 1994; Mankiw, 2005)



Where the n is the population growth, g is the technical progress, δ is the attrition of capital stock, i is the investment rate, k is the capital stock per capita

Figure 2. Solow growth model

Source: own editing

Growth theories based on human capital

The first important stage of the growth theories which are based on the human capital relied on the growth-accounting, the prominent figure of which was the Russian Simun Kuznets. In his theory he examined the long-term growth processes in a complex way, he determined as a combined effect of many factors, on which – in his opinion –the population demographical characteristics, and the economic distribution of it, the structural changes in population, or the technical progress, the capital, the change of labour or the change of the social environment has an impact. Kuznets was awarded the Noble memorial prize in economics, because he took a significant part in determining a clear concept of the GDP, and until today the Gross Income per capita is the important element of economic rankings between countries. In addition to this Kuznets detailed indirectly related costs – such as educational costs – which have an influence on the size of national income. In his view, the condition of the long-term GDP growth resulted from in addition the physical capital stock growth, the

technological advance and the human knowledge development and expansion. With the further elaboration of the theory of Kuznets it can be defined that the present return of unit of a physical capital is higher than the productivity of a previous period, because the economy's general knowledge pool is increased, which we called the knowledge production. (Sikora, 2004; Kuznets, 1981)

After the Conference of Capital Investment in Human Being which was held in the United States in 1961, the importance of the human capital in the economic growth was widely accepted. In this topic Becker examined the investment and return of the human capital investment. The conclusion of Becker's published work can be interpreted as for future benefit we make an investment – furthermore we resign from a current consumption. According to the author the result of the so called family production is the future benefit, where the future cumulated income of one child is correlated with the bringing-up, so with the measure cost connected to education. According to this theory, those who have higher education they achieve a higher level of lifetime earnings. (Sikora, 2004; Becker et al., 1990)

Becker presented the importance of investment of human capital in the microeconomic level (household), while the Human Capital the work of Schultz published in 1972 was a macro approach. According to Schultz the human capital is similar to the physical capital in that to obtain the human knowledge is a long, costly process, which has a continuous return. As the result of it, it should be realised any kind of investment in human capital – for example the fee-paying education – profitable in long run and have additional benefits in the lifetime earnings. In his empirical examinations he identified that in the period after the Second World War the economic growth in respect of the profitability of total capital was approximately the same, however the profitability of the physical capital had decreased over time, and was replaced by the human capital. (Sikora, 2004; Schultz, 1972)

Denison made his examination in the USA between 1948 and 1981, and stated that the Gross National Product (GNP) average annual growth rate was 3.2% to which the contribution of physical capital was one-sixth, and the amount of work expansion contributed the same amount. The remaining part – four sixth – the growth residuum, which contains the education, the expansion of knowledge and the innovation of Schumpeter, the quantifying of them is a difficult task. (Sikora, 2004; Magas, 2002)

The main element of the growth theory developed by Lucas is concentrated on the human capital and the cumulation of knowledge. The Endogenous growth theory was born before the other – for example Nelson-Phelps, Uzawa – growth theories and had a new structure. It contains the technological parameter, the stock of human capital, the latter to determine the optimal allocation is the task of the economic decision-makers: who are the active labour market participants, and who take part in the expansion of knowledge. According to Lucas' theory the expansion of the human capital stock is determined by the invested efforts, which confirms Denison 33 years overall research. (Valentinyi, 1995; Lucas, 1990)

For the new human capital development, the growth theory which was started by Denison, Lucas herded to a new way, was a good basics for it. Becker-Murphy-Tamura presented that the human capital stock allocation does not influence significantly the economic growth rate, if the country's human capital stock is low. According the theory of Azariadis-Drazen the human capital stock has to reach a certain level, to start the economic growth. (Valentinyi, 1995; Becker et al., 1990; Azariadis & Drazen, 1990)

The contribution of Romer and Lucas for the growth theory was significant, they greatly transformed the previous mentality. According to Romer if we tested a not convex product set and not every variable of the production function is concave, it can be stated that the technological knowledge of public goods become available for everybody over a period of time. Breaking with the classical perception of the growth theory, the doubling of the expense of the factors, that purchased on a competitive market resulting in doubling of output volume. However, in the case of goods that originated from non-competitive market (e.g.: public good) the multiple use of the society knowledge as a multiplicative effect increases the output, so increasing the level of knowledge with “x” amount increase the output more than the amount of “x”. (Romer, 1990; Meyer, 1995)

THE CRITIQUE OF THE NEOCLASSIC ECONOMICS

Adapting the neoclassical models into practice is difficult because of the many simplistic conditions, such as the examination of two countries, production of two goods, two factors of production used for production, spatial and temporal constraints and dissolve the static approach. In addition, than is also the problem market ideas of neoclassical economy, such as the effectiveness of the market, the perfectly pure competition, the homogeneity of factors of production etc. The neo-classical growth theory overlooked with many elements during the investigation, which I detailed in the summary of literature, such as the technical development, human capital, or the existence of state interventions. (Mátyás, 2003; Szentes, 2005)

The changes in the world economy during the 20th century, such as the appearance of the stagflation, the end of the gold standard system, the oil crisis, he strengthening of European integration and the disintegration of the Eastern block, or the emergence of new economic powers in Europe and outside the United States, drew attention to the applicability of earlier models limitations and marked new research directions. (Szentes, 2005)

THE APPEARANCE AND SPREAD OF NEW INSTITUTIONAL ECONOMICS

During the operation of the economy and society several phenomena can be found, which go beyond the neoclassical economics inquiry, however it has a significant impact on its operations. (Bartha et al., 2013)

The Institutional Economy birth was induced by the global politics and scientific changes during the two world wars. At the same time in the field of neo-classical economythe mathematized, formal models strengthened. These models do not describe macroeconomic operations country-specific or case-specific, but describe it in general. So for a few decades they had a leading role and appropriated the explanations of the economic discipline events, with their model which had a high level of abstraction.(Hodgson 1998)

The reason of the marginalization of the institutional economic is the lack of fixed theoretical basis, and the lack of disciplinary laws existence. In the last half century came to the fore by created the world economic change incomplete,or defective neoclassical theories resulted.

The researchers of the institutional economics tried to modulate the mistakes inherited in the neoclassical explanations, and overcome the weakness of the model. So it formed the neo-institutional economic trend, where the focus of the analysis is on the institutional system and its embeddedness, however it does not reject the neoclassical trend theories. (Brousseau & Glachant, 2008)

The economic thinking that are explanatory power of institutions based on interdisciplinary approach, it adapts political science, sociology, psychology, and other typically other social science researches results, and with it they seek to describe the functioning of the economy, or the part of it. In addition, the institutional economics formalised mathematical modelling, used other methodological tools used by social sciences for investigation such as case studies, historical analysis, field studies, etc. The followers of institutional economics interpret their knowledge as the complement of the classical economics, rather than a current struggle for life and death as the enemy. During the research, starting from the neoclassical model it can be determined the economic growth is the result of factors of production and productivity. However the neoclassical theory does not detail the productivity, for that the institutional trend provides explanation. In the field of institutional economics, researches focused on the economic growth examined for example the efficiency of the market, the legal system operability, education intensity, labour organization, or even the corruption and other moral, ethical issues that media can span. Based on this research, the first step in the field of institutional economics is the factual documentation of the changes in the economy, and gathering the basis, then the determination of the causal relationship between the variables.

In my opinion, the strength of the new types of economic analysis originated from with the improving the neoclassical models try to prove, or refute the hypotheses set on the operation of the economy, while continuously integrated the previous experiences into the model, functions as an evolutionary theory. All this might be necessary, as assumed by the classical economics rationality disprove the empirical researches, economic participants are often unable to get to know the full set of information of the whole market (over-supply of information, or lack of information), and their decision are not controlled by rationality, but in many cases they decide on emotional or random basis. (Bartha et al., 2013; Williamson, 2000; Rutheford, 1996)

CONCLUSION

With the writing of the article I had the opportunity to get to know the cause of the economic growth and development and had a view of the main line of mainstream and institutional theories founding, and theoretical contributions to the theory of economic growth in researching.

Table 1. How the different theories contributed to the development of growth theory

Author(s)	Contribution to the theory of economic growth	Role of human capital	Role of education
<i>Quesnay (physiocrat)</i>	Exclusivity of agricultural income-generating ability.		-
<i>Mercantilists</i>	Wealth, prosperity is the accumulation of money and precious metals through an active foreign trade.	-	-
<i>Smith</i>	Productive human labor legacy is the wealth.		-
<i>Ricardo</i>	The dominance of labour theory of value in the process of production of a product, the theory of comparative advantage in international trade.	-	-
<i>Marx</i>	Productive work is value-bearer.		-
<i>Say</i>	Intellectual work the bearer of values, physical work can also create value by it.		Intellectual work depends on education level.
<i>Schumpeter</i>	Role of innovations: innovative, proactive, and enterprising people role.		-
<i>Harrod - Domar</i>	Economic growth depends on capital adequacy.	-	-
<i>Solow</i>	Population growth, technological progress per capita and the impact of the amortization on the economy.	The growth rate of human capital determines the economic growth.	-
<i>Kuznets</i>	Complex analysis of long-term economic growth. (e.g.: demographics, technological advances, changes in capital and labor, social, environmental change)	Demographic and sociological characteristics of human capital.	-
<i>Becker</i>	Learning interpret as an investment.	-	Longer education time means higher investment.
<i>Denison</i>	The education, knowledge expansion, the Schumpeterian innovation are the part of Growth residuum.		Education and knowledge expansion.
<i>Lucas</i>	The importance of the role of human capital and knowledge accumulation. Determination of the optimal allocation of human resources.		-
<i>Becker – Murphy - Tamura</i>	Human resource allocation will not affect the economic growth if countries have less human resources.		-
<i>Azariadis - Drazen</i>	Critical level of human capital, which triggers economic growth.		
<i>Romer</i>	Knowledge level multiplier multiplicative effect on emissions.		Knowledge level multiplies the economic growth.

After writing the article the direction can be targeted for further research focusing on institutional economics research in the field of higher education and economic growth.

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