THE IMPORTANCE OF THE HUMAN FACTOR IN THE GROWTH AND ECONOMIC DEVELOPMENT

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Abstract. The links between the development of human potential and its various structures on one hand, and economic growth and development, on the other hand, represent a concern of exceptional importance for contemporary economic theory. Concerning the demo-economic relations, the population occupies a double position: it represents a main production factor contributing to economic growth, but also a virtual receiver of the output of economic activities. On one hand, economic growth affects the sectors and socio-professional groups, geographical and occupational mobility of the workforce , the content , quality, duration and labor difficulties . On the other hand, the working population can exert a favorable influence on economic growth, thanks to increases of labor productivity, either lower or higher, through the quality of workers activities and public openings for professional and territorial mobility.

1.Introduction

Economic development and population evolution are two components of social development, which do not operate simultaneously, but interdependent, between them, existing system interrelationships. Effects resulting from the impact of economic and human potential is assessed, most often, through the production of goods and services per capita. Production volume (Q) is conditioned mainly by the physical capital stock and its yield (K), volume and quality of labor input (L) and technical progress, became the basic factor of production growth , which is included in all components of economic processes. Given the increase in investment in humans (for growth, education, skills, health , information, human culture , etc.), labor factor has ceased to be homogeneous ; it was divided into **regular work** (Lo) and **trained labor** (educated, cultural) or **human capital** (Kn). So traditional binomial real capital - labor has become a trinomial : regular work (Lo) - material capital (K) - human capital (Kn). The three production factors , distinct but interdependent in their operation , meet permanent mobility based on competitive market situation of each of them.

Economic growth depending on the impact of human capital can act as an **economic growth with stagnant human capital,** when labor contribution ratio of

normal (L0) and human capital (Ku) remains unchanged, **economic growth with human capital regression**, when regular labor contribution to achieving production is higher compared to that of human capital **and economic growth with progressive human capital** , when reaching a high contribution of human capital to produce goods in relation to regular work.

In turn, the result or production obtained through the contribution of human capital (QKu) manifests itself as a global size in relation to investment in human capital components: current individual consumption expenditure (food), clothing, housing) (Ci); expenses for protecting healthcare and medical assistance (Cs); cultural costs (Cc); sport and recreation expenses (C_{S0}) and the costs incurred for labor mobility (changing jobs (Cm). Therefor:

$$QK_u = f(Ci, Cs, Cc, Cs_0, Cm)$$
$$qk_u = \frac{Qk_u}{P_0} = \frac{1}{P_0}\left(Ci, Cs, Cc, Cs_0, Cm\right)$$

where: qk_u represents production per employed person obtained through the contribution of human capital and P_0 – people employment.
Economic growth and population are in relations of reciprocity. On one hand, economic growth affects the sectors and socio -professional groups, geographical and occupational mobility of the workforce, the content, quality , duration and labor difficulties. On the other hand , the working population can exert a favorable influence on economic growth, thanks to lower or higher increases of labor productivity, through the quality of workers and public openings for professional and territorial mobility. People are moving across the territory – from a village, town , region or country to another - either to return sooner or later to the place they left from, or to settle permanently elsewhere. These actions, as a whole, characterize the geographic mobility[7]. During a longer or shorter period, a part of the active population adapts its workforce to changes in economic activity (agricultural exodus, modernization of activities, etc.), or demand, changing the activity sector, employment status or profession, the entreprise or institution . Finally, people can more easily walk up or down the social hierarchy, voluntarily or involuntarily.

2. Economic growth theories focused on the impact of the human factor

Economic growth theory aims to shape the interactions between production factors (inputs in the economic system) and increase of production (outputs of the economic system and macroeconomic outcomes). The general equation that shows the production function is:

$Y = A.K^{\alpha}.L^{\beta}$
Where: y - national income
A - a constant reflecting the initial technological level;
K - the size of physical capital used;
L - the amount of labor force used;

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[7] Krugman P.R., *Geografy and Trade,* Cambridge, MIT Press, 1991, p.73-79.

α,β - coefficients of income elasticity (outcomes) in relation to capital and labor, respectively; α + β = 1.

Population growth shapes the trends of reduction of physical capital per capita income. In order to rise the income per capita, we must find sufficient investment in physical and human capital, to equip national production and to increase its efficiency. Investments, in their turn, depend on the volume of internal and external (foreign) economies, public and private, which can be converted into additional production factors and increase national production volume. Also, the investments productivity is different from one country to another and from one production factor to another.

Keynesian economists revealed the possibility of determining economic growth through policies of stimulation of aggregate demand ("demand-side economics") either internal ("uhme-mode expansion"), or external ("export led expansion"), either one or the other simultaneously, on its three components: final consumption, investments and net exports[8]. Moreover, post-Keynesians economists had in mind the increase of production capacity and the method of balance it with aggregate demand.

According to the growth pattern of R.Harrod and E.Domar, investments have a dual status: on one hand, they represent a component of the aggregate demand (of total spendings), which causes an increase of national income equal to the product of the investments volume and investment multiplier, on the other hand, they represent an addition to the existing capital stock, so an increase in production capacity.
Economic growth will be given by the marginal propensity to save, which depends on the rate of investment (if we consider satisfactory the equilibrium condition of Keynes, the equality of savings to the investments), and its existing technology and costs, which gives us the (marginal) coefficient of capital.

Unlike the previous model, where the coefficient of capital was fixed, given by the production technology, the ***neoclassical theory*** introduces flexibility on production techniques, therefore, on the capital coefficient. R.Solow[9] sustains the increase of national income as a function of increasing production factors (labor L and capital K) or their total productivity ("Total factor prductivity")

$Y = Ae^{\lambda t}K^{\alpha}L^{1-\alpha}$, where

A - a constant reflecting the initial technology;

$e^{\lambda t}$ - exogenous rate of technical progress.

Given the possibility of substitution of production factors, the capital coefficient becomes reported to the capital-labor ratio. In the absence of technical progress, the average/marginal productivity capital (reverse of capital coefficient) will be in its turn reported to the capital-labor ratio.

$Y/K = Ae^{\lambda t}(K/L)^{\alpha-1}$

Neoclassical growth theory considers that there is a convergence trend of per capita income levels in countries which register the same rate of technical progress and population growth, and economic policies are unable to determine (predict) these two variables.

[8] Michael Burda, Charles Wiplosz, ***Macroeconomics. An European Text,*** Oxford University Press, 1993, p.88-90.
[9] Robert Solow, ***Growt Teory. An Exposition,*** Oxford University Press, 1987

New growth theories have proposed precisely explaining persistent and growing divergence in growth rates of per capita income across countries and substantiation of some economic policies through which they intend to influence the growth rate of the economy. Remaining differences between the growth rates are due to endogenous kind of technical progress. Three explanations have been given to this phenomenon.

First, there may be *a higher share of capital income in national income factor* in relation to the other income factors, which would mean that the social benefit of capital investment exceeds the private benefit. In order to justify this difference, Paul Romer[10] assumed that private investment in capital generate dynamic externalities type ″learning from practice ″ (″ *learning by doing* ″) which increases the public stock of knowledge (″*knowledge*″), so a higher rate of technical progress and higher productivity of all future investments. The idea belongs to Arrow[11], who considers technical progress as a function of the cumulative investment of physical capital. The technical progress is the result of a ″ learning ″ process in each company, a secondary product (″*by- product*″) of physical capital investment. Growth equation becomes:

$$Y = A(K)F(K,L)$$

Robert Lucas (1988)[12] considered human capital as being the generator of externalities. In his model, the marginal productivity of capital increases with the ratio of human / physical capital and, in the presence of externalities, with existing human capital stock. Production function becomes:

$$Y = A(H)F(K,H)$$

Following the same line, Paul Romer (1986)[13] proposed a model in which knowledge (*knowledge*) represent a distinct factor of production. Knowledge production causes an enhancement of the public stock of knowledge and using external economies due to the specificity of these economic goods, counteracts the decreasing yield in their subsequent production and enables further innovation and therefore growth.

The second application supported by G.Mankiw and others (1992)[14] assumes that the mere existence of human capital is *an input into production that can justify a slower convergence*. Production function becomes:

$$Y = AK^{\alpha}H^{\beta}L^{1-\alpha-\beta}$$

where: H - human capital.

Usually, the weight attached to the work force in national countries represents both paid income for unskilled labor, and paid income for skilled labor, human capital share is estimated to be between 50 and 70% of the total workforce. Adding weight represented by the the human capital to the stock of physical capital, we find a value for β close to that of Romer , not assuming the existence of external economies to justify a higher share of capital contribution to total income growth. Labor weight in national income (human capital plus unskilled labor) is the usual and can justify

[10] Romer Paul, *Crazi Explantations for the Productivity Solowdouwn,* Cambridge, MIT Press, 1987

[11] Arrow Kenneth, *The Economic Implantations of Learing by Doing,* Review of Economic Studies, 1962

[12] Robert Lucas, *On the Mechanics of Economic Development, Journal of Monetary Economics,* July 1988, p.3-42

[13] Paul Romer, *Increasing Returs and Long-Run Growth,* Journal of Political Economy, 1986

[14] Mankiw G., Romer P., Weil D., *A Contribution to the Empirics of Economic Growth,* Quaterly Journal of Economic, vol.107, 1992

significant differences between countries in labor productivity through reduced differences investments (physical and human capital) . Mankiw and others (1992) consider that the type $Y = A(t)K^{1/3}H^{1/3}L^{1/3}$ best satisfies empirical estimations.

The third explanation of slow convergence is giving up the equal access to technology hypothesis for all countries . Existence of differences between countries in the level of technology does not exclude the existence of convergence trend, countries followers meet higher rates of technical progress as they recover gaps (catch- up grow). A. Gerschebkrin (1962)[15] was the first who advanced the idea that countries lagging behind enjoy yet the advantage of taking over advanced technologies. Barro and Sala Martin (1992)[16] propose a model in which the technology level is different, the initial distribution of these differences being due to historical conditions. Technological difference causes a variation both of the capital-labor ratio and the marginal productivity of capital. Dissemination of advanced technology makes the follower countries (followres) to meet higher rates of technical progress. Speed of convergence will be determined primarily by the rates of diffusion of technology, and not by the representatives of capital and labor. The rate of diffusion of technology to these countries differ due to their different ability to adapt to new technologies. This depends on a number of elements of the internal environment (social capability)[17] as well as technologically compatibility (the technological congruence) with the leader[18] .

The concept of social capability (social capability) does not have a precise definition. M.Abramowith (1986)[19] lists the elements of social capability at educational level, how to organize companies, opening up to foreign competition, free market entry, resistance of certain interest groups, labor market performance, the degree of competitiveness on domestic goods markets. N.Stern (1991)[20] has added a number of other factors as: managerial competence, quality of infrastructure, including social infrastructure such as honesty, kindness bureaucracy, rigorous definition of property rights.

3. Conclusions

Economic growth today comes on the general backround of globalization . The new models of economic growth give a major role to international trade in determining the economic performance of different countries. Under the new conditions , open economies will grow faster than the autarkic ones, as international economic flows include not only goods but also ideas, research and development, supply of technical progress, the inputs and outputs of human capital. The free flow of ideas will benefit

[15] Alexander Gerschebkrin, *Economic Backwardness in Historical perspective,* Cambridge MA, Belknap Press 1962, dup[Jan Fagerberg, techology and International Differences in Growth Rates, Journal of Economic Literature, No.3, September 1994, p.1147-1176

[16] Robert Baroo]i Xavier Sala I Martin, *Convergence,* Journal of Political Economy, vol.100, No.2, April 1992, p.223-251, dup[Romer, 1994, p.8-9

[17] Kazushi Ohkawa]i Henry Rosovski, *Japanese Economic growth,* Stanford University Press, 1973

[18] Moses Abramovity, Cathching Up, Forging Ahead an Falling Behind, Journal of Economic History, No.2, iune 1986, p.386-406, dup[J.Fagerberg 1994, p.1156

[19] Moses Abramowith Cathching Up, Forging Ahead an Falling Behind, Journal of Economic History, No.2, iune 1986

[20] Nicholas Stern, *The Determinants of Growth,* The Economic Journal, vol.101, 1991, p.122-123, dup[Hansson]i Heurekson, 1994, p.762

research in each country , which will increase the stock of ideas. Increasing the available set of ideas will increase the marginal productivity of human capital and therefore use more growth .

Liberalized exchange of ideas take place between countries that are unevenly developed and record different rates of innovation , where international trade acts as a reallocation of resources under comparative advantage . The new theories makes the long-term economic growth a good specialization. A sustained growth can be achieved only in those sectors likely of innovation that use as production factors technology and / or human capital or sectors with potential of "practical learning" .

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