

Economic growth in the development economy

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Abstract: Development must be conceived of as a multidimensional process involving major changes in social structures, popular attitudes and national institutions, as well as the acceleration of economic growth, the reduction of inequality and the eradication of poverty. Development in its essence must represent the whole gamut of change by which the entire social system tuned to the diverse basic needs and desires of the individuals and social groups within the system moves away from a condition of life widely perceived as unsatisfactory toward a situation or condition of life regarded as materially and spiritually better.

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The experience of the 1950s and 1960s, when many developing nations did reach their economic growth targets, but the levels of living of the masses of people remained for the most part unchanged, signalled that something was very wrong with this narrow definition of development (UN-OHRLA 2012). During the 1970s, economic development came to be redefined in the terms of the reduction or elimination of poverty, inequality and unemployment within the context of a growing economy. “Redistribution from growth” became a common slogan (Fourth UN Conference ... 2011; LDC Report 2011).

A number of developing countries experienced relatively high rates of growth of the per capita income during the 1960s and 1970s, but showed little or no improvement or even an actual decline in the employment, equality and the real incomes of the bottom 40% of their population. By the earlier growth definition, these countries were developing; by the newer poverty, equality and employment criteria, they were not. The situation in the 1980s and 1990s worsened further as the GNI growth rates turned negative for many Least Developed Countries (LDCs) (Bjerkholt 2005; UN DESA 2008; The Least Developed Countries ... 2012).

Development must therefore be conceived of as a multidimensional process involving major changes in social structures, popular attitudes, and national institutions, as well as the acceleration of the economic growth, the reduction of inequality, and the eradication of poverty (Criteria for identification ...

2012; LDC Information ... 2012). Development, in its essence, must represent the whole gamut of change by which the entire social system, tuned to the diverse basic needs and desires of the individuals and social groups within that system, moves away from a condition of life widely perceived as unsatisfactory toward a situation or condition of life regarded as materially and spiritually better (Todaro 2008).

Factors influencing economic growth

Why does income grow faster in some countries than in the others? Theoretical developments have been accompanied by a growing number of empirical studies. Initially, research focused on the issue of the economic convergence/divergence since this could provide a test of validity between the main growth theories (i.e. the neoclassical and the endogenous growth theory). Eventually, the focus shifted to factors determining economic growth. A wide range of studies has investigated these factors. Using differing conceptual and methodological viewpoints, these studies have placed emphasis on a different set of explanatory parameters and offered various insights to the sources of economic growth. The theory of economic growth divides these factors to two basic groups – proximate and deeper (wider). Proximate factors have an immediate and direct influence on economic growth. Deeper factors are influencing growth indirectly, through proximate factors.

According to Rodrik (2003), the total output of an economy is a function of its resource endowments (labour, physical capital, human capital) and the productivity with which these endowments are deployed to produce a net flow of goods and services (GDP). It can also be illustrated by the following production function:

$$y = ak^\alpha (hl)^{1-\alpha} \tag{1}$$

$$\hat{y} - \hat{l} = \alpha(\hat{k} - \hat{l}) + (1 - \alpha)\hat{h} + \hat{a} \tag{2}$$

per capita GDP growth = capital deepening + human capital accumulation + productivity growth

We can express this relationship in the form of an economy-wide production function, with a representing the total factor productivity. Note that a captures not only the technical efficiency level of the economy, but also the allocative efficiency with which the resource endowments are distributed across economic activities. The growth of the per capita output can in turn be expressed in terms of three proximate determinants: physical capital deepening; human capital accumulation; and productivity growth.

Rodrik argues that it is best to think of the accumulation and productivity change as proximate determinants of growth. The deeper determinants are shown in Figure 1.

Temple rates among the primary factors of economic growth the investments into physical capital (K), human capital (H) and science and research level (whereby describes economy technical level). To factors widely influencing economic growth (which corresponds to the deep growth factors), he places the population development, trade, the financial sector development, short-term macroeconomic policies, government investments into infrastructure, the share of the public sector in the economy, inequality and

wider sociological and political factors (e.g. policy regime etc.) (Temple1999).

Kenny (1999) deals mainly with the institutional factors, among which he includes the following: corruption, quality of bureaucracy, civil freedoms, efficient law and regulatory system or level of financial sector development. These factors are, according to Kenny, given by deeper causes – mainly the economy history and the geographical location, which are simultaneously determined by the cultural factors, e.g. the ethnical heterogeneity which may significantly influence economic growth. Also the geographical factors can be approximated by many variables: the geographical latitude and the corresponding climate, the mineral wealth occurrence, the neighbouring states development and many others.

Szirmai (2008) described the factors of economic growth by the production function:

$$Y = f(K, L, R)^e + A + P \tag{3}$$

where the economic output Y is regarded to the proximate production factors (capital K , labour L and natural resources R), e is expressing the productivity by which these factors are employed in the input to output transformation. Economic output is also influenced by the net income coming from capital investments and foreign labour (A) and colonial exploitation (P is negative), resp. the transfers and development aid (P is positive).

According to Petrakos, of the specified factors, those that are more important for the economic dynamism of developed countries compared to the developing ones are: high technology, innovation and R&D followed by the specialization in knowledge and capital intensive sectors and a high quality of human capital. In turn, those factors that are deemed as more important in developing countries compared to the developed ones are: rich natural resources and favourable geography (Petrakos et al. 2007).

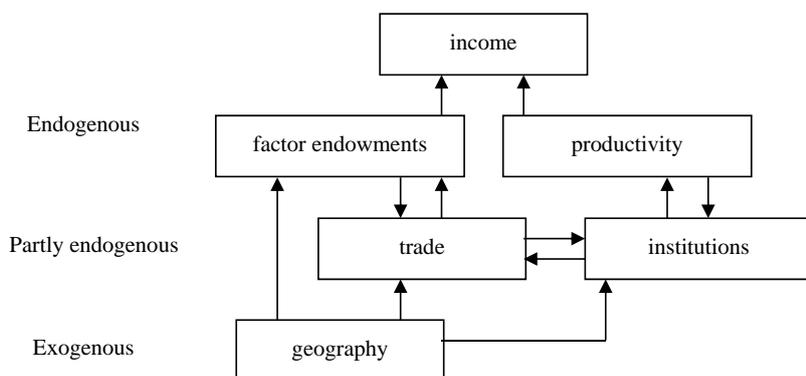


Figure 1. Factors and determinants of economic growth

Source: Rodrik (2003)

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Sources of growth analysis

Two core determinants of growth are the factor accumulation and the productivity gains. But how important is each of them in explaining growth? Robert Solow pioneered his early efforts to quantify the contribution of each of the proximate causes of the increased output – capital accumulation, labour accumulation, and productivity gains – to economic growth. This model seeks to answer the following question: What proportions of the recorded economic growth can we attribute to the growth in the capital stock, the growth of the labour force, and changes to the overall productivity?

It is referred to as the **growth accounting or sources of growth analysis**. It starts with the standard production function relating the contribution of labour and capital to the aggregate production, then it adds a term to capture the total **factor productivity (TFP)**. The TFP is meant to measure the contribution of efficiency, technology, and other influences on productivity. This production function is then converted into a form that makes it possible to measure the contribution of changes in each term – expansion of the labour force, additions to the capital stock, and growth in the TFP to the overall growth. The resulting equation is

$$g_Y = (W_K \times g_K) + (W_L \times g_L) + a \quad (4)$$

In this equation, g_Y stands for the growth of the total income or GDP; that is, g_Y is the rate of economic growth. Similarly, g_K and g_L are the growth rates of the capital stock (K) and the labour force (L), respectively. W_L and W_K represent the shares in the total income of wages and the returns on capital, respectively.

This type of accounting analysis has been used widely in many countries to examine the sources of growth, with a particular attention paid to calculating the TFP growth. There are two kinds of problems in this study. First, a represents a combination of influences that this analysis cannot entirely disentangle. Second, a is invariably measured inaccurately, since it is the residual in the equation. All economic data are measured with some inevitable errors, including all the data used in the Equation 4 (Perkins et al. 2006).

The production function approach to the analysis of growth attempts to disaggregate the sources of growth into the contribution of labour, capital, technological progress, and any other variable included in the production function that is thought to influence the

growth process. In this sense, it is a very versatile approach. It is, however, a **supply orientated** approach. It does not tell us why the growth of capital, labour, and technological progress and so on differ over time or between countries. The sources of growth are treated as exogenous. In practice, however, the supply of most resources to an economic system is endogenous, responding to the demand of them. Capital is a produced means of production and comes from the growth of the output itself; labour is very elastic in supply from both the internal and external sources (migration), and technological progress itself is partly dependent on the growth of output arising from the static and dynamic returns to scale.

The production function approach can provide a useful growth accounting exercise, which is in fact widely used. Apart from deciding which determinants of growth to specify in the production function, and accurately measuring the independent variables, the main problem is the methodological one of fitting the appropriate production function to the data; that is specifying the function relating the output to inputs (Perkins et al. 2006).

THEORIES AND MODELS OF ECONOMIC GROWTH

Classical growth theory

Adam Smith. One of the Smith's most important contributions was to introduce into economics the notion of **increasing returns**, based on the division of labour. He saw the division of labour (or the gains from specialization) as the basis of the social economy. The growth of output and living standards depends first and foremost on the investment and capital accumulation. Investment in turn depends on savings out of profits generated by industry and agriculture and the degree of the labour specialization (or the division of labour).

Increasing returns means rising the labour productivity and the per capita income as the output and employment expand, while the diminishing returns mean falling labour productivity and the per capita income and a limit to the employment of labour at the point where the marginal product of labour falls to the level of the subsistence wage. Beyond that point, there will be no more employment opportunities, and the disguised unemployment. Increasing returns are prevalent in most industrial activities, while the

diminishing returns characterize the land-based activities such as agriculture and mining. Poor developing countries tend to specialize in the diminishing returns activities, while the rich developed countries tend to specialize in the increasing returns activities, and this is one of the basic explanations of the rich country – poor country division in the world economy (Thirlwall 2006).

David Ricardo. Some classical writers focused on the distribution of resources among classes. David Ricardo, in particular, formalized the concept of **diminishing returns**. With some resource (presumably land) in a fixed supply, the addition of other resources (labour and capital) will result in the declining **marginal product**, or additions to production; presumably reaching the point where no more production was possible. Eventually, the economy would reach its stationary state, where growth stopped. Ricardo suggested that as the countries became wealthy, profits would fall to zero, wages would fall to the subsistence levels, and the economy would stall, with the landlords being the big winners due to the relative scarcity of good land. As the better land became used up and agriculture spread to the less productive land, the increasing demand for land allowed the landlords to raise rents and the prices of their crops (Lynn 2003).

Thomas Malthus. Thomas Malthus was even more pessimistic about the prospects for the long-term growth. He is the most famous for his view that the population growth would ultimately outstrip the earth's productive capacity, leading to famine and war. He agreed that the stagnation was inevitable but suggested that the industrial production could be continued if there was a sufficient investment. Ultimately, however, the increasing capital intensity of the industry would shift the income from wages (which were falling anyway due to the population growth) to profits. The investment depended on the demand for consumer goods. The poverty of workers put constraints on the consumption. As the consumption slowed, the investment into the industry would slow down as well (Lynn 2003).

The Harrod-Dormar growth model

Harrod (1939, 1948) and Dormar (1946) developed the first macroeconomic model to formally analyse the problem of growth. In so doing, a particular attention is paid to make explicit the relationship between

the consumption - savings by the households and the investment decision by entrepreneurs, although these behaviours are not theoretically developed. In fact, the consumption – saving decision is defined, following the Keynesian approach, by an exogenously given propensity to consume, while the investment decision is defined by the accelerator principle. In their model, production is obtained only by the means of physical capital and labour.

For a detailed information about the Harrod-Dormar growth model (see Thirlwall 2006: 130–136).

Structural change models

Since 1950, all developing countries that have experienced a rapid growth and catch up, have been successful industrialisers and industrial exporters. Countries that fell behind in aggregate terms were also the weakest industrial performers. In the past fifty years, manufacturing has been the main engine of growth and development in developing countries. In other words, the **structural change** involved in the shift from agriculture to industry has been a key ingredient of the successful economic development (Szirmai 2008).

Lewis model

The Lewis two sector model became the general theory of the development process in the surplus labour Third World nations during most of the 1960s and early 1970s. It still has many adherents at present.

In the Lewis model, the underdeveloped economy consists of two sectors:

- the traditional, overpopulated rural subsistence sector characterized by zero marginal labour productivity – a situation that permits Lewis to classify this as the surplus labour in the sense that it can be withdrawn from the traditional agricultural sector without any loss of the output;
- the high-productivity modern urban industrial sector into which labour from the subsistence sector is gradually transferred.

The primary focus of the model is on both the process of the labour transfer and the growth of the output and employment in the modern sector. (The modern sector could include modern agriculture, but we will call the sector “industrial” as a shorthand).

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Both the labour transfer and the modern-sector employment growth are brought about by the output expansion in that sector. The speed with which this expansion occurs is determined by the rate of the industrial investment and the capital accumulation in the modern sector. Such investment is made possible by the excess of the modern-sector profits over wages on the assumption that the capitalists reinvest all their profits. Finally, the level of wages in the urban industrial sector is assumed to be constant and determined as the given premium over a fixed average subsistence level of wages in the traditional agricultural sector. At the constant urban wage, the supply curve of the rural labour to the modern sector is considered to be perfectly elastic.

This process of the modern-sector **self-sustaining growth** and the employment expansion is assumed to continue until all surplus rural labour is absorbed in the new industrial sector. Thereafter, the additional workers can be withdrawn from the agricultural sector only at a higher cost of the lost food production because the declining labour-to-land ratio means that the marginal product of rural labour is no longer zero. Thus the labour supply curve becomes positively sloped as the modern-sector wages and employment continue to grow. The structural transformation of the economy will have taken place, with the balance of the economic activity shifting from the traditional rural agriculture to the modern urban industry.

Criticisms of the Lewis model. Although the Lewis two-sector development model is simple and roughly reflects the historical experience of economic growth in the West, four of its key assumptions do not fit the institutional and economic realities of most contemporary developing countries.

- The model implicitly assumes that the rate of the labour transfer and the employment creation in the modern sector is proportional to the rate of the modern-sector capital accumulation. The faster the rate of the capital accumulation, the higher the growth rate of the modern sector and the faster the rate of the new job creation. But what if the capitalist profits are invested in a more sophisticated labour-saving capital equipment rather than just duplicating the existing capital as it is implicitly assumed in the Lewis model?
- The second questionable assumption is the notion that the surplus labour exists in rural areas while there is a full employment in the urban areas. Most contemporary researches indicate that there is a little general surplus labour in the rural locations.

- The third unreal assumption is the notion of a competitive modern-sector labour market that guarantees the continued existence of constant real urban wages up to the point where the supply of the rural surplus labour is exhausted. Prior to the 1980s, a striking feature of the urban labour markets and the wage determination in almost all developing countries was the tendency for these wages to rise substantially over the time.
- A final concern with the Lewis model is its assumption of diminishing returns in the modern industrial sector. Yet there is much evidence that increasing returns prevail in that sector, posing special problems for the policy-making (Torado 2009).

Structural change and patterns of development

Like the earlier Lewis model, the **patterns-of-development analysis** of the structural change focuses on the sequential process through which the economic, industrial and institutional structure of an underdeveloped economy is transformed over time to permit new industries to replace the traditional agriculture as the engine of economic growth. However, in contrast to the Lewis model, increased savings and investment are perceived by the patterns-of-development analysts as necessary but not sufficient conditions for economic growth. In addition to the accumulation of capital, both physical and human, a set of the interrelated changes in the economic structure of a country are required for the transition from a traditional economic system to a modern one. These structural changes involve virtually all economic functions, including the transformation of production and changes in the composition of the consumer demand, international trade, and the resource use as well as the changes in socio-economic factors such as the urbanization and the growth and distribution of the country's population.

Empirical structural change analysts emphasize both domestic and international constraints on development. The domestic ones include economic constraints such as the country's resource endowment and its physical and population size as well as the institutional constraints such as the government policies and objectives. International constraints on development include the access to the external capital, technology and international trade. However, it is the international constraints that make the transition of the currently developing countries differ from

the present industrial countries. To the extent that the developing countries have the access to the opportunities presented by the industrial countries, as the sources of capital, technology and manufactured imports as well as the markets for exports, they can make the transition at an even faster rate than that achieved by the industrial countries during the early periods of their economic development.

The best known model of the structural change is the one based largely on the empirical work of the late Harvard economist Hollis B. Chenery and his colleagues, who examined the patterns of development for numerous developing countries during the post-war period. Their empirical studies, both cross-sectional and of the time series, of countries at different levels of the per capita income led to the identification of several characteristic features of the development process. These included the shift from the agricultural to industrial production, the steady accumulation of the physical and human capital, the change in the consumer demands from the emphasis on food and basic necessities to desires for diverse manufactured goods and services, the growth of cities and urban industries as the people migrate from farms and small towns, and the decline in the family size and the overall population growth as the children lose their economic value and the parents substitute the child quality (education) for quantity, with the population first increasing and then decreasing in the process of development (Torado 2008).

Empirical analyses similar to Chenery counterbalance the theoretical models of economic growth; however, they also have stumbling-blocks, especially related to the phenomenon causality. Earlier these errors in the phenomenon causality could be one of wrong results causations in the frame of the development politics recommendations. A typical example is the historical urban bias, which can be seen in the development strategies, mostly in the African LDCs. Due to an apparent correlation between economic growth, resp. the economic level and the lowering of agricultural sector importance in developing economies, the African LDCs elites incorrectly assumed that it is not necessary to invest too much to the agricultural sector and rural development, because its importance in future will be still lower. Therefore, the majority of public resources was directed to the development of urban areas (urban bias), to the agricultural sector, there flowed only the remainder of investments and this sector was also much taxed. As a consequence, agriculture represents the most

important sector for the majority of the LDCs also today (the structural transformation economies did not experience it yet), the rural sector is neglectful (more than one half of the African poor lives in rural areas) and there also occurs the migration pressure from the rural to urban areas, by which there is also complicated the development of towns.

International dependences models

During the 1970s, the international-dependence models gained an increasing support, especially among the developing countries intellectuals, as a result of the growing disenchantment with both the stages and the structural-change models. Approaches oriented on the explanation of the internal causes of the developing countries lower development are denoted as the theories of economic backwardness, the approaches devoted to the explanation of external causes can be considered as the theories of the economic underdevelopment. The notion underdevelopment signalizes that the lower level of development in developing countries originates from the inactive negative influences of the external world. It is impossible to talk about backwardness, because the developing countries have not any possibility to follow the developed countries in the same or similar development patterns. The reason for this is the prosperity of the developed countries based on the exploitation of the world's poor countries. Dependence means that the development in the poor countries is conformed to (or dependent on) the developed countries actions.]

Within this general approach, there are three major streams of thought: the neo-colonial dependence model, the false-paradigm model, and the dualistic-development thesis. For a detailed information Todaro (2008: 115–117).

CONCLUSION

LDCs belong to the category of countries, which distinguish not only by widespread poverty, but also by the structural weakness of economic, institutional and human resources.

There has been developed wide range of economic growth theories. Theoretical developments have been accompanied by a growing number of empirical studies. Economic growth means achieving a more massive economy – producing more goods

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and services on the one side of the national account (gross domestic product) and a larger total income on the other (gross national income). Development is interested not so much in the growth of an economy but rather the conditions under which production occurs and the results that flow from it. Development is important because it produces an economy, and more broadly a society and culture, that determines how people live - in terms of income, services, life chances, education, etc.

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