An introduction to the theories of national and regional economic development

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Abstract. This conceptual paper analyses the concept of development that is a process of progressive growth that generates a transition from simple to complex system. In economics, development is a multidimensional process that generates changes in economic, political, social and institutional structures to support an accelerated growth and improvement of nations for achieving and sustaining a comprehensive wellbeing of people in society. Some theories of economic development are briefly discussed, considering national and regional economic systems. Finally, some critical contradictions of the process of economic development in society are discussed to conclude this study.

Keywords. Economic development, Economic growth, Human development, Development economics, Social progress.

JEL. F63, O10, O20.

1. Introduction

The concept of development in economics is associated with the concept of social progress: “the full happiness of each, and therefore to the greatest happiness of all” (Spencer, 1902, p.253). The fundamental elements of development in society are health, wealth, sociability, knowledge, beauty, etc. (cf., Woods, 1907). This development is achieved in appropriate social structures with high democracy, good governance, high education, and high innovative outputs (Coccia, 2010, 2014, 2018). Economic development can be explained with different theories that are discussed in next sections (Figure 1).

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2. Theories of development

The study of economic development is one of the most important research fields in economics and political economy (Kuznets, 1966; Nafziger, 2005; Spolaore & Wacziarg, 2013). Classical and neoclassical economics analyze the development with the efficient allocation of scarce productive resources that support the optimal growth, produce and ever-expanding range of goods and services. Instead, new economic approach of development analyzes socioeconomic, political and institutional mechanismsthat accelerate economic growth, improve levels of living for people and reduce poverty, income inequality and violent crime (Todaro & Smith, 2003; Coccia, 2017). A traditional economic measure of development is given by Gross Domestic Product (GDP) per capita: the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. Contemporary studies have added non-economic indicators for measuring development in society, such as Human Development Index (HDI): “a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. … The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita” (Human Development Reports 2018, 2018a).

In this context, theories of development can be divided in two macro categories (Figure 1):

- Theories of development of national systems
- Theories of regional development

3. Theories of development of national economic systems

3.1. Classical Theories of Economic Development

Linear stages theories: Rostow’s stages of growth and the Harrod-Domar growth model (Rostow, 1960; Harrod, 1939, Domar, 1946). The theory of stage of growth suggests that more saving and investment can lead to accelerated rates of economic growth. However, the theory of stages does not always explain economic development in underdeveloped nations, because the drivers of this theory are necessary but not sufficient conditions for supporting economic growth. Advanced
nations, such as European countries after WWII, received physical capital but they also possessed good institutions and high-skilled human resources (e.g., educated workforce, democratic societies, good institutions and governance). Of course, these conditions are lacking in many developing nations, such that higher physical capital may not generate historical paths of economic development.

**Structural-change models.** This approach focuses on mechanisms that poor nations can transform economic structure from traditional agriculture to industrial and service system. Structural-change approach is based on neoclassical price and resource allocation theory. Two main approaches here are: model of two-sector surplus labor by Lewis (1954) and econometric analysis of the patterns of development by Chenery and colleagues (Chenery & Syrquin, 1975). The model of Lewis (1954) considers a process of modern-sector self-sustaining growth and employment expansion that are assumed to continue until all surplus of rural labor is absorbed in the new industrial sector. The structural transformation of the economy is driven by a balance of economic activity shifting from traditional rural agriculture to modern urban industry. However, a limitation of the model by Lewis (1954) is the assumption of diminishing returns in industrial sector, whereas empirical evidence shows increasing returns in that sector.

**The development analysis of structural change** focuses on the sequential process that an underdeveloped economy is transformed over time to permit new industries to replace traditional agriculture as engine of growth. Empirical patterns of development are the steady accumulation of physical and human capital, the change in consumer demands from food and basic necessities to manufactured goods and services, the growth of cities and firms because of people that migrate from farms and small towns, decline of family size and of population growth. These models suggest that appropriate economic policies can generate beneficial patterns of self-sustaining growth. However, economic policies based on this approach in many cases have not generated pathways of development within and between countries.

**The international-dependence models** consider developing countries in a relationship of dependence with rich countries. Major approaches are: neocolonial-dependence, false-paradigm and dualistic models. These approaches reject neoclassical theory of development designed to accelerate growth of Gross National Product (GNP); moreover, they also reject the empirical results by Chenery about empirical characteristics that poor countries should pursue (Todaro & Smith, 2003). These international-dependence models stress the international power imbalances between rich and poor countries. According to Wallerstein (1974), the world-system has core and periphery regions, in which powerful and wealthy "core" societies dominate and exploit weak and poor peripheral societies. The strong nations reinforce and increase the flow of surplus to core regions because they provide "extra-economic" assistance to their capitalist classes on world market. The major weakness of this approach is the actual experience of Least Developed countries (LCDs) that have had industrial nationalization and state-run production with negative effects on patterns of economic growth (cf., Lewellen, 1995).

Neoclassical counter-revolution considers underdevelopment as an internally induced LCD phenomena caused by government intervention and bad economic policies. Neoclassical counter-revolution’s approach suggests that market price allocation usually produces better results than state intervention. Liberalization of national markets generates additional domestic and foreign investments that increase the rate of capital accumulation. The neoclassical growth model of Solow (1956) expanded the Harrod-Domar model, adding to growth equation a second factor,
labor, and inserting a third independent variable, technology. Solow’s model shows diminishing returns to labor and capital separately and constant returns to both factors jointly. Technological progress is the residual factor that explains long-run growth. The output growth here is due to increases in labor quantity and quality (population growth and education), increases in capital (through saving and investment) and improvements in technology and innovation. Closed economies grow more slowly, whereas open economies have income convergence at higher levels because capital flows from rich countries to poor countries where capital-labor ratios are lower and returns on investments are higher (Barro, 1989). However, free markets and open economies may also increase income inequality and public debts that reduce a general welfare (cf., Coccia, 2017, 2017a).

3.2. Contemporary models of development (cf., Todaro & Smith, 2003)

Endogenous growth theory argues that Gross Domestic Product (GDP) growth is determined by the system governing the production processes rather than by forces outside that system (Aghion & Howitt, 1998; Lucas, 1988; Rebelo, 1991). This new growth theory endeavors to explain growth rate differentials across countries and factors of the rate of growth of GDP that are left unexplained and exogenously determined in the Solow neoclassical model of growth (i.e., Solow residual; cf., Solow, 1956). In general, investments in human capital generate external economies and productivity improvements that offset to explain the existence of increasing returns to scale. Endogenous growth models explain anomalous international flows of capital that generate wealth inequalities between rich and poor nations. However, the high rates of return on investment within developing economies with low capital-labor ratios are eroded by low levels of investments in education, infrastructure, and R&D. Criticism of new growth theory is that it depends on a number of neoclassical premises that are inappropriate for LCD economies. Moreover, empirical studies show a limited support of the predictions of endogenous growth theory (Todaro & Smith, 2003).

New theory of economic development stresses complementarities between several conditions necessary for successful development of nations. Investments have to be done by many agents to produce results for any individual agents. When complementarities are present, an action taken by one firm, worker, organization, or government increases the incentives for other agents to take similar actions. In particular, complementarities involve investments whose returns depend on other investments done by other agents. In this context, the Model of Big Push suggests that production decisions by modern-sector firms are mutually reinforcing (cf., Todaro & Smith, 2003). Instead, Kremer’s O-ring model (1993) reveals that the value of the upgrading skills or quality depends on similar upgrading by other agents: production function is based on many tasks, all of which must be proficiency all completed to have a full value of product. Mistakes can be extremely costly, reducing the product’s value (The name O-ring comes from the accident of the space shuttle Challenger that exploded because one of the components, the O-rings, failed). Underdevelopment can be due to a coordination failure: a state of affairs in which agents’ inability to coordinate their behavior (choices) leads to an outcome (equilibrium) that leave all agents worse off than in an alternative situation that is an equilibrium (cf., Jones, 2013).

2 cf., Coccia, 2005a, 2015b, 2016, 2017b, 2018e, 2018f
4. Theories of regional development

Geoeconomic space has regional disparities that can generate poverty, unemployment, social issues, income inequality, violent crime and underdevelopment (Coccia, 2009, 2017). The purpose of the theory of regional development is to reduce regional disparities within countries to support a general development of nations as a whole system. Development was defined by Perroux (1955, p.308) as: “a selective, cumulative process which does not appear everywhere at the same time but becomes manifest at certain points in space with variable intensity”. Perroux (1955, p.309) also argues that: growth does not appear everywhere at the same time; it appears at points or poles of growth with varying intensity; it spreads along various channels and with different effects on the whole economy (cf., Parr, 1999). Growth-pole theory was proposed for solving regional problems within developed as well as developing nations. Perroux (1950, 1955, 1964) confined the growth pole concept to an abstract (economic) space. A growth pole was defined as a large group of industries strongly related through input-output linkages around a leading industry (propulsive industry or \textit{industrie motrice}). Propulsive industry and inter-related industries innovate and grow faster than industries external to the pole. In particular, a propulsive industry (\textit{industrie motrice}) is the engine of developmentby its capacity to innovate and stimulate, as well as, to dominate other industries (\textit{industries mues}) in the geoeconomic space.

The concept of growth pole in geographical space was subsequently developed by Aydalot (1965) and Boudeville (1966) considering a set of expanding industries located in an urban area that induce development of economic activity throughout its zone of influence (Boudeville, 1966, p.11; Richardson & Richardson, 1975, p.163ff). The essence of growth pole analysis is that spatial concentration, agglomeration of population and of economic activities are the most efficient ways to organize resources in geoeconomic space. Although agglomeration of industries is a key element in spatial organizational efficiency, of course it is not the sole element supporting regional growth (Coccia, 2009). The natural growth pole has to be based on a substantial magnitude (at least 250 000 population) before the above-mechanisms become apparent and function within geo-economic space (Parr, 1999). Other factors supporting economic growth, associated with propulsive industry, are education and higher education systems, low corruption, low criminality, democratic institutions, good economic governance, high innovative output and technology, etc. (Coccia, 2010, 2010a, 2014, 2014a, 2017b, 2018). From the viewpoint of policymakers, the major advantage of this approach is the opportunity for integrating industrial policy, physical planning, and inter-regional and intra-regional economic planning.

5. Contradictions of economic development on environment and human health: some concluding remarks

Current scholars are also considering the environmental issues generated by paths of development (Coccia, 2015).

The global and industrial society, driven by new technology, is generating an economic growth rather than a sustainable development in the long term (Coccia, 2015). In particular, Crutzen & Stoermer (2000) assert that the main effects of development on the environment are due to pollution of the Industrial Age in the 18th century, driven by the technical change of steam engine, the internal combustion engine, etc. In fact, this economic development is also causing environmental and climate change (Foley et al., 2013, p.83). In particular, European, North American and Chinese development is generating socioeconomic progress and well-being but also the diffusion of some mutagens and genotoxic carcinogens
from industrialization (e.g., pollutants, pesticides in agriculture, several chemicals, asbestos, processed or chemically preserved food, etc.) whose effects persist in the long run (Coccia, 2015). Irigaray et al., (2007) emphasize that the growing incidence of a variety of cancers in advanced countries, after World War II, is due to environmental carcinogens generated by pollution ascribable to increasing the industrialization of economic development process. Hence, development generally can increase both economic growth and pollution, with negative consequences on environment, health, and food safety in society (cf., Coccia, 2015, p.62; Zeliger 2011, p.434).

In conclusion, the concept of development is driven by the expanding content of human life interests, using new technology and science advances. However, development is also affected by economic, social, psychological, anthropological, and perhaps biological factors that can generate uncertain and unknown long-term effects in society. Overall, then, economic development theories should focus on social well-being of people based on a sustainable development, rather than economic growth also associated with environmental, social, and health issues in the long run.
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