Applicability of Growth Theories and the Significance of Non-economic Factors in Long-run Economic Growth

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Abstract

Economic growth is an essential ingredient in development. Due to its significance, economists have made enormous efforts to identify the sources of growth and to comprehend the causes of differences in growth between countries. Starting from eighteenth century a number of theories have been formulated on economic growth and these theories are evaluated and applicability of them is incessantly criticized. Further, due to complexity of the growth process most of these theories have failed to capture some important aspects that influence economic growth. Factors that are often ignored in growth models are non economic factors. The objective of this paper is to evaluate the applicability of growth theories in the context of long run economic growth and the implications of non economic factors on long run growth.

1.0 Introduction

Economic growth is the percentage rate of increase of per capita real Gross Domestic Product (GDP). It is often used as an indicator of development of a country despite its inherent weaknesses as a measure of well being of all people across a country. Although economic development implies a multitude of aspects which are quantifiable and non quantifiable, economic growth is the most important of all due to its impact on other aspects of development. Development of a country largely depends on sustained high rate of economic growth. An important benefit of economic growth is increased employment opportunities. A country with higher economic growth utilizes its resources more efficiently including its labor resources resulting in high employment opportunities for its people including the poor. It boosts investment in capital goods, improves investor confidence and business profits encouraging businesses to grow resulting the process to sustain in the long run. Even a small annual growth leads to a significant growth in the long run. High economic growth means high standard of living of people. However growth alone will not assure equal benefits to all unless there is more equitable distribution of income among individuals.

Due to its role in development, economic growth is one of the main areas of interest in economics. Various views and theories of economic growth have been developed and some of these theories and their applicability on long run sustainability of economic growth and the importance of non-economic factors on growth are addressed in this paper.

2.0 Theories of Economic Growth and their Limitations

Growth theories strive to understand the sources of economic growth and the differences in income over time and between countries. It concerns why some countries have developed while others have not. Sustained growth is not experienced by all countries in the world equally. Only some countries, mainly which are classified as developed countries have recorded high growth rates and countries that are classified as less developed countries show significantly lower GDP per capita growth rates demonstrating a strong correlation between growth and development.

Growth theories commonly take into consideration exogenous economic variables in explaining growth. However economic growth is a complex process and it is influenced by non economic variables as well. Therefore it is pertinent to scrutinize the role of non-economic variables in the process. Some examples of such variables are political, social, cultural, environmental, psychological and religious factors.

History of growth theories runs back to 1770s when Adam Smith inquired into causes of wealth of nations. Other economists i.e. David Ricardo, Mill, Karl Marx etc. contributed to the views of Adam Smith's which is known as classical theory of growth. These theories were followed by Keynesian growth theories, neo-classical growth theories, multi sectoral growth, endogenous growth theories etc. Focus will be on a few widely known growth theories developed after mid 1900's starting from Harrod Domar model.

2.1 Harrod-Domar Model

Harrod-Domar Model is one of the early theories of economic growth, which was developed by Roy F. Harrod and Evsey Domar in 1930's. Subsequent growth theories were expanded based on this model. This theory emphasizes the importance of savings and investment in economic growth. According to Harrod Domar model growth is positively related to the rate of savings and is negatively related to the capital (physical and human) output ratio. Economic growth is positive when the investment (savings) exceeds the depreciated capital. If not, an economy can stagnate or even shrink. Basic Harrod-Domar model was later modified to incorporate the impact of population growth on economic growth. The final model explains the relationship of growth to the ability to save and invest, ability to convert capital into output, the rate at which capital depreciates and the rate of population growth.

Harrod-Domar model is represented by a simple equation: $s/\theta = (1 + g^*)(1 + n) - (1 - \delta)$

Where g^* is the per capita rate of growth θ is the capital output ratio, s is the savings rate and δ is the rate of depreciation of capital n is the population growth rate. Due to its simplicity, countries can use this model to achieve predetermined growth targets. In a centrally planned economy government can manipulate the parameters of the model to influence the

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growth rate. However to make use of this model, government of a country must have instruments to manipulate the parameters of the model. For an example national savings of a country can be increased by reduced consumption and increased taxes. In a country where there is low savings, investment can be supported by foreign trade, aid and investment. Growth engineering using Harrod-Domar model was first practiced in Soviet Union in 1917.

However one major problem associated with the Harrod-Domar model is that the parameters of the mocel are not completely exogenous. They are influenced by the growth process itself. Savings rate of a country depends on the level of income of the people. There is little or nothing that a government can do to influence the savings rate if people do not earn sufficient incomes to save. Under these circumstances alternative strategies should be adopted to support investment such as foreign aid and credit. Dependency and indebtedness are adverse outcomes of this strategy in the long run.

Population growth also depends on the level of development of a country. Poor countries show a high rate of population growth. In poor countries even if there is a GDP growth, the effects are not felt due to high growth in population. There are several factors that influence the rate of population growth of a country and controlling the population growth rate is an issue to be addressed separately. There are non economic factors which cannot be captured in a model or changed easily.

This model also assumes that the investors are only influenced by output, the relative price of labour and capital is fixed, and that they are used in equal proportions, which are not realistic in modern economies. In terms of development, the model sees economic growth and development as the same but economic growth is only a single element of development. Yet another criticism of the model is that it implies poor countries should borrow to finance investment in capital to accelerate economic growth, which often leads to repayment problems in the long run. Theory also emphasizes the importance of capital accumulation but capital accumulation per se would not ensure sustainable growth unless it is supplemented by technological improvements and labour quality improvements. Diminishing marginal returns to capital will impede the growth in the absence of technological innovation.

Harrod-Domar model can be useful in long run economic growth as it outlines the basic requirements that are necessary for a country to grow. But it is not as simple as the model represents therefore it is important to understand and be aware of the weaknesses of the model when using it.

2.2 Solow-Swan Model (Neoclassical Growth Model)

Solow model was developed by Robert Solow and Trevor Swan in 1956. It is an attempt to model long-run growth analytically. This model assumes that countries use their resources efficiently and that there are diminishing returns to capital and labor. If there is more labour compared to capital an increase in capital would result in the productivity of labour to increase and thereby increasing the output. Solow-Swan model considers that the capital output ratio depends on the labour and capital owned by an economy. The model makes three important predictions. First, increasing capital relative to labor creates economic growth, since people can be more productive given more capital. Second, Investment in capital will lead poor countries with less capital per person to grow faster because each investment in capital will produce a higher return than rich countries with abundant capital. Third, because of diminishing returns to capital, economies will eventually reach a point at which no new increase in capital will create economic growth. This point is called a "steady State." The model also notes that countries can overcome this steady state and continue growing by inventing new technology that allows production with fewer resources.

Solow model believes that continuous increase in capital would increase growth rate only temporarily because the ratio of capital to labour goes up but the marginal product of additional units of capital declines. At the point of steady state output, capital and labour grow at the same rate but the level of income increases. Therefore to ensure long term growth, improvement of productivity of both capital and labor is required. The model assumes that the productivity is independent of the investment in capital. As per the Solow model differences in growth rate between countries is mainly attributable to differences in the rate of change in technology.

Solow model is an improvement of the Harrod Domar model discussed earlier. But it stresses the fact that continuous accumulation in capital would not result in increased rate of growth due to diminishing marginal returns of factors of production. Therefore it is important that countries invest in technological improvement and human capital improvement in order to ensure sustainable growth. Each technological innovation triggers further innovation resulting in long-term economic growth. The factors that facilitate innovations are investment in higher education, improvement in information technology, government spending on research and development and effective intellectual property laws that promote research and development.

However technological progress and human capital development are independent of the model. Capital assets are not homogeneous as assumed by the theory. It is a draw back of the theory that it does not explain how and why technological progress takes place.

2.3 Endogenous Growth

Economists extended Solow model to incorporate technology into the model and developed endogenous growth theory in the 1980s. This model introduced a new concept of human capital, the skills and knowledge that make workers productive. As per the model unlike physical capital, human capital has increasing rates of return. Therefore, overall there are constant returns to capital, and economies never reach a steady State. Growth does not slow as capital accumulates, but the rate of growth depends on the types of capital that a country invests in.

Endogenous growth theorists stress the need for government and private sector institutions and markets which promote innovation, and provide incentives for individuals to be inventive. Appropriate government policies can permanently raise a country's growth rate particularly if they lead to a higher level of competition in markets and a higher rate of innovation. Theory emphasizes that investment in research and development (R&D) is the main source of technical progress. Protection of property rights and patents can provide incentives to R&D. Investment in human capital i.e. education and training is also an essential part in economic growth.

Less developed countries do not have required skills and capital to develop new technology. However they must find strategies to allow technology to flow from developed countries. This can be done by importing capital goods with embedded technology and knowledge spillovers. Exporting products also allow technology acquisition and learning.

According to endogenous growth theory GDP growth is determined by the production process itself rather than the factors that are outside the system. Endogenous growth theory emphasizes that the government policies and behavior of the economy has a role to play in economic growth as well as cultural and sociological factors.

Due to lack of empirical support and some of the assumptions of the theory being unrealistic in the context of less developed countries, the endogenous theory is subject to criticism. However this theory in summery explains the importance of human capital and technology in long run economic growth which is a convincing argument.

2.4 Modern Approaches to Economic Growth

World Bank has introduced a functional approach to economic growth. It begins with policy choices that lead to competitive disciplines and growth functions helping in achieving the desired outcomes. Policy choices include getting the fundamentals in place such as a stable macroeconomic environment, high level of human capital, effective and secure financial systems, limited price distortions, openness to foreign technology and sound agricultural development policies. Government has to support these policies with selective interventions such as export promotion and directed credit for desired activities. Institutional support must be provided through a high quality civil service and effective monitoring process. As per this approach above mentioned growth oriented policies promote competition i.e. export and domestic competition. Competition leads to increased human capital, high savings and investment, effective allocation of resources, productivity improvements and rapid technological change. The outcomes expected from this approach are rapid growth of exports, rapid demographic transition, rapid agricultural transformation and industrialization which would finally lead to high economic growth and reduced poverty.

The World Bank approach is a practical and flexible approach to economic growth and countries can make use of this approach by making necessary changes to the model depending on country context.

3.0 Non-economic Factors Affecting Economic Growth

Theories of economic growth are continuously being criticized and recent studies have shown that there are various non economic factors that influence the economic growth process which are not given adequate attention.

Importance of human capital and its quality in economic growth was highlighted in growth theories discussed above. Appropriate combination of labour with different skills is as much important as the quality and quantity in making optimum use of human resource. Any kind of excess labour is a problem to an economy than a benefit. Scarcity of labour on the other hand is also a barrier in economic growth. Middle Eastern countries are confronted with the problem of human resource scarcity. On contrary countries like India are faced with the problem of excess labour who cannot contribute to the production process thereby inhibiting the growth process. When considering the quality of human capital it is not only the skill and productivity that matters but also discipline, honesty and sincerity, commitment to work, performance and professionalism. These qualities are influenced by social cultural and historical aspects of a nation. Japan is a good example of a country with committed and honest labour force. Natural resources endowed by a country are only passive factors in economic growth. Countries like Japan and Singapore have recorded high economic growth with less resource base. Skilled and motivated manpower has contributed to this high growth rates. Capital formation and technological development are economic factors that are taken into consideration in many growth models. Social and political factors are difficult to be incorporated in growth models due their nature and inability to be measured and quantified. Social and political systems, organizations, institutions, social values and beliefs, religions, ethics, attitudes and aspirations of people all have a role to play in the process of growth and development of a country. Demographic factors such as, fertility rates, immigration, participation in the labour force are also factors needs to be addressed. Psychological factors also matters since growth involve people. Traditions, customs, beliefs, communal harmony, attitude towards material success and well being and social ethics influence economic growth. Studies have revealed that Confucianism in Japan has made a significant contribution to its development. Confucianism has been an influence in Japan on schooling and training and therefore on education. Religion also plays a role in formulating attitudes among people.

Government and its policies matter in economic growth. Providing a stable macroeconomic environment is one of the major roles of government in achieving growth. Stable price levels and exchange rates allow entrepreneurs to concentrate on profit maximization and productivity improvements. Uncertainty discourages investments and long term planning. If there is stability in the economy investors develop confidence and plan for long term investments. Government also should strive to minimize price distortions. Less price distortions allow resources to be allocated efficiently including equilibrium in the labour market. Resources will be allocated according to their comparative advantages. It is important that government adopt outward oriented trade policies and specialization according to comparative advantages. Markets should be allowed to operate freely to encourage competition so that firms would be more cost conscious which would lead to increased efficiency. Being open to technology would facilitate technology transfer from developed countries. This should be supported by a sound industrial policy to encourage growth of domestic industries. Government should support growth by providing efficient infrastructure, building an efficient system of public utilities such as health and education system, investing in industries that private sector cannot invest, removing weaknesses of the market system etc.

Some theorists believe that recent records of high growth in certain economies were due to government engineered investment plans. It is essential that government remove impediments to investment and remove coordination failures by providing incentives for investment and administrative guidance. Government should take measures to improve the investment climate by providing tax incentives and credit facilities to encourage private investment. Export oriented policies would enable earning of foreign currency which can be spent on imports of capital goods. Government should have a clear vision to promote economic growth. Government discipline and competent bureaucracy is favorable for economic growth. Commitment to encourage generation and transfer of technology by providing adequate property rights, avoiding procedural bottlenecks and appropriate policies to encourage research and development are also important. An honest, sincere and efficient government is able to build public confidence and correct attitude towards growth and public welfare.

There is empirical evidence that demographic factors are linked with economic growth of a country. Countries that are less developed show a rapid rate of population growth which further impede economic growth. Implications of population growth were incorporated in growth theories. Economic growth and population growth are interrelated which means less population leads to higher growth and higher growth result in low population growth. However composition of population also matters in economic growth. A country with a high aging population implies that dependency is higher and labour force participation is lower. If a large proportion of population comprises of labour force it is favorable for economic growth. Male female composition also matters depending on the country context.

Psychological factors have significance in economic growth and development. It is believed that key to development lies in the minds of people. A society that is unstable, emotional, and resistant to change is not conducive for economic growth. Consumer and business confidence matters to growth. If consumers are confident of their future income, job security and promotional prospects they tend to spend more on consumption which lead to increase in aggregate demand inducing economic growth. However increase in demand must be accompanied by a supply side response if growth to take place. Although in developed countries this mechanism can work favorably in most developing countries it may not happen due to absence of excess capacity. If firms are confident they would invest in expansion projects that demand more labor and raw materials leading to increased employment and aggregate demand. Consumer and business confidence are short term variables but if they persist they become long term variables influencing sustainable growth in the long run.

Some political factors that have influenced growth are colonialism, political instability, ideological barriers, civil strife and wars. Colonialism has both advantages and disadvantages. However disadvantages outweigh the advantages. Most under-developed countries today were once colonies. Both natural and human resources of the colonies were largely extracted by colonizers. Political freedom gave no economic freedom to colonies and colonizers continued to control those countries economically. Colonization evidently has instilled backwardness and lack of innovativeness in most less developed countries which is one of the factors that impede growth and development. Psychological effects of authoritarian leadership may have contributed to this backwardness. Civil strife and wars cripple economies. On one hand wars makes it necessary to increase military expenditure and on the other hand it adversely affects the social harmony and public confidence. Governments have to deviates from its objectives to concentrate on war.

Corruption, mainly in the public sector is another factor that affects growth adversely which is a problem in most less developed countries. Government must take necessary steps to control and minimize corruption.

Proper institutional set up is essential for an efficient economy. Institutions include financial systems, legal system, education system, health system, other public services and private organizations etc. Institutions are made of people and procedures. Planning organizing controlling and leading are necessary management skills that are required for efficient functioning of institutions. Workers attitudes, level of motivation, skills and knowledge, simple procedures and faster responses are essential for efficient functioning of institutions.

4.0 Global Competitiveness: a New Challenge

The world has become one market place. It is a new challenge for less developed countries today in achieving growth objectives and development targets. Growth competitiveness of a country is driven by three main inter-related mechanisms. Efficient allocation of resources based on market competition, capital accumulation and technological advancement. These are addressed in growth theories discussed above.

Out of these three mechanisms technological advancement is the most important due to the fact that without technological advancement efficient resource allocation and capital accumulation will not result in long term economic growth. The most significant global division today in view of long-term economic growth is between the countries that are able to achieve technological innovations and the countries that are unable to do so. Developed countries of the world are powered by their ability to innovate. The competition among the countries is closely related to their capacities to innovate and to win new global markets for their technologically advanced products.

Each country's strategy for competitiveness in the global market should vary depending on the stage of economic development of that country. A poor country should attract capital investment and use the proceeds of economic growth to invest in health education and infrastructure. A country somewhat higher in the development ladder should speed up technological diffusion to the country where as highly developed countries should concentrate on technological innovations.

5.0 Conclusion

Economic growth is crucial in development of a country. It is measured in terms of per capita growth in GDP. Although economic growth does not imply well-being of individuals of a country it is the foundation for development due to its own importance and its impact on other aspects of development. History of growth theories runs back to 1770's but these theories are subject to continuous criticism over time and new theories are continuously being developed. Widely used theories are neo classical growth theories and endogenous growth theories. In modern world these theories cannot be directly applied to achieve desired outcomes. It is partly due to weaknesses inherent in the theories themselves and partly due to limited applicability of the theories in different socio-economic and cultural contexts. Most of these theories were developed in western economies based on their growth experiences which occurred in different environments. Therefore applicability of these theories in current context is limited. Economic growth in current context is much more complex and needs different approaches taking country's stage of development, social, cultural, political, institutional, demographic background, global competitiveness etc. into consideration. However these growth theories can be used as guidelines in achieving growth as they outline the fundamentals of growth. It is important that less developed countries formulate their strategies by carefully taking economic as well as non-economic factors into consideration to face the challenge of achieving growth objectives in an environment that is highly competitive and dominated by strong economies.

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