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Chapter

Introductory Chapter: Macroeconomic Policy Perspectives of Economic Growth

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1. Introduction

Macroeconomic policy formulation and implementation are crucial for creating the enabling environment for wide-ranging economic activities to drive economic growth, which manifests into increase in the outputs of major sectors of an economy. A multiple sector positive performance is essential for the growth of the overall economy, but a sector of the economy that attracts large spectrum of economic activities can stimulate the productivity of other sectors to achieve strong sustainable growth of the economy. It is assumed that if an economy is not achieving high growth as expected, it is due to market imperfections, likely coming from economic distortions that emanate from such sources as government tax policies, human capital externalities and information spill overs. The distortions prevent the best use of economic resources (i.e., efficiency) by hindering the free flow of economic activities, thus the economy performs at levels far below its potential.

Based on the balanced growth path principles of the standard growth analysis, which assumes that economic growth on balanced path is equal to the rate of asset accumulation, growth is a function of the difference between the expected returns to asset accumulation and the opportunity cost of investing those assets from the perspective of private economic agents. Low growth rate is due to low social returns or high cost of capital (investment) or both. Increase in private investment leads to increase in capital accumulation to stimulate growth of the economy. Therefore, holding all things constant, economies with high level of private investments tend to achieve high growth and vice versa, but distortions could lead to high cost to discourage investments, thereby stifling growth even with high investments.

Different economies have peculiar conditions and therefore likely to have different critical growth determinants and constraints even though certain factors such as property rights, the rule of law, market-oriented incentives, sound money and sustainable public finance are universally applicable to all economies. The purpose of this introductory chapter is to generate insights into salient issues from standard economic growth analysis to develop macroeconomic policy perspectives therefrom. In subsequent sections, the convergence of standard growth analysis is presented, followed by macroeconomic policy implications and completing with a section on summary and conclusions.
2. Convergence of standard economic growth analysis

Economic growth analysis illuminates the essence of the effective use of factors of production as the mechanism for attaining economic growth. A given level of natural resource requires the use of labour, capital and the 'effectiveness of labour' (technology) to spring up a production process. The imperative of household consumption is the main activity, which is a veritable source of demand that facilitates production. In turn, the household is the source of labour input for production activities that leads to output of goods and services.

Through persistent production activities to meet growing demand, endogenous process of 'learning-by-doing' facilitates technological progress to underpin strong and sustainable growth of the economy. In the context of classical theory with exogenous technology effect, the economy converges towards a balanced growth path, implying that the rate of growth cannot be influenced by the activities within the economy. Consumers’ preferences, production processes and policy changes within the economy cannot influence the growth rate of the economy with capital, output and consumption per unit of effective labour being constant.

The economy grows through the effective use value-adding capabilities of factors of production to adapt to the effect of existing technology. Based on assumption of constant saving rate, the capital stock does not exceed its golden rule level, such that even if shocks occur, it will eventually adjust to the golden rule value. However, it is difficult to determine a desirable level of saving rate due to the notion that it will be inefficient for the saving rate to exceed the golden-rule level forever because higher quantities of per capita consumption could be attained at all points in time by reducing the saving rate (see, for instance, [1]). The neoclassical growth analysis tends to either suggest the same growth rate for all economies or that growth rates are determined by unexplained factors, but experience has shown that different economies have maintained different per capita growth rates over a long period of time.

Transitional growth rates will differ among economies based on differences in the ratios of capital to effective labour. The assertion of convergence principle implies that if all economies have the same parameters for taste, technology and population growth rate, then they should have the same steady-state level of per capita income. Accordingly, low-income economies will grow more rapidly than high-income economies, and per capita income levels of different economies will converge to a common level. Economies with lower ratios of capital to effective labour relative to the steady-state values will grow faster. Variation in countries' growth rates is as result of variations in distances from steady state and by the rate of decrease of returns to capital. As a country approaches steady-state level of capital per unit of effective labour, diminishing returns to investment will cause a decline in growth rate.

Dowrick and Rogers [3], argued in line with Bernard and Jones [4], that technology transfer and catch-up race among economies could be adduced as explanation for the convergence prediction of the neoclassical models. However, this logic is overshadowed by differences in human capital, external benefits of human capital and capital market imperfections, which renders the prediction of catch-up and a convergence of all economies on a steady-state growth path untenable. Economies

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1 This convergence principle is based on a condition of equal parameters, which does not exist ipso facto; hence it is more appropriately termed conditional convergence. McCallum [2] provides a technical and detailed analysis of this convergence condition, further stressing that average growth rates among countries tend to be positively correlated with shares of total income devoted to investment, rather than consumption as espoused by the neoclassical models.
with inherent demand and supply distortions tend to stultify growth in a sustained manner and lead to a cyclical trend of slow growth of such economies. In an empirical cross-country study, Salai-Martin et al. [5] discovered, among several variables tested, that the ones that are significantly related to economic growth are human capital development, average price of investment goods, the initial level of per capita GDP and fraction of GDP in mining.

In endogenous growth analysis, the arbitrary assumption of constant returns with respect to the producible inputs reflects a “knife-edge” character in that slight increasing returns would lead to explosive growth and a slight decreasing return leads to shrinking growth. Both the capital accumulation and the technological progress models subscribe to this knife-edge principle. According to Groth and Schou [6], this is an indication that the models are not amenable to endogenous variables and as such lack robustness. In the absence of population growth, the strictly endogenous models transform into instability problems which give credence to the weakly endogenous growth or semi-endogenous growth in terms of growth in per capita consumption in the long run at a constant positive rate. In strict endogenous context, even without any exogenous technological change and discounting increasing returns and population growth, a stable positive per capita growth and constant growth rate of per capita consumption will occur in the long run.

The attainment of never-ending growth requires never-ending increase in human capital, but human capital is not monolithic, since human skills are peculiar and cannot be automatically transferred to succeeding generations. The assumption of scale effect is therefore mundane, without a discernible analysis of human capital and stock of knowledge that is owned by society in general. Knowledge in use, not human capital per se, can provide a basis for never-ending growth through incentives for Research and Development (R&D) and spill over effects that lead to chain of innovations over time in quality and variety. Li [7], in consonance with Jones [8], argued that the possibility of inter-R&D knowledge spill overs leads to semi-endogenous growth where technological change, which requires real resources, is endogenous while long-run growth is exogenous as in the neoclassical models, which weakens the impact of scale effects.

Natural resources have a double-edge effect on economic growth, the intensity of utilisation of such resources increases total output of the economy but also leads to higher depletion rate of such resources. Given that natural resources are essential in production, growth rate can be constant only through mechanism for maintaining constant level of output. A combination of Hartwick rule of investing the rents derived from efficient extraction, the Hotelling’s rule of efficient intertemporal resource extraction and the acquisition of backstop technology has been emphasised as means by which adverse effects of resource depletion can be alleviated. The principle of maximising the utilitarian social utility is a basis for obtaining optimal resource utilisation. The backbone of these expositions is the constant returns to scale assumption relative to technology, which brings the analysis close to endogenous growth models. According to Groth and Schou [6], a one-sector model including non-renewable resource as production inputs does not generate endogenous growth because the strain of extracting successfully smaller amounts of the resource can offset the impact of increasing returns to producible inputs to lead to instability.

According to the ‘leading sector’ strategy of economic growth [9], a sector with intrinsic potential for large-scale economic activities but strangled by

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2 Allyn Young conceives economic growth based on increasing returns to scale and cumulative causation that leads to self-sustaining growth due to market size which provides opportunities and incentives for innovation.
institutional and related policies can be liberated to spring up and stimulate strong economic growth. In this context, it is more effective to increase overall growth of the economy in terms of output and employment by removing barriers or provide incentives to investment in sectors in which there is a large but latent demand that can be exploited, so that an increase in investment and consequent output can find a market without resulting in distortions in prices and incomes in the sector. Without removing this barrier, standard growth policies such as propping aggregate demand, spontaneous innovations, cost reductions, tax incentives or direct government investment in general would be less effective. Two main characteristics of a ‘lead sector’ are the existence of latent demand, the size of which must be large enough to have significant impact on the whole economy if it is actualised; and secondly, an increase in the sector’s growth can be exogenous and occur independently of the current overall rate of growth of the economy.

The existence of industrial production, on the one hand, and demand for the products of the industries, on the other hand, create opportunities for market expansion, competition and specialisation. Through a favourable ‘forward linkage’ effect, an endogenous self-perpetuating process of growth emerges and feeds on it almost automatically. By the prompting of internal and external economies of scale, the process of industrial production evolves into higher and more sophisticated levels of production, giving rise to further specialisation, new products and quality improvements, leading to technological acquisition and economic growth. Adaptation to a growing market, widened by international trade, stimulates industrial production and provides additional impetus to the attainment of strong and sustainable economic growth.

Inter-industry linkages facilitate economic growth by increasing the absorptive capacity of industries through interdependence for goods and services produced by the cluster of existing industries. As each producing sector uses a given level of inputs to produce, it creates demand for products of other sectors. The interdependence of sectors of the economy leads to expansion in production due to increasing demand for goods and services by all sectors. The intensity of this interdependence generates high level of learning by doing, motivates innovation and R&D activities to lead to positive technological change to underpin strong and sustainable growth of the economy.

3. Macroeconomic policy implications

The most significant deduction from economic growth analysis is the convergence of the role of technology as the catalyst for economic growth through facilitating relationship between production and consumption. Production is meant to provide for consumption, which originates from the urge of the household to consume to attain welfare. Since utility is a function of quantity and quality, the motivation to improve on the variety (quantity and quality) of consumption leads to discoveries of more sophisticated methods of production. A co-ordinated institutional motivation for effective utilisation of resources is therefore a fundamental condition for generating strong and sustainable growth path. This implies that, in a situation where consumption is not significantly linked to the process of production, technological progress will be undermined and economic growth, measured by increase in per capita output induced by the enhanced value-adding capabilities of factors of production (technology), will be weak.

For natural resource abundant economies, temptation for rent seeking could facilitate complacent consumption to the detriment of production, thereby crippling value-adding capability of factors of production. The absence of ‘backward
and forward linkages’ and learning-by-doing effects will result into socially inefficient economic structure to adversely affect the growth prospects of the economy. A strategy that ensures optimal utilisation of resources requires providing incentives for investments that makes use of natural resources as intermediate goods to be transformed into finished goods through manufacturing production and inter-industry linkages. Rents from natural resource extraction need to be deployed to build requisite institutional and infrastructure that create opportunities for value-adding production investments. This process will enhance the value-adding capabilities of factors of production, facilitate learning-by-doing complemented by R&D and lead to technological progress that will underpin strong and sustainable growth of the economy.

As the pivotal role of government is crucial in the implementation of appropriate macroeconomic policies in terms of fiscal and monetary policies as well as other aspects of governance, public expenditure pattern needs to align with allocation priority and efficiency of implementing projects and programmes. Production activities in sectors of the economy take place effectively under enabling conditions such as infrastructure and the rule of law that guarantees property rights (patents and copy right laws) along with robust human capital. These are the core pillars that propel economic activities to drive strong economic growth as they are essential to both firms (businesses) and households. However, their non-excludability character, on the one hand, and the competitive profit-making objectives of firms, on the other, prevent firms from engaging in the provision of these services.

Furthermore, given the significant relationship between consumption and production and input-output mechanism needed to drive this relationship, an effective coordination is necessary to generate expansionary economic activities, which is by default expected from the government in accordance with its non-profit and welfare responsibility. Thus, without the ability of government to perform its welfare and coordination functions, all the building blocks of economic growth analysis (‘effectiveness of labour’, capital, technological change, R&D, etc.) will not be able to contribute adequately to value-adding production activities. Furthermore, natural resource sectors, which are the roots of economic activities, require legal and institutional framework of operations, and this can only be provided by government institutions. Effective governance, through the proper functioning of institutions and the implementation of robust policies, is therefore a crucial prerequisite to the attainment of economic growth.

Two significant interrelated issues arise. One is that the assumption of a responsible government appreciating its crucial role and discharging its functions in accordance with perfect objectivity and rationality may be untenable. Secondly, the possibility of trade-off between the implementation of economic growth enhancing policies on the one hand and the social welfare and intergenerational equity policies on the other give rise to difficult policy choices. A properly balanced combination of the equity-economic growth policy implementation then becomes the fundamental challenge of governance.

A robust macroeconomic policy framework is critical to the size of policy multipliers. However, as modern economies are connected to global economic trends, the most effective strategy is to implement market-oriented policies with indirect government participation to align fiscal policies. It is important to formulate a macroeconomic framework that is contingent upon the core pillars of economic growth with strong institutional arrangements to ensure sustainability. This implies the need to establish a strong fiscal system with public expenditure pattern that invests significantly in human capital development and economic infrastructure while ensuring that core governance issues such as rule of law and property rights are adequately enforced. Economic growth will emanate from strategic macroeconomic
policies that provide incentives for investments in key sectors of the economy to expand manufacturing value-added production activities by removing institutional bottlenecks to supply responses and expand the demand for goods and services from the strategic sectors of the economy.

4. Summary and conclusions

The fundamental convergence of various strand of economic growth analysis is that technological progress is the critical factor for achieving strong and sustainable growth of the economy. However, economic growth process is hinged on strong relationship between consumption and production driven by effectiveness of factors of production. Sectoral interdependence based on input-output principles is vital for expanding economic activities to enhance the capability of factors of production that could lead to technological progress through application and adaptation to exogenous technology that is amplified by endogenous technological change made possible by ‘learning-by-doing’ and further enhanced by R&D activities.

Production activities by all sectors of the economy are possible only if basic infrastructures and the rule of law that guarantees property rights (patents and copy right laws) are in existence. In addition, human capital formation, which is the bedrock upon which all aspects of economic growth processes are hinged, requires to be nurtured by services that are provided by non-profit-making principles. Effective governance in the performance of welfare and coordination functions, through the proper functioning of institutions and the implementation of robust policies, is a fundamental enabling condition for robust economic activities to enhance the effectiveness of factors of production (labour, capital, land) for technological progress to occur for a strong and sustainable growth of the economy to be achieved.

Inter-industry linkages are essential for achieving economic growth through facilitation absorptive capacity of industries through interdependence for goods and services produced by the cluster of existing industries. The intensity of this interdependence generates high level of learning by doing, prompts the need for innovation, which leads to R&D activities and positive technological change occurs to accelerate economic growth.

It follows therefore that, in general, macroeconomic policies for achieving strong and sustainable growth need to focus on value-adding investments that could expand economic activities to develop a strong household sector to emerge as a source of demand for goods and services on the one hand and source of quality labour input on the other hand to facilitate inter-industry linkages. It is crucial to develop robust manufacturing value-added sector as the core of economic growth strategy to take advantage of high value-adding and inter-industry linkages potential of manufacturing activities to drive strong economic growth.

In conclusion, it is fundamental to implement far-reaching policies for achieving inter-generational equity by investing significantly in social and economic services such as education and health anchored on sound and efficient macroeconomic management.
References


