Chapter 3
Convergence Aspect of Capital Formation: A Study on Major Countries

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ABSTRACT
Empirical evidences on convergence or divergence of a group of economies or regions in most instances are based upon per capita income as the only determinant for discussion. As time goes on, there has been a lot of studies on the convergence or divergence of certain variables which are proxy to the income variable. The present chapter attempts to examine whether there is convergence or divergence in per capita gross capital formation across 37 countries for the period 1980-2013. The study observes that there is significant absolute β and σ convergence for the cross section of all the economies for the entire period. By segregating the entire data into the categories of developed and developing country, the study further observes significant σ convergence in both the cases with no absolute β convergence in either of the country categories.

INTRODUCTION
Prevailing massive inequality in per capita income across the nations or continents in the global economy is a benchmark today as we often talk about the virtual aspect of human rights. On the one hand, struggling for bare minimum subsistence in the South and roll in luxury in the North on the other contradict the holistic economic theories and their applications under globalization in new millennium. The output of mammoth growth that taken place in some regions, reforms policies so far realized in different corners,
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Evolution in respective fields in different nations during the last 100 years is being funneled into global output that does not conform to the rights to human beings today—human suffering in large scale continues. We are really worried, but with a hope. There is a hope in the face of neoclassical growth models developed in the 1960s, absolute convergence among the world economies due to the diminishing marginal productivity of capital is not impossible in 50 or 100 years ahead. All the countries might converge to a common level of per capita income and growth, if capital matters much. The countries might differ or diverge, but it could be explained by the theory of conditional convergence. Sala-i-Martin (1990) as a follower of Solow (1956) introduced terminology of β convergence and σ convergence, and then conditional β convergence in 1991. The removal or minimization of disparities of per capita income across the nations depends on the speed of convergence that could be tested empirically by clubbing group of concerned nations. How much time would be allowable for sustainability so far as rampant poverty in the developing countries is concerned?

Land, labor and capital are assumed to be basic inputs of production, if technology is taken as a secondary factor of production. Land of the concerned nation is supposed to be exogenously given and cross-border movement of land is next to impossible even in the era of globalization whereas technology as a public good is transferable across the nations as per assumption of neoclassical growth theory of Solow (1956) and Swan (1956). Inward-oriented economies seem to grow slower than outward-looking ones. The rate of convergence also tends to be higher if we allow for the flow of technological advances from rich to poor economies. Solow and Swan have given conceptual ideas that derive standard neoclassical growth theory and famous neoclassical growth model. Labor and capital are also transferable from one nation to another because of the differences of factor payments; but it is subjected to the governance policy of the concerned nation. Solow justified that production of output depends on labor, capital and technology and he assumed that technological progress is absent in the short run period; constant returns to scale and inada conditions prevail. Accordingly, per capita output of a nation is directly proportional to capital labor ratio and both marginal productivities of labor and capital are positive but both are falling over the time horizon. The change in capital stock is simply a difference between investment and depreciation rate when population growth rate is being bracketed into depreciation. As Dynamic Equalization between the investment and depreciation rate plus population growth rate results in zero incremental capital stock, the economy would come to a halt. Solow defines it steady state of growth as all the variables grow at a same rate and hence per capita quantities do not grow; it is a steady and stable equilibrium point because of strong force of diminishing marginal productivity of capital. Our model does not allow any departure from equilibrium point towards any transitional phase because of the variations of marginal productivity of capital. The smaller initial values of per head capital are associated with larger values of marginal productivities of capital and vice versa. Consequently, the economies with lower per capita capital tend to grow faster in per capita terms. It was argued that capital would have a tendency to move from low-rent region to high-rent region and the process continues until factor returns are equalized. Low income group countries would catch up with the high income nations because of convergence process.

Despite the adoption of policies of internal and external liberalization or globalization in the growing economies, gross inequality in per capita income across the nations persists even in the new millennium that has to be investigated by indirect method of testing of convergence with the help of neoclassical growth theories—convergence of capital per person instead of per capita income. Differences between the performances of the nations are obviously linked to their corresponding governance quality that creates effective internal as well as external markets since nation’s growth primarily depends on market incentives for investment of the economy. Therefore, good governance matters a lot so far as convergence theory
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