GREEN GROWTH AND THE CRITICAL ISSUE OF THE GENUINE SAVINGS PATH FOR AN OPEN CAPITAL-SHORT ECONOMY: THE CASE OF EMERGING COUNTRIES

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For emerging countries, making economic growth and development compatible with stabilizing the climate and with a sustainable environmental footprint will require a drastic shift towards clean development and green, low-carbon economies. This will require a great transformation of activities as far reaching as the transformation brought about by the Industrial Revolution. The rationale for green growth and clean development has mostly been presented as a win-win situation for the environment and for economic development. In this respect, genuine savings is generally used as an indicator of sustainability (Pearce and Atkinson, 1993; Hamilton and Clemens, 1999). It is designed to capture whether a nation is operating sustainably or not. However this interpretation remains debatable (Lawn, 2003, 2004). It is true that the concept of genuine savings expresses the capacity for an economy to invest in the various capital goods of which it lays out and assesses the opportunity of preserving a certain level of consumption per capita in the long run. Nevertheless, the mere observation of a positive rate of genuine savings does not necessarily guarantee this opportunity. These difficulties of interpretation are partly related to the basically static nature of the indicator. They also bear on both the value and the sign of the genuine savings (D'Autume & Schubert, 2008).This interpretation must take account of the situation of the economy at a given moment of the time and along a given growth path. Indeed, one must wonder about the trajectory of the genuine saving in a context of convergence, of transition towards the long run potential green growth path. This interpretation must also consider the way in which expenses associated with the various capital goods are defined in the national accounts. Some of the expenditures which are related to environmental policy are treated as non productive expenditures. In this context, the choices which are carried out as regards to public policy influences necessarily the division of the national income between consumption and investment and, by the same occasion, the valorization of the various components of the capital assets portfolio of an economy.

This paper aims at discussing the dynamic behavior of the genuine savings rate for emerging nations. We amend the Brock & Taylor model (2010) to incorporate sustainability limits to investment in physical capital. These limits are defined with respect to the Hicksian and Fisherian measures of the national income (Mates, 2003; Lawn, 2004). Because a nation chooses how much of its current income it will invest in capital assets and how much it will use for current consumption, the two definitions of income relate directly to the measurement of sustainability. We explain that these limits are endogenous and depend upon the development level of the nation. The model is then extended to the case of a capital-short open economy. The transition path of the genuine savings is then analyzed with reference to the policy-guiding value of the combined Hicksian and Fisherian sustainability limits to investment strategies. To demonstrate how a nation's transition to a green growth path might be guided the sustainability limits are calculated for emerging countries over the period 1970–2008. Also calculated for the study period is the changing sustainability gap of these countries. By measuring the required commitments to adjust the genuine savings to its sustainable level, it is shown that some countries tend to exceed their optimal macroeconomic scale by over-investing in physical capital.

In this paper, we also propose to integrate spatial dimension. Using the Geographical Information System (GIS) visualization helps us understanding through diachronic dimension, the territorial changes between countries. It allows us to compare at different scales (state, region) the transition path of the genuine savings. Moreover, this analytical framework enables us to identify bifurcation points by using different configurations through a political/geographic/economic angle questioning the territorial cooperation and competition issues. The aim of this methodology is to tackle the comprehension of dynamic complex relations contributing to the possible orientations and contents of the genuine savings path for the considered emerging countries.