Chapter 7
New Method New Estimates

ABSTRACT

This chapter discusses Rao and Singh’s (2007) approach in detail and applies it with alternative datasets to estimate the growth effects of selected variables. Country-specific results obtained using LSE-Hendry’s method show that growth effects vary between countries, but openness to trade seems to be important for almost all the economies. Human capital and policy-related variables had theoretically consistent and statistically significant growth effects. In summary, the results show investment and education together with trade openness could be important stabilization tools in most of these economies. The cross-country estimates support the importance of these factors. The estimates show that private investment has contributed most to the regional growth since 1970s and that these variables combined account for about 90% to the average rate of growth. Conclusions from the various growth accounting exercises noted in the previous chapter indicated that whilst growth rates in these economies will eventually taper-off, the panel data estimates obtained in this chapter with systems methods of moments indicate that the region will have an average steady-state growth rate of around 3.2% in the long-run. This will lead to a serious drag in development because such a low rate of growth, relative to their current averages, implies a dramatic fall in incomes and welfare of Asia. This also suggests that such a scenario will have significant effects on the global economy since the region is being considered as the center of world growth.

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INTRODUCTION

A new methodology is being adopted in this chapter to estimate the growth effects. Using time series and panel datasets, this chapter estimates the growth effects of the aforesaid variables for the sample of Asian countries using Rao and Singh’s (2007) extension of the Solow model. A few additional variables, rate of inflation (∆lnP), human capital, Dreher’s globalization index and the ratio domestic credit to GDP (M1RAT) are also added to the variable list. In spite of this, it is hard to argue that the list is exhaustive. However, Sala-i-Martin (1997) ended up with estimating millions of regressions with 61 variables. In contrast, the Extreme Bounds Analysis (EBA) of Levine and Renelt (1992) indicates that only investment ratio is the robust determinant of growth. Given the objectives of the book, I explore with the limited set leaving such explorations for future researchers.

This chapter begins by discussing the specification and explains how the LSE-Hendry’s method best fits the objectives. Of course, other time series methods can be used, but imposing important constraints on parameters like the share of capital becomes challenging in these alternative techniques. In order to minimize endogeneity bias (due to possible reverse causations), it was necessary to invoke 2-stage instrumental variable technique for GETS using internal instruments. The Saragan’s test is used to verify the included instruments. All estimates are conducted in Microfit-4.1, disregarding the stationary properties of variables because pretesting for unit roots is not required for GETS, see Rao et al. (2010). Furthermore, in this extension, since we are estimating the SSGR, unit roots do not matter in steady-state. The Microfit software is published by Oxford University Press and is useful for modeling time series data on univariate or multivariate space. Nevertheless, the alternative unit root tests did indicate that all the variables are I(1) in levels but stationary in their first differences, see the previous chapter. The time series estimates are useful because they help to identify country-specific growth policies. This extension by Rao and Singh (2007) provides another approach through which growth effects can be estimated and therefore the growth theory and policy can linked more closely. This extension represents an alternative to Senhadji’s TFP based method and Barro’s (1991) well-known approach. At the wake of the endogenous growth theory, Barro’s (1991) methodology was at the forefront. With the analysis in this and in the previous chapter, readers are provided with two alternative methods for country-specific as well as for cross-country analyses. This in itself is useful to policy makers and applied growth economist, and helps establish a closer link between the theory and growth policy. For economists working with multi-country datasets, they now have three methodologies in their toolbox. Many of the regional and country-specific studies employ technically advanced methods but on weak specifications. It is hoped
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