National Accounts Structure and Empirical Comparisons: China, Korea and Japan

Wang Jianxiong,

Hiroshima Shudo University

A candidate for PhD in 2002 at Hiroshima Shudo University,

Japan

1. Purpose of this paper

I intend to apply the generalized model [Kamiryo, 2001] to national accounts in China and South Korea to obtain fact-findings that are useful to each country's policy-makers. we need effective policies useful to the world economy as a whole.

2. Equations and propositions in the generalized model

2.1 The initial data

The generalized model needs the following seven initial values.

1. D: Dividends
2. S_{Π}: Corporate saving or undistributed profit
3. Π: Profit, where Π≡ D + S.
4. W: Compensation of employees
5. Y: Net national income, where Y≡ W + Π.
6. K: Net capital stock
7. L: Population

For saving-investment relationship, the following six initial values are added.

1. S_{total}: Total saving
2. S: Net saving for investment
3. S_H: Household saving
4. I_M: Imports
5. E_M: Exports
6. I_{NV}: Changes in inventories

2.2 The initial ratios

Using the above initial values, four basic parameters and variables (as a function of time, where t=0) are calculated as follows:

n: The growth rate of workers：$n_T \equiv (L_T - L_{T-1})/L_{T-1}$., where T indicates each year in national accounts.

α: The relative share of profit or alpha：α≡Π(0)/Y(0).

Ω(0): The capital-output ratio：Ω(0)≡K(0)/Y(0).

k(0): The capital-labour ratio：k(0)≡K(0)/L(0).

Other important variables are derived using t=0 as follows:

r(0): The rate of profit：r(0)≡Π (0)/K(0)、r(t) =α/Ω(t).

y(0): Per capita output ：y(0) ≡ Y(0) /L(0),

where using the Cobb-Douglas production function,

y(0) =A(0)k(0)$^{\alpha}$ since $Y_t = A_t K_t^{\alpha} L_t^{1-\alpha}$.

A(0): The level of technology, A(0)=k(0)$^{1-\alpha}$/Ω(0) since $y_t = A_t k_t^{\alpha}$.

2.3 Basic equations derived

the three financial parameters θ_1 θ_2 γ in the generalized model determine the qualitative and quantitative investment. Where, investment is divided into two, quantitative and qualitative.

1. $I_K(t) = \gamma\theta_1 S_H(t) + \theta_2 S_\Pi(t)$ as quantitative investment.
2. $I_A(t) = (1-\gamma)\theta_1 S_H(t) + (1-\theta_2) S_\Pi(t)$ as qualitative investment.

2.4 Propositions in the generalized model

This section shows fifteen propositions that were raise in the generalized model (see Kamiryo [2000]).

3. Results of simulation using the three calibrated financial parameters

3.1 Concept of critical alpha

3.2 Calibration of the parameters

3.3 Data source and a direct method for measuring parameters:

3.4 Results of calibration: China versus Korea

3.5 Optimality

4. Conclusions: China and Korea

The generalized model [Kamiryo, 2000] endogenously measures the rate of technological progress and the growth rates of output and capital. I found that propositions are justified using national accounts in China and Korea. This paper, however, concentrated on the model's application to the Chinese and Korean economies (if necessary, referring to the Japanese economy).

Kamiryo and I hope that both countries do not repeat the same mistakes as Japan has chosen for the last ten years. This is an intention to present this paper together with Dr. Kamiryo.