This note is composed of two volumes: M for main relationships and B for business cycles. These figures use my data-sets of nine counties 1960–2005, by country and by sector. Each figure is composed of three pages: (1) Russia, China, Korea, (2) Japan, the US, Australia, and (3) India, Brazil, Mexico. The original data source is IFSY and GFSY, IMF. Such countries as Russia and China shifted previous national accounts system to the SNA 1993 and thus, the periods are shorter than those of other countries. The data of the above figures in this note are simultaneously published in Journal of Economic Sciences 11 (Sep, 1). I will increase the number of countries in the near future if I could get continuously budget surplus/deficit and government gross investment by country in IMF data.

This is because there are no data-sets that publish capital stock and returns or rents by country and by sector. Penn World Table stopped publishing the capital-labor ratio after 1995 (or, at the time when PWT published PWT 6.1 and PWT 6.5). OECD and the Jorgenson researchers will continue to publish capital of the business sector in the future. Nevertheless, I point out that it will be difficult for statistics and econometries to estimate capital and returns at the macro-level if the estimation starts with micro data. The reason comes from the fact that the macro-level data and the micro-level data cannot be consistently estimated. My data, model, and methods for estimation go together. My
methods depend on my endogenous growth model that integrates, under the discrete case, national accounts and the Cobb-Douglas production function. My data, model, and methods are based on national disposable income $NDI$ (which is output $Y$ in my model) or the sum of consumption and saving, instead of $GDP$. This is justified when I apply a labor function of consumption to my model and methods. If wages and returns are estimated so that the sum is equal to $NDI$, the data-set of an economy holds consistently, where capital and returns or rents are also estimated at the macro-level and furthermore by sector based on accounting identity except for the ratio of the discount rate of consumption goods and that of saving (for a preliminary discussion, see Kamiryo (IARIW, 2006 that uses the 30 country data-sets by sector 1995–2004).

A problem lying in the SNA is that wages or compensation and operating surplus in $GDP$ are actual but in vague to consumption and saving. It is difficult to prove annual ex-post equilibrium by using the data-set based on $GDP$. It is easy to prove the ex-post equilibrium by using the data-set based on $NDI$. Furthermore, it is easy to prove ex-ante equilibrium, once the Cobb-Douglas production function is settled, by using the data-set based on $NDI$, where my model measures the transitional path of all variables endogenously over time (helped and verified by recursive programming). My data-sets are theoretical (not actual) except for some current/initial values ($L, S, C, ΔK$—before dividing investment into qualitative and quantitative—, $S-I, S_G-I_G$) from IMF. My data-set clarifies the relationship between ex-post set at the current situation and ex-ante set at convergence, using equations, where variables at the current situation are compared with variables at convergence. The data-set by year shifts the Cobb-Douglas production function. The ex-ante data-set by country uses each fixed Cobb-Douglas production function.

PS: For data, see tables in *Journal of Economic Sciences* 11 (Sep, 1). For future perspectives and for global rules, see a summary at the end of the above journal.
Table A-1 Notations of values and ratios of the total economy as a base

<table>
<thead>
<tr>
<th>Notation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y/N$</td>
<td>The ratio of government NDI to the total economy NDI</td>
</tr>
<tr>
<td>$N_c/K$</td>
<td>The ratio of government capital to the total economy capital</td>
</tr>
<tr>
<td>$\alpha$</td>
<td>The relative share of returns/rents/capital to NDI</td>
</tr>
<tr>
<td>$\beta$</td>
<td>The ratio of the rate of return to the wage rate</td>
</tr>
<tr>
<td>$w/w_L$</td>
<td>The wage rate (for convenience, I assume $w = w_L = w_N = p$)</td>
</tr>
<tr>
<td>$g$</td>
<td>The growth rate of the wage rate</td>
</tr>
<tr>
<td>$g_r$</td>
<td>The rate of change in the rate of return</td>
</tr>
<tr>
<td>$k = KL$</td>
<td>The capital-labor ratio</td>
</tr>
<tr>
<td>$K = K_c + K_L$</td>
<td>Capital as the sum of the previous stock plus net investment</td>
</tr>
<tr>
<td>$\Omega/$</td>
<td>The capital-output ratio where output/NDI</td>
</tr>
<tr>
<td>$\Omega/\gamma$</td>
<td>The total factor productivity as an input stock of $\gamma$</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>The growth rate of TFP</td>
</tr>
</tbody>
</table>

Notes:
1. My framework of $BOP$ as exports net, $(S-Y)_t - (S-Y)_t - 1$, is based on NDI, where deficit $(S-Y)_t - 1$ equals taxes less $C_t$.
2. Here NDI is actually domestic disposable income since we cannot obtain factor income from abroad by country in IMF data. My framework is consistent with the framework of Rudiger Dornbusch (1988, pp.19-28) based on GDP or GNP. I still discuss this issue in Kamiryo (1992, 1998).
3. For China and Russia, $(\text{rrew}) = 1.0757 \times 2.2354 = 1.1486$. For Japan, $(\text{rrew}) = 1.4672 \times 2.0307 = 0.6068$. For the US, $(\text{rrew}) = 0.9256 \times 2 = 1.4193$.
4. For $\text{rrew}$ by country and by sector, use goal seek to $\text{rrew}$ in a goal, by making $K = KL$ what $(\text{rrew})^{(1/\alpha)}(\text{rrew}) = K = K_c + K_L$.

Table A-2 Notations of values and ratios by sector: the government and private sectors

<table>
<thead>
<tr>
<th>Notation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\delta$</td>
<td>The growth rate of the capital-labor ratio</td>
</tr>
<tr>
<td>$\epsilon$</td>
<td>The growth rate of tech. progress $g_r = (1 - \beta) / (\alpha + \beta)\gamma^{2/\gamma}$</td>
</tr>
<tr>
<td>$\theta$</td>
<td>The ratio of $g_r$ to $g_L$, if it is 1.0, alpha is constant over years</td>
</tr>
<tr>
<td>$\beta$</td>
<td>The ratio of $g_r$ to $g_L$, if it is 0.0, alpha does not change</td>
</tr>
<tr>
<td>$\delta_{BP}$</td>
<td>The ratio of quantitative investment to total net investment</td>
</tr>
<tr>
<td>$\delta_{qBP}$</td>
<td>The ratio of quantitative investment to the growth rate of tech. progress</td>
</tr>
<tr>
<td>$\delta_{BPNP}$</td>
<td>The ratio of $BOP$ (deficit) to NDI</td>
</tr>
<tr>
<td>$\delta_{qBPNP}$</td>
<td>The ratio of $BOP$ (deficit) to NDI</td>
</tr>
<tr>
<td>$\delta_{BP}$</td>
<td>The ratio of $BOP$ (deficit) to NDI</td>
</tr>
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<td>The ratio of $BOP$ (deficit) to NDI</td>
</tr>
<tr>
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<tr>
<td>$\delta_{qBPNP}$</td>
<td>The ratio of $BOP$ (deficit) to NDI</td>
</tr>
</tbody>
</table>

Notes:
1. By an accounting identity, expenditures $C_t$ equals wages $W_t$ in the government sector: $C_t = W_t$ where saving equals returns, $S_t = P G_t$. By setting $w = w_L = w_N = p$, the share of government labor is labor set aside $1(\text{rrew})^{(1/\alpha)}(\text{rrew}) = K = K_c + K_L$.
2. By comparing each of values and ratios of the total economy, the government sector, and the private sector, economic and fiscal policies are evaluated.
3. I stress that the reweigh of the values and ratios of the total economy is not enough to clarify the real movements of economic and fiscal policies.
Contents of two table series in Kamiryo Endogenous World Table (KEWT 1.07)

**For Main Tables**, where output=national disposable income:

- Figure M1 The difference between saving and net investment divided by output by sector
- Figure M2 The rate of change in the difference between saving and net investment by sector
- Figure M3 The growth rate of per capita output by sector
- Figure M4 The ratio of net investment to output by sector
- Figure M5 The growth rate of net investment to output by sector
- Figure M6 The growth rate of net investment divided by output by sector
- Figure M7 The ratio of quantitative investment to investment at convergence $\beta^*$ by sector
- Figure M8 The growth rate of technological progress in flow at convergence $g_A^*$ by sector
- Figure M9 The growth rate of technological progress in flow, $g_{TFP}$, by sector
- Figure M10 $\delta$ as a parameter that neutralizes DRC at the current situation by sector
- Figure M11 The years for convergence $\lambda (\lambda = (1-\alpha) n +(1-\delta) g_A^*)$ by sector
- Figure M12 The marginal relative share of capital and the marginal propensity to consume, both in the private sector
- Figure M13 The growth rate of technological progress and the consumption-multiplier $\Delta C/\Delta K$
- Figure M14 The propensity to consume and the relative share of capital, and each marginal ratio, $\Delta C/\Delta Y$ and $\Delta \Pi/\Delta Y$

**For Business cycle Tables**, where output=national disposable income:

- Figure B1 The capital-output ratio, the elasticity of substitution $\sigma$, and the rate of tech. progress in flow / the growth rate of TFP
- Figure B2 The relative share of capital, the rate of return, and the growth rate of net investment in the private sector
- Figure B3 The relative share of capital $\alpha$ by sector and the rate of return in the government sector $r_G$
- Figure B4 The relationship between $\alpha/(1-\alpha)$ and $(r/w)$ connected with the capital-labor ratio
- Figure B5 The rates of change in the rate of return, the interest rate of central bank $(r_{CB})$, $CPI$, and the theoretical wage rate $w$
- Figure B6 Trend of the relative share of capital in the private sector and its regression equations
- Figure B7 Trend of the growth rate of net investment in the private sector and its regression equations
- Figure B8 Business cycle of the private sector derived from net investment in the private sector, considering the trend of $\alpha$ in the private sector
- Figure B9 Investment and consumption, $\mu=K/C$ and the marginal $\Delta \mu=\Delta K/\Delta C$
Hideyuki Kamiryo: Figures for Main Relationships and for Business Cycles in Kamiryo
Endogenous World Table (KEWT 1.07) Data-Sets 1960–2005
by Country and by Sector

Figure B10 Multiplier as $\Delta Y/\Delta K$, the capital-output ratio, and the rate of technological progress
Figure B11 Multiplier, $\Delta Y/\Delta K$, as the inverse number of the marginal capital-output ratio, by sector
Figure B12 Consumption-Multiplier, $\Delta C/\Delta K$, as the product of $M$ and $\Delta C/\Delta Y$ by sector
Figure B13 The relationship between the growth rate of investment and the $S-I$ in the private sector
Figure B14 The test of crowding-out due to huge budget deficit by comparing two growth rates of investment, $g_{I(PRI)}$ and $g_I$
Figure B15 Multiplier and Consumption-Multiplier versus the growth rate of investment as an indicator of business cycle in the short run
Figure B16 Turning point of business cycle using the propensity to consume: compared with consumption multiplier and the marginal capital-output ratio
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**Figure M1**  The difference between saving and net investment divided by output by sector (2)
Figure M1  The difference between saving and net investment divided by output by sector (3)
Figure M2  The rate of change in the difference between saving and net investment by sector (1)
Figure M2  The rate of change in the difference between saving and net investment by sector (2)
Figure M2  The rate of change in the difference between saving and net investment by sector (3)
Figure M3  The growth rate of per capita output by sector (1)
The growth rate of per capita output: **Japan** 1960-2005

The growth rate of per capita output by sector: **the US** 1960-2005

The growth rate of per capita output by sector: **Australia** 1960-2005

Figure M3  The growth rate of per capita output by sector (2)
Figure M3  The growth rate of per capita output by sector (3)
Figure M4  The ratio of net investment to output by sector (1)
Figure M4  The ratio of net investment to output by sector (2)
Figure M4  The ratio of net investment to output by sector (3)
Figure M5  The growth rate of net investment to output by sector (1)
The growth rate of $i/Y$ by sector: Japan 1960-2005

The growth rate of $i/Y$ by sector: the US 1960-2005

The growth rate of $i/Y$ by sector: Australia 1960-2005

Figure M5  The growth rate of net investment to output by sector (2)
Figure M5  The growth rate of net investment to output by sector (3)
Figure M6  The growth rate of net investment $I=\Delta K$ by sector (1)
Figure M6  The growth rate of net investment $I=\Delta K$ by sector (2)
Figure M6  The growth rate of net investment $I=\Delta K$ by sector (3)
Figure M7  The ratio of quantitative investment to investment at convergence $beta^*$
by sector (1)
Figure M7  The ratio of quantitative investment to investment at convergence $\beta^*$ by sector (2)
Figure M7  The ratio of quantitative investment to investment at convergence $beta^*$ by sector (3)
Figure M8  The growth rate of technological progress in flow at convergence $g_A^*$ by sector (1)
Figure M8  The growth rate of technological progress in flow at convergence $g_A^*$ by sector (2)
Figure M8  The growth rate of technological progress in flow at convergence \( g_A^* \) by sector (3)
Figure M9  The growth rate of technological progress in $TFP$, $g_{TFP}$, by sector (1)
Figure M9  The growth rate of technological progress in $TFP$, $g_{TFP}$, by sector (2)
The rate of technological progress at convergence by sector:

**India** 1960-2005

![Graph showing the rate of technological progress at convergence by sector in India from 1960 to 2005.](image)

The growth rate of technological progress in *TFP* by sector:

**Brazil** 1975-2005

![Graph showing the growth rate of technological progress in TFP by sector in Brazil from 1975 to 2005.](image)

The growth rate of technological progress in *TFP* by sector:

**Mexico** 1977-2005

![Graph showing the growth rate of technological progress in TFP by sector in Mexico from 1977 to 2005.](image)

Figure M9  The growth rate of technological progress in *TFP*, $g_{TFP}$, by sector (3)
Hideyuki Kamiryo: Figures for Main Relationships and for Business Cycles in Kamiryo Endogenous World Table (KEWT 1.07) Data-Sets 1960–2005 by Country and by Sector

**Figure M10**  $\delta$  as a parameter that neutralizes DRC at the current situation by sector (1)
Figure M10  \( \delta \) as a parameter that neutralizes DRC at the current situation by sector (2)
Figure M10  *delta* as a parameter that neutralizes DRC at the current situation by sector (3)
Figure M11  The years for convergence $1/\lambda = (1 - \alpha) n + (1 - \delta) g_A^*$ by sector (1)
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Figure M14 The propensity to consume and the relative share of capital, and each marginal ratio, $\Delta C/\Delta Y$ and $\Delta \Pi/\Delta Y$ (1)
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Figure M14  The propensity to consume and the relative share of capital, and each marginal ratio, $\Delta C/\Delta Y$ and $\Delta \Pi/\Delta Y$ (3)