Data and Programs for

"Confucianism and the East Asian Miracle"

By Ming-Yih Liang

American Economic Journal: Macroeconomics

I. Data

All the data (except data about Taiwan) for Tables 1 – 3 and the amounts of foreign exchange reserves held by the various countries cited are obtained from International Monetary Fund (IMF) International Financial Statistics (IFS) database (http://www.imfstatistics.org/imf/). Country codes are: United States (111), United Kingdom (112), Japan (158), South Korea (542), Singapore (576), Hong Kong (532), China (924), Australia (193), Argentina (213), Egypt (469), Pakistan (564), and Sri Lanka (524). The line numbers of the data used are:

GDP: 99b_c, 99b;
GDP deflator: 99bir, 99bip;
Government Consumption: 91f_c, 91f;
Private Consumption: 96f_c, 96f;
Population: 99z;
Foreign Exchange Reserve: 01d_d.

The IMF IFS database does not include Taiwan's data because Taiwan is not a member nation of the IMF. Taiwan's data are obtained from "AREMOS Taiwan Statistical Databanks" (http://140.111.1.22/moecc/rs/pkg/tedc.htm) and are reported in the accompanied Excel file Taiwan_Data.

II. Programs

The calibrations reported in Figures 1 – 3 are done with AREMOS software (by IHS Global Insight) which happens to be available at the National Taiwan University Library. I will list the exact sequences of commands below. These results can easily be replicated using other econometric softwares such as EViews, Mathematica, etc.

The computations involve 4 steps:

(1) specifying the frequency and the time period,

(2) defining the equations for the model,

(3) giving the values of the parameters and the initial values for the endogenous variables necessary for simulations,

(4) solving the model.

The exact sequences of commands for AREMOS software are reported as follows.

A. *For Figure 1. Calibration for the Convergence Phase*

Commands

(1) set frequency a;
(2) set period 1962 1997;
(3) series<1962>n1=100;
(4) series<1963 1997>n1=n1.1*1.0243;
(5) series eta=134.68 repeat *;
(6) equation<autofit no constant no>nu=28.66*((n2/n1)**.261);
(7) equation<autofit no constant no>n2=n2.1+n2dot.1;
(8) equation<autofit no constant no>n2dot=(y2-c2-(y2/9))/nu;
(9) equation<autofit no constant no>r2=(pi2/nu)+((nu-nu.1)/nu.1);
(10) equation<autofit no constant no>gamac2=r2-.014;
(11) equation<autofit no constant no>c2=c2.1*(1+gamac2);
(12) equation<autofit no constant no>y2=n2*(.8**1.5)*27/3;
(13) series pi2=1.4311 repeat *;
(14) series<1962>c2=110.0385;

(15) series<1962>n2=25;
(16) series<1962>n2dot=1.6569;
(17) series<1962>nu=19.9590;
(18) series<1962>y2=160.9969;
(19) set compile order yes;
(20) model figure1=nu,n2,n2dot,r2,gamac2,c2,y2;
(21) set solve solution f1;
(22) solve<1963 1997>;

Explanations

(1) – (2): specifying the frequency as annual and the time period as 1962 – 1997.
(3) – (5): providing the values for country 1's variables, n1 and η.
(6) – (12): defining equations for country 2.
(13) – (18): giving the value for the parameter π_2 and the initial values for the 5 endogenous variables.
(19) – (22): solving the model for the time period 1963 – 1997.

B. *For Figure 2. Predicting Future Growths of the Four Tigers*

Commands

(1) set frequency a;
(2) set period 1997 2097;
(3) equation<autofit no constant no>c1=c1.1*1.0243;
(4) equation<autofit no constant no>c2=c2.1*1.0305;
(5) equation<autofit no constant no>n11=.0622*c1-.2324*c2;
(6) equation<autofit no constant no>n12=-.0288*c1+.2670*c2;
(7) equation<autofit no constant no>n1=n11+n12;
(8) series<1997>c1=2685.12;
(9) series<1997>c2=297.29;
(10) series<1997>n11=98;
(11) series<1997>n12=2;
(12) series<1997>n1=100;
(13) set compile order yes;

(14) model figure2=c1,c2,n11,n12,n1;
(15) set solve solution f2;
(16) solve<1998 2097>;

Explanations

(1)– (2): specifying the frequency as annual and the time period as 1997 – 2097.
(3) – (7): defining equations for the model of two interacting countries.
(8) – (12): giving the initial values for the 5 endogenous variables.
(13) – (16): solving the model for the time period 1998 – 2097.

Note that the equations in lines (5) and (6) represent equations (24) and (25) of the main text. The coefficient values can be calculated using a hand calculator.

C. *For Figure 3. Calibration of Country 2 with Low and Constant Imitation Costs*

Commands

(1) set frequency a;
(2) set period 1978 2014;
(3) equation<autofit no constant no>n1=n1.1*1.0243;
(4) equation<autofit no constant no>n2=n2.1*1.0801;
(5) series<1978>n1=100;
(6) series<1978>n2=15;
(7) set compile order yes;
(8) model figure3=n1,n2;
(9) set solve solution f3;
(10) solve<1979 2014>;

Explanations

(1)– (2): specifying the frequency as annual and the time period as 1978 – 2014.
(3) – (4): defining equations for the model of two countries.
(5) – (6): giving the initial values for the 2 endogenous variables.
(7) – (10): solving the model for the time period 1979 – 2014.

Once we have identified $C_2 = 89.64$ as the initial consumption that will place country 2 on the stable convergence path and confirmed that C_2, Y_2, and N_2 grow at the same constant rate, the computations for Figure 3 are very straightforward. The only thing that needs to be watched for is the time when N_2 catches up with N_1. In the present calculation, this happens at t = 35.

If you have any questions on the data or the programs, please do not hesitate to email the author at tedc3@ma12.hinet.net.