

ESRI Asian LINK model

The Equation and Variable Lists

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by

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Equation List¹

The Japan Model

1. Real human wealth

$$JP_HW = (1-JP_RTAXW)*JP_YL/(JP_PCP/100) + 1/(1+JP_DIS/100)*JP_HW (+1)$$

2. Real private consumption

$$\begin{aligned} JP_CP = & 681112 + 0.04019*(JP_HW+JP_VAL/(JP_PCP/100)) \\ & + JP_BOND/(JP_PCP/100) + JP_KBPC*JP_REX/(JP_PCP/100)/10 \\ & + 0.1*(1-JP_RTAXW)*JP_YL/(JP_PCP/100) \end{aligned}$$

3. Value of business firms

$$\begin{aligned} JP_VAL = & (1-JP_RTAXC)*JP_YC + 1/(1+JP_RISK/100+JP_RBOND/100)* \\ & JP_VAL (+1) \end{aligned}$$

4. Average Q

$$JP_AVQ = JP_VAL/(JP_PIP/100)/JP_KP(-1)$$

5. Real business fixed investment

$$JP_IP/JP_KP(-1) = JP_DEPR + 0.08076 + 0.1100*(JP_AVQ-1)$$

6. Capital stock

$$JP_KP = JP_IP + (1 - JP_DEPR)*JP_KP(-1)$$

7. Exports of goods, BOP base

$$\begin{aligned} \text{LOG}(JP_BPXG*JP_REX/JP_PXG) = & 0.5032 + 0.4866*\text{LOG}(WIM_JP/W_PIM) \\ & -0.1640*(\text{LOG}(JP_PXG/JP_REX/W_PIM) \\ & +\text{LOG}(JP_PXG(-1)/JP_REX(-1)/W_PIM(-1))) \end{aligned}$$

8. Exports of services, BOP base

$$\begin{aligned} \text{LOG}(JP_BPXS*JP_REX/JP_PGDP) = & -3.3921 \\ & + 0.5499*\text{LOG}(WIM_JP/W_PIM) \\ & - 0.6596*\text{LOG}(JP_PGDP/JP_REX/W_PIM) \end{aligned}$$

¹ In this paper, models of Japan, Korea, Thailand, China and US are included. The Full version with trade model is available on request.

9. Real exports of goods and services

$$\text{LOG}(\text{JP_XGS}) = -0.02837 + \text{LOG}((\text{JP_BPXG} + \text{JP_BPXS}) * \text{JP_REX} / (\text{JP_PXGS} / 100))$$

10. Imports of goods, BOP base

$$\begin{aligned} \text{LOG}(\text{JP_BPMG} * \text{JP_REX} / \text{JP_PMG}) = & -7.2663 + \text{LOG}(\text{JP_GDP}) \\ & - \text{LOG}(\text{JP_PMG} / \text{JP_PGDP}) \end{aligned}$$

11. Imports of services, BOP base

$$\begin{aligned} \text{LOG}(\text{JP_BPMS} / \text{W_PIM}) = & -31.70 + 2.5823 * \text{LOG}(\text{JP_GDP}) \\ & - 0.4355 * \text{LOG}(\text{W_PIM} * \text{JP_REX} / \text{JP_PGDP}) \end{aligned}$$

12. Real imports of goods and services

$$\text{LOG}(\text{JP_MGS}) = -0.03450 + \text{LOG}((\text{JP_BPMG} + \text{JP_BPMS}) * \text{JP_REX} / (\text{JP_PMGS} / 100))$$

13. Real government consumption

$$\text{JP_CG} = \text{JP_CGV} / \text{JP_PCG} * 100$$

14. Real government fixed investment

$$\text{JP_IG} = \text{JP_IGV} / \text{JP_PIG} * 100$$

15. Real gross domestic products

$$\text{JP_GDP} = \text{JP_CP} + \text{JP_CG} + \text{JP_IP} + \text{JP_IG} + \text{JP_JP} + \text{JP_JG} + \text{JP_XGS} - \text{JP_MGS}$$

16. Potential gross domestic products

$$\begin{aligned} \text{LOG}(\text{JP_GDPF}) = & (1 - \text{JP_LABOR_SHARE}) * \text{LOG}(\text{JP_KP}) \\ & + \text{JP_LABOR_SHARE} * \text{LOG}(\text{JP_LF}) \end{aligned}$$

17. Nominal gross domestic products

$$\text{JP_GDPV} = \text{JP_GDP} * \text{JP_PGDP} / 100$$

18. Deflator for gross domestic products

$$\begin{aligned} \text{LOG}(\text{JP_PGDP}) - \text{LOG}(\text{JP_PGDP}(-1)) = & -0.0400 \\ & + 0.5 * (\text{LOG}(\text{JP_PGDP} (+1)) - \text{LOG}(\text{JP_PGDP})) \\ & + 0.5 * (\text{LOG}((-1)) - \text{LOG}(\text{JP_PGDP}(-2))) \\ & + 0.05 * \text{LOG}(\text{JP_GDP} / \text{JP_GDPF}) + 0.02 * \text{LOG}(\text{JP_M2CD} / \text{JP_GDPV}) \end{aligned}$$

19. Deflator for private consumption

$$\text{LOG}(\text{JP_PCP}) = 0.2034 + 0.2785 * \text{LOG}(\text{JP_W}) + 0.6803 * \text{LOG}(\text{JP_PGDP}) \\ + 0.0412 * \text{LOG}(\text{JP_PMG})$$

20. Deflator for business fixed investment

$$\text{LOG}(\text{JP_PIP}) = -0.009276 + \text{LOG}(\text{JP_PGDP})$$

21. Deflator for exports of goods

$$\text{LOG}(\text{JP_PXG}) = -2.5397 + 0.4461 * \text{LOG}(\text{JP_PGDP}) \\ + 0.5539 * \text{LOG}(\text{W_PIM} * \text{JP_REX})$$

22. Deflator for exports of goods and services

$$\text{LOG}(\text{JP_PXGS}) = -2.1121 * \text{JP_PXGS0} + 0.5408 * \text{LOG}(\text{JP_PGDP}) \\ + 0.4592 * \text{LOG}(\text{W_PIM} * \text{JP_REX})$$

23. Deflator for imports of goods

$$\text{LOG}(\text{JP_PMG}) = -4.5765 + \text{LOG}(\text{W_PIM} * \text{JP_REX})$$

24. Deflator for imports of goods and services

$$\text{LOG}(\text{JP_PMGS}) = -4.5936 + \text{LOG}(\text{W_PIM} * \text{JP_REX})$$

25. Deflator for government consumption

$$\text{LOG}(\text{JP_PCG}) = 0.3598 + 0.4854 * \text{LOG}(\text{JP_W}) + 0.5146 * \text{LOG}(\text{JP_PGDP})$$

26. Deflator for government fixed investment

$$\text{LOG}(\text{JP_PIG}) = 0.21131 + 0.7197 * \text{LOG}(\text{JP_PIP}) + 0.2803 * \text{LOG}(\text{JP_W})$$

27. Depreciation of capital, private

$$\text{JP_DEPP} = 12975 + 0.9612 * \text{JP_DEPR} * \text{JP_KP}(-1) * \text{JP_PIP} / 100$$

28. Depreciation of capital, total

$$\text{JP_DEP} = \text{JP_DEPP} + \text{JP_DEPG}$$

29. Wage rate

$$\text{LOG}(\text{JP_W}) = \text{LOG}(\text{JP_W}(-1)) + 0.04772 + \text{LOG}(\text{JP_PGDP}(+1)) - \text{LOG}(\text{JP_PGDP})$$

$$+ 0.7914 * \text{LOG}(\text{JP_L} / \text{JP_LF})$$

30. Labor employed

$$\text{JP_L} = \text{JP_LABOR_SHARE} * (\text{JP_GDPV} - \text{JP_TAXI} - \text{JP_DEP}) / \text{JP_W}$$

31. Labor income

$$\text{JP_YL} = \text{JP_W} * \text{JP_L}$$

32. Corporate income

$$\text{JP_YC} = \text{JP_GDPV} - \text{JP_YL} - \text{JP_TAXI} - \text{JP_DEP}$$

33. Tax on labor income

$$\text{JP_TAXW} = \text{JP_RTAXW} * \text{JP_YL}$$

34. Tax on corporate business income

$$\text{JP_TAXC} = \text{JP_RTAXC} * \text{JP_YC}$$

35. Indirect tax

$$\text{JP_TAXI} = \text{JP_RTAXI} * \text{JP_GDPV}$$

36. Government interest income, net

$$\begin{aligned} \text{JP_INTG} / \text{JP_BOND}(-1) &= 0.001415 * \text{JP_RBOND} \\ &+ 0.8408 * \text{JP_INTG}(-1) / \text{JP_BOND}(-2) \end{aligned}$$

37. Government balances

$$\text{JP_BG} = \text{JP_TAXW} + \text{JP_TAXC} + \text{JP_TAXI} + \text{JP_DEPG} - \text{JP_CGV} - \text{JP_IGV} - \text{JP_JOG}$$

38. Government Bond

$$\text{JP_BOND} = -\text{JP_BG} + \text{JP_BOND}(-1)$$

39. Net income from abroad

$$\text{JP_BPY} = \text{JP_BPY0} + 0.001 * \text{JP_KBPC}(-1)$$

40. Current account, BOP base

$$\text{JP_BPC} = \text{JP_BPXG} + \text{JP_BPXS} - \text{JP_BPMG} - \text{JP_BPMS} + \text{JP_BPY} + \text{JP_BPTRN}$$

41. Accumulated current account, BOP base

$$JP_KBPC = JP_BPC + JP_KBPC(-1)$$

42. Bank loan rate

$$JP_RLB = -23.19 - 3.7484*LOG(JP_M2CD/JP_GDPV)+0.9227*JP_RDIS$$

43. Government bond rate

$$JP_RBOND = 0.2279 + 10.646*JP_BG/JP_GDPV \\ +(JP_RLB+JP_RLB(+1)+JP_RLB(+2)+JP_RLB(+3)+JP_RLB(+4))/5$$

44. Foreign exchange rate

$$LOG(JP_REX) = LOG(JP_REX(+1)) \\ -0.25*(JP_RBOND/100-US_RBOND/100+JP_REXRISK-0.02)$$

45. Rate of tax on labor income

$$JP_RTAXW = JP_RTAXW(-1) \\ +1/JP_LABOR_SHARE*(0.025*(JP_BOND/JP_GDPV- 0.75) \\ -0.05*JP_BG/JP_GDPV)$$

46. Rate of tax on corporate income

$$JP_RTAXC = JP_RTAXC(-1) \\ +1/(1-JP_LABOR_SHARE)*(0.025*(JP_BOND/ JP_GDPV-0.75) \\ -0.05*JP_BG/JP_GDPV)$$

47. Rate of indirect tax

$$JP_RTAXI = JP_RTAXI(-1)+0.025*(JP_BOND/JP_GDPV-0.5) \\ -0.05*JP_BG/ JP_GDPV$$

The Korea Model

1. Real human wealth

$$KR_HW = (1-KR_RTAXW)*KR_YL/(KR_PCP/100) \\ +KR_HW(+1)/(1+ KR_DIS/100)$$

2. Real private consumption

$$KR_CP = -179942 + 0.1379*(KR_HW+KR_VAL/(KR_PCP/100))$$

$$\begin{aligned}
& + KR_BOND/(KR_PCP/100) \\
& + KR_CP1*KR_KBPC*KR_REX/1000/(KR_PCP/100)) \\
& + 0.2*(1-KR_RTAXW)*KR_YL/(KR_PCP/100)
\end{aligned}$$

3. Value of business firms

$$\begin{aligned}
KR_VAL &= (1-KR_RTAXC)*KR_YC \\
& + KR_VAL (+1)/(1+KR_RBOND/100+KR_RISK/100))
\end{aligned}$$

4. Average Q

$$KR_AVQ = KR_VAL/(KR_PI/100*KR_KP(-1))$$

5. Real business fixed investment

$$\begin{aligned}
KR_IP/KR_KP(-1) &= KR_DEPR + 0.2944 + 0.2983*(KR_AVQ-1) \\
& + 200*KR_REX*KR_FA/KR_KP(-1)/KR_PI(-1)
\end{aligned}$$

6. Capital stock

$$KR_KP = KR_IP+(1-KR_DEPR)*KR_KP(-1)$$

7. Exports of goods, BOP Base

$$\begin{aligned}
\text{LOG}(KR_BPXG*KR_REX/(KR_PXG/100)) &= 4.5957 + \text{LOG}(WIM_KR/W_PIM) \\
& - 0.9962*\text{LOG}(KR_PXG/(W_PIM*KR_REX))
\end{aligned}$$

8. Exports of services, BOP Base

$$\begin{aligned}
\text{LOG}(KR_BPXS*KR_REX/(KR_PXS/100)) &= 1.4999 + \text{LOG}(WIM_KR/W_PIM) \\
& - 1.2063*\text{LOG}(KR_PXS/(W_PIM*KR_REX))
\end{aligned}$$

9. Real exports of goods

$$\text{LOG}(KR_XG) = -2.3015 + \text{LOG}(KR_BPXG*KR_REX/KR_PXG)$$

10. Real exports of services

$$\text{LOG}(KR_XS) = -2.037 + \text{LOG}(KR_BPXS*KR_REX/KR_PXS)$$

11. Imports of goods, BOP Base

$$\begin{aligned}
\text{LOG}(KR_BPMG*KR_REX/(KR_PMG/100)) &= 5.7552 + \text{LOG}(KR_GDP) \\
& - \text{LOG}(KR_PMG/KR_PGDP)
\end{aligned}$$

12. Imports of services, BOP Base

$$\text{LOG}(\text{KR_BPMS}*\text{KR_REX}/(\text{KR_PMS}/100)) = 4.2857 + \text{LOG}(\text{KR_GDP}) \\ - \text{LOG}(\text{KR_PMS}/\text{KR_PGDP})$$

13. Real imports of goods

$$\text{LOG}(\text{KR_MG}) = -2.3020 + \text{LOG}(\text{KR_BPMG}*\text{KR_REX}/\text{KR_PMG})$$

14. Real imports of services

$$\text{LOG}(\text{KR_MS}) = -2.3031 + \text{LOG}(\text{KR_BPMS}*\text{KR_REX}/\text{KR_PMS})$$

15. Real government consumption

$$\text{KR_CG} = \text{KR_CGV}/(\text{KR_PCG}/100)$$

16. Real government investment

$$\text{KR_IG} = \text{KR_IGV}/(\text{KR_PI}/100)$$

17. Real gross domestic products

$$\text{KR_GDP} = \text{KR_CP}+\text{KR_CG}+\text{KR_IP}+\text{KR_IG}+\text{KR_J}+\text{KR_XG}+\text{KR_XS} \\ -\text{KR_MG}-\text{KR_MS} + \text{KR_DISC}$$

18. Potential gross domestic products

$$\text{LOG}(\text{KR_GDPF}) = 1.447051+\text{KR_LABOR_SHARE}*\text{LOG}(\text{KR_LABOR}) \\ +(1-\text{KR_LABOR_SHARE})*\text{LOG}(\text{KR_KP}(-1))$$

19. Nominal gross domestic products

$$\text{KR_GDPV} = \text{KR_GDP}*\text{KR_PGDP}/100$$

20. Deflator for gross domestic products

$$\text{LOG}(\text{KR_PGDP})-\text{LOG}(\text{KR_PGDP}(-1)) = -0.2471 \\ + 0.5*(\text{LOG}(\text{KR_PGDP} (+1)) -\text{LOG}(\text{KR_PGDP})) \\ + 0.4*(\text{LOG}(\text{KR_PGDP}(-1))-\text{LOG}(\text{KR_PGDP}(-2))) \\ + 0.1*(\text{LOG}(\text{KR_PMG}(-1)) -\text{LOG}(\text{KR_PMG}(-2))) \\ + 0.1*\text{LOG}(\text{KR_GDP}/\text{KR_GDPF})$$

21. Deflator for private consumption

$$\text{LOG}(\text{KR_PCP}) = 1.0357 + 0.5228*\text{LOG}(\text{KR_PGDP}) + 0.4772*\text{LOG}(\text{KR_W})$$

22. Deflator for business fixed investment

$$\text{LOG}(\text{KR_PI}) = 0.00794 + 0.8394*\text{LOG}(\text{KR_PGDP}) + 0.1606*\text{LOG}(\text{KR_PMG})$$

23. Deflator for government consumption

$$\text{LOG}(\text{KR_PCG}) = 1.685 + 0.2661*\text{LOG}(\text{KR_PGDP}) + 0.7339*\text{LOG}(\text{KR_W})$$

24. Deflator for exports of goods

$$\text{LOG}(\text{KR_PXG}) = - 0.1611 + \text{LOG}(\text{KR_PGDP})$$

25. Deflator for exports of goods and service

$$\text{LOG}(\text{KR_PXS}) = 0.1790 + \text{LOG}(\text{KR_PGDP})$$

26. Deflator for imports of goods

$$\text{LOG}(\text{KR_PMG}) = -6.7148 + \text{LOG}(\text{W_PIM}*\text{KR_REX})$$

27. Deflator for imports of goods and service

$$\text{LOG}(\text{KR_PMS}) = -6.6288 + \text{LOG}(\text{W_PIM}*\text{KR_REX})$$

28. Depreciation of capital, private

$$\text{KR_DEPP} = 3561 + 0.4854*\text{KR_DEPR}*\text{KR_PI}/100*\text{KR_KP}(-1)$$

29. Depreciation of capital allowance, total

$$\text{KR_DEP} = \text{KR_DEPP} + \text{KE_DEPG}$$

30. Wage rate

$$\begin{aligned} \text{LOG}(\text{KR_W})-\text{LOG}(\text{KR_W}(-1)) &= 0.03226 \\ &+ 0.5*(\text{LOG}(\text{KR_PGDP} (+1))-\text{LOG}(\text{KR_PGDP})) \\ &+ 0.3*(\text{LOG}(\text{KR_PGDP})-\text{LOG}(\text{KR_PGDP}(-1))) \\ &+ 0.2*(\text{LOG}(\text{KR_W}(-1))-\text{LOG}(\text{KR_W}(-2))) \\ &+ 0.05*\text{LOG}(\text{KR_L}/\text{KR_LF}) \end{aligned}$$

31. Labor employed

$$\text{KR_L} = \text{KR_LABOR_SHARE}*(\text{KR_GDPV}-\text{KR_DEP}-\text{KR_TAXI})/\text{KR_W}$$

32. Labor income

$$KR_YL = KR_W * KR_L$$

33. Corporate income

$$KR_YC = KR_GDPV - KR_DEP - KR_TAXI - KR_YL$$

34. Tax on labor income

$$KR_TAXW = KR_RTAXW * KR_YL$$

35. Tax on corporate income

$$KR_TAXC = KR_RTAXC * KR_YC$$

36. Indirect tax

$$KR_TAXI = KR_RTAXI * KR_GDPV$$

37. Government tax revenue

$$KR_TAX = KR_TAXC + KR_TAXW + KR_TAXI$$

38. Government interest payment

$$KR_INTG = 949.4 + 0.6347 * KR_RBOND / 100 * KR_BOND(-1)$$

39. Government balances

$$KR_BG = KR_TAX - KR_RBOND / 100 * KR_BOND(-1) - KR_GV - KR_GEOV$$

40. Government bond

$$KR_BOND = -KR_BG + KR_BOND(-1)$$

41. Net Income from abroad

$$KR_BPY = -1776 + 0.01 * KR_KBPC(-1)$$

42. Current account, BOP Base

$$KR_BPC = KR_BPXG + KR_BPXS - KR_BPMG - KR_BPMS + KR_BPY + KR_BPTRN$$

43. Accumulated current account, BOP Base

$$KR_KBPC = KR_BPC + KR_KBPC(-1)$$

44. Bank loan rate

$$KR_RLB = 4.3099 + KR_RDIS - \text{LOG}(KR_M2/KR_GDPV)$$

45. Government bond rate

$$KR_RBOND = 4.6925 - 50 * KR_BG / KR_GDPV \\ + 0.2 * (KR_RLB + KR_RLB(+1) + KR_RLB(+2) + KR_RLB(+3) + KR_RLB(+4))$$

46. Foreign exchange rate

$$\text{LOG}(KR_REX) = \text{LOG}(KR_REX(+1)) \\ - 0.5 * (KR_RBOND / 100 - US_RBOND / 100 + KR_REXRISK)$$

47. Rate of tax on labor income

$$KR_RTAXW = KR_RTAXW(-1) \\ + 1 / KR_LABOR_SHARE * (0.5 * KR_BOND / KR_GDPV \\ - 0.5 * KR_BG / KR_GDPV)$$

48. Rate of tax on corporate income

$$KR_RTAXC = KR_RTAXC(-1) \\ + 1 / (1 - KR_LABOR_SHARE) * (0.5 * KR_BOND / KR_GDPV \\ - 0.5 * KR_BG / KR_GDPV)$$

49. Rate of indirect tax

$$KR_RTAXI = KR_RTAXI(-1) + 0.5 * KR_BOND / KR_GDPV - 0.5 * KR_BG / KR_GDPV$$

The Thailand Model

1. Real human wealth

$$TH_HW = (1 - TH_RTAXW) * TH_YL / (TH_PCP / 100) + 1 / (1 + TH_DIS / 100) * TH_HW(+1)$$

2. Real private consumption

$$TH_CP = 680.64 + 0.02435 * (TH_HW + TH_VAL / (TH_PCP / 100)) \\ + TH_BOND / (TH_PCP / 100) \\ + TH_KBPC * TH_REX / 1000 / (TH_PCP / 100) \\ + 0.4 * (1 - TH_RTAXW) * TH_YL / (TH_PCP / 100)$$

3. Value of business firms

$$\begin{aligned} \text{TH_VAL} &= (1-\text{TH_RTAXC}) * \text{TH_YC} \\ &+ 1/(1+\text{TH_RBOND}/100+\text{TH_RISK}/100) * \text{TH_VAL}(+1) \end{aligned}$$

4. Average Q

$$\text{TH_AVQ} = \text{TH_VAL}/(\text{TH_PIP}/100)/\text{TH_KP}(-1)$$

5. Real business fixed investment

$$\begin{aligned} \text{TH_IP}/\text{TH_KP}(-1) &= \text{TH_DEPR} + 0.03514 + 0.01 * (\text{TH_AVQ}-3) \\ &+ 1260.0 * \text{TH_REX} * \text{TH_FA}/1000/(\text{TH_PIP}/100)/\text{TH_KP}(-1) \end{aligned}$$

6. Capital stock

$$\text{TH_KP} = \text{TH_IP} + (1-\text{TH_DEPR}) * \text{TH_KP}(-1)$$

7. Exports of goods, BOP base

$$\begin{aligned} \text{LOG}(\text{TH_BPXG} * \text{TH_REX}/(\text{TH_PXGS}/100)) &= -0.08782 \\ &+ \text{LOG}(\text{WIM_TH}/(\text{W_PIM}/100)) \\ &- 0.5 * \text{LOG}(\text{TH_PXGS}/(\text{W_PIM} * \text{TH_REX})) \\ &- 0.5 * \text{LOG}(\text{TH_PXGS}(-1)/(\text{W_PIM}(-1) * \text{TH_REX}(-1))) \end{aligned}$$

8. Exports of services, BOP base

$$\begin{aligned} \text{LOG}(\text{TH_BPXS} * \text{TH_REX}/(\text{TH_PXGS}/100)) &= -1.6335 \\ &+ \text{LOG}(\text{WIM_TH}/(\text{W_PIM}/100)) \\ &- 0.5 * \text{LOG}(\text{TH_PGDP}/(\text{W_PIM} * \text{TH_REX})) \\ &- 0.5 * \text{LOG}(\text{TH_PGDP}(-1)/(\text{W_PIM}(-1) * \text{TH_REX}(-1))) \end{aligned}$$

9. Real exports of goods and services

$$\begin{aligned} \text{LOG}(\text{TH_XGS}) &= -6.9067 \\ &+ \text{LOG}((\text{TH_BPXG} + \text{TH_BPXS}) * \text{TH_REX}/(\text{TH_PXGS}/100)) \end{aligned}$$

10. Imports of goods, BOP base

$$\begin{aligned} \text{LOG}(\text{TH_BPMG} * \text{TH_REX}/(\text{TH_PMGS}/100)) &= 6.0475 + \text{LOG}(\text{TH_GDP}) \\ &- \text{LOG}(\text{TH_PMGS}/\text{TH_PGDP}) \end{aligned}$$

11. Imports of services, BOP base

$$\begin{aligned} \text{LOG}(\text{TH_BPMS} * \text{TH_REX}/(\text{TH_PMGS}/100)) &= 7.6637 + \text{LOG}(\text{TH_GDP}) \\ &- \text{LOG}(\text{W_PIM} * \text{TH_REX}/\text{TH_PGDP}) \end{aligned}$$

12. Real imports of goods and services

$$\begin{aligned} \text{LOG}(\text{TH_MGS}) &= - 6.913 \\ &+ \text{LOG}((\text{TH_BPMG}+\text{TH_BPMS})*\text{TH_REX}/(\text{TH_PMGS}/100)) \end{aligned}$$

13. Real government consumption

$$\text{TH_CG} = \text{TH_CGV}/(\text{TH_PCG}/100)$$

14. Real government fixed investment

$$\text{TH_IG} = \text{TH_IGV}/(\text{TH_PIG}/100)$$

15. Real gross domestic products

$$\text{TH_GDP} = \text{TH_CP}+\text{TH_IP}+\text{TH_CG}+\text{TH_IG}+\text{TH_J}+\text{TH_XGS}-\text{TH_MGS}$$

16. Potential gross domestic products

$$\begin{aligned} \text{LOG}(\text{TH_GDPF}) &= 2.176565 + (1-\text{TH_LABOR_SHARE})*\text{LOG}(\text{TH_KP}) \\ &+ \text{TH_LABOR_SHARE}*\text{LOG}(\text{TH_LF}) \end{aligned}$$

17. Nominal gross domestic products

$$\text{TH_GDPV} = \text{TH_GDP}*\text{TH_PGDP}/100$$

18. Deflator for gross domestic products

$$\begin{aligned} \text{LOG}(\text{TH_PGDP})-\text{LOG}(\text{TH_PGDP}(-1)) &= 0.03861 \\ &+ 0.5*(\text{LOG}(\text{TH_PGDP} (+1))-\text{LOG}(\text{TH_PGDP})) \\ &+ 0.5*(\text{LOG}(\text{TH_PMGS})-\text{LOG}(\text{TH_PMGS}(-1))) \\ &+ 0.05*\text{LOG}(\text{TH_GDP}/\text{TH_GDPF}) \\ &+ 0.01*\text{LOG}(\text{TH_GDP}/\text{TH_GDPF}) \end{aligned}$$

19. Deflator for private consumption

$$\text{LOG}(\text{TH_PCP}) = -0.003653 + 0.7938*\text{LOG}(\text{TH_PGDP}) + 0.2062*\text{LOG}(\text{TH_PMGS})$$

20. Deflator for business fixed investment

$$\text{LOG}(\text{TH_PIP}) = 0.0062 + 0.4446*\text{LOG}(\text{TH_PGDP})+0.5554*\text{LOG}(\text{TH_PMGS})$$

21. Deflator for exports of goods and services

$$\begin{aligned} \text{LOG}(\text{TH_PXGS}) &= -1.4386 + 0.5099*\text{LOG}(\text{TH_PGDP}) \\ &+ 0.4901*\text{LOG}(\text{W_PIM}*\text{TH_REX}) \end{aligned}$$

22. Deflator for imports of goods and services

$$\text{LOG}(\text{TH_PMGS}) = -2.8679 + \text{LOG}(\text{W_PIM} * \text{TH_REX})$$

23. Deflator for government consumption

$$\text{LOG}(\text{TH_PCG}) = 0.4712 + 0.2103 * \text{LOG}(\text{TH_W}) + 0.7897 * \text{LOG}(\text{TH_PGDP})$$

24. Deflator for government fixed investment

$$\text{LOG}(\text{TH_PIG}) = -0.001999 + \text{LOG}(\text{TH_PIP})$$

25. Depreciation of capital, private

$$\text{TH_DEPP} = 5.3449 + 0.5949 * \text{TH_DEPR} * \text{TH_KP}(-1) * \text{TH_PIP} / 100$$

26. Depreciation of capital, total

$$\text{TH_DEP} = \text{TH_DEPP} + \text{TH_DEPG}$$

27. Wage rate

$$\begin{aligned} \text{LOG}(\text{TH_W}) - \text{LOG}(\text{TH_W}(-1)) = & \text{LOG}(\text{TH_PGDP}(+1)) - \text{LOG}(\text{TH_PGDP}) \\ & + 0.00411 + 0.05 * \text{LOG}(\text{TH_L} / \text{TH_LF}) \end{aligned}$$

28. Labor employed

$$\text{TH_L} = \text{TH_LABOR_SHARE} * (\text{TH_GDPV} - \text{TH_TAXI} - \text{TH_DEP}) / \text{TH_W}$$

29. Labor income

$$\text{TH_YL} = \text{TH_W} * \text{TH_L}$$

30. Corporate income

$$\text{TH_YC} = \text{TH_GDPV} - \text{TH_YL} - \text{TH_TAXI} - \text{TH_DEP}$$

31. Tax on labor income

$$\text{TH_TAXW} = \text{TH_RTAXW} * \text{TH_YL}$$

32. Tax on corporate income

$$\text{TH_TAXC} = \text{TH_RTAXC} * \text{TH_YC}$$

33. Indirect tax

$$TH_TAXI = TH_RTAXI*TH_GDPV$$

34. Tax, total

$$TH_TAX = TH_TAXW+TH_TAXC+TH_TAXI$$

35. Government interest payment

$$TH_INTG = 52.9027 + 0.01*TH_BOND(-1)$$

36. Government balances

$$TH_BG = TH_TAXW+TH_TAXC+TH_TAXI+TH_DEPG-TH_CGV-TH_IGV-TH_INTG \\ + TH_OG$$

37. Government Bond

$$TH_BOND = -TH_BG+TH_BOND(-1)$$

38. Net income from abroad

$$TH_BPY = -1286.0 + 0.01*TH_KBPC(-1)$$

39. Current account, BOP base

$$TH_BPC = TH_BPXG+TH_BPXS-(TH_BPMG+TH_BPMS)+TH_BPY+TH_BPTRN$$

40. Accumulated current account, BOP base

$$TH_KBPC = TH_BPC+TH_KBPC(-1)$$

41. Bank loan rate

$$TH_RLB = 5.0623 - 0.5987*LOG(TH_M2/TH_GDPV) + 0.7331*TH_RDIS$$

42. Government bond rate

$$TH_RBOND = -0.8124 - 7.9715*TH_BOND/TH_GDPV \\ + 0.2*(TH_RLB+TH_RLB(+1)+ TH_RLB(+2)+TH_RLB(+3)+TH_RLB(+4))$$

43. Foreign exchange rate

$$LOG(TH_REX) = LOG(TH_REX(+1)) \\ -0.5*(TH_RBOND/100-US_RBOND/100+TH_REXRISK)$$

44. Rate of tax on labor income

$$\begin{aligned} \text{TH_RTAXW} = & \text{TH_RTAXW}(-1) + \\ & 1/\text{TH_LABOR_SHARE}*(-0.003+0.004*\text{TH_BOND}(-1)/\text{TH_GDPV}(-1) \\ & -0.02*\text{TH_BG}(-1)/\text{TH_GDPV}(-1)) \end{aligned}$$

45. Rate of tax on corporate income

$$\begin{aligned} \text{TH_RTAXC} = & \text{TH_RTAXC}(-1) \\ & + 1/(1-\text{TH_LABOR_SHARE})*(0.005 \\ & +0.006*\text{TH_BOND}(-1)/\text{TH_GDPV}(-1) -0.02*\text{TH_BG}(-1)/\text{TH_GDPV}(-1)) \end{aligned}$$

46. Rate of indirect tax

$$\begin{aligned} \text{TH_RTAXI} = & \text{TH_RTAXI}(-1) -0.003 + 0.005*\text{TH_BOND}(-1)/\text{TH_GDPV}(-1) \\ & -0.02*\text{TH_BG}(-1)/\text{TH_GDPV}(-1) \end{aligned}$$

The China Model

1. Real human wealth

$$\begin{aligned} \text{CH_HW} = & (1-\text{CH_RTAXW})*\text{CH_YL}/(\text{CH_PGDP}/100) \\ & +1/(1+\text{CH_DIS}/100)*\text{CH_HW} (+1) \end{aligned}$$

2. Real private consumption

$$\begin{aligned} \text{CH_CP} = & -145.86 + 0.03764*(\text{CH_HW}+ \text{CH_VAL}/(\text{CH_PGDP}/100) \\ & + \text{CH_KBPC}*\text{CH_REX}/1000/(\text{CH_PGDP}/100)) \\ & +0.45*(1-\text{CH_RTAXW})*\text{CH_YL}/(\text{CH_PGDP}/100) \end{aligned}$$

3. Value of business firms

$$\begin{aligned} \text{CH_VAL} = & (1-\text{CH_RTAXC})*\text{CH_YC} \\ & +1/(1+\text{CH_RBOND}/100+\text{CH_RISK}/100)*\text{CH_VAL} (+1) \end{aligned}$$

4. Average Q

$$\text{CH_AVQ} = \text{CH_VAL}/(\text{CH_PGDP}/100)/\text{CH_K}(-1)$$

5. Real fixed investment

$$\text{CH_I}/\text{CH_K}(-1) = \text{CH_DEPR}+0.1734+0.2*(\text{CH_AVQ}-1)$$

6. Capital stock

$$CH_K = CH_I + (1 - CH_DEPR) * CH_K(-1)$$

7. Exports of goods, BOP base

$$\begin{aligned} \text{LOG}(CH_BPXG * CH_REX / (CH_PGDP / 100)) &= -0.15 + \text{LOG}(WIM_CH / (W_PIM / 100)) \\ &- \text{LOG}(CH_PGDP / (CH_REX * W_PIM)) \end{aligned}$$

8. Export of services, BOP base

$$\begin{aligned} \text{LOG}(CH_BPXS * CH_REX / (CH_PGDP / 100)) &= -2.25 + \text{LOG}(WIM_CH / (W_PIM / 100)) \\ &- \text{LOG}(CH_PGDP / (CH_REX * W_PIM)) \end{aligned}$$

9. Real exports of goods and services

$$CH_XGS = (CH_BPXG + CH_BPXS) * CH_REX / 1000 / (CH_PGDP / 100)$$

10. Imports of goods, BOP base

$$\begin{aligned} \text{LOG}(CH_BPMG / (W_PIM / 100)) &= 1.3 + \text{LOG}(CH_GDP) \\ &- \text{LOG}(W_PIM / 100 * CH_REX / CH_PMG) \end{aligned}$$

11. Imports of services, BOP base

$$\begin{aligned} \text{LOG}(CH_BPMS / (W_PIM / 100)) &= -0.75 + \text{LOG}(CH_GDP) \\ &- \text{LOG}(W_PIM / 100 * CH_REX / CH_PMG) \end{aligned}$$

12. Real imports of goods and services

$$CH_MGS = (CH_BPMG + CH_BPMS) * CH_REX / 1000 / (CH_PMG / 100)$$

13. Real government consumption

$$CH_CG = CH_CGV / (CH_PGDP / 100)$$

14. Real gross domestic products

$$CH_GDP = CH_CP + CH_CG + CH_I + CH_J + CH_XGS - CH_MGS + CH_DISC$$

15. Potential gross domestic products

$$\begin{aligned} \text{LOG}(CH_GDPF) &= (1 - CH_LABOR_SHARE) * \text{LOG}(CH_K(-1)) \\ &+ CH_LABOR_SHARE * \text{LOG}(CH_LF) \end{aligned}$$

16. Nominal gross domestic products

$$CH_GDPV = CH_GDP * CH_PGDP / 100$$

17. Deflator for gross domestic products

$$\begin{aligned}\text{LOG}(\text{CH_PGDP}) &= \text{LOG}(\text{CH_PGDP}(-1)) - 0.01 \\ &+ 0.6 * (\text{LOG}(\text{CH_PGDP}(-1)) - \text{LOG}(\text{CH_PGDP}(-2))) \\ &+ 0.4 * (\text{LOG}(\text{W_PIM} * \text{CH_REX}) - \text{LOG}(\text{W_PIM}(-1) * \text{CH_REX}(-1))) \\ &+ 0.01 * \text{LOG}(\text{CH_GDP} / \text{CH_GDPF}) \\ &+ 0.01 * \text{LOG}(\text{CH_M2} / \text{CH_M2}(-1))\end{aligned}$$

18. Deflator for imports of goods

$$\text{LOG}(\text{CH_PMG}) = -2.0757 + \text{LOG}(\text{W_PIM} * \text{CH_REX})$$

19. Depreciation of capital, total

$$\text{CH_DEP} = \text{CH_DEPR} * \text{CH_K}(-1) * \text{CH_PGDP} / 100$$

20. Wage rate

$$\text{LOG}(\text{CH_W}) = \text{LOG}(\text{CH_W}(-1)) + \text{LOG}(\text{CH_PGDP}(+1)) - \text{LOG}(\text{CH_PGDP})$$

21. Labor employed

$$\text{CH_L} = \text{CH_LABOR_SHARE} * (\text{CH_GDPV} - \text{CH_TAXI} - \text{CH_DEP}) / \text{CH_W}$$

22. Labor income

$$\text{CH_YL} = \text{CH_L} * \text{CH_W}$$

23. Corporate business income

$$\text{CH_YC} = \text{CH_GDPV} - \text{CH_YL} - \text{CH_TAXI} - \text{CH_DEP}$$

24. Tax on labor income

$$\text{CH_TAXW} = \text{CH_RTAXW} * \text{CH_YL}$$

25. Tax on corporate business income

$$\text{CH_TAXC} = \text{CH_RTAXC} * \text{CH_YC}$$

26. Indirect tax

$$\text{CH_TAXI} = \text{CH_RTAXI} * \text{CH_GDPV}$$

27. Government interest receipts

$$CH_INTG = CH_RBOND/100*CH_BOND(-1)$$

28. Government balances

$$CH_BG = CH_TAXW+CH_TAXC+CH_TAXI-CH_CGV-CH_INTG-CH_OG$$

29. Government Bond

$$CH_BOND = -CH_BG+CH_BOND(-1)$$

30. Net income from abroad

$$CH_BPY = -16088 +0.001*CH_KBPC(-1)$$

31. Current account, BOP base

$$CH_BPC = CH_BPXG+CH_BPXS-CH_BPMG-CH_BPMS+CH_BPY+CH_BPTRN$$

32. Accumulated current account, BOP base

$$CH_KBPC = CH_BPC+CH_KBPC(-1)$$

33. Bank loan rate

$$CH_RLB = 1.3591 + CH_RDEP-1*LOG(CH_M2/CH_GDPV)$$

34. Government bond rate

$$CH_RBOND = 5.6645 + 112.39*CH_BG/CH_GDPV \\ +0.2*(CH_RLB+CH_RLB(+1)+CH_RLB(+2)+CH_RLB(+3)+CH_RLB(+4))$$

35. Foreign exchange rate

$$LOG(CH_REX) = LOG(CH_REX(+1)) \\ -0.1*(CH_RBOND/100- US_RBOND/100+CH_REXRISK-0.06)$$

36. Rate of tax on labor income

$$CH_RTAXW = CH_RTAXW(-1) \\ +1/CH_LABOR_SHARE*(0.01*(CH_BOND/CH_GDPV-0.1) \\ -0.2*CH_BG/CH_GDPV)$$

37. Rate of tax on corporate income

$$CH_RTAXC = CH_RTAXC(-1)$$

$$+1/(1-CH_LABOR_SHARE)*(0.01*(CH_BOND/CH_GDPV-0.1) - 0.2*CH_BG/CH_GDPV)$$

38. Rate of indirect tax

$$CH_RTAXI = CH_RTAXI(-1) + 0.01*(CH_BOND/CH_GDPV-0.1) - 0.2*CH_BG/CH_GDPV$$

The US model

1. Real human wealth

$$US_HW = (1-US_RTAXW)*US_YL/(US_PCP/100) + 1/(1+US_DIS)*US_HW (+1)$$

2. Real private consumption

$$US_CP = 427.47 + 0.06402*(US_HW + (US_VAL+US_BOND+US_KBPC)/(US_PCP/100)) + 0.1*(1-US_RTAXW)*US_YL/(US_PCP/100)$$

3. Value of business firms

$$US_VAL = (1-US_RTAXC)*US_YC + 1/(1+US_RISK/100+US_RBOND/100)*US_VAL(+1)$$

4. Average Q

$$US_AVQ = US_VAL/(US_PIP/100)/US_KP(-1)$$

5. Real business fixed investment

$$US_IP/US_KP(-1) = US_DEPR + 0.04935*(US_AVQ-1)$$

6. Capital stock

$$US_KP = US_IP + (1 - US_DEPR)*US_KP(-1)$$

7. Exports of goods, BOP base

$$\begin{aligned} \text{LOG}(US_BPXG/US_PXG*100) &= -3.5539 + 1.1315*\text{LOG}(WIM_US/W_PIM) \\ &- 0.6196*\text{LOG}(US_PXG/W_PIM) \\ &- 0.6196*\text{LOG}(US_PXG(-1)/W_PIM(-1)) \end{aligned}$$

8. Exports of services, BOP base

$$\text{LOG}(\text{US_BPXS}/\text{US_PGDP}*100) = -0.30516 + 0.9570*\text{LOG}(\text{WIM_US}/\text{W_PIM}) \\ - 0.1*\text{LOG}(\text{US_PGDP}/\text{W_PIM})$$

9. Nominal exports of goods and services

$$\text{US_XGSV} = \text{US_BPXG} + \text{US_BPXS}$$

10. Real exports of goods and services

$$\text{US_XGS} = \text{US_XGSV}/\text{US_PXGS}*100$$

11. Imports of goods, BOP base

$$\text{LOG}(\text{US_BPMG}/\text{US_PMG}*100) = -11.8380 + 2.0671*\text{LOG}(\text{US_GDP}) \\ - 0.2*\text{LOG}(\text{US_PMG}/\text{US_PGDP})$$

12. Imports of services, BOP base

$$\text{LOG}(\text{US_BPMS}/\text{W_PIM}*100) = -8.5909 + 1.5219*\text{LOG}(\text{US_GDP}) \\ - 1.0202*\text{LOG}(\text{W_PIM}/\text{US_PGDP})$$

13. Nominal imports of goods and services

$$\text{US_MGSV} = \text{US_BPMG} + \text{US_BPMS}$$

14. Real imports of goods and services

$$\text{US_MGS} = \text{US_MGSV}/\text{US_PMGS}*100$$

15. Real government expenditures

$$\text{US_G} = \text{US_GV}/\text{US_PG}*100$$

16. Real gross domestic products

$$\text{US_GDP} = \text{US_CP} + \text{US_IP} + \text{US_CG} + \text{US_IG} + \text{US_XGS} - \text{US_MGS}$$

17. Potential gross domestic products

$$\text{LOG}(\text{US_GDPF}) = -2.3465 + (1 - \text{US_LABOR_SHARE})*\text{LOG}(\text{US_KP}) \\ + \text{US_LABOR_SHARE}*\text{LOG}(\text{US_LF})$$

18. Nominal gross domestic products

$$\text{US_GDPV} = \text{US_GDP}*\text{US_PGDP}/100$$

19. Deflator for gross domestic products

$$\begin{aligned}\text{LOG(US_PGDP)-LOG(US_PGDP(-1))} &= 0.14466 \\ &+ 0.5*(\text{LOG(US_PGDP (+1))-LOG(US_PGDP)}) \\ &+ 0.5*(\text{LOG(US_PGDP(-1))-LOG(US_PGDP(-2))}) \\ &+ 0.1*\text{LOG(US_GDP/US_GDPF)}+0.075*\text{LOG(US_M1/US_GDPV)}\end{aligned}$$

20. Deflator for private consumption

$$\begin{aligned}\text{LOG(US_PCP)} &= 0.1307 + 0.1477*\text{LOG(US_W)} + 0.8455*\text{LOG(US_PGDP)} \\ &+ 0.068*\text{LOG(US_PMG)}\end{aligned}$$

21. Deflator for business investment

$$\text{LOG(US_PIP)} = 0.07318 + \text{LOG(US_PGDP)}$$

22. Deflator for exports of goods

$$\text{LOG(US_PXG)} = 0.0136 + 0.4606*\text{LOG(US_PGDP)} + 0.5394*\text{LOG(W_PIM)}$$

23. Deflator for exports of goods and services

$$\text{LOG(US_PXGS)} = 0.05616 + \text{LOG(US_PXG)}$$

24. Deflator for imports of goods

$$\text{LOG(US_PMG)} = 0.008739 + \text{LOG(W_PIM)}$$

25. Deflator for imports of goods and services

$$\text{LOG(US_PMGS)} = 0.03772 + \text{LOG(US_PMG)}$$

26. Deflator for government expenditures

$$\text{LOG(US_PG)} = 0.1239 + 0.1272*\text{LOG(US_W)} + 0.8761*\text{LOG(US_PGDP)}$$

27. Depreciation of capital, private business firms

$$\text{US_DEPP} = -98.7531 + 1.1095*\text{US_DEPR}*US_KP(-1)*US_PIP/100$$

28. Depreciation of capital, total

$$\text{US_DEP} = \text{US_DEPP}+\text{US_DEPG}$$

29. Wage rate

$$\text{LOG}(\text{US_W}) = \text{LOG}(\text{US_W}(-1)) + 0.02452 + \text{LOG}(\text{US_PGDP} (+1)) - \text{LOG}(\text{US_PGDP}) \\ + 0.1 * \text{LOG}(\text{US_L} / \text{US_LF})$$

30. Labor employed

$$\text{US_L} = \text{US_LABOR_SHARE} * (\text{US_GDPV} - \text{US_TAXI} - \text{US_DEP}) / \text{US_W} * 1000$$

31. Labor income

$$\text{US_YL} = \text{US_L} * \text{US_W} / 1000$$

32. Corporate business income

$$\text{US_YC} = \text{US_GDPV} - \text{US_YL} - \text{US_TAXI} - \text{US_DEP}$$

33. Tax on labor income

$$\text{US_TAXW} = \text{US_RTAXW} * \text{US_YL}$$

34. Tax on corporate business income

$$\text{US_TAXC} = \text{US_RTAXC} * \text{US_YC}$$

35. Indirect tax

$$\text{US_TAXI} = \text{US_RTAXI} * \text{US_GDPV}$$

36. Government interest payment, net

$$\text{US_INTG} = 14.3854 + 0.01082 * \text{US_RBOND} * \text{US_BOND}(-1)$$

37. Government revenue

$$\text{US_REVG} = \text{US_TAXI} + \text{US_TAXW} + \text{US_TAXC} + \text{US_DEPG}$$

38. Government balances

$$\text{US_BG} = \text{US_REVG} - \text{US_GV} - \text{US_INTG} - \text{US_GOVO}$$

39. Government Bond

$$\text{US_BOND} = -\text{US_BG} + \text{US_BOND}(-1)$$

40. Net income from abroad

$$US_BPY = 27.9539 + 0.007961*US_KBPC(-1)$$

41. Current account, BOP base

$$US_BPC = US_BPXG+US_BPXS-US_BPMG-US_BPMS+US_BPY+US_BPTRN$$

42. Accumulated current account, BOP base

$$US_KBPC = US_BPC+US_KBPC(-1)$$

43. Bank loan rate

$$US_RTB = -4.4485 - 2.5*LOG(US_M1/US_GDPV) + 0.8558*US_RFF$$

44. Government bond rate

$$US_RBOND = 0.6151 - 34.718*US_BG/US_GDPV \\ +0.2217*(US_RTB+US_RTB(1)+US_RTB(2)+US_RTB(3)+US_RTB(4))$$

45. Rate of tax on labor income

$$US_RTAXW = US_RTAXW(-1) \\ + 1/US_LABOR_SHARE*(0.025*(US_BOND/US_GDPV-0.5) \\ -0.5*US_BG/US_GDPV)$$

46. Rate of tax on corporate income

$$US_RTAXC = US_RTAXC(-1) \\ + 1/(1-US_LABOR_SHARE)*(0.025*(US_BOND/US_GDPV-0.5) \\ - 0.5*US_BG/US_GDPV)$$

47. Rate of indirect tax

$$US_RTAXI = US_RTAXI(-1) \\ +(0.025*(US_BOND/US_GDPV-0.5)-0.5*US_BG/US_GDPV)$$

Variable List and Country Abbreviation

Abbreviation	Country name
CH	China
EU	European countries of Euro currency
HK	Hong Kong
ID	Indonesia
JP	Japan
KR	Korea
ML	Malaysia
PH	Philippines
SG	Singapore
TH	Thailand
TW	Taiwan, province
UK	United Kingdom
US	United States
ROW	Rest of the World

Variable	Description
AVQ	Tobin's average Q
BG	Government balance
BOND	Government Bond
BPC	Current account, BOP base
BPMG	Imports of goods, BOP base
BPMS	Imports of services, BOP base
BPTRN	Net transfer payment, BOP base
BPXG	Exports of goods, BOP base
BPXS	Exports of services, BOP base
BPY	Factor income from abroad, BOP base
CG	Government consumption expenditures, Real
CGV	Government consumption expenditures, Nominal
CP	Private consumption expenditures, Real
DEP	Depreciation, Total
DEPG	Depreciation, Government
DEPP	Depreciation, Private
DIS	Discount factor
DOTM	Imports, DOT base
GDP	Gross domestic products, Real
GDPF	Potential gross domestic products, Real

GDPV	Gross domestic products, Nominal
HW	Real Human Wealth
IG	Government fixed investment, Real
IGV	Government fixed investment, Nominal
INTG	Government interest received
IP	Private fixed investment, Real
KBPC	Accumulated current account, BOP base
KP	Private business capital stock
L	The number of labor
labor share	Labor share
LF	Labor force
M2	Money supply
M2CD	Money supply, CD included
MGS	Imports of goods and services, Real
MGSV	Imports of goods and services, Nominal
MONEY	Money and quasi money
PCG	Government consumption deflator
PCP	Private consumption deflator
PGDP	Gross domestic product deflator
PIG	Government fixed investment deflator
PIP	Private fixed investment deflator
PMG	Import price index, goods
PMGS	Deflator for MGS
PMS	Import price index, services
PXG	Export price index, goods
PXGS	Deflator for XGS
PXS	Export price index, services
RBOND	Government bond rate
RDIS	discount rate
REVG	Government revenue
REX	Foreign exchange rate per US\$
rexrisk	Risk in foreign exchange rate
RLB	Bank lending rate
rtaxc	Corporate income tax rates
rtaxi	Indirect tax rates
rtaxw	Labor income tax rates
SD	Statistical discrepancy, Real
SG	Government savings
TAXC	Tax on corporate in come
TAXI	Indirect tax
TAXW	Tax on labor income
TRNG	Government transfer, net

VAL	Value of corporate business firms
W	Wage
XGS	Exports of goods and services, Real
XGSV	Exports of goods and services, Nominal
YC	Corporate income
YL	Labor income