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Jong-Wha Lee
Korea University and The Australian National University

Warwick J. McKibbin
Centre for Applied Macroeconomic Analysis
The Australian National University, Canberra

Yong Chul Park
Korea University

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Transpacific Trade Imbalances: Causes and Cures*

Jong-Wha Lee
Korea University and The Australian National University

Warwick J. McKibbin
The Australian National University
and The Lowy Institute for International Policy
and The Brookings Institution
and
Yung Chul Park
Korea University

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Abstract

This paper explores the causes of the transpacific trade imbalances using an empirical global model. It also evaluates the impact of various policies to reduce these imbalances. We find the fundamental cause of trade imbalance since 1997 is changes in saving-investment gaps, attributed to the surge of the U.S fiscal deficits and the decline of East Asia's private investment after the 1997 financial crisis. Our simulation results show that a revaluation of East Asia's exchange rates by 10 percent (effectively a shift in monetary policy) cannot resolve the imbalances. We find East Asia's concerted efforts to stimulate aggregate demand can have significant impacts on trade balances globally, but the impact on the US trade balance is not large. US fiscal contraction is estimated to have large impacts on the US trade position overall and on the bilateral trade balances with East Asian economies. These results suggest that in order to improve the transpacific imbalance, macroeconomic adjustment will need to be made on both sides of the Pacific.

Keywords: Current Accounts, US Trade Deficit, Exchange Rate Policy, East Asia, Multi-country Simulation Model.

JEL Classification Codes: F32, F42, 05

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1. Introduction

Global trade imbalances continue to enlarge. The US current account deficit has widened significantly. In contrast, China, Japan and East Asian emerging economies including Hong Kong SAR, Korea, Singapore and Taiwan have persistently accumulated large current account surpluses, the bulk of which has come from their trade with the United States. The size of East Asia's current account surpluses has led to massive accumulation of dollar reserves, given strong foreign exchange market intervention by East Asian central banks.

In managing exchange rate policy, China, Hong Kong, and Malaysia have maintained a fixed parity vis-à-vis the US dollar. Other countries including Japan, Korea, and Singapore rely on de jure floating exchange rate systems, but in practice have intervened extensively in the foreign exchange market to maintain competitiveness of the export sector.

The growing imbalances between regions across the Pacific have provoked heated debates. What contributed to the transpacific imbalances? What will be the consequences of these imbalances? If it is desirable to reduce these imbalances what would be feasible policies to correct for the imbalances? The purpose of this paper is to analyze these issues.

In recent studies, Dooley, Folkerts-Landau and Garber (2003, 2004) argue that East Asia's export-led strategy is the principle cause of the growing global imbalance or that

it will block the adjustment that will reduce the transpacific imbalance. Some US government officials argue that East Asian countries, notably China, should abandon the strategy of exchange rate undervaluation and increase exchange rate flexibility in order to share the burden of global readjustments. Eichengreen and Park (2004) assert that an increase in public investment by East Asian economies would help to stimulate domestic demand and reduce their current account surpluses.

This paper explores the effects of these proposed policies on the transpacific imbalances. This paper attempts to provide empirical estimates for the effects of the proposals based on a simulation model which is better equipped in assessing the dynamic effects of policy changes. Our experiments are based on a multi-country intertemporal general equilibrium model called the Asia-Pacific G-cubed Model (see McKibbin and Wilcoxen, 1998). This model incorporates important linkages between countries and regions, through trade and capital flows, which is the key element to assess the sources of global imbalances or the effects of polices to eliminate transpacific imbalance.

The major finding of the simulation exercises is that a concerted revaluation of East Asian exchange rates by 10 percent could not make any sustained significant impact on the trade imbalances. Changes in Asian fiscal policies or investment rates in Asia can have significant impacts on their trade balances, but their impact on the US trade balance is not large. A reduction in U.S. fiscal deficits can be more effective to deal with the U.S. current account deficit, and reduce the transpacific imbalance.

The paper is structured as follows. Section 2 discusses the causes and development of

the imbalances. Section 3 discusses the implications of the imbalances for East Asian economies and suggests policies to reduce the imbalances. Section 4 introduces the dynamic model that is used for evaluating the effects of the proposed policies. Section 5 provides empirical results based on simulation experiments from the model. Concluding remarks follow in the final section.

II. The Causes and Development of Global Imbalances

The United States current account deficit has increased significantly in recent years. In 2003, the US deficit stood at $542 billion, up from $128 billion in 1997. It amounted to 4.9 percent of GDP, increasing from 1.5 percent six years earlier (Table 1).

The current accounts in East Asian economies have mirrored that of the United States. Japan and four East Asian NIES (newly industrialized economies) including Hong Kong SAR, Korea, Singapore and Taiwan have persistently accumulated large amounts of surplus on their current accounts (Table 1). In 2003, Japan had a current account surplus of $136 billion, amounting to 3.2 percent of GDP, and the four East Asian emerging economies as a group had a surplus of $87 billion, or 7.6 percent of their GDP. China also had a surplus of about $30 billion in 2003 or 2.1 percent of GDP. A significant portion of East Asia's current account surpluses originated from the region's trade with the U.S. In 2003, US trade deficit with 10 East Asian countries including Japan and China amounted to $ 248 billion (see Table 2).

The principal cause of the US current account deficits is the low levels of private and

public saving rates relative to investment in the United States (see Figure 1). In 2002 the US gross private saving rate remained at 15.2 percent of GDP (Table 3). The private saving rates dropped continuously from over 19 percent in 1980s. In particular, the recent worsening of the US current account deficits reflects the deterioration of public savings. Over the period between late 80s and 2001, the US fiscal balance improved dramatically from negative savings to positive, peaking at 4.4 percent of GDP in 2000 (Figure 2). However, in 2002 fiscal saving switched back to negative, –0.2 percent of GDP, as the US government loosened fiscal policy beginning from early 2001 as the US economy was heading towards a recession. The US government adopted a series of significant tax cuts. There was a considerable amount of fiscal stimulus from spending increases as well. The federal government budget balance (including the social security surplus) shifted from a surplus of 2.5 per cent of GDP in FY 2000 to a deficit of more than 4 per cent of GDP in FY 2004.[1] In 2003 the US public saving rate is estimated to be –1.9 percent of GDP.

As the massive US current account deficit is attributed to its low savings relative to investment, the East Asian current account surpluses reflect high saving rates relative to investment in East Asia. In 2003, the national saving rate was 26 percent in Japan, and 23 percent in a group of four East Asian emerging economies (Figure 3 and 4). The public saving rate was 0.5 percent and 5.7 percent in Japan and four East Asian emerging economies respectively (Table 3).

While the high saving rates in East Asia must have contributed to the prolonged global

[1] See Council of Economic Advisors (2003) and Muhleisen and Towe (2004) for details.

imbalances, the recent surge of surpluses reflects a reduction in domestic demand in this region. After the financial crisis of 1997, investment as a proportion of GDP fell in most East Asian countries, and has not yet recovered.[2] In a group of four East Asian NIES, investment rates dropped from 31.6% in 1997 to 22.9 % of GDP in 2003 (Figure 4). In Indonesia, the investment-GDP ratio in 2003 was less than a half of what it was in 1997. Malaysia and Thailand experienced a fall in investment ratio amounting to about 20 percentage points (Table 4).

Since 1998, interest rates have fallen to historically low levels, leaving little room for additional monetary expansion. East Asia has traditionally valued fiscal prudence highly, and with the IMF on the watch these countries have not seriously considered fiscal expansion as a means of expanding domestic demand. In four East Asia NIES, public investment has declined from 9.6% in 1997 to 6.2 % of GDP in 2002.

Although the worst of the crisis was over by 2000, many of the East Asian economies found themselves with large underutilized capacity in manufacturing and vacant commercial and residential buildings that were constructed before the crisis. The existing excess capacity, despite the sharp decline in real interest rates, has held back new investment in many East Asian countries (Park, 2004). In recent years, the capital intensity of Asian exports has also declined as the region has shifted to exporting more IT industry products and services that are skill and knowledge intensive than before.

[2] Barro and Lee (2003) analyzes the movements of investment and growth in East Asia before and after the financial crisis of 1997 and claims that the financial crisis would have permanent depressing effects on investment.

This shift has also contributed to weaker investment demand.

The combination of substantial changes in savings and investment in Asia and the United States explains much of the transpacific imbalances.

III. Implications and Policy Challenges of the Trade and Financial Imbalances

1. East Asia's 'Export-led Growth' Policy

Fiscal policy in the United States has been very expansionary, and is projected to remain extremely loose in the next decade (Muhleisen and Towe, 2004). In theory the persistent U.S. twin deficits should ultimately lead to real depreciation of the US dollar and an increase in U.S. interest rates, thereby helping the deficits to diminish. Nevertheless, the US deficits have been sustained, and there have been almost no significant forces toward reducing the global imbalances.

In a series of influential articles, Dooley, Folkerts-Landau and Garber (2003, 2004) contend that the imbalance can be sustained for a long time as long as East Asian economies continue to follow an 'export-led growth' strategy. In their view, the U.S. trade deficits have persisted because East Asia is willing to finance them by accumulating an unlimited amount of dollar reserve assets in order to keep exchange rates undervalued.

East Asian countries, with underdeveloped financial markets and a 'fear of floating' against the US dollar, have intervened heavily in the foreign exchange market so as to moderate excessive volatility of exchange rates, but mostly to maintain competitiveness of export sectors. The intervention is reflected in the stability of real exchange rates in East Asian economies in recent years (Figures 5-7). The international reserves of 10 East Asian economies increased significantly in recent years, amounting to 1.8 trillion US dollars (Table 5).

Dooley et al. named the current situation as a 'revived Bretton Woods system', where East Asian countries peg to the center's currency, the US dollar, as the European countries did under Bretton Woods. The periphery countries hoard their export earnings in low-yielding US Treasuries and other dollar denominated assets in order to maintain exchange rates stable vis-à-vis the US dollar. While the reserve accumulation is costly to the East Asian economies, the export-led growth can be a (sub-)optimal choice for the countries in the periphery considering the lower productivity in non-tradable sectors.

East Asian's craving for dollar assets must have helped the U.S. current account imbalances persist or more importantly affected the price at which these imbalances are sustainable. However, it is incorrect to argue that East Asia's exchange rate policy is the principle cause of the growing global imbalances. Many East Asian countries ran large current account deficits in the course of promoting exports before the crisis. As explained in the earlier section, much of the increase in current account surpluses since the crisis is explained by a sharp reduction in domestic investment demand while domestic saving as a proportion of GDP has remained largely unchanged in East Asia.

Immediately after the 1997-98 crisis, exports provided the only way out of the crisis and of sustaining recovery to the crisis-hit Asian countries, as these countries were not able to expand domestic demand by implementing expansionary monetary and fiscal policy in the midst of crisis management. Unable to stimulate domestic demand, East Asian countries have been driven to rely on exports to sustain a fledgling recovery. Most East Asian countries had put in place a system of promoting an export-led growth strategy before the crisis, and it was perhaps natural then that they turned to exports as the major source of growth. Most East Asian countries have also had to generate current account surpluses to replenish the foreign exchange reserves they lost in the run-up to the crisis (Park, 1994).

The continuing pursuit of interventionist exchange rate regimes and reserve accumulation has created serious problems for the East Asian economies. The distortion of real exchange rates has discouraged investment in the non-tradable sector, creating unbalanced growth of the economy. The *de facto* pegging exchange rate system combined with deregulated capital market leaves little room for independent monetary policy as manifested by the 'impossible trinity'.

The export-led growth strategy also has other undesirable side effects. The continuing accumulation of foreign assets would not be always successfully sterilized. A subsequent increase in the supply of money is bound to be translated into inflation of goods and services or real and financial assets. While price increases have been modest so far in East Asia, it is inevitable that amassed current account surpluses and net capital

inflows will induce rising inflation. In particular recent data for China suggest a significant acceleration in inflation.

The intervention in foreign exchange markets to keep exchange rates undervalued could precipitate a round of boom-and-bust cycles. The capital inflows and current surpluses have generated expectations of currency appreciation and cause further capital inflows, thereby amplifying a cyclical upswing in real asset prices. But then once capital outflows happen, it could trigger a significant collapse of asset prices.

2. What Can Be Done by East Asia?

Should East Asia stop its pursuit of the 'export-led growth' strategy? Some US government and international financial institutions officials have argued that East Asian countries should abandon their interventionist exchange rate regime and increase exchange rate flexibility in order to alleviate global imbalances.

The demand for an appreciation of currencies in East Asia raises several fundamental questions. One is the collective action problem that unless both China and Japan are prepared to let their currencies appreciate, other countries will not follow. Park (2004) argues that an independent revaluation by individual East Asian countries will lead to loss of relative currency competitiveness in the current situation in which there is a lack of coordination of exchange policies among East Asian countries. It is uncertain that China can move first to make upward discrete adjustments of the Renminbi or

eventually go for a more flexible exchange rate regime. Chinese policy makers would not give up pegging the exchange rate at a competitive level as long as they believe that they need to support their export industries and thereby promote employment and output growth. In addition, the bilateral trade imbalances between countries in the region add more complications. Most of the Asian economies, while competing with China in third markets, have recorded trade surpluses with China. Thus, Chinese revaluation will exert mixed effects on other Asian economies (as illustrated below). In the case of Japan, further strengthening of the yen would aggravate its deflation problem and hurt the economy which is now recovering from a long recession.

Another issue is the extent to which an appreciation of East Asian currencies will reduce the transpacific imbalance. The impact depends very much on the source of the currency appreciation – whether it was a currency adjustment effectively as a change in monetary policy or whether it was brought about through other policy changes. Even if East Asian countries including Japan were able to agree to a region-wide currency adjustment, it is not clear whether the adjustment would lead to a sizable reduction in East Asia's aggregate current account surplus. Many analysts argue that an appreciation of the East Asian currencies across the board on the order of, for example, five to ten percent on average will not have much impact on the transpacific imbalance (Eichengreen, 2004). This is clearly an empirical question. We seek for an answer to this question in the next section.

East Asian economies can adopt polices to stimulate their aggregate demand. However, what really matters for current account balances is how these demand policies impact on

savings relative to investment in Asian economies. Although economic recoveries have occurred, many crisis-hit East Asian economies have not recovered their pre-crisis investment ratio. But, with historically low real interest rates and increasing inflation pressures, many East Asian governments have little room to implement expansionary monetary policy and thereby stimulate private spending. Unable to expand demand by monetary policy, they can consider fiscal expansion as another means regardless of its effectiveness.

Eichengreen and Park (2004) suggest that fiscal expansion is a feasible policy that East Asian countries except Japan can consider in reducing global imbalances. They assert that regionally concerted efforts to increase public spending by East Asian economies help to revive domestic demand and non-tradable sectors, resulting in real exchange rate appreciation and decrease in current account surpluses.

What is uncertain is that a reduction in East Asia's surplus may not necessarily lead to a corresponding reduction in the US current account deficit. The effects on the US current account are not likely to be a large fraction of their own GDP because the size of the expanding countries is small relative to the United States. Moreover, a decline in East Asia's surplus may occur as East Asian countries start importing more from Europe and other non-US regions, while exporting less. If this happens, it can further complicate global adjustments involving the US, Europe, and Asia.

IV. Effects of Adjustment Polices

1. The G-Cubed (Asia Pacific) Model

Given the important linkages between affected countries in the region, through the trade of goods and services and capital flows, any analysis of the sources of global imbalances or policies to reduce imbalances needs to be undertaken with a model that adequately captures these interrelationships. The G-Cubed (Asia Pacific) model is a 6 sector version of the G-Cubed model outlined in McKibbin and Wilcoxen (1998).

This model is ideal for such analysis having both detailed country coverage of the region and rich links between countries through goods and asset markets. [3] A number of studies—summarized in McKibbin and Vines (2000)—show that the G-cubed/MSG3 models have been useful in assessing a range of issues across a number of countries since the mid-1980s.[4] A summary of the model coverage is presented in Table65. Some of the principal features of the model are as follows:

- The model is based on explicit *intertemporal* optimization by the agents (consumers and firms) in each economy[5]. In contrast to static CGE models, time and dynamics are of fundamental importance in the G-Cubed model.

- In order to track the macro time series, however, the behavior of agents is modified to allow for short run deviations from optimal behavior either due to myopia

[3] Full details of the model including a list of equations and parameters can be found online at: www.gucubed.com

[4] These issues include: Reaganomics in the 1980s; German Unification in the early 1990s; fiscal consolidation in Europe in the mid-1990s; the formation of NAFTA; the Asian crisis; and the productivity boom in the US.

[5] See Blanchard and Fischer (1989) and Obstfeld and Rogoff (1996).

or to restrictions on the ability of households and firms to borrow at the risk free bond rate on government debt. For both households and firms, deviations from intertemporal optimizing behavior take the form of rules of thumb, which are consistent with an optimizing agent that does not update predictions based on new information about future events. These rules of thumb are chosen to generate the same steady state behavior as optimizing agents so that in the long run there is only a single intertemporal optimizing equilibrium of the model. In the short run, actual behavior is assumed to be a weighted average of the optimizing and the rule of thumb assumptions. Thus aggregate consumption is a weighted average of consumption based on wealth (current asset valuation and expected future after tax labor income) and consumption based on current disposable income. Similarly, aggregate investment is a weighted average of investment based on Tobin's q (a market valuation of the expected future change in the marginal product of capital relative to the cost) and investment based on a backward looking version of Q.

- There is an explicit treatment of the holding of financial assets, including money. Money is introduced into the model through a restriction that households require money to purchase goods.

- The model also allows for short run nominal wage rigidity (by different degrees in different countries) and therefore allows for significant periods of unemployment depending on the labor market institutions in each country. This assumption, when taken together with the explicit role for money, is what gives the model its "macroeconomic" characteristics. (Here again the model's assumptions differ from the standard market

clearing assumption in most CGE models.)

- The model distinguishes between the stickiness of physical capital within sectors and within countries and the flexibility of financial capital, which immediately flows to where expected returns are highest. This important distinction leads to a critical difference between the *quantity of physical capital* that is available at any time to produce goods and services, and the *valuation of that capital* as a result of decisions about the allocation of financial capital.

As a result of this structure, the G-Cubed model contains rich dynamic behavior, driven on the one hand by asset accumulation and, on the other by wage adjustment to a neoclassical steady state. It embodies a wide range of assumptions about individual behavior and empirical regularities in a general equilibrium framework. The interdependencies are solved out using a computer algorithm that solves for the rational expectations equilibrium of the global economy. It is important to stress that the term 'general equilibrium' is used to signify that as many interactions as possible are captured, not that all economies are in a full market clearing equilibrium at each point in time. Although it is assumed that market forces eventually drive the world economy to a neoclassical steady state growth equilibrium, unemployment does emerge for long periods due to wage stickiness, to an extent that differs between countries due to differences in labor market institutions.

2. Simulation Results

A. Baseline Business-As-Usual Projections

To solve the model, we first normalize all quantity variables by each economy's endowment of effective labor units. This means that in the steady state all real variables are constant in these units although the actual levels of the variables will be growing at the underlying rate of growth of population plus productivity. Next, we must make base-case assumptions about the future path of the model's exogenous variables in each region. In all regions we assume that the long run real interest rate is 5 percent, tax rates are held at their 2002 levels and that fiscal spending is allocated according to 2002 shares. Population growth rates vary across regions as per the 2000 World Bank population projections.

A crucial group of exogenous variables are productivity growth rates by sector and country. The baseline assumption in the MSG3 model is that the pattern of technical change at the sector level is similar to the historical record for the United States (where data is available). In regions other than the United States, however, the sector-level rates of technical change are scaled up or down in order to match the region's observed average rate of aggregate productivity growth over the past 5 years. This approach attempts to capture the fact that the rate of technical change varies considerably across industries while reconciling it with regional differences in overall growth. This is clearly a rough approximation; if appropriate data were available it would be better to estimate productivity growth for each sector in each region.

Given these assumptions, we solve for the model's perfect-foresight equilibrium growth path over the period 2002-2081. This a formidable task: the endogenous variables in *each* of the 80 periods number over 2500 variables and include, among

other things: the equilibrium prices and quantities of each good in each region, intermediate demands for each commodity by each industry in each region, asset prices by region and sector, regional interest rates, bilateral exchange rates, incomes, investment rates and capital stocks by industry and region, international flows of goods and assets, labor demanded in each industry in each region, wage rates, current and capital account balances, final demands by consumers in all regions, and government deficits.[6] At the solution, the budget constraints for all agents are satisfied, including both intra-temporal and inter-temporal constraints.

B. The simulations

We now consider a range of shocks. These comprise shocks that might explain the changes in global trade balances in the past decade as well as possible policy changes that might impinge on these trade balances in future years. They are stylized representations of what has been observed rather than precise estimates so as to illustrate the rough orders of magnitude of effects.

1) *Asian private investment shock*: a permanent rise of 0.5% in the equity risk premium in Japan, 2% in Indonesia, and 1% in other Asian economies except China sufficient to reduce private investment rates by the extent observed between 1997 and 2002, and an decrease of 0.5% in the equity risk premium in China reflecting the Chinese

[6] Since the model is solved for a perfect-foresight equilibrium over a 80 year period, the numerical complexity of the problem is on the order of 80 times what the single-period set of variables would suggest. We use software summarized in McKibbin and Sachs (1991) Appendix C, for solving large models with rational expectations on a personal computer.

investment boom;[7]

2) *U.S. fiscal deficit shock*: A permanent rise in the US fiscal deficit of 4% of GDP comprising a rise in spending in goods and services of 1% of GDP, rise in spending on labor of 1% of GDP, and a cut in personal income taxes to sufficiently reduce revenues by 2% of GDP;
3) *Asian revaluation shock*: A 10% appreciation of the currencies of China, Hong Kong and other crisis-hit Asian economies such as Indonesia, Korea, Malaysia, the Philippines, and Thailand[8];
4) *Asian fiscal expansion shock*: A permanent expansion of Asian fiscal deficits (excluding Japan) of 2% of GDP comprising an increase in spending of 1% of GDP on goods and services and 1% on labor

C. Results

i. Fall in Asian Investment

Results are presented for changes in current account balances as a percent of GDP (table 7); the percent change in private investment relative to baseline (Table 8); the change in real effective exchange rates relative to baseline (defined as an increase being an

[7] We assume the rise in equity risk premium, instead of country risk premium (see McKibbin (1998)), considering that the shocks have had depressing effects mainly on private domestic investment, rather than total investment. Evidence shows that in the crisis-hit East Asian countries, country risk premia increased sharply with the eruption of the crisis in 1997, but then have quickly returned to the pre-crisis level.

[8] In China and Hong Kong this is an instant appreciation since they follow exact pegs – in the other countries the targeted exchange rate is appreciated by 10% but the actual exchange rate appreciates less quickly because the exchange rate is only one factor in their monetary reaction functions – in practice 7.5% of the full appreciation has occurred by year 2.

appreciation) (Table 9) and the percent change in real GDP relative to baseline (Table 10). These tables contain results at year 1, 5 and 10 following the shocks indicated.

The rise is equity risk premia in Asia acts to reduce private investment in Asia. In the first year, private investment declines by between 5% and 14% relative to baseline, and the negative impacts on investment are magnified over time due to the permanent nature of the shocks. In the five years following the shocks, the investment declines range from 13% (Japan) to 50% (Indonesia). [9]This leads to a continuous capital outflow and a depreciation in effective exchange rates which improves current account balances of Asian economies except China by between 1.2 and 2.8 percent of GDP in the first year and by between 1.3 and 7.6 percent of GDP by year 5. The capital inflow into the US worsens the US current account balance by 0.2 percent of GDP in year 1 and 0.3 percent of GDP by year 5. The reallocation of global capital tends to reduce investment in the economies experiencing the rise in risk and increase investment in economies receiving the capital that flows out of Asia (US, other OECD economies as well as China and India).

As expected the fall in real investment in Asian economies reduces GDP in the economies (table 9) despite the rise in net exports that accompanies the real exchange rate depreciations in Asia. The opposite is true in the United States where the stronger real exchange rate lowers net exports but the fall in long term real interest rates driven by the capital inflow stimulates private investment by more than the fall in net exports, causing US real GDP to rise.

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[9] We can convert the estimated declines in the investment levels into the changes in investment rates by using the actual investment rates in 1997, in table 5, as a base year, and then taking account of the estimated declines in GDP. A typical case of an Asian economy with the estimated decline of investment level by 25%, combined with the about 7% GDP decline, after 5 years following the shock of the 1% increase in the equity risk premium implies a drop of investment ratio from 32% to 26%.

These results show that the fall in private investment in Asia since the crisis has contributed significantly to the size of trade surpluses in Asia but less to the worsening US trade position.

ii. US Fiscal Expansion

Results for a permanent increase in US Fiscal deficits are contained in the lower left panel of Tables 7 through 10. The rise in US fiscal deficits lowers US national savings by more than national investment and causes a large capital inflow. This inflow which appreciates the US dollar causes the current account balance to worsen by 1.6% of GDP in the first year and 1.9% after 5 years. The gradual turn around in the US trade balance ultimately towards surplus is caused by the requirement that the US external position satisfy the intertemporal budget constraint that countries must service external debts. The current account remains in deficit much longer than the trade deficit. The large capital inflow to the US is reflected in a large capital outflow from other economies. This results in improvements in trade balance globally and particularly in Asia. The Japanese trade surplus is 1% higher in the first year of the fiscal package in the US. China experiences less of an initial trade surplus because of the assumption of a peg to the US dollar which initially worsens Chinese competitiveness relative to other managed floating Asian economies.

The impact on investment and savings is quite interesting. In the United States the rise in spending and cut in taxes initially stimulates private consumption and real GDP (table 10) but despite the higher demand, higher long term real interest rates cause investment to initially rise only slightly and then over time to fall in the United States. The larger fall in investment over time in the United States occurs because the private sector is forced to reduce private spending in order to finance the permanently higher public spending and tax

cuts that foreigners are increasingly unwilling to service. The only way this would not occur would be if the higher fiscal deficits created additional aggregate supply sufficient to cover the permanently higher fiscal deficits. Interestingly the expansionary US fiscal policy is large enough to raise global long term real interest rates (relative to base) and reduce investment rates globally in order to finance the US fiscal deficit (Table 8). Indeed the initial impacts on investment are larger outside the United States because of the initially higher aggregate demand in the US from the larger fiscal spending.

The US fiscal expansion appreciates the US dollar by 8 percent relative to baseline and depreciates the real exchange rates of other economies except those who are pegging to the US dollar such as China. Note that countries such as Indonesia and Korea who are assumed to be following a monetary rule that targets domestic inflation and growth as well as minimizing exchange rate changes also experience less currency depreciation than floating countries such as Australia and Canada.

The fiscal expansion initially raises US real GDP which is above baseline by 2.2% in the first year and by 0.4% for 5 years, but eventually leads to a fall below baseline by 0.8% by 10 years. The transmission of US fiscal policy to other countries is negative as the US fiscal policy draws resources globally to finance the permanently large deficit.

iii. Appreciation of the Asian Exchange Rate.

We perform the revaluation of a 10% appreciation of the currencies of Hong Kong, China and the most crisis-hit five Asian economies such as Indonesia, Korea, Malaysia, the Philippines, and Thailand.

The revaluation has significant and direct impacts on the domestic economy but over time the effects dissipate as domestic prices fall to completely offset the change in

nominal exchange rates. The appreciation temporarily lowers net exports because of temporary change in export competitiveness. This fall in net exports leads to lower domestic demand and a slowdown in GDP growth relative the baseline. Real GDP (table 10) falls sharply by 4.1% (relative to a rapidly rising baseline) in China, and more than 2% in Hong Kong, Indonesia, Korea, and the Philippines in the first year.

The trade impacts of this policy for global imbalances are small with minor impacts on the current accounts of the revalued East Asian economies as well as other countries. The reasons are clear. The revaluation makes export goods less competitive on world markets during the period that domestic prices have not adjusted to the effective tightening of monetary policy. The revaluation also reduces domestic demand. Thus the effect of the decrease in East Asian countries' import demand is offsetting the effect of a stronger currency on other countries. Whether a country is positively or negatively affected depends on the size and nature of trade with the East Asian countries and the impact of changes in the East Asian countries' demand on other countries. The demand and relative price (or competitiveness) effects tend to cancel in their impact on the trade balances of most countries. The estimation result shows that the Asian currency revaluation will have no effect on the U.S. current account balance.

An earlier version of this paper, as well as McKibbin and Stoeckel (2004), explores the implication of a 10% appreciation of the Chinese exchange rate. The main result is similar. Chinese revaluation has significant impacts on the Chinese economy by decreasing GDP growth by 4.1% relative to the baseline in the first year, but the effects disappear over time. The Chinese current account balance worsens by close to 0.5% of GDP but with minor impacts on the trade positions of other economies including the United States.

iv. Fiscal Stimulus in Asia

The final results are for a coordinated fiscal stimulus in Asian economies except Japan. As with the US fiscal package the expansion in Asia has ambiguous effects on investment in the short run but negative impacts over time as global savings are channeled into financing permanently larger fiscal deficits in Asia. Whether investment initially rises or falls in expanding countries depends on the relative impact of higher long term interest rates relative to higher short term domestic demand from the government. This also matters for the size of the initial rise in real GDP. In non expanding countries (India, OECD countries) real GDP initially falls and falls further over time for the same reasons as already discussed for the US fiscal policy experiment.

The impact on current account balances is similar to that for the US policy although this policy has a much small impact on the US current account balance than it does on the Asian economies. The 2 percent of GDP fiscal deficits causes current account balances in Asian economies to worsen by between 0.2 and 1.1% of GDP in the first year. The corresponding improvements in current account balances in the United States and other countries are a much small share of their own GDP because the size of the expanding countries is small relative to the United States. The U.S current account balance improves by 0.05 percent of GDP in the first year. The Europe as a whole also experience an improvement in current account by 0.05 percent in the first year. Note that fiscal expansion in East Asia except for Japan tends to increase Japan's trade surplus, which amounts to 0.11 percent of GDP. .

Table 11 summarizes the changes in current account balances over the five years obtained from the simulations with the shocks of Asian investment declines and the U.S.

fiscal expansion. The simulation results are compared to the actual changes in current account balances over the period from 1997 to 2002. We can see that the principle cause of the transpacific imbalance is the surge of the U.S fiscal deficits and the depression of East Asia's private investment after the 1997 financial crisis. The increase in the U.S. current account deficits is for the most part attributed to the U.S. fiscal deficits. The U.S. fiscal deficits take account of about 1.9 % point out of the increase in the U.S. current account deficits amounting to 3.1 percent of GDP over the 1997-2002 period, while the shock of Asian investment declines contributes to the U.S. current account deficit by 0.3% of GDP over the five years. For the East Asian economies except Hong Kong, the decline in private investment is a major cause of the surge of their current account surpluses since 1997.

V. Concluding Remarks

The recent debates over global imbalances have been centered on East Asia's interventionist exchange rate regime and reserve management. Some argue that East Asian economies will continue to accumulate surpluses and finance the US deficit, thereby sustaining the imbalances.

This paper argues that the fundamental cause of trade imbalance is saving-investment gaps, mostly attributed to the surge of fiscal deficits in the United States and the depression of East Asia's private investment in recent years. Nominal exchange rate movements caused effectively by shifts in monetary policies alone are not the underlying causes of these imbalances and they cannot resolve the imbalances.

Macroeconomic adjustments can help to reduce the imbalances and greater exchange rate flexibility would help speed up the adjustment to these changes in macroeconomic policy. Ultimately it is changes in real exchange rates that matter for changes in current accounts and in the medium to longer run it doesn't matter if it occurs through changes in nominal exchange rates or price levels. There are already some signs indicating that adjustments are already in process to correct for the imbalances. With relatively fixed exchange rates, inflation rates are rising in East Asian economies to generate the real exchange rate appreciations expected. The recent fall of the U.S. dollar reflects the concern by investors about the sustainability of the US deficit. In addition, some public policies that influence aggregate demand directly can be used to precipitate the market adjustment process to reduce the imbalances. We find East Asia's concerted efforts to stimulate aggregate demand can have significant impacts on trade balances globally, but its impact on the US trade balance is not large. These results suggest that East Asia alone cannot resolve the transpacific imbalance. Macroeconomic adjustment should be made on both sides of the Pacific. Our results show that fiscal contraction in the United States will have the largest impact on the US trade position overall and on the bilateral trade balances with East Asian economies, via its effect on global saving and investment balances.

References

Bagnoli, P. McKibbin W. and P. Wilcoxen (1996) "Future Projections and Structural Change" in N, Nakicenovic, W. Nordhaus, R. Richels and F. Toth (ed) *Climate Change: Integrating Economics and Policy*, CP 96-1 , International Institute for Applied Systems Analysis (Austria), pp181-206.??

Barro, Robert and Lee, Jong-Wha (2003), "Growth and Investment in East Asia Before and After the Financial Crisis," *Seoul Journal of Economics*, 16(2).

Blanchard O. and S. Fischer (1989) *Lectures on Macroeconomics* MIT Press, Cambridge MA.

Council of Economic Advisors (2003), *Economic Report of the President,* Washington, D.C.: GPO.

Dooley, Michael, David Folkerts-Landau, and Peter Garber (2003), "An Essay on the Revived Bretton Woods System," NBER Working Paper no. 9971 (September).

Dooley, Michael, David Folkerts-Landau, and Peter Garber (2004), "Asian Reserve Diversification: Does It Threaten the Pegs?" Deutsche Bank Global Markets Research (February).

Eichengreen, Barry (2004), "Chinese Currency Controversies," *Asian Economic Papers* (forthcoming).

Eichengreen, Barry and Yung-Chul Park (2004), "The Dollar and the Policy Mix Redux," mimeo.

Hertel T. (1997) (ed) *Global Trade Analysis: Modeling and Applications*, Cambridge University Press

McKibbin W. (1998) "Risk Re-Evaluation, Capital Flows and the Crisis in Asia" in Garnaut R. and R. McLeod (1998) (eds) *East Asia in Crisis: From Being a Miracle to Needing One?* Pp227-244, Routledge.

McKibbin W.J. and J. Sachs (1991) *Global Linkages: Macroeconomic Interdependence and Co-operation in the World Economy*, Brookings Institution, June.

McKibbin W.J. and A. Stoeckel (2004) "What if China Revalues It's Currency?" www.EconomicScenarios.com Issue 7, February, 8 pages

McKibbin W.J. and D. Vines (2000) "Modelling Reality: The Need for Both Intertemporal Optimization and Stickiness in Models for Policymaking" *Oxford Review of Economic Policy* vol 16, no 4. (ISSN 0266903X)

McKibbin W. and P. Wilcoxen (1998) "The Theoretical and Empirical Structure of the G-Cubed Model" *Economic Modelling* , 16, 1, pp 123-148 (ISSN 0264-9993)

Muhleisen, Martin and Christopher Towe, eds (2004), "U.S. Fiscal Policies and Priorities for Long-Run Sustainability," Occasional Paper no. 227, Washington, D.C.: IMF.

Obstfeld M. and K. Rogoff (1996*) Foundations of International Macroeconomics* MIT Press, Cambridge MA.

Office of Management and Budget (2003), *Budget of the U.S. Government, Fiscal Year 2004,* Washington, D.C.: GPO.

Park, Yung Chul (2004), "The Transpacific Imbalance: What Can Be Done About It?," mimeo.

Table 1. Summary of Balances on Current Account

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
						(Billions of US dollars)				
Advanced economies	49.4	38.5	90.2	38.1	-102.2	-246.3	-206.7	-193.3	-241.9	-184.1
United States	-105.8	-117.2	-127.7	-204.7	-290.8	-411.5	-393.7	-480.9	-541.8	-495.8
Euro area	50.9	79.7	100.0	61.4	28.9	-29.8	14.0	77.9	53.2	68.3
Japan	111.4	65.7	96.6	119.1	114.5	119.6	87.8	112.7	136.4	144.0
Other advanced economies	-7.1	10.2	21.3	62.3	45.2	75.4	85.2	96.9	110.3	99.4
Newly Industrialized Asian	2.7	-2.2	6.1	64.9	58.4	41.4	52.0	63.6	86.5	76.7
Korea	-8.5	-23.0	-8.2	40.4	24.5	12.2	8.0	5.4	12.3	9.5
Taiwan Province of China	5.5	10.9	7.1	3.4	8.4	8.9	17.9	25.6	28.6	22.4
Hon Kong SAR	-9.1	-4.0	-7.7	2.5	10.3	7.1	9.9	13.7	17.4	16.9
Singapore	14.8	13.9	14.9	18.6	15.3	13.2	16.1	18.9	28.2	27.9
Developing countries	-97.2	-87.8	-82.9	-115.0	-18.1	88.1	37.9	83.6	121.0	85.4
China	1.6	7.2	37.0	31.5	15.7	20.5	17.4	35.4	29.6	25.0
India	-5.6	-6.0	-3.0	-6.9	-3.2	-5.1	-0.8	4.8	3.0	1.3
Indonesia	-6.8	-7.3	-3.8	4.0	5.8	8.0	6.9	7.8	8.0	6.7
Malaysia	-8.6	-4.5	-5.9	9.5	12.6	8.5	7.3	7.2	11.4	12.0
Philippines	-2.0	-3.9	-4.3	1.5	7.2	6.3	1.3	4.2	1.7	1.3
Thailand	-13.2	-14.4	-3.1	14.3	12.5	9.3	6.2	7.0	8.0	7.1

Table 1. Continued.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
					(Percent of GDP)					
Advanced Economies	0.2	0.2	0.4	0.2	-0.4	-1.0	-0.8	-0.7	-0.8	-0.6
United States	-1.4	-1.5	-1.5	-2.3	-3.1	-4.2	-3.9	-4.6	-4.9	-4.2
Euro area	0.7	1.1	1.5	0.9	0.4	-0.5	0.2	1.2	0.6	0.7
Japan	2.1	1.4	2.2	3.0	2.6	2.5	2.1	2.8	3.2	3.1
Other advanced economies										
Newly Industrialized Asian	0.3	-0.2	0.6	7.6	6.0	3.8	5.1	5.9	7.6	6.2
Korea	-1.7	-4.1	-1.6	11.7	5.5	2.4	1.7	1.0	2.0	1.5
Taiwan Province of China	2.1	3.9	2.4	1.3	2.9	2.9	6.4	9.1	10.0	7.3
Hon Kong SAR	-6.4	-2.6	-4.4	1.5	6.4	4.3	6.1	8.5	11.0	10.3
Singapore	17.6	15.1	15.6	22.7	18.6	14.3	18.7	21.4	30.9	28.0
Developing countries	--	--	-0.6	-1.1	0.6	1.5	0.8	1.7	1.8	1.3
China	0.2	0.9	4.1	3.3	1.6	1.9	1.5	2.8	2.1	1.6
India	-1.6	-1.6	-0.7	-1.7	-0.7	-1.1	-0.2	1	0.5	0.2
Indonesia	-3.4	-3.2	-1.8	4.2	4.1	5.3	4.8	4.5	3.9	2.9
Malaysia	-9.7	-4.4	-5.9	13.2	15.9	9.4	8.3	7.6	11.1	10.9
Philippines	-2.6	-4.6	-5.2	2.3	9.5	8.4	1.9	5.5	2.1	1.6
Thailand	-7.9	-7.9	-2.1	12.8	10.2	7.6	5.4	5.5	5.6	4.4

Note: The figures for 2004 are estimates.
Source: IMF, *World Economic Outlook Reports*, April 2004.

Table 2. Bilateral trade of U.S. with East Asian Countries, 2003

(Millions of U$)

Country	U.S. Export to	U.S. Import from	Balance
Japan	52,063.7	118,029.0	-65,965.3
Hong Kong	13,542.1	8,850.2	4,691.9
Korea, South	24,098.6	36,963.3	-12,864.7
Singapore	16,575.8	15,158.0	1,417.8
Taiwan	17,487.9	31,599.9	-14,112.0
Indonesia	2,520.1	9,520.0	-6,999.9
Malaysia	10,920.4	25,437.8	-14,517.4
Philippines	7,992.1	10,061.0	-2,068.9
Thailand	5,841.8	15,180.8	-9,339.0
China	28,418.5	152,379.1	-123,960.6
Total	**179,461.0**	**423,179.1**	**-243,718.1**

Source : U.S. Census Bureau.

Table 3. Sources and Uses of World Saving

(Percent of GDP)

	Averages								estimate	projection
	1981~88	1989~96	1997	1998	1999	2000	2001	2002	2003	2004
World										
Saving	22.8	23.1	23.8	23.2	23.0	23.6	23.1	23.4	23.3	23.0
Investment	24.0	24.2	24.3	23.5	23.2	23.5	23.1	22.9	23.2	23.3
United States										
Saving	18.4	16.7	18.1	18.8	18.4	18.4	16.5	15.0	13.6	13.2
Private	19.5	17.5	16.2	15.7	14.6	14.0	13.9	15.2	15.5	15.5
Public	-1.1	-0.8	1.9	3.1	3.8	4.4	2.6	-0.2	-1.9	-2.3
Investment	20.6	18.3	19.9	20.7	20.9	21.1	19.1	18.6	18.3	18.2
Net lending	-2.2	-1.6	-1.8	-1.9	-2.6	-2.7	-2.6	-3.6	-4.7	-5.0
Euro Area										
Saving	--	21.0	21.3	21.2	21.2	21.1	20.6	20.7	20.9	21.2
Private	--	22.3	21.2	20.3	19.3	18.8	18.9	18.8	19.3	19.5
Public	--	-1.4	0.1	0.8	1.9	2.3	1.7	1.8	1.6	1.7
Investment	--	21.3	20.3	21.0	21.3	22.0	21.0	20.0	19.8	20.1
Net lending	--	-0.4	0.9	0.1	-0.1	-0.9	-0.4	0.6	1.0	1.1
Japan										
Saving	31.8	32.4	30.8	29.7	28.4	28.7	27.7	26.5	26.3	26.3
Private	26.3	24.5	25.7	25.9	26.0	26.9	24.1	25.5	25.8	25.0
Public	5.5	7.9	5.1	3.8	2.4	1.8	3.5	1.0	0.5	1.3
Investment	29.4	30.3	28.6	26.8	25.9	26.2	25.6	23.7	23.5	23.5
Private	21.9	22.7	21.0	19.3	18.1	19.3	19.0	17.4	17.9	17.9
Public	7.5	7.5	7.6	7.4	7.8	6.9	6.6	6.3	5.7	5.5
Net lending	2.4	2.2	2.2	2.9	2.5	2.5	2.1	2.8	2.8	2.9
Newly Industrialized										
Saving	--	34.5	32.3	32.6	31.8	30.7	28.8	28.7	29.4	29.8
Private	--	27.5	24.9	26.0	25.5	22.7	20.9	21.7	22.9	23.0
Public	--	6.9	7.3	6.6	6.3	8.0	7.9	7.0	6.5	6.8
Investment	--	32.1	31.6	24.2	25.9	26.9	23.8	22.8	22.9	23.2
Net lending	--	2.4	0.6	8.4	5.9	3.9	5.0	5.9	6.5	6.6
Developing Countries										
Saving	21.5	25.3	27.6	26.1	26.4	27.0	27.1	29.0	29.2	28.9
Investment	24.2	27.2	28.3	26.7	25.8	25.9	26.6	27.3	28.1	28.3
Net lending	-2.7	-2.0	-0.6	-0.7	0.6	1.1	0.5	1.7	1.1	0.6

Source: IMF, World Economic Outlook Reports, September 2003.

Table 4. Investment as share of GDP

(Unit: percent)

Country	Hong Kong	Singapore	Indonesia	Malaysia	Philippines	Korea	Thailand	Japan	Taiwan	China
1995	34.67	34.17	31.93	43.64	22.45	37.67	42.09	28.24	21.19	40.81
1996	32.06	35.78	30.69	41.48	24.02	38.87	41.82	29.12	20.63	39.32
1997	34.52	39.24	31.75	42.97	24.78	35.97	33.66	28.66	22.12	38.00
1998	29.15	32.33	16.77	26.67	20.34	25.00	20.45	26.89	22.78	37.40
1999	25.26	32.44	11.37	22.38	18.75	29.12	20.50	26.00	23.16	37.14
2000	28.08	32.28	16.10	27.18	21.17	31.00	22.73	26.27	22.57	36.37
2001	25.91	24.23	17.45	23.95	20.65	29.33	23.91	25.76	17.35	37.99
2002	23.38	20.61	14.27	24.45	19.30	29.08	23.84	23.91	16.44	37.24
2003	22.84	--	--	21.84	18.72	29.39	25.24	--	--	--

Source: IMF, International Financial Statistics, and the Asian Development Bank.

Source: ARIC (Asia Recovery Information Center: http://aric.adb.org) Data Base, Asian Development Bank

Table 5. International Reserves of East Asia, 1999~2003

(Millions of US$)

	1999	2000	2001	2002	2003
Japan	287,019	354,927	395,240	461,349	663,303
Subtotal	**287,019**	**354,927**	**395,240**	**461,349**	**663,303**
Hong Kong	96,270	107,549	111,179	111,935	118,362
Korea, South	74,014	96,137	102,775	121,388	155,287
Singapore	76,871	80,138	75,391	82,050	95,748
Taiwan	106,238	106,749	122,237	161,714	206,636
Subtotal	**353,393**	**390,573**	**411,582**	**477,087**	**576,033**
Indonesia	26,454	28,504	27,252	30,980	34,963
Malaysia	30,599	29,525	30,481	34,234	44,516
Philippines	13,234	13,053	13,445	13,149	13,463
Thailand	34,075	32,018	32,362	38,060	41,078
China	157,784	168,289	215,651	291,230	408,151
Subtotal	**262,146**	**271,389**	**319,191**	**407,653**	**542,171**
Total	**902,558**	**1,016,889**	**1,126,013**	**1,346,089**	**1,781,507**

Source: IMF, *International Financial Statistics*

Table 6: The G-Cubed (Asia Pacific) Model version 58N

Countries:

United States
Japan
Canada
Australia
New Zealand
Indonesia
Malaysia
Philippines
Singapore
Thailand
China
India
Taiwan
Korea
Hong Kong
ROECD
non Oil Developing countries
Eastern Europe and Russia
OPEC

Sectors:

Energy
Mining
Agriculture
Durable Manufacturing
Non-Durable Manufacturing
Services

Table 7: Change in Current Account/GDP as a results of various shock

(%point deviation from baseline)

	year 1	year 5	year 10		year 1	year 5	year 10
Asian Investment Decline				East Asia Appreciation			
USA	-0.19	-0.30	-0.35	USA	0.00	0.00	0.00
Japan	0.87	1.15	1.30	Japan	-0.01	0.00	0.00
Canada	-0.26	-0.41	-0.48	Canada	-0.01	0.00	0.00
Australia	-0.22	-0.46	-0.66	Australia	-0.01	0.00	0.00
New Zealand	-0.54	-1.32	-1.72	New Zealand	-0.02	-0.01	0.00
Indonesia	2.50	6.32	8.86	Indonesia	0.04	0.00	-0.01
Malaysia	2.80	6.69	7.16	Malaysia	0.11	0.03	-0.01
Philippines	2.70	5.93	5.48	Philippines	0.07	0.01	-0.01
Singapore	2.44	7.65	13.54	Singapore	-0.03	-0.03	-0.01
Thailand	1.43	4.18	7.55	Thailand	0.01	0.03	0.02
China	-1.05	-1.64	-1.62	China	0.02	-0.01	0.00
India	-0.25	-0.40	-0.46	India	0.00	0.00	0.00
Taiwan	1.23	2.54	3.48	Taiwan	-0.01	0.00	0.00
Korea	1.89	3.42	3.67	Korea	0.09	0.00	-0.02
Hong Kong	1.26	1.31	1.18	Hong Kong	0.06	0.02	-0.01
Europe	-0.24	-0.38	-0.47	Europe	0.00	0.00	0.00
US Fiscal policy				Asian Fiscal Stimulus			
USA	-1.58	-1.89	-1.95	USA	0.05	0.04	0.04
Japan	0.95	0.94	1.00	Japan	0.11	0.10	0.10
Canada	1.04	1.36	1.41	Canada	0.07	0.06	0.06
Australia	1.00	1.11	1.21	Australia	0.10	0.10	0.09
New Zealand	1.57	2.57	2.67	New Zealand	0.32	0.32	0.29
Indonesia	0.56	1.24	1.22	Indonesia	-0.77	-0.69	-0.67
Malaysia	1.03	2.10	1.75	Malaysia	-0.17	-0.02	-0.02
Philippines	2.54	2.94	2.20	Philippines	-0.31	-0.15	-0.18
Singapore	-0.40	0.34	1.51	Singapore	-0.35	0.04	0.24
Thailand	1.31	2.09	2.32	Thailand	-1.11	-1.08	-0.99
China	0.24	0.48	0.38	China	-0.47	-0.41	-0.38
India	0.52	0.82	0.71	India	0.08	0.06	0.05
Taiwan	0.43	0.73	0.89	Taiwan	-0.93	-0.89	-0.87
Korea	1.10	1.59	1.33	Korea	-0.74	-0.66	-0.65
Hong Kong	5.14	4.53	3.57	Hong Kong	-0.69	-0.57	-0.54
Europe	0.67	0.61	0.66	Europe	0.06	0.06	0.06

Table 8: Change in Investment as a results of various shocks

(% deviation from baseline)

	year 1	year 5	year 10		year 1	year 5	year 10
Asian Investment Decline				East Asia Appreciation			
USA	0.75	1.92	1.89	USA	-0.11	0.07	0.00
Japan	-5.37	-12.97	-15.82	Japan	-0.14	0.18	-0.02
Canada	0.91	2.68	2.42	Canada	-0.11	0.09	-0.01
Australia	0.61	2.97	4.18	Australia	-0.12	0.11	0.02
New Zealand	2.29	6.69	6.36	New Zealand	-0.24	0.16	0.01
Indonesia	-14.73	-50.21	-62.64	Indonesia	-2.61	-0.74	0.24
Malaysia	-10.07	-23.03	-23.19	Malaysia	-1.84	-0.66	0.05
Philippines	-12.49	-25.28	-18.05	Philippines	-2.99	-0.61	0.22
Singapore	-8.04	-31.56	-44.26	Singapore	-0.22	0.16	0.09
Thailand	-6.95	-28.44	-44.91	Thailand	-0.76	-0.51	-0.23
China	5.50	9.44	9.32	China	-5.77	-0.05	0.18
India	0.63	2.12	2.21	India	-0.09	0.04	0.01
Taiwan	-8.12	-24.72	-30.26	Taiwan	-0.20	0.12	-0.02
Korea	-12.43	-22.91	-24.39	Korea	-5.56	-1.08	0.46
Hong Kong	-2.07	-4.48	-5.61	Hong Kong	-2.39	-0.50	0.05
Europe	0.84	2.18	2.45	Europe	-0.11	0.08	0.00
US Fiscal policy				Asian Fiscal Stimulus			
USA	0.05	-4.40	-7.66	USA	-0.20	-0.36	-0.22
Japan	-4.00	-7.37	-6.13	Japan	-0.35	-0.79	-0.48
Canada	-4.86	-10.78	-8.63	Canada	-0.24	-0.52	-0.28
Australia	-2.87	-6.72	-6.73	Australia	-0.22	-0.72	-0.66
New Zealand	-7.33	-12.59	-8.45	New Zealand	-0.65	-1.42	-0.91
Indonesia	-4.99	-6.68	-4.99	Indonesia	0.26	-3.15	-4.30
Malaysia	-5.44	-7.29	-5.00	Malaysia	-0.09	-1.96	-2.68
Philippines	-5.64	-4.92	-2.08	Philippines	-0.33	-3.39	-3.03
Singapore	-3.68	-10.51	-11.89	Singapore	-0.18	-2.96	-5.24
Thailand	-3.46	-7.22	-7.56	Thailand	0.47	-0.85	-2.53
China	-8.25	-3.47	-2.36	China	0.83	-2.16	-2.30
India	-4.66	-4.65	-3.20	India	-0.14	-0.40	-0.29
Taiwan	-4.50	-9.62	-8.67	Taiwan	0.40	-2.30	-4.79
Korea	-9.02	-6.68	-3.80	Korea	0.68	-2.28	-3.54
Hong Kong	-0.26	3.40	4.39	Hong Kong	-0.34	-2.21	-3.05
Europe	-3.50	-5.22	-4.68	Europe	-0.26	-0.46	-0.33

Table 9: Change in Real Effective Exchange Rates as a results of various shocks

(% deviation from baseline [+ is appreciation])

	year 1	year 5	year 10		year 1	year 5	year 10
Asian Investment Decline				East Asia Appreciation			
USA	0.87	0.84	0.49	USA	0.00	0.00	0.00
Japan	-3.18	-3.35	-2.76	Japan	-0.01	0.00	0.00
Canada	0.17	0.23	0.19	Canada	-0.01	0.00	0.00
Australia	0.36	0.31	-0.09	Australia	-0.01	0.00	0.00
New Zealand	0.53	0.79	0.58	New Zealand	-0.02	-0.01	0.00
Indonesia	-3.22	-3.79	-1.59	Indonesia	0.06	0.00	0.00
Malaysia	-0.81	-1.55	-0.98	Malaysia	0.13	0.02	-0.04
Philippines	-1.67	-3.26	-3.54	Philippines	0.07	-0.02	-0.04
Singapore	-0.57	-0.34	0.47	Singapore	-0.04	-0.02	-0.01
Thailand	-0.14	0.42	2.21	Thailand	0.04	0.04	0.03
China	2.09	2.91	1.58	China	0.01	-0.02	-0.01
India	0.69	0.76	0.37	India	-0.01	0.00	0.00
Taiwan	-1.06	-0.57	0.21	Taiwan	-0.01	0.01	0.01
Korea	-1.46	-1.39	0.54	Korea	0.08	-0.02	-0.03
Hong Kong	0.36	0.92	1.44	Hong Kong	0.11	0.04	0.00
Europe	0.80	0.81	0.47	Europe	0.00	0.00	0.00
US Fiscal policy				Asian Fiscal Stimulus			
USA	7.88	8.76	7.74	USA	0.04	0.02	0.02
Japan	-3.88	-3.34	-3.02	Japan	0.08	0.05	0.04
Canada	-3.01	-3.28	-3.25	Canada	0.06	0.04	0.02
Australia	-2.39	-1.97	-1.60	Australia	0.09	0.06	0.04
New Zealand	-2.08	-2.32	-2.05	New Zealand	0.27	0.21	0.13
Indonesia	-0.84	-1.63	-1.42	Indonesia	-0.57	-0.37	-0.25
Malaysia	-0.30	-1.10	-0.98	Malaysia	-0.10	0.14	0.19
Philippines	-0.47	-0.93	-0.62	Philippines	0.02	0.21	0.15
Singapore	-0.49	-0.56	-0.62	Singapore	-0.37	-0.01	0.11
Thailand	-0.17	-0.45	-0.12	Thailand	-0.83	-0.60	-0.33
China	0.69	-2.09	-1.90	China	-0.44	-0.31	-0.22
India	-0.87	-1.75	-1.35	India	0.06	0.04	0.02
Taiwan	-1.21	-1.10	-1.16	Taiwan	-0.86	-0.65	-0.45
Korea	-0.63	-1.59	-1.12	Korea	-0.54	-0.35	-0.23
Hong Kong	2.17	3.45	4.57	Hong Kong	0.03	0.17	0.23
Europe	-3.55	-2.76	-2.46	Europe	0.04	0.03	0.02

Table 10: Change in Real GDP as a results of various shocks

(% deviation from baseline)

	year 1	year 5	year 10		year 1	year 5	year 10
Asian Investment Decline				East Asia Appreciation			
USA	0.09	0.31	0.43	USA	-0.01	0.01	0.00
Japan	-0.57	-3.03	-4.72	Japan	-0.02	0.03	0.01
Canada	0.10	0.41	0.48	Canada	-0.01	0.01	0.00
Australia	0.16	0.51	0.93	Australia	-0.03	0.02	0.01
New Zealand	0.11	0.83	1.29	New Zealand	-0.01	0.01	0.01
Indonesia	-3.76	-12.21	-21.54	Indonesia	-2.50	-0.25	-0.06
Malaysia	-1.64	-7.94	-13.11	Malaysia	-0.87	-0.42	-0.22
Philippines	-2.75	-7.77	-9.16	Philippines	-2.27	-0.30	-0.04
Singapore	-1.06	-7.73	-14.93	Singapore	-0.09	0.01	0.03
Thailand	-0.77	-8.33	-20.75	Thailand	-0.67	-0.25	-0.23
China	1.61	2.57	3.15	China	-4.13	-0.19	-0.05
India	0.14	0.44	0.62	India	-0.01	0.01	0.00
Taiwan	-0.40	-4.22	-7.70	Taiwan	-0.06	0.01	0.00
Korea	-2.47	-6.81	-10.77	Korea	-2.23	-0.55	-0.16
Hong Kong	-0.15	-1.44	-2.38	Hong Kong	-2.08	-0.47	-0.18
Europe	0.13	0.40	0.64	Europe	-0.01	0.01	0.01
US Fiscal policy				Asian Fiscal Stimulus			
USA	2.19	0.44	-0.80	USA	-0.02	-0.07	-0.06
Japan	-0.63	-1.55	-1.70	Japan	-0.06	-0.18	-0.17
Canada	-0.27	-1.53	-1.77	Canada	-0.02	-0.09	-0.07
Australia	-0.58	-1.30	-1.81	Australia	-0.04	-0.14	-0.19
New Zealand	-0.37	-1.96	-2.30	New Zealand	-0.01	-0.20	-0.25
Indonesia	-3.08	-1.69	-1.88	Indonesia	1.63	-0.33	-1.23
Malaysia	-1.65	-2.86	-3.35	Malaysia	1.30	0.19	-0.72
Philippines	-2.73	-1.58	-1.06	Philippines	1.74	-0.19	-0.89
Singapore	-0.52	-2.47	-3.98	Singapore	1.25	0.20	-0.79
Thailand	-1.12	-2.00	-3.64	Thailand	1.26	0.24	-0.84
China	-4.70	-1.19	-1.05	China	1.93	-0.12	-0.59
India	-2.38	-1.00	-1.14	India	-0.02	-0.09	-0.10
Taiwan	-0.48	-1.41	-1.91	Taiwan	1.35	0.49	-0.19
Korea	-2.93	-2.15	-2.04	Korea	1.56	0.24	-0.64
Hong Kong	0.24	2.85	4.04	Hong Kong	1.71	0.04	-0.89
Europe	-0.45	-1.08	-1.47	Europe	-0.03	-0.10	-0.12

Table 11. Actual V.S. Simulated Changes in Current Account Balances

	Actual Balances			***Simulated Changes over 5 Years with the Shock of***		
Country	**1997**	**2002**	**Change 1997-2002**	**Asian Investment Declines (A)**	**US Fiscal Contraction (B)**	**Sum (A+B)**
USA	-1.5	-4.6	*-3.1*	-0.3	-1.9	*-2.2*
Japan	2.2	2.8	*0.6*	1.2	0.9	*2.1*
Korea	-1.6	1.0	*2.6*	3.4	1.6	*5.0*
Hong Kong	-4.4	8.5	*12.9*	1.3	4.5	*5.8*
Singapore	15.6	21.4	*5.8*	7.7	0.3	*8.0*
Taiwan	2.4	9.1	*6.7*	2.5	0.7	*3.3*
China	4.1	2.8	*-1.3*	-1.6	0.5	*-1.2*
Indonesia	-2.2	3.9	*6.1*	6.3	1.2	*7.6*
Malaysia	-5.9	11.1	*17.0*	6.7	2.1	*8.8*
Philippines	-5.3	2.1	*7.4*	5.9	2.9	*8.9*
Thailand	-2.0	5.6	*7.6*	4.2	2.1	*6.3*

Note: The figures of the simulated changes are from Table 7.

Figure 1. Saving, Investment and Current Account: The U.S, 1981-2004

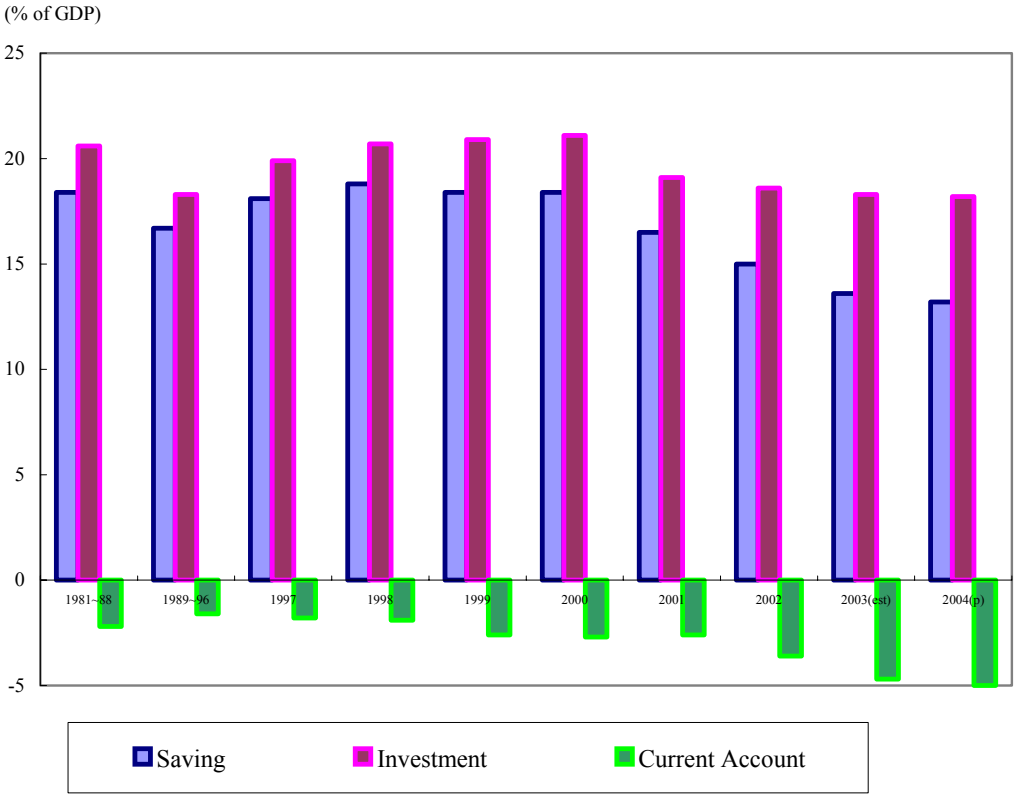

Figure 2. Private and Public Saving, and Current Account: The U.S., 1981-2004

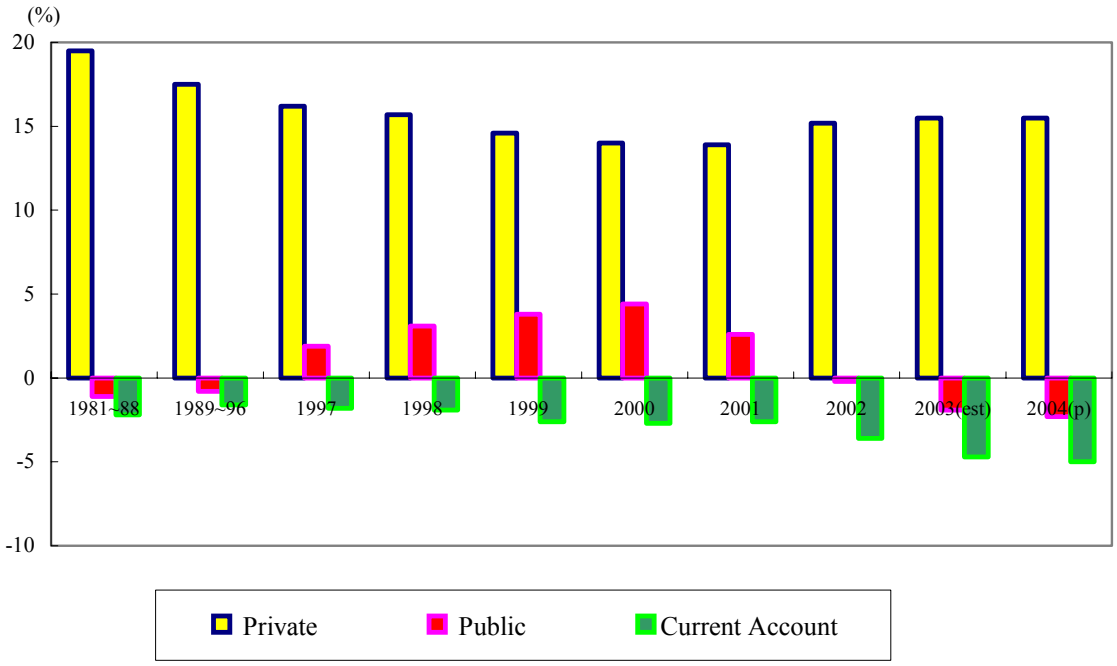

Figure 3. Saving, Investment and Current Account: Japan, 1981-2004

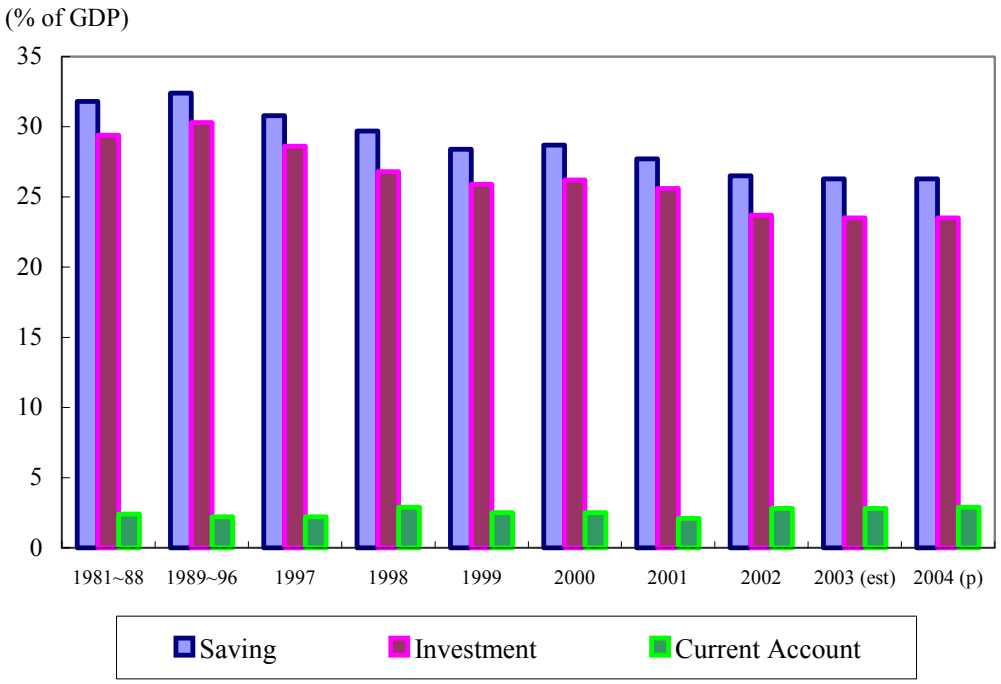

Figure 4. Saving, Investment and Current Account: Four East Asian NIES, 1981-2004

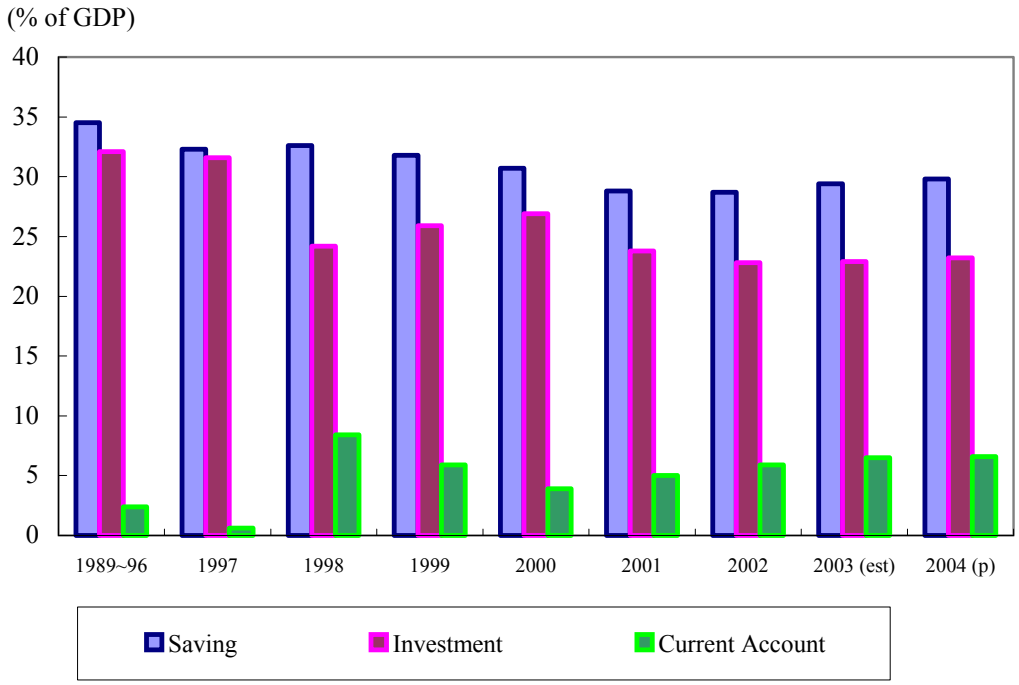

Figure 5. Real Effective Exchange Rates: China, Japan, and Korea

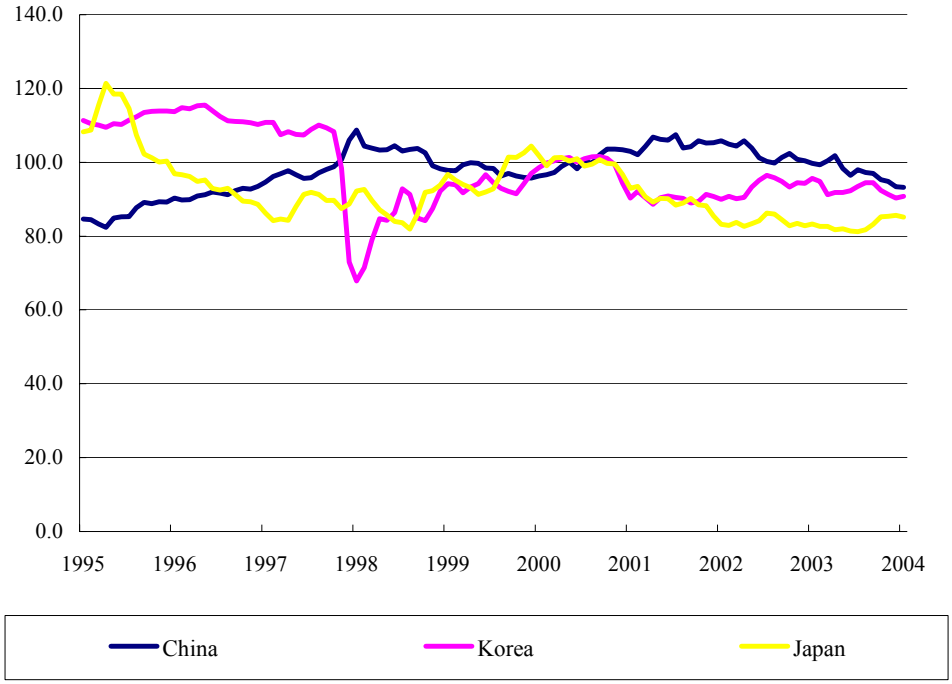

Figure 6. Real Effective Exchange Rates: (Indonesia, Malaysia, Philippines, Singapore, and Thailand)

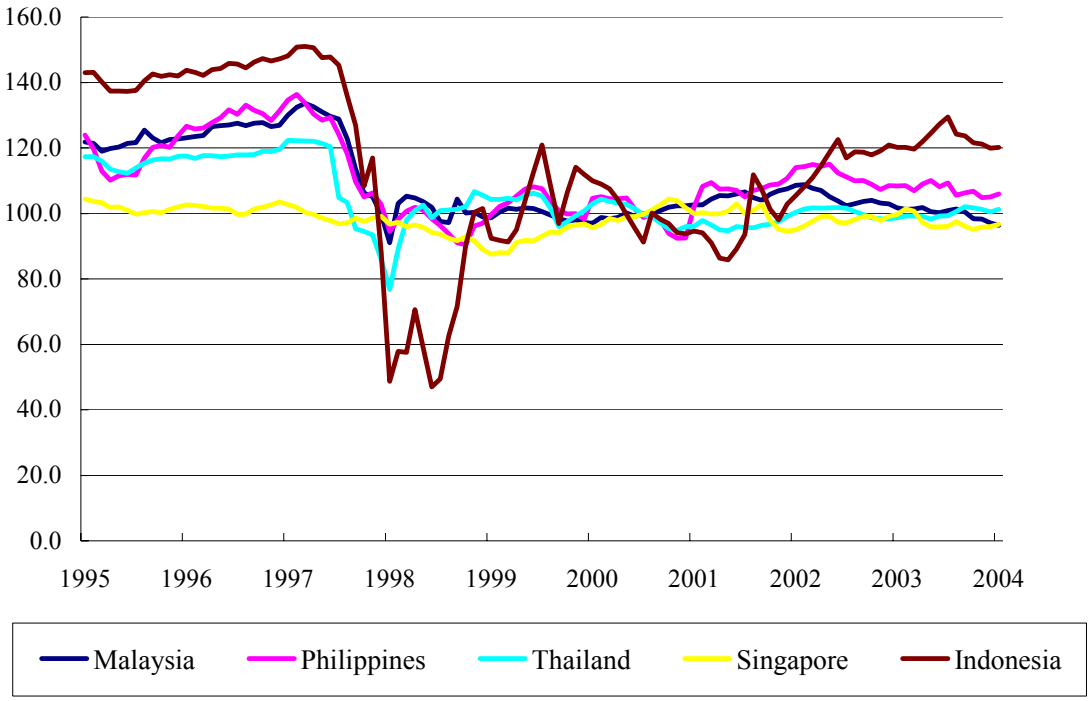

Figure 7. Real Effective Exchange Rates: (Hong Kong and Taiwan)