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Savings, Investment and Current Account Surplus in Asia[1]

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Abstract

Drawing upon panel data and SUR estimates for selected eight countries in East, South and South-east Asia, over the period 1961-2007, we have examined the determinants of national saving, investment and current account balance. Our analysis confirms strong effects of growth, structural features (share of rural population) and demographics on these variables. Simulation confirms that deceleration of growth will lower current account surplus through reductions in savings and investment. A recent validation of the savings glut hypothesis is questioned, as also the consensus view of exchange rate adjustments in emerging Asia – especially China – as key to robust global recovery. The alarmist predictions of a global depression or a wave of fiscal crises are ill-informed and mistaken. An alternative growth perspective is delineated that emphasizes the imperative of higher investment, a higher share for agriculture and other activities in rural areas, with little risk of overheating of these economies.

Key words: Savings glut, underinvestment, current account imbalances, exchange rates, SUR

VHLSS.

JEL codes: C21, C33, E21, E22

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Savings, Investment and Current Account Surplus in Asia

Introduction

One of the main features of the Asian economy after the financial crisis in 1997-98 is the shift from current account deficit into a region of current account surplus, or equivalently, from a net importer of capital to a net exporter of capital. Some stylised facts underlying this shift include: (i) the investment rate fell sharply in some countries while the savings rate continues to be high, and (ii) while the investment rate after the crisis matched or exceeded the saving rate in the pre-crisis period, it fell subsequently. Unresolved but frequently debated questions are: i) why investment rates in some Asian countries have fallen in post-crisis years, ii) whether current account surplus is due to an excess of savings, and iii) whether non-economic factors are involved in the co-existence of high savings rates and low investment rates. Recent commentators – including officials and researchers at the IMF, ADB and elsewhere – have drawn pointed attention to astonishingly high saving rate of emerging Asia and the huge current account surplus, and the imperative of curtailing these drastically in the interest of a robust global recovery. The present study offers a detailed scrutiny of this consensus, and a new perspective on rebalancing of growth in this region.

The Savings Glut and Rising Imbalances in Asia

(a) Overview

Various recent contributions have highlighted the huge current account surplus in this region and growing. In particular, attention has been drawn to the huge surplus in China and its implications for global economic recovery. In fact, a steady but rising crescendo of voices emanating from the IMF, ADB and other more specialised

writings have pinned the blame on China for not revaluing the *renminbi* as key to cutting its huge current account surplus and helping USA and other industrialised countries to break out of a contraction of their economies. As argued below, this is an oversimplified and potentially misleading prescription that is both ill-informed and driven largely by the short-term interests of these economies at the expense of valid medium-term growth considerations of emerging Asia.

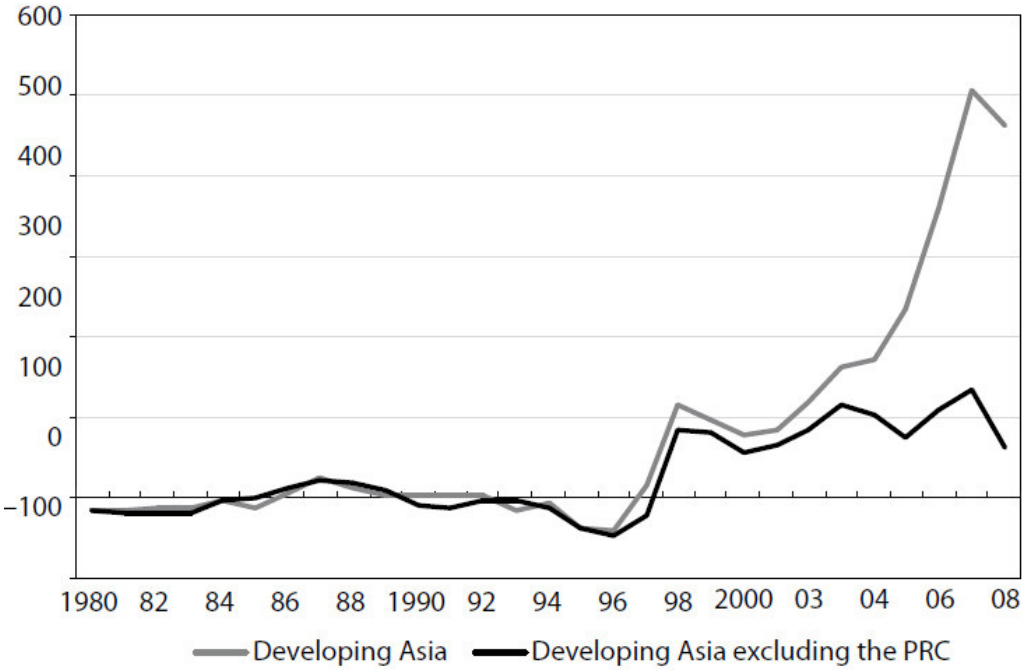
Let us first summarise salient features of selected Asian countries. In doing so, we shall draw upon three recent studies (Prasad, 2009, Jha et al. 2009, and Park and Shin, 2009).

The connection between domestic and global imbalances is through the current account, representing the difference between national savings and investment (Begg et al. 1991). As shown in Figure 1, savings grew at a faster rate than investment, resulting in a rising current account surplus of 7 per cent of GDP in Asia. The surge in this ratio over the period 2000-2007 reflected largely the massive current account surplus of China. Excluding China, Asia's saving rose gradually and in tandem (Jha et al. 2009).

Analysis of national savings, investment and current account surplus as ratios of national GDP for selected Asian countries is carried out here. Briefly, aggregate savings and investment rose in Asia during 2000-2007. Among others, China led in current account surplus while highest deficits were recorded by Vietnam, Sri Lanka and Pakistan in that order.

The current account surplus in China was modest during 2000-2004, averaging 2.5 per cent of GDP. 2005 was a turning point as the surplus surged to 11.3 per cent in 2007, largely as a result of a trade surplus of 9.6 per cent[2].

Figure 1: Aggregate Current Account Balance for Developing Asia ($ billion)



Note: Developing Asia includes Bangladesh; Cambodia; People's Republic of China, Hong Kong, China; India; Indonesia; Korea; Malaysia; Pakistan; Philippines; Singapore; Sri Lanka; Taipei,China; Thailand; and Viet Nam.
Sources: IMF's *World Economic Outlook*, authors' calculations.

Source: Jha et al. (2009)

A key element in this debate is excessive savings in this region. Rapidly growing Asian economies have also recorded high saving rates. Some of the countries that have recorded saving rates of over 30 per cent are China, Indonesia and Korea. Besides, for most major economies in this region, saving rates have either stayed

[2] Jha et al. (2009) view this level of surplus as a problem, as it is not explainable in terms of demographics, stage of development and financial development. As elaborated later, this is contentious and potentially misleading.

unchanged or risen in the aftermath of the Asian financial crisis of 1997-98. China recorded the sharpest jump during 2000-2007 with the saving rate crossing 50 per cent in 2007. But there are also countries with very low saving rates (e.g. Fiji, Tonga and Vanuatu have saving rates of below 15 per cent)[3].

Three sources of domestic savings are distinguished: households, enterprises and government. Household saving is measured as the difference between household disposable income and consumption expenditure. Corporate/enterprise savings are counted as retained earnings (retained profits or profits not paid as dividends). Government savings are defined as the difference between revenues and (current) expenditure.

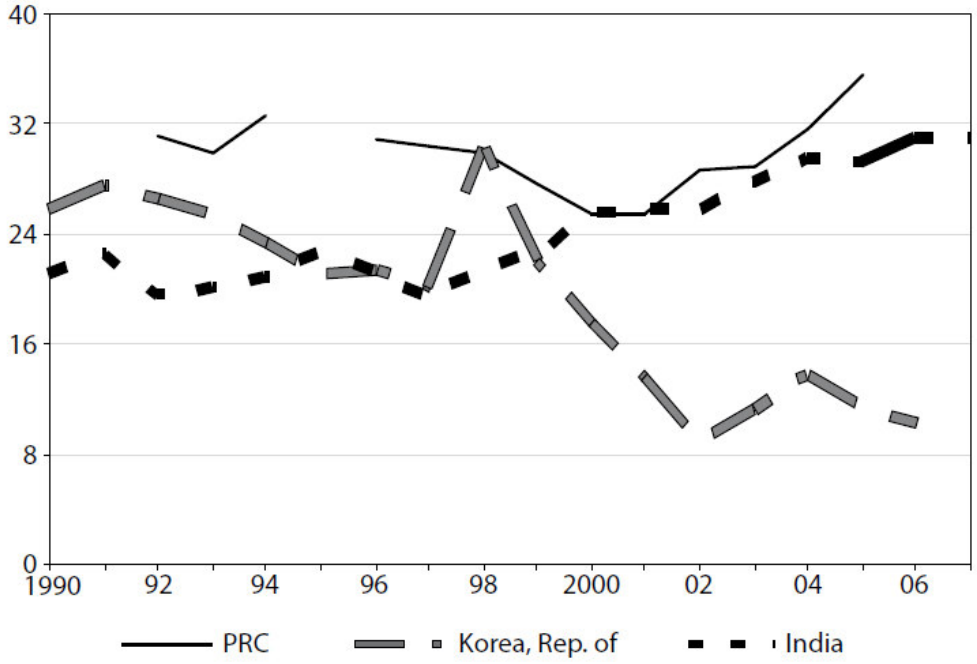
Jha et al. (2009) have collated data on sources of savings for China, Korea, India and Philippines[4]. Savings grew two and a half times during 2000-2007. But more striking than this feature is that corporate savings became the dominant source of savings in this region, contributing about half of aggregate savings. In China, for example, the share of corporate savings rose markedly, accounting for more than half of national savings in 2006. In India and Philippines too, the share of corporate savings doubled relative to GDP since 2000.

Yet in specific countries household savings continue to be a major source. As these are more appropriately measured relative to disposable household income, some comments on the available estimates are necessary. A graphical illustration is given in Figure 2.

[3] For further details, see Jha et al. (2009).
[4] Including Taipei, China.

In China, the household saving rate rose sharply during the high growth years of this decade. This was also the case in India where this saving rate went up from 20 per cent of disposable income in 1998 to 32 per cent in 2007. In sharp contrast, Korea recorded a marked reduction, from 30 per cent in the late 1990s to 10 per cent in 2007 (Jha et al. 2009).

Figure 2: Household Saving Rates as Percent of Disposable Income



Note: Household savings survey data on the PRC are based on per capita income and consumption, and population available through CEIC. Saving rates from national accounts (flow of funds) are expressed as a share of disposable income; the data are missing for 1990, 1991, 1995, 2006, and 2007. For India, data refer to gross savings of households as a share of personal disposable income. For the Republic of Korea, data refer to gross savings of individuals as a share of disposable income of household and private unincorporated enterprises.
Sources: CEIC Data Company Ltd., downloaded February 2009; Prasad (2009a).

Source: Jha et al. (2009)

A broad brush and highly selective treatment of the underlying factors is given below to set the stage for rebalancing of growth in this region as key to global economic recovery.

Focusing on corporate savings in China, a rapid rise occurred in the profitability of state-owned and private enterprises and internal financing of investment. Some of the specific factors include firm-specific factors (e.g. firm level uncertainty), macro-economic factors (e.g. robust growth, low interest rates, and growing output prices), and policy induced distortions (state subsidies on land and energy, low dividend pay out, weak financial system). Besides, dividend payouts from large and profitable enterprises accrued mainly to the rich with higher saving propensities[5]. Corporate savings in India have begun growing, contributing a quarter of national savings. This is attributable to reduction in corporate tax rate, customs duty and nominal interest rates.

With the contagion of global slowdown and declining corporate profitability, household savings may regain their importance. In any case, in several developing Asian countries, their share has risen. Specifically, the rising rate in China is closely linked to its rising current account surplus. Together with its high corporate saving rate, it has contributed substantially to this region's current account surplus.

Apart from growth of incomes, precautionary savings – a reflection of life-cycle and aging effects, weak or patchy social safety net, and lack of financial intermediation – have assumed greater importance. China and India illustrate in varying degrees their importance. The age-saving profile in urban China in 1990 exhibited a hump-shaped pattern, consistent with the life-cycle hypothesis. However, from mid-1990s, it became U-shaped, with high saving rates at the early and later stages of the life-cycle. Besides, the higher private burden of health and education expenditure in the

[5] Lin (2009) makes the important observation that the high level of corporate savings in China is partly a result of a financial structure dominated by state-owned banks and an equity market that favour large firms.

transition to a market economy induced more household savings. In India too, given the weakness of the public health system and near absence of health insurance, the precautionary motive for savings remains strong. These effects are further compounded by weak financial intermediation – especially in the rural areas (Jha et al. 2009).

Jha et al. (2009) elaborate their case for rebalancing of growth in Asia on a disaggregation of growth into domestic and external demand. As a review is given in Gaiha et al. (2009), the main points are summarised below.

- The strongest boost to growth is through consumption. On average, it contributes about three quarters of the median GDP growth in this region. However, there is wide variation. At one end of the spectrum is China where consumption contributes less than half of GDP growth. At the other end is Sri Lanka where it contributes about 90 per cent of overall growth.
- Private consumption dominates in all countries, with the notable exception of China where its relative importance to government expenditure is less marked. On average, private consumption growth accounts for about three quarters of the total growth contribution of consumption.
- The average contribution of investment growth at about 1.2 percentage points of 5.3 per cent per annum GDP growth pales in comparison with that of consumption. However, it accounts for much larger shares in China and Vietnam (4.5 percentage points each) and India (3.4 percentage points). Indeed, it is only in China that investment is the main source of growth.

Moreover, this investment is largely domestically financed, supported by a large current account surplus.

- Considering the dependence on foreign trade, its contribution is barely 0.3 percentage point of overall GDP growth in the region. But again there is considerable diversity in the region. While net exports in 6 of the 15 countries add 1 percentage point or more per annum to GDP growth, their contribution in Cambodia, India, Sri Lanka and Vietnam was negative. Even in China – often held up as a model of export-led growth – the direct effects of net exports on GDP growth were barely 1.2 percentage points per year, accounting for one eighth of overall GDP growth. It must, however, be borne in mind that even if a country has a high level of exports relative to GDP, it could have a balanced trade account (or low net exports) and limited contribution to overall GDP growth.
- That this is, in fact, the case in several countries in the sample is revealed by the fact that average ratio of exports to GDP was about 45 percent in 2007, implying a high level of dependence on exports. However, the average ratio of the trade balance (or net exports) is barely half a percent of GDP. Again, there is wide disparity. On average, the trade balance during the 2000s was negative for Bangladesh, Cambodia, and India, Lao PDR, Pakistan, Sri Lanka and Vietnam. By contrast, China, among others, recorded a large trade surplus.

While these findings reaffirm the importance of consumption growth as a source of growth, its analytical significance is limited by the fact that this is merely an accounting exercise that apportions contributions to growth additively. Indeed, as argued below, it is not so much excess of savings as underinvestment that needs

greater emphasis from a medium-run growth perspective on this region and elsewhere. More specifically, as demonstrated in Gaiha et al. (2009), policies need to be identified to influence not just investment but also its composition – especially of public investment – towards agriculture and other rural activities for a more sustainable growth of incomes and livelihoods. Assertions that exchange rate adjustments and concomitant increases in consumption in emerging Asia are not just simplistic but also potentially misleading.

(b) Empirical Validation of Savings Glut Hypothesis

In another recent study, Park and Shin (2009) offer an empirical validation of the savings glut hypothesis, based on a large sample. First, the empirical evidence is summarised, followed by a critique. This then sets the stage for our own econometric analysis that addresses some of the key specification and methodological issues, and simulations of contractions in GDP growth rate. An alternative perspective on rebalancing of growth that follows from our reading of recent evidence is delineated.

Park and Shin (2009) motivate their analysis by two stylised facts that relate to Asia's transformation from a region of current account deficit into a region of current account surplus (or, equivalently, from a net importer of capital to a net exporter of capital). One of these facts is that the investment rate fell sharply in some countries, while the other is that the saving rate continues to be high throughout the region. Although the investment rate matched the saving rate in the pre-financial crisis period, it lagged behind the saving rate in the post-crisis period.

The persistent current account surplus in the post-crisis period may thus be due to either excessive savings or underinvestment or both. Recognising the difficulties of an unambiguous resolution, Park and Shin (2009) are inclined to the view that "the contribution is predominantly from oversaving than underinvestment…." (p. 2). Of particular interest is the fact that in China the current account surplus is driven by astonishingly high saving rates.

The empirical validation of the savings glut hypothesis rests on "determining the extent to which Asian countries' saving and investment rates can be explained by fundamentals" (Park and Shin 2009, p. 9). It is further explained that "a positive gap between the actual saving rate and saving rate predicted by fundamentals" could be viewed "as evidence of oversaving" (p. 9). "Likewise, we may view a negative gap between the actual investment rate and the investment rate predicted by fundamentals as evidence of underinvestment" (pp. 9-10). As argued below, this argument is deeply flawed, as also the econometric validation.

Savings and investment functions are estimated for a large sample of developing countries including a large number of Asian countries. Briefly, the specification used to explain saving and investment comprises three sets of factors: (i) country-specific factors that change over time (GDP per capita and its growth rate), (ii) factors that vary across countries but not over time (country dummies that control for unobservable differences between them), and (iii) demographic structure of the population (two different measures of dependency rate).

A summary of the econometric results is given below.

- GDP growth has a positive impact on both savings and investment.
- The estimated coefficients of GDP growth in the saving and investment equations are considerably larger for the Asian countries.
- Lagged GDP growth also has a positive effect on both saving and investment for Asian countries. The coefficient is larger for investment for Asian countries compared with that for the rest of the sample. The effect on savings for the latter is not significant while it is positive and significant for the Asian countries.
- The coefficient of GDP per capita is negative and significant for savings in Asia and positive and significant in the aggregate sample. The coefficient in the investment equation is positive and significant for all countries but not for Asia.
- The coefficient of GDP per capita squared for savings is positive and significant for Asia but negative and significant for investment in the aggregate sample.
- Contrary to the assertion by Park and Shin (2009), whether GDP per capita has a positive effect on savings will depend on what the level of GDP per capita and its square for the relatively small coefficient of GDP per capita square are to more than offset the negative coefficient of GDP per capita.
- Based on these regressions, some computations are carried out to illustrate that large fractions of savings rates cannot be explained by fundamentals – about 69 per cent for China, 33 per cent for Thailand. Similarly, large fractions of investment rates are not attributable to fundamentals – 65 per cent for China.

From a broader perspective, faster growing economies save and invest more than others. To the extent that unexplained savings (i.e. the difference between actual and predicted savings) are interpreted as oversaving, there is some evidence of it in Asia since the mid-1980s. That savings grew after the crisis in specific Asian countries (captured through time dummies for specific countries) is interpreted as growth of precautionary savings. The authors also concede that this undermines their view of unexplained savings as oversaving but steer clear of the larger issue that the difference between actual and explained savings varies with the specification used. In the absence of structural characteristics (e.g. share of the rural population), unexplained variation in savings is simply a result of an incomplete specification of the saving equation.

Turning to the investment rate, attention is drawn to the fact that in the period preceding the crisis, 1990-96 , the investment rate in the crisis countries was about 12 per cent higher than in countries with similar characteristics. How this similarity is ensured – far from self-evident – is not discussed. Therefore the inference that the "fundamental determinants of investment fail to explain a large part of the investment boom" (Park and Shin 2009, p. 21) in the pre-crisis period is tenuous, if not misleading. If the different forms of GDP per capita fail to capture the "animal spirits" of investors in the pre-crisis period, this evidence is far from conclusive. Indeed, if our view is anything to go by, what is seen as a bout of overinvestment is nothing more than an artefact of specification used[6]. What is equally contentious is the interpretation of small coefficients of sub-period dummies after the crisis as

[6] In any case, lack of evidence corroborating overinvestment in Indonesia, Korea and Philippines as due to the small number of observations should have alerted the authors to the fragility of their thesis. Instead, to make matters worse, they merge Indonesia and Korea into one dummy and report a positive and significant coefficient for the sub-period 1990-96.

reflecting that investment rates have come down to more sustainable levels. If the crisis lowered investment rates, as corroborated by our econometric analysis, the slow recovery of investment in the post-crisis period is merely a reflection of growing optimism.

The conclusion, therefore, that there is "stronger evidence of oversaving than underinvestment" is suspect or plain wrong.

Data

The data for the present study, on eight countries in South, South-east and East Asia region, were obtained from World Development Indicators (World Bank 2009), Asian Development Bank's Key Indicators (ADB, 2009), and UNU-WIDER data (World Institute for Development Economics Research of the United Nations University). These countries comprise Bangladesh, China, India, Indonesia, Pakistan, Philippines, Sri Lanka and Vietnam. We have aggregated annual data for all the variables in the period 1961-2007 into sub-periods of 3-year averages except the last period of 2006-7 (that is, 1961-3, 1964-6, … , 2003-5, and 2006-7). 3-year averages have been taken as some countries do not have the complete annual data for key variables.[7]

The definitions of variables used in our econometric econometric analysis are as follows:

- S_{it} : Saving ratio: Log of average ratio of national savings to GDP
- I_{it} : Investment ratio: Log of average ratio of national investment to GDP
- C_{it} : Current Account Balance: Ratio of the current account balance to GDP
- GDP: Log of per capita GDP (constant US$)

[7] Appendix 1 and Appendix 2 contain, for each country, the graphs of saving, investment, and current account balance as a share in GDP, and those of growth of GDP, saving, and investment. Appendix 3 contains the annual growth rate of saving and investment for each country.

- GDPG: Growth rate of per capita GDP (%)
- FDI: Log of net inflow of Foreign Direct Investment (current US$)
- Dependency: Log of ratio of dependents (people younger than 15 or older than 64) to the working age population (15-64)
- Agriculture: Log of ratio of agriculture output (value added) to GDP
- Trade: Log of ratio of trade to GDP
- Rural: Log of ratio of rural population to total population
- GINI: Log of GINI coefficient of income distribution
- Life: Log of life expectancy (i.e. number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life)

Because of a few missing observations for some countries, the final dataset has 69 observations.

Analysis

Given that Savings, Investment, and Current Account Balance are likely to be endogenous, we employ a system of equations to estimate these three variables simultaneously. Here, the functional forms for country *i* in period *t*, where *t* is defined by three year averages: 1961-3, 1964-6, ... , 2003-5, and 2006-7, are specified as:

$$S_{it} = \alpha_0 + \alpha_1 GDP_{i,t-1} + \alpha_2 (GDP_{i,t-1})^2 + \alpha_3 Dependency_{i,t} + \alpha_4 Rural_{i,t} + \alpha_5 Life_{i,t} + \alpha_6 GINI_{i,t} + u_{t,t} \quad (1)$$

$$I_{it} = \beta_0 + \beta_1 GDP_{i,t-1} + \beta_2 (GDP_{i,t-1})^2 + \beta_3 GDPG_{i,t-1} + \beta_4 I_{i,t-1} + \beta_5 FDI_{i,t-1} + \beta_6 Agriculture_{i,t-1} + \beta_7 Trade_{i,t-1} + \varepsilon_{t,t} \quad (2)$$

$$C_{it} = \gamma_0 + \gamma_1 GDP_{i,t-1} + \gamma_2 FDI_{i,t-1} + \gamma_3 C_{i,t-1} + \gamma_4 Crisis + e_{t,t} \quad (3)$$

While Park and Shin (2009) use current GDP and GDP growth in saving or investment functions, the present study uses lagged GDP and lagged GDP growth to circumvent reverse causality. Here FDI is supposed to affect investment and current account balance. FDI is lagged to take partial account of its endogeneity and the time

lag of the indirect effects of FDI on national investment (e.g. through its complementarity to domestic investment) and the current account balance (e.g. through an increase in imports to, or exports from a subsidiary of multi-national corporations).

In the saving function, the share of the age group younger than 15 and older than 64 in the total population (or Dependency) is used as an argument to capture the demographic pattern of the country (or, life-cycle effects). This could negatively affect savings in case this group tends to have lower savings rates than the working-age group under the life-cycle or permanent income hypotheses. However, if the aging of the population increases propensity of the working age population to work harder and save to better prepare for the future, it may offset partially the negative effect. The share of the population living in rural areas is used as another argument of savings, as lack of financial intermediation may induce higher precautionary savings. It is assumed that savings are also influenced by life expectancy (*Life*) because a longer life expectancy will strengthen the motivation to save. The GINI coefficient (*GINI*) is used in the saving function to allow for different propensities to save of the poor and rich.

We estimate saving and investment models separately using panel data methods, viz. fixed and random effects estimation following previous studies (Bosworth and Chodorow-Reich 2006; Park and Shin 2009). However, since savings and investment are likely to be contemporaneously correlated, we have also used Seemingly Unrelated Regression (SUR) estimation for saving and investment. This is an important point of departure from Park and Shin (2009) in so far as a persistent current account surplus or deficit may induce exchange rate adjustments in a flexible exchange rate regime. But, on the other hand, accumulation of foreign exchange

reserves may result in a positive asset effect of higher import demand, offsetting exchange rate adjustment[8].

Results

First, as a background, we present the results of a trend regression with country dummy variables in Table 1. The dependent variable is either log of saving ratio, log of investment ratio or current account balance. As the units of saving ratio and investment ratio are transformed in logarithm, the estimated coefficients of *t* in saving and investment represent average growth rates. Saving grows by 5.5 per cent per period (3 years) while investment grows by 4.1 per cent per period. In contrast, current account balance changes 0.39 per cent per period. However, compared to China, all other country

Table 1: Growth rates of Saving, Investment and Current Account Balance

	Log(Saving)	Log (Investment)	Current Balance
T	**0.055**	**0.041**	**0.39**
	(6.05)* **	**(8.39)*** **	**(4.55)*** **
Crisis	0.026	-0.031	-0.26
	(0.17)	(0.36)	(0.29)
Bangladesh	**-1.509**	**-0.777**	**-2.995**
	(10.04)* **	**(9.49)*** **	**(2.85)*** **
India	**-0.564**	**-0.42**	**-2.506**
	(3.75)* **	**(5.14)*** **	**(2.42)** **
Indonesia	**-0.435**	**-0.416**	**-2.711**
	(2.89)* **	**(5.08)*** **	**(2.53)** **
Pakistan	**-1.202**	**-0.581**	**-4.815**
	(7.78)* **	**(7.10)*** **	**(4.59)*** **
Philippines	**-0.63**	**-0.412**	**-4.102**
	(4.19)* **	**(5.03)*** **	**(3.91)*** **
Sri Lanka	**-0.923**	**-0.413**	**-6.331**
	(6.07)* **	**(4.97)*** **	**(6.12)*** **
Vietnam	**-1.056**	**-0.44**	**-4.946**
	(5.81)* **	**(4.31)*** **	**(3.15)*** **
Constant	-1.522	-1.48	-2.323
	(10.72)	(20.90)	(1.82)
Observations	114	119	79
Joint Significant Test	F(9, 104)= 20.38	F(9, 109)= 19.44	F(9, 69)= 8.24
R-squared	0.64	0.62	0.52

Absolute value of t statistics in parentheses

- significant at the 10%; ** significant at the 5%; *** significant at the 1% levels
- The omitted country is China.

[8] We are grateful to Raghbendra Jha for pointing this out.

dummies have negative coefficients for savings, investment and current account balance.

Table 2 shows the results of static panel estimation of saving and log investment (both in logarithm) for the total sample of eight countries. We employed both fixed and random effects specifications, separately for saving and investment functions. Hausman test results, however, favour the fixed effects specification over the random effects in all cases. Hence we confine our comments to the fixed-effects version. The first two columns relate to the saving function, without the GINI (in the first column) and with it (in the second). The coefficient of lagged GDP measures the elasticity of savings. Specifically, savings will increase by 2.6 per cent in response to a one percent increase in per capita GDP. The negative sign of lagged GDP per capita squared suggests a non-linear relationship between savings and lagged GDP – savings rise with income but at a diminishing rate. While the coefficients of lagged GDP and its square become non-significant in the second column, with a control for the effect of inequality in income distribution, their sign and size are similar.

Table 2: Panel data estimations for saving and investment equations

	Log (Saving)		Log (Investment)	
lag GDP	**2.565**	2.247	**1.988**	**2.012**
	(1.85)*	(1.48)	**(2.13)****	**(2.03)****
lag $(GDP)^2$	**-0.196**	-0.178	**-0.136**	**-0.141**
	(1.73)*	(1.38)	**(1.81)***	**(1.77)***
lag GDPG	-	-	**0.022**	-
			(3.07)***	
lag Investment	-	-	**0.488**	**0.568**
			(4.96)***	**(5.63)*****
lag FDI	-	-	-0.015	-0.01
			(1.29)	(0.78)
lag Agri. Share	-	-	**0.507**	**0.525**
			(3.06)***	**(2.99)*****
lag Trade	-	-	**0.186**	**0.215**
			(2.21)**	**(2.42)****
Dependency	0.041	0.169	-	-
	(0.08)	(0.29)		
Rural share	**1.677**	**1.692**	-	-
	(3.48)***	**(3.45)*****		
Life expectancy	**3.553**	**3.829**	-	-
	(6.02)***	**(6.11)*****		
GINI	-	0.362	-	-
		(1.06)		
Crisis	-0.008	-0.075	**-0.101**	**-0.083**
	(0.06)	(0.56)	**(2.33)****	**(1.83)***
Constant	-24.068	-23.578	-6.674	-6.493
	(5.44)	(4.73)	(2.23)	(2.04)
Observations	108	92	81	81
Joint Significant Test	F(6,94)= 14.38	F(7,77)= 9.10	F(8,65)=19.13	F(7,66)=18.19
R-squared	0.48	0.45	0.7	0.66
Hausman Test for the choice between FE and RE model	$chi^2(6)$ = 61.16 Prob>chi2=0.0000	$chi^2(7)$ = 58.83 Prob>chi2=0.0000	$chi^2(8)$ =121.75 Prob>chi2=0.0000	$chi^2(7)$ =19.83 Prob>chi2=0.0059

Absolute value of t statistics in parentheses

* significant at the 10%; ** significant at the 5%; *** significant at the 1% level.

A possibility is a positive correlation between the GDP and the GINI.

Among the demographic factors, the positive association of dependency ratio with national saving is not statistically significant. The effect of the ratio of rural population to total population is positive and significant confirming a strong motivation for precautionary savings. The estimated coefficient of life expectancy suggests that there is a positive and strong – both economically and statistically – association with savings regardless of the inclusion of the GINI: a one percent higher life expectancy would increase the saving ratio by 3.55 per cent (without the GINI) or 3.83 per cent (with the GINI). If family support systems weaken without strengthening of social support systems – old age support, health insurance, and protection against debilitating illnesses and injuries – such a strong association is plausible. Somewhat surprisingly, the crisis period dummy does not have a significant negative effect on savings.

Turning to the results of investment equation, we observe a positive relationship between GDP per capita and investment at the 1 per cent significance level. A one percent increase in GDP per capita would increase the investment ratio by about 2 per cent. Lagged GDP squared has a negative and significant coefficient, which implies a non-linear relation between lagged GDP and investment. The influence of lagged investment is also positive and significant at the 1 per cent level. Somewhat surprisingly, FDI does not have a significant effect on investment implying absence of a strong complementarity.

On the other hand, the estimated elasticity of investment with respect to agricultural output share is approximately 0.5 per cent and is significant at the 1 per cent level. That is, a higher share of agriculture is associated with higher investment. The association of trade (as a proxy of openness) with investment is positive and

significant. Therefore trade liberalisation induces higher investment. The Asian financial crisis dampened investment. But whether it was a one-off effect seems unlikely as building up of investor confidence and optimism take time.

Table 3 shows the result of panel estimation taking account of time effects. We confine our comments to the fixed effects version, guided by Hausman test results that favour it over random effects. For savings, the results are generally similar to those in Table 2. The coefficient estimate of GDP per capita and its square term become more highly significant. While the effect of the dependency ratio on savings is still non-significant, both rural population share and life expectancy show positive and strong relationship with savings. Most of the time dummy variables, with 1997-1999 as the base period, are non-significant except that the 1960s, 1970s and early 1980s have significant positive effects in the specification without the GINI. In contrast, after controlling for the time effects, the effect of GDP per capita on investment becomes non-significant while the sign is unchanged. GDP per capita growth and lagged investment show positive and strong association with investment, as in Table 2. The coefficient of agriculture output share is positive and significant at the 10 per cent level in the specification with lagged GDP growth.

Table 3. Panel data estimations for saving and investment equations – time effects

	Log (Saving)		Log (Investment)	
lag GDP	**3.354**	**2.81**	0.401	0.399
	(2.38)**	**(1.69)***	(0.52)	(0.50)
lag $(GDP)^2$	**-0.251**	-0.215	-0.032	-0.037
	(2.19)**	(1.54)	(0.52)	(0.58)
lag GDPG	-	-	**0.017**	-
			(2.18)**	
lag Investment	-	-	**0.853**	**0.96**
			(9.39)***	**(12.18)*****
lag FDI	-	-	0	0.006
			(0.01)	(0.65)
lag Agri. share	-	-	**0.246**	0.218
			(1.75)*	(1.51)
lag Trade	-	-	0.017	0.035
			(0.50)	(1.04)
Dependency	-0.154	0.119	-	-
	(0.27)	(0.18)		
Rural share	**1.677**	**2.039**	-	-
	(3.57)***	**(3.94)*****		
Life expectancy	**7.445**	**6.331**	-	-
	(6.33)***	**(4.61)*****		
GINI	-	0.167	-	-
		(0.42)		
yr61	**1.224**	0.597	-	-
	(2.62)**	(1.08)		
yr64	**1.879**	**1.444**	-	-
	(3.49)***	**(2.61)****		
yr67	**1.352**	**1.189**	-	-
	(3.35)***	**(2.67)*****		
yr70	**1.113**	**0.694**	-	-
	(3.09)***	**(1.76)***		
yr73	**0.799**	0.425	-0.113	-0.126
	(2.38)**	(1.16)	(1.36)	(1.46)
yr76	**0.723**	0.362	-0.036	-0.03
	(2.44)**	(1.10)	(0.43)	(0.35)
yr79	**0.581**	0.333	-	-
	(2.20)**	(1.15)		
yr82	**0.503**	0.318	-0.106	**-0.138**
	(2.10)**	(1.28)	(1.30)	**(1.67)***
yr85	0.178	0.156	**-0.171**	**-0.203**
	(0.87)	(0.74)	**(2.10)****	**(2.48)****
yr88	0.046	0.094	-0.058	-0.083
	(0.25)	(0.49)	(0.75)	(1.05)
yr91	0.161	0.101	-0.059	-0.077
	(0.93)	(0.60)	(0.76)	(0.96)
yr94	0.074	0.039	-0.006	-0.029
	(0.45)	(0.22)	(0.07)	(0.35)
yr00	-0.038	0.051	-0.047	-0.105
	(0.22)	(0.29)	(0.51)	(1.16)
yr03	-0.167	-0.022	0.025	-0.006
	(0.90)	(0.11)	(0.27)	(0.07)

	Log (Saving)		Log (Investment)	
yr06	-0.171	0.012	0.046	0.042
	(0.83)	(0.05)	(0.48)	(0.42)
Constant	-43.214	-36.175	-1.087	-0.794
	(6.61)	(4.89)	(0.45)	(0.32)
Observations	108	92	81	81
Joint Significant Test	F(20,80) =6.01	F(21,63) =4.33	Wald chi2(18) = 357.81	Wald chi2(17) = 333.13
R-squared	0.6	0.59	-	-
	$chi^2(20)$ =405.90	$chi^2(21)$ =160.32	$chi^2(17)$ =11.32	$chi^2(16)$ =11.74
Hausman Test for the choice between FE and RE model	Prob>chi2=0.0000	Prob>chi2=0.0000	Prob>chi2=0.8395	Prob>chi2 =0.7616

Absolute value of t statistics in parentheses
* significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.

Table 4 reports the results of SUR estimation where log of savings and log of investment are simultaneously estimated. Two cases are presented: the first two columns show the case with Asian financial crisis dummy (Crisis) and country dummies and the last two columns are the case with time dummies and country dummies. Since the overall pattern of the results is similar to that in Table 2 and Table 3, we mainly focus on the differences. Lagged GDP has positive and significant effects in both saving and investment equations. The dependency burden also has a positive and significant effect on savings with time and country dummies (i.e. in the third column). The second column confirms that Asian financial crisis had a negative and significant impact on investment.

Table 4: SUR estimation – Saving and Investment

	Log (Saving)	Log (Investment)	Log (Saving)	Log (Investment)
lag GDP	**2.303**	**2.438**	**3.257**	**3.048**
	(1.88)*	**(2.89)*****	**(2.94)*****	**(3.22)*****
lag $(GDP)^2$	-0.145	**-0.178**	**-0.228**	**-0.228**
	(1.47)	**(2.63)*****	**(2.56)****	**(3.00)*****
Dependency	0.51	-	**1.297**	-
	(1.62)		**(3.95)*****	
Rural share	**1.62**	-	**1.721**	-
	(5.72)***		**(6.69)*****	
Life expectancy	**1.997**	-	**2.566**	-
	(3.26)***		**(2.72)*****	
GINI	-0.036	-	-0.077	-
	(0.15)		(0.36)	
lag GDPG	-	**0.018**	-	**0.014**
		(3.08)***		**(2.15)****
lag Investment	-	**0.479**	-	**0.464**
		(5.22)***		**(4.47)*****
lag FDI	-	-0.008	-	0.001
		(0.58)		(0.04)
lag Agri. share	-	**0.32**	-	**0.325**
		(2.12)**		**(1.71)***
lag Trade	-	0.039	-	-0.009
		(0.45)		(0.10)
Crisis	-0.045	**-0.094**	-	-
	(0.73)	**(2.25)****		
BGD	**-0.912**	**-0.244**	**-1.186**	**-0.245**
	(7.73)***	**(2.31)****	**(5.56)*****	**(1.97)****
IND	**-0.379**	**-0.162**	**-0.607**	**-0.215**
	(3.52)***	**(2.16)****	**(3.71)*****	**(2.50)****

	Log (Saving)	Log (Investment)	Log (Saving)	Log (Investment)
IDN	-0.175	**-0.218**	**-0.363**	**-0.222**
	(1.27)	**(2.39)****	**(2.34)****	**(2.46)****
PAK	**-1.2**	**-0.403**	**-1.583**	**-0.434**
	(6.64)***	**(3.56)*****	**(7.34)*****	**(3.58)*****
PHL	**-0.734**	**-0.404**	**-0.985**	**-0.385**
	(3.23)***	**(2.79)*****	**(4.64)*****	**(2.71)*****
LKA	**-1.621**	**-0.38**	**-1.744**	**-0.342**
	(15.71)***	**(2.53)****	**(18.36)*****	**(2.23)****
VNM	-0.553	-0.109	-0.691	-0.081
	(0.48)	(0.85)	(0.68)	(0.57)
yr73	-	-	0.065	0.073
			(0.34)	(0.75)
yr76	-	-	0.117	**0.162**
			(0.70)	**(1.81)***
yr79	-	-	-0.015	0.114
			(0.10)	(1.34)
yr82	-	-	-0.043	**0.145**
			(0.37)	**(1.86)***
yr85	-	-	-0.121	0.034
			(1.28)	(0.48)
yr88	-	-	-0.082	0.09
			(0.99)	(1.39)
yr91	-	-	-0.038	0.057
			(0.54)	(1.01)
yr94	-	-	-0.004	**0.114**
			(0.05)	**(2.25)****
yr00	-	-	**0.148**	0.051
			(2.06)**	(1.00)
yr03	-	-	**0.179**	**0.126**
			(2.08)**	**(2.34)****
yr06	-	-	**0.326**	**0.137**
			(2.81)***	**(2.05)****
Constant	-17.058	-8.101	-21.662	-10.254
	(5.28)	(3.10)	(4.98)	(3.38)
Observations	69	69	69	69

Absolute value of z statistics in parentheses
* significant at the 10% level; ** significant at the5% level; *** significant at the 1% level.

Briefly, pulling together these results, two implications for the savings glut may be noted: (i) while savings responded positively to GDP, there were also significant negative country effects (relative to China) and positive year effects in a few of recent years; (ii) investment responded as well to GDP but at a diminishing rate, with negative coefficients of country dummies and positive coefficients of time dummies for recent periods. That the year effects were less strong for investment is consistent

with our conjecture that business confidence grows slowly. Savings exhibit larger year effects mainly because precautionary savings grew more rapidly in the aftermath of the crisis.

Table 5 gives a set of results where current account balance is the dependent variable. We have selected fixed- effect estimation, guided by the Hausman test. GDP per capita has a positive impact on current account balance. A one percent increase in GDP per capita corresponds to 0.033 per cent increase in the ratio of current account balance to GDP.[9] None of the coefficients for FDI, lagged current account balance or Asian financial crisis are significant.

Table 5: Panel estimation for Current account balance

	Panel FE
lag GDP	**3.264**
	(1.94)*
lag FDI	0.128
	(0.47)
lag Current balance	0.179
	(1.15)
Crisis	0.466
	(0.46)
Constant	-23.98
	(3.22)
Observations	66
Joint Significant Test	F(4, 54)= 5.00
R-squared	0.27
Hausman Test for the choice	chi2(4)= 19.30
between FE and RE model	Prob>chi2=0.0007

Absolute value of t statistics in parentheses
* significant at the 10% level; ** significant at the 5%level; *** significant at the 1% level.

Table 6 gives the simulation results, focusing on the implications of a slowing down of GDP growth (by 5 per cent, 10 per cent and 15 per cent). These results are based on panel data estimation in Table 2, and SUR estimation with Crisis (i.e. the first two columns of Table 4). A 5 per cent decline of GDP per capita has a relatively small effect on the saving ratio (it falls from 16.8 per cent to 16.5 per cent or a

[9] The dependent variable is the ratio of current account surplus or deficit to national GDP. Thus, the interpretation of coefficient is based on the level-log model.

reduction of 1.8 per cent from the baseline case). The effect on investment, however, is not so small (it falls from 24.9 per cent to 22.3 per cent or a decline of 10.4 per cent from the baseline case). However, if GDP per capita decreases by 15 per cent, the saving ratio declines to 12.7 per cent (a decline of 24.4 per cent from the baseline case) and the investment ratio to 16.6 per cent (a decline of 33.3 per cent from the baseline case). In the second set of simulations, we find larger reductions in the saving ratio. A 5 per cent (10 per cent or 15 per cent) decline of GDP corresponds to a reduction of 12.9 per cent (28.4 per cent or 43.3 per cent) in the savings ratio relative to the baseline case. The corresponding reductions in investment are smaller than those in the first case, but still large. A 5 per cent (10 per cent or 15 per cent) decline of GDP corresponds to a reduction of 4.5 per cent (15.9 per cent or 28.5 per cent) in investment relative to the baseline case.

Table 6: The effect of GDP per capita on saving and investment ratio

	Table2			Table 4	
GDP per capita	Saving ratio	Investment ratio	GDP per capita	Saving ratio	Investment ratio
No change	0.168	0.249	No change	0.201	0.246
-5% decline	0.165	0.223	-5% decline	0.175	0.235
-10% decline	0.147	0.195	-10% decline	0.144	0.207
-15% decline	0.127	0.166	-15% decline	0.114	0.176

Note: The first two columns of SUR estimation in Table 4 were used for the simulation.

In brief, with a sharp deceleration of GDP growth, both savings and investment fall and, in specific cases, a narrowing of the gap between them occurred. Note, however, that this is a piece of comparative static analysis in which we have traced the implications of changes in GDP growth rate. The current account surplus is of course determined by other factors than those analysed earlier. But the important point is that to the extent major Asian economies experienced some deceleration of growth implies a reduction of current account balance.

Current Account Imbalances and Economic Recovery

In an influential comment (along with several others who have endorsed it), Wolf (December 8, 2009, *Financial Times*) offers an assessment of China's current account imbalance and its implications for global economic recovery. As China is viewed as the villain of the pack of emerging Asia, the discussion is confined to it but it is generalizable to other emerging Asian countries. Our choice of this piece to anchor our comments to was influenced by the fact that it is a most recent statement of the consensus view, as also by its expositional clarity[10].

In an alarmist vein – typical of a wide range of commentators –Wolf (2009) asks: If China's current account surplus were to rise toward 10 per cent of GDP once again, its surplus could be $800 bn, in today's dollars, by 2018. Who then will absorb these sums?

For the external deficit countries, the concern is to lower fiscal deficits without slipping back into recession. The options are either these economies stimulate private spending and borrowing to earlier levels, or their net exports grow rapidly. The latter is the safer option. But its feasibility depends largely on surplus countries expanding demand faster than potential output. China is thus a key player.

[10] For a refutation of this view by Rodrik (2009), we reproduce below his opening salvo: "China's undervalued currency and huge trade surplus pose great risks to the world economy. They threaten a major protectionist backlash in the United States and Europe; and they undermine the recovery in developing and emerging markets. Left unchecked, they will generate growing acrimony between China and other countries. But the solution is not as simple as some pundits make it out to be" . The policy recommendations are equally stark, as Rodrik further elaborates: " Listen to what comes out of Washington and Brussels, or read the financial press, and you would think you were witnessing a straightforward morality play. It is in China's own interest, these officials and commentators say, to let the *renminbi* appreciate. After all, the Chinese economy can no longer rely on external demand and exports to sustain its remarkable growth, and Chinese consumers, who are still poor on average, deserve a break and should be encouraged to spend rather than save" (December 15, 2009, *Business Standard*).

A second but related point is that such adjustments are in the longer-term interests of both sides, including China. What is emphasized is that China's external surpluses have been a product of misguided policy. This includes underpricing of capital, via cheap credit and low taxes on corporate profits, and undervaluation of the *renminbi* to keep foreign exchange expensive through currency interventions. The not-so-surprising result was a huge surge in exports and expansion of capital- intensive heavy industry, with little job creation. Household incomes fell, while corporate investment, savings and current account surplus soared. The fiscal stimulus further reinforced these aberrations.

For graphical illustrations of China's key role in the global economy, attention is drawn to Figure 3.

Figure 3: China and the World Economy

Source: Wolf (2009)

A doomsday day scenario would then be: If the deficit countries slash spending – it is far from obvious though why USA, for example, would do that if unemployment is about 10 per cent – while their trading partners sustain their own excess of output over income and export the difference, a global depression. If, on the other hand, deficit countries (let us stick with the example of USA) sustained domestic demand with massive fiscal deficits, there will be a wave of fiscal crises.

Not only does this assessment betray a lop-sided view of the current account surplus of China (and other emerging Asian countries) but, more seriously, overlooks not just investment priorities within these economies and possibilities of intra-region trade without drastic exchange rate adjustments. Some observations are made below to delineate an alternative perspective on rebalancing of growth.

- If there is a divergence between saving and investment, this will lower current account surplus. Our simulations illustrate the contraction of surplus.
- If there is a divergence between saving and investment, it does not necessarily follow that there is a savings glut. Alternatively, in the context of the economic slowdown, the case for public expenditure – specifically public investment – designed to stimulate growth remains strong in both deficit and surplus countries with low risks of overheating (Krugman, 2009, and Gaiha et al. 2009). If our analysis has any validity, both higher levels of public investment in infrastructure – including health and education – and a higher

share devoted to rural areas and agriculture is likely to have a substantial pay-off in terms of growth acceleration and poverty reduction[11].

- Specifically, in the context of China, Kroeber (2009a, b) and Wiemer (2009) raise serious doubts about the rebalancing of growth view. First, some relevant facts. (i) From 1989 to 2008, Chinese exports grew at an annual average of 19 per cent in US dollar terms. There were, in fact, two phases. Up to 2001 – when China joined the WTO and US housing bubble started – Chinese exports grew at 15 per cent annually, and were highly cyclical. In 2002-08, they grew at an astonishing rate of 27 per cent annually without any cyclical dips. This year, exports will fall by about 15 per cent. Even after the global recovery, it is unlikely that exports will grow at more than 8-10 per cent annually, given the very high base, and the weakness of the rich countries. (ii) As export growth slows, more efficient use of capital and other productivity improvements will be necessary. In other words, the rebalancing requirement is not so much to reduce the rate of investment as to increase the efficiency of investment. Substantial increases in household incomes and domestic consumption will follow (Kroeber, 2009a, b)[12].
- What about exchange rate appreciation? In a managed exchange rate regime, as in China, exchange rate policy is designed to achieve macroeconomic stability. Appreciation of the *renminbi* will reduce China's surplus and, correspondingly, its internal balance by reducing retained earnings in the

[11] In any case, as Kroeber (2009b) points out, as long as investment stays productive – and the current stimulus-financed investments in infrastructure and public goods will be economically productive in the medium-run – a higher saving and investment rate imply faster growth of not just investment but of consumption as well.

[12] Kroeber (2009b) is, in fact, emphatic that the Chinese current account surplus was in large measure a result of debt-fuelled spending splurge in USA. So to blame China's policies of manipulating the exchange rate is misplaced. China's surplus will come down – as recent evidence suggests – with a reduction in US and European consumption growth, and China figures out how to spend more of its foreign exchange reserves.

tradable goods sector. But if this is achieved at the expense of a marked reduction in growth – as feared by the Chinese leadership – it may mean paying a price which is much too high[13] (Wiemer, 2009).

- As demographic factors (i.e. the dependency ratio is bottoming and likely to rise as the number of elderly dependents grows more rapidly) aided by domestic policies push the saving rate down, it is arguable that without the *renminbi* appreciation the saving-investment gap could fall to about 2 per cent of GDP. Hence trade could rebalance at the existing exchange rate (Wiemer, 2009).
- Currency appreciation is necessary when an economy overheats and inflation looms large. Fiscal policy was highly contractionary in 2007. For the longer-term well- being of the Chinese population, there is, of course, a case for higher expenditure on public consumption (or social overheads such as education and health). The scale of expansion of public expenditure is undoubtedly enormous and its stimulative effects on the economy are likely to be substantial (Wiemer 2009, Gaiha et al. 2009).
- Currency appreciation would then offset the overheating and help preserve macroeconomic stability. A key indicator is how fast is the economy growing relative to its potential. But, despite the massive monetary expansion and fiscal stimulus, given the slack demand in the external sector – especially demand from rich economies – there is no compulsion to revalue the *renminbi*.[14]

[13] See also Rodrik (2009).
[14] Kroeber (2009b) takes another extreme view that is not entirely without merit of a more vocal resistance to the idea that rich countries run surpluses and lend money to developing countries, who should run deficits and go into debt.

In short, the consensus view favouring exchange rate adjustments lacks credibility, or is largely mistaken.

Conclusion

Our analysis confirms that savings and investment in the sample of Asian countries were in large measure driven by growth, structural characteristics, and demographic features. Besides, the saving and investment ratios varied with country and time. The country-specific effects (representing the effects of unobservable differences) typically dampened savings and investment (relative to China) while some recent years (after the Asian financial crisis circa 1997-98) saw both higher savings and investment. Higher savings in recent years reflect a larger share of precautionary savings while a slower rise of investment is consistent with a slow build-up of investor confidence in the aftermath of the crisis.

Our simulations point to a narrowing of current account balance with deceleration of growth.

The preoccupation with the savings glut in emerging Asia, with China as the villain of the piece, and its empirical validation are ill-informed and the latter is deeply flawed. Neither excess savings (measured as the difference between actual savings and savings predicted by 'fundamentals') nor the assertion of overinvestment in the pre-crisis period and its stabilisation in recent years lack firm empirical foundations. Worse, these assertions are subject to misinterpretation of the evidence given.

The alarmist scenarios of the global economy succumbing to a depression or experiencing a wave of fiscal crises in the absence of emerging Asia – in particular,

China cutting its current account surplus through exchange rate adjustments is simplistic, if not largely mistaken. The case for rebalancing growth in this region with a shift of emphasis from investment to consumption takes an aggregate view of investment and overlooks priorities for higher investment in rural infrastructure and technology designed to enhance agricultural productivity. A higher level of investment and compositional changes in it would not only accelerate growth but also expand employment opportunities and consequently reduce poverty in the medium-run. Available evidence suggests that the risks of overheating of these economies through massive monetary and fiscal expansion are highly exaggerated given the imperative of enhancing agricultural productivity and rural livelihoods.

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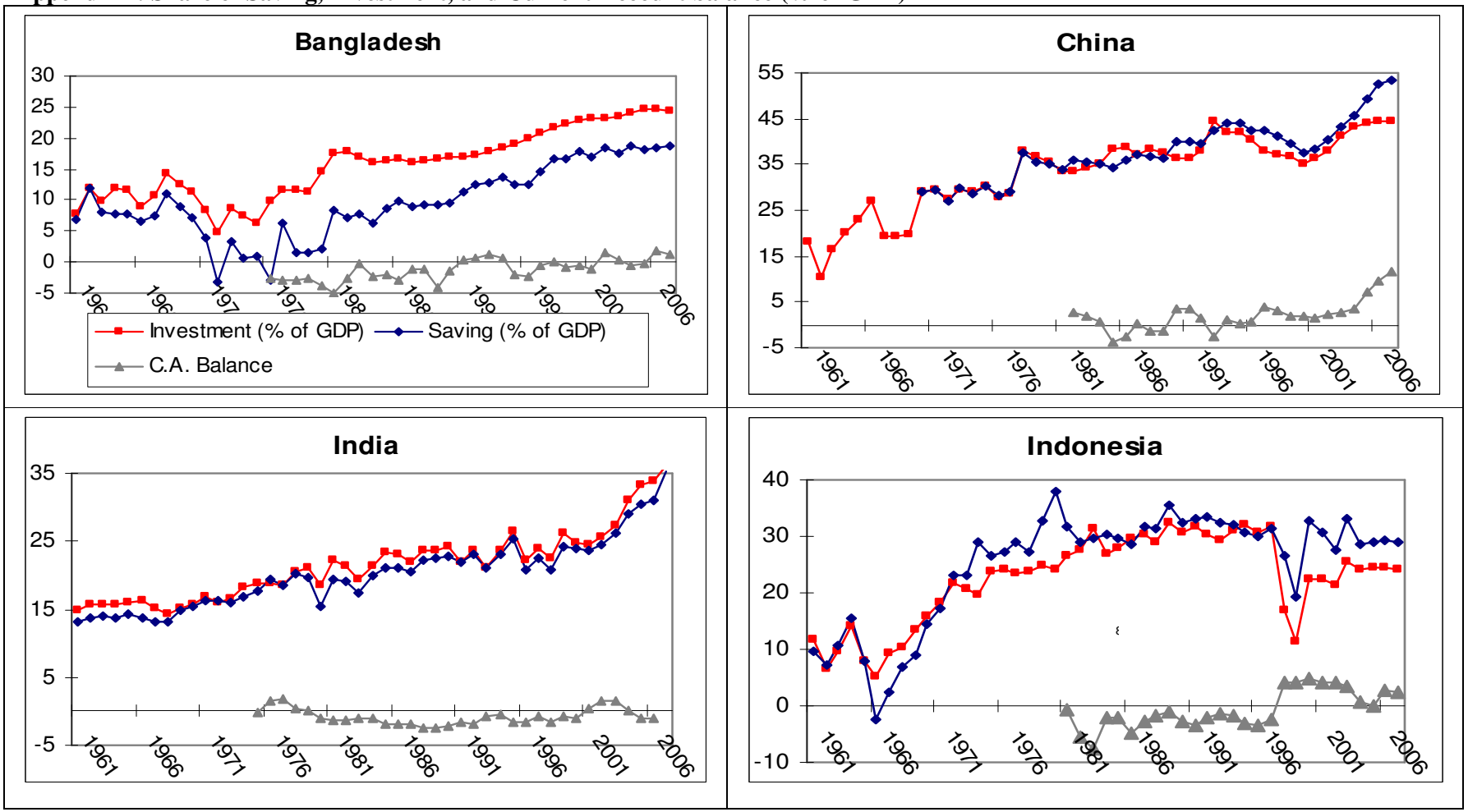
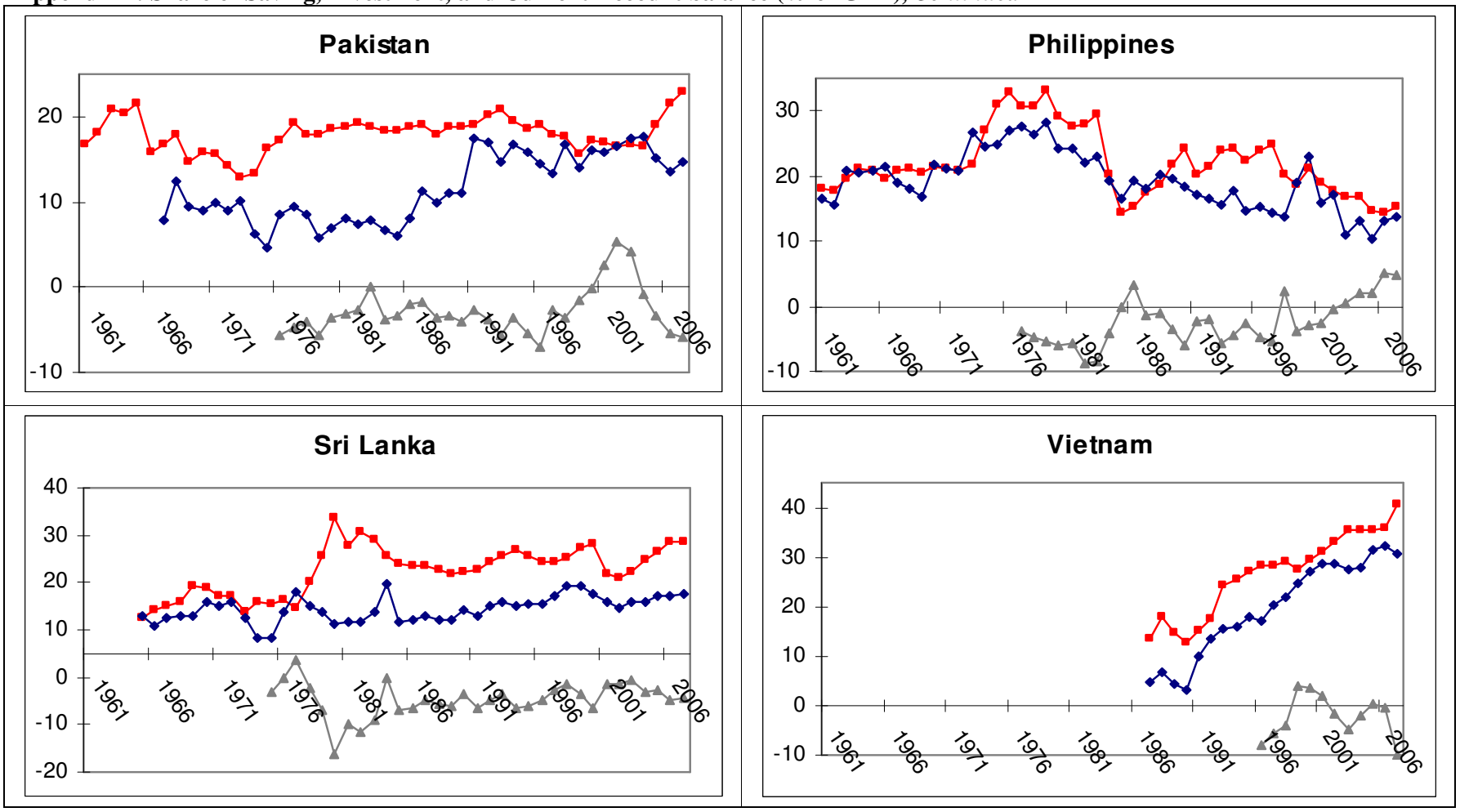
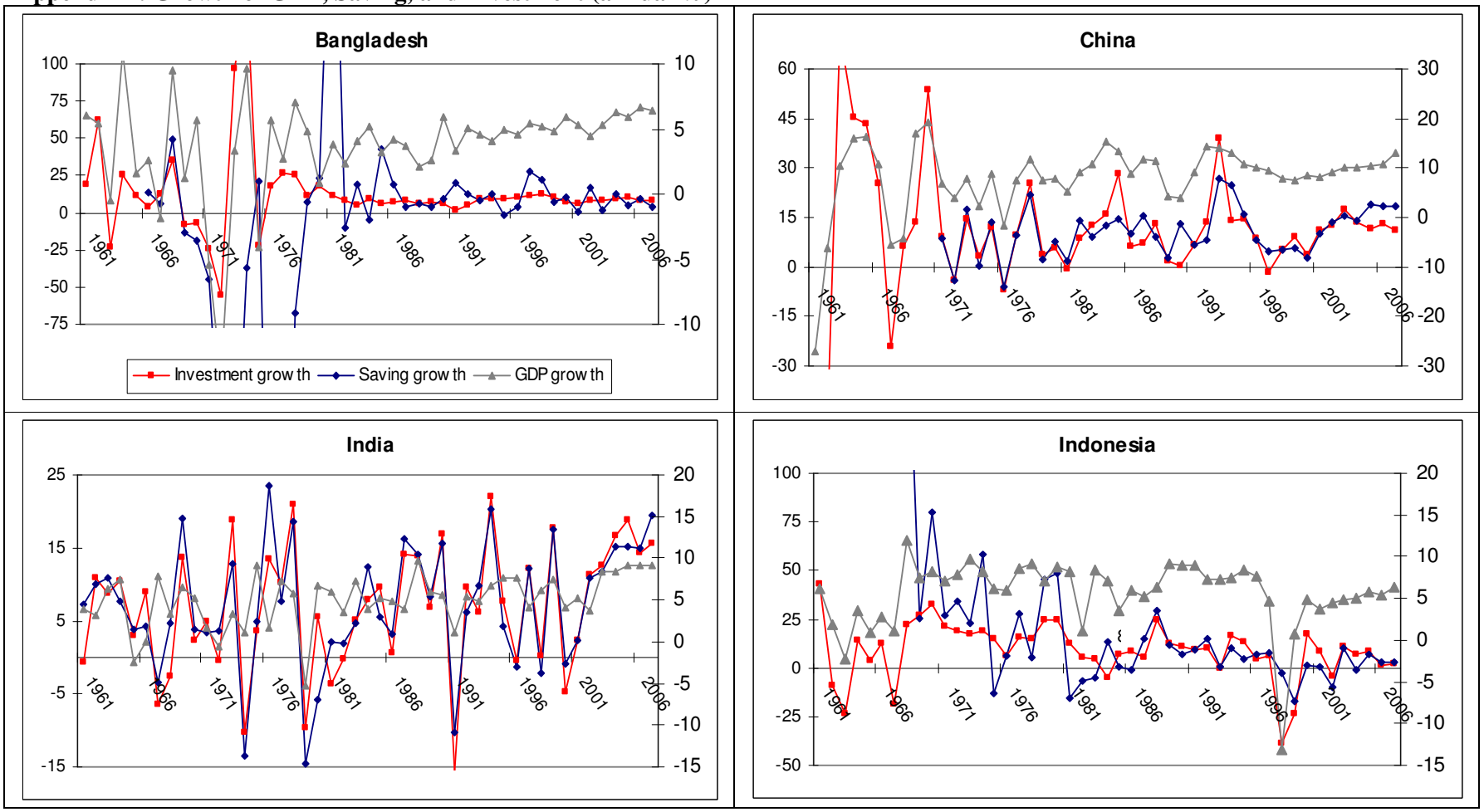
Appendix 1: Share of Saving, Investment, and Current Account balance (% of GDP)



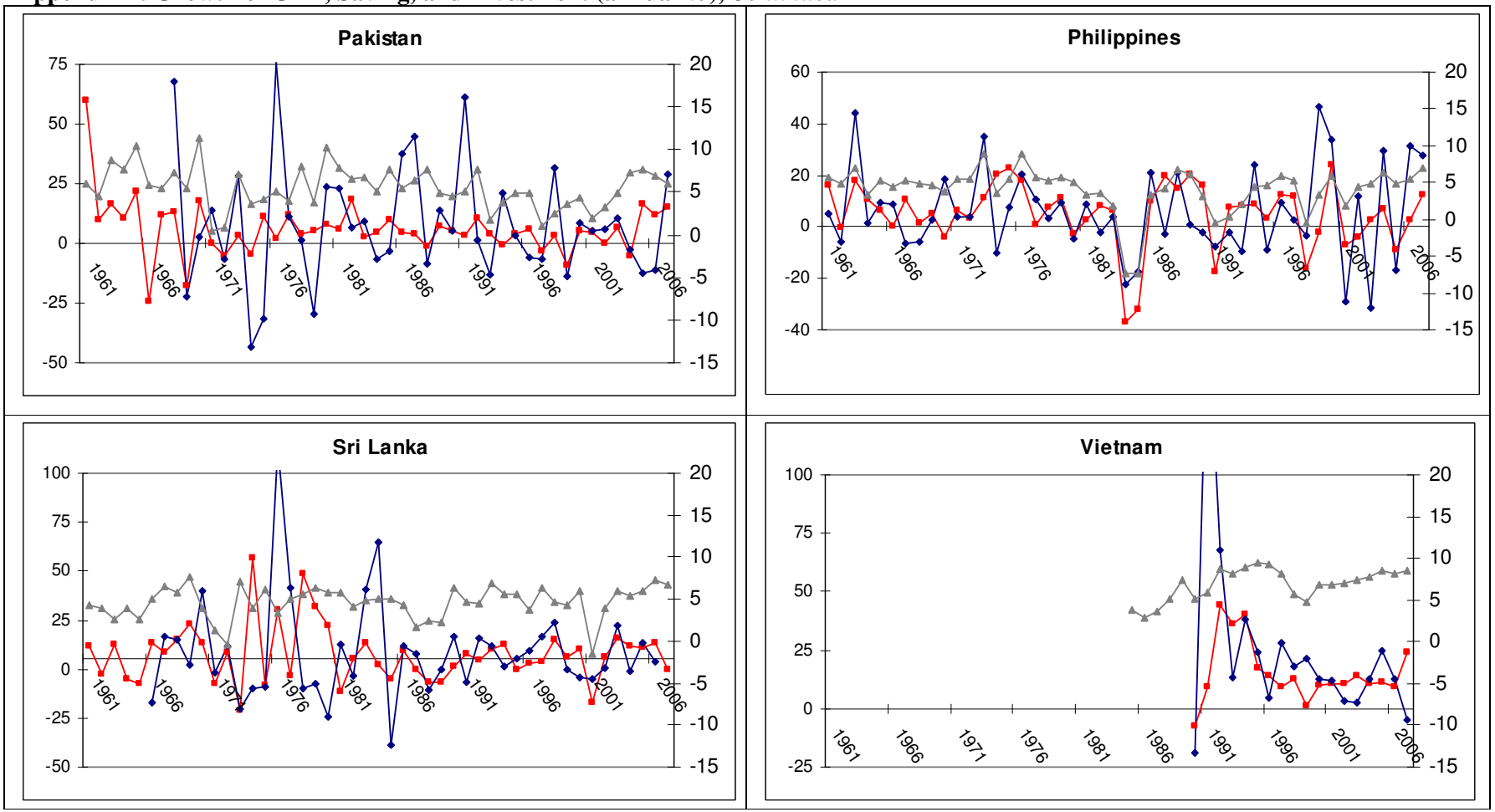
Appendix 1: Share of Saving, Investment, and Current Account balance (% of GDP), *Continued*



Appendix 2: Growth of GDP, Saving, and Investment (annual %)



Appendix 2: Growth of GDP, Saving, and Investment (annual %), *Continued*



Appendix 3: Annual growth rates of Saving and Investment

Annual growth rate of savings and investment are derived for each country by running the following simple regression separately for savings and investment for each country and for all the countries.

log Saving= a+b log t
where t is time trend. The coefficient estimate of b is average growth rate of savings.

log Investment= a+b log t
where t is time trend. The coefficient estimate of b is average growth rate of investment.

Annual growth rates of Saving and Investment

	Saving	Investment
Bangladesh	0.425	**0.38*** **
China	**0.383*** **	**0.365*** **
India	**0.29*** **	**0.272*** **
Indonesia	**0.612*** **	**0.454*** **
Pakistan	**0.462*** **	0.033
Philippines	-0.124	-0.035
Sri Lanka	**0.161*** **	**0.327** **
Vietnam	**3.696*** **	**1.891*** **
Overall	**0.326*** **	**0.260*** **

* Bold numbers with *** show the case where the coefficient estimate of b is statistically significant at the 1% level.