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Saving in Asia and Issues for Rebalancing Growth

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Issues for Rebalancing Growth

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Contents

Abstract

This paper assesses the role of consumption and savings in Asia's growth. It examines the composition of national savings, analyzes what forces drive savings rates, and draws policy conclusions from the analysis that are relevant for the economies in the region and which might play an important part in rebalancing global growth. The paper identifies a number of issues. A rapid rise in the profitability of state-owned and private enterprises together with distorted dividend policies and underdeveloped financial markets in the People's Republic of China (PRC) seem to have contributed to the corporate sector saving spiral. Rising corporate saving rates in India can be attributed to lower corporate tax rates, customs duty, and interest rates along with restructuring of firms. Channeling corporate savings into investment will require elimination of policy distortions and financial sector development including availability of better saving instruments and improved business and investment climates. At the household level, demographic trends, financial development, and precautionary saving are revealed to be important for Asian savers. Two case studies from the PRC and Philippines suggest that these factors are interrelated and complement one another. The surge in urban households' savings in the PRC has two main drivers. First, younger households lack access to credit and accumulate savings in order to purchase durable goods such as televisions, white goods, and automobiles. Second, most urban households undertake precautionary savings as a hedge against risks of illness or other healthcare expenses and in order to finance educational expenses. Hence policies that develop financial markets enabling borrowing against future income, and that rationalize public spending to increase social transfers, reform pension systems, and provide universal health care insurance and education, appear top priorities. These policies would moderate household saving rates and help in rebalancing growth toward consumption.

I. Introduction

Asia's excessive dependence on external demand has left Asian economies vulnerable
to the severe global recession. Rebalancing growth in Asia is of direct interest not only
to the countries in the region, but also provides important feedback channels for greater
stability of the global financial and economic systems. A key issue for the discussion of
rebalancing growth is what exactly "balanced" growth would look like. More precisely,
what does this concept imply in terms of the national saving rate, the structure of gross
domestic product (GDP) (as captured by the composition of expenditure components or
the sectoral distribution of value-added), and the saving–investment balance? Finding
a significant positive and robust relationship across countries between saving and
growth rates in an early empirical investigation, Deaton (1999) suggested that it cannot
be interpreted to say whether saving causes growth, growth causes saving, or both
simultaneously. To design appropriate policy, it is important to understand the process
of causation and determine whether policies for growth should be directed at saving
incentives or at improving the level and efficiency of investment.

A necessary condition for economic growth is investment in physical or human resources.
In a closed economy, investments can come only from saving, i.e., from postponing
consumption. If national saving has a substantial effect on the level of investment, the
obvious conclusion is that saving drives growth and that appropriate policies for growth
are those that promote saving. Alternatively, the causality can run in the opposite
direction.[1] When economies are open, investment in one country can be supported by
saving elsewhere in the world. Indeed the divergence of views on the sources of current
global financial imbalances range from weak macroeconomic policies that encouraged
excessive consumption in the United States (US), to inappropriate policies in emerging
economies that encouraged excessive savings, thereby financing high current account
deficits of industrial economies at low interest rates. The focus of this discussion has
increasingly shifted to the Asian "savings glut" hypothesis. This paper assesses the role
of consumption and savings in Asia's growth. It examines the composition of national
savings, analyzes the forces that drive savings rates, and draws policy conclusions
from the analysis that are relevant for the economies in the region and that may play an
important part in rebalancing global growth.

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[1] Empirical evidence suggests that an increase in the level of national income increases saving in developing
countries, but not in countries of the Organisation for Economic Co-operation and Development (OECD)
once the rate of growth of income is taken into account (Modigliani 1993). Evidence for Asian economies
can be found in Collins (1991) and Schmidt-Hebbel, Webb, and Corsetti (1992).

The rest of the paper[2] is organized as follows. Section II presents an overview of the widening savings–investment imbalances in the region. To trace the factors that can help rebalance growth, the next section analyzes sources of growth and their implications for social welfare. Given that high-growth countries in Asia are characterized by high saving rates, Section IV enumerates the changing composition of national saving in selected countries. While the share of household savings in total savings has declined, however, it may once again emerge as the major source of savings as the global economic slowdown dampens corporate profitability. Section V conducts an in-depth analysis of household saving behavior, particularly in the People's Republic of China (PRC) and Philippines. Section VI concludes.

II. Rising Imbalances within Asia

The connection between domestic and global imbalances is through the current account, which represents the difference between national savings and national investment. Figure 1 shows the evolution of the overall current account balance for Asia excluding Japan in billions of US dollars. The aggregate savings to GDP ratio is the sum of national savings across the countries in the sample divided by the sum of national GDP for those countries, with both variables expressed in a common currency, converted at market exchange rates from domestic currency. The aggregate investment and current account data are constructed in a similar manner. The numbers in Figure 1 represent the excess of savings over investment for the region as a whole, representing the contribution of the Asian region to the financing of current account deficits elsewhere including in some industrial countries of the Organisation for Economic Co-operation and Development (OECD). The rate of increase in savings has been higher than that of investment, leading to a rising current account surplus, which was in the order of 7% of aggregate GDP by 2007. The total excess savings of the region amounted to only about $100 billion in the early 2000s. Excluding the PRC, this figure stayed roughly constant in the rest of the 2000s, through 2007–2008. The big surge in the region's excess savings came from the PRC as the aggregate current account balance including that of the PRC jumped to $500 billion by 2007, driven by massive current account surpluses from the PRC. The current account balance to GDP ratio of the PRC had risen to more than 11% by 2007. Exclusion of the PRC makes the current account balance to GDP ratio relatively flat in the 3–4% range since the early 2000s (except in 2003, when it spiked up to nearly 5%). Excluding the PRC, Asia's aggregate savings and investment were rising gradually and in tandem.

Figure 2 shows the savings–investment balances for individual countries in the sample, with national savings, national investment, and the current account balances all expressed as ratios to national GDP. The countries are sorted by decreasing order of the current account balance in 2007. The top panel of the figure contains data for 2007 (or the latest year for which data are available for each country) and the lower panel

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[2] This paper draws heavily from Prasad (2009a).

Figure 1: Aggregate Current Account Balance for Developing Asia ($ billion)
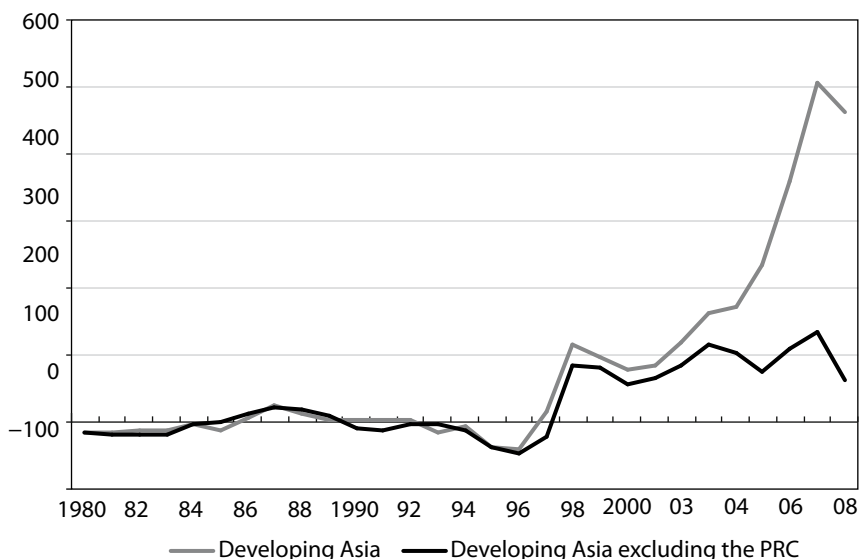
Note: Developing Asia includes Bangladesh; Cambodia; People's Republic of China,
        Hong Kong, China; India; Indonesia; Korea; Malaysia; Pakistan; Philippines;
        Singapore; Sri Lanka; Taipei,China; Thailand; and Viet Nam.
Sources: IMF's *World Economic Outlook,* authors' calculations.

shows the corresponding data for 2000. To facilitate comparison, the order of countries is the same in the lower panel as in the upper panel. Figure 2 shows that aggregate savings and investment have been rising in Asia since the early 2000s. While Singapore, Malaysia, and PRC lead in current account surpluses, the highest deficits are recorded in Viet Nam, Sri Lanka, and Pakistan in that order.

The golden rule of capital accumulation suggests that developing countries with a relatively high labor to capital ratio, such as the PRC, should be importing rather than exporting capital (see Box 1). A current account surplus thus appears to be prima facie evidence of suboptimal saving and investment behavior relative to the predictions of the benchmark neoclassical model. However, the model does not perform well when confronted with the data in terms of explaining the relationship between current account balances and growth. Indeed, nonindustrial countries with smaller current account deficits or even current account surpluses have, on average, registered higher growth rates than those nonindustrial countries that have run larger current account deficits (Prasad et al. 2007). This is consistent with work by Aizenman et al. (2007) showing that developing countries that tend to rely more on domestic rather than foreign finance for their investment do better in terms of growth. These results show that the real constraint to growth in developing economies is not domestic savings, as presumed in the standard neoclassical model, but inadequate investment opportunities due to weak financial systems or other institutional weaknesses (Rodrik 2007).

Figure 2: Savings-Investment Balances (in percent of GDP)
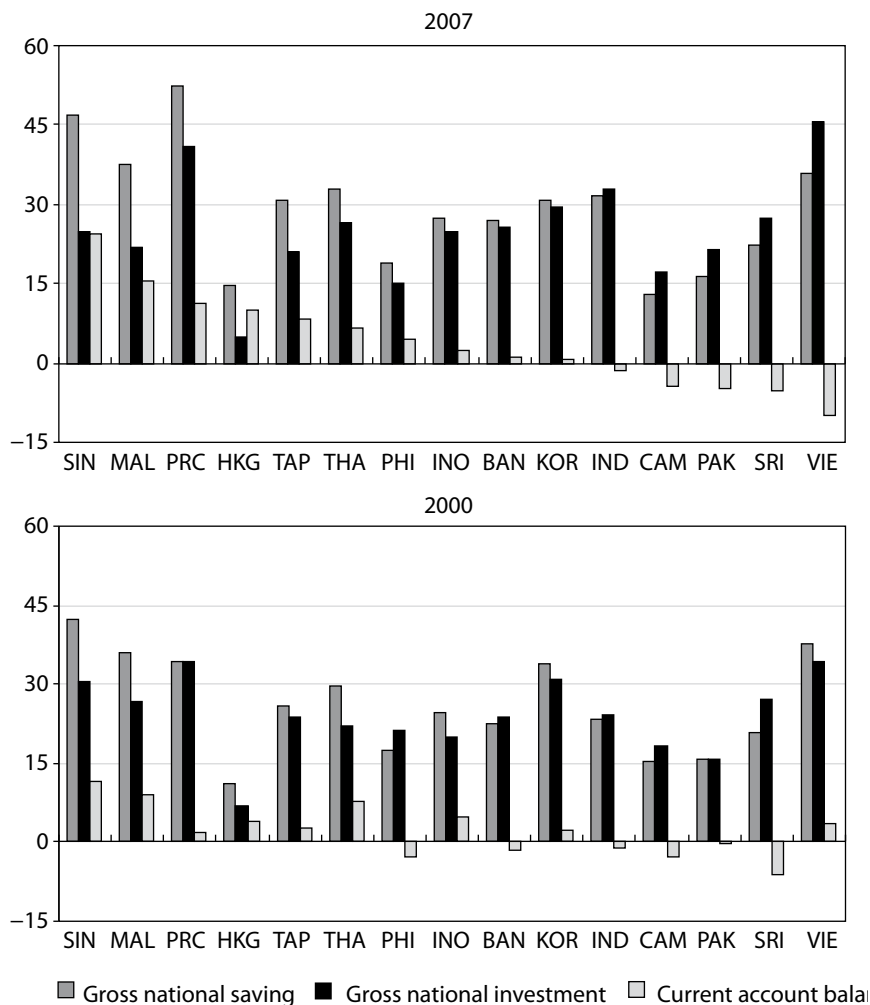
2007

2000

Gross national saving   ■ Gross national investment   □ Current account bala

BAN = Bangladesh; CAM = Cambodia; PRC = China, People's Rep. of; HKG = Hong Kong,
China; IND = India; INO = Indonesia; KOR = Korea, Rep. of; MAL = Malaysia; PAK =
Pakistan; PHI = Philippines; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
Note: In both panels, the countries are sorted by decreasing order of current account
         balances in 2007 (as percent of GDP). The upper panel data are for 2005 for
         Cambodia; 2006 for Sri Lanka; 2008 for Hong Kong, China; and 2007 for all the
         other countries.
Source: CEIC and authors' calculations.

Thus, a forthright case cannot be made that the current account surpluses in the PRC
are a problem in and of themselves. Indeed, these surpluses were rather modest during
2000–2004, averaging only 2.5% of GDP. Since 2005, however, the current account
surplus has surged, reaching 11.3% in 2007, largely as a result of a trade surplus of 9.6%
of GDP. For a developing economy, this level of a current account surplus points to a
problem as it cannot be explained by any standard determinants of medium-term current
account balances such as demographics, stage of development, or financial development
(see Chinn and Prasad 2003).

As explained in Box 1, domestic interest rate should equal the world interest rate in an open economy. But financial repression and restrictions on capital flows have kept the real interest rate in the PRC low and below the world real interest rate for most of this decade. Thus, the required return on capital is lower in the country, meaning that even projects that have a return less than the world real interest rate would get financed by its banking system.

Box 1: The Golden Rule

While indicators such as GDP growth and household income growth are normally used as benchmarks for economic progress, what ultimately counts is the welfare of the members of an economy. The key criterion that guides the discussion of efficiency and optimality thus has to be in terms of welfare of the representative household in the economy.

Consider a closed economy with identical agents whose utility function is defined over consumption and a single production technology with physical capital. This discussion does not take distributional considerations into account. The same average level of consumption could have very different implications for average welfare depending on its distribution among the population. Also, the focus here is on a utility function for the representative agent that is defined only over consumption and excludes leisure and other arguments that should be included in a fuller analysis. In a closed economy, the national saving rate is equal to the national investment rate. The optimal rate of saving is given by the golden rule of capital accumulation, i.e., it is the rate that generates the highest level of steady-state consumption. In its simplest form, this rule states that the marginal product of capital should be equal to the rate of labor force growth plus the rate of depreciation of the capital stock, which corresponds to the steady state with the highest level of consumption (Box Figure 1.1).

Box Figure 1.1: Saving Rate and the Golden Rule in a Closed Economy
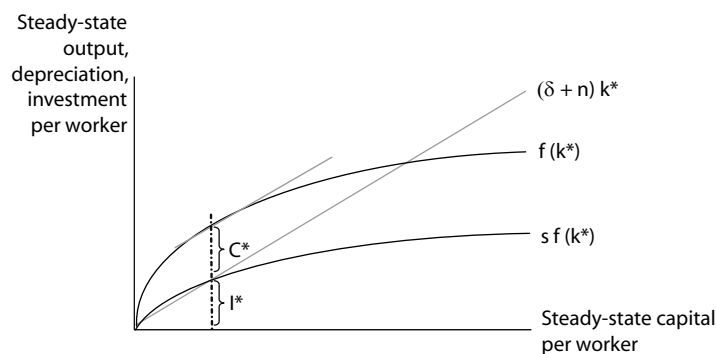
k = steady state capital per worker
$f(k)$ = production function
I = investment
C = consumption
s = saving rate
δ = rate of depreciation of capital stock
n = rate of labor force growth
$*$ denotes steady state level

continued.

Box 1: *continued.*

The intuition is fairly simple—if the marginal product of capital is more than enough to cover the depreciation of the extra unit of capital and to provide the new workers with an additional unit of capital, then it would be optimal to postpone consumption and increase saving. If, on the other hand, the marginal product of capital is not enough to cover the depreciation and for providing the new workers with additional capital, then the saving rate (which, in a closed economy, is equal to the investment rate) should be reduced as there is otherwise an inefficient transfer of current consumption to future consumption.

The levels of savings and investment both depend on the rate of interest. In an open economy, the relevant interest rate is no longer the domestic interest rate but the world interest rate. With freely mobile capital, the two should be similar (after adjusting for currency premia, risk premia, and transaction costs). The life cycle model of consumption smoothing, as applied at the level of countries in an international economy, suggests that countries should run current account deficits in the early stages of their life cycle. In other words, when they are less developed they tend to be labor-rich and capital-poor, implying that the marginal product of capital should be higher than the world interest rate. Hence, it would be optimal for these countries to import capital, run current account deficits, and increase their growth rate through higher investment. To pay off their accumulated obligations, these countries would then run current account surpluses once they become more developed. Thus, current account deficits in early stages of development and current account surpluses in the advanced stages of development should be the norm.

III. Sources of Asian Growth and Its Welfare Implications

To understand the meaning of rebalancing of growth it is useful to characterize the role of domestic versus foreign demand in driving growth. This section begins with an overview of the patterns of growth in selected developing economies of East Asia, Southeast Asia, and South Asia. It then examines how this composition might influence economic welfare in general and the growth in employment in particular.

Underlying the variations in composition of growth of Asian economies is the unevenness that has developed between savings and investment in developing Asia. Table 1 shows the contributions of consumption, investment, and net exports to overall growth in real GDP and related effects on employment growth in the formal sector over the period 2000–2007. The contribution of total consumption is further broken down into private and government consumption.

Table 1: Contributions to Growth and Employment Growth, 2000–2007 (percent)

Country	GDP Growth	GDP Growth Contributions			Investment	Net Exports	Employment Growth
		Consumption					
		Total	Private	Government			
Bangladesh	5.8	3.4	3.0	0.4	2.0	0.3	−1.4
Cambodia	9.0	6.9	6.6	0.3	2.3	-0.4	5.7
PRC	9.8	4.3	2.9	1.3	4.5	1.2	0.9
Hong Kong, China	5.3	2.3	2.2	0.2	1.2	1.8	1.5
India	7.0	4.0	3.5	0.5	3.4	−0.2	1.9
Indonesia	5.1	3.0	2.4	0.6	1.2	0.3	1.5
Korea	5.2	2.7	2.1	0.6	1.2	1.3	1.8
Malaysia	5.1	4.4	3.4	1.1	0.5	0.2	2.2
Pakistan	5.3	3.8	3.2	0.6	1.2	0.3	3.0
Philippines	5.1	4.0	3.8	0.2	0.7	1.4	2.5
Singapore	5.9	2.9	2.2	0.7	0.7	2.7	7.4
Sri Lanka	5.0	4.5	4.0	0.4	1.5	−1.0	1.9
Taipei,China	4.1	1.6	1.6	0.1	0.2	2.2	1.0
Thailand	5.1	2.9	2.5	0.4	1.5	0.6	2.1
Viet Nam	7.6	5.0	4.5	0.5	4.4	−2.1	2.6
Unweighted medians:							
All Countries	5.3	3.8	3.0	0.5	1.2	0.3	1.9
All excluding the PRC	5.3	3.6	3.1	0.5	1.2	0.3	2.0

Note: GDP growth rates (in percent) are annual averages over the period 2000–07. GDP growth contributions (in percentage points) are averages over the same period, except for Cambodia (2000–05), Indonesia and Malaysia and Pakistan (2001–07), and Sri Lanka (2000–06). Contributions may not sum exactly to GDP growth because of rounding error or, in the case of some countries like the Philippines, because the statistical discrepancy is large. Investment includes private and public investment. Employment growth rates (in percent) are also annual averages over the period 2000–07, except for Bangladesh and Cambodia (2000–06), Korea (2001–07), Philippines (2004–07), Singapore (2005–07), Viet Nam (2000–05), India (average cumulative growth rate over 2000–05). The unweighted medians in the last two rows are the cross-sectional medians of the data in the respective columns.

Sources: CEIC, IMF's *World Economic Outlook*, ADB, authors' calculations.

A.   Domestic Sources

The strongest role in boosting economic growth in Asia is played by consumption, which tracks overall GDP growth in a sample of 15 countries. On average, it contributes about three quarters of the median GDP growth in the region. However, there is a wide variation across countries. In particular, consumption is less significant in real GDP growth in PRC; Hong Kong, China; Singapore; and Taipei,China where it contributes less than half of GDP growth. Sri Lanka is at the other end of the spectrum with its consumption growth accounting for about 90% of real GDP growth of 5%, a share far beyond the sample average. A comparison of the relative importance of private versus government consumption shows the former to clearly dominate in all countries, with the notable exception of the PRC. On average, private consumption growth accounts for about three

quarters of the total growth contribution of consumption. But in the case of the PRC, the corresponding figure is less than one third, lower than in any other economy in the sample.

The average contribution of investment growth at about 1.2 percentage points of 5.3% per annum GDP growth in the region pales in comparison with that of consumption. However, it accounts for much larger shares in the PRC and Viet Nam (4.5 percentage points each) and India (3.4 percentage points). Indeed it is only in the PRC that investment is the main source of GDP growth. Moreover, this investment is largely domestically financed, supported by a large current account surplus, unlike the other two countries that depend on foreign capital to finance investment.

B.   Reliance on Foreign Demand

The last dimension of the balance of growth comes from the dependence on external trade. Net exports account, on average, for only 0.3 percentage point of overall GDP growth among the countries in the region. But this conceals a wide disparity across the individual countries. For six of the 15 economies in the sample, net exports contributed 1 percentage point or more per annum to GDP growth. In Singapore and Taipei,China, the contribution was as much as half of overall GDP growth. At the other extreme, net exports contributed negatively to growth in Cambodia, India, Sri Lanka, and Viet Nam. In the PRC, which is often characterized as relying on "export-led growth", the direct effect of net exports on GDP growth amounted to only 1.2 percentage points per year, which is only about one eighth of overall GDP growth. One reason for this is that the data in Table 1 do not capture the essence of export-led growth, and it is important to be careful about the use of this term. Even if a country has a very high level of exports relative to GDP, it could have a balanced trade account, which would mean that net exports were not contributing much to the bottom line in terms of GDP growth.

To clarify the issues, Table 2 presents additional trade data on the ratio to GDP of exports, total trade (the sum of exports and imports), and the trade balance (the difference between exports and imports) for 2000 and 2007. The measure of exports and imports used here includes goods and nonfactor services. The average ratio of exports to GDP in the sample countries is about 45% for 2007, suggesting a high level of dependence on exports. However, the average ratio of the trade balance (or net exports), which is of relevance to the GDP bottom line, is much smaller at barely half a percent of GDP. There is again a wide disparity among the countries in the sample. While on average the trade balance during the 2000s was negative for Bangladesh; Cambodia; India; Lao PDR; Pakistan; Sri Lanka; and Viet Nam, large trade surpluses were recorded by PRC; Hong Kong, China; Malaysia; and Singapore.

Table 2: Openness to Trade
(percent of GDP)

Country	2007			2000		
	Exports	**Total Trade**	**Trade Balance**	**Exports**	**Total Trade**	**Trade Balance**
Bangladesh	22.0	50.8	−6.9	14.0	33.2	−5.2
Cambodia	47.1	109.5	−15.4	38.2	91.2	−14.7
PRC	40.7	72.1	9.3	23.3	44.2	2.4
Hong Kong, China	207.6	404.5	10.6	143.3	282.1	4.4
India	21.2	45.4	−3.1	13.2	27.4	−0.9
Indonesia	29.4	54.7	4.0	41.0	71.4	10.5
Korea	45.6	90.4	0.8	40.8	78.5	3.2
Lao, PDR	22.2	47.7	−3.4	19.1	49.9	−11.8
Malaysia	110.2	200.1	20.3	119.8	220.4	19.2
Pakistan	13.9	36.2	−8.3	13.4	28.1	−1.2
Philippines	42.6	84.8	0.5	55.4	108.9	1.9
Singapore	185.3	348.2	22.5	148.8	294.0	3.5
Sri Lanka	29.2	68.8	−10.3	38.2	86.7	−10.2
Taipei,China	73.8	140.0	7.5	53.8	105.4	2.2
Thailand	73.2	138.7	7.6	66.8	124.9	8.6
Viet Nam	76.8	167.0	−13.4	55.0	112.5	−2.5
Unweighted medians:						
All Countries	44.1	87.6	0.7	40.9	88.9	2.1
All excluding the PRC	45.6	90.4	0.5	41.0	91.2	1.9

Note: Exports include both goods and services, total trade refers to the sum of exports and imports of goods
and services, exceptions are Cambodia; Lao, PDR; and Singapore in which the data only include goods and
nonfactor services. The unweighted medians in the last two rows are the cross-sectional medians of the data
in the respective columns.

Sources: IMF's *World Economic Outlook*, UN Statistics, Asian Development Bank's Statistical Database System, authors' calculations.

But even a net trade balance of zero cannot undermine the spillover benefits from the
exporting sector and, indeed, from overall trade volumes. Such benefits could include
technology transfer associated with trade, scale efficiencies in production arising from
larger market size; employment generation in downstream and upstream firms (suppliers,
distributors); and increased efficiency in production due to greater competition. From this
perspective, total trade of nearly 90% of GDP implies that Asian economies in general
are open and in a position to derive considerable benefits from international trade. While
trade openness has increased in most of the economies under consideration during
the period 2000–2007, the increase in the volume of trade has not kept pace with GDP
growth in a few economies such as Indonesia, Lao PDR, Malaysia, Philippines, and Sri
Lanka. But the PRC stands out in particular with a rapid increase in the share of exports
to GDP, and also its large trade balance that rose sharply from 2.4% of GDP in 2000 to
9.3% in 2007. These trends indicate that exports have become an important contributor to
growth in the PRC, both through the direct channel of its exports to industrial economies
and the indirect channel of its role as a processing hub for trade going from other Asian

countries to the industrial economies. In part, this shift toward greater export orientation and greater dependence on external trade for domestic growth is due to accession of the PRC to the World Trade Organization.

C.   Welfare Effects

An important consideration, especially in the current troubled times, is the welfare implication of consumption-driven versus investment-driven growth. It may be argued that what matters to individuals in an economy is the level and stability of their consumption. According to the golden rule, policies that direct investment to a steady state level can indeed maximize the level of consumption (see Box 1). Under fairly general assumptions about the production function, this rule is equivalent to saying that the optimal rate of saving in the economy should be equal to the share of output produced by capital.

A simple application of the golden rule would suggest that the saving rate in the PRC is not greatly out of line with this rule as the national saving rate is roughly equal to the share of capital in national income, both around 50%. But it is difficult to evaluate this proposition in an economy where the price of capital (the real interest rate) is not market-determined as the financial system remains repressed and under state control. Moreover, there is a lack of good measures of the marginal product of capital to evaluate the efficiency of investment. Thus, a mechanical application of the golden rule could be misleading. Indeed, it has been argued that extensive government subsidies to capital (low interest rates) and its complements (land and energy) have artificially raised the capital share beyond efficient levels (see, e.g., Aziz 2006 and Prasad 2009b). A further inkling of the inefficient level of saving and investment comes from the fact that the real interest on household savings has been very low or even slightly negative in recent years, making it difficult to justify the high and rising levels of household savings on the basis of standard intertemporal models of consumption (see Chamon and Prasad 2008). The real cost to households of this consequence of financial repression is estimated at nearly 4% of GDP per annum, which is transferred to the government and to enterprises via the state-owned banking system (Lardy 2008).

There are two other indicators of the inefficient pattern of growth in the PRC from a welfare-enhancing perspective. One is the falling share of household income in national income. In principle, households are the ultimate owners of the firms in an economy and should enjoy the benefits of higher profits if investment is highly productive. But the profitable state-owned enterprises in the PRC were not (until recently) required to pay dividends either to the state or to shareholders so that the full returns to investment did not eventually accrue to households. The second indicator is that private consumption growth has averaged 8% per annum since the early 1990s, more than 2 percentage points below the average annual rate of GDP growth (Aziz 2006). This is reflected in the nearly 7 percentage point decline in the share of household income in national income, and shows that households have not benefited fully from the high rate of GDP growth.

In another dimension of welfare, it is useful to examine how the composition of growth influences distribution through income and employment. The last column of Table 1 shows that the cross-sectional median of employment growth over the period 2000–2007 was about 2%. With the exception of Bangladesh, which registered a decline in overall employment over this period, the two economies with the lowest average rate of employment growth are the PRC and Taipei,China. It is striking that, in the PRC, aggregate employment growth was only one tenth the pace of output growth. Prasad (2009b) notes that, over the period 2000–2006, growth in secondary and tertiary sector employment in the PRC averaged a healthier 3%, but this was largely offset by a decline in primary sector employment. In other words, the PRC's growth model, which has relied to a great extent on investment growth, has resulted in limited employment growth and a substantial increase in the capital–output ratio. It would seem that a growth model that generates high GDP growth but only minimal employment growth is not welfare-improving, especially in a less developed economy like the PRC that has a high level of unemployment and underemployment. This is a subtle issue as high output growth and low employment growth together imply a high rate of labor productivity growth. This is certainly welfare-enhancing, especially if the growth in labor productivity is largely driven by growth in total factor productivity. Indeed, the calculations of Bosworth and Collins (2008) suggest that total factor productivity growth has accounted for a substantial portion of labor productivity growth in the PRC during the first half of this decade. Nevertheless, the low rate of employment growth is clearly a concern, as it has implications for economic but also social stability. In summary, a variety of indicators—the declining share of labor income in national income, the slower rate of private consumption growth relative to national income growth, and the massive current account surplus—point to an economy that is out of balance from efficiency and welfare perspectives.

IV. Components of National Savings

Saving dynamics are a key component of the story driving shifts in current account balances in the region. Countries in Asia that have achieved high growth rates are also characterized by high saving rates. Asian economies that have been constantly registering a more than 30% saving rate since the mid-1980s are noteworthy. These include Hong Kong, China; Indonesia; Republic of Korea (henceforth Korea); Malaysia; Singapore; Taipei,China; and Thailand, and are known to be takeoff countries,[3] characterized as those that have achieved high and sustained saving and growth rates since the mid-1970s. This observation is often described as the "virtuous cycles of saving and prosperity", as opposed to the "poverty trap" of inadequate saving and stagnation (Loayza et al. 2000).
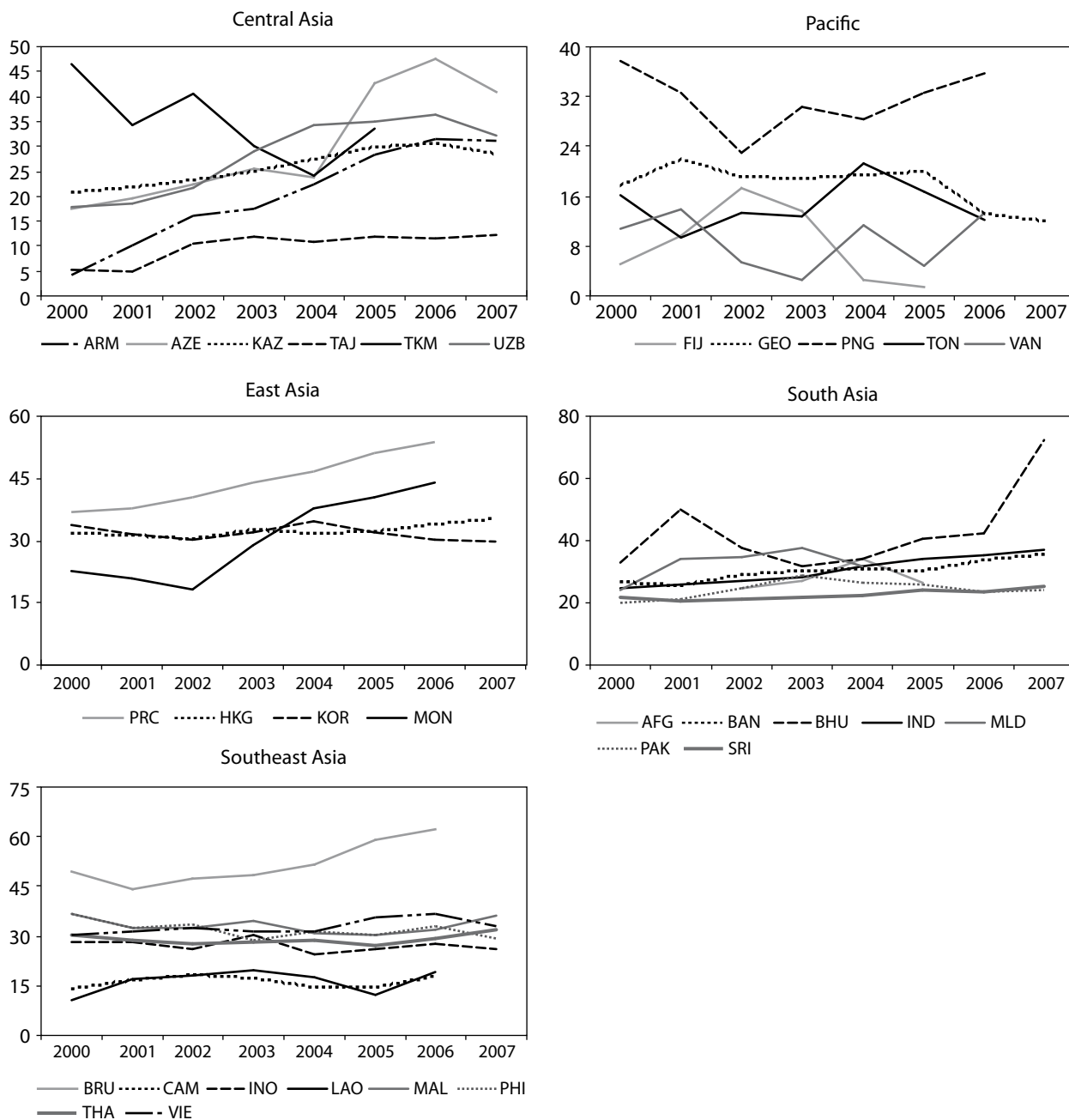
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[3] The term was used in Rostow (1971).

For most major economies in the region, saving rates have either increased or stayed roughly constant after the recovery from the 1997–1998 Asian financial crisis. On average, current national saving rates are high in Asia, with the PRC leading the pack with its rate in excess of 50% of GDP in 2007. The PRC experienced the sharpest jump of almost 20 percentage points in the 7-year period 2000–2007. A comparison across countries in developing Asia shows that saving rates, as of 2006 and 2007, vary considerably from above 40% of GDP in Azerbaijan, Bhutan, Brunei Darussalam, PRC, and Mongolia; to below 15% in Fiji, Georgia, Tajikistan, Tonga, and Vanuatu (Figure 3).

For countries with excess saving that is not directed toward investment or consumption, rebalancing of growth will require that the source of oversaving determine the appropriate policy mix. Rebalancing in Asia therefore requires policies to (i) channel saving to productive investment, and (ii) promote consumption in order to raise domestic demand. While the first issue relates to the saving behavior of the corporate sector, the second is associated with the household sector. This section investigates these issues by considering the components of national savings to better understand the saving dynamics.

Domestic savings in an economy come from three different categories of economic agents, namely households, enterprises, and the government. Household savings is generally defined as the difference between household disposable income and household consumption expenditures. Retained earnings (profits that are not paid out as dividends) are counted as corporate savings. These can of course be used to internally finance investment projects (if retained earnings of all firms in a country equaled domestic investment financed by those retained earnings, the effect on the current account would be nil). Government savings includes amounts that are used to finance public investment. Unfortunately, a breakdown of savings data by these categories is available only for a handful of countries. Figure 4 tracks the evolution of the composition of savings in PRC; India; Korea; Philippines; and Taipei,China. In the PRC and India there is a significant increase in the national saving rate from 2000 to 2007. Aggregating across the five Asian economies reveals that aggregate saving has risen from 14.8% of GDP in 2000 to 37.8% in 2007. But the striking feature is that, by 2007, corporate saving became the dominant source of saving in the region, accounting for about half of aggregate saving. This mirrors the trend in industrial countries where corporate saving has become the main source of private saving as against household saving (OECD 2007). The share of corporate saving in the PRC has increased markedly in recent years, accounting for more than half of national saving in 2006. In India and the Philippines too, the share of corporate saving doubled relative to GDP since 2000. An upward trend was discernible in Korea and Taipei,China as well.

Figure 3: Gross Saving Rates as Percent of GDP

Central Asia

```
50
45
40
35
30
25
20
15
10
5
0
   2000  2001  2002  2003  2004  2005  2006  2007
```

— ARM   — AZE   ······· KAZ   — — TAJ   — TKM   — UZB

Pacific

```
40
32
24
16
8
0
   2000  2001  2002  2003  2004  2005  2006  2007
```

— FIJ   ······· GEO   — — — PNG   — TON   — VAN

East Asia

```
60
45
30
15
0
   2000  2001  2002  2003  2004  2005  2006  2007
```

— PRC   ······· HKG   — — — KOR   — MON

South Asia

```
80
60
40
20
0
   2000  2001  2002  2003  2004  2005  2006  2007
```

— AFG   ······· BAN   — — — BHU   — IND   — MLD
······· PAK   — SRI

Southeast Asia

```
75
60
45
30
15
0
   2000  2001  2002  2003  2004  2005  2006  2007
```

— BRU   ······· CAM   — — — INO   — LAO   — MAL   ········ PHI
— THA   — · VIE

BAN = Bangladesh; CAM = Cambodia; PRC = China, People's Rep. of; HKG = Hong Kong, China;
IND = India; INO = Indonesia; KOR = Korea, Rep. of; MAL = Malaysia; PAK = Pakistan; PHI =
Philippines; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
Source: World Bank, *World Development Indicators* online database, downloaded 6 February 2009.
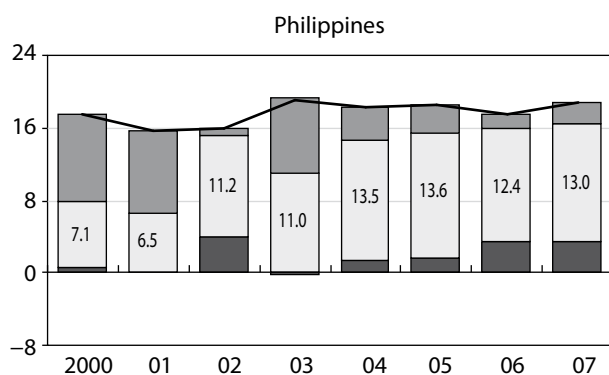
## Figure 4: Composition of Savings; Government, Corporate Sector, and Households as Percent of GD
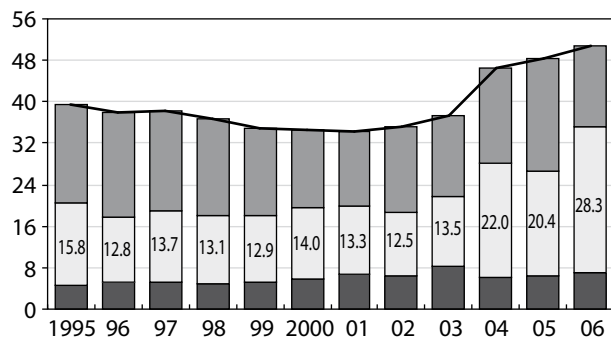
Sources: *China Statistical Yearbook*, various years, available:
www.stats.gov.cn, downloaded 23 February 2009; Chamon and Prassad (2008).
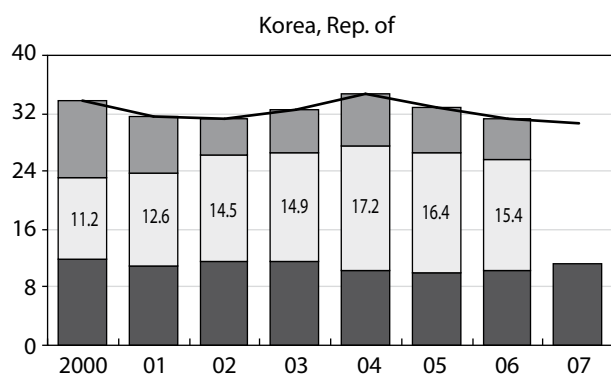
Korea, Rep. of

Source: CEIC Data Company Ltd., downloaded 6 February 2009.

Philippines
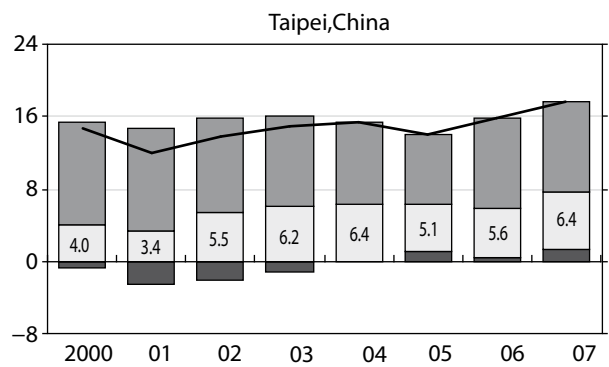

Source: CEIC Data Company Ltd., downloaded 6 February 2009.

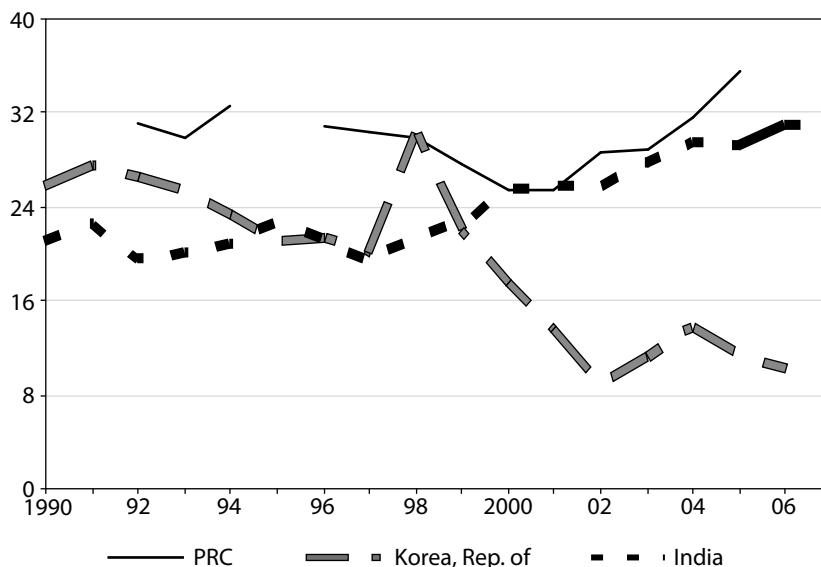India

Source: CEIC Data Company Ltd., downloaded 6 February 2009.

Taipei,China
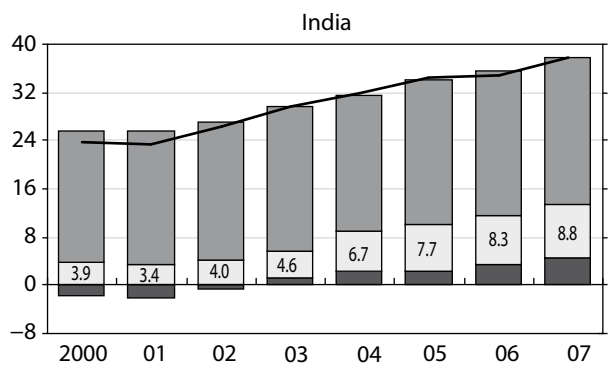
Sources: Directorate General of Budget, Accounting
and Statistics, available: eng.stat.gov.tw;
CEIC Data Company Ltd., both downloaded 6 February 2009.

■ Government   □ Corporations
■ Households   — National saving rate

India's high reliance on human capital, low capital–output ratio, and efficient utilization of physical capital have limited its dependence on foreign saving as a source of financing its growth (Mishra 2006). Household and corporate savings have risen and government saving, which had been negative in 2000, was positive in 2007 partly as a result of the implementation of rule-based fiscal policies. Moreover, a 1 percentage point increase in public saving increases aggregate saving by 0.67 percentage point, which signifies the need for prudent fiscal policies. By far, household saving has remained the dominant source of national saving in India, amounting to about 20% percent of GDP since the early 2000s. The share of this component in overall national saving has declined in PRC, Korea, and Philippines but remained stable in Taipei,China. The trend observed in the PRC can be largely attributed to a declining share of household income in overall national income. This point is discussed in more detail later. In Korea and the Philippines, the rise in corporate saving was inadequate to offset the significant decline in household saving as a ratio to GDP. This led to a slight fall in overall national saving rate in Korea.

A different perspective on household saving is provided by the saving rate relative to household disposable income rather than GDP. This is the relevant metric for understanding household saving behavior as it abstracts from changes in the distribution of national income between labor and capital. Figure 5 shows the household saving rates for PRC, India, and Korea. The figure shows the data from the national accounts (which are incomplete and not available for recent years) for the aggregate economy as a percentage of disposable income. In the PRC, the household saving rate rose rapidly

Figure 5: Household Saving Rates as Percent of Disposable Income

Note: Saving rates from National Accounts (Flow of Funds) are expressed as a share of
          disposable income. For the PRC, the data are absent for 1990, 1991, 1995, 2006,
          and 2007. India's income data is from personal disposable income; Korea's income
          is from national disposable income: household and private unincorporated enterprises.
Sources: CEIC , Prasad (2009a).

during the high-growth years of this decade. Similarly, the household saving rate in India has risen sharply over the last decade, from 20% of disposable income in 1998 to 32% in 2007. Indeed, India now seems to have the highest household saving rate among the Asian economies for which data are available. In contrast to the PRC and India, the household saving rate in Korea has fallen considerably, from nearly 30% in the late 1990s to 10% in 2007.

The cross-country comparison shows that there are substantial differences across countries in terms of the evolution of overall saving rates as well as the sources of national saving. The sharp increase in corporate savings and the evolution of the PRC's savings both play big roles in influencing overall saving patterns in Asia. Given the prominence that corporate sector savings are beginning to enjoy in developing Asia, this section now turns to the role played by various factors in shaping their behavior.

V. Saving Behavior in Asia

A.   Behavior of Corporate Savings

Rising corporate savings are increasingly responsible for the large and fast-growing current account surplus that Asia has accumulated and which has resulted in the global savings glut. Corporate savings largely reflect retained earnings, so understanding the profitability of firms is important. One way to classify the determinants of corporate savings is to consider cyclical and transitory factors (for example, financial and monetary variables such as money supply, interest rates and inflation, cost of investment goods and real estate prices) as well as long-term trends. Evidence available from OECD countries shows that a quarter of the overall increase in aggregate corporate net lending (defined as the excess of undistributed profits or gross saving over fixed investment) between 2001 and 2005 can be attributed to the influence of the output cycle and one fifth to financial-sector buoyancy (OECD 2007). Global trends reflecting globalization and technological change as well as wage moderation led to a general long-term shift in profit shares in the OECD countries.

What can account for the rising corporate savings in Asia? An understanding of which factors affect corporate saving in Asia would suggest how the saving–investment imbalances might adjust. However, lack of detailed information on corporate accounts for most developing member countries) makes such an analysis difficult. Limited data available for the PRC shows that after-tax profits of the corporate sector (industrial, retail, wholesale, and construction) rose by about 6% of GDP between 2003 and 2006 (OECD 2007). This came about from robust growth, low interest rates, and falling labor costs and growing output prices, which significantly increased profitability of state-owned and private enterprises in the country (IMF 2005). High firm-level uncertainty, an incentive to reduce debt and underfunding of company pensions also encouraged larger cash holdings, which in turn added to savings.

Some of the factors were policy-induced. Massive state subsidies on land and energy to state-owned firms reduced their input costs substantially. Combined with administrative monopolies in some sectors, this led to high levels of profitability in some sectors, with the boom years until mid-2008 creating rising profits. These profits generated large retained earnings (gross savings) owing to low dividend payout ratios (Tyers 2008). About half of listed companies in the PRC pay no dividends. State-controlled listed companies do pay dividends but they accrue only to holding companies and are not passed on to shareholders. Until very recently, state-owned enterprises were not required to pay dividends to their shareholders or to the state, thereby creating an incentive for these firms to retain their profits rather than distribute them. Furthermore, payouts from large and profitable firms go disproportionately to the rich, who have higher saving propensities than the poor, adding to the saving spiral (Lin 2009).

Lin (2009) has argued that in the PRC the high level of corporate savings can partly be attributed to a financial structure dominated by state-owned banks and an equity market, both of which favor large firms. Similarly, Prasad (2009b) notes that the repressed financial system in the country provides cheap capital (low real interest rates) to favored firms, most of which are large state-owned firms. The underdeveloped financial system also has a role to play in the high level of retained earnings among profitable firms. One of the aspects of financial repression involves a ceiling on deposit rates, which means that firms (like households) have faced very low or sometimes even slightly negative real rates of return on their bank deposits. This led some firms to use their profits to purchase shares on the equity market, which was booming, and increased paper profits even more. Moreover, limited access to the financial sector and the lack of alternative financing mechanisms such as a deep corporate bond market led firms to retain their earnings in order to finance future investment projects. With the collapse of the equity markets in the early 2000s, companies switched to internal sources of finance rather than borrowing, creating a need to generate surpluses and to hold liquid assets including cash rather than pay out dividends (IMF 2006, Kuijs 2005). In a fast-growing economy, retaining and reinvesting profits is an attractive proposition when firms face an opportunity cost of funds that is very low. More than 50% of total investment comes from corporate saving, not from borrowing. This also explains the high investment rates in the PRC, which are not much influenced by changes in interest rates. Indeed, the surge in corporate savings went hand-in-hand with a rise in investment, notably in infrastructure, manufacturing, metals, automobiles, cement, and property. However, the quality of investment and overcapacity are matters of concern (IMF 2005).

Examining data from 1950 to 2005, Mishra (2006) notes that India's household saving rate is reaching a plateau and further contribution to private saving must come from corporate saving, which is among the lowest in the world. One of the reasons for low corporate saving is that firms report their saving net of depreciation allowance for tax purposes, which is as high as 25%. Using data for 1950–2001, Sinha and Sinha (2007) find that the growth rate of GDP is a strong determinant of corporate saving in India. A number of policy initiatives also helped to bolster corporate profitability in India (Mohan

2008). They included reduction in the corporate tax rate from 45% in 1992–1993 to 30% by 2005–2006, a cut in the peak rate of customs duty on nonagricultural goods from 150% in 1991–1992 to 10% in 2007–2008, and sustained moderation in inflation leading to reduction in nominal interest rates. Firm-level factors included financial restructuring of firms leading to a reduction in debt–equity ratios in the corporate sector and improved productivity and efficiency through new technology.

The literature on post-Asian crisis performance of corporate savings in newly industrialized economies is rather scant. However, Fernald and Neiman (2006) provide evidence that "favored firms" in Hong Kong, China; Korea; Singapore; and Taipei,China reaped economic profits during their rapid expansion in the 1990s. Preferential tax treatment, subsidies, and access to capital, which created market imperfections, led to their concentrated income growth, allowing them to maintain high saving rates. Similar observations on oligopoly rents, which increased profitability and corporate saving, have also been made in the context of the PRC by Lu et al. (2009) and Tyers (2008) and in a more general context by Aghion and Griffith (2005). In some of the other economies, the sheer pace of economic growth in recent years (until about mid-2008) led to rising corporate profitability but there may be country-specific institutional features that drive the dynamics of corporate savings. In particular, financial sector development may play a key role in determining corporate savings and directing them to most productive investment (see Box 3). A more careful investigation of this issue is warranted in future work.

As the effects of the global slowdown permeate the Asian region and reduce corporate profitability, household savings could regain its dominance. Interestingly, even though the share of household savings in total savings has declined, household savings as a share of disposable income has continued to rise in countries such as the PRC. The rising household saving rate in the PRC is of considerable interest from two perspectives. First, this phenomenon obviously has a key role to play in explaining the rising current account surplus in the region. Second, understanding what is driving the rising household saving rate is also crucial for devising policy measures to stoke private consumption growth. The next section reviews a number of potential explanations for the level and trend in household savings in developing Asia.

B. Household Saving Behavior

While consumption demand is the key in terms of the contribution to growth from the household sector, it is often the case that high and stable consumption cannot be achieved due to financial and resource constraints, particularly in the context of developing countries. Therefore, theoretical and empirical investigations in developing Asia are usually focused upon household saving behavior. This section reviews the discussion on the behavior of household savings in developing Asia and examines possible determinants of the growth patterns. It considers how policy choices might have influenced cross-country differences in saving rates. In particular, it investigates

empirical evidence on the following channels: consumption smoothing over the life cycle, demographic factors, cultural factors, habit persistence, precautionary savings, and underdevelopment of the financial system. The section then considers specific country cases and investigates the behavior of household savings with particular attention paid to the PRC and Philippines by drawing upon some macroeconomic perspectives as well as household-level data.

1. Alternative Hypotheses of Household Saving Behavior and Evidence in Developing Asia

There are well-established hypotheses in examining households saving behavior, which are closely interlinked and often complement each other. Some of the hypotheses appear more relevant and/or applicable than others in the context of developing economies. Six major hypotheses and relevant evidence in Asia are discussed in this subsection.

### a. Life Cycle Permanent Income Hypothesis

The life cycle permanent income (LCPY) hypothesis implies that young workers should borrow against their future income; workers should have the highest saving rates when their incomes are highest in the latter stages of their careers; and retirees should start drawing down their savings upon retirement. This implies a hump-shaped age-savings profile (Box 2). The life cycle model is also relevant at the macroeconomic level. Less developed countries with relatively low capital–labor ratios should be running current account deficits and borrowing more.

**Box 2: Hump-shaped Age-Saving Profile and Growth**

Life cycle permanent income is closely associated with the positive relationship between saving and growth, which is the central and most important prediction of this model (Modigliani 1986). Box Figure 2.1 shows a lifetime profile of earnings and consumption. The hump in consumption reflects the changing demographic composition of the household as children are born, grow expensive, and leave, and the hump in earnings reflects the standard age-earning profile. Consumption drops at retirement as work-related expenses such as transportation are no longer needed. Household members would borrow at the beginning of their career, save in the middle, and run down the accumulated assets after retirement.

Box Figure 2.2 illustrates that the line for zero growth, g=0, shows the hump-shaped saving-age profile corresponding to the earning and consumption paths in Box Figure 2.1. The total area under the zero growth line is zero; saving during the prime age years just finances borrowing in youth and retirement. Alternatively, the figure shows how higher growth rates, g=2, 4, and 6%, lead to higher saving due to the fact that the midlife saving of the younger generations exceeds the retirement dissaving of their elderly. At very high growth rates, however, the dissaving by the youngest households could predominate. But a fairly reasonable assumption that the youngest households cannot borrow for consumption guarantees that higher growth will produce more saving.

continued.

Box 2. *Continued.*

Box Figure 2.1: Hump-shape
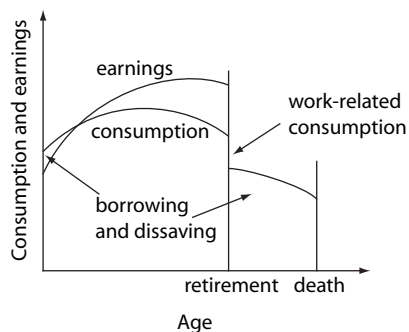
Box Figure 2.2

Source: Deaton (1999).
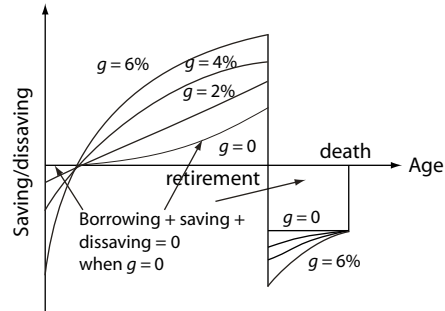
Empirical support for the LCPY hypothesis is generally weak at both the microeconomic and macroeconomic levels. Nonetheless, there are a handful of findings in favor of the hypothesis in developing Asia. Deaton and Paxson (2000) show that the age-saving profile has the traditional hump shape in Taipei,China. Park and Rhee (2005) also find for Korea that there is a positive relationship between the age of household head and the household saving rate, once the household head's age crosses the mid-40s. There is a decline in saving rates after retirement relative to the peak saving rates that are attained in the late 50s, but the average post-retirement saving rate is still quite high.

Using household survey data, Attanasio and Szekely (2000) show that households in Taipei,China and Thailand have higher saving capacity because of higher income growth allowing for accumulation of resources. Alternatively, low income level has been blamed for the low saving rate of Philippine households (Alba and See 2005 among others).

b. Demographic Factors

Demographic factors, in conjunction with the LCPY hypothesis, can generate shifts in saving patterns. An aging population means that the dependency ratio—the ratio of the dependent population to the working-age population—is expected to rise, which could drive up saving rates. This could be particularly important for a country like the PRC where the one-child policy is projected to generate a substantial demographic shift.

East Asian countries have had a noteworthy demographic transition—aging with a declining fertility rate. Figure 6 shows demographic projections for the countries in selected Asian economies. In virtually every country, the share of the elderly in the population is projected to increase, with particularly sharp increases in store by 2040 for PRC; Hong Kong, China; and Korea. This could increase household saving rates in

Figure 6: Demographic Projections
(dependent and working-age populations as percent of total population)
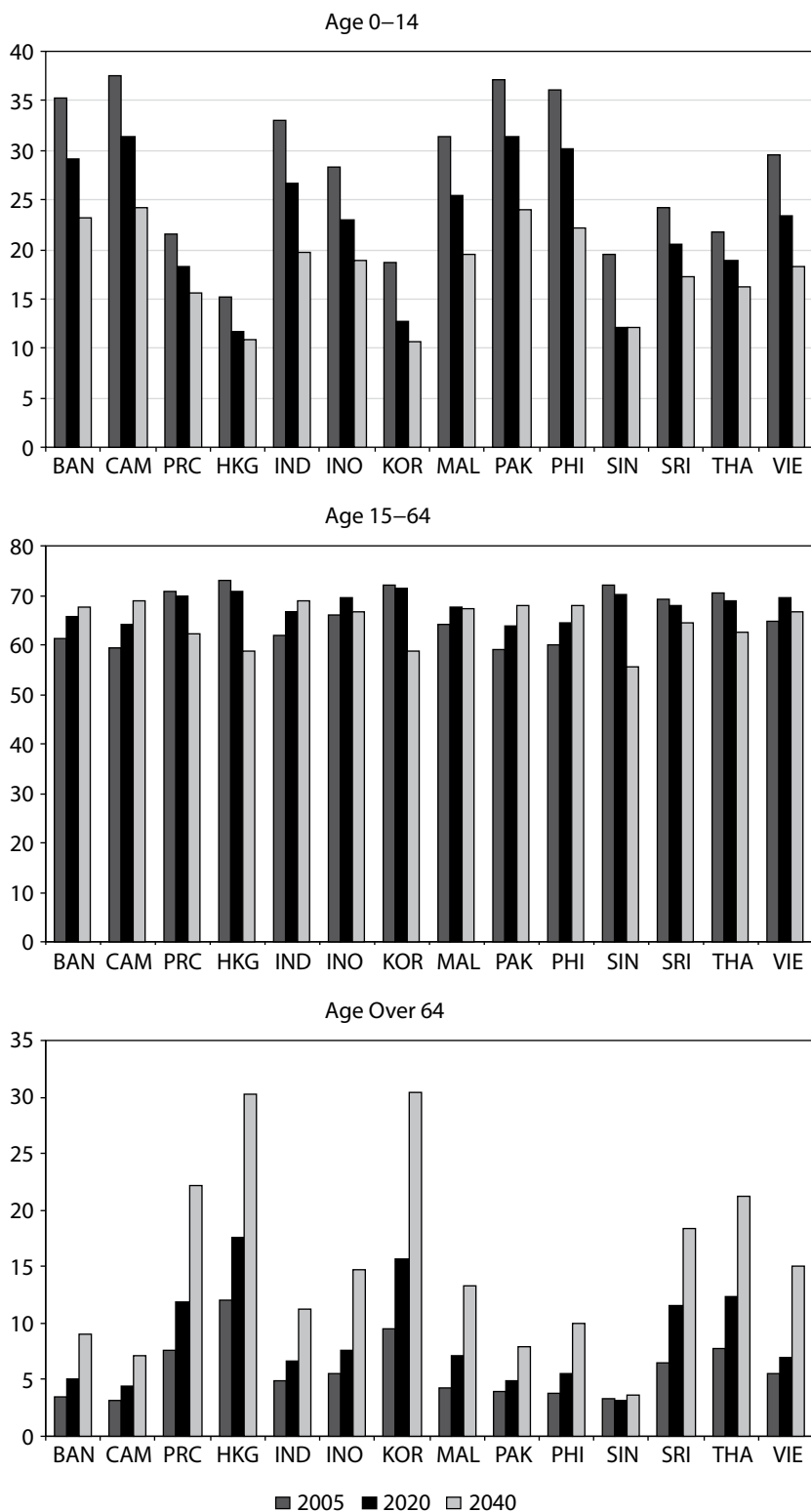
BAN = Bangladesh; CAM = Cambodia; PRC = China, People's Rep. of; HKG = Hong Kong, China;
IND = India; INO = Indonesia; KOR = Korea, Rep. of; MAL = Malaysia; PAK = Pakistan;
PHI = Philippines; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
Source: United Nations. World Population Prospects: 2006 Revision Population Database.
          Available: esa.un.org/unpp/index.asp?panel=2, downloaded 25 February 2009.

these countries in anticipation of rising dependency ratios and greater strains on public pension systems. Their saving rates then may start to fall with the increasing share of the dissaving elderly population. Interestingly, the share of the working-age population is actually projected to *increase* slightly over the next three decades in Bangladesh, Cambodia, India, Pakistan, and Philippines. This could have opposite effects on savings behavior, other things being equal.

The effects of a rising old-age dependency ratio on average household savings are, however, not entirely obvious. Based on the traditional version of the LCPY hypothesis, one would expect older individuals and households with older heads to be drawing down on their savings to finance postretirement consumption. This would generate a negative relationship between the elderly dependency ratio and average household saving rates. For instance, Kim and Lee (2007) find an evidence for East Asian economies that higher old-age dependency ratios lead to lower saving rates. Can this be squared with rising saving rates across all age groups and the high saving rates of the elderly that have been documented using the household-level data? One difference between microeconomic and macroeconomic data is that the concept of savings tends to be different because of measurement as well as conceptual issues. For instance, the flow of services from owner-occupied housing is treated differently in the national income accounts than in household surveys. Household surveys also tend to undersample households near the top of the income distribution, which normally have high saving rates. This would then result in a lower household saving rate compared with the macroeconomic data.

c.   Cultural Factors
Cultural factors may explain why people in some societies are just more frugal and inclined to save more of their incomes than in others. It is clearly not a theoretically well-grounded explanation but has been resorted to by authors such as Bosworth (1993) in the absence of other models that can convincingly explain the high levels of savings in East Asian economies.

Formal evidence in support of the cultural factor is scant. In an indirect test of the hypothesis, Carroll, Rhee, and Rhee (1994), for example, compare the saving behavior of different immigrant groups in Canada, but find no evidence of cultural effects on savings. Moreover, it cannot explain rising saving rates in economies like the PRC.

d.   Habit Persistence
Habit persistence implies that consumption reacts slowly to rising income because consumption may be influenced by previously established habits. This could explain why saving rates may increase during a period of rapid income growth. This hypothesis has been used to explain why rapidly growing countries have high saving rates (Carroll and Weil 1994).

e.   Precautionary Motives

Precautionary motives play an important role in explaining saving in less financially developed economies. Rising macroeconomic uncertainty or household risks can raise saving rates, in the absence of mechanisms for hedging against these risks. High saving rates among households with young household heads may be driven by the need to build an adequate buffer stock of savings to smooth consumption when hit by adverse shocks to their income, while households with older heads may be concerned about job loss, skills obsolescence, and an underdeveloped pension system. This could be particularly relevant for economies such as the PRC and Viet Nam that are becoming more market-oriented, and where the level of household-specific employment and income uncertainty have risen, even though average income growth has been rapid.

One of the major factors inducing precautionary saving is an inadequate health care system. Health care financing in developing Asia is dominated by private expenditure, while public health systems remain weak and health insurance largely nonexistent—as the evidence from India highlights (Peters et al. 2002, Bonu et al. 2007). The availability of health insurance is particularly important for the elderly, who face rising health care costs.

In both the PRC and Taipei,China, precautionary motives have been found to play an important role in household saving behavior. Indeed, in Taipei,China, provision of social health insurance is found to have substantially weakened the precautionary motive for saving. The 1995 introduction of the National Health Insurance scheme reduced household saving rates significantly, with declines of 9–14% in the average level of saving (Chou et al. 2003 and 2006). In Taipei,China, Athukorala and Tsai (2003) conclude that increased availability of social security provisions and enhanced credit availability also tended to reduce household saving. In the PRC, precautionary saving has been triggered by the absence of a safety net, minimal health and education coverage, limited pension coverage, and low unemployment compensation funds or related benefits (Chamon and Prasad 2008).

Financial sector development in tandem with precautionary saving warrants particular attention as it plays an important role in the saving process, particularly in the context of global imbalances. Caballero et al. (2008) argue that financial underdevelopment and saving are related in three important ways as a driver for the global imbalances or "saving glut" in emerging economies. First, in a fast-growing economy where the desired consumption bundle shifts toward big-ticket durable goods such as cars and houses, inability to borrow against future income streams could lead to households saving more in order to self-finance their purchases. Second, lack of diversification opportunities for financial assets could in fact lead households to save more for precautionary purposes. Finally, financial repression, which results in low or negative real interest rates, could lead to higher savings—the real interest rate elasticity of savings could be negative if the income effect dominates the substitution effect. This is sometimes referred to in the literature as the "target savings hypothesis."

To summarize, existing empirical studies suggest that a number of factors such as income growth, demographic change, financial underdevelopment, and/or precautionary saving are important factors in determining saving behavior in developing Asia. There seems to be a significant variation across economies in the determining factors of households' saving behavior. In order to illustrate how the alternative hypotheses can explain households' saving behavior, two case studies on households saving behavior in the PRC and Philippines are discussed.

2.   Case Study 1: Household Saving in the Philippines

In the Philippines, a Family Income and Expenditure Survey is conducted every 3 years, and a total of seven survey results are available for the period between 1988 and 2006 providing household-level information for a number of variables, including detailed information on income and consumption expenditures. The surveys also provide demographic and employment information about household members, living conditions, and a number of other household characteristics. As the national-level flow of funds data in Figure 4 indicates, the household saving rate has declined over time—from 9.8% of GDP in 2000 to 1.7% in 2006, then rebounded to 2.4% of GDP in 2007. Meanwhile the national saving rate has been stable at around 18% of GDP. This declining trend and tipping up in 2007 can be similarly observed at the household-level data.

The age-saving profile shows an interesting pattern, with almost a monotonic increase in saving rates in tandem with the age of the household head in all available surveys (Figure 7), even though age-income and age-consumption profiles tend to be hump-shaped just as in many other economies (Figure 8). Remarkably, saving rates are highest among households whose heads are past the normal retirement age. There is almost a linear relationship between the average household saving rate and age of household head beyond age 46 even after controlling for time and cohort effects. This finding holds regardless of whether the household head is male or female or whether the income level is within the top 25 percentile albeit at different degrees (Figure 9, left panel). From the age range in the mid-40s to the mid-60s, there is a 3% increase in the household saving rate (from 21% to 24%).

Demographic development has been cited as one of the factors to explain the declining saving trend in the Philippines (Figure 9, right panel). Bersales and Mapa (2006) analyze the same survey (up to 2003) and report that the declining trend has to do with the higher proportion of young dependents in the economy. In fact, the share of dependent population between age 0 and 15 in 2005 was about 36% of total population in the Philippines—close to the South Asian economies' average and much higher than its neighboring Southeast Asian economies' average of about 26%. The increase in the young dependency group would have increased the education and health expenditures, which result in lower aggregate saving.

Factors responsible for the upward sloping age-saving rate profile could be financial sector underdevelopment and family composition. Bersales and Mapa (2006) argue that remittances are major source of aggregate household saving. Figure 10 decomposes the total income into three income sources, namely wage, entrepreneur, and other incomes. It shows that the share of other income as a percentage of total income, roughly 40% of which is accounted for by remittances from abroad, steadily increases to over 60% by age 80 with the 2006 survey. To the extent that elderly heads receiving the remittances from their working-age family members abroad, and these financial flows are channeled though the informal financial sector and are not directed to productive use in the economy, the saving rates of households with elderly heads would increase.

This argument is consistent with the fact that households with an elderly head have working-age family members in the Philippines, which would contribute to a higher saving rate. This point is made by authors such as Deaton and Paxson (2000) and Attanasio and Szekely (2000). Therefore, one has to be careful in taking into account the factors driving family composition in different countries. In countries where it is the norm for elderly persons to live with their adult-age children, high household saving rates of households headed by older persons could reflect family composition rather than high individual saving rates of the elderly. Clearly, the aging of the population has complex effects on household savings.

Figure 7: Age-Saving Rate Profile in the Philippines

Source: Authors' calculations based on Philippines Family Income and Expenditure Surveys.

**Figure 8: Age–Income and Age–Consumption Profiles in the Philippines
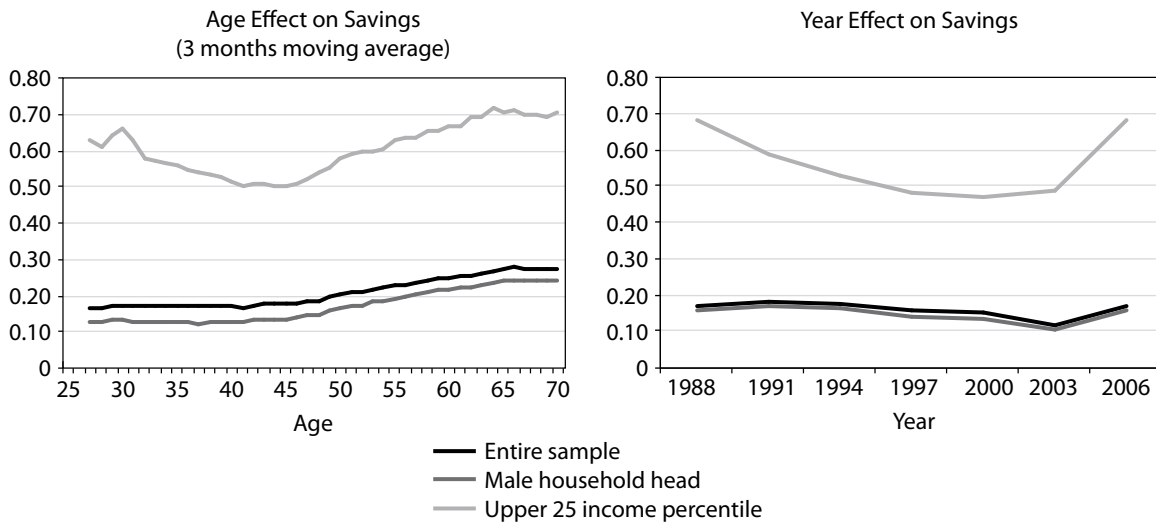(thousand pesos at 2000 prices)**

1994

2000

2006
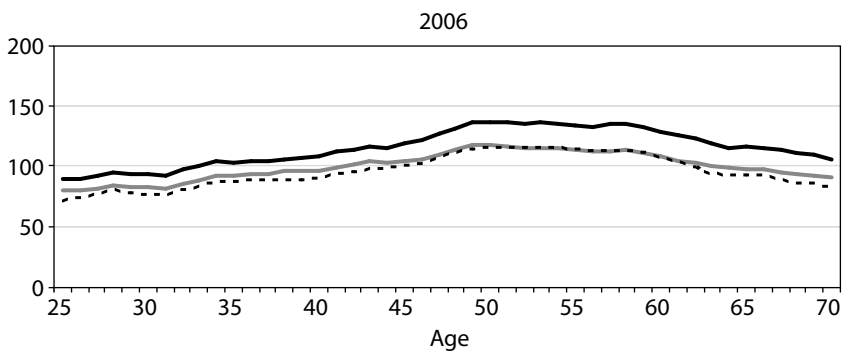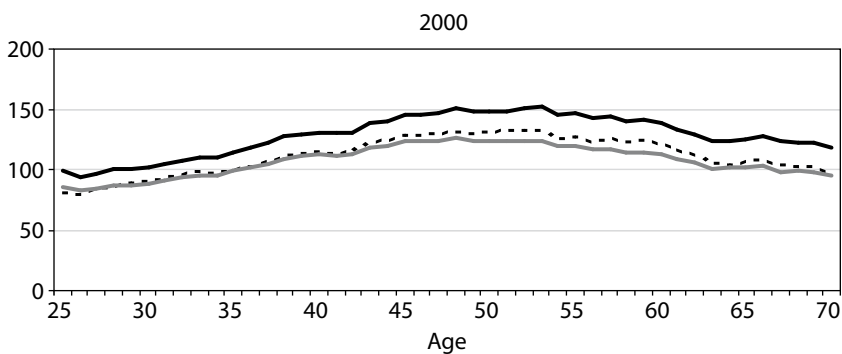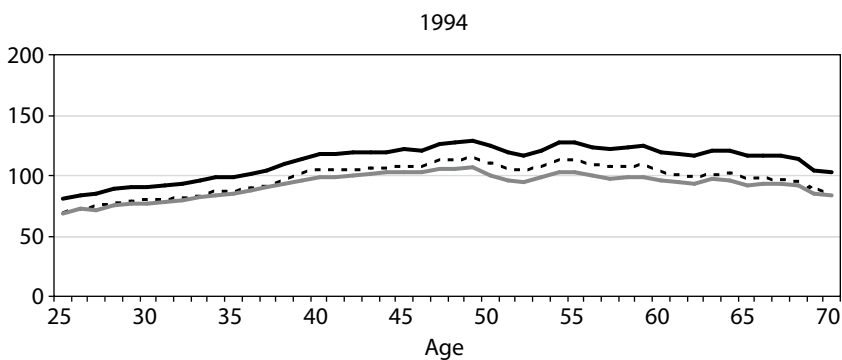
———— Consumption   ———— Average annual   ▪▪▪▪ Disposable income
       by age of   family disposable   less transfers
       household head   income

Note: Income and consumption converted to constant 2000 prices using the CPI as the deflator.
           Each series represents 3-year moving average (the averages for each age were combined
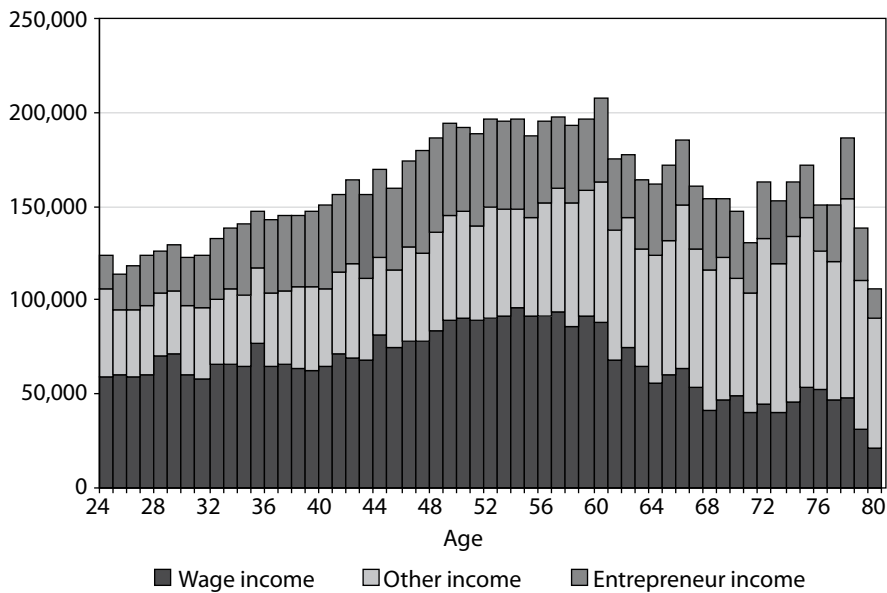   with those for the ages immediately above and below).
Source: Authors' calculations based on Philippines Family Income and Expenditure Surveys
           (National Statistics Office, various years).

Figure 9: Age and Year Effects, Philippines

Age Effect on Savings
(3 months moving average)

Year Effect on Savings

Entire sample
Male household head
Upper 25 income percentile

Source: Authors' calculations based on Philippines Family Income and Expenditure Surveys (National Statistics Office, various years).

Figure 10: Income Components in 2006 Survey, Philippines (pesos)

Wage income   Other income   Entrepreneur income

Source: Authors' calculations based on Philippines Family Income and Expenditure Surveys (National Statistics Office, various years).

### 3. Case Study 2: Household Saving in the People's Republic of China

For the PRC, analysis using annual urban and rural household surveys for the period 1990–2005 explains the surge in household saving in the country. As with the household surveys in the Philippines, the PRC survey also provides household information needed for detailed analysis of their saving behavior. Figure 11 shows that urban, rural, and total PRC household saving, as a ratio of disposable income, has been gradually rising since 1990, reaching nearly 26% in 2007. Household saving rates have increased in almost all income deciles, except at the lowest part of the household income distribution (Figure 12). This increase has been driven largely by the rise in the saving rate of urban households.

Figure 11: Households Saving Rates by Urbanity, the PRC (percent)
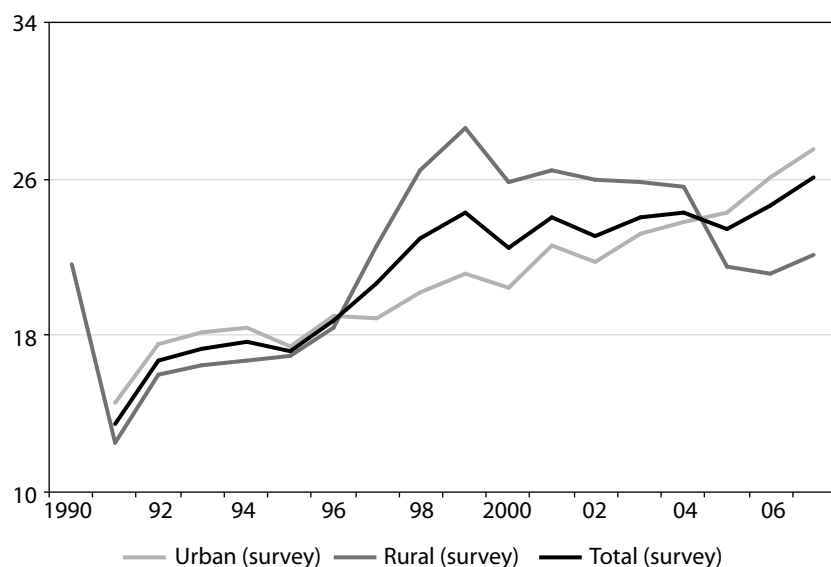
Note: Household savings survey data are based on per capita income and consumption, and population available through CEIC. Saving rates from the Urban and Rural Household Surveys are expressed as a share of disposable income and net income respectively. Data for Urban and Total are absent for 1990. Saving rates from National Accounts Flow of Funds) are expressed as a share of disposable income, the data are absent for 1990, 1991, 1995, 2006, and 2007.
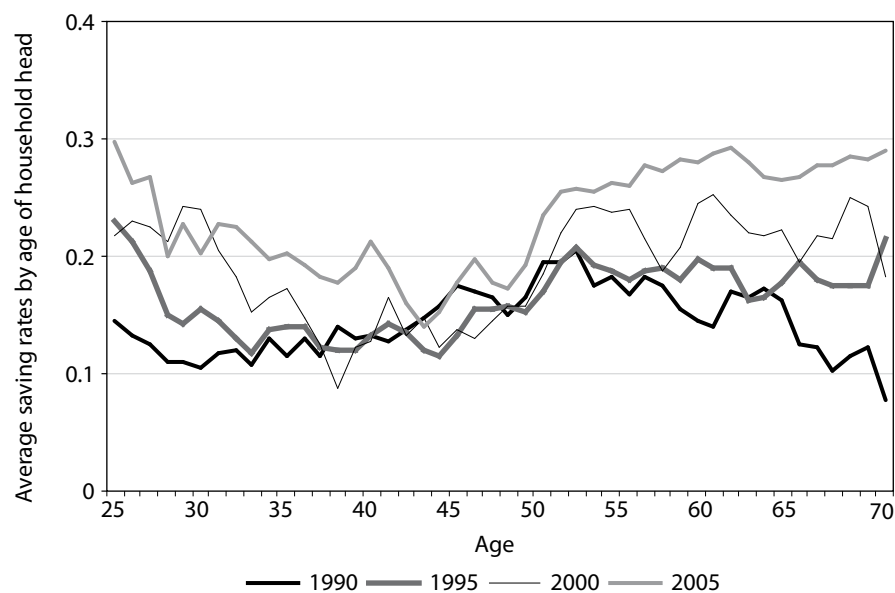
Source: Chamon and Prasad (2008).

Figure 12: Saving Rate and Income Distribution, the PRC
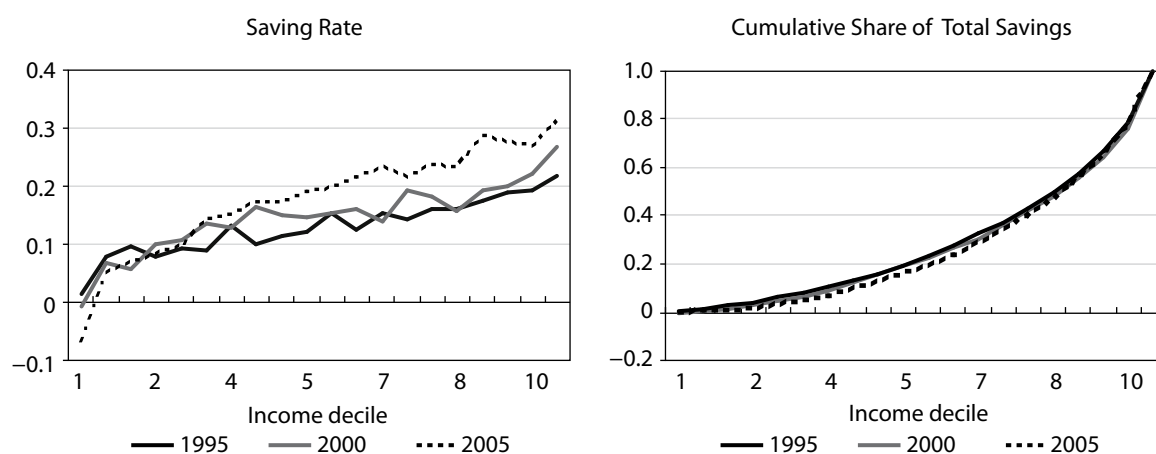
Source: Chamon and Prasad (2008).

Figure 13 plots the saving rate as a function of the age of the head of household in the cross-section of households for 1990 and 2005. In 1990, the age-saving profile exhibits a hump-shaped pattern, with the saving rate increasing with age, peaking at around age 50, and then declining with age. Such behavior is close to what life-cycle theory would predict, given borrowing constraints that limit borrowing against future income and rising labor earnings over some range of the working life. However, the age-saving profile starts to shift to a U-shaped pattern in the mid-1990s, and this pattern becomes more pronounced in the 2000s. That is, young households save a lot more of their income than was the case a decade ago. Saving rates then decline with age with a trough around the 40s, before rising as the household head approaches retirement age. This type of saving behavior—the relatively high saving rates at the early and late stages of the life cycle—is puzzling as it does not conform to the standard life cycle model, especially in the context of a fast-growing economy.

These simple age-saving plots of course mix together age, time, and cohort effects. For instance, different cohorts could have different saving propensities that affect these profiles. Figure 14, based on a regression analysis by Chamon and Prasad (2008), shows separately the age, cohort, and year effects on household income, consumption and savings, with all three variables measured in per capita terms. The results confirm that consumption (dashed line) tends to track income (solid line). The age effects show that income and consumption initially increase with age before steadily declining. The implied effect on the saving rate is similar to the saving rate profile as a function of age observed in the cross-section for recent years (although the amplitude of the movements is smaller). It indicates that young households save substantially, but then saving rates gradually decline (by about 10 percentage points), reaching a trough around age 45. Saving rates increase rapidly after the age of the household head crosses the mid-40s and remain high even among much older households. This U-shaped pattern of savings is a striking departure from the traditional hump-shaped pattern suggested by the life cycle/permanent income hypothesis.

Figure 13: Age-Saving Rate Profile, the PRC

Note: Income and consumption profiles were smoothed by a 3-year moving average
          (the averages for each age were combined with those for the ages immediately
          above and below).
Source: Chamon and Prasad (2008).

The cohort profiles of income, consumption, and savings suggest that younger and older cohorts had relatively higher income than those that were in their 20s and 30s in 1990. The resulting effect on savings suggests that the higher saving cohorts are those that were in their 40s and 50s in 1990 (saving about 7.5 percentage points more than later cohorts). This could be capturing the fact that those cohorts were particularly hard-hit by the reform process and bore the brunt of the increase in uncertainty associated with the move toward a market economy. The sharp increase in the saving rate in the later working years is also consistent with postponing retirement savings until retirement is near, which is the optimal response to rapid expected income growth.

Finally, the (unrestricted) time effects point to upward trends in both income and consumption. Income grows more rapidly than consumption, resulting in a strong increasing trend in savings. Could this trend in savings be driven by the substantial demographic shifts that have taken place over the last two decades and that are likely to intensify over the next two decades? The estimated time effects explain a 9 percentage point increase in the saving rate from 1990 to 2005. This is large given the fact that the life-cycle and demographic characteristics are already controlled for, yet time effects account for most of the increase in average saving rates over this period. This suggests a limited role for demographic changes in explaining the rise in urban household savings in the PRC over the last decade and a half.

**Figure 14: Age, Cohort, and Year Effects, the PRC**
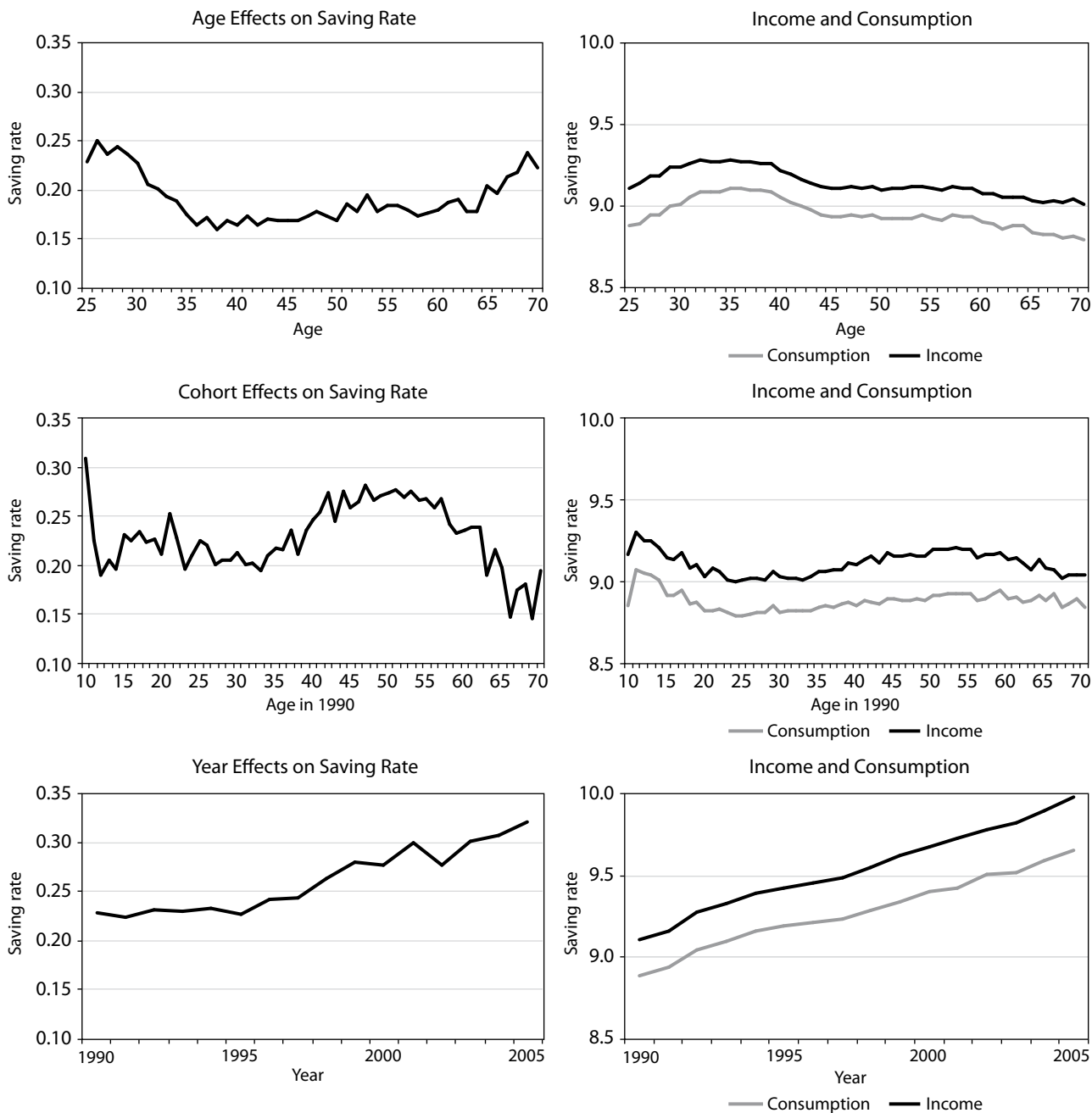
Note: Effects based on a regression of average log(Y) and log(C) on a vector of age, cohort dummies and time dummies. Cohort dummies constrained to add to zero and be orthogonal to a linear trend. Log(Household Size), and share of household members aged 0–4, 5–9, 10–14, 15–19, and 20+ used as controls. Reference household is one that was 25 years old in 1990. Each profile displayed holds the other two effects constant at their respective levels for the baseline household. For example, the age profile shows how income, consumption, and savings vary with age holding the cohort effect constant at its level for households aged 25 in 1990, and the year effect constant at its 1990 level.
Source: Chamon and Prasad (2008).

Chamon and Prasad (2008) conclude that habit formation, demographics, and the life-cycle hypothesis cannot explain the rising household saving rate in the PRC in the face of rapid income growth. This is consistent with other studies such as by Paxson (1996) and Horioka and Wan (2007) that use provincial-level data and also find a limited role for variables related to the age structure in explaining saving behavior. Instead, the increasing private burden of education and health expenditures seem among the strongest candidates for explaining the increase in saving rates, at least during the transition period from central planning to a market economy.

Feng et al. (2009) also arrive at a similar conclusion in their analysis of urban households in the PRC. In the process of restructuring the economy toward a market-oriented system, traditionally high social transfers were reversed. Education and health lost government support and became private and expensive. The total budget allocation for health and education combined stood at around 18% of total government expenditure in 2007 (Figure 15), well behind peer countries' standards. Health expenditure-related risks can largely explain the dramatic increase in saving rates among elderly households. The uncertainty related to those expenditures can also increase aggregate saving rates, despite the higher consumption expenditures of households suffering an adverse health shock.

Figure 15: Government Expenditures, the PRC (percent of GDP)
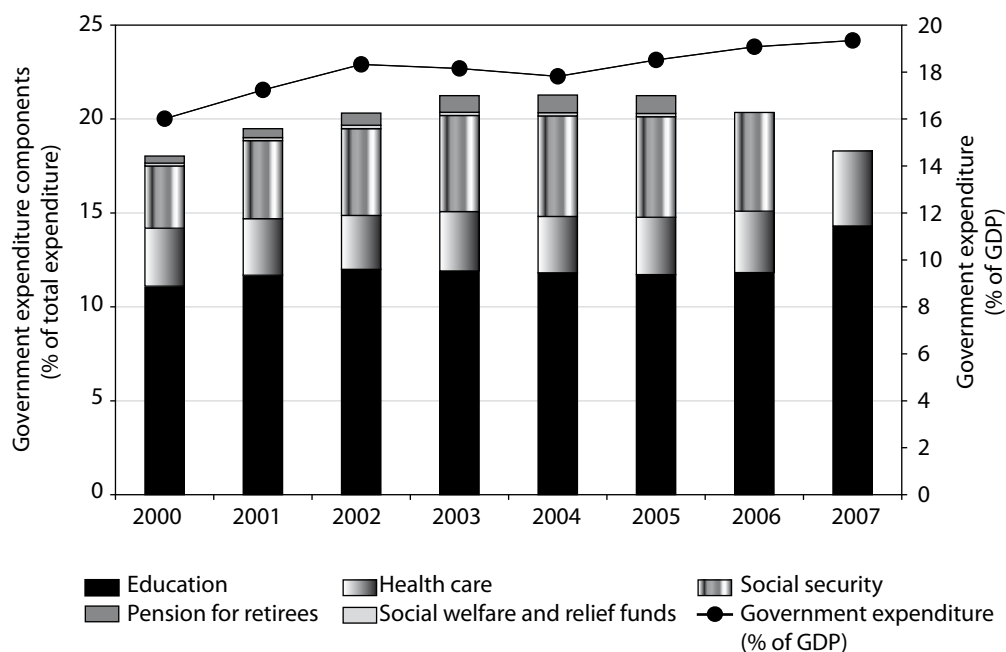
Note: Government expenditure on social security is absent for 2007, government
           expenditure on pension for retires and social welfare and relief funds are absent
           for 2006 and 2007.
Sources: CEIC, authors' calculations.

The effects of these shifts, together with precautionary motives stemming from state enterprise restructuring and market-oriented reforms, should eventually fade as households adjust their consumption plans and build up a level of assets appropriate for this post-transition environment. This build-up in savings could have been smaller if financial markets were more developed. Financial frictions also strengthen precautionary saving motives, and borrowing constraints can play an important role in driving up saving rates despite rapid income growth, especially among younger households.

4.   Policies for Rebalancing Growth toward Consumption

Two common themes come out of the results from these studies based on household data. One is that the social safety net, particularly the availability of health insurance, can reduce precautionary savings. This effect is particularly important for the elderly, who face rising life expectancy rates and rising health care costs. Besides, health care is a superior good and the demand for it is likely to rise as per capita income levels rise in developing Asia. Hence, the provision of comprehensive social health care can play an important role in influencing household saving behavior. The second theme is that financial development—as reflected in the availability of instruments to insure against idiosyncratic income risk and smooth consumption and also the ability to borrow against future income to finance current purchases of durables, including houses—can reduce household saving and stimulate private consumption.

What are the implications of these findings for rebalancing Asia's growth? As financial markets develop, households should benefit from being able to borrow against future income, better opportunities for portfolio diversification, and better rates of return on their savings. Improvements in the social safety net would pool the risks associated with idiosyncratic income shocks and health expenditures, reducing the need for households to save in order to self-insure against these risks. Increasing public provision of education could also lower household savings by reducing the need to accumulate assets to finance future education expenditures. Thus, policies that foster financial sector development and increased social expenditures could play an important role in helping to smooth consumption over the life cycle (Blanchard and Giavazzi 2006). This would moderate household saving rates and help in rebalancing growth toward consumption.

C.   Role of Financial Sector Development in the Saving Process

The rate of saving is closely related to the level of financial development (Caballero et al. 2008). An efficient financial system can promote conversion of financial resources into real investment and enhance economic growth by pooling the risk, lowering the cost of borrowing, raising the returns on savings, allocating savings to projects with a high marginal product of capital, and inducing investors to invest in riskier but higher-return projects. Financial development can thus support the growth of firms by lowering their costs of finance. On the other hand, high costs incurred by inefficient financial

systems due to large spreads between deposit and lending rates, and commissions and transaction fees may eat into private consumption and reduce the efficiency of investment, thereby depressing the growth rate. Examining the debate dating back from the 19th century on the relationship between financial development and long-run growth, Tsuru (2000) notes that an improvement in the legal and regulatory structure exclusively affecting financial development can also enhance economic growth.

In general, use of financial instruments offers the household saver wide access to the yield on the investment opportunities available in the economy. Financial development can reduce saving rates of households by reducing the rate-of-return risks and by easing liquidity constraints through systematic development of consumer credit and mortgage markets. In particular, financial intermediaries and securities markets can help channel household saving to investment by providing liquidity to individual investors. Intermediated savings in general are likely to be allocated efficiently to more productive use than where the household saver is limited to its own production technologies. Alternatively, reliable access to borrowed funds through the financial system can reduce precautionary saving encouraging some households to consume more than what they can afford—dissavers. While benefits of financial liberalization by channeling saved resources to productive use could still materialize, the fact that it may have contributed to the decline in saving ratios in many industrial countries raises reservations on financial sector policy in the discussion of saving. Therefore, saving behaviors are related with financial development in a complex way.

Evidence regarding the financial sector development link to saving behavior in developing Asia is mixed. In the case of India, the household saving rate has increased over the last decade, and notable financial sector development has been observed (Athukorala and Sen 2004). Households tend to hold about half their savings in physical assets (including livestock, land holdings, and jewelry), with various forms of financial savings accounting for the other half (Figure 16). Moulick (2008) provides some qualitative evidence regarding how lack of access to the formal financial system affects saving patterns among poor people in the northeast of India, including the level of household savings and the forms in which savings are held.

Mohan (2008) notes that while gross financial savings of the household sector in India have risen in recent years households' financial liabilities have also been increasing rapidly, albeit from a low base. He points out that households' gross financial savings rose from 13.8% of GDP in 2004–2005 to 18.3% in 2006–2007, while their financial liabilities rose from 3.8% of GDP during 2004–2005 to 6.8% during 2006–2007. He attributes both phenomena to financial development as well as the broadening of access to the financial system. Lanot and Lawrence (2005) test the proposition that greater availability of credit due to financial development should increase consumption expenditures in areas where such credit is required, including durables consumption, education, and health. They do find a positive association of financial development variables with expenditures on durable

goods in India, but the economic significance of this relationship is small. Nair (2006), on the other hand, finds a statistically and economically significant effect of financial liberalization on household consumption.

Figure 16: India: Breakdown of Household Savings by Type of Saving Instrument, 2007
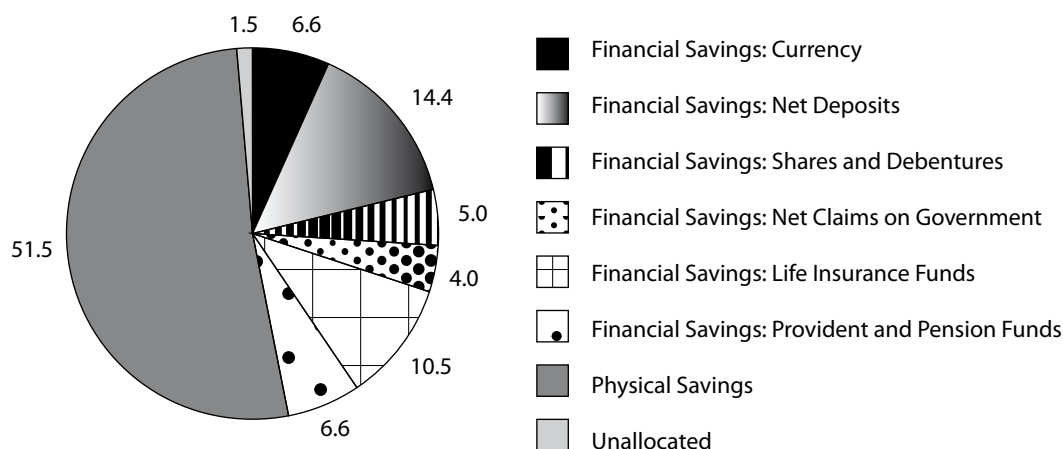
Source: CEIC Data Company Ltd., downloaded 23 February 2009.

On the other hand, restricted mortgage availability due to the requirement of minimum down payment ratios has been observed in Korea and Taipei,China. For Korea, Chou et al. (2003) find that increases in housing prices and increases in downpayment requirements can explain the rise in saving rates among households with relatively young household heads, a result that echoes the one reported by Chamon and Prasad (2008) for the PRC. In the PRC, escalating housing prices in recent years in urban areas, and the higher cost of mortgages following the tightening of monetary policy have depressed housing consumption. Under this circumstance, saving will increase. If saving drives growth, such financial restrictions can move a low-growth economy from low-saving/low-growth to a high-saving/high-growth equilibrium. This is the opposite of what financial repression view would dictate—financial repression generates more saving, capital deepening, and growth.

Box 3: Financial Sector Development in Asia and Saving Rate—Macro Evidence

It is not easy to obtain a comprehensive measure of financial sector development. As a crude yet comprehensive measure at the macroeconomic level, however, financial development ranking for 52 industrialized and developing economies is available from World Economic Forum (WEF 2008). Indices for developing Asian economies are shown in Box Table 1. The overall ranking is based on indices on seven pillars consisting of factors, policies, and institutions that lead to effective financial intermediaries and markets that strengthen broad access to capital and financial services.

Box Table 1: Financial Sector Development Index

Economy	Financial Development Index
PRC	4.1
Hong Kong, China	5.2
India	3.6
Indonesia	3.3
Kazakhstan	3.1
Korea, Rep.	4.6
Malaysia	4.5
Pakistan	3.5
Philippines	3.0
Singapore	5.2
Thailand	3.8
Viet Nam	3.0
Average	3.9
G7 Average	5.0
OECD Average	4.6

Source: World Economic Forum, *Financial Development Report 2008.*

The following paragraphs summarize the findings of WEF (2008), which displays an interesting variation among the Asian economies based on the individual indices for each of the seven pillars.

Hong Kong, China boasts a very strong institutional environment spanning shareholder rights, a low regulatory burden, effective regulation of security exchanges, and rigorous contract enforcement. It has a nondistortionary tax regime, high quality of infrastructure, good banking system, and easy access to different forms of capital.

Singapore too delivers a strong performance in institutional and business environment. It tops the list of countries in terms of lowest regulatory burden, highest effectiveness of its law-making bodies, contract enforcement, and financial stability. But its banking system is ranked a relatively low due to its relative inefficiency.

Malaysia's banking system is strong in terms of size, efficiency and financial disclosure. Its nonbank financial institutions are not as successful. Its domestic financial sector is fully liberalized but its capital account lacks liberalization.

Korea demonstrates a consistent performance across all aspects of financial development including a low legal and regulatory burden, size and efficiency of its banking system, and robust nonbank

continued.

Box 3: *continued.*

financial institutions. But the risk of currency crisis and systemic banking crises linger on from the financial contagion of the 1990s.

In the PRC, large inflows of capital and rapid export-driven growth have promoted the size and depth of its financial markets. Its relatively high levels of banking efficiency and financial depth have increased the size of its banking sector. But there is room for improvement in its institutional environment, and access to capital.

India's financial markets (foreign exchange and derivatives) and its nonbank institutions are solid. Its banking system is stable but its banks suffer from lack of size, low efficiency, and poor information disclosure. There is scope to improve the business environment, tax regime, contract enforcement, and to liberalize the financial sector and capital account.

Pakistan's banking system is strong and efficient. However, its institutional and business environments are poor in terms of domestic financial sector liberalization and infrastructure.

Indonesia's banking system delivers world-class efficiency. Yet, its nonbank financial institutions and financial markets rank among the lowest. Its strong institutional environment is bolstered by good corporate governance and regulatory effectiveness, but its business environment is poor.

Kazakhstan, Philippines, and Viet Nam fall at the bottom of the rankings, with a high degree of risk of financial instability and room for improvement in institutional and business environments.

When the financial development indicators are plotted against the corresponding saving rates for all 52 economies, the overall relationship is hard to assess but a positive relationship can be observed for developing Asia (Box Figure 3.1).

Box Figure 3.1: Financial Sector Development Index and Saving Rate for 52 Economies
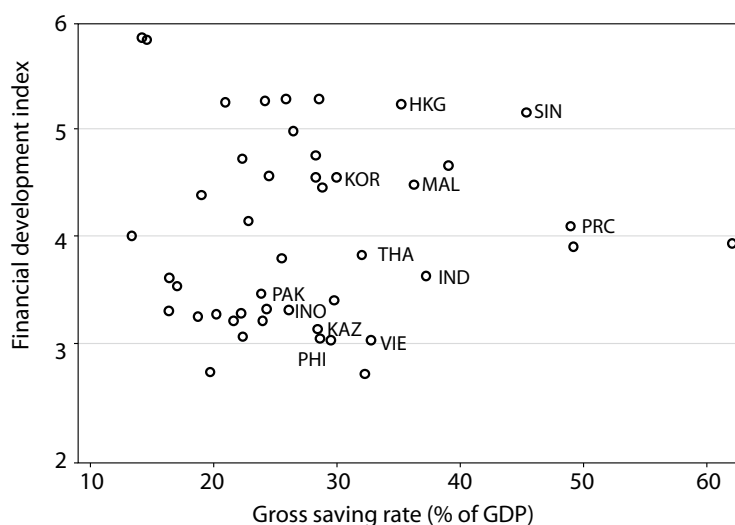
PRC = China, People's Rep. of; HKG = Hong Kong, China; IND = India;
INO = Indonesia; KAZ = Kazakhstan; KOR = Korea, Rep. of; MAL = Malaysia;
PAK = Pakistan; PHI = Philippines; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
Source: *Financial Development Report* (World Economic Forum 2008), available:
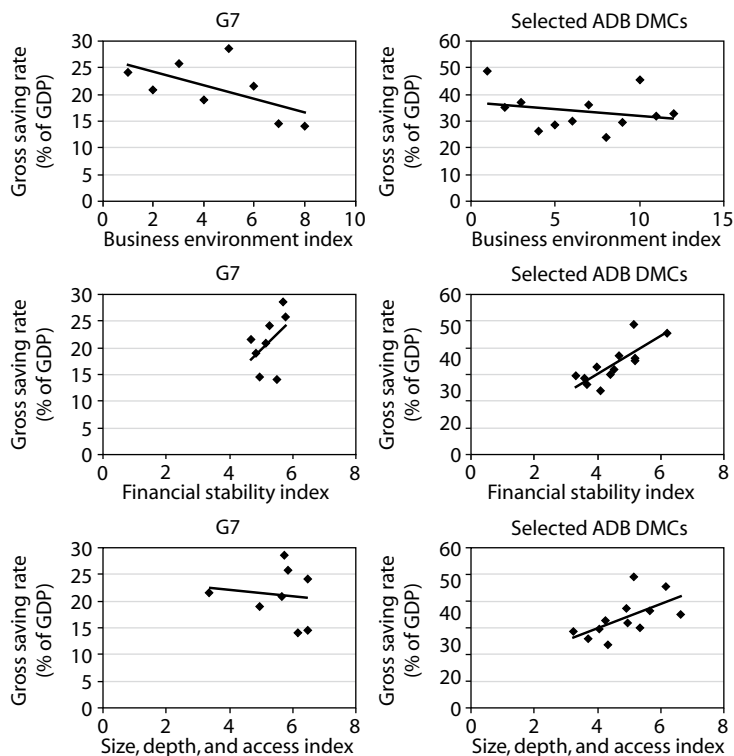   www.weforum.org/pdf/FinancialDevelopmentReport/2008.pdf.

continued.

Box 3: *continued.*

The relationships are revealed much more clearly when saving rates are plotted against disaggregated indices for 12 economies in developing Asia, for which the indices are available, namely business environment, financial stability, and capital availability and access. Box Figure 3.2 shows that the relationship for savings rates in Asia is negative with the business environment, but is positive with the financial stability and capital availability and access indicators. In other words, people tend to save less when the business environment is better—possibly assets are directed for investment. On the other hand, when the financial system is more stable and less prone to crises, and the market is more accessible, people save more.

More interestingly, this relationship does not hold for G7 countries for the index of capital availability and access. The relationship is no longer positive, and it is rather a negative relationship suggesting that people can now borrow against their future income stream to smooth consumption and save less. While it is far from conclusive, this observation is consistent with the arguments that the level of financial development in developing Asia is still low, encouraging precautionary saving; and is at the stage where availability of new financial instruments encourage people to accumulate saving as is argued for India. Papagni (2008) also notes nonmonotonic effects of financial reforms on growth. His analysis shows that financial development can be beneficial for economic growth of poor countries since it boosts investment in human capital, while in developed countries greater credit availability might bring about lower economic growth through decreased saving.

Box Figure 3.2: Selected Financial Sector Development Indices and Saving Rates

Source: *Financial Development Report* (World Economic Forum 2008), available:
         www.weforum.org/pdf/FinancialDevelopmentReport/2008.pdf.

VI. Summary and Concluding Comments

Consumption has played the strongest role in boosting economic growth in Asia in the current millennium by contributing about three quarters of the median GDP growth in the region. The average contribution of investment growth at less than a quarter pales in comparison. Net exports account, on average, for only 0.3 percentage point of overall GDP growth. But a balanced trade account may hide a high level of exports relative to GDP and understate the importance of export-led growth. Indeed, the average ratio of exports to GDP was about 45% in 2007 for 15 large Asian economies. The spillover benefits from exports may include technology transfer, scale efficiencies from larger market size, employment generation, and increased efficiency in production due to greater competition. With Asia's total trade at nearly 90% of GDP in 2007, this implies that these economies in general are open and in a position to derive considerable benefits from trade. To sustain this level of trade, Asia may have to focus on destinations within the region in the short term to offset the sharp reduction in G3 demand.

Countries in Asia that have achieved high growth rates are also characterized by high saving rates. Saving is important for growth in two ways; (i) it finances investment, and (ii) it acts as a buffer so people can smooth consumption in bad times. Data available from five economies (PRC; India; Korea; Philippines; and Taipei,China) reveals that national savings, namely, by households, corporations, and the government, rose rapidly from 14.8% of GDP in 2000 to 37.8% in 2007. While the share of corporate saving has increased markedly in recent years, household saving remains an important source of national saving in many countries. The sharp increase in corporate saving and the evolution of savings in the PRC both play big roles in influencing overall saving patterns in Asia. What matters for rebalancing growth through saving in Asia is oversaving that is not directed to investment and/or consumption. Policies are therefore required to (i) channel saving to productive investment, and (ii) promote consumption to buoy domestic demand. While the first issue relates to the saving behavior of the corporate sector, the second is associated with the household sector.

Corporate savings largely reflect retained earnings or profitability of firms. An analysis of profitability in most DMCs is rendered difficult by the lack of detailed information on corporate accounts. Limited data availability for the PRC shows a rapid rise in the profitability of state-owned and private enterprises. Large cash holdings and internal investment of these enterprises can be attributed to several interrelated factors. These include firm-specific factors (such as firm-level uncertainty and underfunding of company pensions); macroeconomic factors (including robust growth, low real interest rates, falling labor costs, and growing output prices); and policy-induced factors (such as state subsidies on land and energy, low dividend payout ratios, repressed financial system, and lack of alternative financing mechanisms). Moreover, payouts from large and profitable firms go disproportionately to the rich, who have higher saving propensities than the poor, contributing to the saving spiral. Corporate saving in India—which is among the lowest

in the world—is taking root. Currently it contributes barely 25% of national saving, in contrast to 60% in the PRC. Its growth in India has been aided by sustained reduction in corporate tax rate, the peak rate of customs duty, and nominal interest rates. Financial restructuring of firms reduced their debt while new technology helped improve productivity and efficiency.

As the effects of the global slowdown permeate the Asian region and reduce corporate profitability, household saving could regain its dominance. Even though the share of household saving in national saving has declined, it has continued to rise as a share of disposable income in many developing Asian economies. In particular, the rising household saving rate in the PRC has played a key role in explaining its rising current account surplus. Together with high corporate saving rate, this has substantially influenced the current account surplus in the region.

Understanding what is driving the household saving rate is crucial for devising policy measures to stoke private consumption growth. As envisaged under the life cycle hypothesis, a hump-shaped age-savings profile is observed in Indonesia; Korea; and Taipei,China. This means that young workers borrow against their future income; mid-career workers have the highest saving rates when their incomes are at their highest; and retirees draw down their savings. Near- and medium-term demographic trends in East Asian economies point to higher old-age dependency ratios, which imply an accumulation of saving before leading to lower saving rates.

The age-saving profile based on data from seven household surveys in the Philippines shows an almost monotonic increase in saving rates in tandem with the age of the household head. Factors responsible for this profile could be financial sector underdevelopment and family composition. To the extent that remittance flows to elderly heads are channeled though the informal financial sector and not directed to productive use in the economy, the saving rates of households with elderly heads would increase. The household saving rate in the Philippines has declined over time owing to the growing proportion of young dependents in the economy. The increase in the young dependency group would have increased the education and health expenditures, which result in lower aggregate saving. Clearly, the aging of the population has complex effects on household savings, which may reflect family composition rather than individual saving rates.

The surge in household saving in the PRC has been driven largely by the rise in the saving rate of urban households. In 1990, the urban age-saving profile exhibited a hump-shaped pattern, consistent with the life-cycle theory. But the profile became U-shaped from the mid-1990s, continuing into the 2000s. This type of saving behavior—the relatively high saving rates at the early and late stages of the life cycle—is puzzling. An econometric analysis suggests that the higher-saving cohorts, who were in their 40s and 50s in 1990, were particularly hard-hit by the reform process and bore the brunt of the increase in uncertainty associated with the move toward a market economy.

The sharp increase in the saving rate in the later working years is also consistent with postponing retirement savings until retirement is near, which is the optimal response to rapid expected income growth. The increasing private burden of education and health expenditures seem among the strongest candidates for explaining the increase in saving rates, at least during the transition period.

Precautionary saving has been important in explaining household saving behavior in Korea and Taipei,China as well as the PRC. Provision of social health insurance has been seen to substantially weaken this motive for saving. Evidence from India shows that health care financing in Asia is dominated by private expenditures while public health systems remain weak and health insurance almost nonexistent (Peters et al. 2002, Bonu et al. 2007). The availability of health insurance is particularly important for the elderly, who face rising health care costs. Besides, health care is a superior good and the demand for it is likely to rise as per capita income levels rise in developing Asia. Hence, the provision of comprehensive social health care can play an important role in influencing household saving behavior. Improvements in social safety nets in general would pool the risks associated with idiosyncratic income shocks and health expenditures, reducing the need for households to save in order to self-insure against these risks.

Increasing public provision of education could also lower household savings by reducing the need to accumulate assets to finance future education expenditures. Hence policies to rationalize public spending to increase social transfers, reform pension systems, and provide universal health care insurance and education are top priorities. These policies will not only generate short-term demand for education and health services, but also ensure long-term human capital investment, promote lifetime earnings, and create greater economic potential. Higher spending on social safety nets would boost domestic demand by freeing up household resources. The effect would be stronger if spenders, including the poorest people, are influenced more than the savers. Policies to shore up domestic demand should therefore include the poor through targeted transfers. When directed to the poor, such funds will not be saved but will be used to buy goods and services, supporting a broader economy through a multiplier effect. An expansion of social services will increase government consumption as well but attention also needs to be paid to improving the efficiency of public spending.

The rate of saving in an economy is in general driven by the level of financial development. Indicators of financial development from World Economic Forum 2008, based on seven pillars of factors, policies and institutions, display a positive relationship with national saving rates for economies in developing Asia. In particular, the relationship for Asia is negative with regard to the business environment, but is positive with regard to financial stability and capital availability and access indicators. This observation is consistent with the argument that the level of financial development in developing Asia is still low, encouraging precautionary saving, and is at a stage where availability of new

financial instruments encourage people to accumulate saving. The saving behavior is thus related with financial development in a complex way.

The real constraint to growth in developing economies is not domestic savings per se, as presumed in the standard neoclassical model, but inadequate investment opportunities due to weak financial systems or other institutional weaknesses. The build-up in savings in Asia could have been smaller if the financial markets were more developed. Financial frictions strengthen precautionary saving motives, and borrowing constraints can play an important role in driving up saving rates despite rapid income growth, especially among younger households. Financial development can reduce the need for saving by providing access to borrowed funds and investment opportunities, reducing the rate-of-return risks and easing liquidity constraints through systematic development of consumer credit and mortgage markets. An efficient financial system can promote conversion of financial resources into real investment and enhance economic growth by pooling the risk, lowering the cost of borrowing, raising the returns on savings, allocating savings to projects with a high marginal product of capital and inducing investors to invest in riskier but higher-return projects. But at the same time, high costs incurred by inefficient financial systems due to large spreads between deposit and lending rates, and commissions and transaction fees may eat into private consumption and reduce the efficiency of investment, thereby depressing the growth rate. This caveat should be noted in any discussion on the role of financial sector policy in intermediating saving toward investment.

In general, increased availability of social security provision and enhanced credit availability can reduce household saving. Policies that foster increased social expenditures could play an important role in helping to smooth consumption over the life cycle. This would moderate household saving rates and help in rebalancing growth toward consumption. Channeling corporate savings into investment will require financial sector development including availability of better saving instruments and an improved business and investment climate. To sum up, policies that can shift household saving toward consumption and channel corporate savings into productive investment will help to reduce the existing saving–investment gap in Asia, and thereby lead to a reduction in global imbalances.

References

Aghion, P. and R. Griffith. 2005. *Competition and Growth: Reconciling Theory and Evidence.* Cambridge: The MIT Press.

Aizenman, J., B. Pinto, and A. Radziwill. 2007. "Sources for Financing Domestic Capital—Is Foreign Saving a Viable Option for Developing Countries?" *Journal of International Money and Finance* 119(2):613–46.

Alba, M., and E. C. See. 2005. Exploring Household Saving and Consumption-Smoothing in the Philippines. Available: www.pes.org.ph/events/annual_meeting/2005/42pesam_alba-see_hh_saving.pdf.

Athukorala, P-C., and K. Sen. 2004. "The Determinants of Private Saving in India." *World Development* 32(3):491–503.

Athukorala, P-C., and P-L. Tsai. 2003. "Determinants of Household Saving in Taiwan: Growth, Demography and Public Policy." *Journal of Development Studies* 39(5):65–88.

Attanasio, O., and M. Szekely. 2000. Household Saving In Developing Countries: Inequality, Demographics And All That: How Different Are Latin America And South East Asia? Inter-American Development Bank Research Working Paper No. 427, Washington, DC.

Aziz, J. 2006. Rebalancing China's Economy: What Does Growth Theory Tell Us? IMF Working Paper 06/291, Washington, DC.

Bersales, L. G., and D. Mapa. 2006. Patterns and Determinants of Household Saving In the Philippines. Report prepared under the EMERGE Project of USAID. Available: *www.stat.upd.edu.ph/ARTICLES/Article3/Paper_BERSALES_MAPA.pdf.*

Blanchard, O. J., and F. Giavazzi. 2006, "Rebalancing Growth in China: A Three-Handed Approach." *China and the World Economy* 14(4):1–20.

Bonu, S., I. Bhushan, and D. H. Peters. 2007. Incidence, Intensity, and Correlates of Catastrophic Out-of-Pocket Health Payments in India. ERD Working Paper Series No. 102, Economics and Research Department, Asian Development Bank, Manila.

Bosworth, B. P. 1993. *Saving and Investment in Global Economy.* The Brookings Institution, Washington, DC.

Bosworth, B., and S. M. Collins. 2008. "Accounting for Growth: Comparing China and India." *Journal of Economic Perspectives* 22(1):45–66.

Caballero, R. J., E. Farhi, and P. O. Gourinchas. 2008. "An Equilibrium Model of "Global Imbalances" and Low Interest Rates." *American Economic Review* 98(1):358–93.

Carroll, C., B-K. Rhee, and C. Rhee. 1994. "Are there Cultural Effects on Saving? Some Cross-Sectional Evidence." *Quarterly Journal of Economics* 109:685–99.

Carroll, C., and D. Weil. 1994. "Saving and Growth: A Reinterpretation." *Carnegie-Rochester Conference Series on Public Policy* 40:133–92.

Chamon, M., and E. Prasad. 2008. Why Are Saving Rates of Urban Households in China Rising. NBER Working Paper 14546, National Bureau of Economic Research, Cambridge, .

Chinn, M. D., and E. Prasad. 2003. "Medium-Term Determinants of Current Accounts in Industrial and Developing Countries." *Journal of International Economics* 59:47–76.

Chou, S-Y., J-T. Liu, and J. K. Hammitt. 2003. "National Health Insurance and Precautionary Saving: Evidence from Taiwan." *Journal of Public Economics* 87:1873–94.

———. 2006. "Households' Precautionary Behaviors-the Effects of the Introduction of National Health Insurance in Taiwan." *Review of Economics of the Household* 4:395–421.

Collins, S. 1991. "Savings Behavior in Ten Developing Countries." In B. D. Bernheim and J. Shoven, eds., *National Saving and Economic Performance*. Chicago: University of Chicago Press.

Deaton, A. 1999. "Saving and Growth." In S-H. Klaus and L. Servén, eds., *The Economics of Saving*. Cambridge: Cambridge University Press.

Deaton, A., and C. Paxson. 2000. "Growth and Savings among Individuals and Households." *The Review of Economics and Statistics* 82(2):212–25.

Feng, J., L. He, and H. Sato. 2009. Public Pension and Household Saving:Evidence from Urban China. Global COE Hi-Stat Discussion Paper Series 030, Hitotsubashi University, Tokyo.

Fernald, J. G., and B. Neiman. 2006. Measuring the Miracle: Market Imperfections and Asia's Growth Experience. FRB of San Francisco Working Paper No. 2006-17. Available: ssrn.com/abstract=1003052.

Horioka, C. Y., and J. Wan. 2007. "The Determinants of Household Saving in China: A Dynamic Panel Analysis of Provincial Data." *Journal of Money, Credit, and Banking* 39(8):2077–96.

IMF. 2005. "Global Imbalances: A Saving and Investment Perspective." In *World Economic Outlook 2005*. International Monetary Fund, Washington,DC.

———. 2006. "Awash with Cash: Why are Corporate Savings so High?" In *World Economic Outlook 2006*. International Monetary Fund, Washington, DC.

Kim, S., and J-W. Lee. 2007. "Demographic Changes, Saving, and Current Account in East Asia." *Asian Economic Papers* 6(2):22–53.

Kuijs, L. 2005, Investment and Saving In China? World Bank Policy Research Working Paper 3633, Washington, DC. Available: ideas.repec.org/s/wbk/wbrwps.html.

Lanot, G., and P. Lawrence. 2005. Financial Liberalization and Household Financial Behaviour in India. Keele Economics Research Papers from Centre for Economic Research 2005/15, United Kingdom.

Lardy, N. 2008, Financial Repression in China. Peterson Institute for International Economics Policy Brief No. 08-8, Washington, DC.

Lin, J. 2009. "Paradigm Shift on Both Sides of the Global Imbalance." Paper presented at the Brookings-Caijing Conference, 13 January, Washington, DC.

Loayza, N., K. Schmidt-Hebbel, and L. Servén. 2000. What Drives Private Saving around the World. World Bank Policy Research Working Paper 2309, Washington, DC.

Lu, F., G. Song, J. Tang, H. Zhao, and L. Liu, 2009. "Profitability of China's Industrial Firms (1978-2006)." *China Economic Journal* 1(1). Forthcoming.

Mishra, D. 2006. Can India Attain the East Asian Growth with South Asian Saving Rate?, Preliminary Draft, World Bank, Washington, DC. Available: siteresources.worldbank.org/INDIAEXTN/Resources/events/359987-1149066764594/Deepak_Mishra_paper.pdf.

Modigliani, F. 1986. "Life Cycle, Individual Thrift, and the Wealth of Nations." *American Economic Review* 76:297–313.

———. 1993. "Recent Declines in the Saving Rate: A Life Cycle Perspective." In M. Baldassarri, L. Pananetto and E. Phelps, eds., *World Saving, Prosperity and Growth*. London: McMillan.

Mohan, R. 2008, "The Growth Record of the Indian Economy, 1950-2008: A Story of Sustained Savings and Investment." Keynote Address at Reserve Bank of India Conference on Growth and Macroeconomic Issues and Challenges in India, Institute of Economic Growth, February, New Delhi. Available: www.bis.org/review/r080218c.pdf.

Moulick, M. 2008. Understanding and Responding to the Savings Behavior of Poor People in the People in the North East of India. United States Agency for International Development. Available: www.ruralfinance.org/servlet/BinaryDownloaderServlet/59204_Paper.pdf?file.

Nair, L. R. 2006. "Financial Sector Liberalization and Household Savings in India." Indian Institute of Capital Markets 9th Capital Markets Conference Paper. Available: ssrn.com/abstract=876879.

National Statistics Office. various years. Family Income and Expenditure Surveys, Philippines. Manila.

OECD. 2007. "Corporate Saving and Investment: Recent Trends and Prospects." In *OECD Economic Outlook 82*. Organisation for Economic Co-operation and Development, Paris.

Papagni, E. 2008. The Long-run Effects of Household Liquidity Constraints and Taxation on Fertility, Education, Saving and Growth. MPRA Paper No. 12793, University Library of Munich. Availablempra.ub.uni-muenchen.de/12793/.

Park, D., and C. Rhee. 2005. "Saving, Growth, and Demographic Change in Korea." *Journal of the Japanese and International Economies* 19(3):394–413.

Paxson, C. 1996. "Saving and Growth: Evidence from Micro Data." *European Economic Review* 40(2):255–88.

Peters, D. H., A. S. Yazbeck, R. R. Sharma, G. N. V. Ramana, L. H. Pritchett, and A. Wagstaff. 2002. Better Health Systems for India's Poor: Findings, Analysis, and Options. World Bank, New Delhi.

Prasad, E. 2009a. "Rebalancing Growth in Asia." Mimeo.

———. 2009b. "Is the Chinese Growth Miracle Built to Last?" *China Economic Review*. Forthcoming.

Prasad, E., R. Rajan, and A. Subramanian. 2007, "Foreign Capital and Economic Growth." *Brookings Papers on Economic Activity* 1:153–230.

Rodrik, D. 2007. "The Real Exchange Rate and Economic Growth: Theory and Evidence." Kennedy School of Government, Harvard University, Cambridge, MA. Processed.

Rostow, W. W. 1971. *The Stages of Growth: A Non-Communist Manifesto*. Cambridge: Cambridge University Press.

Schmidt-Hebbel, K., S. B. Webb, and G. Corsetti. 1992. "Household Saving in Developing Countries: First Cross-Country Evidence." *World Bank Economic Review* 6:529–47.

Sinha, D., and T. Sinha. 2007. Relationship among Household Saving, Public Saving, Corporate Saving and Economic Growth in India. MPRA Paper No. 2597, University Library of Munich. Available: mpra.ub.uni-muenchen.de/2597.

Tsuru, K. 2000. Finance and Growth: Some Theoretical Considerations, and a Review of the Empirical Literature. OECD Economics Department Working Paper 228, Organisation for Economic Co-operation and Development, Paris.

Tyers, R. 2008. Competition Policy, Corporate Saving and China's Current Account Surplus. CAMA Working Paper 21/2008, The Australian National University, Canberra.

World Economic Forum. 2008. *The Financial Development Report 2008*. Available: www.weforum.org/pdf/FinancialDevelopmentReport/2008.pdf.

About the Paper

Shikha Jha, Eswar Prasad, and Akiko Terada-Hagiwara note that as high-growth economies in Asia saved heavily, they helped to finance rapidly growing current account deficits of industrial economies. Channeling corporate savings into productive investment will require elimination of policy distortions and financial sector development including availability of better saving instruments and improved business and investment climates. Development of financial markets, reformed pension systems, higher social transfers, universal health care insurance, and improved access to education would moderate household saving rates and help in rebalancing growth toward consumption.

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