

**FOR  
AGENDA**

SM/07/401\*

December 26, 2007

To: Members of the Executive Board

From: The Acting Secretary

Subject: **People's Republic of China—Hong Kong Special Administrative Region—Selected Issues**

This paper provides background information to the staff report on the 2007 Article IV consultation discussions with the People's Republic of China—Hong Kong Special Administrative Region (SM/07/398, 12/26/07), which is tentatively scheduled for discussion on **Friday, January 18, 2008**. At the time of circulation of this paper to the Board, the Secretary's Department has not received a communication from the authorities of People's Republic of China—Hong Kong Special Administrative Region indicating whether or not they consent to the Fund's publication of this paper.

Questions may be referred to Mr. Aziz (ext. 37693) and Mr. Porter (ext. 37316) in APD.

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\*This document is being reissued to include the correct attachment. Through a printing error, the staff report—rather than the selected issues paper—was inadvertently attached to the cover note for SM/07/401. The staff report was also circulated with the correct cover note as SM/07/398.



INTERNATIONAL MONETARY FUND

PEOPLE’S REPUBLIC OF CHINA—HONG KONG  
SPECIAL ADMINISTRATIVE REGION

**Selected Issues**

Prepared by Cynthia Leung, Nathan Porter, Olaf Unteroberdoerster  
and Francis Vitek (all APD)

Approved by the Asia and Pacific Department

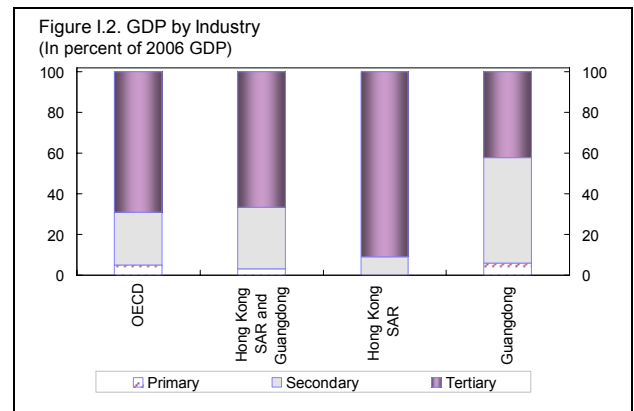
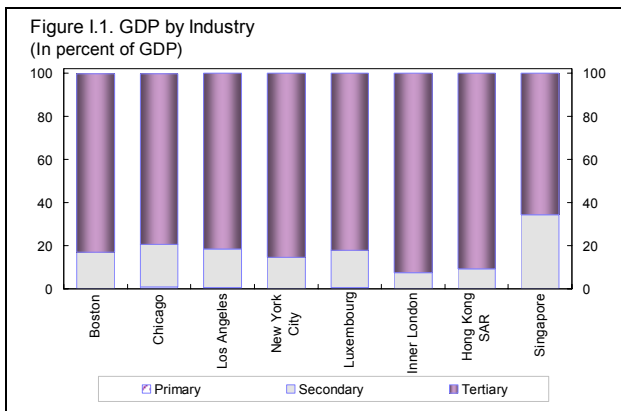
December 21, 2007

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## I. SAVING AND INVESTMENT IN HONG KONG SAR AND OTHER FINANCIAL CENTERS<sup>1</sup>

### A. Introduction—Saving and Investment in City Financial Centers

1. Economic transformation over the past decade or so has turned Hong Kong into a city financial center. Globalization, which has more than ever separated production and consumption, has led to a gradual decline in industrial cities and driven massive concentration of financial and business services in a few centers, like New York and London as well as Hong Kong SAR. Hong Kong's economic structure has come to resemble that of other global, high income, cities rather than that of a typical advanced country. In particular, its growing integration with the Mainland complements the adjacent manufacturing-centered economy of the Pearl River Delta. The characteristics and concerns of city economies like Hong Kong are different from those of more diverse advanced economies. The concentration of financial activity in these centers relates to the high fixed costs of financial and information infrastructure, and the need for highly specialized and specific forms of intangible human capital. Reflecting the importance of this human capital, the success of these cities depends, in part, on attracting and retaining talented people and therefore, in part, the lifestyle (including amenities) they offer.<sup>2</sup> This paper does not address the factors that contribute to these “soft” types of competitiveness, but asks what makes saving and investment patterns of financial centers different.<sup>3</sup>



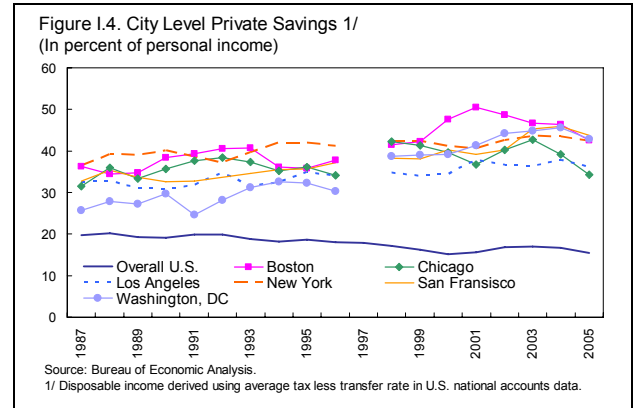
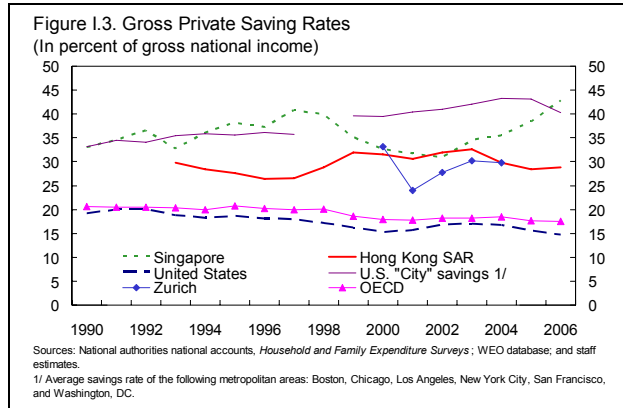
2. As with other similar city economies, Hong Kong SAR has a very high private saving rate, and possibly a lower investment rate than in economies that rely more on

<sup>1</sup> Prepared by Nathan Porter and Francis Vitek. We would like to thank Mehmet Ziya Gorpe for his excellent assistance in compiling the output and saving data for the cities referred to in this chapter.

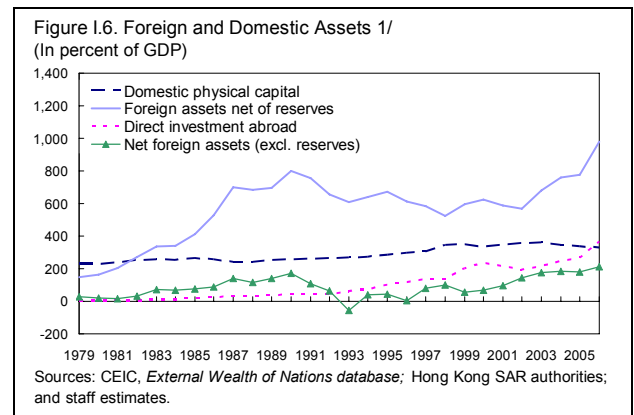
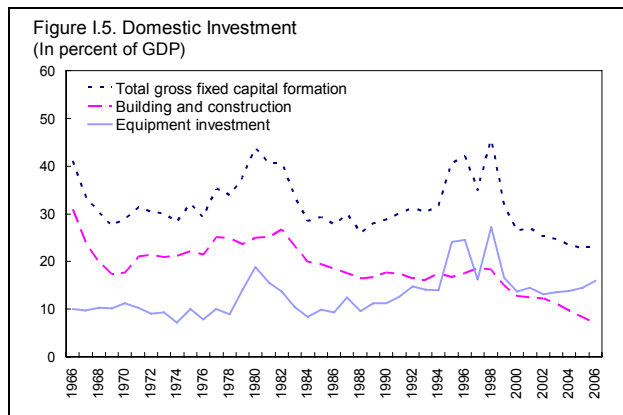
<sup>2</sup> For a discussion of the role of global cities in the globalized production process, and the factors that underpin them, see Sassen (1991; 2006), Sanyal (2007), and Glaser (2001).

<sup>3</sup> Hong Kong Securities and Futures Commission (2006) and Syed (2007) describe how Hong Kong SAR compares with other financial centers on such “soft” competitiveness factors.

manufacturing. Given their nature, these cities tend to have highly concentrated economic bases, and it seems likely that their higher savings could partly reflect precautionary motives (due to potentially volatile income and capital flows) in addition to life-cycle motives. Investment, at least in certain types of capital,



may also be lower than in manufacturing-centered cities, although city-level investment data is hard to come by.<sup>4</sup> In the case of Hong Kong SAR, the transition out of manufacturing which began in the 1980s reduced the need for domestic physical capital, especially in the form of structures. With the domestic capital stock growing broadly in line with GDP, Hong Kong SAR's high savings have been largely invested externally, a trend that may reverse in coming decades if many Hong Kong SAR residents retire there.



3. While directly using city level data would be the most natural way to analyze the saving and investment patterns in Hong Kong SAR and its peers, data limitations preclude this. Not only does coverage differ significantly across countries—household expenditure

<sup>4</sup> There is no available city-level investment data for U.S. cities. However, in a broad panel of 85 economies Hori (2007) find industry structure to be a significant determinant of investment demand, with service-oriented economies generally investing less. Consequently, service-oriented cities may require less capital in production.

data is available for many U.S. cities, but not European cities—but comparability in terms of time coverage, not to mention differences in the measurement of variables such as income are problematic. Given these issues, the econometric analysis in the next section uses national data from a set of six economies that are heavily reliant on financial services—Belgium, Luxembourg, Hong Kong SAR, the Netherlands, Singapore, and Switzerland. Sensitivity analysis to including additional Asian and advanced countries is also undertaken to assess how the determinants of financial center saving and investment patterns differ from those of other economies.

4. This chapter finds that population dynamics, volatility, and growth are the main drivers of both short- and medium-run and saving and investment behavior. Moreover, the results show that increased volatility around the Asian crisis led to a substantial and persistent structural decline in investment relative to savings in Asian financial centers, leading to a structural rise in the current account surplus. At a business cycle frequency, shocks to effective import prices and international financial linkages (through interest rates) and the efficiency of investment turn out to be particularly important for Hong Kong SAR's saving and investment patterns.

## **B. Medium-Run Saving and Investment Trends in Service-Oriented Economies**

5. An extensive literature has studied the determinants of saving and investment. Many of these studies estimate saving-investment relationships which on depend on factors highlighted in intertemporal optimizing models. Underpinning savings are income, interest rates, factors that drive precautionary savings (income volatility and access to insurance and credit markets), and life-cycle savings ahead of retirement. Underpinning investment include measures of income and prospective growth, uncertainty and volatility, and factors that capture the cost of funds. The analysis in this section focuses on service-oriented economies to understand the principal drivers of saving and investment in city states. To understand how saving and investment in these cities differ from more diversified economies, the reduced form relationships are also estimated with broader samples of countries, first including several advanced Asian economies, and then a set of 28 economies classified as advanced by the IMF's *World Economic Outlook* (WEO).<sup>5</sup>

6. Old-age dependency and the impact of the Asian crisis are key determinants of the medium-run saving rate, while short run saving growth is driven by economic growth and medium-run adjustment.<sup>6</sup> The estimated parameters (Table I.1) suggest that the determinants

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<sup>5</sup> The first set of economies (financial centers) comprise Belgium, Luxembourg, Hong Kong SAR, the Netherlands, Singapore, and Switzerland. The second set (financial centers and advanced Asia) adds Australia, Japan, Korea, New Zealand, and Taiwan POC.

<sup>6</sup> In the estimated medium-run saving relation, indicators of volatility (both the standard deviation of growth and an Asian crisis dummy) were included along with old-age dependency, while in the short-run saving relation  
(continued...)

of medium-run saving are the same across the three different sets of economies, although their importance does differ. The significance of old age dependency indicates a strong life-cycle effect, with saving in financial centers seemingly much more responsive to dependency than that in the more diversified set of countries. This could reflect the stylized fact that in financial centers young professionals come and accumulate savings, but leave and are replaced by other young professionals before reaching retirement, while the old remain and dissave in the more broadly based advanced economies.<sup>7</sup> The significance of the Asian crisis dummy likely reflects the decline in fiscal savings in affected countries that followed the crisis, although with the Asian crisis being a huge volatility event for the countries affected, the significance of the dummy is indicative of the importance of precautionary savings.<sup>8 9</sup>

Table I.1. Saving Error-Correction Parameter Estimates						
	Financial Centers		Financial Centers and Advanced Asia		Financial Centers and Advanced Countries	
	Coef.	t	Coef.	t	Coef.	t
Short-run coefficients						
$\Delta \log$ (saving)	0.10	1.16	0.17	2.3	0.16	3.14
$\Delta \log$ (GDP)	0.97	2.60	0.83	2.96	0.96	8.61
MR adjustment	-0.25	-2.21	-0.29	-3.10	-0.23	-4.60
SR $R^2$		0.43		0.44		0.70
Medium-run coefficients						
Dependency ratio	-0.44	-63.1	-0.37	-4.2	-0.16	-4.0
Asian crisis	-0.11	-5.1	-0.14	-7.1	-0.11	-6.4
MR $R^2$		0.66		0.79		0.74
Source: Staff estimates.						

7. Volatility is the main driver of medium run investment, although investment in financial centers is also very responsive to economic growth in the short run. The estimated relationship posits that medium-run investment is dependent on volatility and industry

growth, the ex post real interest rate, and lagged saving growth were included. General-to-specific techniques were used to choose the final estimated relationship.

<sup>7</sup> We would like to thanks Hans Genburg for suggesting this interpretation.

<sup>8</sup> Although the estimates presented in Table I.1 reflect our preferred structure, the fact that when the medium-run saving relationship is re-estimated without the Asian crisis dummy, the standard deviation of growth becomes strongly significant for the financial centers and Asia and financial centers panels suggests the dummy captures the impact of volatility.

<sup>9</sup> In the case of Hong Kong SAR, this dummy could also capture uncertainty generated by the 1997 return of the SAR to China.

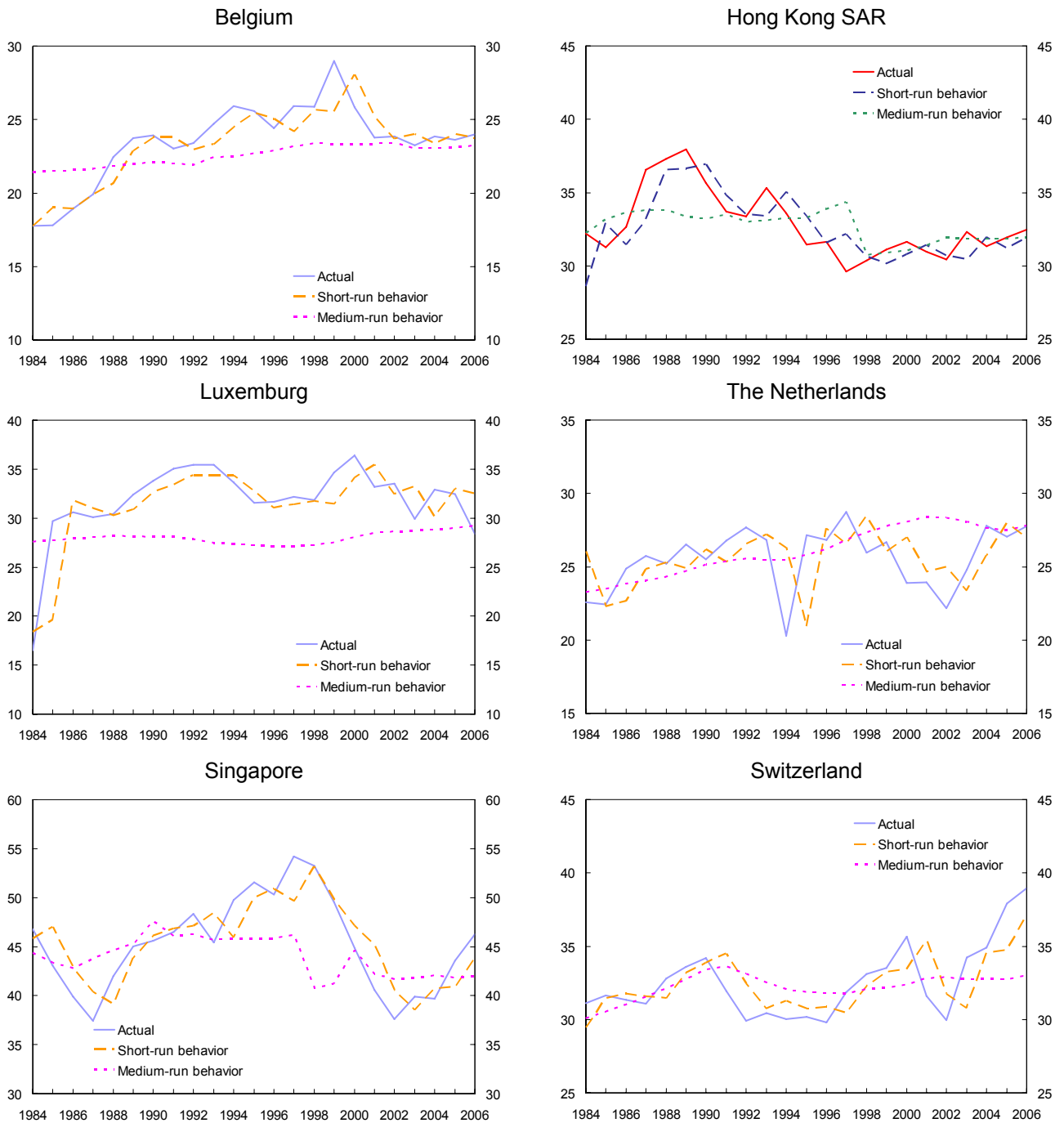
structure with the possibility of a break in the relationship around the Asian crisis, while short-run dynamics potentially depend on the persistence of investment growth, GDP growth, and an ex post real interest rate. The same factors broadly drive investment across advanced economies, although short-run investment growth is only significant outside of Asia and financial centers. Moreover, the magnitude of the impact differs across types of economies—medium-run investment has been more responsive to volatility in financial centers (and especially in Asia) than in more diversified advanced economies.

Table I.2. Investment Error-Correction Parameter Estimates						
	Financial Centers		Financial Centers and Advanced Asia		Financial Centers and Advanced Countries	
	Coef.	t	Coef.	t	Coef.	t
Short-run coefficients						
$\Delta \log$ (investment)	-0.06	-0.76	0.04	0.62	0.24	2.69
$\Delta \log$ (GDP)	1.33	3.75	1.05	4.20	0.65	2.70
MR adjustment	-0.25	-3.70	-0.30	-4.60	-0.28	-4.70
SR $R^2$		0.60		0.55		0.49
Medium-run coefficients						
Volatility	-1.35	-0.70	-3.05	-5.08	-0.69	-3.28
Asian crisis	-0.33	-4.89	-0.22	-7.09	-0.23	-5.83
MR $R^2$		0.64		0.67		0.63
Source: Staff estimates.						

8. Medium-run saving and investment rates have been fairly stable in the financial centers outside Asia (Figures I.7 and I.8). There are distinct breaks (around the Asian crisis) in the medium-run saving and investment rates for Hong Kong SAR and Singapore, with the rates largely stationary around the break. Nonetheless, changing volatility since 2000 has led to some small increase in Hong Kong SAR's medium-run investment rate. Cyclical (short run) factors seem more important as determinants of the actual path of saving and investment in Hong Kong SAR and Singapore, with the adjustment in actual investment lagging medium-run breaks in Hong Kong SAR and Singapore, and an apparent overshooting of the decline in investment in Singapore. Slightly rising trends in medium run saving in the Netherlands and Switzerland are driven by movements in the dependency ratio. Overall, the results suggest that for Hong Kong SAR and Singapore the Asian crisis (and for Hong Kong SAR the reunification with the Mainland), and any accompanying changes in perceived volatility, have resulted in a widening of the medium-run saving-investment gap, with an even greater widening for Singapore.

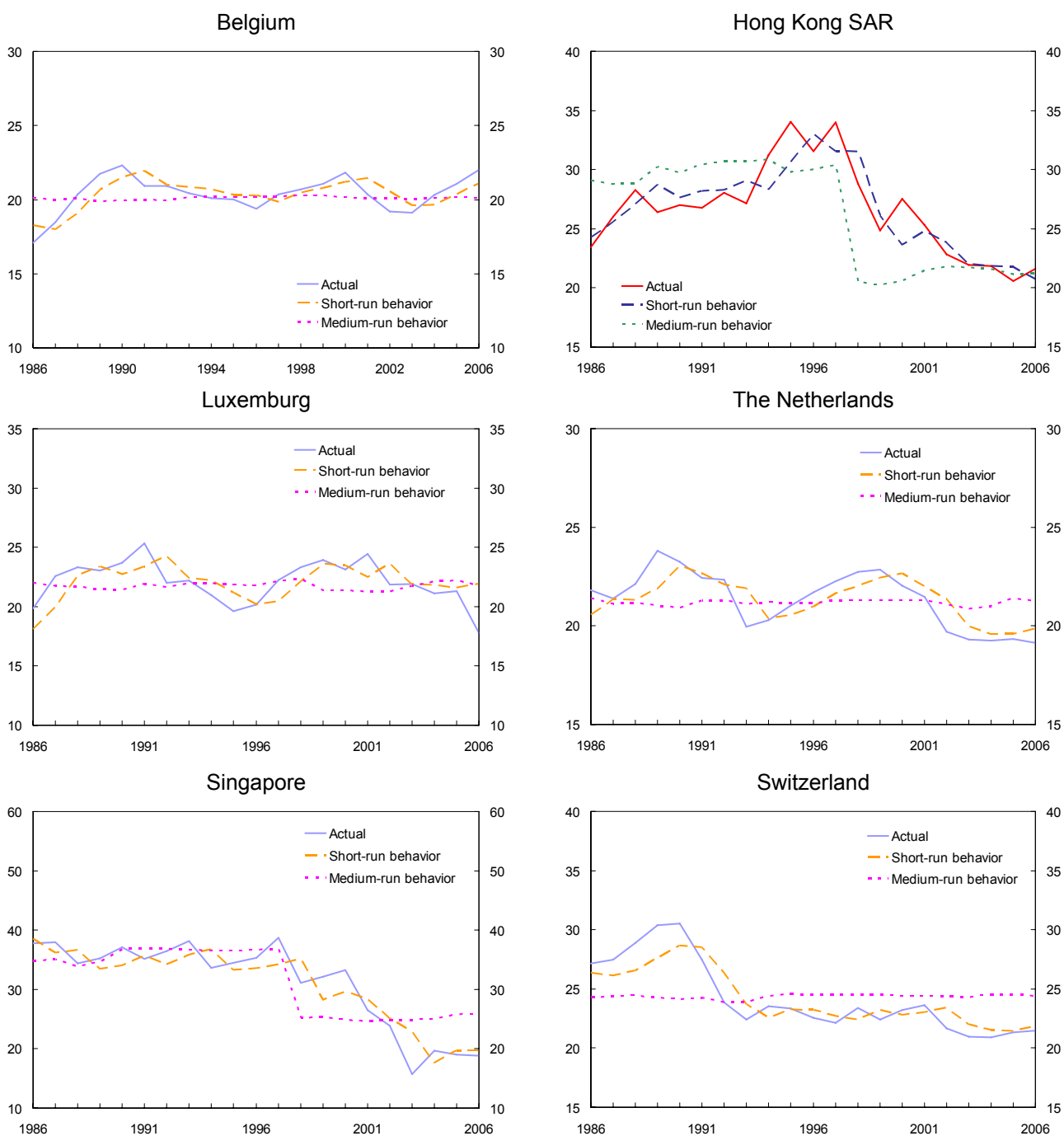


Figure I.7. Saving Rates  
(In percent of GDP)



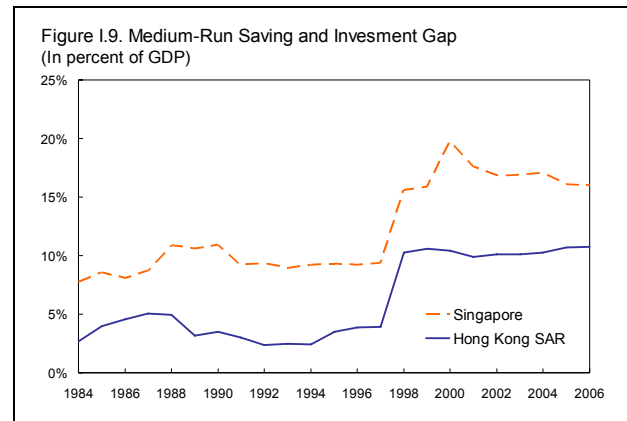
Sources: *WEO database*; and Fund staff estimates.

Figure I.8. Investment Rates  
(In percent of GDP)



Sources: *WEO database*; and Fund staff estimates.

9. Three conclusions follow from the above analysis for Hong Kong SAR: First, a high saving rate is likely to persist for some time due to aging of the workforce. Second, the investment rate should rise if economic uncertainty continues to decline, but it is very unlikely to revert to its level immediately prior to the Asian crisis in Hong Kong SAR and Singapore. Consequently, a large equilibrium current account surplus and large external private investment are likely to continue for some time.



### C. Determinants of Saving and Investment Over the Business Cycle

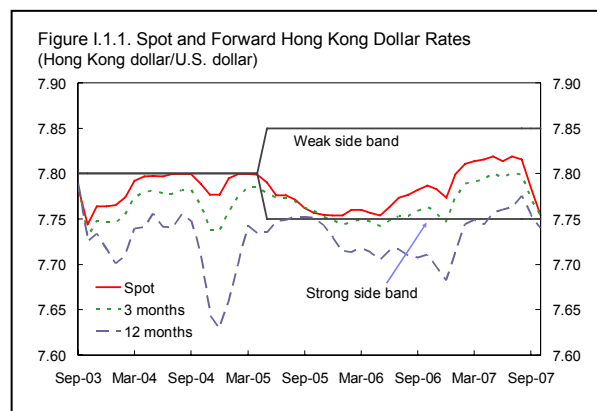
10. In this section factors that are particularly important drivers of saving and investment dynamics over the business cycle are identified for Hong Kong SAR. A two country dynamic stochastic general equilibrium (DSGE) model designed to capture many of Hong Kong SAR's unique and salient features—tightly controlled exchange rate with the U.S., resultant high sensitivity to foreign monetary policy, prudent fiscal policy and large fiscal savings, economic structure as a trade intermediating hub, and flexible markets—is used.<sup>10</sup> This analysis highlights the role that changes to financial linkages (through the gap in interbank—HIBOR-LIBOR—interest rates), trade linkages (through effective import prices), domestic monetary conditions, foreign (U.S.) monetary policy, as well as changes to the efficiency of investment (possibly reflecting the changing cost of capital) play in determining saving and investment dynamics.<sup>11</sup> Estimation and inference are based on an approximate linear unobserved components representation of this DSGE model, with estimation by Bayesian techniques. Following Vitek (2006a, 2006b), cyclical components are modeled by linearizing equilibrium conditions around a stationary deterministic steady state equilibrium, while trend components are modeled as random walks. The data set consists of quarterly seasonally adjusted observations on the levels of thirty-three macroeconomic variables for Hong Kong SAR and the United States over the period 1983Q4 through 2007Q2. The results are summarized through the responses of saving and investment to shocks (impulse responses functions), decomposition of volatilities into the shocks that drive them, and a decomposition of historical saving and investment into the factors that drive them.

<sup>10</sup> Details of this model are elaborated in Porter and Vitek (2007).

<sup>11</sup> See Box I.1 for a discussion of factors that drive the gap between HIBOR and LIBOR interest rates.

### Box I.1. Explaining the Hong Kong Dollar and the U.S. Dollar Interest Rate Gap<sup>1</sup>

Under a pure currency board system, Hong Kong dollar and U.S. dollar interest rates should move together; however, under the LERS with its “convertibility zone,” they may deviate. Unless there is speculation that the zone may be breached, the extent of any deviation should be limited so that HK\$/US\$ forward rates remain within the trading band. In recent years, local interbank rates (HIBOR) have mostly remained below their U.S. dollar counterparts (LIBOR), and have done so in a way that, consistent with covered interest parity, has seen the HK\$ forward rates remain outside the strong side of the band for significant periods. The difference in these rates rose to over 200 basis points in late 2004. Although this gap largely disappeared in May 2005 when the HKMA introduced the three refinements (including the convertibility zone) to the LERS, it reemerged throughout 2006 before narrowing again in 2007.



The factors that drive the gap can give rise to anomalies in the relationship between interest rates and the exchange rate. Forward HK\$ rates can lie outside of the trading band and there can be insufficient adjustment of local interest rates to liquidity changes, as recently demonstrated. Empirical estimates (see equation below) suggest the gap is explained by several liquidity supply and demand factors in addition to Mainland-specific factors. The estimates are based on OLS regressions using a sample of monthly data from September 2000 through October 2007. The difference between 12-month HIBOR and LIBOR (*gap*) is the dependent variable. Key results are that the gap is highly persistent—three fifths of the previous period’s gap carries over, and:<sup>2</sup>

- ◆ *Expectations that the HK\$ would be allowed to follow an appreciating renminbi were only important prior to the May 2005 refinements of the LERS.* During this period, the HK\$ was seen by some market participants as a renminbi proxy, and speculative inflows into the HK\$ market increased domestic interbank liquidity to unprecedented levels, depressing local interest rates. Specifically, before May 2005, an expected 1 percentage point appreciation in the renminbi/US\$ exchange rate (implied by the 12-month nondeliverable forward rate,  $e^{rmbusd}$ ) led to a 4 basis point reduction in the gap. A dummy for the 2005 refinements ( $d1 = 1$  after May 2005) is statistically insignificant, suggesting that speculative pressures ended then.
- ◆ *Strong foreign appetite for Hong Kong assets helps keep HK\$ interest rates relatively low.* Inflows attracted by large IPOs (in particular for Mainland banks) have been widely cited as a possible factor driving down local interest rates. Indeed, for each HK\$1 billion increase in IPO funds raised (*ipo*) the gap falls by one fifth of a basis point. Local equity market returns (*hsidji*) are also significant, with a 1 percentage point rise in returns in the Hang Seng relative to the Dow Jones reducing the gap by ½ basis point.
- ◆ *A temporary excess supply of funds also reduces the gap, but high stock market turnover tends to offset this.* Local interest rates also decline with the loan-to-deposit ratio (*ltd*); it is estimated that the gap will fall by nearly 2 basis points for each percentage point loans grow by less than deposits. In contrast, higher stock market and IPO activity—captured through turnover (*dailyto*) and a higher ratio of HK\$ to foreign currency deposits (*hkdfc*)—usually increases demand for local currency, thereby increasing local interest rates. For a HK\$1 billion rise in daily stock market turnover or a 1 percentage point rise in the ratio of HK\$ to foreign currency deposits, the gap is estimated to rise by ½ basis point.

$$gap = -12.2 + 0.616 gap_{-1} - 0.042(1 - d1)\Delta e^{rmbusd} - 0.002 ipo + 0.018 ltd + 0.005 hkdfc - 0.006 hsidji + 0.004 dailyto - 0.672 d2$$

(3.0)      (6.5)      (2.8)      (2.4)      (2.5)      (1.2)      (1.9)      (2.2)      (11.2)

Adjusted  $R^2 = 0.906$       adjusted DW test (p-value) = 0.2      LM serial autocorrelation test (p-value) = 0.71

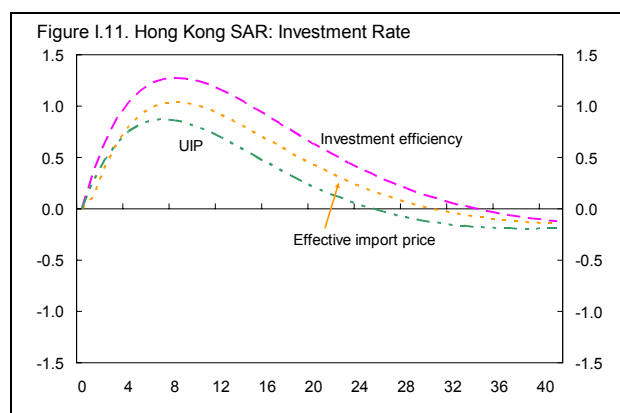
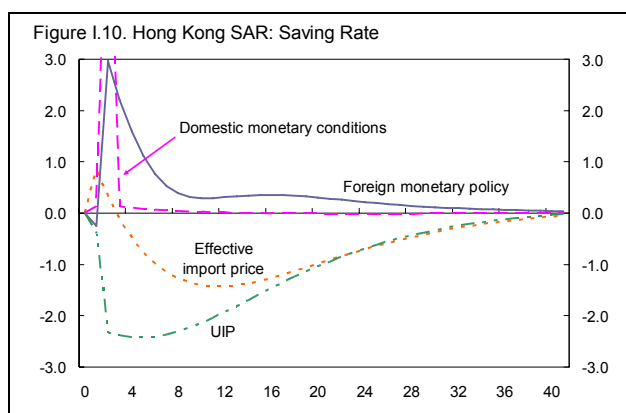
1/ The principal author of this box is Cynthia Leung; the results are based on Gruenwald and Leung (2007).

2/ Diagnostic tests indicate serially correlated errors. A plot of residuals reveals two outliers (October and December 2004), and a dummy variable  $d2$  was added to correct this serial correlation.

## Empirical Results

11. An unexpected tightening of domestic and foreign monetary conditions induce transitory increases in the national saving rate, while decreases in effective import prices and HK\$ interest rates (relative to US\$ rates and expected exchange rate changes) induce persistent reductions (Figure I.10). Increases in domestic interest rates, whether through a rise in the HIBOR-LIBOR gap (through deviations from uncovered interest parity, UIP), or through U.S. interest rates causes domestic nominal and real interest rates to rise, inducing intertemporal substitution by households away from current towards future consumption, increasing private saving. In response to speculative inflows that decrease domestic interest rates (relative to U.S. rates) and lead to an appreciation (an increase in the deviation from UIP), or to lower effective import prices which improves the terms of trade, households raise current and future consumption due to an intratemporal increase in wealth and reduce private saving.

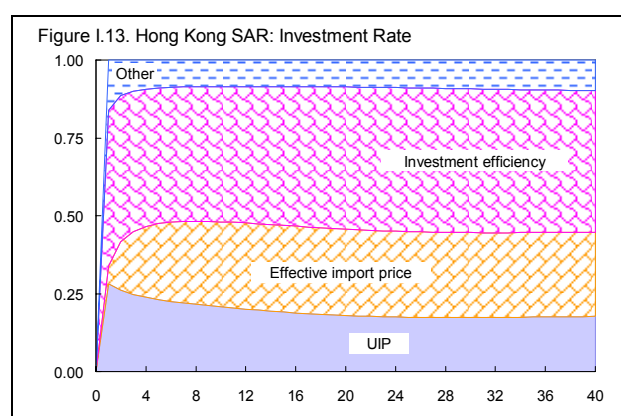
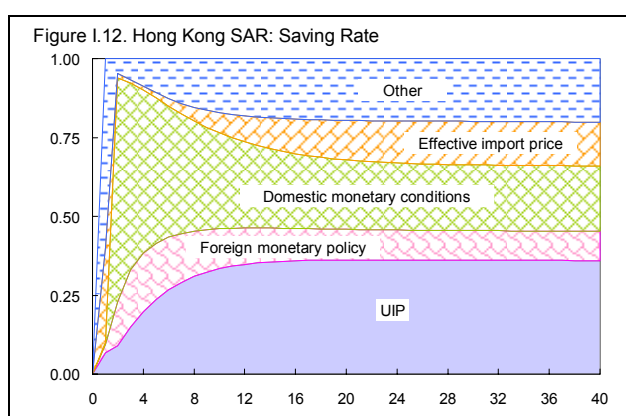
12. Increases to the efficiency of investment, possibly reflecting changes in the cost of capital, and decreases in effective import prices and relative domestic interest rates induce persistent increases in the domestic investment rate (Figure I.11). In response to higher investment efficiency, investment by households and firms increases. Lower effective import prices and increases in relative domestic interest rates lead to a real domestic appreciation and an improvement in the terms of trade, directly reducing the cost of purchasing housing or capital goods both directly, and indirectly through a lower cost of financing.



13. Changes in domestic and foreign monetary conditions are primary contributors to variation in the national saving rate at high frequencies, while changes in effective import prices and relative domestic interest rates are primary contributors at low frequencies (Figure I.12). These changes either directly affect the incentives facing households to save (through interest rates), or the resources for doing so (through real income). In particular, changes to domestic and foreign monetary conditions primarily change the timing of consumption through interest rates and substitution effects, while changes to effective import prices and relative domestic interest rates (though changes to UIP), which affect the real

exchange rate and the terms of trade, induce shifts in the level of the consumption through intratemporal wealth effects.

14. The efficiency of investment (possibly reflecting the cost of capital), followed by changes in effective import prices and relative domestic interest rates (UIP), are primary contributors to variation in the domestic investment rate at all frequencies (Figure I.13). These factors all directly affect the incentives facing households and firms to invest. Investment efficiency influences the efficiency with which actual investment is converted into effective investment. Changes in effective import prices influence the cost of purchasing investment goods, which have relatively large imported components in Hong Kong SAR, while changes in relative domestic interest rates (through UIP and the HIBOR-LIBOR gap) influence the cost of financing these purchases.



15. Several of the above factors have been important in explaining cyclical fluctuations in historical saving and investment (Figures I.14 and I.15). Fluctuations in relative domestic interest rates (through deviations from UIP) were primary contributors to realizations of the national saving rate during several historical episodes. In particular, speculation ahead of the Asian crisis led to capital inflows which reduced nominal (and real) interest rates, leading consumers to increase current consumption and reduce saving. When the crisis hit, domestic interest rates rose sharply compared with U.S. dollar rates, reversing the impact on the saving rate. The efficiency of investment, followed by changes to effective import prices and relative domestic interest rates, were primary contributors to realizations of the domestic investment rate during several historical episodes. In particular, during the build up to the Asian crisis, increases in investment efficiency (possibly reflecting the impact of the overvaluation of the stock market on the cost of capital) induced intertemporal substitution with firms bringing investment forward. The resulting investment boom was mitigated by increases in the effective price of imported goods, but was amplified by low relative domestic interest rates due to capital inflows which reduced the cost of financing.

Figure I.14. Hong Kong SAR: Saving Rate

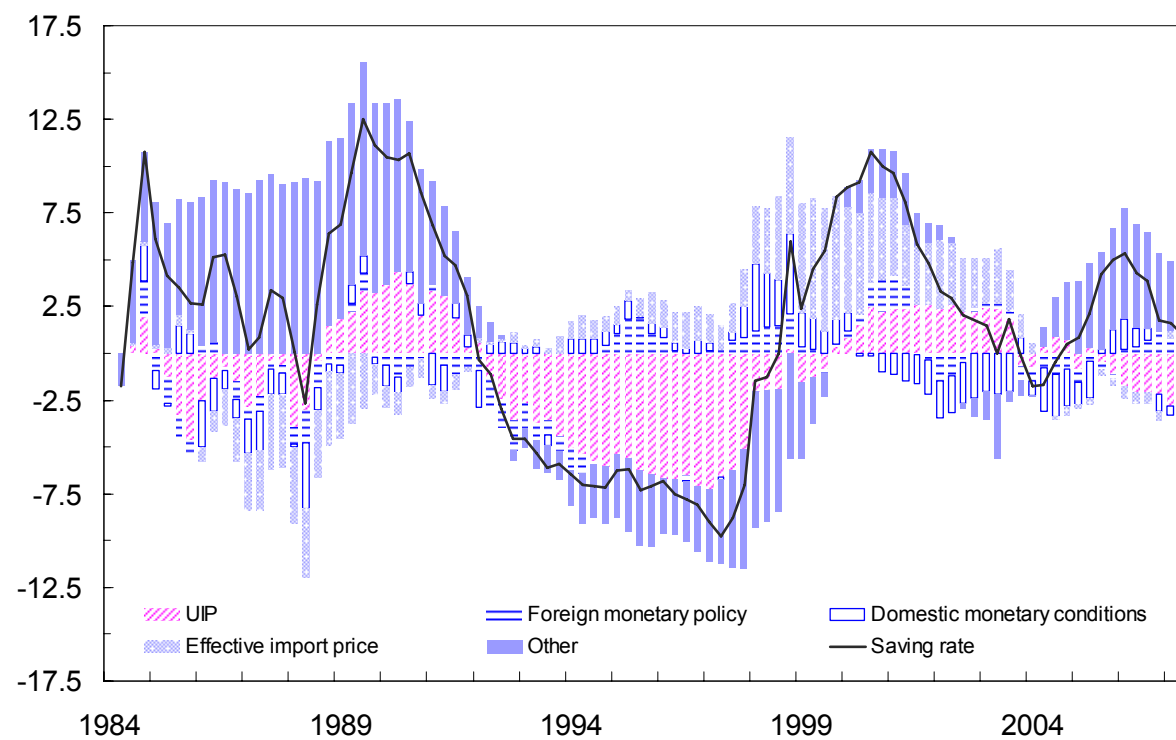
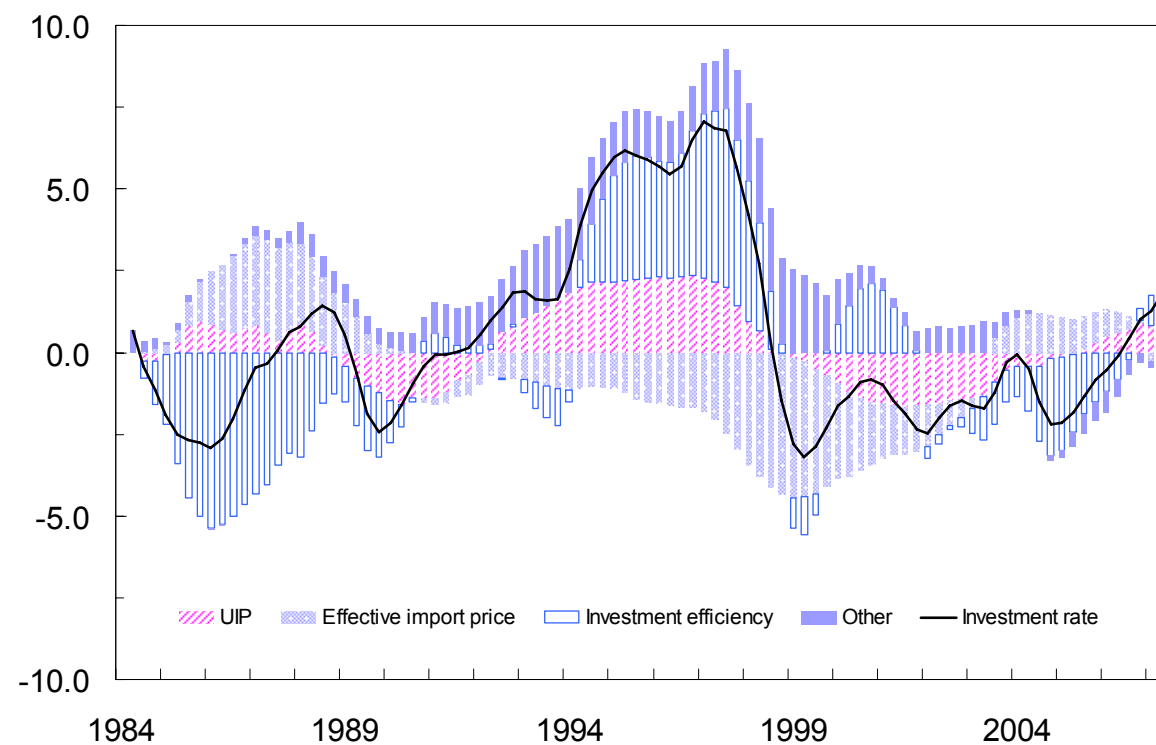


Figure I.15. Hong Kong SAR: Investment Rate



## **D. Conclusion**

16. Hong Kong SAR, like other city financial centers, has a very high private saving rate. This paper has sought to understand what the principal drivers of saving and investment in financial centers are. Panel error correction model estimates suggest that population dynamics is an important driver of medium-run saving across advanced economies, with saving in financial centers being more sensitive to ageing than in other economies. Medium-run investment in advanced economies is driven by volatility, with investment in financial centers more sensitive to volatility than in more diversified economies. Events around the Asian crisis have also widened the gap between saving and investment in Singapore and Hong Kong SAR, possibly reflecting increased perceived volatility or, in the case of Hong Kong SAR, the structural transformation associated with Mainland integration. The DSGE results suggest that at a cyclical frequency changes affecting international financial and trade linkages are key drivers of saving and investment fluctuations in Hong Kong SAR.



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## II. HONG KONG SAR AS A CENTER FOR ASIA'S FINANCIAL INTEGRATION<sup>12</sup>

### A. Introduction

17. Hong Kong SAR has a long established track-record as Asia's premier center for cross-border financial transactions, particularly if account is taken of its relatively small domestic base. Its preeminence derives from its special link with Mainland China, in particular with respect to FDI flows, but supply-side factors, notably the availability of skilled labor, strong regulatory environment and the quality and depths of business services, have also been important. Further financial opening of China is thus likely to consolidate Hong Kong SAR's leading position as Asia's international financial center over the medium term. However as its competitive advantage in China-related intermediation over centers in the Mainland diminishes with financial-system modernization there, Hong Kong SAR's long-term standing as a financial center will increasingly depend on its ability to build a geographically diverse base for financial services that relies less on a domestic economy or hinterland.

### B. Financial Centers and Integration: Trends from an Asian Perspective

18. There does not appear to be a universally accepted definition of the term "international financial center." Nor is there a unique framework of quantitative measures that would document their activities and relative performance. Earlier studies (e.g., Cheng, 1976; Johnson, 1976; Kindleberger, 1974) are also mostly nonquantitative and descriptive, combining aspects of urban and regional economics, and financial market development. On the other hand, more recent quantitative studies on financial centers and financial integration, often only cover vaguely related aspects such as the size of financial markets or indicators of activity. However it is unclear, to what extent these result from domestic activity rather than constituting an international financial service, i.e., intermediation between international 3<sup>rd</sup> parties.<sup>13</sup> It is this type of transaction that appears to be particularly relevant to analyze trends and policies for a small open city-economy such as Hong Kong SAR.

19. Hong Kong SAR has a long track record as a leading international banking center in Asia. A study by Reed (1981) based on five banking sector variables that, broadly speaking, combines the number of banks in a financial center and their links to other financial centers, identifies Hong Kong SAR as leading center in Asia, ahead of Tokyo from 1900–1925, and again after the war until 1960.<sup>14</sup> At the same time, Reed's study puts London and New York

<sup>12</sup> Prepared by Cynthia Leung and Olaf Unterberdoerster.

<sup>13</sup> For a recent comprehensive overview of indicators of financial activity and Hong Kong SAR's ranking in the world, see Cheung and Yeung (2007).

<sup>14</sup> Interestingly, Hong Kong SAR's preeminence is also surpassed by Shanghai, but only in 1925 and 1947.

consistently in the top positions. All this suggests, that the preeminence of certain financial centers over others is related to enduring and lasting structural factors, such as language, legal system, infrastructure, and proximity to markets. While the Reed study is unique in its long horizon, it is limited in its focus on banking sector activities. In what follows, we aim to overcome this limitation by looking at a more comprehensive set of cross-border financial transactions, including foreign direct investment, portfolio investment, and banking activities. In doing so, our focus to the extent possible is on bilateral data which helps to identify special country factors and linkages in explaining the preeminence of certain financial centers over others. The data and country samples are described further in Appendix II.1.

Table II.1. Ranking Score of Selected Top Ten International Banking Centers

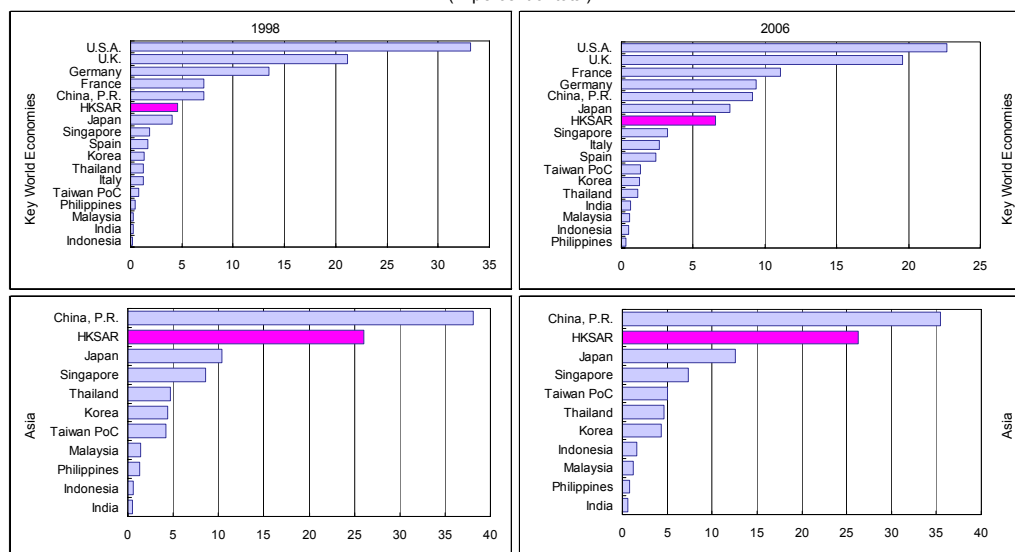
	London	New York	Hong Kong	Tokyo	Singapore
1900	100	87	77	--	--
1915	99	100	84	--	--
1930	100	93	74	70	--
1947	100	92	78	--	76
1960	100	97	78	80	--
1970	100	99	76	86	--
1980	100	100	89	90	--

Source: Reed (1981).

## Foreign Direct Investment

20. Hong Kong SAR's role as an intermediary of FDI flows seems small on a global scale, but it appears to be by far the dominant player within Asia (Figure II.1).<sup>15</sup>

Figure II.1. Foreign Direct Investment Flows  
(In percent of total)



Sources: UNCTAD; EIU; and IMF staff estimates.

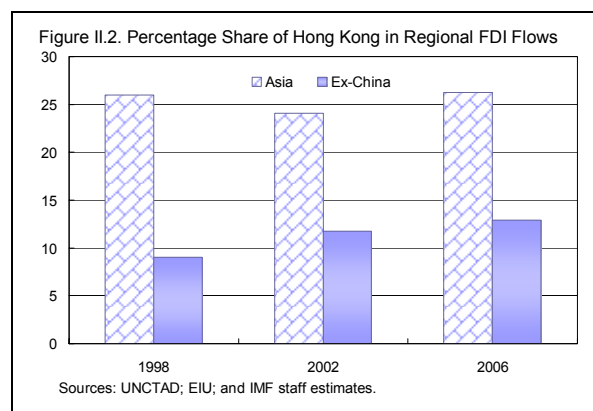
<sup>15</sup> For the purpose of this paper, a country's share in bilateral flows is calculated as the sum of all outflows from and inflows into this country over the total of gross inflows and outflows. By this convention, a given flow is attributed twice, i.e., as an outflow from the source country and an inflow to the destination country. As a result, the share of bilateral inflows and outflows accounted for by a country is half the share of actual flows to which this country is a party.

- Between 1998 and 2006 Hong Kong SAR's share in FDI flows involving key world regions in our sample gradually rose, but remained below 7 percent in 2006. In part, this is due to the fact that FDI flows involving largest five EU countries and the United States, exclusive of Asia, are dominant, accounting for 66 percent of global FDI flows in 2006 (Table II.2).
- Within Asia, bilateral FDI flows involving Hong Kong SAR are only second to China. In 2006, Hong Kong SAR accounted for 26 percent of intra-Asian FDI flows, compared with China's 36 percent, while Japan was a distant third at 13 percent (Table II.3A). In fact, the two single-largest flows by far in 2006 were recorded from Hong Kong SAR to China (US\$27.8 billion; 15 percent), and from China to Hong Kong SAR (US\$13.2 billion; 7 percent).

		Investment from:				Total
		Asia	U.S.	EU5	Others	Outflows
(In percent)						
Investment in:	Asia	3.4	0.6	0.9	2.4	7.2
	U.S.	1.0	--	2.5	3.4	6.9
	EU5	0.4	2.7	3.7	5.4	12.3
	Others	1.0	6.8	8.8	7.1	23.7
Total inflows		5.8	10.1	15.9	18.2	50.0
Overall flows		13.0	16.9	28.2	41.9	100.0

Sources: UNCTAD; EIU; and IMF staff estimates.

- Hong Kong's leading role within Asia as an intermediary of FDI flows thus rests on the China link. Excluding all China-related flows, Hong Kong SAR's share in intra-regional FDI flows drops by half to 13 percent in 2006 (Figure II.2). However, this reflects a steady increase from 9 percent in 1998. If China is excluded, Hong Kong SAR only appears twice amongst the top ten FDI links in the region, compared with six times for Japan—the major source country of FDI in Asia—and five times for Singapore—both a major source and destination of FDI flows within Asia.<sup>16</sup>



<sup>16</sup> The practice of round tripping, driven by the differences in treatment of foreign and domestic investors, appears to be an important factor for the dominance of the Hong Kong SAR-China FDI link in the data (see UNCTAD, 2007). From a statistical point of view, round tripping may inflate FDI flows, which should actually be classified as domestic investment. However, to the extent that these flows require the same services (e.g., legal, consulting, financial, advisory) as other FDI flows channeled through Hong Kong SAR, they matter in measuring Hong Kong SAR's status as a financial center.

Table II.3. Bilateral Cross-Border Transactions Within Asia

## A. Share of FDI Flows in 2006, Total US\$183 billion 1/

		Investment from:										Total Outflow	
		HKG	CHN	IND	IDN	JPN	KOR	MYS	PHL	SGP	TWN		THA
		(In percent)											
Investment in:	HKG	--	7.3	--	--	1.8	0.1	--	--	0.7	0.3	--	10.2
	CHN	15.2	--	--	0.1	4.1	3.0	0.3	0.2	1.8	2.9	0.2	27.8
	IND	--	--	--	--	0.4	0.1	--	--	0.2	--	--	0.6
	IDN	0.0	--	--	--	1.1	0.2	0.0	--	--	--	--	1.3
	JPN	0.1	0.0	0.0	0.0	--	0.0	0.0	0.0	0.0	0.1	0.1	0.3
	KOR	0.0	0.2	--	--	0.3	--	0.0	--	0.1	--	--	0.7
	MYS	0.0	0.1	0.0	0.0	0.1	0.1	--	--	0.3	0.1	--	0.7
	PHI	0.0	0.0	0.0	--	0.5	0.0	0.0	--	0.1	0.0	0.0	0.7
	SGP	0.2	0.0	0.0	0.1	1.4	0.2	--	--	--	0.5	0.0	2.5
	TWN	0.0	--	--	0.0	0.5	--	0.1	0.0	0.3	--	0.0	0.9
THA	0.4	0.0	0.0	0.0	2.1	0.1	0.0	0.0	1.4	0.2	--	4.4	
Total inflows		16.1	7.6	0.0	0.3	12.3	3.7	0.5	0.2	4.9	4.1	0.3	50.0
Overall flows		26.3	35.5	0.6	1.6	12.6	4.4	1.2	0.8	7.4	5.0	4.6	100.0

1/ Absolute values of flows are used in the calculation.

## B. Share of Portfolio Investment in 2005, Total US\$401 billion

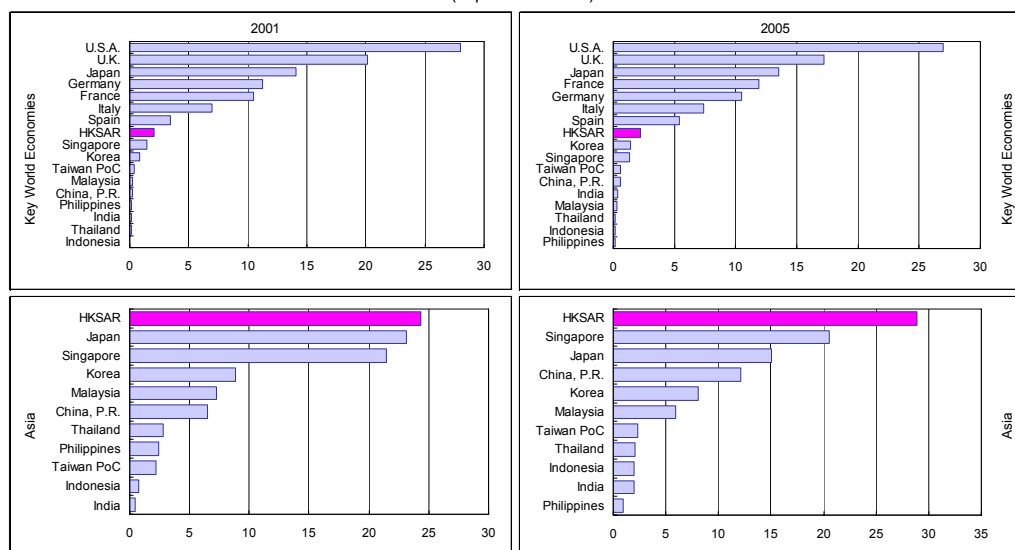
Investment from:													Total
	HKG	CHN	IND	IDN	JPN	KOR	MYS	PHL	SGP	TWN	THA		
(In percent)													
Investment in:	HKG	-	-	0.0	0.0	2.2	0.3	0.0	0.0	3.4	-	0.0	6.0
	CHN	10.3	-	-	0.0	1.0	0.0	0.0	0.0	0.8	-	0.0	12.2
	IND	0.5	-	-	0.0	0.7	0.1	0.0	0.0	0.6	-	0.0	1.9
	IDN	0.1	-	0.0	-	0.1	0.0	0.0	0.0	1.6	-	0.0	1.9
	JPN	4.2	-	0.0	0.0	-	0.4	0.0	0.0	2.2	-	0.0	6.8
	KOR	3.1	-	-	0.0	1.9	-	0.0	0.0	2.3	-	0.0	7.2
	MYS	1.0	-	0.0	-	0.3	0.1	-	0.0	4.2	-	0.0	5.6
	PHL	0.3	-	0.0	0.0	0.3	0.0	0.0	-	0.2	-	0.0	0.9
	SGP	1.8	-	0.0	0.1	1.1	0.1	0.2	0.0	-	-	0.0	3.3
	TWN	1.1	-	-	0.0	0.3	0.0	0.0	-	0.8	-	-	2.3
THA	0.6	-	0.0	0.0	0.2	0.0	0.0	0.0	1.1	-	-	1.9	
Total	22.9	-	0.0	0.1	8.3	0.9	0.3	0.1	17.2	-	0.2	50.0	
Overall investment	28.9	12.2	1.9	2.0	15.1	8.1	5.9	1.0	20.5	2.3	2.1	100.0	

Sources: UNCTAD; EIU; and IMF staff estimates.

## Portfolio Investment

21. Unlike for FDI, Hong Kong SAR plays a lead role inside Asia in intermediating portfolio investments, even if links with Mainland China are excluded (Figure II.3).

Figure II.3. Portfolio Investment  
(In percent of total)



Sources: IMF, CPIS; and IMF staff estimates.

- From a global perspective, the United States and EU5 again account for the bulk of cross-border portfolio assets and liabilities, with portfolio assets and liabilities involving them but not Asia accounting for over two thirds of all holdings in 2005, a share that has remained roughly stable since the first survey in 2001. Similarly, of the total portfolio assets held by foreigners in Asia, some US\$2.2 trillion in 2005, holdings by Asian countries only account for 9 percent, while the U.S. accounts for 40 percent and the EU5 for 20 percent (Table II.4).
- Regarding cross-border holdings within Asia, Hong Kong SAR's share in assets and liabilities was 29 percent in 2005, followed by Singapore (20 percent) and Japan

Table II.4. Share of Portfolio Investment in 2005,  
Total US\$52 trillion

		Investment from:				Total
		Asia	U.S.	EU5	Others	
(In percent)						
Investment in:	Asia	0.4	1.7	0.9	1.2	4.2
	U.S.	1.7	-	2.1	6.5	10.2
	EU5	1.2	2.8	4.5	7.3	15.8
	Others	2.1	4.4	6.7	6.5	19.7
Total		5.4	8.9	14.2	21.5	50.0
Overall investment		9.7	19.1	30.0	41.2	100.0

Sources: IMF, CPIS; and IMF staff estimates.

(15 percent) (Table II.3B). Even if assets held in China are excluded, Hong Kong SAR's share was still over 24 percent, up from 22 percent in 2001.<sup>17</sup>

- Regarding Hong Kong SAR's role as an intermediary of portfolio investment from/to outside the Asia region, in 2005 it accounted for 6 percent of U.S. and EU5 investments in the region, and 10 percent of Asian investments in the United States and EU5. On the outflow side, this was the largest share after Japan (83 percent). On the inflow side, Japan (61 percent), South Korea (12 percent) ranked before, and Taiwan POC (6 percent) was on par with Hong Kong SAR.

### **Banking Activities**

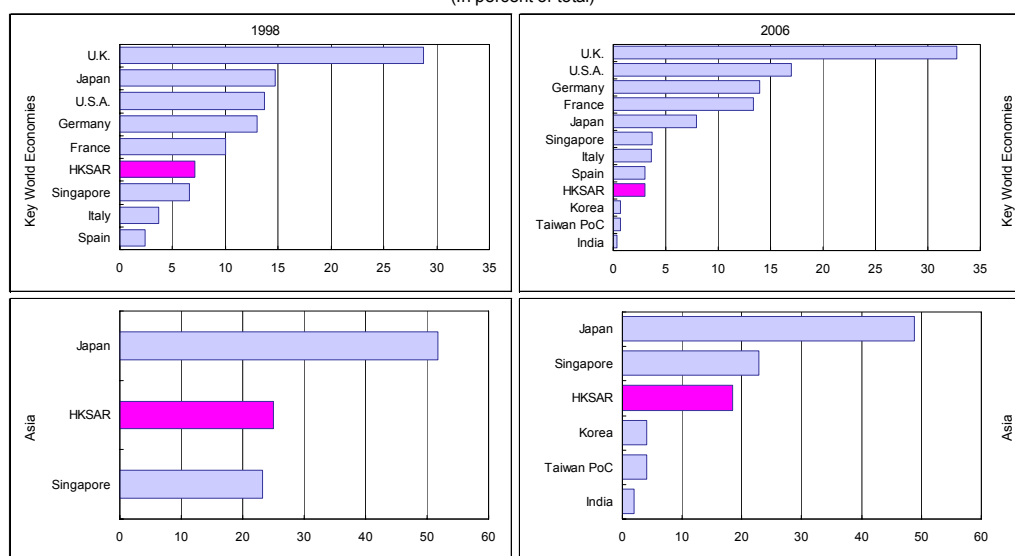
22. Based on the international banking statistics of the BIS, Hong Kong SAR plays a less prominent role in cross-border banking than as an intermediary of FDI and portfolio investment (Figure II.4). Its total share in gross external positions reported by Asian banks was 18 percent at end-2006, down from 25 percent in 1998. Japan and Singapore, have been playing more prominent roles in bank intermediation, accounting for 49 percent and 23 percent, respectively, of Asian banks external assets and liabilities in 2006. Unlike the data used for FDI and portfolio investment, BIS banking statistics do not permit a bilateral breakdown. Nevertheless, the risk that activities with China skew results appears rather small.<sup>18</sup>

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<sup>17</sup> China does not participate in the CPIS, so there are no data on liabilities vis-à-vis China. Nevertheless, given existing tight controls on capital flows, amounts are believed to be small and to not change the thrust of trends presented here. For example, under the QDII program for retail investors, financial institutions are reported to have invested less than US\$1 billion on behalf of their customers by mid-2007.

<sup>18</sup> According to BIS, Table 6A (external positions of banks in all currencies vis-à-vis all sectors vis-à-vis individual countries) total assets and liabilities vis-à-vis China were US\$280.2 billion at end-2006, equivalent to 0.6 percent of the aggregate external positions of all reporting banks in the BIS system.

Figure II.4. Banking Activities  
(In percent of total)



Sources: BIS; and IMF staff estimates.

### Gauging 3<sup>rd</sup> Party Flows

23. The presence of countries in international financial markets arises either from the need to satisfy domestic demand or to provide services to other countries. It is the latter activity that reflects the role of a country as an international financial center, narrowly defined. In this sense, comparing a country's share in world capital flows with its share in world GDP, thereby controlling for domestic demand, provides a first gauge for its status as an international financial center. On this count, Hong Kong SAR, Singapore, and the United Kingdom consistently stand out on all types of capital flows (Figures II.5, II.6, and II.7).

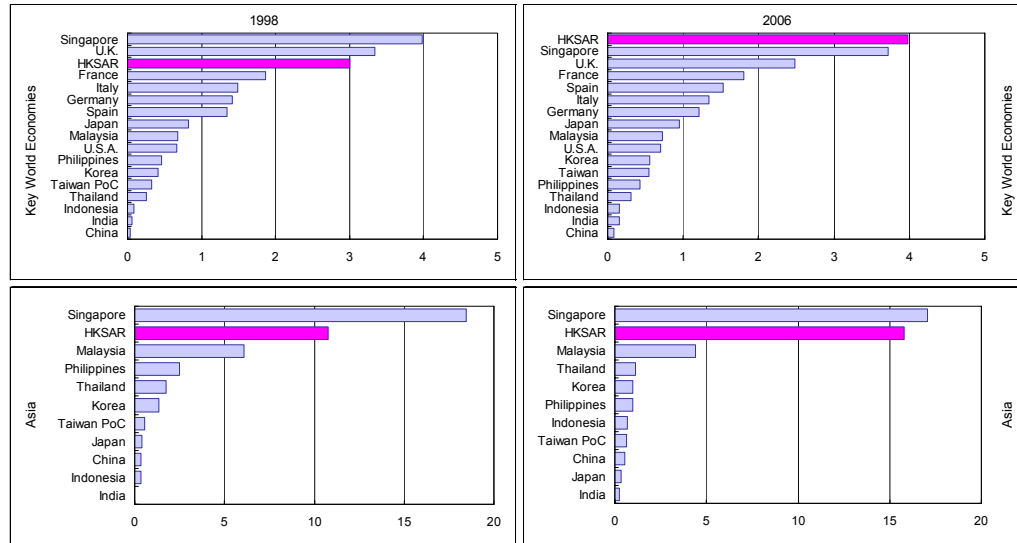
- Regarding FDI, Hong Kong SAR appears to be the leader with its share in FDI flows of the key world regions in our sample in 2006 12 times larger than its share in GDP, followed by Singapore (8 times larger) and the United Kingdom (3 times larger). By contrast the United States, the world's largest economy (and leading source as well as recipient of FDI), has a ratio of less than 1 in 2006. While the top rankings have shown little change since 1998, the ratios have nearly doubled for Hong Kong SAR and Singapore, but remained stable for the United Kingdom.
- On portfolio investment, Hong Kong SAR has narrowly overtaken Singapore as an intermediary in 2005 as the ratio of its share in cross-border investments relative to its GDP-share rose to 4 (from 3 in 2001), while Singapore's has fallen slightly below 4. However, if only intra-Asian positions are taken into account, Singapore still holds a small edge over Hong Kong SAR, but the gap has been narrowing rapidly. In 2005, both cities' presence in cross-border portfolio investments with Asia was 15 times larger than their share in the region's GDP. Taken together, this suggests, that while Hong Kong SAR plays a somewhat bigger role than Singapore as



an intermediary of portfolio flows to and from outside the Asia region, its rapidly growing presence inside Asia is also boosting its role at the global level.

- By contrast, Singapore has consistently held a leadership role in banking over Hong Kong SAR. In 2006, the ratio of Singapore's world share in cross-border banking positions relative to its share in global GDP was about 10, nearly twice the level observed for Hong Kong SAR.

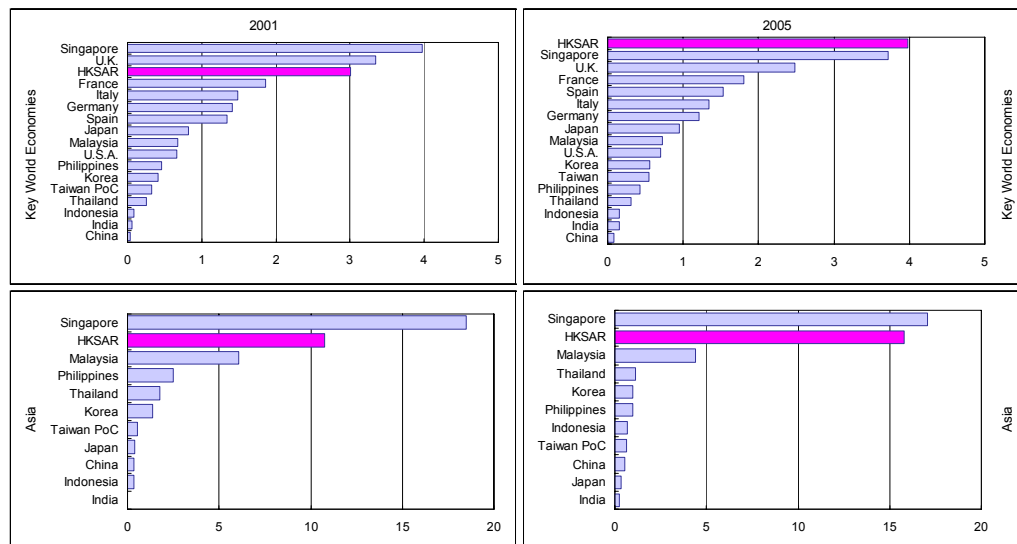
Figure II.5. Intensity of Foreign Direct Investment 1/



Sources: UNCTAD; EIU; and IMF staff estimates.

1/ Ratio of share in cross-border transactions to share in GDP.

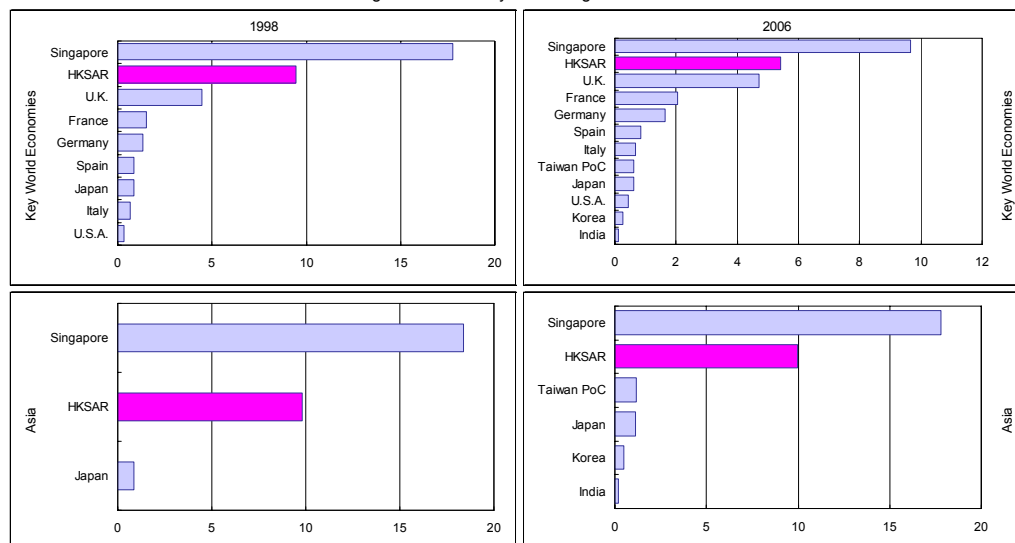
Figure II.6. Intensity of Portfolio Investment 1/



Sources: IMF, CPIS; and IMF staff estimates.

1/ Ratio of share in cross-border transactions to share in GDP.

Figure II.7. Intensity of Banking Activities 1/



Sources: BIS; and IMF staff estimates.

1/ Ratio of share in cross-border transactions to share in GDP.

## C. Implications

### Demand and Supply Factors

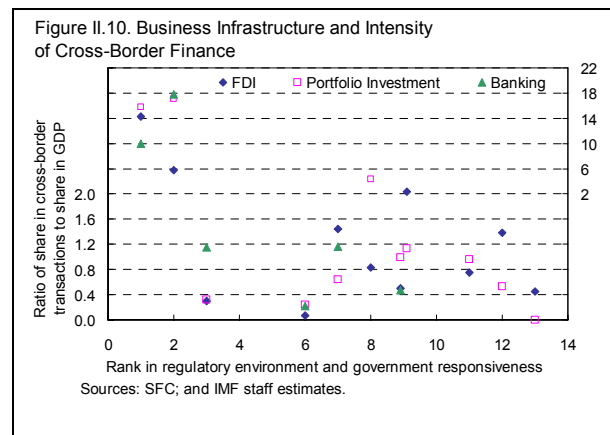
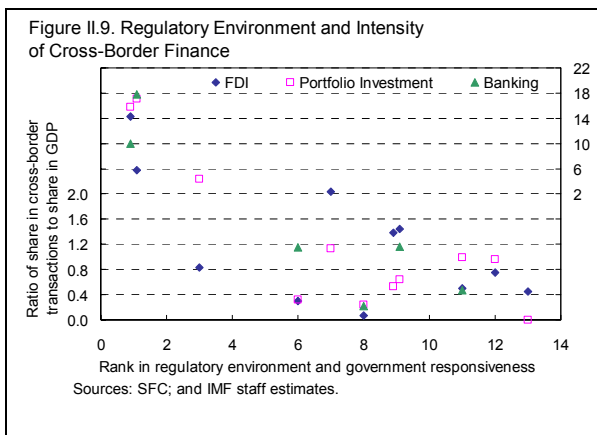
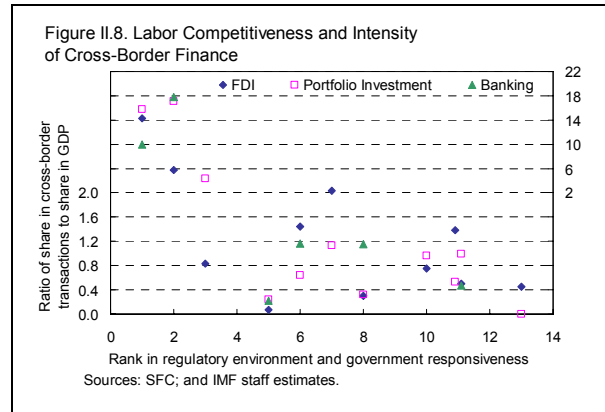
24. Hong Kong SAR in some ways resembles more other international financial centers with a large domestic economy, such as New York, than those without one, such as Singapore or London. As a small open city-economy, Hong Kong SAR derives its presence in international finance primarily from its ability to offer services to nonresident 3<sup>rd</sup> parties. However, unlike Singapore, its leading role as an international financial center in Asia stems from bilateral flows with the Mainland, particularly in FDI where the process of China's gradual capital account opening is more advanced than for other types of capital flows.

25. Nevertheless, supply-side factors have also played an important role in establishing Hong Kong SAR as an international financial center. For example, the rapid growth of Hong Kong SAR as an asset management and hedge fund center in Asia in recent years rests on its already high concentration of financial institutions, well functioning legal and regulatory systems, and highly skilled and flexible labor force.<sup>19</sup> In a McKinsey survey of executives these were viewed as the most important of 18 factors defining the success of a financial center.<sup>20</sup> As shown in a study by the Securities and Futures Commission (SFC), Hong Kong SAR, and also Singapore, consistently top various competitiveness indicators for

<sup>19</sup> See Box 1.4, IMF (2007).

<sup>20</sup> The results of the McKinsey Financial Services Senior Executive Survey are reported in the City of New York and the United States Senate (2006).

global financial centers on these dimensions.<sup>21</sup> For the Asian countries in our sample, rankings measuring the availability of skilled labor and professional services, the quality of regulations and government, and the business infrastructure, all are positively related to the intensity of cross-border FDI, portfolio investment and banking activities, which is proxied by the ratio of a country's share in Asian cross-border finance to its share in Asian GDP.



26. Regression estimates broadly confirm the importance of supply-side factors in addition to domestic demand factors (Table II.5). The estimates here are based on a sample of 47 advanced and emerging market economies and their average share in global FDI, portfolio investment, banking and other investment flows during 2003–05. While a country's share in international capital flows rises with its share in world GDP, its level of development (proxied here by per capita income), which tends to correlate with supply-side factors such as the skills base, the strength of institutions and the rule of law, is at least as important. Both variables are statistically significant across the entire range of model specifications. While an increase in a country's GDP share tends to result in a less than proportional increase in its share in global capital flows, for each 10 percent increase in per capita GDP a country's share in international capital flows rises by about 12–14 percent. A dummy for EU countries is statistically significant, suggesting that the common market is boosting financial integration. Interestingly, variables capturing structural factors directly, such as government effectiveness and regulatory quality, do only appear to matter when

<sup>21</sup> SFC (2006) contains a detailed overview and analysis of competitiveness rankings and their relevance for financial centers based on the *World Competitiveness Yearbook*, *Global Competitiveness Report*, *Index of Economic Freedom*, *Economic Freedom of the World*, and the *Doing Business Report in 2006*.

interacting with the EU dummy.<sup>22</sup> This suggests that the comparative advantage of international financial centers tends to be more sensitive to such factors at higher levels of development and regional integration.

Table II.5. Determinants of a Country's Share in Global Capital Flows

Table II.5. Determinants of a Country's Share in Global Capital Flows								
Independent Variables	Model 1		Model 2		Model 3		Model 4	
	Estimated coefficient	t-value	Estimated coefficient	t-value	Estimated coefficient	t-value	Estimated coefficient	t-value
(Dependent variable: log of share in flows, 2003–2005) (Number of observations: 47)								
Log of GDP share	0.803	14.9	0.742	14.4	0.762	16.1	0.754	15.3
Log of per capita GDP	1.441	7.5	1.237	8.0	1.204	9.0	1.213	8.4
Capital account openness 2/	0.095	0.8	0.019	0.2	0.041	0.5	0.031	0.3
Dummy for EU			0.938	4.6				
Dummy for EU x regulatoryQ 3/					0.633	3.9		
Dummy for EU x BURQ 4/							0.254	4.3
Adjusted R-square	0.8556		0.8932		0.8951		0.8957	
Source: IMF staff estimates.								
1/ Based on OLS (Newey-West heteroskedasticity consistent standard errors).								
2/ Chinn-ito index of capital account openness.								
3/ <i>World Bank Governance Indicators</i> database.								
4/ <i>International Country Risk Guide</i> : Indicator for quality of bureaucracy.								

## Prospects for Future Growth

27. The combination of Hong Kong SAR's special relationship with the Mainland and its supply-side strengths are likely to be the key drivers of Hong Kong SAR's growth as an international financial center for some time. For example, one indication of potential growth can be derived from assuming that Hong Kong SAR's share in Chinese portfolio flows converges to its current share in FDI intermediation. Based on bilateral portfolio investment data for OECD countries, Cheung and others (2006) estimate that China's outward portfolio investment would have amounted to some US\$340 billion at end-2005, or about three times the actual level, had its capital account been as open as in OECD countries. Taking Hong Kong SAR's share in China's FDI outflows as a benchmark, some 60 percent (excluding an estimated 50 percent of FDI outflows due to round tripping), the Chinese outward portfolio investments that Hong Kong SAR could capture, would amount to about US\$200 billion. This would increase Hong Kong SAR's cross-border portfolio assets and liabilities by over 35 percent, from US\$574 billion at end-2005. It would make Hong Kong SAR by far the dominant portfolio investment center in Asia, with cross-border investments at end-2005

<sup>22</sup> If these variables are entered without the interactive term, their explanatory power may be captured by the per capita GDP variable.

within the region at some US\$400 billion, and boost its world share from 1.1 percent to 1.5 percent.<sup>23</sup>

28. Moreover, recent administrative measures seem to underscore Hong Kong SAR's privileged role in China's gradual capital account liberalization for portfolio flows. Under the latest round of the Mainland and Hong Kong Closer Economic Partnership Agreement, Mainland fund managers, with approval of the China Securities and Regulatory Commission, will be allowed to establish wholly owned subsidiaries or joint ventures in Hong Kong SAR to serve Mainland clients. Moreover, the Qualified Domestic Institutional Investor (QDII) program is being expanded to allow investment in overseas stock markets (in addition to fixed income products previously), with Hong Kong SAR being an attractive destination given its preeminence in listings of Mainland companies. Finally, in mid-August, the Chinese authorities announced a pilot project under which local retail investors can directly invest in non-Mainland securities. With the pilot initially restricted to the Hong Kong SAR market (given the need to agree on a memorandum of understanding with the relevant Mainland regulators), trading activity should be bolstered here, although the modalities are still to be set. The first Chinese renminbi-based bond issuance in Hong Kong SAR in late June offers another avenue of growth, although prospects are limited for now owing to relatively unattractive yields and a small deposit base.

29. As a result, Hong Kong SAR is likely to enjoy a first-mover advantage as the Mainland's financial system further integrates with the world, but how to preserve this momentum will be critical in the long run. Hong Kong SAR's traditional strengths vis-à-vis domestic centers in terms of a first-rate financial sector infrastructure and skills base could diminish over time relative to its disadvantage regarding cultural proximity, expert knowledge of the local economy, or access to local distribution networks for financial products. This calls for a development strategy that balances reaping the nearer-term benefits from the special China role with the need to transcend into a truly international center in the long run. Developing a more geographically diverse base for financial services that relies less on a domestic economy or hinterland can be done, as evidenced by the examples of London at the global level, or Singapore in Asia. It would require maintaining Hong Kong SAR's competitive edge on skills, legal and institutional infrastructure, as well as regulation, thereby creating an environment that promotes both stability and innovation. Further improving English language skills will also be critical as English is not only the language of global finance, but also the lack of its use in other sectors of society would make it difficult to attract and retain a globally diversified pool of human talent. Similarly, quality of life issues, including cultural vibrancy and a clean environment, are likely to become

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<sup>23</sup> In addition, it is conceivable that some form of "round tripping" may also occur with portfolio investments to the extent that investments through Hong Kong SAR-based firms and products offer advantages over direct domestic investments in the Mainland.

increasingly important factors.<sup>24</sup> Developing new markets and instruments, including emissions trading or aging-related products, could bolster further Hong Kong SAR's role as a less China-centric and more international financial center.

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<sup>24</sup> While quality of life has been ranked only 11<sup>th</sup> for a global financial centers index compiled by Mainelli and Yeandle (2007), this does not capture its indirect impact, e.g., by reducing the availability of skilled labor.

## APPENDIX II.1. DATA ISSUES

Data on bilateral financial linkages cover the following countries: In Asia, China, Hong Kong SAR, India, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan (POC), and Thailand; in Europe the largest five EU member countries (EU5), i.e., Germany, France, Italy, Spain, and the United Kingdom; and the United States.

**Regarding foreign direct investment (FDI)**, data on flows, which are preferred over stocks to avoid accounting for valuation changes and other adjustments (e.g., write-offs), are sourced from the UNCTAD, *Foreign Direct Investment Database* and *Economist Intelligence Unit* (EIU). IMF data are not available on a bilateral basis. The data are broadly compatible with the IMF BOPM5 definition of FDI, thereby combining three broad aspects, i.e., new equity flows, intra-company debt transactions, and re-invested earnings. While the data do not distinguish between M&A and greenfield investments, this shortcoming does not affect the findings in this papers, which is about any form of financial linkages. Both inflows and outflows are reported on a net basis, i.e., capital transactions credits less debits between a given direct investor and its foreign affiliate. To address bilateral discrepancies, which mainly arise from differences in reporting practices across countries, we rely on FDI inflow data reported in the host economies as they tend to be more complete and are available for all developing Asian economies under consideration.

**Bilateral data on portfolio investment** are only available as stocks and are obtained from the IMF's *Coordinated Portfolio Investment Survey* (CPIS). China (and also Taiwan POC) does not participate in the CPIS, so there are no data on liabilities vis-à-vis China. Nevertheless, given existing tight controls on capital flows, amounts are believed to be relatively small and not change the thrust of trends presented here.

**To obtain a measure of cross-border banking activities**, we use the *Locational Banking Statistics* of the BIS (Table 2a: External positions of banks in all currencies vis-à-vis all sectors in individual *reporting* countries). The *Locational Banking Statistics* are useful for measuring cross-border lending flows. However, reporting countries in the BIS only cover more advanced economies and as such the Asian sub sample only includes Hong Kong SAR, India, Japan, Singapore, South Korea and Taiwan (POC).

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