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Beyond the Crisis: Financial Regulatory Reform in Emerging Asia

Chee Sung Lee and Cyn-Young Park
No. 34 | September 2009

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+Chee Sung Lee, is an independent consultant, Kuala Lumpur, Malaysia, lee.cheesung@gmail.com

++ Cyn-Young Park is a Principal Economist of the Office of Regional Economic Integration, Asian Development Bank, 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines. Tel +63 2 632 5473, Fax +63 2 636 2342, cypark@adb.org

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Unless otherwise noted, \$ refers to US dollars."

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Abstract

The main objective of this paper is to suggest reform measures to address the gaps and weaknesses in emerging Asia's financial regulatory and supervisory systems, on the basis of lessons drawn from the global crisis. For emerging Asia, the direct impact of the global financial crisis has been limited, thus generating substantially less pressure for financial restructuring and regulatory reform than is the case in developed economies. However, the underlying causes of the current turmoil—such as the dynamics of financial innovation and globalization—remain relevant for the region. As the world embraces wide-ranging financial reforms, emerging Asia will face dramatic changes in the global financial landscape. The region's authorities need to be prepared for the changing regulatory environment and proactive in strengthening their national regulatory and supervisory frameworks, in line with higher regulatory standards emanating from global reforms. Financial regulators will also need to design an effective and coherent framework for cross-border crisis management, and work towards a potential international regulatory and surveillance system.

Keywords: Financial regulation, regulatory reform, asia, global financial crisis

JEL Classification: G01, G2, G28

1. Introduction

Financial crises often provide impetus and opportunity for overdue regulatory reform. As in past crises, the current turmoil exposed shortcomings in supervisory, regulatory, and prudential frameworks. This has led national authorities—together with regional and global financial institutions—to reexamine approaches to financial regulation and supervisory oversight. As the crisis continues to reshape the global financial architecture, wide-ranging reforms and a regulatory overhaul is under discussion to address apparent weaknesses and gaps.

The unprecedented global financial crisis has prompted a reassessment of financial regulatory systems worldwide. By and large, emerging Asia's¹ financial systems and institutions have been shielded from the direct impact of the global financial crisis. Thus, the region faces substantially less pressure for financial restructuring and regulatory reform. Nonetheless, the underlying causes of the current turmoil—based on the dynamics of financial innovation and globalization—accent the need to better supervise financial institutions and safeguard financial stability.

Asia cannot be insulated from the impact of financial crises spawned elsewhere. The resilience of Asia's banking systems can, in part, be attributed to the reforms implemented following the 1997/98 Asian financial crisis. However, the risk-assessment capabilities of existing regulatory systems are clearly insufficient and must be supplemented in a way that reflects emerging new risks and challenges. With the crisis well into its second year, lessons drawn from recent events have led to specific reform proposals with concrete implementation plans in various global forums. Two major shortcomings in the modern global financial system are shaping an array of possible regulatory, supervisory, and prudential reforms. First, supervisors failed to stop excessive risk-taking and leveraging by financial institutions. Market failures, due in part to rapid financial innovation, discredited the regulatory model that relied on transparency, disclosure, and market discipline to curb inordinate risk-taking. Second, the absence of well-established crisis management mechanism, which was revealed in the failure to quickly address impaired financial institutions—both local and international, sapped confidence from the system.

The mandate for the region's authorities is clear: to be proactive in strengthening their respective national regulatory and supervisory frameworks, in line with higher regulatory standards emanating from global reforms. The crisis has also highlighted the need for a coordinated approach beyond national borders. National regulators should form regional and global alliances to establish a mechanism that can effectively monitor cross-border financial activities that could potentially threaten national, regional, and global financial stability. Together with global regulatory authorities, the region's financial regulators also need to design an effective and coherent framework for cross-border crisis management, and work towards a possible international regulatory and surveillance system.

¹ Throughout this paper, "Emerging Asia" refers to 10 selected economies of developing Asia: the People's Republic of China; Hong Kong, China; India; Indonesia; Republic of Korea; Malaysia; the Philippines; Singapore; Taipei, China; and Thailand.

Following a brief survey of the lessons drawn from the crisis, this paper will review the status of emerging Asia's financial systems, the authorities' responses to the crisis, and existing regulatory systems. This paper will then focus on reform measures and related issues with strong implications for emerging Asia's financial systems. With discussions over specific reforms underway in the global arena, the proposed reform measures will serve to underpin the region's active participation in shaping a new global financial architecture to address regulatory gaps and build a more resilient regional financial system.

2. Global Lessons: What Went Wrong?

A confluence of macroeconomic and structural factors contributed to the current crisis, highlighting an inadequate financial policy and regulatory framework. The existing regulatory and supervisory system clearly failed to prevent systemic risk from undermining financial stability. Regulatory gaps between different market segments and products, fragmented supervision, and inadequate information to protect investors and encourage market discipline all contributed to the incidence of systemic risk crippling the global banking and financial system. While there are many lessons to draw from the crisis, there are five broad lessons pertinent to reform considerations for Asia's financial systems.

- **Global and national regulatory structures have not kept up with market innovation over the past decade, creating gaps across products and services that allow excessive leverage and risk-taking.**

The crisis exposed important weaknesses and gaps in regulations and their coverage in a number of countries. Innovation is often driven by regulatory arbitrage, or the desire to avoid regulatory requirements on banks and other deposit-taking institutions. These include minimal capital and liquidity ratios, various prudential constraints on permissible assets and liabilities, governance requirements, and reporting obligations. For example, securitization is a useful tool that can transfer risks from those who originate to those who are better able to manage them. However, it has also allowed banks to build off-balance sheet leverage. Deregulation has obscured the boundaries between banks and nonbank financial institutions in terms of the products and services they offer. Cross-border finance has accelerated, increasing financial interdependence globally. But the absence of clear mechanisms for information sharing and monitoring global transactions contributed to the rapid spread of financial panic as the crisis gained strength.

- **Excessive maturity transformation, with greater reliance on market-based wholesale funding, has made the financial system susceptible to a sudden shift in investor sentiment and market liquidity conditions.**

Greater reliance on market-based wholesale funding tends to generate a false sense of liquidity in times of relative market calm. But in a time of market distress, elevated uncertainty may lead to a collective failure of liquidity provision in the

market. Prior to the current crisis, a largely unregulated shadow banking system² showed phenomenal growth with a massive build-up of off-balance sheet leverage. These shadow banking institutions were not subject to the rigorous prudential regulations required of depository banks, thus allowing excessive leverage and risk-taking. The popular and growing use of structured investment vehicles and other conduits also contributed to the expansion of the shadow banking system. However, these nonbank financial institutions tend to rely on wholesale funding sources, rather than relatively less volatile retail deposits. With their high leverage ratios, the rollover needs for short-term funding became acute during the crisis. Also, system-wide deleveraging has forced regulated financial institutions to liquidate positions during market distress, exacerbating the liquidity crisis.

- **Spillovers and externalities were evident during the crisis, reflecting high levels of financial interdependence including, for example, the transfer of risk through complex securitized products.**

The financial crisis illustrated how the collapse of a systemically significant global financial institution—or a sharp, rapid deterioration in an asset class—can have far-reaching impacts on global markets and financial systems. Dramatic changes in the financial landscape driven by innovation, deregulation, and globalization in the past few decades have increased financial interdependence across institutions, market segments, and national borders. The emergence of global financial conglomerates has also contributed to this. However, the crisis revealed that this strong interdependence has not been fully appreciated by the regulators, while the complexity of financial innovation often undermines the capacity of risk managers. For example, growth in securitization and structured credit products³ has been phenomenal in recent years. While such innovations allowed banks to manage risks more effectively by adjusting their exposure to different types of credit risk, the lack of transparency created by these complex credit products has made it difficult to assess their underlying value. The high leverage embedded in these products also blurred the size of commitment in each layer of securitization, obscuring the degree of risk exposure.

- **Misaligned incentives in compensation schemes, credit ratings, and the originate-to-distribute model were also exposed by the crisis.**

² The shadow banking system refers to nonbank financial institutions that play an increasingly critical role in lending. For example, a hedge fund may channel funds from an investor to a corporation, profiting either from management fees or from interest rate differentials between investor and borrower.

³ Structured credit products such as collateralized debt obligations (CDOs) arise from a pool of debts, which is then partitioned into different tranches representing different degrees of risk and sold off to investors with different risk appetites. CDOs bundle various types of debt into securities structured in such a way that losses from defaults are borne successively, in their entirety, from low-ranking through to high-ranking tranches, thus protecting the latter from the immediate loss. CDO tranches are then awarded credit ratings based on the layers of protection given to each tranche by the subordinate (i.e., lower) tranches as well as the credit quality of the underlying collateral. In this process, these structured securities are effectively severed from the credit risk of the original issuer of collateralized debts and rely solely on their own credit ratings. This means that a CDO tranche that includes unrated “junk” assets in its mix of assets used as collateral could still be AAA-rated.

Faulty incentive structures contributed to excessive leveraging and risk-taking. First, the remuneration and incentive schemes of financial institutions encouraged managers to take excessive risks by focusing on short-term returns. Second, misaligned incentives faced by credit rating agencies in supplying ratings and offering advisory services likely contributed to overly positive ratings for complex financial instruments and the underestimation of risk. Third, the originate-to-transfer model may have contributed to a decline in due diligence in lending by reducing incentives to monitor the credit quality of underlying assets in structured credit products.

- **Certain regulations reinforced the procyclicality of financial systems, exacerbating market stress as the crisis developed.**

The regulatory system was inadequate in accounting for risks associated with boom–bust cycles at the macro level. In some cases, prudential requirements even encouraged the procyclical behavior of banking systems. For example, several provisions in the Basel II framework appear to encourage banks to decrease the amount of capital they hold during business cycle expansions and increase them during contractions—the result of mark-to-market accounting, variations in specific provisioning and related risk-weighted capital requirements, and changes in perceived risk using the Value-at-Risk (VaR) model.

3. Asia’s Responses: What Makes Asia Different?

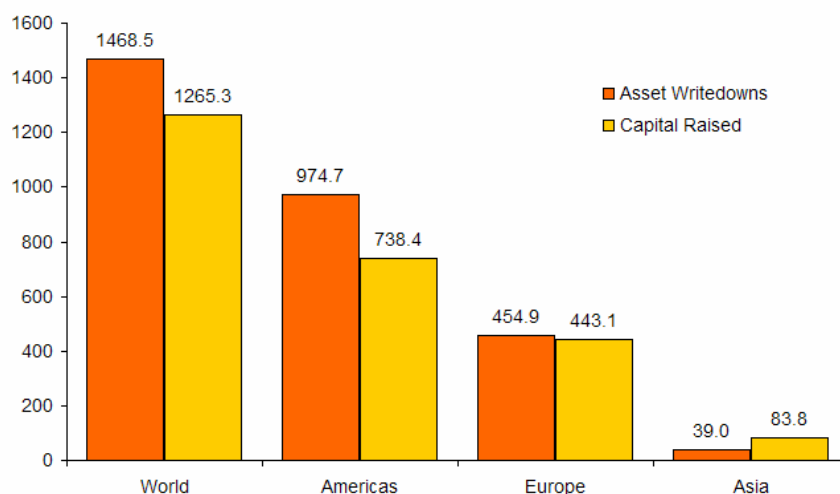
3.1 Banking and Financial Systems

The direct impact of the global crisis on Asian financial systems has been minimal (ADB 2008, 2009). Limited direct exposure to mortgage-related assets in the United States (US) shielded Asian banking systems from massive losses (Figure 1). Of the total USD1.5 trillion in writedowns and credit losses reported worldwide since July 2007, only USD39.0 billion, or about 2.7%, comes from Asian financial institutions—the bulk of which is concentrated in Japan and, to a lesser extent, the People’s Republic of China (PRC). Along with Asian banks’ continued ability to raise fresh capital, this allowed the region’s banking systems to remain generally well-capitalized and liquid.

Across the region, banks play a dominant role in financial intermediation (Figure 2). The relative soundness of the region’s banking systems has helped the region’s financial systems to continue financing real economic activity. Banks across the region entered this period of crisis in relatively good shape, owing in part to improved risk management practices. Banks generally hold comfortable credit and liquidity cushions, with the ratio of nonperforming loans to total loans having decreased sharply since the 1997/98 Asian financial crisis (Table 1). Loan-to-deposit ratios have come down across the region as well, with the exception of India, Indonesia, and the Republic of Korea (Korea). The post-1997/98 crisis reforms also reflected the structural weaknesses embedded in the perilous combination of a highly leveraged corporate sector and weak bank oversight. The region’s corporate sector now appears to be in good shape with rising profitability and declining gearing ratios (Table 2). Despite the global run-up in housing prices prior

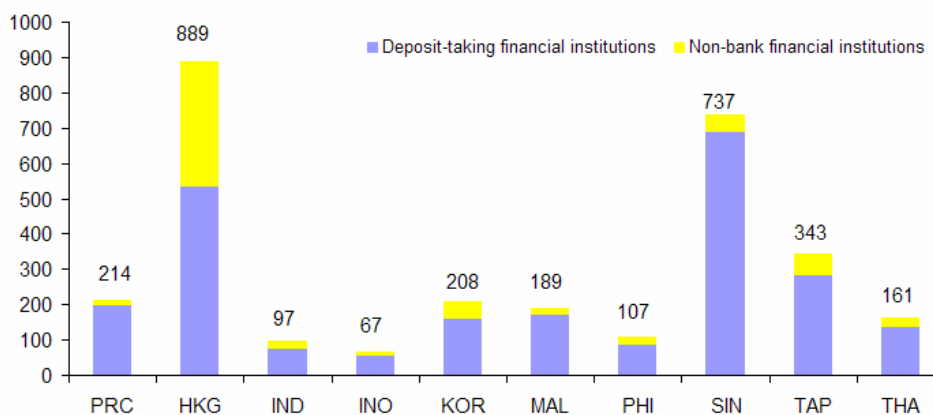
to the 2008 crisis, the region's households also appear to hold relatively healthy financial positions as well (Table 3). With the exception of Hong Kong, China and Taipei,China, household debt and mortgages in emerging Asian economies remain low as a percentage of gross domestic product (GDP) compared with Europe and, in particular, the US. While these indicators show the region's banks are sound overall, pockets of weakness remain with new challenges emerging.

Figure 1: Write downs and Capital Raised by Major Banks since 3Q2007 (USD billion, as of 7 July 2009)



Source: Bloomberg.

Figure 2: Importance of Banks Relative to the Non-Bank Financial Sector¹ (Total assets in % of GDP, period average)



¹Average value for People's Rep. of China (PRC) for 2002-2007; Hong Kong, China (HKG) for 2000-2007; India (IND) for March 2000 to March 2008; Indonesia (INO) for 2001-2007; Korea, Rep. of (KOR) for 2000-2008; Malaysia (MAL) for 2000-2007; Philippines (PHI) for 2000-2008; Singapore (SIN) for 2000-2008; Taipei,China (TAP) for 2000-2008; and Thailand (THA) for 2000-2008.

Sources: OREI staff calculations using data from national sources; CEIC; and *World Economic Outlook Database* (April 2009), International Monetary Fund.

Table 1: Banking Sector Indicators (%)

	Nonperforming Loans to Total Loans ¹		Bank Regulatory Capital to Risk-Weighted Assets ²		Bank Provisions to Nonperforming Loans ³		Private Sector Loans to Deposit ⁴	
	2000	2008	2000	2008	2000	2008	2000	2008
China, People's Rep. of	22.4	2.5	13.5	8.2	4.7	115.3	95.2	69.6
Hong Kong, China	5.9	1.2	17.8	14.7	—	—	66.7	47.3
India	12.8	2.3	11.1	13.0	—	52.6	63.0	75.3
Indonesia	20.1	3.2	12.5	16.8	36.1	98.5	39.2	80.1
Korea, Republic of	6.6	1.2	10.5	12.7	81.8	155.4	111.5	134.1
Malaysia	9.7	2.2	12.5	12.2	57.2	88.9	108.8	92.8
Philippines	15.1	3.5	16.2	15.7	43.7	86.0	82.0	78.3
Singapore	3.4	1.4	19.6	14.3	87.2	119.9	99.7	85.3
Taipei,China	5.3	1.5	10.8	10.8	24.1	76.6	77.5	73.1
Thailand	17.7	5.3	11.9	14.1	47.2	97.9	102.3	97.7
Average ⁵	11.9	2.4	13.6	13.3	47.7	99.0	84.6	83.4
Median	11.3	2.3	12.5	13.6	45.5	97.9	88.6	79.2
eurozone ¹	—	1.5	—	7.9	—	—	135.0	138.5
Japan	5.3	1.5	11.7	12.3	35.5	24.9	58.5	73.9
United States	1.1	2.3	12.4	12.5	146.4	84.7	110.6	109.2

— = not available.

¹ Nonperforming loan ratios for commercial banks, except for eurozone and Taipei,China for banking system; Japan for major banks; and United States for all FDIC-insured institutions. Data for Hong Kong, China in 2008 refers to gross substandard, doubtful, and loss loans.

Data for Japan, Singapore, and the United States as of September 2008. Value for India as of March 2008; and eurozone as of end-2007.

² Risk-weighted capital adequacy ratios for commercial banks except for China, People's Rep. of (PRC), eurozone, and Taipei,China banking systems; Japan major banks; and United States all FDIC-insured institutions.

Values for the Philippines are on consolidated basis; while eurozone data includes non-IFRS reporting countries only.

Data for PRC in 2000 for state commercial banks only.

Data for Singapore as of September 2008; and for PRC and India of as of March 2008.

³ Data for Japan; Korea, Rep. of; Singapore; and United States in 2008 as of September 2008; Indonesia as of August 2008; and India as of March 2008.

Values for Indonesia are write-off reserve on earning assets to classified earning assets ratio, while those for Malaysia refer to general, specific, and interest-in-suspense provisions. Data for PRC in 2000 for state commercial banks only.

⁴ Covers loans to private sector or nonfinancial corporations, and deposits of banking institutions, other depository corporations, or deposit money banks.

Private sector loans-to-deposit data for Indonesia, Japan, Malaysia, Thailand, and United States in 2000 are end-2001 values.

⁵ Simple average.

Source: Global Financial Stability Report, and International Financial Statistics, International Monetary Fund; and national sources.

Table 2: Corporate Sector Indicators¹

	Return on Assets (%)		Sales Growth (% , y-o-y)		Interest Expense /Assets (%)		Interest Coverage Ratio		Debt–Equity Ratio	
	2000	2008	2000	2008	2000	2008	2000	2008	2000	2008
China, People's Rep. of	4.5	4.6	621.5	38.5	2.7	1.3	5.1	9.3	0.6	0.3
Hong Kong, China	11.6	7.4	9.7	24.5	1.7	1.2	9.0	11.5	0.2	0.1
India	5.7	8.5	33.0	25.7	2.9	1.8	5.2	9.0	0.5	0.5
Indonesia	6.5	6.5	0.0	35.5	5.2	1.9	3.4	9.9	1.1	0.5
Korea, Rep. of	3.0	2.0	1.3	26.9	3.9	1.3	3.4	7.6	0.8	0.6
Malaysia	4.1	4.6	10.3	22.5	2.3	1.7	4.5	6.7	0.5	0.4
Philippines	3.3	4.4	0.5	16.8	3.1	2.5	3.4	5.2	0.8	0.5
Singapore	4.4	6.7	5.8	25.3	1.1	1.0	8.1	12.7	0.0	0.2
Taipei,China	7.5	3.1	19.7	6.0	1.3	0.9	11.2	13.9	0.3	0.2
Thailand	0.8	4.7	3.0	36.2	4.8	1.6	2.3	9.3	1.9	0.6
Average ²	5.2	5.2	70.5	25.8	2.9	1.5	5.5	9.5	0.7	0.4
Median	4.4	4.6	7.8	25.5	2.8	1.5	4.8	9.3	0.6	0.4
eurozone	3.9	3.8	-1.4	-0.8	1.5	1.6	8.2	7.0	0.5	0.7
Japan	0.8	2.0	1.1	1.3	1.2	0.6	6.4	18.3	0.9	0.6
United States	5.7	4.6	7.0	10.6	2.2	1.8	6.7	7.2	0.7	0.6

y-o-y = year-on-year.

¹ Data for all listed non-financial companies.

² Simple average.

Notes:

Return on assets = (net income/total assets)*100.

Interest expense/assets = (interest expense/total assets)*100.

Interest coverage ratio = earnings before interest, taxes and depreciation (EBITDA)/interest expense.

Net income represents income after removing all operating and non-operating income and expense, reserves, income taxes, minority interest, and extraordinary items of listed non-financial companies.

Total assets represent the sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment, and other assets of listed non-financial companies.

Net sales represent gross sales and other operation revenues less discount, returns, and allowance of listed non-financial companies.

Net debt represents total debt minus cash of all listed non-financial companies.

Common equity represents common shareholders' investment in listed non-financial companies.

Source: OREI staff calculations using Datastream data.

Table 3: Household Sector Indicators

	Household Indebtedness (% of GDP) ¹		Household Mortgage Loans (% of GDP) ¹		Housing Prices Change (in %, y-o-y) ²		LTV Limit (in %) ³	DTI Limit (in %) ³	Mortgage Delinquency Ratio ⁴
	2001	2008	2001	2008	Average 2001–2007	2008	Current	Current	Latest
China, People's Rep. of	—	—	5.1	11.6	6.3	7.1	80	55	—
Hong Kong, China	61.3	52.3	49.8	38.8	3.2	17.3	60–90	45–50	0.1
India	3.1	10.5	1.2	5.5	—	—	75	—	—
Indonesia	5.6	11.6	1.2	2.5	6.9	5.5	—	—	2.3
Korea, Rep. of	24.7	37.9	13.3	23.4	6.7	4.0	40–60	40	0.7
Malaysia	43.8	48.5	24.4	26.0	3.1	4.0	—	—	5.6
Philippines	2.2	6.4	1.4	2.1	—	—	—	—	7.5
Singapore	—	50.8	28.0	34.8	2.1	13.4	90	none	0.5
Taipei, China	43.3	54.0	26.6	38.4	—	—	—	—	—
Thailand	10.8	17.9	7.1	9.6	3.1	-1.1	70–90	none	—
Average ⁵	24.3	32.2	15.8	19.3	4.5	7.2	81.7	47.5	2.8
Median	17.7	37.9	10.2	17.5	3.2	5.5	80.0	47.5	1.5
eurozone	44.4	52.7	28.6	37.6	6.4	1.7	—	—	—
Japan	19.7	22.4	15.0	19.5	-4.2	-1.2	90	25–40	—
United States	95.6	120.8	76.4	102.6	6.7	-5.7	70–95	45	7.9

— = not available.

DTI = mortgage debt to income ratio, GDP = gross domestic product, LTV = mortgage loans to value ratio, y-o-y = year-on-year.

¹ Values for Indonesia, Singapore, and Thailand refer to loans from commercial banks and financing companies; People's Republic of China (PRC) from financial institutions; Hong Kong, China from authorized institutions; India for scheduled commercial banks; Rep. of Korea from commercial and specialized banks; Malaysia from commercial and investment banks; Philippines and Taipei, China from the banking system; eurozone from monetary and financial institutions; Japan from domestic licensed banks; and United States from financial system. Data for PRC and India in 2008 refers to 2007 values.

² Values for PRC; Hong Kong, China; Indonesia; Singapore; and eurozone refer to residential property price index. Data for Korea, Rep. of; Malaysia; Thailand; and United States refer to housing price index. Data for Japan refers to urban residential land price index.

³ Limits for the United States are from Freddie Mac and Fannie Mae; Japan from Japan Housing Finance Agency; Hong Kong, China from Hong Kong Mortgage Corporation; and Thailand from Government Housing Bank. For India, LTV ratio equal to or less than 75% will have a risk weight of 50% or 75% depending on the sanctioned amount of the loan; LTV ratio above 75% will have a risk weight of 100% regardless of the sanctioned amount of the loan.

⁴ Values for Indonesia, Malaysia, Philippines and Singapore refer to nonperforming housing loans ratio. For Korea, Rep. of; Philippines and United States, housing loans are 30 days or more in arrears; Hong Kong, China; Indonesia; and Singapore 3 months or more in arrears; and Malaysia 6 months or more in arrears. Data from the banking system for most; except for Malaysia and United States for commercial banks; and Hong Kong, China for retail banks. Data for Singapore as of September 2008; Indonesia as of December 2008; Korea, Rep. of as of February 2009; and Hong Kong, China; Malaysia; Philippines and United States as of March 2009.

⁵ Simple average.

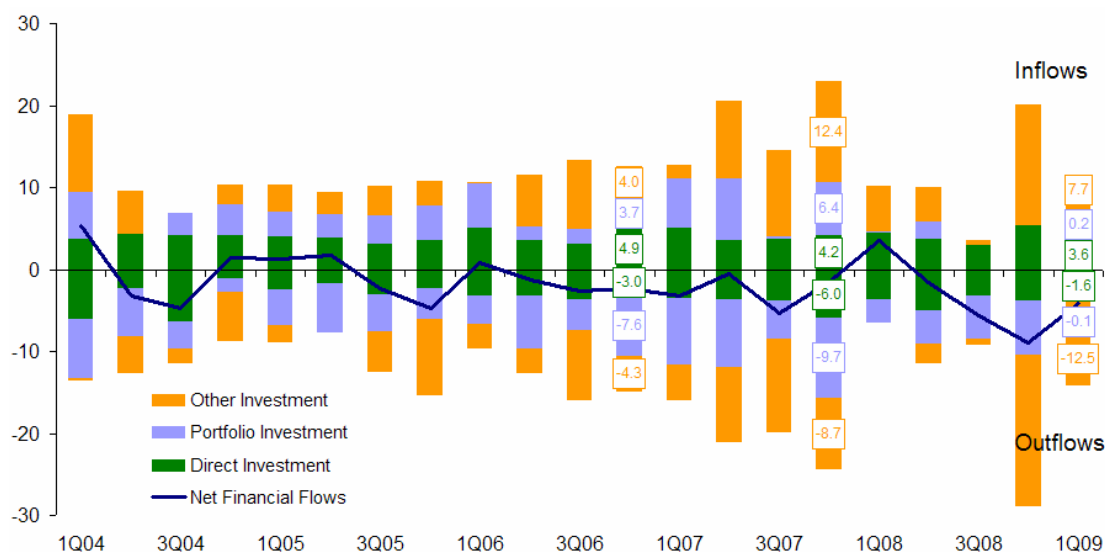
Source: National sources accessed through CEIC and various websites; Federal Reserve System; European Central Bank; and *World Economic Outlook Database* (April 2009), International Monetary Fund.

The quality of banks' risk management in the region has been strengthened substantially, but vulnerabilities could still arise from new lines of banking business and the legal and structural impediments that remain. For example, the region's banking systems now lend more to the household sector and invest more in securities. Deterioration in housing and/or financial asset markets could still make a visible dent in banks' balance sheets. Also, slower growth often reveals vulnerabilities hidden below the surface during the high-growth period. With economies in the doldrums, the region's banking systems face a tougher business environment. Corporate defaults tend to rise with economic difficulty, increasing nonperforming loans. And finally, despite the significant progress made as a result of post-1997/98 crisis reforms, legal and market infrastructure remain underdeveloped in many of the region's economies, with institutional support for risk management still wanting.

Financial contagion is also an important risk factor for the region's financial systems. The countries most affected by the crisis have been those with (i) banking systems that depend heavily on short-term foreign currency funding, (ii) high foreign participation in local equity markets, and (iii) current account deficits. Volatility in the movement of foreign portfolio investments—short-term funds placed in stocks, bonds, and banks' overseas borrowing—posed a significant risk during the crisis (Figures 3a, 3b, 3c). Exposure to short-term external funds adversely affected the performance of regional currencies amid greater uncertainty about the continuity and stability of those foreign currency funds. In the wake of the crisis, massive deleveraging by global financial institutions tightened credit conditions. As international financial conditions worsened even further, repatriation by foreign financial institutions accelerated and the investment climate turned sour. Capital outflows surged in the final quarter of 2008 due to the repricing of risk and unwinding of the “carry trade.”⁴ Despite the large build-up of foreign exchange reserves since the 1997/98 crisis, some emerging Asian economies experienced a severe foreign currency liquidity problem amid the global credit squeeze.

⁴ "Carry trade" often refers to an investment strategy where an investor earns the spread between borrowing a low-yielding asset and lending a high-yielding one. For example, an investor can borrow in a low-yielding currency and invest in a high-yielding currency.

Figure 3a: Financial Account Flows—Emerging Asia (excl. People's Rep. of China and India) (% of GDP)

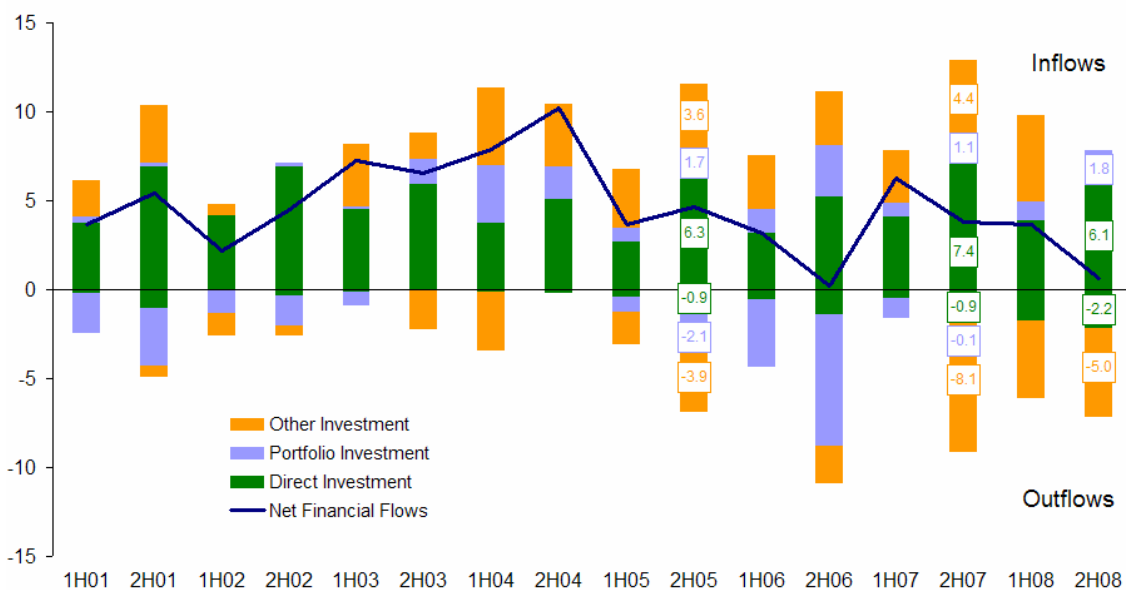


Note: Emerging Asia includes Hong Kong, China; Indonesia; Korea Rep. of; Malaysia; Philippines; Singapore; Taipei, China; and Thailand.

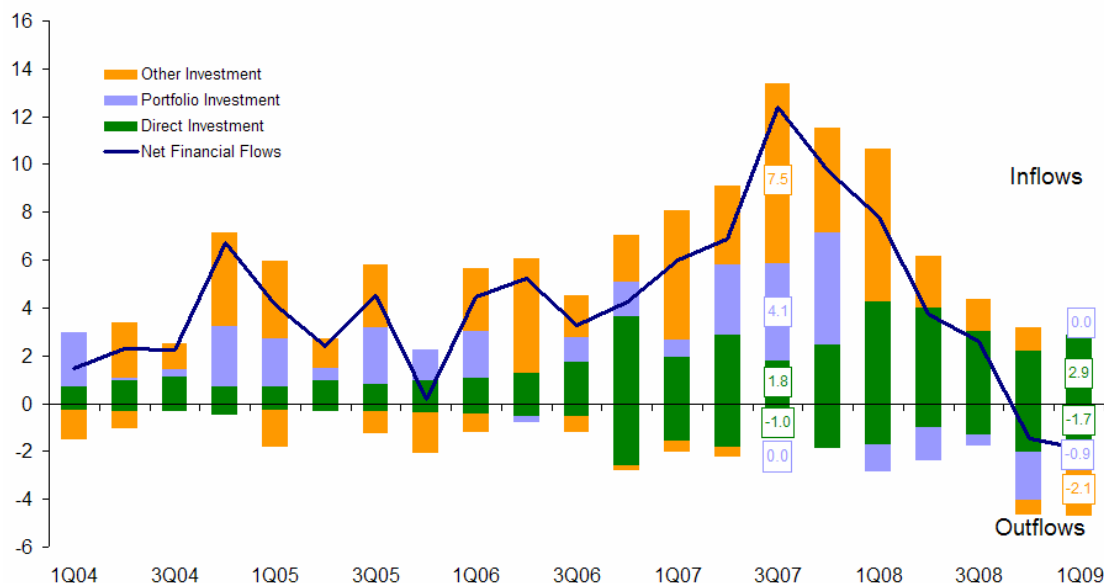
Other Investment includes financial derivatives.

Source: Data sourced from the *International Financial Statistics*, International Monetary Fund and national sources.

Figure 3b: Financial Account Flows—People's Rep. of China (% of GDP)



Source: Data sourced from the *International Financial Statistics*, International Monetary Fund and national sources.

Figure 3c: Financial Account Flows—India (% of GDP)

Source: Data sourced from the International Financial Statistics, International Monetary Fund and national sources.

Significant reform and restructuring have swept across emerging Asian financial systems since the 1997/98 crisis. The post-crisis reforms helped deepen and broaden the region's financial sectors, with significant financial asset growth, particularly in the nonbanking sector, together with a strong rise in equity and bond markets (Table 4). Capital market development has made significant progress, expanding alternative means of corporate finance, such as equities and bonds. Nevertheless, the current crisis highlights an unfinished reform agenda and underlying structural weaknesses in the region's financial systems. The region's financial markets and institutions remain relatively underdeveloped and unsophisticated. Although their unsophisticated nature initially helped the region avoid being hit directly because of narrow exposure to toxic assets, limited tools for hedging and underdeveloped market infrastructure generally weakened investors' confidence and contributed to capital flight during the crisis. Despite significant progress since the 1997/98 Asian financial crisis, the region's capital markets remain thin. Local currency bond markets are still in their infant stages in many regional economies, unable to provide reliable alternatives to bank lending. Also, in some economies, a narrow domestic investor base leaves the market susceptible to high volatility.

Table 4: Size and Composition of Financial System (% of GDP)

	Financial Sector Assets ¹							
	Deposit-taking Financial Institutions		Non-bank Financial Institutions		Market Capitalization ²		Total Bonds Outstanding	
	2000	2008	2000	2008	2000	2008	2000	2008
China, People's Rep. of	168.8	204.5	8.8	33.9	27.1	32.3	16.9	50.3
Hong Kong, China	505.5	640.7	196.4	573.8	363.9	610.9	35.8	42.9
India ³	61.6	91.6	15.4	32.8	33.3	59.7	24.6	35.3
Indonesia	63.6	48.6	8.8	13.7	18.7	21.7	31.9	13.4
Korea, Rep. of	147.9	192.7	44.1	62.6	31.2	56.3	66.5	86.2
Malaysia	154.2	190.3	16.5	20.2	124.7	89.6	74.8	73.5
Philippines	99.2	78.8	22.4	18.5	76.8	54.3	27.6	33.7
Singapore	683.8	707.9	39.1	47.1	243.7	148.0	48.0	70.8
Taipei,China	259.9	289.6	29.8	80.6	81.7	94.7	7.7	7.7
Thailand	132.3	137.7	10.7	33.0	26.0	39.2	25.3	51.6
Average ⁴	227.7	258.2	39.2	91.6	102.7	120.7	35.9	46.5
Median	151.1	191.5	19.5	33.4	55.1	58.0	29.8	46.6
eurozone	230.0	315.8	142.1	169.3	—	—	124.2	69.4
Japan	227.5	230.9	118.5	132.1	71.7	55.8	97.4	193.4
United States	78.3	104.8	283.2	306.1	117.5	64.6	41.8	55.3

¹ Financial asset data for People's Rep. of China (PRC) for 2002 and 2007; Hong Kong, China for 2000 and 2007; Indonesia for 2001 and 2007; Malaysia for 2000 and 2007; and Japan for 2001 and 2004.

² Market capitalization as percent of gross domestic product (GDP) in local currency unit.

³ Financial sector assets data for India in 2000 refers to FY ending March 2000; and for 2008 FY ending March 2008.

⁴ Simple average.

Sources:

OREI staff calculations using data from national sources, CEIC, *AsianBondsOnline*, Bloomberg, *World Economic Outlook Database* April 2009, and World Federation of Exchanges.

3.2 Responses to the Crisis

In response to the global financial turmoil, Asian authorities used various policies to support their banking systems and ensure financial stability. While these policy responses ranged across a wide spectrum, from tending to the immediate crisis effects to addressing spillovers into the real economy, this section will focus on the measures aimed at restoring financial stability. The main thrust of the policy measures in response to the crisis has been to ensure sufficient funding in credit markets, restore public confidence, and prevent systemic failures. Korea was the most aggressive in pursuing such measures, while authorities in the PRC; several Association of Southeast Asian Nations (ASEAN) members; Hong Kong, China; and Taipei,China were also active (Table 5).

Table 5: Government Responses to the Global Financial Crisis

Emerging Asia	Guarantees				Foreign Exchange Intervention & Swap Arrangements		
	Capital Support	Liquidity Support	Deposits	Other Bank Liabilities	Regulatory Forbearance	Stock Market Intervention	
China, People's Rep. of		✓			✓	✓	✓
Hong Kong, China	✓	✓	✓		✓		
India	✓	✓			✓		
Indonesia	✓		✓		✓	✓	✓
Korea, Rep. of	✓	✓		✓	✓	✓	✓
Malaysia		✓	✓		✓		✓
Philippines		✓	✓		✓		
Singapore		✓	✓		✓		
Thailand		✓	✓		✓	✓	✓
Taipei, China		✓	✓	✓	✓	✓	✓
Viet Nam					✓	✓	✓

Source: Asian Economic Monitor December 2008, ADB; *The State of Public Finances: Outlook and Medium-term Policies After the 2008 Crisis*, International Monetary Fund; OREI staff country write-ups; news releases; and national budget documents.

As the effect of the financial crisis was most acute in terms of currency volatility and external funding conditions, the most common measures taken by authorities were exchange market interventions and swap arrangements. Along with these, liquidity support and the blanket provision or extension of bank deposit insurance coverage were commonly used to ensure public confidence in banking systems. Several governments also supplemented deposit guarantees by issuing guarantees for the banks' foreign liabilities (e.g., Indonesia and Korea). Taken together, the monetary, liquidity support and deposit and other guarantees appear to have been broadly successful in maintaining confidence in the banks as no real bank runs have been recorded in the region.

Several governments also supported banks by providing funds to shore up bank capital and share prices that had been affected by the financial crisis and/or the slowdown in growth. For example, India infused capital to commercial banks to boost their capital adequacy ratios to 12%; the PRC directed a state-owned fund to acquire additional equity in banks; Hong Kong, China established a Contingent Bank Capital Facility; Korea set aside funds for the same purpose; and Malaysia announced its readiness to facilitate bank recapitalization. So far, it is not evident that the region's banks have accessed these facilities. Instead, banks from several countries have been able to raise capital from the markets. Nevertheless, while the growth outlook recently appears to have reached a tentative inflection point, the downside risks continue to be high for further deterioration in the performance of emerging Asian banks and their capital positions.

Some authorities opted for regulatory forbearance or eased prudential requirements. Indonesia suspended mark-to-market valuation for certain bank assets. Korea eased several prudential rules and delayed the adoption of Basel II requirements until 2010. The Philippines allowed banks to transfer securities from the trading to the investment book, excluded unrealized mark-to-market losses from the calculation of regulatory ratios, and gave favorable treatment in the risk weights of guaranteed bank assets.

Finally, several countries adopted measures in the securities markets to restore confidence and stem the outflow of funds. The PRC encouraged state enterprises to conduct share buybacks. Indonesia closed its stock market for a few days, temporarily banned the short selling of equity, suspended bonds auctions, encouraged state enterprise to buy back shares, forbid sales of derivatives to bank depositors, and banned the sale of structured derivative products altogether. Korea also banned short selling, allowed pension funds to invest in bonds of healthy corporations, and liberalized access of sovereign wealth funds to domestic securities markets. Malaysia increased the size of a state-owned fund that invests in domestic securities, while Taipei, China banned short sales and eased terms for margin loans.

Asian authorities' policy responses have been swift and aggressive compared with the 1997/98 financial crisis. The speed and magnitude of measures taken have helped mitigate the immediate crisis impact and avoid more serious systemic stress. Despite their short-term stabilizing effects, however, many of these measures have major drawbacks. Accommodative policies such as state guarantees and regulatory forbearance tend to create moral hazard and breed future problems. Most of these measures also entail significant costs. Direct capital injections can add significant

contingent risks to a government's fiscal position, with the possibility of large losses at the expense of taxpayers. Frequent interventions in foreign exchange and stock markets also do not seem to have much visible effect on stabilizing either currencies or equity prices—although the simple fact of intervention can have a considerable negative reputational effect in the long run.

Ad hoc national policy responses can also create conflicts of interest among the region's economies, often leading to suboptimal levels of policy support. As the crisis intensified rapidly in the latter half of 2008, emerging Asian governments raced to protect their financial systems and bolster foreign investor confidence in their markets. Without a regionally coordinated approach, competition among the region's financial systems could have easily led to inefficient or wasteful policy support. For example, the introduction of a blanket guarantee in one economy can force a competing economy to follow suit where authorities otherwise might not have done so. The result may be excessive policy support with potentially large corresponding costs.

A well-established crisis management framework reduces the risk of policy mistakes and greater costs in addressing financial crises. Monetary and liquidity support along with deposit and other guarantees have succeeded thus far in maintaining confidence in the region's banking systems (e.g., there have been no bank runs). However, few economies have systemic guidelines in responding to crises. For example, when providing capital and liquidity, few governments have specified criteria that trigger a support mechanism. And when such support mechanisms do exist, state-owned banks are usually the beneficiaries. State guarantees for depositors and credits for small- and medium-sized enterprises (SMEs) have been repeatedly expanded. In the case of Taipei, China, it took only 1 day for authorities to expand the scope of deposit guarantees to unlimited coverage. Given the significant moral hazard and financial cost that stabilization measures might entail, there should be clear conditions and criteria under which financial institutions can avail of public sector support.

3.3 Challenges to Existing Regulatory Regimes

The current crisis has demonstrated that the risk-assessment and management capabilities that have been built since the 1997/98 Asian financial crisis remain insufficient and need to be upgraded after a thorough review of new challenges. There is a fundamental weakness in using an exclusively micro-prudential approach towards supervision as it tends to overlook financial spillovers and externalities in times of stress. While better regulatory and supervisory oversight has improved the soundness of individual banks, financial interdependence has intensified as banks diversify lines of business and new products, and services blur the boundaries of banking. In addition, the complexity of structured credit products—often involving high leverage, the unbundling and repackaging of risk, and credit enhancement—is challenging the ability of banks and financial regulators to fully assess the risks involved. In sum, marked changes in the banking environment have rendered existing regulatory approaches somewhat outdated.

Innovation, deregulation, and globalization continue to impact the region's evolving banking and financial industry. As a result, the rapidly changing financial landscape requires a review of and adjustment to current regulatory and supervisory regimes. The

financial regulatory and supervisory framework changed significantly after the 1997/98 Asian financial crisis, driven by banking sector consolidation, growing financial disintermediation, and the evolving business of banking. However, the emergence of new products and services, and the increasing role of nonbank financial institutions, continue to pose challenges to the regulatory environment. Increased globalization also means global financial conditions increasingly affect the health of the region's banking and financial systems. During the current crisis, for example, the repatriation of funds by global financial institutions put significant pressure on local banks' foreign currency resources and, in some cases, threatened their financial soundness. The crisis presents an opportune time to review and make required adjustments to the reform measures implemented in the wake of the 1997/98 Asian financial crisis.

Overall, the region's banking regulatory and supervisory frameworks have become more rule-based—as opposed to the discretionary, relationship-based frameworks in place prior to 1997. Rules and norms in bank supervision across the region now appear to be broadly consistent with international standards. Market entry and ownership criteria, capital and liquidity requirements, prudential requirements, banking activities, auditing and disclosure requirements, and corporate governance all generally comply with international standards (Appendix 1). Nevertheless, there remain vast differences across emerging Asia in the institutional setup for financial regulation and supervision (Table 6). This largely reflects the varying stages of financial development and differences in the structure of financial systems. The 1997/98 Asian financial crisis played a catalytic role in reforming the region's regulatory and supervisory regimes. One of the key considerations at the time was how to integrate and streamline the regulatory structure. For example, both Korea and Taipei,China now have single, integrated financial regulators separate and independent from their respective former regulators. In Singapore and Viet Nam, the central bank is the single regulator for all financial services. In most cases, however, the central bank remains the banking regulator. Even in Korea and Taipei,China, where the single financial regulator also oversees banks, the central bank retains a specific role in bank supervision.

Table 6: Institutional Setting of Financial Regulation and Supervision in Emerging Asia

		China, People's Rep. of	Hong Kong, Rep. of	India	Indonesia	Korea, Rep. of	Malaysia	Philippines	Singapore	Taipei, China	Thailand	Viet Nam
Supervisory structure	Single supervisor					✓				✓		
		Separate from the central bank										
		Within the central bank							✓			✓
Semi-integrated supervisory agencies		Banking and securities										
		Banking and insurance					✓					
		All nonbanks										
Multiple supervisors		At least one for banks, securities, and insurers							✓		✓	
			✓	✓	✓	✓						
Central bank involvement in banking supervision	Central bank is the banking supervisor		✓	✓	✓	✓	✓	✓	✓		✓	✓
	Partial involvement	Management of the banking supervisor										
		Some specific tasks in banking supervision	✓			✓					✓	

Table 6 continued

	China, People's Rep. of	Hong Kong, China	India	Indonesia	Korea, Rep. of	Malaysia	Philippines	Singapore	Taipei, China	Thailand	Viet Nam
Sharing resources with other supervisory agencies											
Consolidated supervision of the operations of domestic and non-domestic financial groups	✓		✓	✓			✓		✓	✓	✓
Consolidated supervision applied to bank subsidiaries and affiliates of domestic financial groups, and to unincorporated branches and affiliates of non-domestic financial groups											
Consolidated supervision applied to bank subsidiaries and affiliates of domestic financial groups, but not to unincorporated branches and affiliates of non-domestic financial groups		✓			✓						

Source: *Global Survey 2008: Regulatory and Market Developments*, Institute of International Bankers; *Designing an Integrated Financial Supervision Agency*, Siregar, R. and W. James; ASEAN Economic Bulletin Vol. 23, No. 1; and OREI staff updates and inputs.

Assessments of Asia's performance in implementing international standards through end-2008, however, call for further improvement in compliance with international financial standards and codes. Information on the quality of regulation can be drawn from assessments of compliance with international financial standards and codes. For selected Asian economies that participate in the World Bank-International Monetary Fund (IMF) Financial Sector Assessment Program (FSAP), such information is available, along with other stand alone- and self-assessments. The principal standards assessed through FSAP are the Basel Core Principles (BCP), insurance core principles (ICP), and International Organization of Securities Commissions (IOSCO) principles (Tables 7a, 7b, 7c).

Table 7a: Assessment of Compliance with Basel Core Principles

Core Principles	Asia (% of Asian Economies Assessed)					Global (% of World Economies Assessed)				
	Compliant	Largely Compliant	Materially Compliant	Non-Compliant	No Answer or Not Assessed	Compliant	Largely Compliant	Materially Compliant	Non-Compliant	No Answer or Not Assessed
Objectives, Independence, Powers, Transparency, and Cooperation	1	10.5	5.3	5.3	—	78.9	4.3	2.2	—	81.9
Licensing and Structure	2–5	46.1	35.5	15.8	2.6	—	31.9	13.8	3.3	—
Prudential Regulations and Requirements	6–18	32.4	22.7	31.2	11.3	2.4	33.7	25.8	7.5	1.1
Methods of Ongoing Banking Supervision	19–21	33.3	26.3	24.6	8.8	7.0	29.7	23.9	5.6	4.3
Accounting and Disclosure	22	26.3	52.6	15.8	5.3	—	39.1	30.4	2.9	—
Corrective and Remedial Powers of Supervisors	23	36.8	5.3	21.1	10.5	26.3	19.6	13.8	8.0	28.3
Consolidated and Cross-Border Banking Supervision	24 to 25	36.8	34.2	13.2	7.9	7.9	29.0	14.5	4.3	12.0

Note: Asia includes Australia; Bangladesh; Cook Islands; Hong Kong, China; India; Indonesia; Japan; Korea, Republic of; Labuan (Malaysia); Macau, China; Marshall Islands; New Zealand; Palau; Philippines; American Samoa; Singapore; Sri Lanka; Thailand; and Vanuatu. Global includes 139 jurisdictions assessed.
Source: International Monetary Fund.

Table 7b: Assessment of Compliance with Insurance Core Principles

	Asia (% of Asian Economies Assessed)					Global (% of World Economies Assessed)					
	Core Principles Observed	Largely Observed	Partly Observed	Materially Non-Observed	Not Assessed or Not Applicable	Observed	Largely Observed	Partly Observed	Materially Non-Observed	Not Assessed or Not Applicable	
Organization	1	—	62.5	37.5	—	15.0	3.3	40.0	30.0	5.0	6.7
Licensing and Changes in Control	2–3	75.0	—	12.5	6.3	—	0.8	25.0	10.0	7.5	0.8
Governance and Internal Control	4–5	18.8	—	25.0	18.8	17.5	0.8	20.0	33.3	23.3	5.0
Prudential Rules	6–10	30.0	10.0	15.0	12.5	34.7	3.0	28.7	17.3	8.7	7.7
Market Conduct	11	37.5	—	25.0	—	30.0	—	20.0	35.0	8.3	6.7
Monitoring and On-Site Inspection	12–13	37.5	6.3	25.0	6.3	40.8	2.5	35.0	18.3	2.5	0.8
Sanctions	14	75.0	—	12.5	—	50.0	1.7	36.7	10.0	1.7	—
Cross Border Business Operations	15	50.0	—	25.0	—	41.7	—	15.0	11.7	—	31.7
Coordination and Cooperation	16	12.5	12.5	25.0	12.5	41.7	1.7	30.0	15.0	10.0	1.7
Confidentiality	17	75.0	—	25.0	—	71.7	—	21.7	5.0	—	1.7

Note: Asia includes Hong Kong, China; Japan; Korea, Republic of; Labuan (Malaysia); Macau, China; Philippines; Singapore; and Vanuatu. Global includes 60 jurisdictions assessed.

Source: International Monetary Fund.

Table 7c: Assessment of Compliance with IOSCO Core Principles

Core Principles	Asia (% of Asian Economies Assessed)					Global (% of World Economies Assessed)				
	Implemented	Broadly Implemented	Partially Implemented	Non-Implemented	Not Applicable or No Answer	Implemented	Broadly Implemented	Partially Implemented	Non-Implemented	Not Applicable or No Answer
Powers, Resources, Independence, and Accountability	52.0	17.1	25.3	4.0	1.6	56.4	25.5	18.2	—	—
Self-Regulatory Organizations and Supervision	48.0	5.3	22.0	4.7	20.0	63.6	4.5	31.8	—	—
Enforcement	46.2	15.1	29.8	7.1	1.8	45.5	21.2	24.2	9.1	—
Domestic and International Cooperation	47.1	10.7	29.8	10.2	2.2	45.5	15.2	15.2	21.2	3.0
Issuers and Disclosure of Information	48.4	13.3	29.3	4.0	4.9	45.5	27.3	21.2	—	6.1
Collective Investment Schemes and Operations	62.7	9.0	21.3	5.0	2.0	54.5	13.6	27.3	4.5	—
Supervision of Market Intermediaries	50.3	11.0	26.3	9.7	2.7	52.3	11.4	31.8	4.5	—
Regulatory Structure, Integrity, and Clearance and Settlement Functions	50.2	9.6	22.2	5.6	12.4	53.0	13.6	24.2	1.5	7.6

— = not available.

Note: Asia includes Australia; Bangladesh; Hong Kong, China; India; Japan; Korea, Republic of; Labuan (Malaysia); New Zealand; Philippines; Singapore; and Sri Lanka. Global includes 75 jurisdictions assessed.

Source: International Monetary Fund.

- **Assessments of the BCP for effective banking supervision reveal that compliance was generally lower in Asian jurisdictions compared with the global reference sample.**

Observance of compliance with principles on licensing and structure, methods of supervision, accounting and disclosure, and consolidated and cross-border supervision were found to be lower in Asian economies than the global average. For this particular cluster of principles, the incidences of materially compliant to non-compliant with the standards were generally higher among Asian economies. On the other hand, full compliance with BCP requirements on prudential regulations and on corrective/remedial powers were higher than the average benchmark, even though there were also more observations of non-compliance among assessed Asian economies. It is noteworthy that in Asia and elsewhere there were some difficulties in assessing compliance with BCP on the objectives, independence, and powers of the supervisor.

- **Asian jurisdictions also scored lower than the global average in the assessment of compliance with ICP.**

Serious shortcomings were found in the organization of insurance supervision in Asia compared to the global benchmark, as no Asian jurisdictions were found to either fully or largely observe this principle. Compliance with ICP principles on prudential rules, monitoring and inspection, and coordination and cooperation was generally lower in Asia, with the incidences of non-compliant to materially non-compliant much higher than average. However, as a group, Asia scored much better than the global average for licensing, market conduct, and imposing sanctions.

- **Assessment of compliance with IOSCO principles showed that Asian economies implemented these principles more consistently than the global average.**

Asia as a group was particularly strong relative to the global average in the implementation of IOSCO principles in collective investment schemes and disclosure of information by issuers. But Asia had lower scores relating to supervisory powers and independence, the role of self-regulatory entities, and the cluster of principles that included clearance and settlement functions. Otherwise, the implementation of the other principles by Asia was generally observed to be close to the global average.

3.4 Reform Measures: How to Close Regulatory Gaps

Specific reform measures are emerging in international forums to address regulatory gaps; those that caused the crisis and hampered corrective measures afterwards. Based on initiatives from the Group of Seven (G7),⁵ Group of Twenty (G20),⁶ Financial Stability

⁵ As early as August 2007, some international responses started to emerge to calm volatile financial markets, which originated from the US subprime mortgage market. The Group of Seven (G7) finance ministers who met in Washington DC in October 2007 requested the Financial Stability Forum (FSF) to prepare recommendations for increasing the resilience of financial institutions and markets. An initial

Forum (FSF),⁷ and IMF,⁸ recommendations for regulatory and supervisory reform are being developed with detailed implementation plans. The following section focuses on these measures and related issues that have strong implications for emerging Asia's financial systems.

Revamping regulatory structures

Regulatory reform should eliminate gaps and overlaps, avoid regulatory arbitrage, increase transparency, and improve coordination among relevant authorities. The crisis revealed fragmentation in current supervisory and regulatory structures. In economies without unified financial supervision, a lack of coordination among different regulatory agencies—such as information sharing—hinders effective monitoring and an understanding of the risks that are closely tied to intertwined financial institutions and market segments. Even in economies with unified supervisors, particularly those based outside the central bank, there remains the need for greater cooperation and information sharing. A new and revamped regulatory structure needs to address the gaps arising from incomplete cooperation and communication among different regulatory agencies, and identify clearly who has the final legal authority to sanction or bail out individual institutions and implement policies to safeguard financial stability. Regardless of the institutional arrangements for supervision—whether unitary, “twin-peaks,”⁹ or multiple

FSF report was tabled in April 2008, which was updated in October 2008 and again in April 2009. Initially, these recommendations did not address specific regulatory structures or expanding the scope of regulation, but rather focused on broad issues related to improving the existing international financial architecture.

- ⁶ With the crisis worsening—despite policy measures taken by advanced economies—it became clear that the G7 could not address those issues requiring more comprehensive global resolution. The Group of Twenty (G20) met in Washington DC on 14–15 November 2008 to craft more comprehensive and multilateral measures to stop the financial panic and avoid a major global recession. At the end of their Washington summit, G20 leaders endorsed common principles for reform of the international financial system and established five working groups to review and recommend how to strengthen transparency and accountability; enhance sound regulation; promote integrity in financial markets; reinforce international cooperation; and reform International Financial Institutions.
- ⁷ The Financial Stability Forum (FSF)—founded in 1999 to promote international financial stability—brings together finance ministers, central bankers, financial regulators, and international financial bodies. Following the G20 London summit in April 2009, the FSF was renamed the Financial Stability Board (FSB) with all G20 countries as members. The FSB is mandated to address vulnerabilities and to develop and implement strong regulatory, supervisory, and other policies in the interest of financial stability.
- ⁸ At the London summit, the G20 also requested the International Monetary Fund (IMF) to tackle long-term and multilateral challenges of strengthening financial regulation while helping mitigate the short term impact of the crisis. The IMF will assume a greater role in monitoring and surveillance of global financial activities and individual member countries' compliance with their policy obligations. In an effort to enhance the global regulatory and supervisory system, the IMF has recommended the adoption of more comprehensive perimeters for regulation, enhancing transparency with adequate disclosure requirements to determine the systemic importance of institutions, and strengthen its oversight.
- ⁹ "Twin peaks" is an approach in which there is separation of regulatory functions between two regulators by objective. For example, in Australia, regulatory responsibilities are split between two entities—one supervises the safety and soundness of financial institutions and systems and the other focuses on conduct-of-business regulation.

supervisors—legal authority, information sharing, and effective coordination remain critical for effective crisis management.

While there is no “one-size fits all” approach to regulatory structure, there is growing acceptance of an integrated approach to macro-prudential oversight and financial stability. The lack of a centralized approach to monitoring potential systemic risk and ensuring financial stability has been identified as a major regulatory gap in many advanced economies. Whether a country follows the approach of a single unified supervisor or several supervisors may not be as critical as having a structure with clear objectives and supervisors with the authority and legal power to regulate and take effective action, especially in resolving financial distress. Although there is sizeable literature on the issue of a single unified supervisor versus multiple supervisors,¹⁰ little evidence has been found that one regulatory structure is universally better than the others (Barth et al., 2004). Nevertheless, the blurring of activities among financial service providers, together with the emergence of financial conglomerates (financial institutions doing a variety of financial business), poses regulatory challenges in which a number of agencies have different objectives and share different regulatory responsibilities. Any new regulatory structure should be flexible enough to meet the challenges of a rapidly changing regulatory environment, while allowing for a centralized approach to macro-prudential oversight and determining systemic risk.

Lessons from the recent financial turmoil call for reconsidering the supervisory role of central banks. Central banks—in the role of “lenders of last resort” and monitors of financial stability—must have timely access to information on banking as well as developments in other financial segments. According to a recent survey by the IMF (Seelig and Novoa, 2009), almost all banking supervisors consider monitoring systemic risks and maintaining financial stability to be part of their mandates. Supervisors of other financial services, such as insurance and securities, gave little importance to these systemic aspects. Whether a central bank should also be a bank regulator is subject to debate. However, the governance arrangement of supervisory agencies is central to their effectiveness. Recent studies suggest that supervisory authorities' independence may enhance the safety and soundness of a banking system while promoting bank efficiency (Barth et al., 2009). The IMF study showed that 75% of agencies surveyed legally possessed operational independence over supervisory decisions, but only 58% had independence for regulatory activities. Currently, the majority of the region's bank supervisors are also located within central banks. Thus, the region's central banks tend to have responsibility for both banking supervision and monetary policy. Nevertheless, it is important to ensure that the supervisory arm of the central bank maintains its independence from the central bank's monetary policy division.

Broadening regulatory parameters

The crisis highlighted the need to extend supervision over a wider set of market segments and institutions, especially those deemed systemically important. Financial regulators have always faced the challenge of balancing public policy objectives with market innovation. They need to safeguard financial stability and protect the general

¹⁰ For a detailed review of existing studies, see Barth et al. (2002).

public, while not stifling market incentives to innovate and diversify risks. At the onset of the current financial crisis, many nonbank financial institutions—non-life insurance, monoline insurance, hedge funds, private equity funds, specials investment vehicles (SIVs)—were either lightly regulated or not regulated at all. However, the crisis showed that these institutions, either individually or collectively, can pose risks to financial stability or trigger contagion when they are closely connected to regulated entities and have a concentration of assets that give rise to systemic risks.

For any financial institution (whether bank or nonbank), many argue that systemic risks should be linked to operations and asset–liability structure. This leaves their legal status—for example, as banks, insurers, SIVs—a secondary concern. Yet, it remains unclear what constitutes systemic importance, how it is defined, and how it should be monitored. Indeed, standard stress testing of individual financial institutions proved inadequate in identifying those that posed systemic risk. Tests of systemic risk can be strengthened by assessing the financial institution’s position and influence in the market, as well as its size. Because of its size or market influence, a specific financial institution could be an individual entity that poses systemic risk. Determining this could be reinforced through stress tests using traditional methods, such as VaR-based models. As a next step, the model could be strengthened by including incremental risk factors of identified weaknesses. A financial entity could also pose systemic risk because it may likely trigger “herd behavior” due to its swathe or position in the market.

Recent studies (Adrian and Brunnermeier, 2008) suggest that CoVaR—the VaR of financial institutions conditional on other institutions being in distress—can be a useful device in determining the systemic risk posed by such an institution. This method can capture the risk spillovers from one institution to another. For example, the financing constraints of individual institutions could force them to unwind when the risk estimated by individual VaR rises, pushing margin and capital requirements higher. In times of market stress, forced asset sales could lead to an increase in market risk, thus feeding back into the measured risk. The co-risk measure, or CoVaR, estimates the extent to which an individual institution is exposed to such systemic risk, in addition to its own risk as measured by VaR.

Another related concern is that specific national reform proposals are likely to err on the side of over-regulation, given the highlighted role that hedge funds and over-the-counter derivatives played leading up to the crisis. The existence of strong asset management funds and the availability of various financial products are essential elements of a deep and liquid financial market. Over-regulation and discouraging financial innovation could be particularly harmful if post-crisis reforms were to deter necessary capital market development in emerging Asia, where many economies still struggle to develop their capital markets and provide adequate systemic support and market infrastructure.

Strengthening prudential requirements

There is broad agreement among financial regulators that existing capital adequacy requirements must be increased and supplemented by a forward-looking assessment of risks. There have been recommendations for bringing back a simple fixed-minimum leverage ratio for capital. This would serve as the first line of defense, not for

safeguarding the bank itself, but for depositors as represented by the deposit insurance agency, and ultimately taxpayers. If this minimum capital level were breached, it would trigger regulators to demand immediate corrective action. In addition, the minimum capital adequacy ratio (CAR) should be set higher and supplemented by additional charges or provisioning based on forward-looking assessments of emerging risks stemming from liquidity, higher leverage, or procyclicality.

Emerging Asian authorities should strengthen bank liquidity management and supervision by determining whether their banks could fall victim to problems encountered by institutions in advanced economies. A global standard on proper liquidity management is evolving rapidly. The financial crisis showed that liquidity management using the minimum CAR for liquidity and leverage risks is inadequate. Several mechanisms are being considered to supplement the minimum CAR—for example, use of an additional capital charge linked to a mismatch in the asset–liability maturity structure. New capital adequacy requirements should also take account of a leverage ratio to dampen excessive leverage. The Basel Committee on Banking Supervision (BCBS) already unveiled enhanced capital requirements for structured products and securitization.¹¹

The crisis showed that the riskiness of a bank's assets is intimately linked to a bank's funding source and its term structure. Regulators did not pay sufficient attention to the source and maturity structure funding a bank's asset expansion and growth. Excessive reliance on short-term funding during booms—particularly when interest costs and margins are low—tends to increase the fragility of the financial system. Accordingly, a capital charge on the maturity mismatch from the funding of asset–liability growth would help dampen a bank's reliance on short-term funding and procyclicality. This means that banks with medium- to long-term assets that have low market liquidity—and those that funded these assets with short-term liabilities—must hold additional capital. This additional capital charge would then force banks to internalize risks from maturity mismatches that give rise to funding liquidity risks. A multiple of CAR set as a function of the months of effective mismatch between asset maturity and funding maturity could be used for the additional capital charge for maturity mismatches. To do this, supervisors need to develop a new database, which would best be done in coordination with macro-prudential supervisors and the industry to agree on a method to match pooled assets with pooled funding, and determine the effective maturities of assets and their funding.

The capital adequacy requirement should also take into account the amount of leverage undertaken by a bank or nonbank financial institution. Setting the explicit leverage ratio may serve as an upper bound to leverage during a boom period. The amount of leverage of a bank or nonbank financial institution would need to be reviewed by taking into account links to off-balance sheet exposures and other contingent liabilities. The additional capital charge for exceeding the leverage ratio can be a multiple of CAR or derived using a function of the amount of deviation from the established ratio, which will

¹¹ Two important global standard setters are documenting new guidelines for prudential requirements. First, the Basel Committee on Banking Supervision (BCBS) published Principles for Sound Liquidity Risk Management and Supervision in June 2008. Second, the Committee of European Banking Supervisors (CEBS) published Technical Advice on Liquidity Risk Management (Second Part) in September 2008.

increase as the deviation widens. The combination of these additional capital charges should be applied to the basic CAR, as in Tier 1 capital. The more a bank engages in risky activities—as measured by asset growth, maturity mismatches, liquidity pressures, and leverage—the higher the multiple in CAR it would have to set aside.

Similarly, regulators should introduce buffers above regulatory minimums, improve the quality of assets, monitor sensitivity to market and liquidity risks, and develop international guidelines to ensure consistency in minimum prudential requirements that will incorporate countercyclical buffers. For example, regulators should pay attention to the loan-to-value (LTV) ratios. During boom periods, asset price inflation tends to encourage leveraged investment in real estates for potential capital gains, leading to a rise in LTV ratios. However, this may precipitate deterioration of bank balance sheets when the housing boom ends in a burst. In this regard, there is a case for setting a maximum LTV—for example, 90% as a prudent ratio. Regulators should then be in a position to closely monitor market developments and formulate triggers to lower the LTV ratio progressively as the housing market, or any other asset market, heats up.

Reducing procyclicality

There is growing support for counteracting the procyclicality of capital and liquidity requirements through the business cycle. Several mechanisms are being considered for creating countercyclical capital buffers and dynamic provisioning (Appendix 2). One example is the requirement for higher capital levels during normal times, which could be used to absorb losses in a downturn. A second is to consider countercyclical or through-the-cycle provisioning. It has long been argued that loan loss provisioning is often backward looking as it is mostly based on losses already incurred. With a short time horizon, the current loan loss provisioning creates delays in recognizing new risks, excessive risk-taking during boom periods, and regulatory arbitrage. In recent years, the enhanced risk sensitivity of Basel II capital requirements also exacerbated this procyclical behavior.

There is merit in considering the implementation of dynamic provisioning that helps recognize credit risks posed by the possibility of expected future losses; it can also limit excessive bank credit growth. The rationale for dynamic provisioning is that the risk of expected losses tends to rise as the economic cycle matures. Thus, the use of a metric that captures the increasing rate of credit growth also measures rising expected losses. This triggers additional provisioning on top of the specific one as a buffer in the upswing phase of credit growth and vice versa in a downswing. Additional provisioning lowers net credit and is reflected as an expense, thus affecting profitability. Since it was introduced by the Bank of Spain in 2000, this mechanism has been widely touted as a good example of a countercyclical measure. There are some complications, however, in applying the Spanish example elsewhere. The use of generic provisioning contravenes International Accounting Standards (IAS) principles, which state that provisioning must be based on incurred losses or evidence of credit impairment. This conflict did not create a problem for Banco de España, as it also sets the accounting standard. But for most other regulators, adopting dynamic provisioning would create conflict with IAS compliance. Related concerns include the possibility that this mechanism would interfere with a proper evaluation of credit risks, distort the distribution of dividends, and give rise

to deferred taxes if not deductible as an expense. There is growing support for recognizing the importance of prudential requirements that may take precedence over accounting principles and a review of IAS principles is underway.

Another more direct countercyclical mechanism would be to add a capital charge linked to a measure of excessive credit growth. Regulators would need to develop, ideally in coordination with macro-prudential supervisors and industry stakeholders, a measure of normal sustainable loan growth consistent with financial stability and the long-term growth of the economy. When a bank's loan growth exceeds the agreed growth path, it triggers an additional charge on capital. The mechanism would be dynamic if the multiple on capital rises as the trend of loan growth deviates farther away from the agreed path. As the boom continues, this would result in a larger capital buffer. Similarly, in a downturn the surcharge would be progressively lowered—below one if the situation worsened dramatically. The Central Bank of Brazil introduced such a capital charge in 2000 through a mechanism that links the deviation of credit growth relative to GDP growth.

Formalizing macro-prudential supervision

System-wide, macro-prudential supervision (MPS) must be developed to complement existing micro-prudential regulation. High leverage tends to magnify profits during booms for individual institutions, while leading to huge system-wide losses during crises. Moreover, the micro-prudential approach encourages banks to be more reluctant and conservative when lending during an economic downturn. This hurts the economy by depressing economic activity and deepening the business cycle trough. Risks also stem from interdependences between banks and lightly regulated nonbank entities through their operations, diversification of risks, and participation in innovative financial instruments. The ups and downs of the economic cycle need to be better integrated through MPS.

MPS aims to ensure financial system stability by focusing on overall market trends or turning points—factors that can signal emerging systemic risks. Strengthening macro-prudential capabilities in no way implies that micro-prudential measures are wrong or no longer needed. Rather, the global crisis clearly showed that micro-prudential supervision is insufficient on its own and would be more effective if complemented by MPS. There is as yet no clear agreement on what an MPS framework should look like and the instruments needed to operationalize MPS are not well defined. Establishing an MPS approach requires caution to ensure that the main objectives for attaining financial stability are met, while taking into account the basic cost–benefit assessment of the large information needs that MPS is likely to entail. This would include defining policy targets to monitor, developing instruments to respond to deviation from targeted trends, and addressing governance issues. It is also important to specify which supervisory or government authority will be in charge and held accountable.

An effective MPS framework requires comprehensive supervision and analysis of how a failure in any segment of a financial system—whether bank- or nonbank-related—affects the risks associated with any other segment or the system as a whole. Many national regulators now publish financial stability reports that provide an analysis of financial risks

from a system-wide perspective based on how the resilience of the system can be assessed. The introduction of dynamic provisioning and/or additional capital requirements may help address identified risks emerging from rapid loan growth in a boom cycle and the effects of deleveraging and asset sales during a downturn. At the global level, international institutions are attempting to define an effective MPS framework. The Financial Stability Board (FSB), for example, is working with the IMF to develop early warning indicators of evolving macroeconomic and financial risks. It is critical that emerging Asian economies contribute to this process by providing inputs for the development of early warning indicators specific to their national systems, while ensuring that these indicators are fully incorporated into their regulatory systems and shared among supervisors and regulators of all financial sector segments.

Improving accounting standards and credit rating systems

Mark-to-market, or fair value, accounting should continue to be the benchmark. However, in the run-up to the crisis, the combination of mark-to-market accounting and the procyclical characteristics of asset prices appears to have contributed to the delay in recognizing the risks and interdependencies that accrued during the boom period. The global financial crisis illustrated that strict adherence to mark-to-market accounting principles could exacerbate bank losses, liquidity problems, and the downward asset price spiral. To alleviate this, regulators could ask banks to pool assets together that can be matched to a pool of liabilities funding such assets. The assets would then be placed in a "hold-to-funding account," which would be linked to the maturity of the funding, rather than be subject to mark-to-market or fair market valuations. This tool would help preserve the value of bank assets during periods when market disruptions hamper appropriate asset pricing. It would also preserve systemic stability by reducing market illiquidity brought about by forced asset sales from strict adherence to mark-to-market accounting.

The crisis identified several flaws in the design and function of credit rating agencies. The complex nature of structured products led to heavy reliance on rating agencies in assessing the exposures to different layers of structured products, and in monitoring their secondary market performance. Traditionally, credit rating agencies enhance transparency, support capital market development, and encourage financial innovation. But several flaws in the design and function of rating agencies helped cause or aggravate the current crisis. Rating agencies were found lax in rating structured credit products with short historical track records, thus relying overwhelmingly on mathematical models in defining risks. This created doubts in rating accuracy and model-based valuations. Credit rating downgrades of structured products triggered the liquidity squeeze and destroyed confidence in related products and the financial entities that were exposed to these instruments. Widespread concern over conflicts of interest and the analytical independence of rating agencies derives from the agency business model—based on compensation from the credit issuers and the fact that rating agencies usually act as issuers' financial advisors. This has triggered discussions over whether credit rating agencies should be subject to formal regulatory oversight. Earlier proposals from the G20 and FSB left open the possibility of voluntary compliance by rating agencies with IOSCO standards on transparency and disclosure, governance, and management of conflicts of interest.

Enhancing corporate governance

The crisis focused attention on flawed compensation incentives for financial managers and traders that rewarded imprudent, short-term risk-taking. There is growing consensus that compensation schemes for financial managers and traders should be reviewed by supervisory authorities to ensure they do not reward excessive short-term risk-taking at the expense of longer-term value and financial stability. At the G20 meeting in London in April 2009, leaders endorsed principles on pay and compensation proposed by the FSB. Following this, the European Commission issued a communiqué and unveiled proposals that included supervisory oversight of the sustainability of compensation schemes.

Promoting better cross-border cooperation

The crisis showed that the established framework for cross-border coordination and cooperation—through, for example, memorandums of understanding or a college of supervisors—have limitations. In reforming crisis management frameworks, remedial or corrective actions need to be harmonized, particularly for large and systemically-important, cross-border financial institutions. In the early stages of the crisis, there were issues with the cross-border movement of funds and assets to support liquidity or capital requirements of either the parent entity or the subsidiary/branch. Actions to widen guarantees on deposits and selected bank liabilities and similar measures were not coordinated, which in some instances added pressure to neighboring countries' systems. Later on, there were problems with the resolution of cross-border banks and their operations.

The supervision of liquidity management of cross-border banks lacks consistency, which became an important issue as liquidity across domestic and international capital markets tightened with the onset of the crisis. Regulators need a common set of liquidity parameters. Disruptive regulatory actions—such as the ring-fencing of liquid assets in the recent crisis—should be used only as a last resort. This requires better knowledge of how cross-border banks conduct their business. Large and complex cross-border banks internally manage liquidity in very diverse ways. Host and home supervisory and regulatory authorities need to ensure that these banks hold sufficiently high-quality liquid assets.

A more effective cross-border bank resolution process needs to be established. The crisis showed that insolvency regimes need to be aligned across economies affected by cross-border bank failures. Delays and uncertainties during the height of the crisis broke potential deals and exacerbated contagion. For example, measures and processes for managing insolvent banks requiring close-out netting, managing creditor claims on collateral assets, or unwinding financial transactions are often designed for domestic operations. They fail to address cross-border banking insolvencies. A strengthened resolution framework would also help forestall unilateral actions that are tantamount to financial protectionism. There is a clear need for better information sharing and for cross-border burden sharing on costs.

There are several models addressing cross-border issues, ranging at the extremes from establishing a global supranational authority to tightly regulating cross-border activities.

Realistically, the establishment of a supranational supervisory authority would involve prolonged political and legal negotiations. A common legal and regulatory framework would be needed for financial institutions to operate and be supervised, resolved, and liquidated. Credible mechanisms for coordination, burden sharing, and crisis management must be in place. While it is difficult to imagine that a supranational supervisor could emerge anytime soon, the opposite measure—establishing rigid operational control of cross-border banks by the host regulator—would be a deep setback to the benefits of financial integration. A middle path needs to be found that incorporates elements of cross-border liquidity management, alignment of insolvency regimes, and better sharing of financial burden and information.

4. Concluding Remarks

Emerging Asia must play its part in ensuring that new financial architecture meets both the challenges of globalized finance and the region's financial development agenda. The absence of a global mechanism to supervise the increasingly globalized financial system exposed serious problems during the crisis. Reform of the global financial architecture is underway. Emerging Asia must take its place in this new architecture by actively participating at all levels of governance. In doing so, authorities in emerging Asia, both individually and collectively, need to address weaknesses in their financial systems, improving both functionality and integrity. Detailed action programs focusing on crisis prevention and improving crisis management can be coordinated regionally in line with the initiatives of the G20, FSB, and IMF. Given its financial evolution since the 1997/98 Asian financial crisis, plus reactions to the spillover from the current global turmoil, the region needs to significantly contribute to these international and regional work programs. While reinforcing efforts for effective regional cooperation, emerging Asia also needs to play a proactive role in ensuring macroeconomic and financial stability at the global level. This will require assuming greater responsibility in correcting global macroeconomic and structural imbalances.

An important distinction should be made between the basic elements of capital market development and risky financial innovation. Many economies in the region continue to face the challenge of developing capital markets to efficiently channel domestic savings into productive investment. For emerging Asia, where banks remain the main channel for financial intermediation, building a strong banking system remains paramount. However, authorities must also foster a broader range of markets—including corporate bond markets, securitization, and derivatives—to enhance financial system resilience. Much of the region still lacks essential financial services—authorities need to encourage greater public access to banking; provide credit to promote entrepreneurship; diversify savings instruments; and develop appropriate products to manage risk. Thus, at this stage, it is important to encourage simple innovations to provide a better array of financial services and products that cater to the needs of small entrepreneurs and investors. Many economies also need to establish, upgrade, or reform the basic market infrastructure for trading and settlement, all of which would help promote more efficient financial transactions.

The key challenge for the region's regulators is how to encourage and manage financial market development without stifling innovation. Ideal regulation leaves space for innovation. Yet, unfettered innovation can generate risks of its own. The effects of past crises suggest that caution is needed. However, translating caution into a regulatory straitjacket stifles innovation, which has its own costs. Striking the right balance is the challenge, and it is not an easy one. Crises highlight the importance of adequate monitoring. Regulators should be wary of complex innovation that make the underlying risks of products or services more difficult to assess or trace—whether by bank management or the final investor. Innovative products also lack the historic data needed to apply appropriate stress testing. Regulators need to assess the impact of innovative products on the safety and soundness of financial institutions, risk management, investor protection, and financial stability in general.

Emerging Asian economies should reinforce their cooperation on enhancing financial stability by accelerating regional initiatives. National mechanisms to stem the spread of financial panic were largely inadequate, ineffective, and inefficient in the face of massive deleveraging in advanced economies, tight international liquidity, and worsening growth prospects. Some Asian economies experienced severe disruptions in their currency and asset markets due to limited access to external funding sources. Although economies with sufficiently large international reserves were able to provide liquidity support to their banks and financial systems, holding vast reserves for rainy days has its own costs. Accumulating large current account surpluses is also often blamed for having contributed to global imbalances. Swap agreements with developed and financially strong emerging economies, regional reserve pooling, and access to funding from international financial institutions offer several alternatives for the region in managing short- to medium-term debt and financial flows. Many Asian economies have already negotiated swap arrangements with both developed and emerging economies. For example, Singapore and Korea established temporary swap lines with the US Federal Reserve of up to USD30 billion, Japan arranged similar deals with Indonesia and several other Asian countries, and the PRC made arrangements with several of its Asian trading partners. In addition, the recent multi-lateralization of the ASEAN+3 Chiang Mai Initiative¹² further institutionalizes the arrangement through an agreement on the operational rules governing fund access, voting rights, and contributions.

In the medium- to long-term, national financial regulators should agree on how to harmonize and work towards convergence of regulatory approaches and prudential

¹² The decision by ASEAN+3 Finance Ministers to expedite multi-lateralization of the CMI and to enlarge commitments was an important confidence building step during the crisis. At the ASEAN+3 Finance Ministers Meeting in Madrid 2008, ministers agreed to create a multilateral currency swap deal worth about USD84 billion. The February 2009 ASEAN+3 meeting in Phuket raised this commitment from USD80 billion to USD12 billion. Subsequently in May, on the side of the ADB annual meeting in Bali, ASEAN agreed on national contributions to the pool and voting rights, along with the procedures for disbursement and repayment of funds. Also, ASEAN+3 will establish a permanent independent surveillance unit to promote objective economic monitoring and operationalize the reserve pool by the end of the year. Rules and restrictions governing the amount members can draw from the pool of foreign currency reserves would also be eased, especially given the IMF's new Short-Term Liquidity Facility that enables certain countries to borrow without conditions. Once the regional surveillance unit becomes fully operational, the amount that member countries can withdraw will be fully de-linked from IMF conditionality. These are the seeds of regional institution building, which could facilitate greater regional cooperation for financial stability.

requirements. Rapid financial globalization requires substantial improvements to the supervision of cross-border financial activities and operation of cross-border banks and financial groups. Specifically, home and host supervisors should agree on what the critical functions of the cross-border financial entities are in their respective jurisdictions. They should then agree on a broad outline of actions that could be taken to preserve these functions. General agreement on how to minimize the likely cross-border spillover effects of such actions, if any, should be discussed and formalized. Finally, emerging Asian regulators and financial supervisors must work on these issues together with developed country authorities, and regional and international institutions, to ensure financial stability.

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Appendix 1: Banking Regulatory and Supervisory Framework in Emerging Asia

	China, People's Rep. of	Hong Kong, China	India	Indonesia	Korea, Rep. of	Malaysia	Philippines	Singapore	Taipei, China	Thailand	Viet Nam	
Market entry criteria	Licensing authority	China Banking Regulatory Commission	Hong Kong Monetary Authority	Reserve Bank of India	Bank Indonesia	Financial Services Commission	Finance Minister (by recommendation of Bank Negara Malaysia)	Bangko Sentral ng Pilipinas	Monetary Authority of Singapore	Financial Supervisory Commission	Ministry of Finance (by recommendation of the Bank of Thailand)	State Bank of Viet Nam
	Minimum capital requirement for entry for domestic banks	CNY1 billion for a nationwide bank; CNY100 million for a city commercial bank; CNY50 million for a rural commercial bank	HKD300 million	INR3 billion	IDR3 trillion for domestic and subsidiary of foreign banks; new entry of foreign bank branch not allowed	KRW100 billion	MYR2 billion	PHP4.95 billion for universal bank; P2.4 billion for commercial bank	SGD1.5 billion	NTD10 billion	THB5 billion	VND3 trillion
	Required information on the source of funds for capital	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ownership criteria	Maximum percentage of capital that can be owned by a single owner	For a city commercial bank, up to 5% of the total shares	None	10%	None	10% for individuals and 20% for corporate	40%	None	25%	5% of the total amount of a commercial bank's shares sold	5%	

Appendix 1 continued

	China, People's Rep. of	Hong Kong, China	India	Indonesia	Korea, Rep. of	Malaysia	Philippines	Singapore	Taipei, China	Thailand	Viet Nam
Nonfinancial firms' ownership of banks	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed
Nonfinancial firms ownership of voting shares	Permitted	Permitted	Restricted	Permitted	Permitted	Restricted	Restricted	Permitted	Restricted	Restricted	Permitted
Risk-weighted capital adequacy ratio (%)	8%	8%	9%	8%	10%	8%	10%	10%	8%	8.5%	8%
Varying capital-asset ratio in line with market risk	No	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes
Securities	Prohibited	Unrestricted	Permitted	Prohibited	Permitted	Permitted	Unrestricted	Unrestricted	Restricted	Prohibited	Permitted
Insurance	Restricted	Unrestricted	Permitted	Prohibited	Permitted	Restricted	Permitted	Restricted	Restricted	Restricted	Permitted
Real estate	Prohibited	Unrestricted	Prohibited	Prohibited	Prohibited	Restricted	Permitted	Restricted	Restricted	Restricted	Permitted
Regulatory restrictions on bank ownership of nonfinancial firms	Prohibited	Permitted	Restricted	Prohibited	Restricted	Restricted	Permitted	Restricted	Restricted	Restricted	Permitted
Compulsory external audit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auditor's report given to supervisory agency	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auditors are	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No

Appendix 1 *continued*

	China, People's Rep. of	Hong Kong, China	India	Indonesia	Korea, Rep. of	Malaysia	Philippines	Singapore	Taipei, China	Thailand	Viet Nam
legally required to report misconduct by managers/directors to supervisory agency											
Supervisors can take legal action against external auditors for negligence	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Explicit deposit insurance scheme	None	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	None	Yes
Deposit insurance agency can take legal action against bank directors and/or officials	Not Applicable	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Not reported
Management and organization											
Supervisors can force banks to change internal organizational structure	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Liquidity requirements											
Specific guidelines for asset diversification	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No

Appendix 1 continued

	China, People's Rep. of	Hong Kong, China	India	Indonesia	Korea, Rep. of	Malaysia	Philippines	Singapore	Taipei, China	Thailand	Viet Nam
Supervisory agency can order directors and/or management to constitute provisions to cover actual and potential losses	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Not reported
Specific law addressing bank insolvency	Banking Law and Commercial Banking Law	Companies Ordinance, Bankruptcy Ordinance, Banking Ordinance, Deposit Protection Scheme Ordinance, and Clearing and Settlement Systems Ordinance	Banking Regulation Act, 1949 and Companies Act, 1956	Banking Act and Bank Indonesia regulation	Banking Act, Act on Structural Improvement of the Financial Industry	Companies Act 1965 and Banking and Financial Institutions Act 1989	R.A. 7653 Central Bank Act	Banking Act, Companies Act, and Bankruptcy Act	Company Law, Bankruptcy Law, and Banking Act	Bankruptcy Act B.E. 2483 (1940) as amended	The Law on Credit Institutions and Bankruptcy Law
Supervisory agency can supersede bank shareholder rights and declare bank insolvent	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Not reported

Source: Caprio, Gerard, Ross Eric Levine, and James R. Barth. *Bank Regulation and Supervision (2003 and 2008)*, World Bank; and OREI staff updates based on central bank/monetary authority and regulatory agency circulars.

Appendix 2: Examples of Countercyclical Regulatory Measures

The global financial crisis revealed an unintended problem with current regulations in that they actually encouraged the procyclical behavior of financial institutions, which thus aggravated the credit crunch. Recent criticism of the Basel II framework is that it reinforces the procyclicality of the financial system by increasing risk sensitivity in financial regulation. There is now growing demand for countercyclical measures using dynamic provisioning or additional capital buffers to help mitigate risks during the boom cycle and dampen the effects of deleveraging and asset sales during a downturn.

Dynamic provisioning is a countercyclical regulatory measure that mitigates risks from rapid loan growth and the sharp credit retrenchment that may follow. The Bank of Spain applies measures that require additional provisions to be set aside (or utilized) based on a formula it provides. The formula can alternatively be an approved internal bank model. The summary formula for general provisioning (*GP*) is

$$GP = \alpha \Delta Credit + \beta Credit - Specific Provisions \quad (1)$$

The formula incorporates an adjustment for collective risk assessment (α) of credit growth over a defined period, latent risks derived from historical loan loss experience (β), the stock of outstanding credit, and specific provisions for incurred losses. The formula aims to capture the rising risk of default over time, provided that the loan is appropriately priced and the default premium is correctly set.

Similarly, additional capital buffers for “excessive” credit growth provide a useful countercyclical tool. There are some simple methods for imposing countercyclical capital charges that are triggered by a definition of excessive bank asset growth. In 2000, the Central Bank of Brazil used a method that relied on a simple comparison of the growth rates of bank credit and gross domestic product (*GDP*). The ratio helped determine the capital buffer needed to help mitigate potential problems during a down cycle.

In Brazil, credit tended historically to expand faster than GDP during economic upswings. In subsequent downturns, the loan loss provisions of Brazilian banks could not support normal operations, leading to stagnation in credit growth and creating a drag on economic recovery. The introduction of an additional capital charge as a function of credit growth in excess of GDP growth to serve as a buffer in the upswing mitigated the negative effects from the downturn that followed.

The increased capital adequacy ratio (CAR) is calculated as a function of the excess growth in credit over GDP growth over a specified observation period. The larger the excess, the higher the additional capital charge levied. The additional capital charge (*ACC*) is determined by

$$ACC = \alpha (\Delta Credit - \Delta GDP) \quad (2)$$

such that α would rise as the positive deviation of $(\Delta Credit - \Delta GDP)$ grows. During a downturn, $(\Delta Credit - \Delta GDP)$ could become negative and α could drop below unity.

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Beyond the Crisis: Financial Regulatory Reform in Emerging Asia

Chee Sung Lee and Cyn-Young Park suggest reform measures to address the gaps and weaknesses in emerging Asia's financial regulatory and supervisory systems, on the basis of lessons drawn from the global crisis. They argue that Asian authorities need to be prepared for the rapidly changing regulatory environment and proactive in strengthening their national regulatory and supervisory frameworks, in line with higher regulatory standards emanating from global reforms.

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