



## Reserve Management in Asia: Changing Contours and Challenges

### Background

Reserve management assumed centre stage in policymaking in Asia after the massive collateral damage caused during the 1997-98 East Asian financial crisis spreading all over the region. In addition to the after-crisis retreat to policy conservatism, the renewed activism on promoting regional self-help mechanisms and reducing reliance on IMF for crisis management have gained momentum in the policy circles (Sussangkarn, 2010; Kawai, 2010). Moreover, the present global economic crisis has paved the way for an assessment of the crisis resolution mechanisms that are already in practice (or under consideration). Among the feasible options that emerged out of this crisis-inspired academic and policy discourse, the idea of mobilising surplus reserves in the region and expanding swap lines as alternatives to reserve use by affected economies in events of liquidity shortage gained priority in the regional cooperation agenda. In that direction, the Chiang Mai Initiative Multilateralisation (CMIM) and Asian Bond Market Initiative (ABMI) deserve due attention.<sup>1</sup>

Is this current policy dialogue on regional cooperation different from the post-1997 developments? Unlike the financial crises of the 1990s, the present global economic recession exposed vulnerability of the mature financial systems in the west and questioned the relevance of the existing global financial superstructure. In the changing global scenario, there is a need to shift the thrust from identifying the new areas of cooperation to consolidating the regional efforts already in place. The region is yet to attain critical mass on many fronts of financial cooperation, particularly in the areas of bond market development, exchange rate policy cooperation and the very usefulness of the Chiang Mai Initiative (Zhang, 2011). While the process of regional cooperation may follow a gradualist approach in the near future, there is hardly any doubt about the importance of establishing credible, timely and effective crisis monitoring and prevention mechanisms in the Asian region.

The pattern of reserve accumulation over the past decade and a half has been highly skewed in favour of emerging and developing economies (EDEs); particularly, emerging Asia holds a disproportionately higher share of global reserves compared to other regions of the world. The East Asia and Pacific (EAP) region accounted for 53.3 per cent of global reserves in 2010. Apparently, reserve accumulation in the region was vigorously pursued in the post-1997 era. Total reserve holdings in the region jumped from 38.2 per cent in 1997 to 47.8 per cent in 2000, and the rising trend was maintained in the subsequent years. Conversely, this resulted in a drastic drop in reserve levels of the OECD and the EU countries. For instance, the share of OECD fell sharply from 57.4 per cent in 2000 to 34.6 per cent in 2010. For the EU, the decline was even steeper, from 15.1 per cent in 2000 to 6.6 per cent in 2010. Whether it is the lessons from the past crises or a well-conceived strategy, reserve levels went on increasing for most economies in Asia in the 2000s. Unlike other countries, the pace of reserve growth in China characterises a distinct regime in the world. From merely 7.5 per cent in 1997 the Chinese reserve kit doubled by 2004, and reached 27 per cent of global reserves in 2010.

Among many competing explanations for this accumulation spree, the self-insurance (precautionary) motive seems to have dictated external sector policies in the post-crisis era in Asia (Aizenman and Lee, 2005). With rising trade and financial integration, the EDEs witnessed a radical change in the motive behind reserve accumulation. In the 1980s and early 1990s, it was against current account shocks whereas capital account shocks remained at the heart of reserve management policy in the late 1990s and 2000s. In recent years, particularly after 2005, the concern for global imbalances has emerged as a dominant factor in explaining reserve flows. Surprisingly, countries having higher reserves as war chest against future crises often hesitate to use those for the fear of rapid

*RIS Policy Briefs* are prepared to communicate results of RIS research on specific policy issues to the policy makers.

This *Policy Brief* has been prepared by Dr. Priyadarshi Dash, Research Associate, RIS.

<sup>1</sup> CMI, consisting of an expanded ASEAN Swap Arrangement (ASA) involving all ASEAN members, bilateral swap agreements (BSAs) and repurchase facilities, was designed to address short-term liquidity problems and supplement existing international financial arrangements in the event of a crisis (Aizenman, Jinjarak and Park, 2011). CMI and ABMI were part of the broad agreement reached at the Meeting of the Asian Finance and Central Bank Deputies in Manila, Philippines during November 18-19, 1997 (the Manila Framework) on developing cooperative financing arrangement which would supplement the IMF resources.

<sup>2</sup> The current *de facto* global reserve regime is partly driven by national policies (export-led growth) and market innovations. Earlier phases of rapid reserve accumulation in the end-1960s and end-1970s have often led to monetary or financial debacles. The severity of balance-of-payments problems in European emerging markets may compel them to seek IMF assistance and opt for a 'never again' approach towards accumulating reserves, thereby replicating the reaction of the Asian countries after the crisis of the late 1990s. As estimated, the precautionary reserves in emerging economies could turn out to be in excess of US\$ 1,200 billion in 2014 (ADB, 2010). Non-availability of borrowing through swap lines by emerging markets from the US Fed during the financial crisis of 2007-09 exposed them to drastic adjustments (ratio of reserve loss-to-exchange rate depreciation: 0.73) and forced them to opt for precautionary holding of reserves (Aizenman and Hutchison, 2010).

drawdown and consequent downgrading of country credibility (Truman, 2011). In view of perverse distribution of global current account, the reserve management policies in these reserve-rich economies would have serious implications on the economic performance of other countries.

### Conflict of Interest: Self-Insurance vs. Welfare Loss

As highlighted above, repeated occurrences of financial crises over the past two decades seem to have driven countries to pursue a conscious strategy of reserve accumulation in the EDEs. This pattern in global reserve flows signifies an increasing concern for self-insurance and growing tolerance for welfare loss in terms of lost output.<sup>2</sup> Welfare loss in that sense amounts to a measure of foregone output which could have been realised otherwise by investing those surplus reserves parked with the central banks in productive activities. Following the conservative view, a minimum threshold level of reserves ensures welfare gains from the stability perspective. Another dimension in defence of the precautionary view is the inherent flaws associated with the IMF financial support. IMF typically follows a "one-size fits all" approach for the ailing economies and presumes a predefined state of macroeconomic discipline for availing crisis financing. That approach with all its academic merits limits flexibility on the part of the recipient countries in implementing the bail-out package. The Korean experience during the current financial crisis provides rationale for that policy stand by the EDEs. Korea preferred to opt for swap lines instead of approaching the IMF for meeting liquidity shortage. On the other extreme, reserve accumulation beyond a threshold entails welfare

loss manifested in output contraction especially in the countries with unemployed (or underutilised) resources. Further, in a regional context, this competitive accumulation motive weakens the stability property and leads to potential conflict of interests by promoting beggar-thy-neighbour policies.

By following the criteria of three months import cover, most of the leading economies in Asia had comfortable amount of reserves in the pre-crisis year 2006. Although it fell marginally in the crisis years 2007 and 2008, the reserve levels strengthened dramatically in 2009 possibly due to higher capital inflows pushed to the region in view of subdued economic activity in the United States and the EU region. An alternative way to judge reserve adequacy is from the angle of external vulnerability. The ratio of short-term debt to total reserves is the widely used indicator of external solvency. As per the 2009 data, this ratio shows a very high risk of external exposure for economies such as Indonesia (36.4 per cent), Sri Lanka (35 per cent), Malaysia (25 per cent), Thailand (20 per cent) and India (15 per cent). Given this magnitude of debt exposure, a policy of augmenting reserve levels in these countries may not sound inconsistent with the broader framework of macroeconomic management. While finding solutions to the trade-off between stability and higher output remains a policy concern, it would be prudent to formulate a balanced approach that blends both the objectives over a medium-term horizon. An alternative path to accommodate the stability concern with high growth target is to bridge the supply bottlenecks by investing a fraction of reserve stock in building infrastructure and social

**Table 1: Measures of Reserve Adequacy**

Country	Import Cover (Months)						Short-term Debt (% of Total Reserves)					
	2000	2006	2007	2008	2009	2010	2000	2006	2007	2008	2009	2010
Japan	8.7	15.0	14.9	13.2	18.1	15.7	-	-	-	-	-	-
China	7.4	14.2	16.7	17.9	24.2	21.4	7.6	16.0	13.2	9.5	9.8	11.9
India	6.1	8.9	11.1	7.7	9.8	7.8	8.4	14.1	13.0	17.0	16.4	18.8
Indonesia	5.3	4.6	5.3	3.8	6.2	6.6	73.9	23.4	27.1	39.7	36.4	32.5
Malaysia	3.3	6.2	6.7	5.6	7.2	6.1	16.0	14.2	22.6	24.7	24.5	32.9
Philippines	3.5	4.2	5.6	6.0	8.7	9.5	36.5	21.8	21.0	18.7	9.1	10.1
Thailand	5.1	5.1	5.9	6.1	9.8	9.2	45.6	26.6	20.9	17.3	19.5	22.4
Korea	5.7	7.4	6.9	4.5	7.9	6.6	-	-	-	-	-	-
Singapore	5.2	4.8	4.9	4.5	6.0	5.8	-	-	-	-	-	-
Hong Kong	4.5	3.6	3.5	4.0	6.3	5.4	-	-	-	-	-	-
Pakistan	1.7	4.0	4.4	2.0	4.1	4.7	72.8	10.3	14.1	15.2	10.8	13.3
Sri Lanka	1.6	2.8	3.1	1.9	5.2	5.3	60.5	30.2	46.7	80.3	35.0	24.6

Source: World Bank (2011).

overheads.<sup>3</sup> This policy holds good in view of the high unemployment rates prevailing in most Asian economies in recent years. In normal period, this strategy is believed to create a virtuous cycle generating additional employment and income. Regional Sovereign Wealth Funds (RSWFs) may play an instrumental role in pooling reserves from the participating economies and allocate the corpus to suitable development projects in consultation with the recipient governments.

However, financing development projects through reserves results in additional purchasing power in local currency and puts upward pressure on prices. High inflation distorts resource allocation and breeds inefficiency. From the stability point of view, this approach does not improve reserve management in a country; rather it shifts opportunity costs of holding excess reserves to price instability in the economy. Although sterilisation policy could be employed to nullify inflationary pressure in the economy, it may have contractionary real economy effects by absorbing extra liquidity created in implementing the development projects and shrinking consumption. In view of these policy conflicts, we take a pragmatic view and propose a medium-run growth trajectory envisioning high growth at the cost of a moderate to high rate of inflation for developing countries characterised by a macroeconomic state of less-than full employment. As the trade-off is a continuous state evolving with the shift in global capital flows and local growth factors, the need for emphasising both dimensions of reserve management remains pivotal.

## Risk Diversification

One possible way to minimise opportunity costs associated with reserve accumulation is to diversify the country reserve investment portfolios. While the “never again”<sup>4</sup> notion continues to dominate external sector policy and tempts countries to maintain reasonably higher amount of reserves (optimum level plus a crisis premium), the risk of surplus accumulation can be compensated by prudent deployment of reserves in high-yielding assets without compromising liquidity and safety canons. At present, the US treasury securities constitute a substantial portion of the reserve investment portfolios of Asian economies. One step in this direction is to move from investing in safe assets (namely, US treasury securities) to private market assets promising better returns. Except Hong Kong, the level of investment in these asset classes has increased over the period 2000-10 in spite of a precipitous fall in long-term real interest rates on US securities with remaining maturity of 10 years and above (Table 2 and Figure 1). Euro zone government papers and debt issuance and emerging market assets appear as profitable alternative investments for the reserve managers. In fact, with continued downgrading of the US economy in the midst of protracted recession, there is a need to rethink on the much-discussed safety tag attached to the US treasury securities. Empirical analysis finds higher real return on long-term government bonds of India, Korea, Thailand, Japan and Australia than the real return on US treasury securities

<sup>3</sup> Infrastructure gap in Asia is estimated to be around US\$ 800 billion over the next decade (UNESCAP, 2011).

<sup>4</sup> This view implies that economies struggled to operate at sufficiently low reserves or experienced sudden reserve drain during crisis periods often tend to avoid similar situations in the future.

**Table 2: Investment of Reserves in U.S Treasury Securities (By End-December)**

(US\$ billion)

Country	2000	2005	2006	2007	2008	2009	2010	2011
Japan	317.7 (87.9)	670.0 (79.1)	622.9 (69.6)	581.2 (59.7)	626.0 (60.7)	765.7 (73.0)	882.3 (80.5)	1058.2
China	60.3 (35.1)	310.0 (37.3)	396.9 (36.7)	477.6 (30.9)	727.4 (37.0)	894.8 (36.5)	1160.1 (39.8)	1151.9
India	-	-	14.6 (8.2)	14.9 (5.4)	29.2 (11.3)	32.5 (11.4)	40.5 (13.5)	43.5
Korea	29.6 (30.8)	69.0 (32.8)	66.7 (27.9)	39.2 (14.9)	31.3 (15.5)	40.3 (14.9)	36.2 (12.4)	47.3
Thailand	13.8 (42.2)	16.1 (30.9)	16.9 (25.2)	27.4 (31.3)	32.4 (29.2)	33.3 (24.1)	52.0 (30.2)	51.6
Philippines	-	-	-	-	11.7 (31.2)	11.7 (26.5)	20.1 (32.2)	32.7
Malaysia	-	-	-	-	-	-	11.5 (10.8)	20.6
Singapore	27.9 (34.8)	33.0 (28.4)	31.3 (23.0)	39.8 (24.4)	40.9 (23.5)	39.2 (20.9)	72.9 (32.3)	75.2
Hong Kong	38.6 (35.9)	40.3 (32.4)	54.0 (40.5)	51.2 (33.5)	77.2 (42.3)	148.7 (58.1)	134.2 (49.9)	121.7

Source: US Treasury.

Note: Figures in parentheses denote proportion of total reserves including gold. Ratio values for 2011 are not computed due to non-availability of reserve data.

<sup>5</sup> The two agencies are conveniently selected as representative institutions for professional reserve investment.

<sup>6</sup> Abridged from CIC (2010) and KIC (2010).

(Zhang, 2011). A recent study by the Asian Development Bank (ADB) identifies the current asymmetry in global reserves distribution from the saving-investment angle in terms of the US being the sole supplier of risky assets and the reserve-rich economies as holders of safe assets. Further, the study reveals the need for diversifying the composition of reserve assets into risky assets and making better use of excess savings in the emerging markets.

In sum, the diversification of reserve investment portfolio encompasses a commercially viable realignment of risk-return profiles of various asset classes that partially dilutes the excessive preoccupation on safety view and recognises the merits of risk distribution across asset categories. Very often, the central banks collaborate with external reserve managers for identification, allocation and assessment of the performance of various assets. In this regard, the officially entrusted entities like the Sovereign Wealth Funds (SWFs) play a key role in global reserve asset allocation (IMF, 2011).

The two case studies<sup>5</sup> presented below show the investment policies and approaches followed by two professional entities in China and Korea entrusted with the responsibility of productive deployment of reserves.

### China Investment Corporation

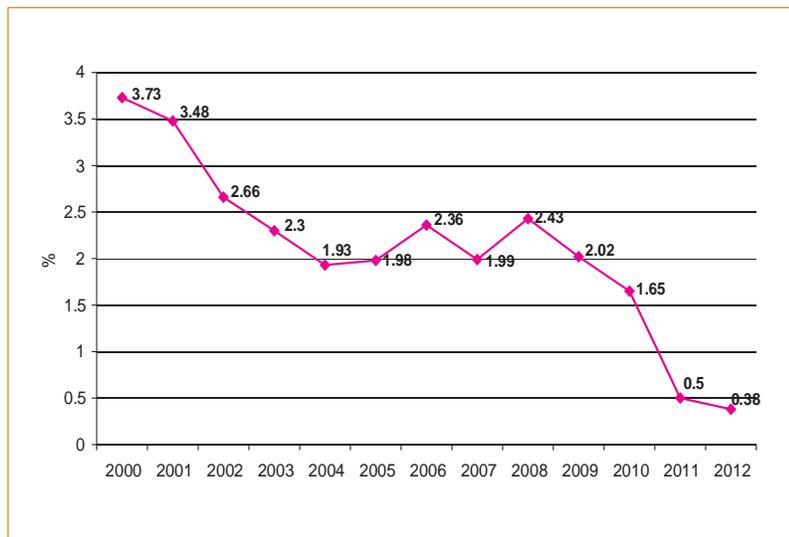
China Investment Corporation (CIC) came into existence with an initial capital of US\$ 200 billion in foreign exchange reserves purchased from the People's Bank of China with the proceeds of the government bond issued by the Ministry of Finance. The entity undertakes long-term investments on commercial basis in order to seek

long-term, sustainable and high financial returns. Beginning with traditional asset classes like the stocks and bonds, CIC expanded its scope to include commodities, private equities, real estate, hedge funds and direct concentrated investments. In 2010, the Board of Directors changed the investment policy of the company by altering the Strategic Asset Allocation (SAA) and extending investment horizon to 10 years. SAA is determined by the long-term return objectives and risk profiles and covers five asset classes: cash, diversified public equities, fixed income, absolute return investments and long-term investments (Table 3). Absolute return investments include primary hedge funds and proprietary trading portfolios. Long-term investments include direct concentrated holdings, private equity, commodities, real estate and infrastructure. In terms of sectors, the six sectors such as the financial services, energy, materials, information technology, industrials and consumer discretionary account for more than 10 per cent of the total diversified equity portfolio. The annual return on CIC's global investment portfolio in 2010 was 11.7 per cent and its cumulative annualised return was 6.4 per cent since inception which were sufficiently higher than the return on US treasury securities.<sup>6</sup>

### Korea Investment Corporation

Korea Investment Corporation (KIC) was established in July 2005 to enhance sovereign wealth and contribute to development of the financial industry by efficiently managing assets entrusted by the Government of Korea and the Bank of Korea. The investment objective of KIC is to achieve a stable and continuous return exceeding the benchmark within an appropriate level of risk. It strives to increase returns by adhering to the following investment

**Figure 1: Long-Term Real Rate (10 Years Maturity and Above)**



Source: US Treasury.

**Table 3: Nature and Types of Investments by CIC and KIC**

China Investment Corporation		Korea Investment Corporation	
Business Area	Asset Class	Category	Asset Class (% Weight)
Interest products	USD aggregate bond, Euro covered bond	Traditional assets	Public equities (43.4)
Credit products	Emerging market local currency debt, Asia fixed income active, Investment grade corporate bond index products, High yield bond		Public bonds (47.6)
Developed country equities	U.S large cap equities, Global convertible bond		Inflation-linked bonds (1.5)
Emerging country equities	Emerging Europe equity active, Latin America equity active, Asia ex Japan active, Metals and mining equity active.		Cash, other (1.7)
Commodities	Metals and energy indices swap, Gold equity fund, Active commodity index.	Alternative assets	Commodities (1.3)
Futures and options	Stock index futures, Bond futures, Commodity futures, FX forward options		Private equity (1.9)
			Hedge funds (1.4)
			Real estate (1.2)

Source: CIC (2010); KIC (2010).

principles: (i) minimising the risks from individual markets and assets through portfolio diversification, (ii) exercising proper flexibility to actively seize investment opportunities as they may occur, while pursuing sustainable increase in return under prudent and responsible asset management policies. Asset classes that typically form its investment portfolio include securities such as stocks and bonds defined under the KIC Act, foreign currencies, financial derivatives, deposits and real estates, etc (Table 3).

### Regional Reserve Pool and Extended Swap Lines

The lessons from the past two major financial crises, for example, East Asia financial crisis in 1997 and the global financial crisis during 2007-09 legitimise the need for collective efforts for crisis prevention and mitigation. Reserve pooling is considered as one of those viable policy options for financial cooperation.<sup>7</sup> Although a minimum quantum of reserves remain very much part of a country's macroeconomic strategy, a regional pool of reserves (a regional institution) obviates the need for running large current account surpluses and reduces the cost of access to reserves (Truman, 2011). In addition, it serves as a regional firewall to meet liquidity shortfalls and promotes a system of mutual cooperation beyond correcting balance of payments disequilibrium. The proposed institution could also play a catalytic role in recycling investment funds for better returns (Chung and Kawai, 2011). Recent episode of liquidity crunch in Korea after the collapse of Lehman Brothers in 2008 reminded

us of the need to assess and expedite the regional financial cooperation mechanisms on an urgent basis. Of these, multilateralisation of Chiang Mai Initiative (CMI), use of Asian Currency Unit (ACU), regular policy dialogue among the regional economies assume importance (Kawai (2010). The role of swap facilities in restoring financial stability in the recipient countries has been particularly highlighted (Allen and Moessner, 2010).

While the lending conditions remain same, the multilateralisation of CMI is believed to alleviate the degree of uncertainty associated with lending because of the "opt-out" options.<sup>8</sup> Unlike the local-currency swaps in CMI Bilateral Swap Agreements (BSAs), CMIM is a US dollar liquidity support arrangement. In addition, CMIM opens options for other countries' participation. Being a self-managed fund the disposition of those reserves would be common and subject to a single agreement rather than a series of bilateral agreements (Henning, 2009). Further, CMIM does not warrant any immediate attention of transforming it to Asian Monetary Fund(AMF).<sup>9</sup> Although the link of swap facilities to IMF conditionality is perceived as a disincentive to its wider use, the creditors of the BSAs understand the importance of linking in view of potential moral hazard problem and the absence of well-functioning regional economic surveillance and monitoring system. At this stage, this mechanism should serve as a regional instrument for external adjustment. Concrete measures need to be undertaken for strengthening the Economic Review and Policy Dialogue (ERPD) mechanism so as to enhance

<sup>7</sup> Although sounds similar to swap arrangements, the *modus operandi* of CMIM may be different. It is envisaged as a regional SWF with the mandate of financing BOP difficulties and serve as a regional coordinating body to manage productive investment of foreign currency assets accumulated in the region (beyond the regional threshold level).

<sup>8</sup> A creditor country may opt out of the swap facilities it agreed to commit at the times of such demands.

<sup>9</sup> The idea of AMF failed to garner support from the IMF, the US and China on the grounds of moral hazard and duplication in the immediate years following the 1997 crisis. The situation now is not that different to push for the AMF even though it remains a utopian goal. More concrete gains from CMIM would be feasible by strengthening regional economic surveillance and monitoring by the ERPD.

regional capacity for monitoring and surveillance and gradually replace the IMF conditionalities with regional policy parameters.

## Conclusion

In the present US dollar-dominated global reserve system, a skewed distribution of reserve currencies exacerbates global imbalances and acts as disincentive to global production. While the self-insurance view justifies a minimum level of reserve stock for economies those experienced crises and/or facing the risk of financial crises, a conscious strategy of reserve accumulation may perpetuate contractionary real economy effects. This prompts the global policymaking community to envision a holistic approach towards reserve management which encompasses three core elements: diversification of investment portfolio, establishing a collective system of reserve pooling in the form of Regional Sovereign Wealth Fund (RSWF), and expediting the proposed reforms in Chiang Mai Initiative Multilateralisation (CMIM) by raising the swap size from US\$ 120 billion to US\$ 240 billion and enhancing the role of ASEAN+3 Macroeconomic Research Office (AMRO) in regional surveillance and monitoring. RSWF could be entrusted with the responsibility of allocating resources for development projects and managing risk. Likewise, the country reserve managers could adopt the 'learning by doing' investment policy currently practised by the professional entities such as China Investment Corporation (CIC) in China, Korea Investment Corporation (KIC) in Korea, Temasek Holdings in Singapore and others. The proposed reserve management mechanism is believed to accommodate both the objectives of growth and stability in a growth-enhancing medium-term macroeconomic environment.

## References

- ADB. 2010. *The Future Global Reserve System- An Asian Perspective*. A Project Report by ADB in partnership with Earth Institute, Columbia University.
- Aizenman, Joshua and Jaewoo Lee. 2005. "International Reserves: Precautionary versus Mercantilist Views, Theory and Evidence". NBER Working Paper No. 11366, May.
- Aizenman, Joshua and Michael M. Hutchison. 2010. "Exchange Market Pressure and Absorption by International Reserves: Emerging Markets and Fear of Reserve Loss During the 2008-09 Crisis." NBER Working Paper No. 16260.
- Aizenman, Joshua., Yothin Jinjarak and Donghyun Park. 2011. "Evaluating Asian Swap Arrangements." ADBI Working Paper Series No. 297, July.
- Allen, William A and Richhild Moessner. 2010. "Central Bank Cooperation and International Liquidity in the Financial Crisis of 2008-09." BIS Working Papers No. 310, May.
- ASEAN Secretariat 2012. "Cambodian Urges ASEAN to Focus on Integration, Especially on People-Centered Issues." Press Release ([www.aseansec.org/26840.htm](http://www.aseansec.org/26840.htm))
- Chung, Duck-Koo and Masahiro Kawai (eds.) 2011. *The Global Financial Crisis, Future of the Dollar, and the Choice for India*, NEAR-ADBI.
- CIC. 2010. *Annual Report*. China Investment Corporation.
- Ghosh, Atish R., Jonathan D. Ostry and Charalambos G. Tsangarides. 2012. "Shifting Motives: Explaining the Buildup in Official Reserves in Emerging Markets since the 1980s." IMF Working Paper No. 34.
- Govt. of United States, Department of Treasury. ([www.treasury.gov](http://www.treasury.gov))
- Henning, Randall C. 2009. "The Future of the Chiang Mai Initiative: An Asian Monetary Fund?". Policy Brief No. 5, Peterson Institute for International Economics.
- IMF. 2011. *Global Financial Stability Report*, September.
- Kawai, Masahiro. 2010. "From the Chiang Mai Initiative to An Asian Monetary Fund." in *The Future Global Reserve System- An Asian Perspective*. A Project Report by ADB in partnership with Earth Institute, Columbia University.
- KIC. 2010. *Annual Report*, Korea Investment Corporation.
- Sussangkarn, Chalongsob. 2010. "The Chiang Mai Initiative Multilateralization: Origin, Development and Outlook". ADBI Working Paper Series No. 230, July.
- The Cambodia Herald.2012. "Asia Strengthens Legal Status of Regional Surveillance Unit", ([www.thecambodiaherald.com](http://www.thecambodiaherald.com)), April 9.
- Truman, Edwin M. 2011. "Asian Regional Policy Coordination". Working Paper No. 21, Peterson Institute for International Economics.
- UNESCAP. 2011. *Economic and Social Survey of Asia and the Pacific*. Bangkok.
- World Bank. 2011. World Development Indicators Online.
- Zhang, Bin. 2011. "Is It Desirable for Asian Economies to Hold More Asian Assets in their Foreign Exchange Reserves? - the People's Republic of China's Answer". ADBI Working Paper Series No. 306, August.

### — Policy research to shape the international development agenda —

RIS Reports, Discussion Papers, Policy Briefs, New Asia Monitor and RIS Diary are available at RIS Website: [www.ris.org.in](http://www.ris.org.in)



**RIS**  
Research and Information System  
for Developing Countries

Core IV-B, Fourth Floor  
India Habitat Centre  
Lodhi Road, New Delhi-110 003, India.  
Ph. 91-11-24682177-80  
Fax: 91-11-24682173-74-75  
Email: [publication@ris.org.in](mailto:publication@ris.org.in)  
Websites: <http://www.ris.org.in>