

## Asia Macro View

### External Vulnerabilities in Historical Context

- **EM Asia volatility has renewed external vulnerability concerns of the past.** We note that there are **five** significant changes to the nature of external vulnerabilities in the last 2 decades. **First**, FX regimes are more flexible; **Second**, FX reserve buffers have significantly improved since Asian Financial Crisis (AFC), though magnitude of improvement depends on “reserve adequacy” definition – relative improvement of reserve coverage vs. ST debt by remaining maturity is more “marginal” in MY, IN and ID vs. pre-AFC levels, though once we include current account (C/A) flows, MY looks better and IN & ID relative improvement look weaker; **Third**, C/A positions are now stronger for most than pre-AFC levels *except* for IN, ID and LK (last thing we need now is an oil price shock); **Fourth**, exposure to private capital flows have grown over the years as net official lending flows declined sharply; and **Fifth**, and probably the most dramatic change – reliance on external borrowings in foreign currency has declined sharply, net external debt positions have improved *dramatically* vs pre-AFC in most, reducing financial fragilities from currency mismatches during bouts of FX volatility.
- **Risks from Asia’s financial imbalances have become another source of concern.** This could make levered sectors increasingly sensitive to funding conditions; re-rating of growth prospects could significantly impact capital flows. In contrast to financial imbalances during the pre-AFC, the ‘geography’ & ‘nature’ of vulnerabilities has shifted – CN, HK and SG have seen the sharpest pick up in private sector leverage since pre-GFC period (though KR is also high); MY and TH have seen a more pronounced pick up in household leverage, MY’s leverage is compounded by rising government debt.
- **Thankfully, the countries under most liquidity stress – ID, IN – did not see significant leverage buildup in recent years** that could be a source of more widespread “distress”. Nonetheless, the overall level of private sector (mostly corporate) and government debt would suggest IN’s growth vulnerability to tighter funding looks more precarious than ID’s. The latter’s relatively low leverage/solvency concerns would argue that, at some point, “if” expectations about external liquidity/FX can be anchored (we argue BI needs to hike rates), ID’s fundamental creditworthiness would remain intact.
- **Source of private capital flow volatility could change from previous crises.** During the AFC, ST external debt via bank flows was the dominant conduit for capital outflows, followed to a much lesser extent by portfolio equity flows, but in the 2008 GFC, while bank-related outflows were still dominant (especially in KR), portfolio outflows played a relatively larger role than it did in AFC, especially via debt securities. We think portfolio flows may again play a larger proportional role in exacerbating volatility in a Fed Taper environment, suggesting persistent external liquidity pressures in ID, IN, MY and TH. FX reserve coverage taking into account risks to portfolio flows makes MY’s reserve coverage deteriorate more than the other three, though still looks better than ID and IN; TH looks better than the other three.

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For brevity, we use the following country abbreviations: CN=China, IN=India, ID=Indonesia, KR=Korea, MY=Malaysia, PH=Philippines, SG=Singapore, LK=Sri Lanka, TH=Thailand, TW=Taiwan, and VN=Vietnam

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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## External Vulnerabilities in Historical Context

### While similarities will appear, no crisis are exactly alike

We think the nature of EM crisis and vulnerabilities changes somewhat over time, and thus, detection of crisis and casualty of countries involved change.

The nature of crisis afflicting EM countries are not always exactly alike, and in fact, policy responses to the previous crisis, may end up fueling a very different kind of crisis – e.g. significant precautionary reserve build up in some Asian countries in response to the Asian Financial Crisis (AFC) contributed to a “savings glut” that exacerbated loose monetary conditions and financial fragilities in the advanced economies, leading up to the 2008 Global Financial Crisis (GFC). Countries that were often badly hit in one crisis are likely to have significantly more motivation to build up defenses and may no longer be the same countries hit by the next crisis. Thus, while financial crises have significant similarities (and regularities) throughout history, as depicted by the seminal work of Reinhart & Rogoff (2009),<sup>1</sup> the geography, transmission channels, their detection, and policy responses may shift.

The Fed Taper induced sell off in EM risk assets has raised concerns of a repeat of the 1997-98 Asian crises (or even of 2008) – we illustrate here the significant differences,

The sharp sell off in EM risk assets in the last three months, fueled by worries over the unwinding of large scale asset purchases (LSAP) by the Fed has reignited debate about whether turbulence in EM Asia is reminiscent of the 1997-98 Asian crises or whether different types of vulnerabilities have arisen since the 2008 Global Financial Crisis. We highlight striking variations across EM Asia in terms of relative vulnerabilities & key sources of risks.

### Comparing external vulnerabilities since the pre-AFC years

Five significant developments have happened over the last two decades that have changed the nature of external vulnerabilities across EM Asia:

- **First, currency regimes are more flexible**, and thus, act as shock absorber to shifting external financing conditions, helping safeguard external liquidity positions. Thus, countries with flexible exchange rate regimes do not have to hold as much precautionary reserves, *all else equal*. The only exceptions to a more flexible FX regime are HK, VN and, arguably, CN, though the next point suggests significant reserve backstop anchoring credibility.
- **Second, FX reserve buffers have improved since AFC except LK**, but not uniformly so, and depends on how one defines “reserve adequacy” — We look at 4 metrics of reserve adequacy, all of which are summarized on Figure 5:

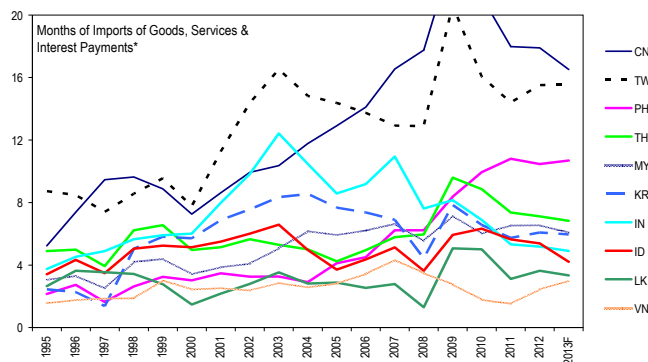
(1) FX reserve coverage has uniformly improved when looking at reserves relative to the number of **months of import of goods & services** it can cover (most strikingly in CN, TW & PH, see Figure 1), but this metric is somewhat flawed as it assumes external shocks hit export payments while other sources of capital flows are not impacted, the latter may be more applicable to lower income countries with limited access to private capital flows. This may have been a more relevant concept in some countries in EM Asia in the 1990s (e.g. India and Indonesia) when capital accounts were more closed and the role of private capital financing was much smaller, but we think this metric’s usefulness over time has been eroded as global financial integration advanced.

(2) Past EM crisis have highlighted the importance of **FX reserves over short-term debt (by remaining maturity)** as a good predictor of relative external vulnerabilities, and explained well relative FX performance during the GFC in 2008-09 (see Figure 2). We try to use a consistent measure of short-term external debt (adopting IMF’s SDDS template where data is available) that incorporate debt with original maturity of 1 year or less (should also include foreign holdings of domestic debt securities with maturity <1 year) and non-resident deposits. Using this measure,

<sup>1</sup> C. Reinhart & K. Rogoff. *This Time is Different: Eight Centuries of Financial Folly* (2009).

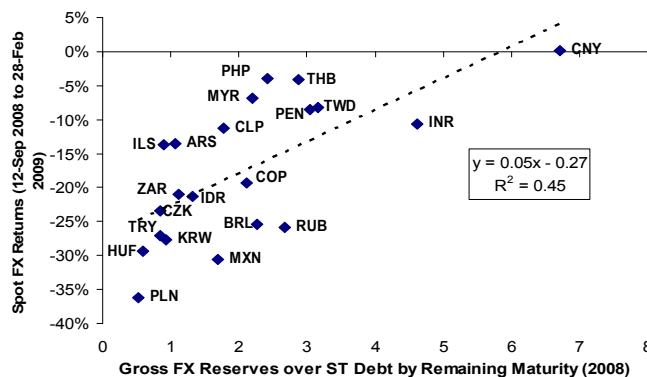
we find that all countries outside of LK look better than pre-AFC levels, though relative improvement of reserve coverage looks milder for MY, IN and ID vis-à-vis others.

Figure 1. FX Reserves over Months of Imports of Goods and Services (and Interest Payments)



Source: IIF, IMF and Citi Research

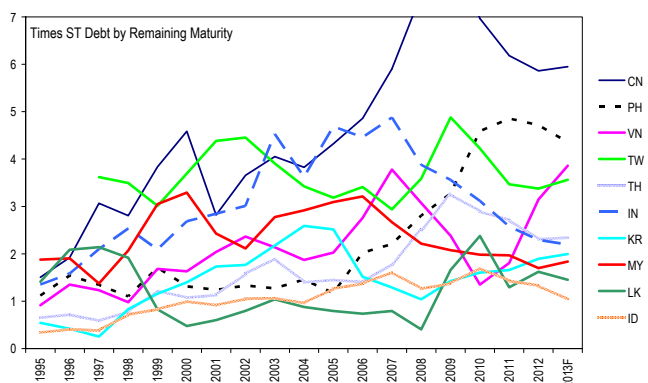
Figure 2. Reserves over ST debt by Remaining Maturity was a good predictor of relative FX performance during the post Lehman 2008



Source: Bloomberg, CEIC, Moody's, Citi Research

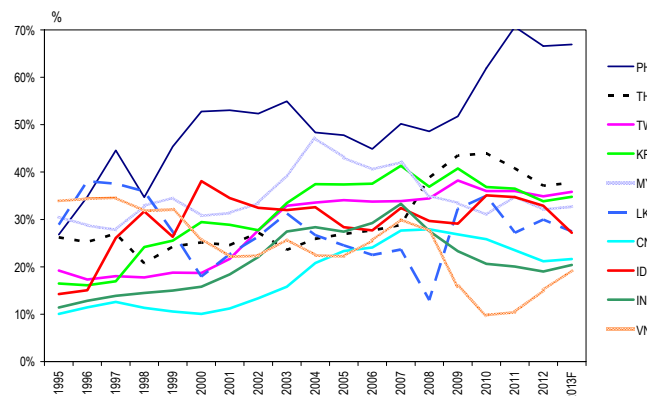
(3) The above metric (2) doesn't take into account flows in the current account (C/A), captured in **reserves over total external financing requirements** – this includes both ST external debt and projected C/A financing needs – the latter would be a negative for surplus countries.<sup>2</sup> This metric would erode the improvement of IN and ID's reserve coverage vis-à-vis the mid-90s, though on the flipside, would now make MY's relative FX reserve coverage improvement look stronger vis-à-vis pre-AFC levels, though still much weaker than pre-GFC levels.

Figure 3. FX Reserves over Short Term Debt by Remaining Maturity\*



Source: Citi Research, CEIC, Haver, Moody's, IMF, IIF; Note: \*This is defined as external debt with original maturity within a year and amortizations in the next 12 months.

Figure 4. FX Reserves, as a% of Broad Money\*



Source: IMF, CEIC, Citi Research; \*Note: For "broad money", we use IMF's "money + quasi money" for CN, IN, KR & VN, IMF's "broad money" for TH, national data for M2 in the case of ID & MY, and national data for M3 for PH.

(4) A last concept used is **FX reserves over broad money (typically M2)** – this indicator is useful to the extent that banking system is weak and confidence in domestic currency is low, and thus, broad money is reflection of potential (domestic)

<sup>2</sup> In cases where the current account surplus is very large, the reserve coverage ratio would suffer a signage problem – i.e. would turn negative, but implying significant strength.

capital flight via conversion to foreign currency during times of “crisis”.<sup>3</sup> However, IMF cites caution in using this indicator – studies have shown “perverse correlations” and may be “counter-indicator” of crisis risk – i.e. countries with stable money demand and high degree of confidence on the currency will tend to have larger money demand, and thus, lower money-based reserve coverage, all else equal.<sup>4</sup> Moreover, larger M2 relative to reserves will also be influenced by a countries’ degree of financial openness – significant capital account restrictions on residents investments, such as the case in CN, IN & VN, may disproportionately inflate the level of M2 vs. reserves. Overall, this metric would imply improvement in FX reserve coverage vis-à-vis mid-90s in all except LK & VN, but has declined significantly vs. pre-GFC in India.

Figure 5. Summing Up: Comparing Various Reserve Adequacy Metrics plus Reserve Loss during Previous Rounds of Crisis

	FX Reserves over Months of Imports of Goods, Services & Interest*			FX Reserves over ST Debt by Remaining Maturity			FX Reserves over Total External Financing Requirements (External Repayments+CAD)			FX Reserves over Broad Money (typically M2)			FX Reserve Change		
	1995-96 Average	2006-07 Average	2013F	1995-96 Average	2006-07 Average	2013F	1995-96 Average	2006-07 Average	2013F	1995-96 Average	2006-07 Average	2013F	1997	Feb 09 vs Sep 08	Apr to Jul 2013****
CN	6.3	15.3	16.5	1.7	5.4	5.9	3.8	(neg)**	8.9	11%	26%	22%	33.2%	1.5%	-1.1%
IN	4.1	10.1	4.9	1.5	4.7	2.2	1.1	3.3	1.4	12%	31%	20%	16.1%	-19.0%	-2.2%
ID	3.9	4.7	4.2	0.4	1.5	1.0	0.3	1.8	0.8	15%	30%	27%	-9.1%	-13.6%	-18.0%
KR	2.4	7.1	6.0	0.5	1.4	2.0	0.4	1.5	2.5	16%	39%	35%	-40.2%	-21.5%	0.0%
MY***	3.2	6.4	6.1	1.5	2.9	1.8	1.2	(neg)**	1.9	30%	41%	34%	-23.0%	-29.0%	-1.8%
PH	2.4	5.4	10.7	1.3	2.1	4.4	0.8	4.2	6.4	31%	48%	67%	0.7%	0.7%	-0.5%
LK	3.1	2.7	3.3	1.8	0.8	1.5	1.2	0.5	0.9	33%	23%	27%	4.7%	-60.0%	-4.4%
TW	8.6	13.3	15.5	n.a.	3.2	3.5	n.a.	5.2	5.6	18%	34%	36%	-5.2%	4.3%	1.0%
TH	4.9	5.4	6.8	0.7	1.6	2.3	0.6	2.0	2.3	26%	28%	38%	-30.4%	0.1%	-3.3%
VN	1.7	3.9	3.0	1.1	3.3	3.9	0.5	1.3	5.5	34%	28%	19%	14.4%	1.2%	n.a.

Source: Citi Research, IIF, IMF, Moody's, CEIC, Haver;

Note: \*We use the IIF data on reserves (ex gold) months of coverage of imports of goods, services & interest for all countries except LK, TW and VN wherein we use Citi numbers relative to 2012 estimates for imports of G&S; \*\*In CN and MY's case, the large CA surplus during this period implied the total external financing requirement was negative; \*\*\*We also make adjustments to MY's ST debt series by incorporating some estimate of non-resident deposits with maturity <1yr for historical data in 1995-96 to be consistent with the more recent SDDS series, while assuming foreign holdings of short-term bills prior to 2005 are negligible. \*\*\*\*We use spot reserves and net forward book for 2008-09 & Apr-Jul 2013; We assume June 2013 net forward book is unchanged for most; we use June FX reserve vs Apr in CN's & LK's case,

■ **Third, current account (C/A) positions are much stronger now for most countries than pre-Asian crisis levels except for IN, ID and LK** (see Fig 6). In the years leading to the AFC, C/A imbalances were particularly large in MY, TH, PHs and KR (and VN), and has significantly improved since. However, almost everyone outside of KR & TW has seen C/As deteriorate significantly since pre-GFC levels, though arguably, pre-GFC surpluses were excessive/ unsustainable (e.g. CN, MY), contributing to global imbalances. Nonetheless, the speed of MY and TH C/A adjustment is quite striking. Even when we adjust for the more resilient net FDI flows, the same countries – IN, ID and LK – look vulnerable from a basic balance perspective. (As an aside, the last thing all three “deficit” countries need, at this juncture, is an oil price shock amid growing Syria-related fears; ID became a net oil importer starting in 2004).

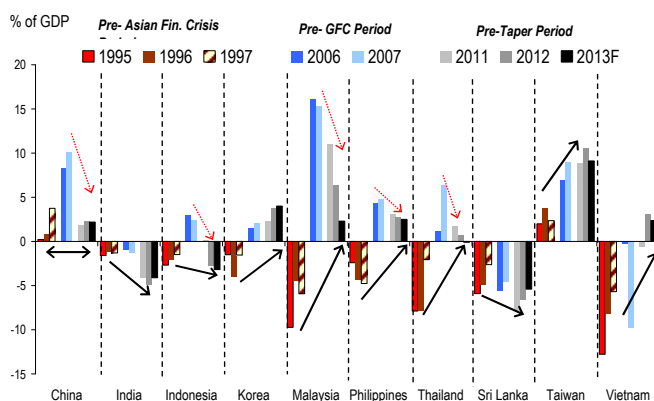
■ **Fourth, the role of official (non-commercial) capital flows in funding basic balance and C/A have declined sharply over the years** as improving fundamentals and domestic financial market developments (e.g. rapid growth in domestic bond markets in the last decade) increased countries’ ability to borrow in the capital markets – domestically and internationally – and rising incomes

<sup>3</sup> For sample work looking at M2/Reserves as explaining the Mexican and Asian Financial Crises, see Aaron Tornell. “Lending Booms & Currency Crises: An Empirical Link”, *Regional and Global Capital Flows: Macroeconomics Causes*, NBER (2001)

<sup>4</sup> For discussions, see International Monetary Fund. “Assessing Reserve Adequacy” (Feb 2011) and “Debt and Reserve Related Indicators of External Vulnerability” (Mar 2000).

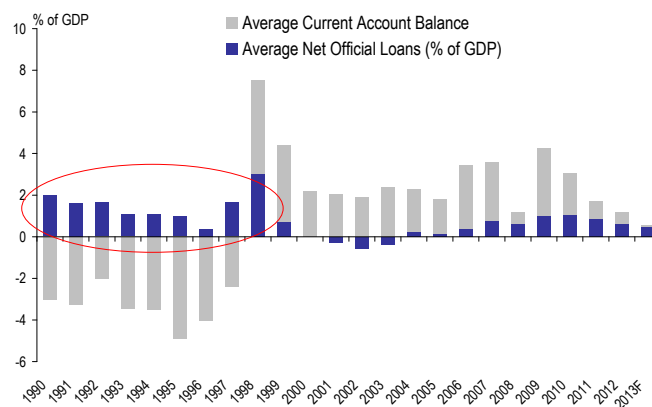
reduce access to concessional borrowings. On the one hand, heavy reliance on official flows expose countries to currency mismatch risk as loans are denominated in foreign currency (as we saw during the AFC when ID ended up having to restructure official loans via the Paris Club), but on the other hand, they are less pro-cyclical (and can be counter-cyclical during crisis periods, subject to conditionalities) to become a stabilizing force for capital accounts when private capital flows become costly. *With elections looming in both IN and ID in 2014F, it is unclear how politically willing governments will be to seek/accept official funding support, and its attached conditionalities.* (Note: LK, on the other hand, will likely be more willing to go back to an IMF program if it needed to).

**Figure 6. Current Accounts in the run up to the AFC, GFC, and recent years (% of GDP)**



Source: CEIC and Citi Research

**Figure 7. Changing Role of Net Official Flows relative to Current Account Balance (% of GDP) – Nine-Country Average\***



Source: IIF, CEIC, Citi Research

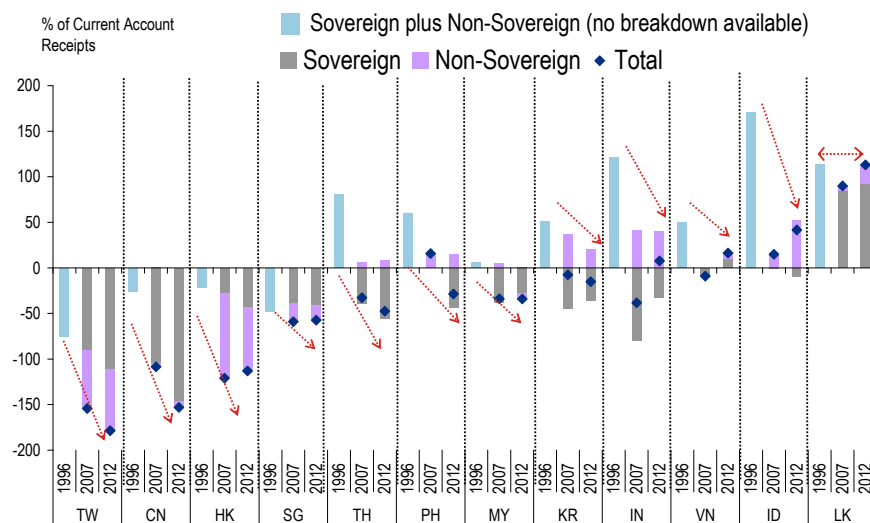
Note: \*We include CN, IN, ID, KR, MY, PH, LK, TH & VN

- **Fifth**, and probably the most significant structural change since the AFC -there is significantly less 'original sin' (i.e. foreign currency component) in external debt profiles of EM Asian countries, and thus, less vulnerability to currency mismatches during periods of sharp FX volatility.<sup>5</sup> This is partly a corollary to the fourth point as official loans are predominantly in foreign currency, on top of significant developments in the domestic bond markets that have allowed countries to increasingly tap external borrowings denominated in local currency. We had previously captured the shifting external debt dynamics and less susceptibility to balance sheet risk from FX weakness by looking at a country's net external debt (gross external debt minus gross external assets) as a share of current account receipts (to reflect ability to generate foreign currency earnings), but this measure has drawbacks as "external" debt is measured by residency of the holder of the obligation, and not by currency. Regardless, this metric shows how vastly different the net external debt position of most countries in Asia vis-à-vis AFC levels (1996) – with 8 out of the 13 countries we cover being net external creditors (only 4 were net creditors back in 1996 – TW, HK, SG, CN) – and even the deficit countries of IN & ID have improved significantly vis-à-vis the 1990s, though both cases show deterioration since pre-GFC years. Another barometer for "original sin" is to look at the share of international debt securities by country

<sup>5</sup> "Original sin" is a concept attributed to economists Barry Eichengreen & John Haussman referring to conditions in which countries cannot borrow external in their domestic currency, which ended up exacerbating financial fragilities due to currency mismatch risks when domestic currency would undergo significant depreciation pressure.

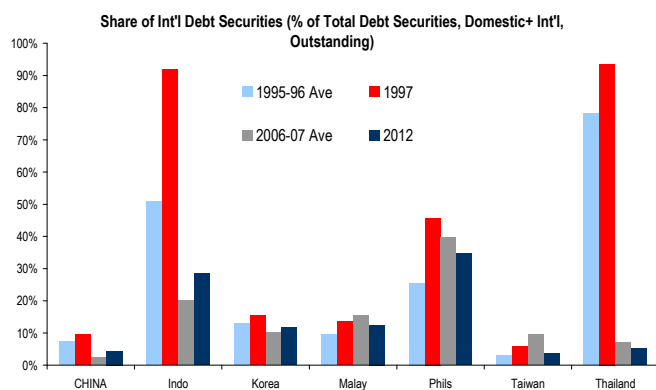
issuer vs. total debt securities issued by the country to measure reliance in borrowing in foreign currency vs. domestic currency: TH, ID and PH show remarkable improvement on this score (Figure 9). A narrow measure of “original sin” focuses on currency composition of government debt (Figure 10). We find that the FCY component of government debt has collapsed since the mid-1990s, most pronounced in TH, ID, VN & KR, and thus, the nature of FX imbalances and vulnerabilities of debt dynamics to FX depreciation is very different now than in the run-up to AFC.

Figure 8. Net External Debt (% of Current Account Receipts)



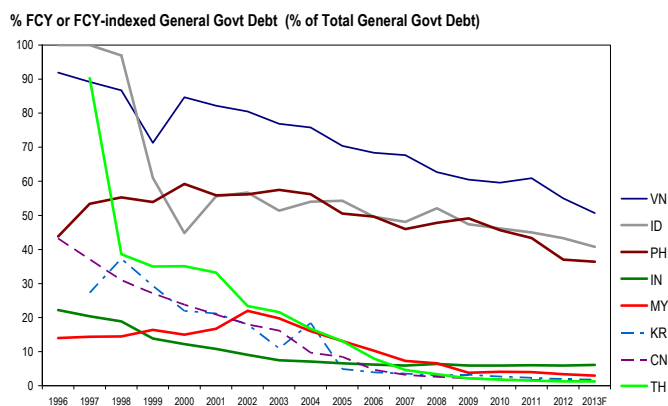
Source: Fitch Sovereign Data Comparator

Figure 9. International Debt Securities issued by Nationality of Issuer (% of Int'l and Domestic Debt Securities Issued in a country)



Source: BIS, CEIC, Citi Research

Figure 10. Foreign Currency and Foreign Currency-indexed share of General Government Debt (% of Total General Government)



Source: Moody's Statistical Handbooks, CEIC, Citi Research

Note: Moody's did not have a complete series for KR and PH; we amended using foreign debt component of KR's central govt debt; In PH, we used foreign component of govt debt but we amended by deducting the peso global bond issuances in 2010-12 which are classified as foreign bonds, but the currency exposure is domestic.



Looking at typical external vulnerability metrics may miss another source of concern in EM Asia – worries about financial imbalances from more risky leverage buildup that could make some more sensitive to shifting funding conditions as well as further re-price growth prospects that could influence capital flows.

Private sector leverage build up look most dramatic in CN, HK & SG

Beyond classic external vulnerability indicators we discuss above, we dig deeper into worries over financial imbalances/rising leverage in parts of Asia that could make some economies increasingly sensitive to funding conditions, which itself can translate to external vulnerabilities if re-assessment of growth prospects significantly impact capital flows. We had previously discussed pockets of financial vulnerabilities in EM Asia, which is both a byproduct of “easy” global funding conditions compounded by its influence on domestic policies, as well as policy responses to the slowdown in AEs that encouraged more build up of leverage – as is the case of CN’s credit-fueled post GFC stimulus.<sup>6</sup> Detecting financial vulnerabilities and unsustainable credit booms is difficult, not to mention interpreting credit trends in regional financial centers in HK and SG. We discuss both the level and speed of adjustment versus pre-GFC levels based on debt metrics summarized on Figure 11.

■ Private sector (PS) credit to GDP ratio picked up most dramatically in the last five years in CN (+52ppts), HK (+52ppts) and SG (+31ppts) – the former two likely dominated by corporate borrowings. This is followed by KR (+27ppts), though the speed of PS credit to GDP pick-up in KR was more gradual than in the run-up to AFC (the opposite is true in CN, HK & SG) and credit intermediated through KR’s banking system was flat relative to GDP.

Figure 11. Comparing Various Debt Metrics – Private Sector & General Government Debt (% of GDP)

		1996	1997	2007	2012/ 1Q13			1996	1997	2007	2012/ 1Q13
China	Private Sector Credit to GDP (BIS)	91%	99%	118%	170%	Malaysia	Private Sector Credit to GDP (BIS)	145%	166%	114%	130%
	Dom. Bank Claims on Private Sector to GDP	89%	97%	107%	138%		Dom. Bank Claims on Private Sector to GDP	133%	149%	101%	120%
	Corp Net Debt to Equity Ratio (Listed Cos)	19%	21%	13%	36%		Corp Net Debt to Equity Ratio (Listed Cos)	37%	45%	33%	30%
	Interest Coverage Ratio (Listed Cos)	8.0	5.1	15.7	7.7		Interest Coverage Ratio (Listed Cos)	6.2	4.8	6.2	7.3
	Household Debt to GDP	n.a.	n.a.	19%	34%		Household Debt to GDP	n.a.	n.a.	64%	83%
HK	General Government Debt to GDP	11%	12%	39%	45%	Philippines	General Government Debt to GDP	35%	32%	40%	53%
	Private Sector Credit to GDP (BIS)	163%	179%	183%	235%		Private Sector Credit to GDP (BIS)	n.a.	n.a.	n.a.	n.a.
	Dom. Bank Claims on Private Sector to GDP	133%	148%	138%	177%		Dom. Bank Claims on Private Sector to GDP	44%	51%	29%	33%
	Corp Net Debt to Equity Ratio (Listed Cos)	20%	15%	25%	23%		Corp Net Debt to Equity Ratio (Listed Cos)	31%	42%	17%	62%
	Interest Coverage Ratio (Listed Cos.)	7.7	8.6	8.0	11.1		Interest Coverage Ratio (Listed Cos.)	8.4	8.0	7.2	4.3
India	Household Debt to GDP	44%	51%	51%	62%	Singapore	Household Debt to GDP	n.a.	n.a.	n.a.	6%
	General Government Debt to GDP	0%	0%	1%	1%		General Government Debt to GDP*	48%	50%	45%	41%
	Private Sector Credit to GDP (BIS)	28%	30%	57%	63%		Private Sector Credit to GDP (BIS)	113%	116%	98%	130%
	Dom. Bank Claims on Private Sector to GDP	24%	26%	51%	56%		Dom. Bank Claims on Private Sector to GDP	95%	97%	87%	124%
	Corp Net Debt to Equity Ratio (Listed Cos)	80%	86%	26%	42%		Corp Net Debt to Equity Ratio (Listed Cos)	17%	15%	26%	35%
Indo	Interest Coverage Ratio (Listed Cos)	5.2	4.6	14.6	6.1	Taiwan	Interest Coverage Ratio (Listed Cos)	12.2	11.2	10.6	6.6
	Household Debt to GDP (CEIC, Haver, Qti)	n.a.	2%	10%	8%		Household Debt to GDP	66%	70%	64%	75%
	General Govt Debt to GDP (Qti)	76%	77%	76%	68%		General Government Debt to GDP*	71%	69%	87%	111%
	Private Sector Credit to GDP (BIS)	61%	75%	28%	35%		Private Sector Credit to GDP (BIS)	n.a.	n.a.	n.a.	n.a.
	Dom. Bank Claims on Private Sector to GDP	50%	55%	25%	31%	Thailand	Dom. Bank Claims on Private Sector to GDP	142%	146%	140%	154%
Korea	Corp Net Debt to Equity Ratio (Listed Cos)	69%	74%	24%	25%		Corp Net Debt to Equity Ratio (Listed Cos)	28%	36%	12%	18%
	Interest Coverage Ratio (Listed Cos.)	3.3	3.5	15.3	8.4		Interest Coverage Ratio (Listed Cos.)	9.2	5.7	13.5	10.0
	Household Debt to GDP	n.a.	n.a.	n.a.	10%		Household Debt to GDP	38%	42%	52%	48%
	General Government Debt to GDP	24%	25%	34%	24%		General Government Debt to GDP	25%	25%	33%	41%
	Private Sector Credit to GDP (BIS)	154%	170%	171%	198%		Private Sector Credit to GDP (BIS)	159%	181%	97%	120%
	Dom. Bank Claims on Private Sector to GDP	52%	58%	98%	99%		Dom. Bank Claims on Private Sector to GDP	147%	166%	92%	115%
	Corp Net Debt to Equity Ratio (Listed Cos)	152%	170%	46%	47%		Corp Net Debt to Equity Ratio (Listed Cos)	106%	159%	44%	57%
	Interest Coverage Ratio (Listed Cos)	2.2	1.4	6.8	6.0		Interest Coverage Ratio (Listed Cos)	3.4	2.8	9.9	7.8
	Household Debt to GDP [1]	n.a.	n.a.	68%	76%		Household Debt to GDP [3]	n.a.	n.a.	17%	26%
	Household Debt to GDP [2]	61%	65%	82%	90%		Household Debt to GDP [4]	n.a.	n.a.	55%	78%
	General Government Debt to GDP	8%	10%	30%	33%		General Government Debt to GDP	15%	40%	37%	44%

Source: BIS, CEIC, Haver, IMF, Moody's, Worldscope, Citi Research

Note: BIS data on private sector credit takes into account both banking and non-bank sources of financing. Korea HH Debt [1] is Credit to Households from the Financial Institutions Survey, HH Debt [2] is from Korea's Flow of Funds data of Financial Liabilities of Individuals; Thailand's HH Debt [3] is Commercial Bank Credit to Individuals and HH Debt [4] is Claims on Other Residential Sector; \*Philippines' General Government debt in 2007 and latest is reported on a consolidated basis, taking into account intra-sector NG debt holdings, but we have no similar data for 1996-97; \*\*Singapore's government debt is reported on a gross basis, net general government debt is negative.

■ Household leverage build up look more pronounced in MY (+19ppts) and TH (+23ppts) and seem to have been the bigger driver of PS re-leveraging post GFC in both countries, more so than the corporate sector whose leverage ratios look

<sup>6</sup> For a discussion of this issue, please see [Asia Macro and Strategy Outlook - On the Lookout for Excessive Leverage](#) (1 March 2013).

relatively benign – this is in sharp contrast to pre-AFC years where corporate debt ratios were much higher. In MY's case, PS leverage was compounded by a sharp increase in government debt (+13ppts), and if we include government guaranteed debt, the ratio rose +19ppts since 2007.

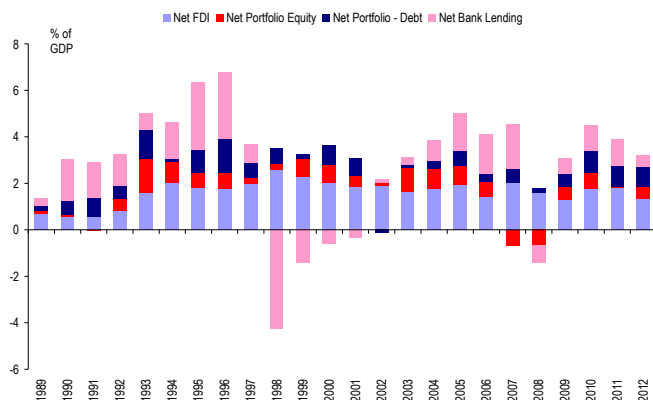
- Thankfully, the two countries under most external liquidity stress – ID and IN – are also two countries which saw only a gradual rise in private sector leverage since 2007, and thus, in aggregate, seem less symptomatic of financial vulnerabilities from excessive/mal-investment, though the overall level of private sector (mostly corporate) and government leverage ratios would suggest IN's growth vulnerability to tighter funding conditions look more precarious than in ID's.
- PH seem to have demonstrated the slowest increase in private sector re-leveraging in the last 5 years, suggesting low risk of financial imbalances, and thus, its growth outperformance looks more sustainable.

### Composition of Private Capital Flows & Potential Source of Volatility

During the AFC, short-term external debt via bank flows was the dominant driver of capital outflows, followed to a much lesser extent by portfolio equities and then debt (on a net basis). Meanwhile, though bank flows were the still dominant driver of capital outflows during the GFC, portfolio flows played a relatively larger role to amplifying the outflow, with portfolio debt outflows now being more dominant than portfolio equities outflows.

The relative contribution of different components of private capital flows to exacerbating external volatility during the AFC and GFC has changed. In both the AFC and the GFC, FDI played a much more stable source of private capital flows to EM Asia during period of stress, validating the view that FDI is driven by longer term investment decisions rather than sharp swings in sentiment. However, when we look at the annual history of net private capital flows into Asia, bank lending proved to be the dominant source of net capital outflows during the AFC, followed by outflows a significant reduction in net portfolio equity flows, and to a much lesser extent, reduction in net portfolio debt flows. However, the relative importance of various types of private capital outflows changed somewhat during the 2008 GFC. When we look at quarterly gross private capital inflow data, we find that bank flows was still the major source of pressure, similar to AFC, which is a reflection of the significant stress of global banks after the collapse of Lehman. However, this was followed by a more pronounced outflow in portfolio debt securities (more so than during AFC), followed by portfolio equity flows.

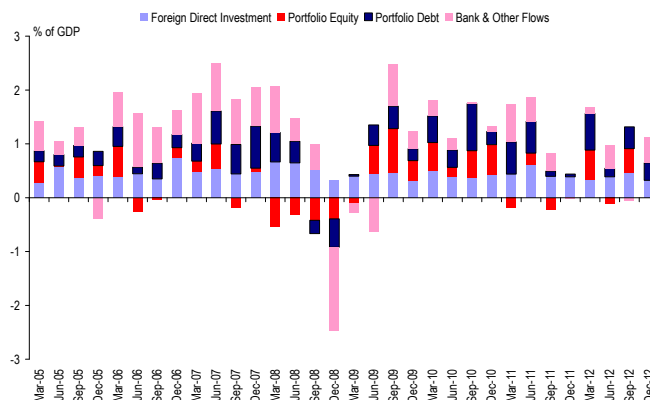
Figure 12. Composition of Net Private Capital Flows in EM Asia\* (% of Aggregate GDP), 1989-2012



Source: IIF, Citi Research

Note: \*We include CN, IN, ID, KR, MY, PH & TH

Figure 13. Select EM Asia - Quarterly data on Gross Private Capital Inflows



Source: Haver, IMF, Citi Research

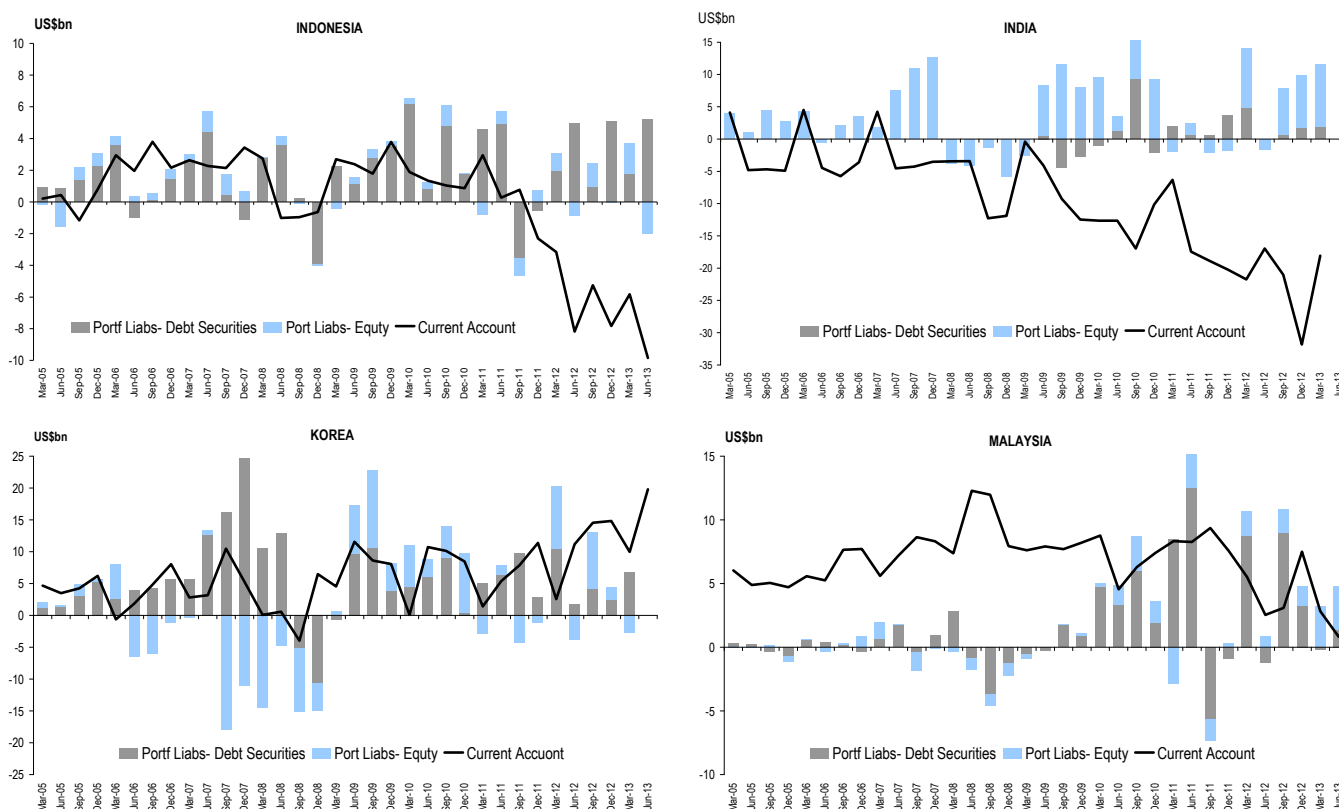
Note: We include IN, ID, KR, MY, PH & TH



**Fed Tapering will likely broadly impact private capital flows, but we could see a proportionally larger influence on portfolio flows vis-à-vis what we saw in previous cycles of EM volatility.**

**How might the nature of capital flow volatility materialize in the run up to Fed Taper?** We think there is every reason to believe that different types of private capital flows are positively correlated, after all, risk premiums influencing investment decisions by portfolio investors should have similar common characteristics with risk premiums influencing decisions by commercial banks, whether they are influenced by domestic fundamentals or global risk aversion. However, expectations of Tapering QE3 could have a proportionally larger influence on portfolio flows than other types of private capital flows vis-a-vis previous cycles of EM volatility. Recent work by Fed economists find that unconventional US monetary policies (i.e. QE announcements) did not have a statistically significant impact on total net capital inflows into EM beyond what is already explained by growth differentials, policy rate differentials and global risk aversion, but they found it to have a statistically significant impact on net *portfolio* flows.<sup>7</sup> We expect Fed officials will pursue more aggressive forward guidance on Fed Funds rate as it tapers its asset purchases, which could, to some extent, help safeguard bank flows that may be more sensitive to short-term funding rates (though there is a risk managing US short-term rate expectations could be tricky), while long end of the yield curve has proven to be more volatile, and could have a relatively larger impact on portfolio allocation decisions of global fund managers, which in the last 5 years have been EM friendly.

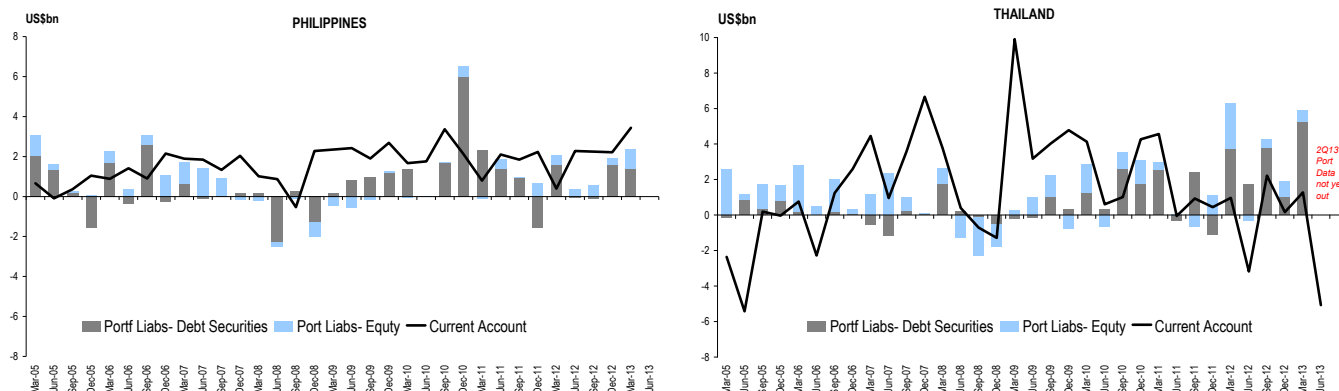
Figure 14. External Flow Analysis – Current Account vs. Portfolio Liabilities in Debt and Equities, in US\$ bn



Source: Haver, CEIC, Citi Research

<sup>7</sup> S. Ahmed & A. Zlate. "Capital Flows to Emerging Market Economies: A Brave New World?" Board of Governors of the FRS, *International Finance Discussion Papers* No. 1081 (June 2013).

Figure 14b. External Flow Analysis – Current Account vs. Portfolio Liabilities in Debt and Equities, in US\$ bn (continued)



Source: Haver, CEIC, Citi Research

Looking at the composition of external flows would argue that ID and IN will be under persistent pressure given their C/A deficits, but MY and TH are also vulnerable due to the relative size of portfolio flows vis-à-vis their C/As.

We may also need to revisit reserve adequacy frameworks to take into account risk of short-term external drains coming from portfolio flows, which among the more “vulnerable” countries, could dampen reserve coverage more in MY, though still looks better than IN, ID and LK.

Even while improving DM outlook and slower growth in EM deficit countries could help current accounts adjust, they are unlikely going to be fast enough vis-à-vis fears of further portfolio rebalancing impacting capital flows, which would be a challenge for ID and IN given significant external funding gaps even without portfolio outflows (see relevant country chart on Figure 14) as well as MY and TH, where the relative size of portfolio flows vis-à-vis C/A flows are large. Meanwhile, we think KR and PH are in relatively better shape as insulation of C/A flows are proportionally larger – KR’s C/A versus portfolio flow trend is very different than what it experienced in the run-up to the 2008 GFC, when portfolio flows were much larger vis-à-vis C/A flows, and alongside bank flows, made KR among the worst hit countries in this region.

Lastly, in a post-Taper environment, we think one might need to revisit reserve adequacy frameworks taking into account greater risks emanating from portfolio flow volatility, which in turn impact risk premiums from perceived external vulnerability. We attempt to find a common, though highly imperfect, metric of relative vulnerability to portfolio flows by assuming a common share of foreign holdings of bonds (with >1 year maturity, to avoid double-counting on the ST debt drain) is unwound (arbitrarily set at 30%). Moreover, we assume the cumulative net FII flows into equities in the last 2 years would be reversed. The measures for both are highly flawed – for one thing, outflows would move asset prices (especially in equities), and thus, reduce the USD-equivalent amount of outflows. Nonetheless, we use this measure as a quick way to gauge relative vulnerabilities, presenting results in Figure 15. Once we account for potential portfolio drains, reserve coverage declines a bit more in KR and PH vis-à-vis reserves over external financing requirements, though reserve coverage look strong at 2.5x and 4.4x, respectively. Meanwhile, among the more “externally” vulnerable countries – IN, ID, MY, TH, LK – risk to portfolio volatilities dampen reserve coverage ratio more in MY, followed by IN (due to still sizeable FII equity flows), though absolute reserve coverage metrics still look the weakest in LK and ID; TH is still in better shape than the other “vulnerable” countries.

Figure 15. Alternative FX Reserve Coverage Metrics Incorporating Risk to Portfolio Flows

In US\$bn	CH	ID	IN	KR	MY	PH	LK	TH	TW	VN
<b>Latest Official FX Reserves</b>	<b>3,496.7</b>	<b>92.7</b>	<b>278.6</b>	<b>329.7</b>	<b>137.9</b>	<b>82.9</b>	<b>6.3</b>	<b>172.2</b>	<b>409.1</b>	<b>30.0</b>
Net Forward Book	0	-4.7	-4.9	45.6	5.9	2.9	0.0	23.7	0.0	0.0
<b>Spot &amp; Forward Book (Total Reserves or TR)</b>	<b>3496.7</b>	<b>88.0</b>	<b>273.7</b>	<b>375.3</b>	<b>143.8</b>	<b>85.9</b>	<b>6.3</b>	<b>195.9</b>	<b>409.1</b>	<b>30.0</b>
ST Debt by <1yr Maturity*	565.7	46.3	96.7	119.6	75.5	9.8	6.8	62.1	125.0	6.8
Amortizations	46.0	35.2	19.0	41.0	10.0	9.7	2.0	19.0	3.0	2.0
<b>ST Debt by Remaining Maturity (a)</b>	<b>611.7</b>	<b>81.5</b>	<b>115.7</b>	<b>160.6</b>	<b>85.5</b>	<b>19.5</b>	<b>8.8</b>	<b>81.1</b>	<b>128.0</b>	<b>8.8</b>
CA Deficit (ave of 2013F to 2014F) (b)	-204.5	27.0	77.6	-41.4	-6.8	-6.6	3.3	0.9	-44.3	-3.9
<b>Total Ext Financing Requirements (TEF) (a) + (b)</b>	<b>407.1</b>	<b>108.5</b>	<b>193.3</b>	<b>119.2</b>	<b>78.6</b>	<b>12.9</b>	<b>12.1</b>	<b>82.1</b>	<b>83.8</b>	<b>4.9</b>
<b>TR /ST Debt By Remaining Mty</b>	<b>5.7</b>	<b>1.1</b>	<b>2.4</b>	<b>2.3</b>	<b>1.7</b>	<b>4.4</b>	<b>0.7</b>	<b>2.4</b>	<b>3.2</b>	<b>3.4</b>
<b>TR /Total Ext Fin Requirements</b>	<b>8.6</b>	<b>0.8</b>	<b>1.4</b>	<b>3.1</b>	<b>1.8</b>	<b>6.7</b>	<b>0.5</b>	<b>2.4</b>	<b>4.9</b>	<b>6.1</b>
Foreign Holdings of Bonds >1yr tenor	n.a.	25.0	22.0	78.2	50.5	5.4	3.0	18.3	0.0	1.5
FII net Flows into Equities in the Last 2 yrs	n.a.	2.0	11.8	6.5	8.0	4.8	0.1	(-)	5.3	0.2
<b>TR / (TEF+30% of bonds &amp; FII net Eqty inflows in last 2yrs)</b>	<b>n.a.</b>	<b>0.7</b>	<b>1.3</b>	<b>2.5</b>	<b>1.4</b>	<b>4.4</b>	<b>0.5</b>	<b>2.2</b>	<b>4.9</b>	<b>5.8</b>

Source: Citi Research, CEIC, Bloomberg, IMF, Various central bank websites, Bursa Malaysia, Moody's

Note: \*ST external debt by remaining maturity includes non-resident deposits maturing within a year and foreign holdings of domestic securities with <1yr maturity, in accordance with IMF SDDS template in most countries where data is available. However, ST ED data in MY and PH do not include foreign holdings of local bills—we adjust for the former and assume the latter's is negligible; LK's ST debt data is adjusted down as they include foreign holdings of all local bonds, regardless of maturity and we assume 85% of bank external liabilities have maturity of <1yr. The foreign holdings of bonds in Indonesia and Thailand only reflect government and quasi-government (including SOE) bonds, as opposed to India and Korea which includes corporate bonds. We calculate the Net FII Flows into equity markets using Bloomberg data for ID, IN, KR, PH, LK, TH, TW and VN but use Bursa Malaysia data for MY.

### Policy options for countries under stress

**Countries under most stress – IN and ID – have limited policy options, but at least ID still has more leeway to hike rates to anchor IDR overshooting (though this is not happening yet) while IN's weak growth and negative feedback loop on fiscal accounts leave policy options more limited; both could mobilize more external financing sources, especially from non-commercial sources.**

While countries in Asia can still absorb the stress from FX weakness due to relatively stronger balance sheets than where we were in pre-AFC period, it also means that tough policy decisions needed to anchor stability in the currency remains elusive so far, and until then, we believe that vulnerable countries in EM Asia will see asset prices susceptible to further “overshooting”. We had earlier mentioned that the “deficit” countries in Asia – India and Indonesia – have limited policy options, but we think ID has more policy maneuver than IN — we think ID needs tighter monetary policy and hawkish rhetoric to anchor expectations, but in IN's case, this may no longer be a favorable option. Both countries also have room to mobilize non-commercial external funding sources.<sup>8</sup> In MY and TH's case, we think their low level of FX mismatches, manageable inflation, and export-oriented economic structure, argues for less adverse consequences from absorbing FX weakness. However, given such elevated foreign positioning in its debt securities, MY likely needs to safeguard financial market volatility by arresting the high speed of C/A deterioration, primarily via measured fiscal tightening and macro-prudential tightening.<sup>9</sup>

<sup>8</sup> [Asia Macro Flash - What Can Asia's Deficit Countries \(Indonesia & India\) Do?](#) (21 Aug 2013)

<sup>9</sup> [ASEAN Macro View - Chartbook: Current Accounts – A Savings-Investment Perspective](#) (27 Aug 2013)

## Appendix A-1

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