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A Compendium of Policy Instruments to Enhance Financial Stability and Debt Management in Emerging Market Economies

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Abstract

Drawing on available theory and evidence, this paper attempts to identify some key factors contributing to international financial instability to develop ataxonomy of policy instruments to enhance financial stability and debt management in emerging market economies. The purpose is to relate each instrument to particular aspects of the broader policy challenge,thus clarifying differences and/or similarities among instruments and proposals. The analysissuggests instruments that could help increase the efficiency of risk management strategies(such as growth- or GDP-indexed bonds) and enhance the effectiveness of debt management,growth and development policies (such as a stability and social investment facility).

JEL Classification: F33 (International monetary arrangements and institutions), F34 (International lending and debt problems), H63 (Debt management)

Keywords: debt sustainability, debt trap, emerging markets, financial stability

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A Compendium of Policy Instruments to Enhance Financial Stability and Debt Management in Emerging Market Economies[1]

Ronald U. Mendoza

Introduction

Financial crises in the emerging markets can often be linked to problems with managing sovereign debt.[2] Debt events, or episodes of debt default or restructuring, can impose severe fiscal and economic costs to the affected country. In the immediate aftermath of such crises, poverty and inequality typically increase substantially and impart deep and long lasting negative effects amongst the poorer segment of the population in the affected country (Birdsall, 2006; Lustig, 2000; Ocampo, 2005).[3] Not only are costs imposed on the country directly concerned, but also often on international investors (Sturzenegger and Zettelmeyer, 2005), and at times, on other emerging market economies that suffer from the effects of crisis contagion (Eichengreen, 2004). Achieving financial stability and enhancing the ability to manage debt at sustainable levels—be it by reducing current debt levels and improving debt structure or by developing the capacity to sustain debt levels similar to that of industrial countries (that is, to enhance debt tolerance), or more likely by a combination of both—are among the principal tasks faced by emerging market economies. For those emerging market economies saddled with high public debt and a history of financial instability, including serial default, these challenges become especially acute.

Many emerging market economies have taken important steps to lessen their vulnerabilities to crisis. These would include increased exchange rate flexibility, improved maturity structures of their debt, and foreign exchange hoarding—with some countries such as China reaching reserve levels that surpass most economists' conception of what would be prudently required for self-insurance (Summers, 2006). Notwithstanding these largely unilateral efforts, it is unlikely that these would be sufficient, for several reasons.

First, self-insurance through reserve-hoarding potentially implies a high social cost for the country, and possibly growing fiscal costs for its government (Mendoza, R.U., 2004; Rodrik, 2006). The cost of this strategy in terms of postponed consumption is particularly large for an emerging market economy, since by their nature, these countries should be anticipating instead of delaying consumption (Caballero, Calderón and Céspedes, 2006). Second, besides self-insurance, there are more efficient forms of managing and sharing risks. As noted by Andres Velasco, Chile's Minister of Finance, it is difficult to imagine a world without basic

1 Acknowledgements: I am grateful to Yilmaz Akyüz, Kathrin Berensmann, Pedro Conceição, Paola Deles, Barry Herman and an anonymous referee for helpful comments on an earlier draft. Their good advice notwithstanding, I alone am responsible for any remaining errors in this paper. The views expressed herein are mine and do not necessarily reflect those of UNDP.

2 Examining a sample of 20 industrial countries and emerging market economies, during the period 1970-2001, encompassing 96 crisis episodes, Kaminsky (2006) finds that crises stemming primarily from sovereign debt problems are the most numerous kind among the emerging market economies in her sample; and it is the second most costly (after crises due primarily to financial excesses, but where debt problems often also play a role).

3 The possibility of implementing countercyclical policies typically depends, in large measure, on the macroeconomic milieu and institutional stage of development of the country. Many emerging market economies usually find themselves unable to use the countercyclical policies that would mitigate the negative effect of a crisis on the economy and especially on the poor. Underdeveloped financial markets and lack of access to borrowing by the poor amplify these negative effects (see for instance Caballero, Calderón and Céspedes, 2006; Derviş and Birdsall, 2006; Gavin and Perotti, 1997; Kaminsky, Reinhart and Vegh, 2004; Ocampo, 2005 and United Nations, 2006, ch. 4).

insurance products (e.g. home, fire, and unemployment insurance) which are now ubiquitous at the household or individual levels, yet are largely missing at the country level. Absent such macroeconomic insurance and risk-management instruments, many macroeconomic outcomes are much worse than they need have been. Velasco conjectures that if more insurance mechanisms such as GDP-indexed bonds were available to developing countries, then perhaps finance ministers may not need to be too conservative in their policies.[4]

In addition, "a number of high-debt emerging-market economies face structural, long-term debt problems that tend to keep their growth rates low, that impart an unequalizing bias to the growth process, that severely constrain social spending and human development, and that make them vulnerable to capital flow reversals (Derviş and Birdsall, 2006: 329)." There is evidence that these countries have fallen into a vicious cycle of serial default. Left to their own devices, these countries often face the impossible choice between draconian fiscal austerity or outright default. Through instruments such as a recently proposed stability and social investment facility (SIF) or a debt tolerance facility, a third, and perhaps more effective path to debt management, growth and development could be devised.

It is important to take stock of the literature on the factors that lead to financial crises, including debt defaults, as well as the possible innovations by way of new policy instruments that could help countries respond to those challenges. This paper contributes to this stock-taking by presenting a compendium of policy instruments and proposals to enhance financial stability and debt management in emerging market economies. In addition, this paper will attempt to make a contribution on two other fronts. First, drawing on the available theory and empirical evidence, it will try to map out some of the key factors that contribute to international financial instability. Second, it will use this to develop a possible taxonomy for the array of proposed (and some already existing) policy instruments designed to enhance financial stability and debt management in emerging market economies. The purpose of this taxonomy is to relate each instrument to the particular aspect(s) of the broader policy challenge, thus clarifying differences and/or similarities across these instruments and proposals.

The analysis suggests that there are two broad aspects to the policy challenge. The first has to do with pursuing domestic institutional and structural reforms as well as sound macroeconomic policies (including minimizing currency mismatch risk) and prudential financial regulations that would make emerging market economies less vulnerable to financial instability and crisis. Both theory and empirical evidence suggest that these types of reforms are important preconditions for preventing debt crises and reducing debt intolerance in emerging market economies. A second aspect of the policy challenge has to do with breaking free from the vicious cycle of chronic financial instability, including serial default. The analysis suggests that instruments that could help increase the efficiency of risk management strategies and the effectiveness of debt management, growth and development policies need to be considered further.

Recent Trends in Emerging Market Economies' Public Debt

Macroeconomic fundamentals in many emerging market economies have undergone a sea change since the Asian financial crisis broke out in 1997. Some of its main aspects include more stable prices, more flexible

4 These comments were made during a seminar on GDP-indexed bonds jointly organized by the Intergovernmental Group of 24 for Monetary and Financial Affairs (G-24), the United Nations Department of Economic and Social Affairs (UN-DESA) and the Office of Development Studies of the UNDP. For a full report of the meeting see United Nations (2006). The live broadcast of this meeting is available at: http://www.imf.org/external/mmedia/view.asp?eventid=577.

exchange rate regimes,[5] more robust fiscal performance, strong export performance (in many cases born on the back of robust commodity exports), and aggressive foreign exchange reserve accumulation (see among others IMF, 2006a and World Bank, 2006a,b). These improved fundamentals have contributed to more favourable risk premium spreads for the emerging market economies' debt. Credit ratings for many emerging market economies have also improved. The confluence of lower sovereign risk premiums, low global interest rates[6] and rabid investor appetite for risk[7] have created ideal conditions for a number of emerging market economies to conduct policies that are enhancing the structure of their public debt by minimizing some forms of risk, rather than using these favourable conditions to borrow more, as might have been the case in the past under similar circumstances. The principal focus has been to address three key risks:

Exchange rate risk. Because of differences in the currencies of assets and liabilities (i.e. currency mismatch), an exchange rate shock could trigger a sharp rise in the local currency value of foreign currency debt, creating debt servicing stress and possibly resulting in a debt crisis. Reducing the share of foreign currency denominated debt in the total debt structure could help address this risk.

Interest rate risk. Interest payments of a country could rise due to higher interest rates on future debt or on the re-pricing of variable rate debt. Countries are thus addressing this duration mismatch by increasing the average term to maturity and enlarging the share of fixed rate debt.

Rollover risk. New funding could evaporate or access to international capital could come at a dramatically higher cost, notably when a country is hit by a crisis of confidence. Increasing maturities and smoothing repayments schedules (such as by prefunding forthcoming debt obligations using the current low rates) could help mitigate this risk.

Emerging market economies have turned to various strategies in their debt management operations in order to deal with these 3 main types of risks by: (a) decreasing their reliance on foreign currency debt and (b) increasing their reliance on local currency debt in order to minimize exchange rate risk; (c) improving the maturity on domestic and international issuances in order to minimize rollover risk, and to some extent, also interest rate risk; and (d) widening their investor base and lowering total debt (to the extent possible for some countries) in order to help mitigate all three types of risk.[8]

However, while a number of emerging market economies have managed to make successful inroads into lowering their vulnerability to financial instability, there are still vulnerabilities that persist. First, progress across countries has not been uniform: some countries have been left behind, while others have even regressed. For instance, between 1996 and 2004, the share of foreign currency debt in total public debt increased in the Russian Federation (42 percentage points), Chile (28 percentage points), and the Philippines (28 percentage points) (IMF, 2006a: 94). These indicators need to be taken in their country-specific context however. Countries that have increased their foreign currency denominated debt shares are not necessarily

5 Since 1996, the IMF (2006: 110) reports that 20 emerging market economies have adopted flexible exchange rate regimes or increased flexibility of the nominally flexible regime.

6 Real long term interest rates in G-7 countries reached their lowest levels in 2004 since the mid-1980s, with rates increasing only slightly in 2005 (World Bank, 2006b: 12).

7 Examining the period from 1983 to 2005, Gai and Vause (2006: 179) note that "More recently, investors' appetite for risk has been strong, above the sample average and at levels comparable to those of 1996 when Alan Greenspan spoke of irrational exuberance."

8 It is beyond the scope of this paper to elaborate on these trends. For a comprehensive summary, see the original full draft from which this paper is based: Mendoza, R.U. (2006).

more vulnerable in absolute terms, since some countries have also lowered their over-all public debt. For example, the Russian Federation has reduced the level of its public debt quite dramatically—from about 70 per cent of GDP in 1998 to about 10 per cent of GDP in 2006 (see Table 1). Hence, the net impact of these two trends would need to be considered.

There has also been uneven progress in trying to avoid a potential mismatch of foreign currency liabilities with local currency assets across emerging market economies. Using as an indicator of vulnerability to currency mismatch the Aggregate Effective Currency Mismatch (ACEM) index (with more negative values indicating higher vulnerability to currency mismatch), in a sample of nine Asian emerging market economies, Singapore and Hong Kong—the two financial centres in the sample—are shown to be the least vulnerable to currency mismatch problems (see Figures 1a-1b).[9] In terms of reducing currency mismatch risk during the period since the Asian crisis, there has been some progress in Indonesia, Republic of Korea, Malaysia and Thailand, but evidence of deterioration in the Philippines.

Furthermore, for a number of countries, rather than eliminate risks altogether, the shift in the balance of foreign currency and local currency denominated debts merely transformed the nature of these risks. A review of the structure of public debt issued in the domestic jurisdiction for several emerging market economies (for which this kind of data is available) reveals that countries like Brazil, Mexico and Venezuela, (among the countries that have decreased their foreign currency denominated debt and shifted emphasis to local currency denominated debt) have ended-up with high shares of variable rate local currency denominated debt (see Jeanne and Guscina, 2006: 23). Therefore, some countries' exchange rate risk has merely been transformed into maturity risk and/or interest rate risk (Eichengreen, 2007; World Bank, 2005: 82).

There is also still a number of emerging market economies that continue to be hobbled by high over-all levels of public debt. In a sample of 28 emerging market economies using data from J.P. Morgan Securities (see Table 1), ten countries breached the 50 per cent threshold for total public debt (expressed as a share of GDP) in 2006: Philippines (74 per cent), India (73 per cent), Uruguay (71 per cent), Hungary (67 per cent), Turkey (67 per cent), Argentina (62 per cent), Panama (61 per cent), Brazil (58 per cent), Pakistan (56 per cent), and Colombia (52 per cent).[10] Of these countries, the largest increases in public debt (scaled by GDP) when compared to the 1998 Figures are in Uruguay, Argentina, Turkey, Colombia and Brazil (in this order).[11] One might also question to what extent some emerging market economies, Brazil and Turkey among them, could continue to run high primary fiscal balances, given their development financing needs. In these two countries, for example, a large share of annual income goes into servicing sovereign debt: on average during the period 1998-2006, about 30 per cent of GDP for Brazil, and 40 per cent of GDP for Turkey.[12]

9 Developed by Goldstein and Turner (2004), the AECM index provides one possible measure of a country's financial vulnerability to currency mismatches in terms of income and expenditure flow. The ACEM considers both the currency of foreign borrowings, and also the currency of domestic debt contracts and other income and expenditure flows. It is computed as the product of foreign currency debt (as a share of total debt) and the country's net foreign currency assets or NFCA (scaled by exports of goods and services if NFCA is negative or scaled by imports of goods and services if the NFCA is positive). Figures closer to zero indicate a better currency match; and more negative values indicate higher vulnerability to a currency mismatch.

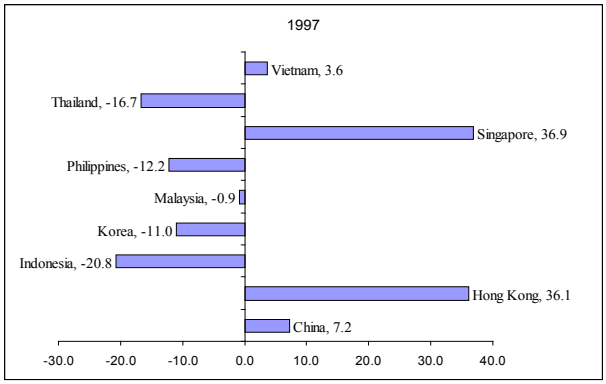
10 Manasse, Roubini and Schimmelpfennig (2003: 31) develop an early warning system for debt crises and find that developing countries with debt to GDP ratios greater than 50 per cent are the most likely to default, with default risk of about 67 per cent.

11 Author's calculations based on data from Table 1.

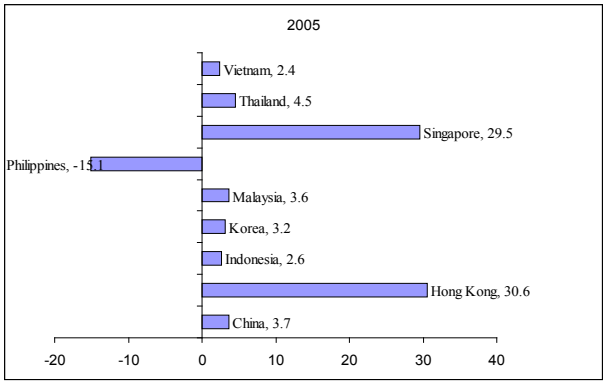
12 Data downloaded last 8 June 2007 from J.P. Morgan Securities Inc. https://mm.jpmorgan.com

Figure 1.
AECM Index for Select Asian Economies, 1997 and 2005

1a. ACEM Index for 1997



1b. ACEM Index for 2005



Many of these heavily indebted emerging market economies also have a history of financial instability, including debt defaults. Of the ten countries breaching the debt threshold of 50 per cent in 2006 (in Table 1), 7 experienced a credit event, defined as a default or restructuring on its external debt[13] in the last 30 years.[14] Focusing on a sample of 26 countries, Figure 2 juxtaposes their 2006 debt levels with their history of debt defaults.[15] For some of these countries, their problems could be chronic—they have default histories and their present debt levels could again render them vulnerable to a debt crisis.

One has to wonder whether, in the next global tightening of credit or after the next major domestic political or external shock, these countries would still be able to find solid fiscal footing. A sudden reversal of the benign global credit environment could create a negative fiscal impact on emerging market economies by increasing the cost of servicing their variable rate debt and by increasing the interest rate cost on new debt. Using simulations, Hauner and Kumar (2005: 17-18) find that a 300 basis points hike in industrial country base interest rates would create fiscal costs of about 1.5 percent of GDP for heavily indebted emerging market economies—and these costs would rise as cheaper debt is replaced by new (and more expensive) debt.[16]

To summarize, a number of emerging market economies have taken steps toward greater financial stability and debt tolerance, buoyed in part by presently favourable global conditions. Yet, the evidence also suggests that some countries remain vulnerable. What happens when presently favourable global conditions turn? Can the pace of reforms be sustained? Will domestic reforms be sufficient to stave of crisis?

13 The source of this definition is Reinhart, Rogoff and Savastano (2003).

14 The seven countries are: Argentina, Brazil, Pakistan, Panama, Philippines, Turkey and Uruguay. Utilizing a battery of thirty financial crisis vulnerability indicators in their analysis, Goldstein and Wong (2005: 45) also note that Argentina, Brazil and Turkey (with the addition of Hungary and Mexico) appear to be the most vulnerable among the emerging market economies at the time of their study in 2005.

15 The 26 countries in Figure 2 are: Argentina, Brazil, Bulgaria, Chile, China, Colombia, Ecuador, El Salvador, Hungary, India, Indonesia, Republic of Korea, Malaysia, Mexico, Pakistan, Panama, Peru, Philippines, Poland, Russian Federation, South Africa, Thailand, Turkey, Ukraine, Uruguay, and Venezuela.

16 For an extended discussion of the possible risks faced by emerging market economies, notably those with high debt to income ratios, see Goldstein and Wong (2005), IMF (2005), Mussa (2006) and World Bank (2006b). The IMF has also begun to include comprehensive reviews of countries' debt dynamics in its Article IV reviews; these could therefore also outline the specific risks faced by many highly indebted countries.

Table 1.
Total Public Debt *(In per cent of GDP)*

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007*
Argentina	37.6	43.0	45.1	53.6	153.4	138.1	119.1	71.0	62.0	53.6
Brazil	42.5	55.7	54.6	64.2	60.4	70.9	64.8	65.0	57.7	61.0
Chile	34.2	35.6	36.0	36.5	36.2	33.4	28.6	24.3	15.8	14.3
Colombia	37.8	42.4	53.0	57.5	65.1	62.9	56.2	55.1	52.1	49.2
Costa Rica	47.2	46.5	44.7	45.5	45.7	44.0	42.4	40.0	35.1	33.6
Dom. Rep.	25.7	23.7	25.7	23.5	25.8	55.9	63.9	42.7	41.8	37.4
Ecuador	67.4	100.6	88.9	66.7	56.9	50.7	44.6	39.8	34.2	32.3
El Salvador	33.3	34.6	36.5	39.8	44.5	47.2	46.0	45.4	44.4	43.5
Mexico	31.0	30.3	26.6	26.3	25.6	26.5	26.0	24.6	25.0	26.5
Panama	64.5	67.2	66.5	71.1	69.4	67.3	69.9	65.3	61.1	57.3
Peru	42.8	47.1	45.3	46.1	46.4	47.0	44.3	37.7	32.7	29.7
Uruguay	27.0	40.6	45.5	54.2	92.1	108.3	100.9	83.8	71.0	64.9
Venezuela	30.4	29.1	27.4	30.1	36.8	48.0	39.0	33.7	25.5	20.3
South Africa	48.9	46.9	42.0	41.2	35.6	35.3	35.1	33.5	31.3	28.4
Bulgaria	86.4	83.3	78.2	69.0	60.3	52.4	39.2	27.3	25.1	19.8
Hungary	61.8	60.5	53.4	50.7	55.6	58.0	59.4	61.7	66.8	68.9
Poland	40.5	39.9	37.7	37.7	42.3	47.2	45.8	47.3	48.1	48.5
Russia	69.9	93.2	62.5	48.0	41.4	32.9	24.0	13.9	9.5	8.3
Turkey	44.8	51.8	58.8	106.7	96.3	97.2	86.7	73.3	67.3	63.4
Ukraine	34.4	48.3	45.3	37.1	33.5	29.0	24.7	18.9	16.1	15.0
China	13.2	16.1	17.2	18.0	19.5	19.9	17.1	15.4	13.6	12.5
India	61.0	62.4	63.5	67.1	73.3	74.5	72.2	68.1	73.3	68.8
Indonesia	119.3	94.6	99.2	68.9	60.8	54.6	49.5	42.1	33.1	29.6
Korea	11.0	19.4	17.2	19.4	12.7	14.0	19.9	23.4	27.1	27.5
Malaysia	37.6	37.3	36.7	43.6	45.6	47.8	48.1	47.3	47.5	41.6
Pakistan	—	—	95.0	109.9	81.4	75.3	67.8	61.8	56.1	52.9
Philippines	67.6	72.0	80.1	78.8	84.6	92.8	95.5	83.0	74.3	65.6
Thailand	43.3	49.4	36.5	40.9	46.1	42.6	39.8	38.5	32.1	26.9

Source: Data downloaded 8 June 2007 from J.P. Morgan Securities Inc. https://mm.jpmorgan.com

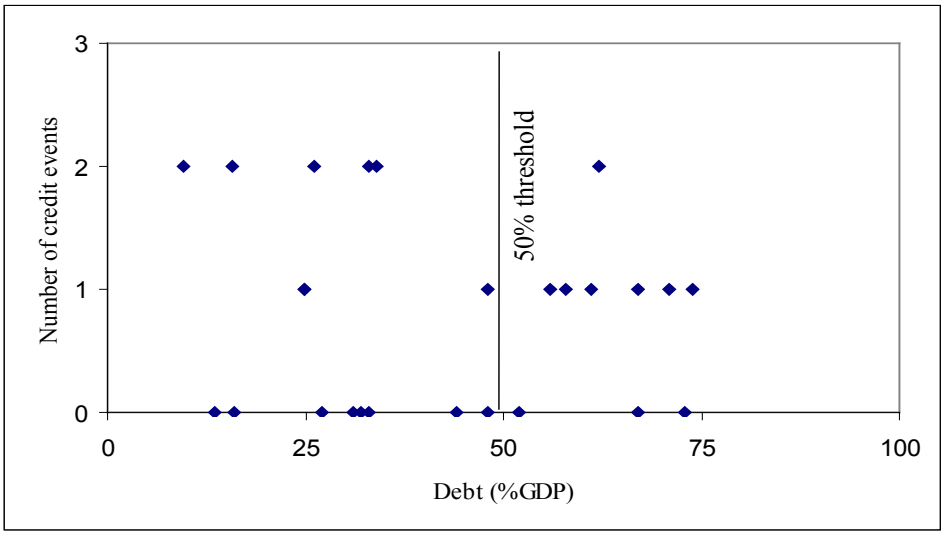
* Figures for 2007 forecasted.

It is unlikely that present, largely unilateral, reforms are sufficient. For one, many countries remain vulnerable to crisis, as noted in this section. In addition, as noted earlier, a number of reforms related to self-insurance—such as hoarding reserves and excessive austerity—are not only detrimental to economic growth and development, but also sub-optimal from a risk management and risk sharing perspective. Furthermore, for countries that might remain trapped in a vicious cycle of serial default, the options for unilateral action are limited, unlikely to be effective and clearly very costly. The discussions on these issues have generated a wealth of ideas to create innovative instruments that could perhaps form part of a more efficient and effective strategy to achieve financial stability and enhance public debt management.

Mapping the Factors that Contribute to Financial Instability

There are by now an array of existing and proposed instruments that seek to enhance financial stability and debt management capabilities in emerging market economies. The annex to this paper lists these instruments, including some recent proposals such as growth- or GDP-indexed sovereign bonds, a stability and

Figure 2.
Debt Ratios and Credit Events for 26 Emerging Market Economies



Sources: Reinhart, Rogoff and Savastano (2003: 16) for the data on credit events from 1970-2001; J.P. Morgan Securities Inc. for the debt ratio in 2006 (https://mm.jpmorgan.com).

social investment facility (SIF) and a debt tolerance facility. In order to better understand these instruments, as well as determine how they figure into what we now know about financial crises prevention and debt management, it would be useful as a first step to map, if only in a preliminary and illustrative way, the factors that contribute to financial instability and debt management difficulties. Drawing on the literature, this section develops such a map, in turn used to elaborate on a possible taxonomy of instruments. This taxonomy could then help to highlight the precise function of each instrument as well as the value-added of some recent proposals.

One could draw on the discussion in the preceding section in order to outline some of the broad contributing factors behind debt management difficulties. Figure 3 illustrates what such a map of financial instability factors might look like and how these factors, in turn, influence a country's debt dynamics. The "story" behind Figure 3 is not the only possible narrative that is consistent with the literature, and merely represents one possible synthesis of some of the theory and evidence presently available.

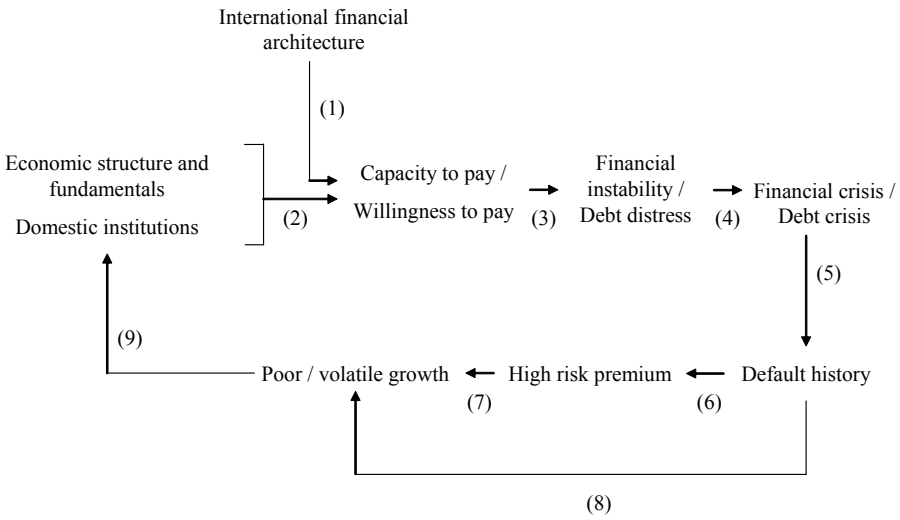
First, domestic institutions and structural features of the economy[17] and the international financial architecture[18] have been identified in the literature as the broad categories of factors that influence a country's vulnerability to financial instability.[19] Notably, these factors could affect the country's capacity—and in some

17 See for instance Burger and Warnock (2006), Goldstein and Turner (2004) and Reinhart, Rogoff and Savastano (2003).

18 See for instance Hausmann and Panizza (2003) and Eichengreen, Hausmann and Panizza (2005a,b).

19 Catão and Kapur (2006), for example, extend the empirical analysis in Reinhart, Rogoff and Savastano (2003) by using the volatility of macroeconomic aggregates as a proxy for the institutional and structural roots that could help explain debt intolerance. Examining 26 emerging market economies during the period spanning 1970-2001, they find that a 1 percentage point increase in the underlying volatility of GDP is associated with a 12 percentage point decline in the maximum debt threshold that a country could sustain Catão and Kapur (2006: 22). Their findings further suggest that strategies to reduce debt may be suboptimal if these preclude feasible consumption smoothing and if these fail to address the sources of domestic income volatility. In addition, countries with better institutions (using various measures) tend to display better economic performance (e.g. higher levels and lower volatility of growth) (IMF 2003a,b) and they also tend to enjoy higher capital flows (Lothian 2006).

Figure 3. Cycle of Financial Instability and Serial Default



instances willingness—to repay its debt (links 1 and 2 in the Figure). To elaborate, on the domestic front, poor institutions (e.g. political, regulatory and supervisory) and economic features that leave the country vulnerable to external shocks (e.g. heavy reliance on one or a few commodity exports, high ratio of short-term domestic debt) and on the international front, the inability to improve the country's debt profile by issuing local currency debt abroad and shedding significant currency mismatch risk are just some of the factors that could lead to problems in its capacity and/or willingness to repay its debt. The latter, in turn, could lead to episodes of financial instability and/or debt distress (link 3).[20] Thus, any country with poor fundamentals and institutions, and economic structures that are vulnerable to shocks could thus face the prospect of financial crisis (link 4).

Before proceeding, it would be important to note several things at that point in the figure. First, financial instability need not develop into full-blown crisis episodes. Based on a number of possible explanations for financial instability and crises explained earlier, some types of crises could be stemmed, or at least mitigated. The literature on second generation crisis models as well as on "sudden stops" of capital flows lends some support to this view.[21] Second, not all bouts of financial instability would necessarily lead to debt distress, nor for that matter, to a debt event (i.e. defined in the literature and in the introduction to this paper as "episodes of debt default or restructuring"). However, history suggests that financial instability could eventually (and quite often does) create the conditions for a debt event; and given the focus of this paper on public debt, the figure continues with a specific focus on this dimension.

For a number of emerging market economies, the underlying problems described by links 1 through 4 could subsequently lead to a history of financial crisis and serial default (link 5). There is no strict definition of how many crises would constitute a history of "serial default".[22] Suffice it to say that a default in the past (amplified if the number of defaults is higher) increases the likelihood that the country could enter into a form of "debt trap" through adverse feedback effects. One possible route for these feedback effects is

20 Drawing a parallel with the distressed debt literature in corporate finance, Sy (2003) defines sovereign bond distress events as occurring when bond spreads are trading 1000 basis points or more above comparable US Treasury securities. He argues that in practice, the 1,000 bps mark for spreads is often considered as a psychological barrier by market participants. The use of the term "debt distress" in this paper is not meant to be as specific as this definition. The purpose is to highlight episodes of instability that are not quite at crisis levels.

21 For a more detailed review of the literature on three generations of speculative attack models, see Frankel and Wei (2005: 318-323). For a discussion of "sudden stops", see among others, Calvo (1998, 2002, 2005), Catão (2007), Edwards (2004), Mendoza, E. (2006), and Mendoza, E. and Smith (2006).

22 See Reinhart, Rogoff and Savastano (2003) for a discussion of possible measurements of serial default.

that a default history could translate into higher perceived default risk and higher risk premiums, and could subsequently shrink capital inflows (link 6). Perhaps more importantly, high risk perceptions could also tend to make these flows more volatile. Combined, the literature suggests higher financial and macroeconomic volatility is anathema to growth (link 7).[23] In addition, financial crises resulting in default could also do permanent damage to the growth path of a country as theory and evidence suggests (link 8). Finally, poor growth also tends to set back reform efforts to make domestic economic and institutional structures more robust and conducive to weathering shocks (link 9).[24] This completes the adverse feedback effect and spurs the vicious cycle.

This type of a "debt trap" story is prevalent in the debt literature. For instance, Eichengreen and Hausmann (2005: 6-7) note that "institutional reform…is critically important. But it may not be sufficient if the structure of international finance heightens volatility in a way that handicaps efforts at institution building, effectively creating a low-level equilibrium trap." In addition, the difference in the ability to carry more debt between the advanced economies and heavily indebted emerging market economies (i.e. the reason behind debt intolerance in the latter group of countries) is thought to lie in the combination of shorter maturities, much lower fiscal revenue-to-GDP ratios, more volatile revenue, higher real interest rates and exchange rate risk, and a history of lower primary surpluses, which suggest that many emerging-market economies essentially find themselves in a debt trap. "Many have debt-to-GDP ratios that are not really sustainable, making them vulnerable to repeated crises of confidence" (Derviş and Birdsall, 2006: 330).

A strand of the monetary literature also suggests that, under circumstances of high public debt, tighter monetary policy could lead to higher inflation if fiscal policy does not change. The reason is that expectations will factor in that government obligations will need to be covered by seigniorage revenue (Sargent and Wallace, 1981). As for empirical evidence, Kwon, McFarlane and Robinson (2006: 21) examined 71 industrial and developing countries during the period 1963-2004 and concluded that "there is a significant risk of a debt-inflation trap in highly indebted countries. A rise in inflation expectations will eventually push up nominal interest rates, elevating public debt unless fully countered by a primary surplus. The debt increase will in turn raise inflation expectations further. This vicious feedback effect implies that rising inflation expectations could increase budgetary costs more than proportionally. This also means that rising inflation expectations could be destabilizing to the debt dynamics more than an adverse real output shock—possibly by as much as one third to one half."

In addition, Reinhart, Rogoff and Savastano (2003) note that when default imposes high costs on a country's banking and financial system, this cost is a strong deterrent against default. These authors argue that weak financial intermediation among countries that are serial defaulters thus tend to lower the penalty for default, which might induce these countries to default at lower thresholds, as their empirical analysis also shows. Serial default thus weakens the financial system further, and perpetuates the cycle.[25]

23 There is an extensive literature on this particular topic. See for example Ffrench-Davis (2006), Hnatkovska and Loayza (2005) and seminal work on this topic by Ramey and Ramey (1995).

24 This is a point raised by Eichengreen, Hausman and Panizza (2005a,b).

25 In addition, incentives play an important role not only in determining the level of public debt, but also the debt structure. Tirole (2002), for example, argues that from a common-agency perspective, a government and a lender may tilt the loan maturity structure toward the short term without internalizing its effects on the potential reduction of other investors' long term claims due to the increased probability that the country would face liquidity constraints in the future. In addition, Alfaro and Kaczuk (2006) argue that under certain conditions, shorter-maturity debt may prove more sustainable because longer-maturity debt structures could be associated with equilibria in which defaults happen more frequently and at lower welfare costs.

In summary, this "map" (Figure 3) is meant to be a preliminary illustration, and enables a broad characterization of the possible areas for policy action. It also helps to distinguish two broad aspects of the policy challenge at hand. The first has to do with links 1 through 4 which pertain to efforts to achieve financial stability in emerging market economies by pursuing reforms, including institutional and structural ones, which would make an emerging market economy more robust against financial instability, and would, over time, enhance its debt tolerance. A second aspect focuses on links 5 through 9, and it is especially important for countries that might find themselves under "debt trap" conditions that tend to lock them into perennially low levels of institutional quality and high vulnerability to crisis episodes, reinforcing unfavourable debt dynamics.

Not all countries have high public debt coupled with a history of default, suggesting that for most countries, the challenge could be circumscribed to the first aspect (i.e. achieving financial stability). However, as noted earlier, there a number of emerging market economies whose public debt exceeds what is normally regarded as sustainable given current conditions, and because of their histories of default in addition to that, the literature suggests that they suffer from a form of chronic vulnerability. Hence, for these countries, the entire figure, including the first and second aspects described earlier, is relevant.

Developing a Taxonomy of Instruments

Based on a survey of existing and proposed instruments to increase financial stability and enhance debt tolerance in emerging market economies, thirty-five instruments are listed in Table 2 with brief descriptions provided in the annex to this paper. Table 2 illustrates the beginnings of one possible taxonomy, constructed according to the key purpose of the instrument. It might be possible to develop other taxonomies which might serve to distinguish these instruments. For example, one could differentiate them according to market- versus non-market related types. Clearly, there are other aspects of the instruments discussed here that may not be fully reflected by this proposed taxonomy. However, it is nevertheless a practical way to differentiate the instruments, by drawing directly on how each instrument might help to break the cycle of financial instability and serial default illustrated earlier in Figure 3.

While the categories are not necessarily mutually exclusive, as some instruments could serve several purposes, six main categories of instruments are identified, namely, instruments that provide for (or help facilitate): (a) emergency liquidity provision; (b) countercyclical financing; (c) currency mismatch reduction; (d) orderly debt restructuring; e) debt reduction; and f) social investment and growth financing. Each of these, in turn, could be linked to the map described in the previous section, as will be elaborated in each of the following points.

Emergency liquidity provision. The literature suggests that the provision of emergency liquidity to emerging market economies with essentially good fundamentals but suffering from a credit crunch could help stem the occurrence of self-fulfilling financial crises as well as help prevent contagion. One could think of this as addressing the challenges reflected in part by link 4. Essentially, a key objective is to prevent financial instability and/or debt distress from deteriorating into a financial crisis. Emergency liquidity is often a key ingredient to achieve this.

Instruments proposed here include those designed to provide access to liquidity during crisis or pre-crisis situations. One example is a revamped contingent credit line (CCL) which would be provided to countries with sound policies in order to help prevent crisis contagion, perhaps coming in the form of a gen-

Table 2. Taxonomy of Instruments

	Instrument	Emergency liquidity provision	Countercyclical financing	Currency mismatch reduction	Orderly debt restructuring	Debt reduction	Social investment and growth financing
1	Collective action clause				■		
2	Commodity risk insurance		■				
3	Compensatory financing facility	■					
4	Contingent credit line	■	■				
5	Contingent liquidity facility	■					
6	Countercyclical guarantee facility		■				
7	Country insurance facility	■					
8	Currency swap	■	■	■			
9	Debt exchange warrant			■			
10	Debt swap (or conversion)					■	
11	Debt tolerance facility					■	■
12	Digital option		■				
13	Domestic currency inflation-indexed bond (EM Index)			■			
14	Emerging market local currency debt (LCD) portfolio			■			
15	Emerging market fund (EMF)	■					
16	Exogenous shock contingency facility	■					
17	Fiscal insurance mechanism		■				
18	Fiscal rule					■	
19	Growth- or GDP-indexed bond (GIB)		■				
20	Indexed bond		■				
21	Macro security		■				
22	Partial credit guarantee						■
23	Partial risk guarantee						■
24	Policy based guarantee						■
25	Political risk guarantee						■
26	Principles for Stable Capital Flows and Fair Debt Rest.				■		
27	Regulatory risk guarantee						■
28	Reserves		■	■			
29	Reserve augmentation line (RAL)	■	■	■			
30	Reserves securitization			■			
31	Shock absorber facility (SAF)	■					
32	Sovereign debt restructuring mechanism (SDRM)				■		
33	Sovereign guarantee pool						■
34	Stability and social investment facility (SIF)					■	■
35	Variable amortization bond		■				

Sources: See the annex of this paper for further details on these instruments.

eral tightening of credit to emerging market economies as a group. Since the original CCL expired (unused) in 2003, there has been a proposal for a modified instrument, the reserve augmentation line (RAL), which would be made available to countries with strong policies, but with remaining vulnerabilities, and without immediate need for crisis-related financing. Other examples of instruments providing emergency liquidity include proposed insurance-type instruments such as a country insurance facility (CIF) which would provide a country access to a line of credit at a prefixed rate and a shock absorber facility (SAF) that would provide a form of insurance against exogenous shocks mainly by helping to smooth their effects on a country's fiscal balance and debt ratio.[26] Bilateral or a regional system of currency swap arrangements could also provide emergency liquidity by allowing countries with sound fundamentals to swap specified amounts of foreign exchange reserves during periods of high demand (such as immediately before or during a financial crisis).

In the same vein, the compensatory financing facility (CFF) at the IMF was established in the 1960s to assist countries experiencing a sudden shortfall in export earnings or an increase in the cost of cereal imports caused by commodity price movements. In addition, the injection of liquidity could be focused very specifically on a particular area, such as to stabilize asset prices and prevent potentially destabilizing balance sheet deterioration, as envisioned by a proposal for an emerging market fund (EMF). While these instruments operate differently, they all share a similar basic function which is to provide liquidity to economies that essentially have good policies at precisely the period wherein the lack of liquidity (such as during a sudden stop episode) threatens financial stability.[27]

Countercyclical financing. Not necessarily tied to the immediate threat of financial crisis, instruments that provide for more general countercyclical finance could help to counteract the effects of the ebb and flow of international capital.[28] Providing for countercyclical finance is particularly important in emerging market economies because their fiscal policies are often found to be more procyclical compared to industrial countries (Gavin and Perotti, 1997; Kaminsky, Reihnart and Vegh, 2004; Talvi and Vegh, 2005). One way to interpret the general function of instruments falling under this category would be to see them as responding to link 3 on Figure 3—these instruments could help mitigate the effects of boom and bust cycles and perhaps also help minimize the potential for financial instability and debt distress. Examples of these instruments include those focused on ensuring more stable infrastructure finance such as a countercyclical guarantee facility provided by a multilateral development bank or export credit agency to developing countries;[29] or instruments designed to smooth cyclical fluctuations in fiscal expenditures such as a fiscal insurance mechanism which would be comprised of a system of intra-country compensating payments, perhaps within a regional setting. Essentially, it would also be possible to envision using a country's reserves as a means to undertake countercyclical financing, if policymakers decide to draw down on the country's reserves for this purpose.[30]

26 Birdsall, Williamson and Deese (2002) supported the creation of a similar facility called an exogenous shock contingency facility. Intended to benefit heavily indebted poor countries (HIPCs), this facility would grant additional debt relief if shocks that are clearly exogenous to the country result in a new erosion of debt sustainability.

27 A contingent liquidity facility serves a very similar purpose but is targeted at specific projects, such as to finance infrastructure. It is envisioned to assist project companies in structured financing arrangements that have borrowed in foreign currency to continue to meet their foreign exchange payment obligations; the loan is contingent, and given only in the event of a major devaluation in the host country currency.

28 For further discussion on countercyclical policies, see Ocampo (2003; 2002).

29 For a comprehensive review of various risk mitigation instruments for infrastructure finance, see in particular Matsukawa and Habeck (2007).

30 For some instruments, there is a fine line distinguishing between the function of emergency liquidity provision and the function of countercyclical financing. It could perhaps be argued that instruments designed to supplement reserves could also be used to help undertake countercyclical financing, notably when made available in a pre-crisis context (e.g. contingent credit line (CCL), reserve augmentation line (RAL), currency swap arrangements).

Some market based instruments have also been proposed in part with the purpose of enhancing a country's ability to implement countercyclical policy. For instance, commodity risk insurance instruments could be used by farmers and government agencies to help temper the effects of volatile commodity prices.[31] In addition, growth- or GDP-indexed bonds belong to a broader category of indexed bonds whose payments could be linked to the underlying conditions of the issuer, notably those that impact on its capacity to pay. These types of bonds could also help alleviate the effects of the ups and downs of the economic cycle, by minimizing the burden of debt payments at precisely those times when the country may be more hard-pressed to repay its debt.[32] GDP-linked bonds enable investors to take an equity-like exposure in the country, with the buyer sharing in the fortunes of the issuer, and with the issuer not bound by fixed obligations.

Alternative instruments carry the equity dimension even further. As envisioned, macro securities would be traded in a market for long-term claims on aggregates of income such as a country's GDP, and could thus be designed to enable a country to raise finance in a way that firms do by issuing equity. In a similar vein, digital options could be designed to provide a pay-off that is correlated to potential sudden stop episodes, thus allowing for liquidity at precisely the time the country most needs it.

These abovementioned instruments are particularly interesting because they have better risk sharing properties when compared to self-insurance strategies, which includes the hoarding of reserves, or the use of buffer stocks. In this way, they are superior to self-insurance because they allow for a packaging and trading of macroeconomic and other risks, and enhances countries' and various agents' risk management strategies (Shiller, 2003; 2006).

Currency mismatch reduction. Currency mismatch could contribute to the financial fragility of the economy, and could perhaps be reflected in part by link 2 in Figure 3. As noted earlier, currency mismatch is not just due to the inability to borrow abroad in one's own currency; it depends on a wider set of policies. Certainly, lowering the reliance on foreign currency denominated debt by retiring them or swapping them for local currency denominated debt (through, for example, debt exchange warrants) and holding higher reserves could help lower currency mismatch risk.[33] However, this leaves the question of whether this imposes high costs—or higher costs than would otherwise have been under alternative strategies.[34] As noted in the literature, high reserve holding (often combined with sterilization) has the effect of preventing the absorption of some of the external financial resources flowing into a country. Switching to local currency debt markets could, among other things, have the effect of crowding out domestic private lending. Therefore there are the additional questions of whether and to what extent these strategies might actually erode the net benefits to be derived from external finance.

31 The United Nations World Food Programme has recently turned to this instrument. In 2006 it took out a drought insurance policy for Ethiopia in order to ensure that if aid is required in the event of a drought, the WFP would have the requisite financing immediately to provide relief assistance. See Financial Times (2006).

32 Variable amortization bonds, a slightly modified version of a GDP-indexed bond, alter only the timing of the payments but otherwise leave the total amount of payments unaltered.

33 A related proposal involves securitizing reserves in order to help lower the costs of reserve-holding. See the annex of this paper for a brief description of the proposal.

34 There is evidence to suggest that reserve holding is indeed a very costly self-insurance strategy. For instance, Rodrik (2006: 9) estimates that the cost of excess reserves in developing countries is about 1 per cent of their combined GDP. While this may not be a high cost for a country that is better protected against a devastating financial crisis, it may be high when compared to alternatives that might be able to provide the same type of protection, like reducing short-term debt. However, countries seem to be reluctant to undertake this alternative strategy, according to Rodrik, because it could be perceived as an intervention that goes against a fully liberalized capital account.

To some degree, the provision of emergency liquidity and countercyclical finance also implies mitigating currency mismatch risk, since these instruments typically involve the provision of liquidity in "hard currency" (e.g. US dollars). However, the focus here is on a number of proposed instruments that could specifically help emerging market economies minimize currency mismatch risk by enabling them to issue local currency denominated debt that would be held more widely by foreign investors (hence not necessarily crowding out the private sector in the domestic debt market). Two proposals are worth noting in this regard. One envisions multilateral development banks (MDBs) jump-starting the market for local currency bonds in the international capital markets by creating bonds denominated in an inflation-indexed basket of emerging market economies' currencies. A very similar alternative proposal envisions a larger private sector role—instead of relying on MDBs, private sector actors could construct diversified portfolios of emerging market local currency government debt securities that would provide investors with competitive returns. In either case, the idea is to help enhance the ability of emerging market economies to shed their currency mismatch risk by increasing the foreign holdings of their local currency denominated debt.

Orderly debt restructuring. In the event of a debt default, a principal challenge in crisis management is the orderly restructuring of sovereign debt. The literature notes two types of instruments to respond to this challenge: those allowing for a contractual approach such as collective action clauses (CACs); and those characterized by a more statutory approach, such as proposals for more formal debt restructuring procedures, including a sovereign debt restructuring mechanism (SDRM). This topic has been the principal focus of numerous other studies on this particular dimension, so no further elaboration is made here on instruments falling under this category.[35]

The SDRM proposal died a natural death in 2003,[36] but there has been recent progress in establishing voluntary market-based guidelines for cooperative action in which borrowers and creditors alike recognize their mutual interest in pursuing dialogue and cooperative actions. The *Principles for Stable Capital Flows and Fair Debt Restructuring* highlights key actions for crisis avoidance, focuses on crisis containment and management in ways that can be applied flexibly and on a case-by-case basis, and seeks to ensure good faith negotiations and fair treatment in situations when debt restructuring is necessary (IIF, 2005). In a way, these principles help preclude and lessen the necessity for debt restructuring, to the extent that government efforts to avoid crisis would help ensure stable capital flows. However, this instrument is located here, under debt restructuring, essentially because of its other main purpose of helping ensure a fair debt restructuring process should one become unavoidable.

Debt reduction. As noted earlier, a number of emerging market economies have public debt levels that surpass what is typically regarded as a safe debt threshold by emerging market economy standards (i.e. 50 per cent debt-to-GDP ratio). Because institutional reforms to enhance these countries' debt tolerance may take time, for some countries, there might be no other recourse but to lower their public debt to levels that would help mitigate the threat of financial crisis. On Figure 3, one could think of this aspect as related to link 4—that is, by lowering the debt level, the probability of a financial crisis might be lowered as well.

There are several instruments of interest here. Fiscal rules, for example, could bind the country to maintain budget deficits and public debt ratios below certain thresholds, thus preventing public debt from increasing. In addition, debt swaps or conversions could enable the cancellation of debt in exchange for the

35 The interested reader may wish to refer to Eichengreen (2006) for a discussion of CACs and the SDRM as alternative instruments to deal with sovereign default challenges.

36 The proposal failed to gain requisite support at the IMF. See http://www.imf.org/external/np/cm/2003/041203.htm.

debtor's commitment to mobilize resources for an agreed purpose, such as environmental preservation or, as envisioned by a more recent proposal, MDG-related investments or projects.

Other proposals envision the creation of official lending facilities. The proposal for a stability and social investment facility (SIF), for example, envisions the creation of a multilateral lending facility that would grant access to loans with blended concessionality in order to help heavily indebted emerging market economies with otherwise sound fundamentals and a demonstrated commitment to running primary surpluses to reduce their debt and vulnerability to debt-related problems and set a path for the growth of real income.[37] A very similar proposal for a debt tolerance facility envisions the international financial institutions (IFIs) sponsoring the creation of a facility in which high-reserve countries (e.g. China, India and Republic of Korea) will invest a fraction of their reserve holdings; and the facility would then on-lend to heavily indebted emerging market economies at a spread that is lower than that of market rates but higher than the return on present reserves (e.g. the US treasury rate to the extent that this where reserves are invested). Thus the proposal for a debt tolerance facility is envisioned to be a win-win for both groups of high reserve and heavily indebted emerging market economies. These two latter proposals are particularly interesting not only because of their intended purpose of reducing debt to more sustainable levels, but also to the extent that they could help address the related challenges of serial default and debt intolerance, discussed next.

Social investment and growth financing. Heavily indebted emerging market economies, notably those with a history of serial default, could find themselves in a form of "debt trap". As mentioned earlier, this is illustrated, in part, by Figure 3—links 6 through 9 indicate how financial crises could lead to a feedback effect on a country's underlying economic fundamentals and institutions, which would then lead to further vulnerability to crises. A principal challenge then would be to try and break from this vicious cycle, and bring the country back to more favourable debt dynamics, and on track for more robust growth.

Part of the immediate task for some emerging market economies would be to reduce their debt, as noted earlier. However, shedding debt intolerance requires much more than debt reduction. It would require the types of institutional and structural reforms that would solve the underlying causes of their chronic vulnerability (Catão and Kapur, 2006; Reinhart, Rogoff and Savastano, 2003). In addition, it would also require time—time to develop a track record of credibility and time to implement policies and pursue institutional reforms that would enable the country to handle higher amounts of debt.

To some extent, guarantee instruments (e.g. partial credit, partial risk, political risk and regulatory risk guarantees) could help ensure that promising investments, notably in infrastructure, would receive adequate financing despite low credit ratings for a country. Furthermore, policy based guarantees could be provided to emerging market economies in support of efforts to undertake reforms that may not immediately translate into lower risk ratings. Special arrangements might also be feasible for countries jointly undertaking projects that might benefit one or more countries. The proposal for a sovereign guarantee pool, for example, could facilitate currency (and regulatory) risk sharing among countries with common interests and projects. This risk pooling arrangement could create benefits for groups of countries with different credit ratings, and enable projects to be financed based on the risk ratings of the most credit worthy participating country.

Beyond sovereign guarantee instruments, the proposals for a stability and social investment facility and debt tolerance facility could also potentially be very useful, because they could more directly assist coun-

37 The SIF would be different from other IMF facilities such as the extended fund facility (EFF). While the former is envisioned to provide blended concessionality lending, the latter type of facility provides non-concessional lending.

tries in the process to shed their debt intolerance. As envisioned, these lending facilities could support the transition from bad to good debt dynamics by lowering the cost of capital for emerging market economies that have already demonstrated strong political commitment to reduce public indebtedness and pursue fiscal and institutional reforms.

Another key purpose of these types of facilities would be to help ensure that the fiscal and institutional reforms would not come at the cost of lower investments, notably those in human capital. This is achieved, principally, by offering a blend of concessionality,[38] which in turn is expected to help spur more favourable debt dynamics over the period of access to the facility. Hence, these types of facilities are entirely different from what has been on offer by international financial institutions so far. Table 3 highlights the

Table 3. Summary of the Key Features of the SIF, CCL and CIF

	Stability and Social Investment Facility (SIF)	Contingent Credit Line (CCL)	Country Insurance Facility (CIF)
The instrument	Lending facility involving an IMF-World Bank program to: a) reduce the chronic vulnerability of high-debt middle-income countries; and b) set a path for the growth of real income.	Lending facility serving as a precautionary line of defence against contagion.	Interest rate insurance that guarantees automatic access to a line of credit at a prefixed rate.
Conditionality	Phased-in so that given initial conditions, the likelihood of disqualification would be low; qualification requires Executive Board approval	Ex ante, involving a qualification process that requires IMF Executive Board approval	Ex ante
Eligible countries	Heavily indebted emerging market economies with sound policies but are vulnerable to contagion	Countries with sound policies, who were not at risk of an external payments crisis of their own making, but were vulnerable to contagion	Same as CCL
Financing	Phased-in to minimize moral hazard	Upon qualification, automatic only for the first tranche	Up front and automatic
Concessionality	Blending between concessional funds and regular lending facilities; cost would be close to LIBOR	Surcharge over the IMF's normal market-based loan rate would have begun at 150 basis points, rising to 350 basis points, depending on the duration of the drawing.	Surcharge equal to 300 bps, and applying a 50 bps increase if extended for another six months.

Sources: Cordella and Yeyati (2005), Derviş and Ozer (2005), Derviş and Birdsall (2006) and IMF (2004).

38 Perhaps more concessional than IDA loans, but less so when compared to non-concessional IBRD loans.

potential value-added of the stability and social investment facility (SIF), compared to emergency liquidity type instruments like the contingent credit line (CCL) and the country insurance facility (CIF). What is clear from the intended design of the SIF—including phased-in conditionality, targeted access, phased-in financing and blended concessionality—is that it is not a crisis facility; and it is envisioned to respond to the source of the chronic problem for many high debt emerging market economies. A facility like the SIF could thus further enhance the prospects for graduating out of debt intolerance by improving a country's prospects for debt management, growth and development.

Conclusion

Drawing on the available theory and evidence, this paper sought to map out the factors that contribute to financial instability and debt management difficulties in emerging market economies. It developed a possible taxonomy for the array of proposed (and some already existing) instruments designed to enhance financial stability and debt management in emerging market economies. While the taxonomy described in this paper is only a preliminary attempt at categorizing these various instruments and proposals, it does help to highlight which instruments respond to which specific aspects of the broader policy challenge at hand. This clarifies the specific purpose and potential contribution of each instrument.

This paper shows that the policy challenge faced by emerging market economies has two important aspects. The first has to do with achieving financial stability, with an emphasis on pursuing domestic institutional and structural reforms, as well as putting in place sound macroeconomic policies (including minimizing currency mismatch risk) and prudential financial regulations. Both theory and empirical evidence suggest that these types of reforms are important preconditions for preventing debt crises and enhancing debt tolerance in emerging market economies. However, there is also reason to believe that country reforms might not be enough. In particular, some of the steps countries have unilaterally taken—such as, in some cases, increased reserve hoarding or implementing severe austerity measures—amount to very costly self-insurance strategies. There are better ways to manage macroeconomic and other types of risks, and instruments such as growth- or GDP-indexed bonds and macro securities could potentially offer countries more efficient risk management strategies. There is a strong case for enhanced international cooperation, both at the regional and multilateral levels, to explore and facilitate the broader use of these types of instruments (Ocampo, 2006; Conceição and Kaul, 2006).

In addition, a second aspect of the policy challenge applies to high debt emerging market economies characterized by chronic debt intolerance: to break free from the vicious cycle of serial default. For countries that are already in this debt trap, it is unlikely that their unilateral measures alone will be adequate to the task. The analysis in this paper reveals that instruments designed to help address this second aspect demand special attention, notably as there is evidence suggesting that debt-related problems in a number of emerging market economies have become chronic. This provides strong impetus to consider and develop proposals such as for a stability and social investment facility (SIF) or a debt tolerance facility, in order to offer countries a more effective path towards enhanced debt management and stronger growth and development outcomes.

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Annex: Instruments to Enhance Financial Stability and Debt Tolerance

Collective action clause (CAC). A contractual provision in international sovereign bonds that allows for a committee of bondholders to negotiate with the debtor in the name of all bondholders (IMF 2002; Eichengreen 2006).

Commodity risk insurance. Refers to insurance and insurance-type instruments such as commodity futures, options and weather index derivatives. These tools are designed to help mitigate the risk of commodity price and/or income volatility (Hess, Richter and Stoppa 2002).

Compensatory financing facility (CFF). A non-concessional lending facility in the International Monetary Fund (IMF) established in the 1960s to assist countries experiencing either a sudden shortfall in export earnings or an increase in the cost of cereal imports caused by fluctuating world commodity prices (IMF 2004a).

Contingent credit line (CCL). A non-concessional lending facility at the International Monetary Fund (IMF) established in 1999, but never used, aimed to help members prevent financial crises. It is designed for countries implementing sound economic policies, which may find themselves threatened by financial contagion. In November of 2003, the CCL was allowed to expire on its scheduled sunset date (IMF, 2004b).

Contingent liquidity facility. A facility for providing a loan to assist project companies in structured financing arrangements that have borrowed in foreign currency to continue to meet their foreign exchange payment obligations; the loan is contingent, and given only in the event of a major devaluation in the host country currency. A domestic currency liquidity facility could help projects meet shortfalls in their local currency revenue stream that may result because of political problems with raising tariffs or prices following a major devaluation (Griffith-Jones and De Lima, 2006).

Countercyclical guarantee facility. Guarantee facility with an explicit countercyclical feature. For example, by taking a longer term perspective in their risk evaluations when issuing guarantees for lending to developing countries, multilateral development banks and export credit agencies could help mitigate boom-bust cycles (Griffith-Jones and De Lima, 2006).

Country insurance facility (CIF). Proposal for "an interest rate insurance that guarantees automatic access to a line of credit at a prefixed rate, if the borrowing country complies ex ante with a number of verifiable conditions. Whenever a liquidity run pushes borrowing costs above the CIF interest rate, an eligible country may turn to the insurer as an alternative financing source, avoiding the need to validate temporarily high interest rates that may have permanent negative effects on debt sustainability (Cordella and Yeyati, 2005: 17)."

Currency swap. System of bilateral and regional arrangements to swap specified amounts of foreign reserves in the event of increased demand during a financial crisis. An example is the Chiang Mai Initiative, which is composed of an expanded Association of Southeast Asian Nations (ASEAN) swap arrangement (ASA) and a network of bilateral swap arrangements (BSAs) among ASEAN countries, the People's Republic of China and the Republic of Korea (ADB, 2003). There is also a proposal to expand and multilateralize the present system of bilateral swap arrangements by creating a central reserve fund where the reserves could be merged and complemented by a more robust regional economic monitoring arrangement (ADB, 2003).

Debt exchange warrant. An option that allows the holder to swap foreign currency denominated debt for local currency denominated debt under specific conditions. In November 2005, Mexico inaugurated the use of

this tool by selling warrants that would allow investors to swap up to $2.5 billion of US dollar denominated debt (with varying maturities between 2007 and 2033) for peso denominated debt (with maturities in 2011, 2014 and 2024) in late 2006. If exercised, the warrants would have the effect of increasing the average duration of domestic debt as well as decreasing the foreign exchange exposure of Mexico (IMF, 2006a, box 3.3).

Debt swap (or conversion). The cancellation of debt in exchange for the debtor's commitment to mobilize resources for an agreed purpose. In international lending for example, the World Conservation Union (IUCN) and the World Wildlife Fund (WWF) have been involved in debt for environment swaps in several countries. A recent proposal involves a wider use of this tool by offering to creditors a menu of MDG-related investments or projects (De Venecia, 2005; UNDP, 2003).

Debt tolerance facility. A facility that would be sponsored by the IFIs in order to encourage high reserve countries/economies (e.g. China, Taiwan ROC, Republic of Korea, etc.) to invest some portion of their reserves into a facility that would then on-lend to heavily indebted emerging market economies to help these countries reduce their debt levels under an IFI program. The cost of this lending could be set much lower than market rates (the latter determined for each qualifying country); but higher than the spreads that high-reserve countries presently earn on their reserves. It would thus be a "win-win" for both the high reserve countries that would be lending; as well as the high-debt countries that would be borrowing. (World Bank, 2004).

Digital option. Comprised of a combination of put and call options, this instrument is envisioned to deliver a payoff that is correlated to sudden stop episodes. An example would be an asset based on the S&P's implied volatility index, which, if added to emerging market economies' portfolios could enhance their risk management strategies and help smooth the impact of sudden stops (Caballero and Panageas, 2005).

Domestic currency inflation-indexed bond (EM Index). Bond denominated in an inflation-indexed basket of currencies of emerging and developing countries. As envisioned, an IFI would borrow by offering this type of debt security, attracting investors because the security's value could not be inflated away (because it's indexed), and its value would tend to be stable (because it's comprised of a basket of currencies). The IFI could then on-lend to developing countries on an indexed basis in the currencies that constitute the index, and in the proportions that make up the basket, helping to solve the problem of currency mismatch (Eichengreen and Hausman, 2004; Williamson, 2005).

Emerging market local currency debt (LCD) portfolio. A diversified portfolio of emerging market local currency government debt securities that could be constructed and held by investors. "The LCD portfolio would work by buying local-currency government debt instruments from many different developing countries and combining them so as to produce a portfolio whose return and variance would be competitive in international capital markets (Dodd and Spiegel, 2005: 94)." Compared to the EM Index proposal, the LCD portfolio proposal differs to the extent that it does not necessitate the approval and active participation of industrial countries nor the international financial institutions.

Emerging market fund (EMF). A fund from which financing would be drawn in order to help stabilize an emerging market bond price or spread index such as J.P. Morgan's EMBI. The EMF would respond to the malfunctioning of the global capital market by acting as a lender of last resort, and aligning incentives with public announcements by providing financing, as well as helping to relieve institutional market constraints (e.g. collateral constraints) by infusing the market with greater liquidity. The EMF would, in a way, provide a

price guarantee to create an environment in which asset prices can be credibly expected to remain above the crash levels that trigger sudden stop episodes (Calvo, 2002; Calvo, 2005).

Exogenous shock contingency facility. A facility that grants additional debt relief if shocks that are clearly exogenous to the country result in a new erosion of debt sustainability. This kind of insurance against exogenous shocks was first proposed to prevent regress in heavily indebted poor countries' debt reduction (Birdsall, Williamson and Deese, 2002).

Fiscal insurance mechanism. "A system of intra-country compensating payments undertaken to smooth cyclical fluctuations in fiscal expenditures. Member countries would agree to contribute to a buffer fund administered by a supra-national institution or a centralized fiscal authority. The risk-sharing scheme would consist of a set of rules that determine the amounts of net transfers according to permanent and cyclical components of government revenues (Dos Reis, 2005: 151-2)."

Fiscal rule. Specific commitment made by a national government (or group of governments) to maintain budget deficits and public debt ratios below certain thresholds. One example is the EU Stability and Growth Pact (Heller, 2003).

Growth- or GDP-indexed bond (GIB). Bond that "would link payments on sovereign debt to the issuing country's rate of economic growth…By stabilizing debt ratios they could, in some circumstances, help reduce the occurrence of debt defaults and financial crises (Council of Economic Advisers, 2004: 1)." There are at least two possible types of these bonds. One would index the amount of payments (on interest and/or principle) to the borrowing country's GDP; another, the variable amortization bond, would index the schedule of payments instead (see Borensztein and Mauro, 2004; Council of Economic Advisers, 2004; United Nations, 2005).

Indexed bond. Bond whose terms of payment are linked to real variables related with or impacting on the underlying economic conditions of the issuer. Examples include catastrophe bonds, commodity-indexed bonds, domestic currency inflation-indexed bonds, and GDP-indexed bonds.

Macro security. A type of security traded in a market for long-term claims on aggregates of income (including national incomes). This tool would create new classes of tradable risks, enhancing risk management opportunities (Shiller, 2003).

Partial credit guarantee. Guarantee that provides comprehensive coverage against all risks for debt service default on a specified portion of the loan or debt. In international lending, partial credit guarantees are typically offered by multilateral development banks (see http://www.miga.org/sitelevel2/level2.cfm?id=1058).

Partial risk guarantee. Guarantee that covers only certain pre-determined types of risk in a transaction. In a project finance structure, it can protect either sponsors (equity investors) or debt investors. Coverage could include: changes in law; failure to meet contractual payment obligations; obstruction of an arbitration process; expropriation and nationalization; foreign currency availability and convertibility; nonpayment of a termination amount or an arbitration award following a covered default; and failure to issue licenses, approvals, and consents in a timely manner. In international lending, partial risk guarantees are typically provided by multilateral development banks. A partial risk guarantee could also be applied as a targeted regulatory risk guarantee (Sheppard, 2005).

Policy based guarantee. Guarantee provided to support certain types of policy reforms by a country, notably those in its financial sector. In international lending, policy based guarantees are typically offered by multilateral development banks. For instance, the International Bank for Reconstruction and Development (IBRD) offers a policy based guarantee that is designed to support access to international financial markets for its well-performing member countries, when the markets are temporarily constrained or blocked. Like partial credit guarantees, policy based guarantees cover a portion of debt service on borrowing (loans or bonds) by an eligible member country from private foreign creditors; but policy based guarantees are provided in support of agreed structural, institutional, and social policies and reform. These guarantees are considered an alternative or supplement to adjustment loans (see http://www.worldbank.org/guarantees).

Political risk guarantee. Partial risk guarantee that covers specific events such as currency inconvertibility and transfer restrictions, confiscation, expropriation, and other forms of deprivation of project assets; political violence (sometimes including terrorist attacks); and breach of contract. In international lending, political risk guarantees are typically offered by multilateral development banks (see http://www.miga.org/sitelevel2/level2.cfm?id=1058).

Principles for Stable Capital Flows and Fair Debt Restructuring. A set of voluntary market-based guidelines for cooperative action in which borrowers and creditors alike recognize their mutual interest in pursuing dialogue and cooperative actions. The Principles (a) highlight key actions for crisis avoidance; (b) focus on crisis containment and management in ways that can be applied flexibly and on a case-by-case basis; and (c) forthrightly underscore the need for good faith negotiations and fair treatment in situations when debt restructuring is necessary. The Principles focus on ensuring four key areas: (a) transparency and timely flow of information; (b) close debtor-creditor dialogue and cooperation to avoid restructuring; (c) good faith actions; and, (d) fair treatment (IIF, 2005).

Regulatory risk guarantee. Partial risk guarantee that covers certain aspects of regulatory risk related to an infrastructure project, such as the timing of and formula used for tariff adjustments. In such arrangements, the host-country would provide a commitment to maintain certain features of its regulatory regime and in case they fail to do so, the project sponsors would then be able to draw on a letter of credit provided by a commercial bank, with a commitment for reimbursement by the World Bank. The latter in turn, would invoke the counterguarantee provided by the host country government and seek reimbursement (Sheppard, 2005).

Reserves. Typically refers to a central bank's holdings of foreign currency assets, particularly foreign government securities; however, a country's reserves could also include gold and special drawing rights (SDRs). Reserves are often used similar to a buffer stock—the buying and selling of foreign exchange is used to even out fluctuations in the country's exchange rate. However, reserves could also be drawn-upon in order to implement countercyclical policies (Higgins, 2004; Mendoza, R.U., 2004; Rodrik, 2006).

Reserve augmentation line (RAL). A proposed IMF instrument that is intended to reduce the risk of capital account crises, reinforce strong policies, and offer an alternative to costly self-insurance strategies. It is also expected to potentially fill the void in the IMF's crisis prevention framework left by the expiration of its contingent credit line (CCL) in 2003. As presently envisioned, the proposed features of the RAL include, among others, strong qualification criteria (e.g. good macroeconomic policies, sustainable debt, transparent data reporting and no immediate need for financing) and frontloaded access. Countries with access to international capital markets, and with no significant need for policy adjustment and reform, but with remaining vulnerabilities are the intended users of this instrument (IMF, 2006b; 2007).

Reserves securitization. A proposal to "securitize" reserves, thereby eliminating the fiscal costs of sterilizing capital inflows, while at the same time giving domestic investors an opportunity to diversify their portfolio holdings. Once the central bank has accumulated the reserves it feels it needs for precautionary purposes, it would determine the amount of outflows that it would be willing to permit. It would then license a private fund management company to start a closed end foreign asset fund with initial assets totalling that amount. The company would raise money from domestic investors by selling them fund shares denominated in the domestic currency. The central bank would sell the fund foreign currency, at the prevailing market exchange rate, in exchange for the domestic currency the fund raises from investors. The fund would then invest the foreign currency in foreign financial assets like stocks and bonds. Periodically (say every quarter), new funds could be licensed, or the size of existing ones augmented, based on the desired level of capital exports, which, in turn, could depend on factors such as the level of inflows (Prasad and Rajan, 2005: 5-6).

Shock absorber facility (SAF). A proposed lending facility at the IMF with the function of reducing the impact of exogenous shocks on developing countries and emerging markets, mainly by smoothing the effects of exogenous shocks on fiscal balances and debt ratios. The SAF would provide a type of insurance not available through traditional borrowing by shifting the risk of specific external shocks from the participating country to the IMF. The SAF would be structured similar to an IMF loan, except payment terms would be steeply linked to a key variable which proxies for the external shock of greatest concern to the country (Forbes, 2006).

Sovereign debt restructuring mechanism (SDRM). A statutory framework for sovereign debt restructuring, proposed at the International Monetary Fund (IMF). Essentially, this mechanism would allow a sovereign and a qualified majority of creditors to reach an agreement that would then be made binding on all creditors that are subject to the restructuring (Eichengreen, 2006; Krueger, 2002).

Sovereign guarantee pool. "Sovereign guarantee pools [would] facilitate currency (and regulatory) risk sharing among countries with common interests and projects. If carefully structured, such a risk pooling arrangement could benefit both participating countries with lower credit ratings than their neighbours and those with better credit ratings (Griffith-Jones and De Lima, 2006: 588)."

Stability and social investment facility (SIF). A lending facility with a blend of concessionality to help indebted emerging market economies attain sustainable growth and viable public finances while allowing them to continue fighting poverty and progressing toward the Millennium Development Goals. It is intended to support heavily indebted middle-income emerging market economies to pursue a medium-term program with the explicit aim of reducing their chronic vulnerability to debt-related problems and setting a path for the growth of real income (Derviş and Ozer, 2005; Derviş and Birdsall, 2006).

Variable amortization bond. Bond that allows the borrower some flexibility in the schedule of payments on principle and/or interest, but otherwise maintaining the total amount of payments unaltered. In international lending, one proposal envisions a GDP-indexed bond that would have variable amortization—allowing the borrower to delay payments once its GDP drops below a certain floor. The borrower would then make-up through possible pre-payments if the GDP pierces a certain ceiling (United Nations, 2005).