

# Public Debt Management in Emerging Market Economies

Has This Time Been Different?

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## Abstract

Despite the scale of the global financial crisis, to date it has not resulted in a sovereign debt crisis among emerging market countries. Two significant factors in this outcome are the improved macroeconomic management and public debt management in these countries over the past decade. This paper reviews the improvements in macroeconomic fundamentals and the composition of public debt portfolios in emerging market countries prior to the crisis and concludes that the policies and strategies pursued by governments provided them with a buffer when the crisis hit. Nevertheless, with the international capital markets effectively closed for over three months and domestic borrowing in many cases impacted by extreme risk aversion, government debt managers were required to adapt their strategies to rapidly changing circumstances. The paper reviews the impact of the crisis and the responses of debt managers to the drying up

of international capital, decreased liquidity in markets, and sharply increased term premia. Three categories of response are identified: (i) funding from other sources to reduce pressure on market borrowing; (ii) adapting funding programs to changes in demand in the different types of securities; and (iii) implementing liability management operations to support the market. Most governments were willing to accept temporarily greater risk in their portfolios, often reversing long established strategies, at a time when financial markets were under stress. These actions contributed to the measures taken by governments to stabilize markets and prevent economies from stalling. Looking to the future, government debt managers will need to consider how they can increase the resilience of public debt portfolios for the uncertain times that lie ahead.

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This paper—a product of the Banking and Debt Management Department and the Global Capital Markets Development Department—is part of a larger effort in the departments to research trends and disseminate sound practices on public debt management and domestic debt market development. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at [prdanderson@worldbank.org](mailto:prdanderson@worldbank.org), [avelandia@worldbank.org](mailto:avelandia@worldbank.org), and [asilva3@worldbank.org](mailto:asilva3@worldbank.org).

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# **Public Debt Management in Emerging Market Economies: Has This Time Been Different?**

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## Introduction

The global financial crisis of 2008 – 2009 was the worst the world has seen since the 1930s in both its intensity and global reach. The “emerging market” countries (EMs) were not immune: at the height of the crisis the emerging-market government bond index (EMBIG) had seen an increase in spread of over 700 basis points from its low point in June 2007, and the international capital markets were effectively closed to issuers for several months. Yet, despite the severity of the global crisis, it did not result in an emerging market sovereign debt crisis of the type that we have seen in the 1990s and early 2000s.<sup>2</sup>

In this paper, we review the reasons why the impact on EMs was so very different from these earlier events, as well as the responses of debt management officials in EMs to the rapidly changing market environment they faced. In section one, the outcomes of macro-economic policy over the decade beginning 2000 are outlined and a story of significantly improved fundamentals emerges. The “virtuous circle” of strong growth, responsible fiscal management, reduced public debt and stable inflation (until the fuel and food crises) provided public debt managers with greater choice and more opportunities to more effectively manage risk in public debt portfolios. We present data on the changes in the composition of public debt over this period, showing marked reductions in currency, interest-rate and rollover risks. Combined with reduced public debt levels and increased levels of foreign-currency reserves, the public debt management strategies adopted in most emerging market countries gave them flexibility to ride out the crisis and adjust borrowing plans to cope with adverse market conditions.

In section two of the paper, the impact of the crisis on the market environment for EMs is outlined and summary data are presented on market spreads, issuance volumes, borrowing requirements, domestic bond yields and capital flows. This section also reviews the responses by debt managers to the impaired and volatile markets. In order to do this, a survey was designed, targeting initially the 24 countries listed in footnote 1 and which represent those countries with relatively more developed domestic debt markets. The survey covered four main topics: (i) borrowing requirements, to reflect the impact of the crisis on the funding gap and the channels of transmission; (ii) adjustments to the funding plan, to capture substantial revisions in the funding sources, or, in the composition of funding by currency, instrument, maturity, placement mechanism, or timing ; (iii) adjustment to debt management strategy, to reveal if the adjustments in the funding plan led to a formal revision of the debt management strategy including the

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<sup>2</sup> The 24 countries considered in this paper include, by region, East Asia Pacific (EAP): China, Indonesia, Malaysia, Philippines and Thailand; Europe and Central Asia (ECA): Hungary, Poland, Romania, Russia and Turkey; Latin America and the Caribbean (LAC): Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay; Middle East and North Africa (MNA): Egypt and Morocco; South Asia (SAR): India and Sri Lanka, and; Sub-Saharan Africa (SSA): Kenya, Nigeria and South Africa.

revision of major risk management guidelines in light of changes in demand; and (iv) outlook for 2010 to gauge the debt manager' expectations for the near future regarding the impact of these events on the funding plan and market development for 2010.

Of the 24 countries targeted in the sample, the following 14 answered the survey: Brazil, Colombia, Egypt, Hungary, Indonesia, Kenya, Mexico, Morocco, Peru, Poland, Romania, South Africa, Turkey, and Uruguay.

Finally, we conclude by drawing some lessons from the crisis for future macroeconomic policy and public debt management strategies.

## I. Crisis Preparedness in Emerging Markets

**Emerging markets (EMs) enjoyed an unprecedented period where both strong macro fundamentals and a benign global economic environment increased the scope for implementation of debt strategies that could reduce their risk to shocks.** The positive combination of several macroeconomic dimensions and interactions among them allowed debt managers from most EM economies (EMEs), as we cover in greater detail below, to actively improve their debt portfolios. Historically, an unfortunate combination of weak macroeconomic fundamentals and debt management practices has exacerbated the impact of previous economic crises and downturns. This time was different.

**In order to gauge the sea change in the macroeconomic scenario and how it influenced debt management practices we start by illustrating the significant shift observed on each of these macroeconomic dimensions (fiscal, monetary, growth and external accounts).** The contrast between the first years of the new century and the three years that preceded the crisis (2005-2007) is particularly striking.<sup>3</sup>

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<sup>3</sup> The changes in these dimensions (fiscal, monetary, external accounts and economic growth) are highly interrelated. Disentangling exogenous and endogenous drivers of such variations is beyond the scope of our analysis.

Chart 1

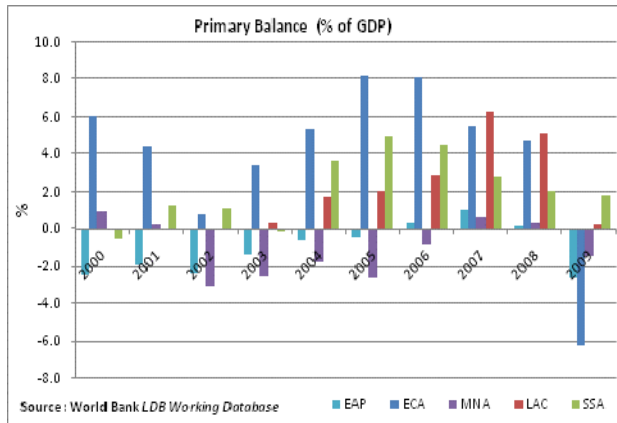
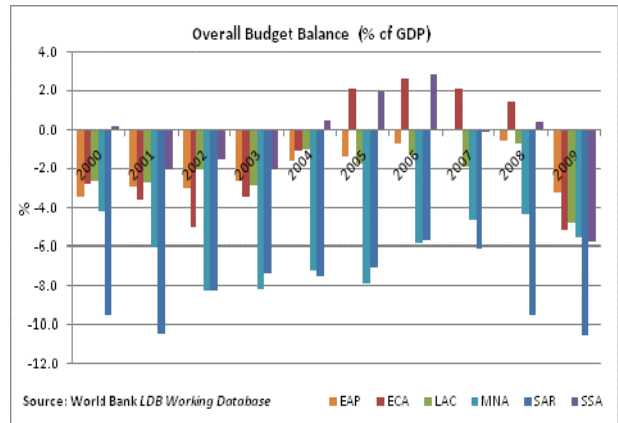


Chart 2



**Fiscal accounts improved remarkably in EMs, with Latin America showing the sharpest changes.** Governments’ primary balances, as a percentage of GDP, were overwhelmingly positive or becoming positive during this period, and overall budget balances, as a percent of GDP, were improving steadily across all regions (see charts 1 and 2). These improvements were crucial in boosting investor confidence that EMs could be better positioned to adopt counter-cyclical policies should conditions change towards an economic downturn – although few would imagine the sweeping global recession that was about to come.

**Monetary policy in EMs experienced a period of increased credibility given that inflation remained relatively stable at historically low levels, despite occasional pressures from commodity prices (see chart 3).** Greater price stability and positive expectations in EMs were favorable ingredients to boost confidence in longer-term bonds, including government bonds. In many countries, especially those that had been historically plagued by volatile and high inflation levels, this scenario paved the way for interest rate cuts (see chart 4), the development of local currency yield curves, and the lengthening of the average time to maturity of the domestic government debt (more below).

Chart 3

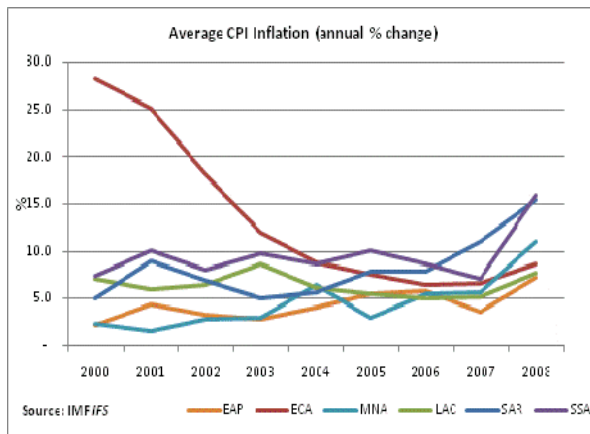
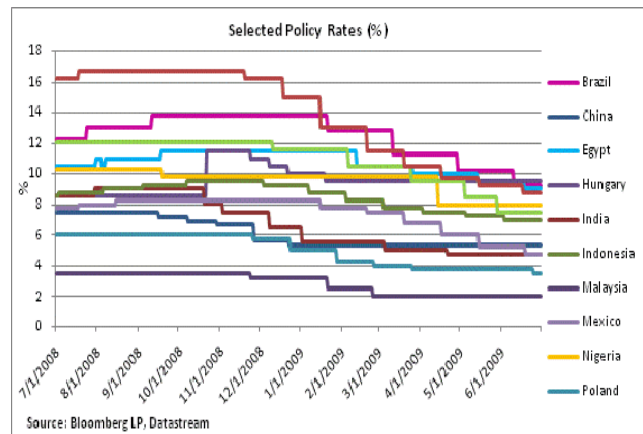


Chart 4



**Buoyant growth in EMs allied to the aforementioned fiscal and monetary policy developments allowed a robust downward trend in debt/GDP ratios in virtually all regions (see charts 5 and 6).**

These variables (fiscal indicators, interest rates and GDP growth) represent the key determinants in the dynamics of debt/GDP ratios. Most EMs enjoyed a long period where this positive combination was in place. Between 2000 and 2008, reductions on the debt/GDP ratios were particularly sharp in SSA and ECA. Between 2005 and 2008, LAC experienced the largest percentage decrease in average debt/GDP ratio. Out of our sample of 24 EMs examined, six showed reductions of about 5-20 percent in the debt/GDP ratio, eleven observed reductions greater than 20 percent, and only seven countries had higher ratios by the end of 2008 as compared to 2000.

Chart 5

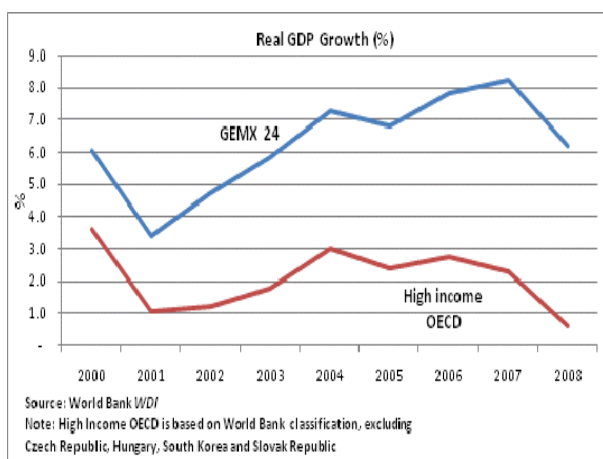
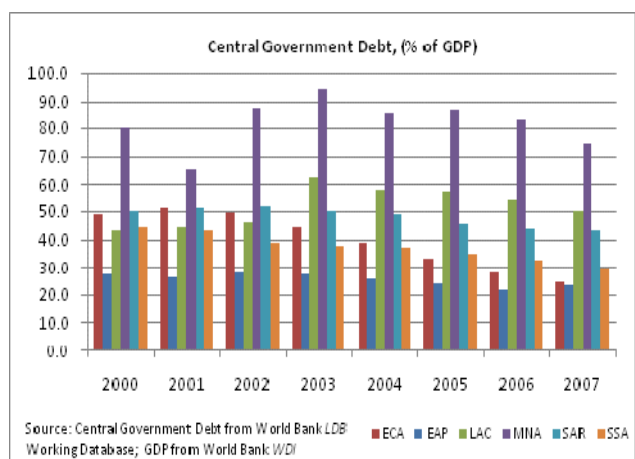


Chart 6



**Improvements in EMs' external accounts provided solid evidence that the positive scenario was leading not only to reduced debt levels, but also to lower vulnerability of these economies to shocks and reversals in capital flows (see charts 7 and 8).** While, admittedly, external account improvements were driven by cyclical factors that led to extremely high international liquidity conditions, proactive policies to reduce debt vulnerabilities (e.g.: buybacks of external debt and shift to funding in local markets) were highly instrumental in the rapid pace of change witnessed in external debt vulnerability indicators. This marked reduction in vulnerability represented a structural change in some economies to break out of a negative shock cycle experienced several times in the past, where pressures on the currency and increased risk aversion had a stronger first order impact in fiscal and debt sustainability indicators.

Chart 7

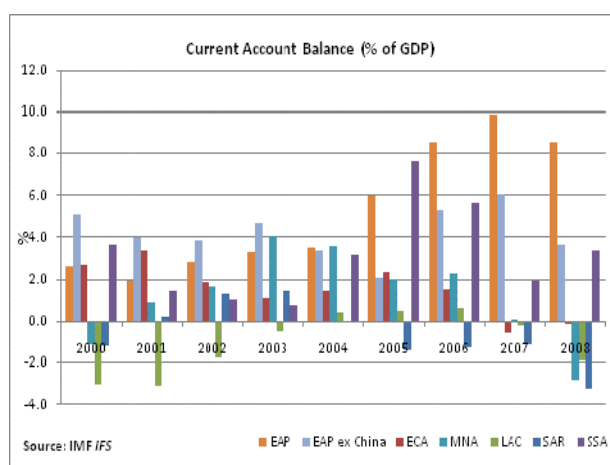
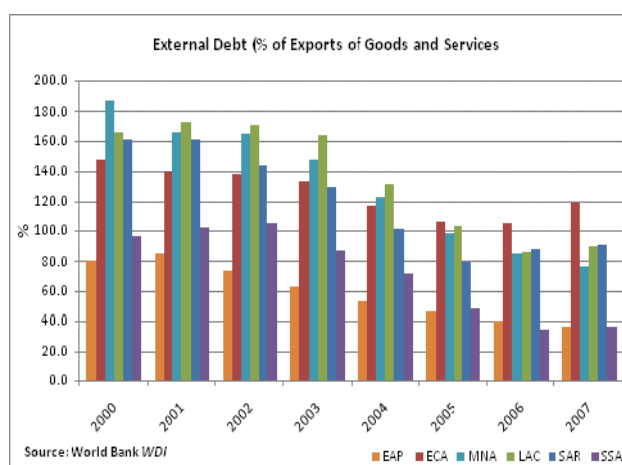


Chart 8



**Notwithstanding the general positive trends seen in the 24 countries that are the focus of this paper, there were other MICs that did not take advantage of the “good times” to strengthen their macroeconomic aggregates and reduce the vulnerabilities to external shocks.** In the Eastern Caribbean, primary fiscal deficits combined with natural disasters and slow growth resulted in a continued build up of public debt reaching limits that today awake sustainability concerns<sup>4</sup>. Similarly, several countries in Eastern Europe, most notably Ukraine, failed to correct external and fiscal imbalances which, combined with the fragility of the banking sector, gravely increased the exposure of the private sector to reversals of capital flows. As it is shown later, the performance of these countries underscores the need to take advantage of the benign phase of the cycle to address debt problems; once a crisis hits, the options for action quickly become curtailed. In any case, these countries were the exception and the ones covered in the sample contain the majority of the world’s population.

<sup>4</sup> The average debt-to-GDP ratio of the eight most indebted CARICOM states passed the 100% threshold in 2009.



**On the back of healthier macroeconomic fundamentals and a benign external environment, debt managers engineered a significant transformation of government debt portfolios.** There was a general reduction of exposures to changes in exchange and interest rates through an increased focus on domestic debt financing, including a reduction in floating-rate bonds. The sustained increase in the share of the domestic debt helped mitigate the dependence from external funding sources and the exposure to currency risk. More importantly, the structure of the domestic debt itself experienced a significant transformation as government authorities embarked on market development programs that allowed debt managers to extend the average life of domestic debt partly through the issuance of long-term fixed-rate instruments<sup>5</sup>. The progress attained in the last decade partly freed debt managers in emerging market countries from choosing between long-term fixed-rate instruments denominated in foreign currency and short-term ones in local currency. This traditional trade-off represents a choice between currency risk on one hand, and interest-rate risk on the other.

### **Exposure to Foreign Currency Borrowing**

**The 34 countries that defaulted or rescheduled the external debt between 1980 and 2000<sup>6</sup> illustrate that excessive foreign currency borrowing exposes the government's financial stability to sudden stops of capital flows, or to a drastic fall in the value of the local currency.** For several EMs dependence on the international capital markets resulted in liquidity crises when these markets closed and governments were unable to rollover their foreign currency obligations. EMs were also familiar with episodes of massive devaluations; when combined with high debt levels, these resulted in debt servicing costs taking an unusually higher share of the revenues to the point when the governments were unwilling to meet their obligations with external creditors. To some extent, the strengthening of the government debt portfolios could be interpreted as debt managers' policy response to the external debt crises of the 1980s and 1990s.

**A first approach to the exposure of the government finances to foreign borrowing indicates a dramatic inversion in the overall short foreign currency position of EMs over the last 10 years<sup>7</sup>.** This can be seen in the evolution of the net foreign currency debt calculated as the gross government

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<sup>5</sup> A common denominator of the transformation of the domestic debt markets in EMs was the expansion and growth of the local investor base especially non-bank financial institutions, most notably pension funds, but also insurance companies and mutual funds. Foreign investors also played a major role in countries like Mexico and Brazil, where they showed significant appetite for local-currency long-term fixed-rate instruments.

<sup>6</sup> See Rogoff and Reinhart (2009). By region, 11 countries defaulted in Africa, 4 in Asia, 4 in Europe and 15 in Latin America. From the latter, 4 countries defaulted or rescheduled 3 times during that period.

<sup>7</sup> However, a full analysis of the exposure of the government financial position to foreign currency borrowing requires complete information on government stocks and flows. Because of data limitations, this paper ignores the cash flows and assumes that the main government stocks are the government debt and the international reserves of the central bank.

foreign currency debt minus the international reserves. As presented in charts 9 and 10, out of the 4 more indebted countries in 2001, Russia and Brazil had become net creditors by 2009. The other two, Turkey and Mexico, reduced their combined net FX debt from \$123 billion in 2001 to \$45 billion in 2009. Most impressive is the case of China with a 5-fold increase in its international reserves from about \$200 billion in 2001 to over \$2 trillion in 2009, while FX debt contracted from \$49 billion to \$35 billion. To better appreciate the magnitude of the changes in other EM countries, China has been excluded from these charts.

Chart 9

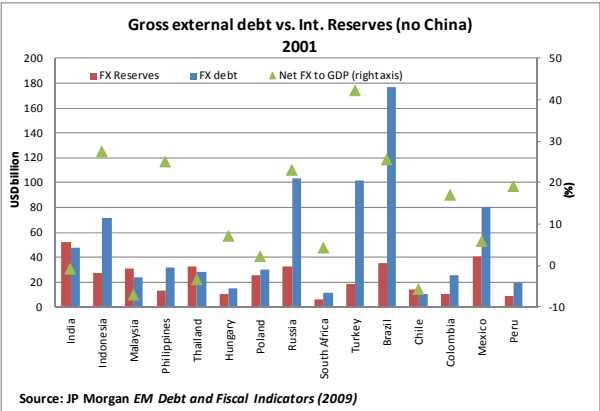
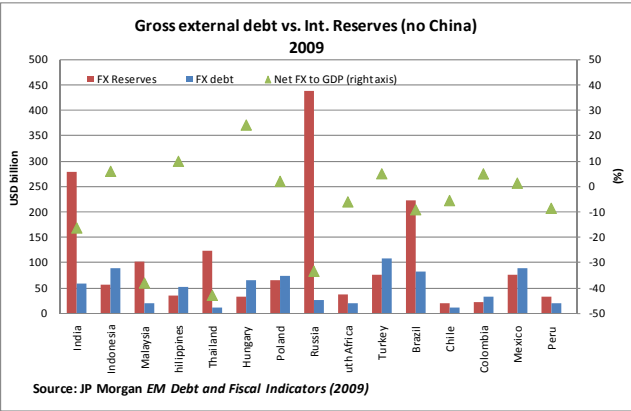


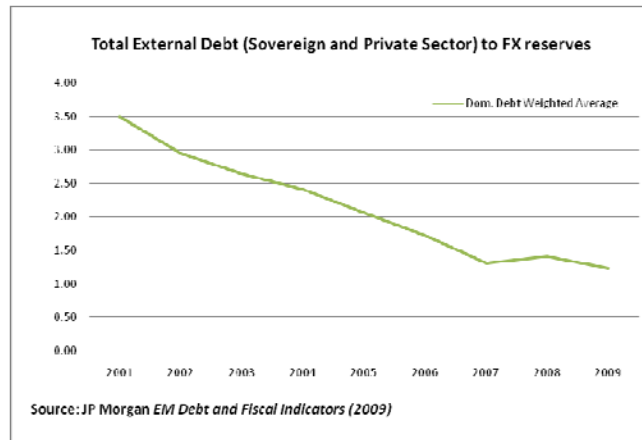
Chart 10



**Although international reserves may also be compromised by a high level of private external debt, there is no question that their accumulation dramatically reduced the overall exposure of our EMs group<sup>8</sup>.** For the sample of selected EMs, chart 11 shows that the weighted average of the ratio of total external debt to international reserves dropped from 3.5 in 2001 to 1.2 in 2009. The steady declining trend over the decade was only slightly reversed by the global financial crisis in 2008.

<sup>8</sup> The implementation of more flexible FX regimes in many EMs also contributed to reduce their exposure to shocks and facilitated adjustments in the external accounts.

Chart 11



**While the accumulation of international reserves played a major role in reducing the overall short foreign currency position of EMs, a significant shift in the currency composition of the government debt portfolios was also an important contributor.** The reduction in foreign currency debt was achieved thanks to a parallel increase in the domestic debt. As chart 12<sup>9</sup> shows, the (weighted) average ratio of external to domestic debt for selected EMs dropped steadily from 0.75 in 2000 to 0.22 times in 2009<sup>10</sup>. The declining share of external debt happened across all regions, but it was more impressive in Europe and Latin America. In Europe the external to domestic debt ratio plummeted monotonically from 2.58 times in 2000 to 0.58 in 2009; in LAC the ratio actually increased in 2001 and 2002 due to the financial turmoil in Brazil<sup>11</sup>, and the increased foreign borrowing combined with a devaluation in Colombia, but the weighted average fell from over 1 in 2002 to 0.2 in 2009<sup>12</sup>. These changes were also significant in Asia where the (weighted) ratio fell from 0.5 to 0.15

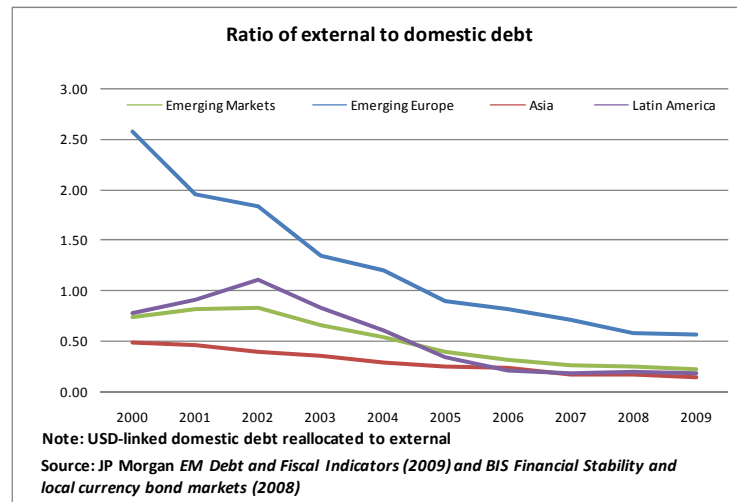
<sup>9</sup> The chart depicts the ratio of external to domestic debt over the last 10 years

<sup>10</sup> The unweighted ratio fell steadily from 1.44 to 0.77 over the same period.

<sup>11</sup> The turmoil was created by a strong market reaction against the increasing probability of the left wing candidate winning the presidential elections in 2002.

<sup>12</sup> Unweighted averages are not used for the regions because in small samples, countries with low debt stocks and high ratios (e.g. Chile) distort the mean. In any case, the trends in unweighted averages show the same structural changes

Chart 12



The relatively swift adjustment in the structure of the debt stock was possible thanks to the implementation of a series of liability management operations that altered the structure of the existing debt stock. In all regions debt managers prepaid international bonds and/or multilateral and bilateral debt through buy backs or exchanges. In addition, countries like Colombia, Brazil, Uruguay and Egypt issued, for the first time ever, global bonds denominated in local currencies in the international capital markets. Even, if the contribution of these securities to the transformation of the composition of the government debt portfolios was rather marginal (except for Uruguay), this led to questioning of the validity of the “original sin hypothesis”<sup>13</sup> and opened a new financing channel to debt managers. For Brazil, this channel allowed the government to issue fixed-rate securities in reais at longer maturities than those placed in local markets, creating a valuable reference for the gradual extension of the curve domestically (discussed in more detail in the next section).

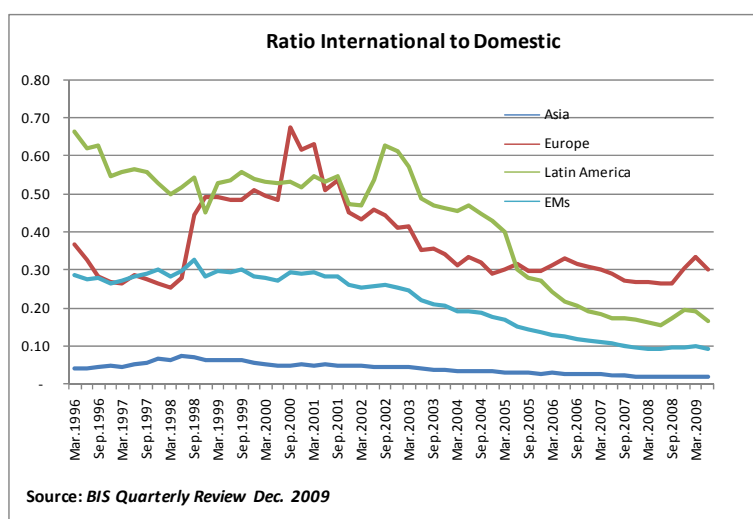
These findings are also confirmed by the structure of outstanding securities issued by EMs reported in the BIS’s quarterly statistics<sup>14</sup>. According to the BIS, international outstanding bonds and notes issued by EM governments as a proportion of their total issuance dropped 20 percentage points from over 30% in 1998 to about 10% in 2009. It is worth noting the considerable variation in this ratio among regions. While in Asia securities issued in foreign markets have traditionally accounted for less than 7%

<sup>13</sup> See Eichengreen, B., and Hausmann, R., (1999). "Exchange Rates and Financial Fragility", In New Challenges for Monetary Policy. Proceedings of a symposium sponsored by the Federal Reserve Bank of Kansas City.

<sup>14</sup> BIS quarterly statistics on bonds and notes outstanding issued by governments of EMEs. The sample included in chart 13 tracks the same countries for domestic and international securities. These are the countries used by the BIS in the Securities statistics and Syndicated Loans Table 16A: Domestic debt securities, by sector and residence of issuer. See <http://www.bis.org/statistics/secstats.htm>. The ratio of international to domestic securities slightly overestimates the ratio of foreign to local currency because of the issuance of local currency bonds in the international capital markets.

of the total, in Latin America until 2002 more than half of the outstanding securities were issued in the international capital markets. The declining trend in the ratio for EMs is offset by Asia with a stock of domestic securities that in 2009 is 5 times larger than that of Latin America and 2.5 that of Europe. Indeed the relatively low and stable share of international securities in Asia, between 1% and 3%, is in startling contrast with Latin America where the ratio dropped from over 60% in 2002 to 17% in 2009. In Europe, international securities that were 37% of the total in 1996 reached almost 70% by September 2000, driven by Russia foreign borrowing and then plummeted to 30% in 2009.

Chart 13



With the domestic debt taking the lion’s share of the government debt portfolios in our sample of EMs we focus next on reviewing the evolution of exposure to rollover and interest rate risk over the last 10 years.

## Transformation of the Domestic Debt Portfolio

**Domestic debt portfolios in EMs went through major shifts in composition and maturity in the years that preceded the crisis, reducing the exposure of these countries to shifts in the economic cycle and market sentiment.** This was done while dealing with several constraints that have affected many emerging markets for several years. More stable and sounder macroeconomic policies, together with reforms in the pension and insurance industries, changed the investor base that previously comprised almost exclusively commercial banks. Holdings of domestic institutional investors grew steadily. Pension funds became the second largest group of investors in EMs, with strong presence in countries such as Chile, Malaysia, Uruguay and Colombia. Insurance companies also became increasingly important,

holding significant shares in Hungary, India and Poland<sup>15</sup>. Foreign investors also played a major role in countries like Mexico and Brazil, where they showed significant appetite for local-currency long-term fixed-rate instruments. This lifted the constraints that forced debt managers to focus on short-term or index-linked instruments.

**The most noticeable shift was the drop in the (weighted) ratio of floating and short-term to fixed-rate debt from 2 in 2000 to 0.70 in 2009.** As presented in chart 14, this represented a substantial reduction in the exposure to interest rate risk. The spike in 2002 is caused by the set back in Brazil where debt managers were forced to resort to floating or short-term securities as speculation on unfriendly market policies of the potential new government caused turmoil in the financial markets. When Brazil is taken out of the sample the chart shows a steady and significant decline in the ratio from 1.31 to 0.13. Brazil and Mexico the two most indebted countries in the region improved substantially after 2003. Progress was also impressive in Europe where the ratio plummeted from almost 2 to 0.5. The indicator is less useful in Asia as only Indonesia has issued floating or short term paper in meaningful sizes. Also Indonesia has brought down the ratio of floating to fixed-rate from 1.7 in 2002 to 0.3 in 2009.

Chart 14

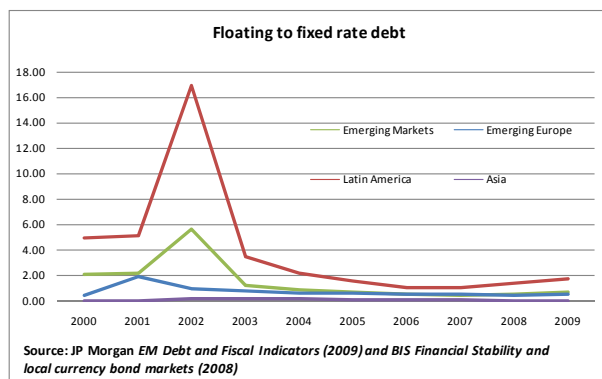
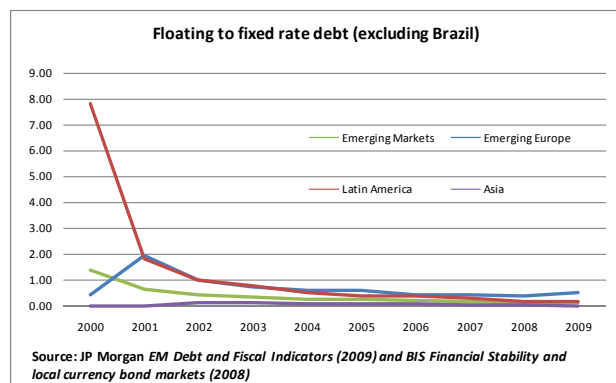


Chart 15

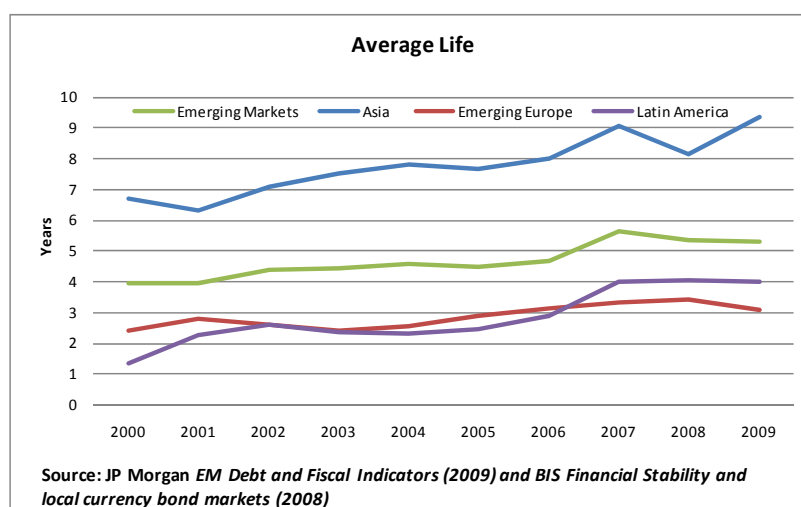


**This shift in the composition of nominal debt brought about a significant increase in the average life of the portfolio which reduced the government exposure to refinancing risk.** Chart 16 shows a steady increase in the average life of domestic debt portfolios from 2000 to 2007 partially due to the success many EMs had in issuing longer-term instruments and extend the yield curve. EMs this time did not have to face the trade-off between long-term indexed (or floating-rate) debt or short-term nominal debt. Several countries were able for the first time to auction fixed-rate local currency instruments at maturities of 10 years or longer. The most impressive progress was achieved in LAC where average life more than tripled

<sup>15</sup> The IMF, Global Financial Stability Report of April 2006 documented the structural changes in the domestic base of investors in Emerging Markets, identifying the increased relevance of institutional investors as one of the key factors behind the improvements in the profile of EM government debt.

from 1.3 years in 2000 to 4 years in 2009. Asia gained almost 3 years from 6.7 to 9.4 while Europe gained 8 months from 2.4 to 3.1 years.

Chart 16

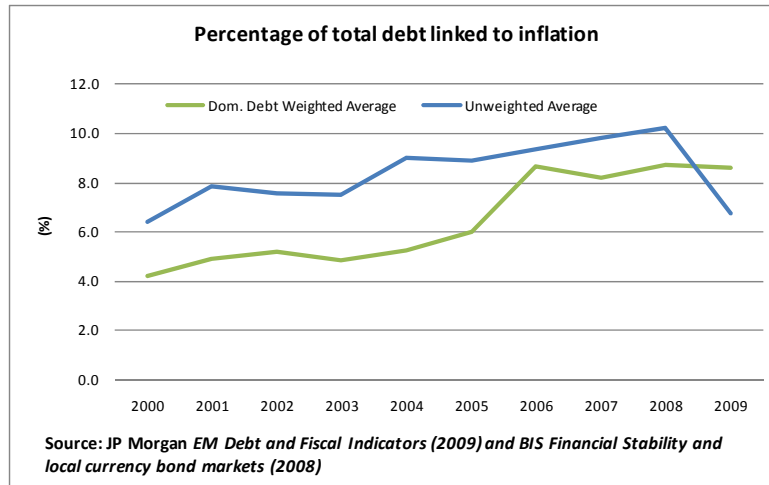


**Another trend in the structure of the domestic debt over the last decade is the increasing importance of inflation-linked debt.** Even though these instruments are not used, or, have low weights in most EM portfolios, they have been introduced by a number of countries as an alternative to nominal fixed-rate instruments to extend maturities and reduce currency<sup>16</sup> and rollover risk. Some countries also issue linkers to reach an optimal debt portfolio, combining these instruments with fixed-rate securities. South Africa for instance who did not use inflation linked securities in 2000 had 16% of the portfolio in these instruments by 2009; Brazil managed to move the share of linkers from 6% to 22%; and Turkey that started using these instruments in 2006, had reached 10% in 2009. Inflation linkers have found strong demand from pension funds and non residents. This is good news as the literature on government debt provides support for some use of inflation-indexed debt, as much of the government's revenues (that service the debt) are real in nature<sup>17</sup>.

<sup>16</sup> For instance, Uruguay has indicated that to shift from FX to LX debt they have relied on inflation linked instruments.

<sup>17</sup> See Barro, R. J. (1997). Optimal management of indexed and nominal debt. Cambridge, MA: National Bureau of Economic Research. NBER Working Paper 6197; Campbell, J.Y. and Shiller R. J. (1996). A scorecard for indexed government debt. Chicago, IL: The University of Chicago Press.

Chart 17



**During the period 2000-2009, only four countries in the sample issued domestic debt linked to FX: Turkey, Brazil, Chile and Colombia.** Turkey brought down the share of FX linked debt from 35% in 2001 to 6% in 2009 and Brazil stopped issuing dollar linked instruments in 2002. For Brazil, Chile and Colombia the share of this type of debt in 2009 was negligible compared with 29%, 22% and 8% respectively at the beginning of the decade. This certainly was an important achievement in improving the composition of the debt portfolio in these countries. Most EMs in our sample however did not recur to this type of instruments during the period of analysis.

**In sum, EMs arrived at the global financial crisis with government debt portfolios that were more resilient to shifts in the economic cycle and market sentiment.** The increase in the share of domestic debt reduced the exposure to exchange rate shocks and the vulnerability to sudden stops in capital flows. The lengthening of maturities in local currency instruments opened new alternatives for debt managers that were no longer confronted with choosing between foreign currency and interest rate risk. Possibly the most important achievement in this area was the diversification of funding sources. Governments have significantly reduced their dependence on bank financing. The evolution of the financial system, pension and insurance reforms and the growth of mutual funds industry, as well the increasing presence of foreign investors, have changed the investor map opening new demand for long-term fixed-rate securities. It is acknowledged that development of the financial sector cannot be achieved quickly and is a result of concerted and deliberate policy actions over a period of years. At the same time, decisions to borrow more in local currency at longer maturities usually requires an acceptance of higher interest costs in the short-run, in order to reduce risk. These realities underscore the strength of policy-making in most EMs over the last decade.



## II. The Crisis: What Happened in Emerging Markets?

**Despite the significant positive changes in macroeconomic and debt indicators in the years that preceded the crisis, there remained serious doubts on the EMs' capacity to withstand shocks.** These economies were yet to be tested by an environment of increased risk aversion and reduced appetite for EM assets, which could be provoked by turbulence in the financial markets and prospects of an economic downturn. Strong skepticism persisted on how resilient EM economies really were to shifts in market sentiment.

**Previous crises had been traumatic: poor debt structures exacerbated the impact of economic shocks.** In these events the world got used to seeing economic shocks leading to a vicious cycle of increased risk aversion to EM assets, strong capital outflows, abrupt currency depreciation and a major negative impact on debt ratios and fiscal indicators - all reinforcing risk aversion and concerns about debt sustainability.

**What most did not expect was the magnitude of the test that was about to come: the greatest financial-economic crisis since the great depression.** The subprime crisis that started in July 2007 in the US, and that at the time appeared to be limited in scope, developed into a global financial crisis and economic downturn that required unprecedented international coordination and policy response.

**Initially, the impact on EMs was mild, but it intensified significantly in the aftermath of the Lehman Brothers bankruptcy on September 15, 2008.** The negligible effect of the crisis on EMs before Lehman's insolvency brought to the spot light the debate on whether these economies had "decoupled." A few months later, the answer was unequivocal: a widespread financial crisis that led to phenomenal deleveraging and capital outflows.

**Debt managers saw funding conditions in international capital markets deteriorate suddenly, with generalized spikes in 5-year EM Credit Default Swap (CDS) (see chart 18) and Emerging Market Bond Index Global (EMBIG) sovereign spreads (see chart 19).** CDS and EMBIG spreads reached their peaks in October 2008, with Sri Lanka's EMBIG spread and Indonesia's 5-year CDS spread widening by 1471 and 900 basis points, respectively, recording the sharpest increases in that month amongst the 24 countries in our sample. Since then, these spreads have been falling almost homogeneously<sup>18</sup> to reach pre-crisis levels by the end of 2009.

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<sup>18</sup> Hungary and Poland are exceptions, reaching their peak 5-year CDS spreads for the period 2008-09, in late February and early March of 2009. The extent of the problems of the financial system in those countries extended the period of relatively wide and increasing spreads

Chart 18

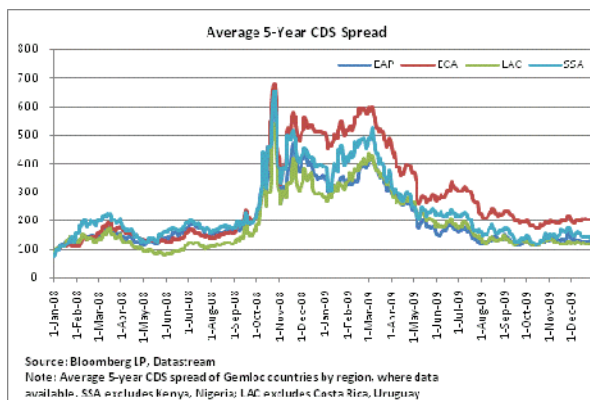
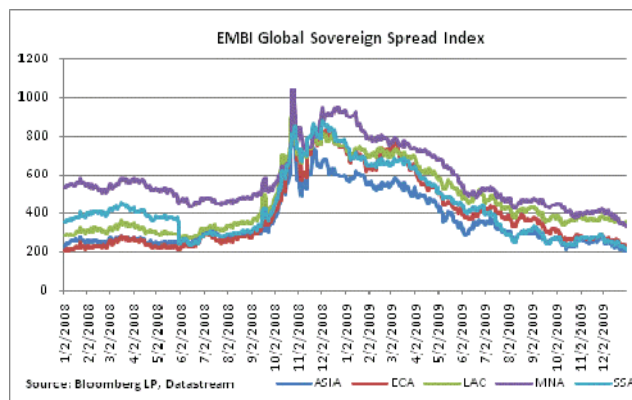


Chart 19



**EM external debt issuance stalled for months as a consequence of increased risk aversion and higher borrowing costs (see chart 20).** International capital markets would reopen only after Mexico’s \$2 billion issuance of a 10-year Global Bond in December 2008. This was then followed by placements by Brazil, Colombia, Turkey and the Philippines in January 2009, as well as other issuances that eventually brought EM issuance back to reasonable levels.

**Significant capital outflows from most EMs increased the challenge to debt managers, especially in countries still dependent on external funding (see chart 21).** The strong and positive capital flows observed in 2007, reduced drastically in 2008, influenced by the abrupt reversal in flows in the last months of that year. Europe and Central Asia and Sub-Saharan Africa witnessed some of the sharpest reversal in portfolio flows in the fourth quarter of 2008. Closed international capital markets and stronger imbalances on external accounts forced many countries to beef up borrowing from multilaterals (more below).

Chart 20

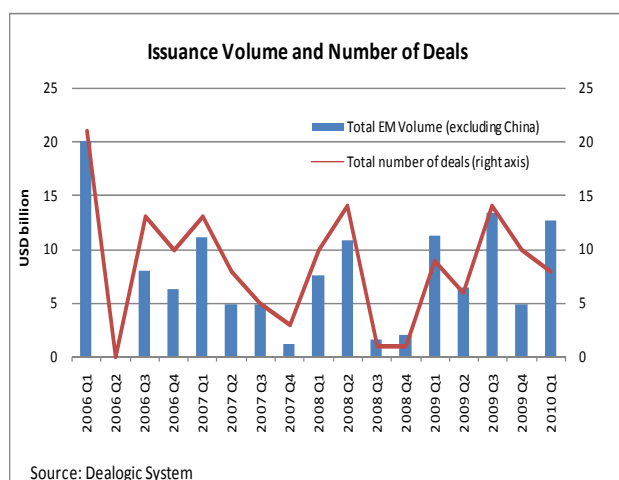
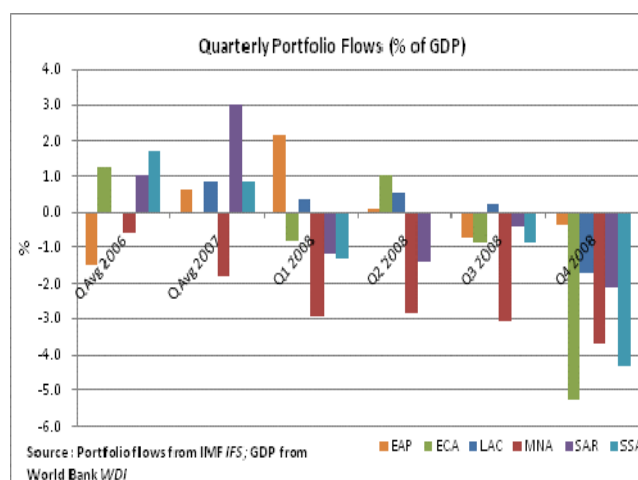


Chart 21



**Impact on EM local currency bond yields was also significant, but it moved yields in contrasting directions across countries in the first months after September 15, 2008.** In most cases, yields either increased or reduced sharply (see chart 22). This divergence was a result of the overall effect of several forces that affected demand and prices for government bonds in different ways for each country.

**Flight to quality, prospects for reduced economic activity and consequent monetary policy easing were among the main factors driving yields down.** These trends prevailed in emerging Asia, with the exceptions of Sri Lanka and Indonesia, where domestic bond rates declined right from the start of the crises, though much less than in mature markets.

**On the other hand, deleveraging as well as increased uncertainty and risk aversion (as shown by CDS and EMBIG spreads) caused sell-offs in many markets, pushing yields up.** These factors may dominate markets especially shortly after a significant shock, when uncertainty is more acute and some groups of investors, such as EM bond funds, abruptly change their portfolios<sup>19</sup> (see chart 23). This was the case in most countries in LAC and ECA, where yields increased until October or November, when they started declining in close correlation with the EMBI.

**The longer-term effect on local yields was more homogenous: a generalized reduction consistent with monetary policy response and the economic downturn.** Although some countries reacted more swiftly than others, policy rates were reduced by central banks across the globe over time, especially in 2009. With deleveraging losing its steam and EMs regaining the confidence of investors, yields declined in most countries to levels below those observed before the Lehman collapse in September 2008.

<sup>19</sup> *Emerging Portfolio Funds Research (EPFR)* tracks net capital flows to a country via bond funds. Net capital flows from bond funds are computed by determining the change in bond fund assets over a period, weighted by the percentage of the fund allocated to a particular country during that period.

Chart 22

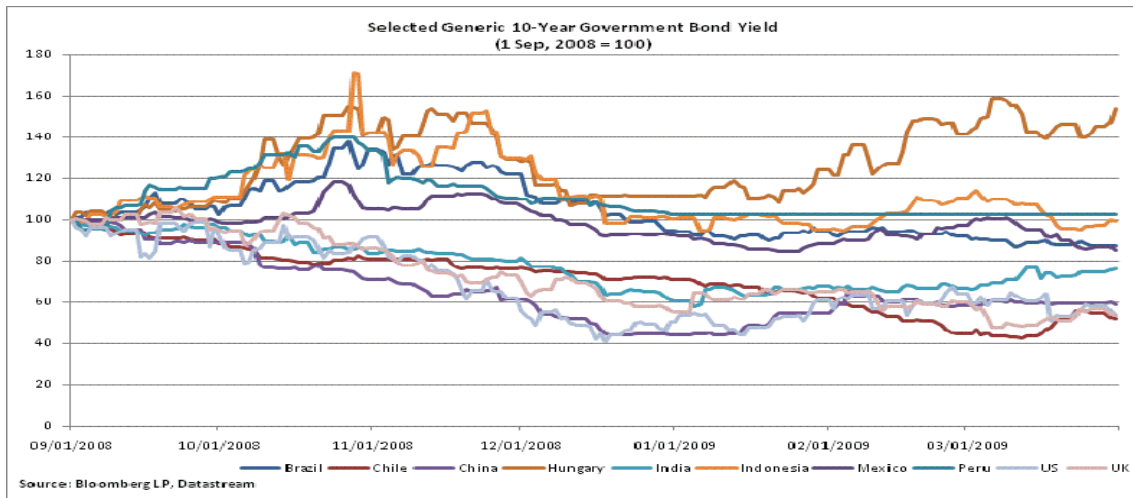
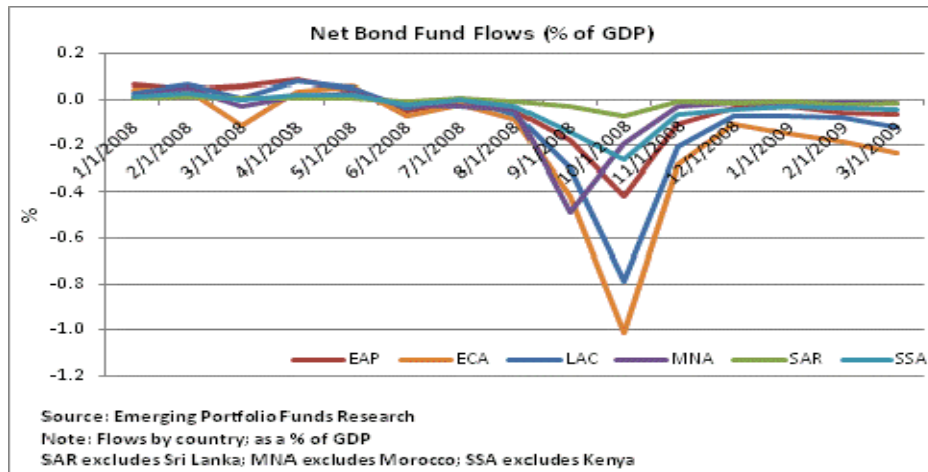


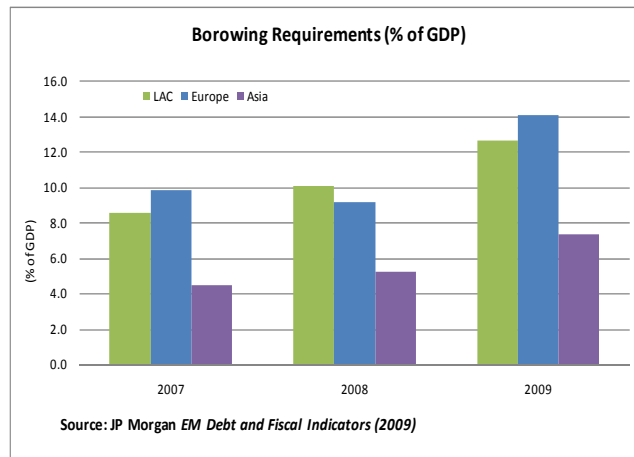
Chart 23



**Contrary to the impact on market rates and capital flows, the impact of the crisis on the fiscal accounts was gradual and hit most EM economies mainly in 2009.** The global financial crisis transmitted to EMs mainly through the contraction of capital inflows and exports. As most high-income countries plunged into the worst financial-economic crisis since the great depression,<sup>20</sup> growth in EMs slowed down from 7.8% in 2007 to 5.1% in 2008 and 0.8% in 2009 and government revenues contracted sharply. A counter-cyclical policy aimed at soothing the impact of the crisis left a fiscal gap that widened out in 2009. The size of the gap varied greatly in the EMs surveyed. As expected, due to the greater dependency on inflows and economic activity in the EU zone, the fiscal gap was larger in Central and Eastern Europe and smaller in Asia and Latin America (see chart 24).

<sup>20</sup> Growth in the G7 economies fell from 2.5% in 2007 to 0.1% in 2008 and -3.5% in 2009 triggering the slowdown in EMs growth.

Chart 24



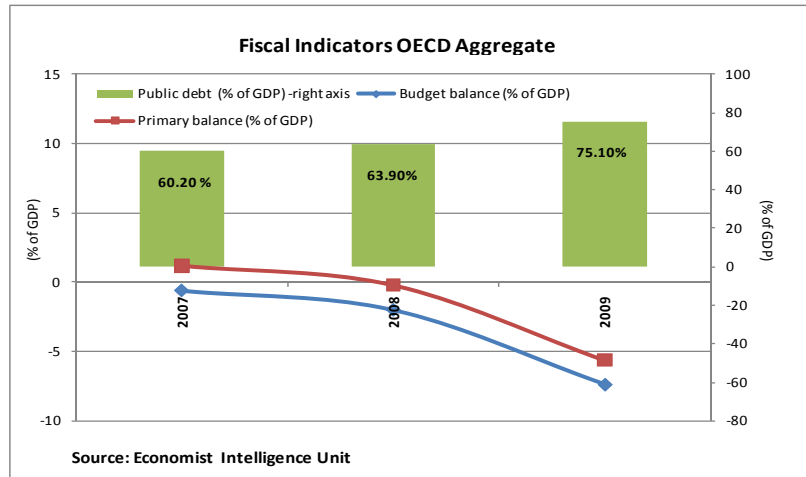
**Borrowing requirements in the surveyed EMs therefore expanded, but different to other crises, this time around EMs were better prepared to handle it.** In Romania and Turkey, where the crisis impact was stronger, borrowing requirements trebled in 2009<sup>21</sup>. This contrasts with most Latin American and Asian countries where debt managers had to fund no more than 1.5 times the sums raised in 2008. The task was nonetheless challenging given that during Q3 and Q4 of 2008 the international capital markets were effectively closed and domestic market conditions in most EM countries had deteriorated. The apparent success with which debt managers were able to meet the additional borrowing demands could reflect that debt portfolios were less dependent on foreign borrowing, while the increase in primary deficit was limited. In addition the external markets, closed for nearly five months, reopened with foreign interest rates at historical lows as monetary policy in the G7 was aggressively expansionary.

**This situation contrasts sharply with that of industrialized countries that plunged into deep deficits and saw their debt to GDP ratios rise rapidly.** The implementation of large bailout packages<sup>22</sup> to keep the financial system afloat and the recession that followed the virtual paralysis of domestic credit and the burst of the real estate bubble, brought about a dramatic increase in the fiscal deficits and the borrowing requirements of these governments. Chart 25 presents the evolution in the primary and overall fiscal deficits as well as the debt/GDP ratio in industrialized countries in the period 2007-2009.

<sup>21</sup> In Hungary the agreements with the Fund and the EU forced a fiscal adjustment which kept the government deficit within relatively narrow bands

<sup>22</sup> Financial rescue programs in industrialized countries are estimated at 13.2% of GDP. See “The Future of Public Debt: Prospects and Implications” by Stephen G. Cecchetti, MS Mohanty and Fabrizio Zampolli, BIS

Chart 25



### The Response to the Crisis from Debt Managers in EMs

**The global financial crisis heightened the role played by debt managers beyond meeting the unexpected borrowing requirements; their actions affected the effectiveness of the policy response to the crisis.** In several countries, debt managers were requested to raise additional funding for the implementation of vital fiscal stimulus packages in an environment of investors' retrenchment. But more importantly, this had to be done in a manner that contributed to the stability of the domestic financial market shaken by the flight of foreign investors and strong risk aversion. In this delicate environment the borrowing decisions needed to carefully weigh the potential impact on interest rates, the fiscal space taken by debt servicing costs, the investors' response and the overall effect on the financial markets.

**The debt managers' response to the crisis varied from country to country depending on the array of instruments available and their experience to work in a new adverse environment.** The global financial crisis tested the debt managers' flexibility to adapt their borrowing strategies after the macro and market fundamentals shifted dramatically<sup>23</sup>. The responses of the debt managers in the sample of selected EMs can be grouped in three categories:

- A. Reducing the pressure on the market by filling part of the funding gap by other mechanisms;
- B. Adapting the funding program to shifts in the demand for government paper; and
- C. Implementing liability management operations to support the market.

- A. **Measures that reduced the pressure on the market by filling part of the funding gap by other mechanisms**

<sup>23</sup> Romania is the most striking example: at the beginning of 2009 the forecasts were GDP growth of 2.9% and a deficit of 2% of GDP. At the end these numbers were -7% and 7.2% respectively.

**The actions aimed at reducing the pressure to the market by raising part of the funding needs by other means included three mechanisms:** (i) Channeling the excess liquidity available within the public sector; (ii) Use of non market funding sources such as multilaterals, and; (iii) Expanding the investor base by using new debt instruments and distribution channels that had not been explored before.

**Most countries reduced or delayed the borrowing from the private sector by recurring to liquid resources within the public sector.** The use of cash reserves allowed the authorities in Peru to stay out of the market and effectively borrow less than originally planned. In Uruguay the authorities also avoided borrowing from market sources; however in their case multilaterals loans were contracted to close the financing gap and reconstitute the liquidity cushion. While Peru does not have an official target for cash reserves, Uruguay adopted in 2005 a prefunding policy that established that cash reserves, at any point in time, should cover the financing needs of the next 12 months<sup>24</sup>. Central Banks in Egypt, Indonesia, Mexico and Hungary were permitted to buy government bonds and served as a buffer to the fall in bond prices. In some countries with less developed local markets, the central bank extended credit lines to the government.

**EM debt managers also stepped up the borrowing from multilaterals.** Hungary received substantial resources from the IMF to deal with the stabilization of the financial sector; Romania filled up a substantial part of the borrowing program with resources from IMF, EC and WB; Peru used contingent credit lines contracted with the WB; and Indonesia also used contingent funding from multi and bilateral entities to backstop its borrowing needs. The substantial increase in the demand from multilaterals loans put significant pressure on the capacity of these entities to expand their lending programs. For instance in 2009 the World Bank lent almost three times the volume that was anticipated before the crisis<sup>25</sup>.

**Some EMs started/expanded retail debt programs or tried new debt instruments in an effort to diversify funding sources and tap segments of investors not explored before.** While this route was marginal compared to the two previous mechanisms, it is worth noting as a complementary alternative that was worth exploring in some countries. Indonesia aggressively expanded the retail program, introduced Sharia-compliant sukuk market instruments and launched a Samurai bond. Hungary also introduced a new 3-year CPI linker for the retail market. Turkey tried new revenue indexed bonds and CPI linkers, all for the wholesale market.

## **B. Revisions of funding programs to respond to shifts in the demand for government paper**

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<sup>24</sup> See Uruguay Debt Report, July 2009. Other countries like Colombia borrowed \$1.8b in 2008 and \$3.8b in 2009 to build up the liquidity position.

<sup>25</sup> This is one of the reasons why the World Bank sought an increase in capital from its shareholders.

**Funding plans were also revised and the supply of government securities was shifted to investors or tenors that would have greater demand.** The loss of appetite for EM government bonds forced debt managers to modify the funding strategies while dealing with the on-going interest rate and refinancing shocks. As a significant portion of the demand from foreign investors switched away, and in some cases even from local institutional investors, to commercial banks, debt managers responded by suspending the issuance in the international capital markets and concentrating the bulk of the issuance program in the shortest tenors and in floaters.

**As discussed earlier, EM issuance in the international capital markets came to a virtual stop in Q3 and Q4 2008.** EM issuance activity recovered strongly in 2009 on the back of aggressive expansionary monetary policies of the G7.

**Market conditions also deteriorated in most local markets and most countries suspended or reduced the auctions of LX medium-term fixed-rate securities.** The impact of the crisis in this regard was worst in Hungary, Turkey, Poland, and Romania where the LX debt market for medium and long term paper came to a virtual halt. Peru postponed its auctions of LX securities and relied on large cash reserves. Mexico and Brazil also reduced dramatically the issuance of fixed rate paper during the crisis. Morocco and Indonesia reacted in the same way, but there the impact was less severe. In South Africa and Eastern and Central Europe the impact of the foreign investor sell-off was probably more important as non-residents traditionally hold a significant share of local currency government securities and the capital mobility is higher than in Latin America or Asia.

**However, in some countries the selloff of LX medium-term fixed-rate securities by foreign investors was compensated for in part by institutional investors like pension funds.** In Peru, Brazil and Colombia, pension funds acted as a buffer absorbing part of the excess of supply of medium-long term paper, making the switch to floating/short term securities less pronounced. In Eastern and Central Europe however, even institutional investors shifted their preference to foreign currency, or local currency short duration assets, so banks ended up absorbing most of the excess supply of government securities.

**To offset the fall in demand for medium-term paper, some countries switched the funding to T-Bills.** The most notable case was probably Hungary whose funding plans relied almost exclusively on T-Bills for the period of 8 months surrounding the crisis. Another dramatic example is that of South Africa who tripled the issuance of T-Bills. Poland doubled the T-Bill share from 6 to 12% while Romania increased significantly the T-Bill volume and introduced 1 and 3 month securities.



**Other EMs switched funding from fixed-rate instruments to floating-rate ones.** Brazil reduced its target of fixed rate paper after the crisis hit and increased that of floating rate paper. Turkey did both: increasing the issuance of shorter-term and floating rate paper.

**As a result of these changes in the funding policy, most countries experienced a reduction in the average time to maturity.** However, given the relatively short duration of the intense phase of the financial crisis, and the fact that EMs regained normal access by mid 2009, the reductions in average maturity were in general small and/or short-lived. Hungary lost 0.6 years going from 2.7 years in September 2008 to 2.1 years in July 2009. Turkey reduced the average maturity from 34 months in 2007 to 32 months in 2008 but recovered in 2009 to 35 months. Brazil and Mexico experienced a small reduction in the average life of their portfolio. This trend was also seen in Poland.

### C. Implementation of liability management operations to support the market

**Liability management techniques such as buybacks and exchanges proved to be powerful tools to help stabilize markets.** Several debt managers found that these transactions reduced market pressure and played a catalytic role in adjusting the debt structure to the changing characteristics of the demand profile. They therefore complemented the other two categories of debt management responses discussed previously.

**Buybacks were used in countries such as Hungary, Indonesia and Mexico to alleviate sell-off pressures, enhance liquidity and improve pricing of liquid instruments.** As securities were bought back for cash, these operations provided a much needed liquidity relief to investors<sup>26</sup> and helped contain sell-off pressures, especially of illiquid securities. In Hungary, for example, a large-scale bond buyback program of approximately USD 2.5 billion was launched in Q2 2009 due to the significant sell-off by foreign investors and weak demand for local bonds. The program was successful and enabled Hungary's debt agency to restart regular bond auctions starting from April 2009. Mexico implemented buyback auctions of select medium and long-term securities, Bonos and Udibonos (10 to 30 years) to, among others, enhance the liquidity of these instruments. Finally, Indonesia conducted buybacks and switches of short-term instruments, providing good price references when market liquidity was weak, which helped stabilize prices.

**Poland explicitly used switches to stabilize the market by redeeming illiquid bonds in exchange for more liquid securities.** Switches are most frequently used to reduce debt fragmentation, consolidate large size benchmarks and to manage refinancing risk (e.g.: Brazil, Indonesia and South Africa). During the

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<sup>26</sup> Most countries financed buybacks with cash reserves, short-term funding or through their regular auctions of more liquid instruments.

crisis, Poland targeted illiquid long-term CPI indexed bonds and floating rate notes replacing them with more liquid instruments to stabilize the market.

**An innovative approach that seems to be working well is the simultaneous buy and sell auctions used by Brazil.** At the peak of the crisis the Brazilian Treasury conducted this type of simultaneous auction for select long-term securities. These auctions provide more reliable buy and sell price parameters at a time that references in the secondary markets are weak or nonexistent. Price discovery usually requires a sequence of two to three auctions for each instrument. This mechanism has been used by Brazil in previous periods of stress and replaced pure buybacks that were conducted in the past in similar situations to stabilize markets.

**Finally, it is important to consider *how* the delivery of the three categories of debt managers' responses to the crisis was handled by different countries.** Some were forced to revisit and adjust their debt management strategies while others, where the guidelines are more directional or loose, could operate within the prevailing policy framework.

**The countries with strategies are expressed as formal targets for managing risk were forced to review them during the crisis.** This was the case of Poland and Hungary who reviewed their strategies including a higher share for foreign currency debt in the years to come, at least until some of the multilateral loans mature. Similarly Brazil, with annual targets for the composition of the debt portfolio, reviewed these targets opening up more space for floating rate paper and reducing the target for fixed-rate debt. The Brazilian DMO saw this adjustment as a temporary setback and reversed it after the situation normalized.

**In contrast, countries where debt management strategies are expressed as broad directional targets for certain risk indicators did not need to undertake a formal review of such strategies.** While most countries formally acknowledged the increase in funding requirements, not all accompanied this by the revision of the policy framework and debt managers continued operating under the prevailing one. Poland has broad bands for local currency risk indicators that did not require revision during the crisis. Similarly Turkey and Mexico had directional targets that did not need to be reviewed; however, it is clear that both countries slowed down their progress in reducing risk in their debt portfolios.

## Conclusion

The impact of the global financial crisis on the 24 countries considered in this paper, as well as the responses by their public debt managers, provide a number of positive lessons for policy-makers and international financial institutions:

1. **Sound and well-coordinated macroeconomic policy during the years before the crisis, leading to much-improved fundamentals, was elemental in serving as a buffer and placed EMs in a position for quicker recovery.** Although we acknowledge that the improvement in macroeconomic fundamentals could in part be attributed to a very benign (cyclical) environment, driven by ample global liquidity and a strong risk appetite by investors, explicit policy choices by EM decision-makers enabled them to capitalize on this environment and reduce their vulnerability. Some of the main measures implemented were improved fiscal policy, accumulation of foreign reserves, controlled inflation and consequent reduction in public debt to GDP ratios.
2. **In addition to the macroeconomic measures, prudent public debt management with a focus on containing risks in debt portfolio was an additional fundamental factor that strengthened EM resilience to the crisis.** In this regard, we would highlight the policies to reduce FX exposure, extend the maturity of domestic debt, reduce reliance on floating-rate instruments, as well as measures to diversify funding sources. For example, and in contrast to many previous events, when EM currencies depreciated sharply at the height of global risk aversion in late 2008 and early 2009, the impact on government budgets was muted, given the reduced level of FX exposure (and in some cases attainment of a net FX asset position).
3. **The conditions summarized in points 1 and 2 provided public debt managers with room to maneuver when the crisis hit.** Rather than being on the back foot, governments were able to delay borrowing, use non-market sources of funding and introduce a range of measures to continue borrowing in their domestic securities markets (as outlined in section 2 of the report). In this way, when markets were suffering severe risk aversion to the point of dysfunction, governments had the capacity to absorb some risk and contribute to the stabilization and recovery of local markets.
4. **The availability and quick disbursement of multilateral funding was critical in cases where the international capital markets were closed and investors in domestic government securities withdrew from the market.** Contingent credit lines proved extremely useful and debt managers learned how valuable these options became. Nonetheless, the massive increase in demand for multilateral loans showed the limited capacity that these entities have to offset a significant reversal of private capital flows.

5. **Countries with larger and more developed domestic bond markets tended to be less affected by the crisis.** In some of them, even during the worst of the crisis, the capital flew to government securities, mirroring the market movements experienced in the US, Europe and Japan. In others, although some time elapsed before interest rates came back to pre-crisis levels, most countries were able to satisfy their funding needs in the domestic market.
6. **The crisis highlighted the degree to which the capacity of public debt managers in the surveyed countries has improved in the last decade.** In a number of them, they were able to quickly employ a range of measures (such as liability management techniques, use of cash reserves, quick adjustment of debt strategies, etc) that helped governments weather the turbulence in financial markets and enabled them to implement appropriate counter-cyclical fiscal policies. This outcome underscores the need for governments to ensure that finance ministries and debt offices are appropriately resourced and staffed.

**While the 24 countries considered in this paper account for the majority of people living in EMs (and around 60% of world population), there are a number of other countries where the financial crisis has had a greater negative impact in terms of market access and funding costs.** Most of these countries went into the crisis with poor fiscal positions, debt sustainability concerns, unresolved debt renegotiations, or some form of political deadlock that impacted on their ability to effectively manage macroeconomic policy. Their predicament underscores the need to take advantage of the benign phase of the cycle to address debt problems; once a crisis hits, the options for action quickly become curtailed. The impact of the financial crisis on low-income countries has not been analyzed as the focus of this paper is on the first round financial impact during the period September 2008 to April 2009. Their lack of integration into global financial markets to a large extent buffered them from impact during this period; their turn came later through the transmission channels of trade and remittances.

**Notwithstanding the positive developments that most EMs have enjoyed between June 2009 and March 2010, the period ahead presents more risks than usual.** First, high income countries have huge borrowing requirements (in 2009 their net issuance of marketable securities was seven times that of 2007), which will create strong competition for capital and represents a potential source of market instability. Second, the process to phase out extraordinarily supportive monetary policy, by its nature, presents a period of increased risk. Moves in this direction are likely to result in increased market volatility as “carry trades”, put in place to profit from very low short-term interest rates, are unwound. The timing of monetary tightening must be carefully judged, so as not to risk an increase in inflationary expectations on one hand, but not cut off the economic recovery and financial sector recuperation on the

other. Finally, opinions on the strength and durability of the global recovery are divergent; there remains a sizable risk that it falters, which would put pressure on the borrowing needs of most governments.

**Given this outlook, it is important that policy-makers in EMs maintain the prudent approach to macroeconomic management that has served them well over the last decade.** The specific policy measures will depend on individual country circumstances; for those with weaker fiscal positions, as growth recovers, it presents an opportunity to reduce debt/GDP ratios by reversing the fiscal accommodation that was implemented to mitigate the impact of the global crisis. For others, with greater fiscal buffers and significant external surpluses, the emphasis would be on stimulating domestic demand and allowing exchange rates to adjust, while maintaining vigilance on inflationary expectations.

**At the same time, debt managers in EM countries are well advised to maintain preparedness for market dislocations, and to continue to seek opportunities to contain risk in public debt portfolios at levels that will ensure that fiscal policy is not jeopardized if disaster strikes again.**

## References

Bank for International Settlements (BIS). 2008. “Financial Stability and Local Currency Bond Markets.” BIS Quarterly Review December BIS. 2009. Quarterly Review December 2009.

Barro, Robert J. 1997. “Optimal Management of Indexed and Nominal Debt”. Working Paper 6197. National Bureau of Economic Research (NBER), Cambridge, MA

Campbell, J.Y and Shiller R.J. “A Scorecard for Indexed Government Debt”. 1996. The University of Chicago Press.

Cecchetti, Stephen G., Mohanty, MS and Zampolli, Fabrizio. 2009. “The Future of Public Debt: Prospects and Implications”. Bank for International Settlements, Basel, Switzerland

IMF (International Monetary Fund). 2006. “Global Financial Stability Report – Market Developments and Issues. April. Washington DC

JP Morgan. 2009. “Emerging Markets Debt and Fiscal Indicators”. New York

Reinhart, Carmen and Rogoff, Kenneth. 2009. “This Time Is Different: Eight Centuries of Financial Folly”. Princeton, NY. Princeton University Press.