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## ***A Balance Sheet Crisis in India?***

### **I. INTRODUCTION**

Fiscal imbalances were the root cause of the 1991 balance of payments crisis in India. By the end of the 1980s, deteriorating government finances had resulted in a significant widening of the current account deficit, an accumulation of government and external debt, and rapidly rising debt service. As concerns about the external position mounted, and with a renewal of domestic political tensions, India's credit rating was downgraded, access to external borrowing dried up, and nonresident deposits were withdrawn. By early 1991, foreign exchange reserves were almost depleted, and India was on the verge of default.

India experienced a classic balance of payments crisis, and the response was also traditional—devaluation and a hike in interest rates; fiscal adjustment; exceptional financing from the International Monetary Fund (IMF) and others; and structural reform. A short-lived slowdown was followed by recovery, confidence was restored, and a reserve cushion was

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rebuilt. By the mid-1990s, the positive impact of stabilization and reform was clear: the economy was more open; investment and growth had picked up; and capital inflows were surging. However, there was backtracking on fiscal adjustment, and commentators on medium-term priorities were unanimous in emphasizing the importance of sustained fiscal adjustment. In this connection, an IMF paper of 1995 noted that: "...without substantial fiscal adjustment, it will difficult to achieve low inflation and the rapid growth that is needed to make effective inroads against poverty. Although the task will not be easy, with determined efforts it should be feasible to eliminate the primary deficit of the consolidated public sector by the end of the decade."<sup>2</sup>

At that time, the overall deficit of the public sector was over 11 percent of GDP, the primary deficit was 4 percent of GDP, and public debt was nearly 90 percent of GDP, while the overall and primary deficits of the general government were 7¼ and 2 percent of GDP respectively, while government debt was approaching 60 percent of GDP. Nearly nine years later, the overall deficit of the general government exceeds 10 percent of GDP, the primary deficit is 4¼ percent of GDP, and government debt is over 83 percent of GDP. The fiscal position is clearly much worse now than in 1995, indeed the overall deficit and debt of the general government are larger now than in the run up to the 1991 crisis when they were 9½ and 62 percent of GDP respectively (the primary deficit was 5 percent of GDP). Looking back, it was clearly far too optimistic to suggest that India could significantly reduce the primary deficit of the public sector by 2000, let alone eliminate it.

Against this background, our aim in this paper is to use a balance sheet approach developed to analyze recent financial crises in a number of emerging market economies to assess India's vulnerability to a crisis given its continuing large fiscal imbalances. The paper makes the point that government debt in India is, based on standard approaches and indicators, clearly unsustainable over the longer term. However, the balance sheet approach distinguishes sustainability and financeability, and the paper explains why India's debt, at least for the time

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<sup>2</sup> Chopra, Collyns, Hemming, and Parker (1995), page 40.

being, appears to be financeable in the short term. But despite some reasons for optimism as regards the continuing financeability of the debt, comparisons with other emerging market economies suggest that India may be more vulnerable to a crisis than is generally perceived—especially by Indian policymakers—and that fiscal adjustment is urgently needed to reduce vulnerability and the likelihood of a crisis.

The remainder of the paper is structured as follows. In Section II we study the long-term sustainability of the India's government debt using a primary gap approach and a range of stress tests. In Section III we introduce the balance sheet approach to debt financeability. In Section IV we apply this approach to assess the vulnerabilities faced by India, the financeability of its debt path, and the risks of a balance sheet crisis. Section V presents our concluding observations on the need for an early and substantial fiscal adjustment.

## II. DEBT SUSTAINABILITY

The primary gap is a simple indicator of debt sustainability. It measures the adjustment to the primary balance needed to immediately stabilize the debt-to-GDP ratio, and is the difference between the debt stabilizing primary balance (which in turn is the product of the debt ratio and minus the growth-interest differential) and the actual primary balance. A positive primary gap says that fiscal policy is adding to the debt, and, with unchanged policy, that debt is unsustainable over time given that the debt-to-GDP ratio cannot grow without limit. World Economic Outlook data for 2000–02 show that India had a primary gap averaging 3½ percent of GDP during this period.<sup>3</sup> As shown in Figure 1, a number of countries had a primary gap that is larger or of similar magnitude, despite India having the largest primary deficit and one of the highest debt ratios. This reflects a relatively favorable growth-interest differential in India, with a real growth rate that exceeded the real interest rate by one percentage point on average contributing to a lower debt ratio, while countries in a more favorable fiscal position (including a few running primary surpluses) faced a real interest rate in excess of the real growth rate, in some cases by a considerable margin.

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<sup>3</sup> International Monetary Fund (2003).

While the primary gap is useful indicator of debt sustainability, it has its limitations. In particular, there is no reason why countries should seek to stabilize the debt, especially at a high level such as India's, which of itself could be problematic. International Monetary Fund (2003) looks at some other approaches to assessing debt sustainability. One approach is to see whether the primary balance responds positively to debt accumulation, which would indicate that fiscal policy is consistent with sustainability. For emerging market economies, it is estimated that this is the case for debt ratios of up to 50 percent. Another approach is to determine whether countries overborrow in the sense that the debt exceeds the present value of future primary surpluses. For emerging market economies, overborrowing is estimated to occur once the debt ratio exceeds 25 percent, with ratios  $3\frac{1}{2}$  times this level being typical in countries that have defaulted. On the face

Figure 1. Emerging Market Economies: Debt Sustainability

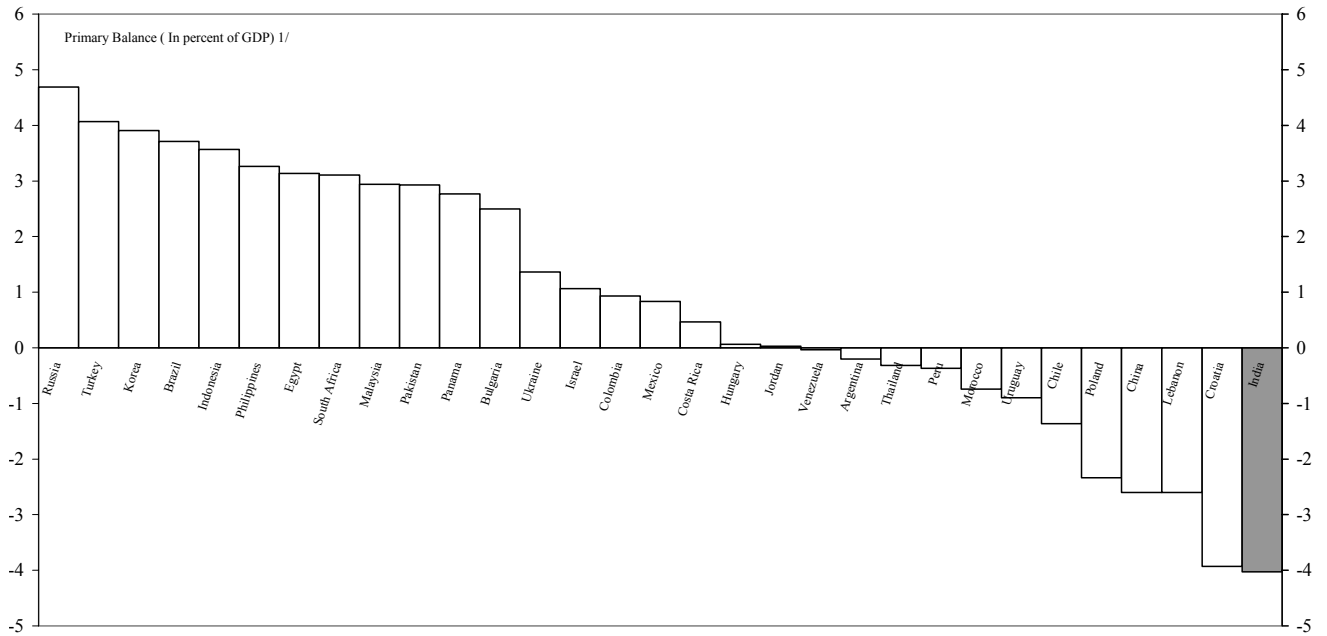
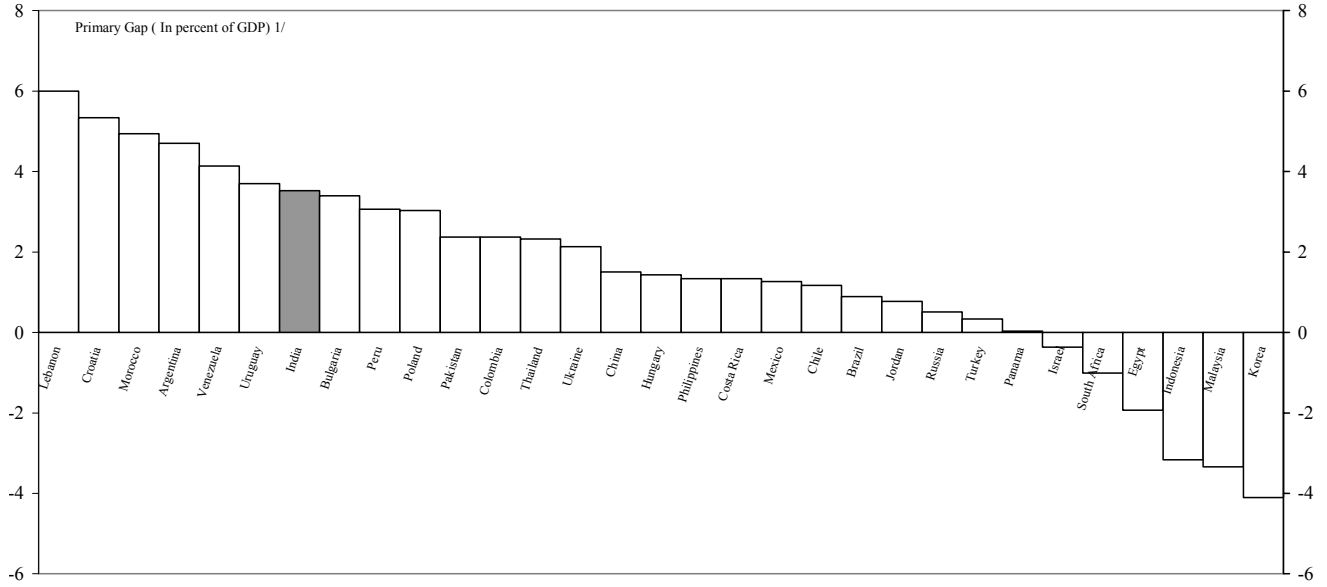
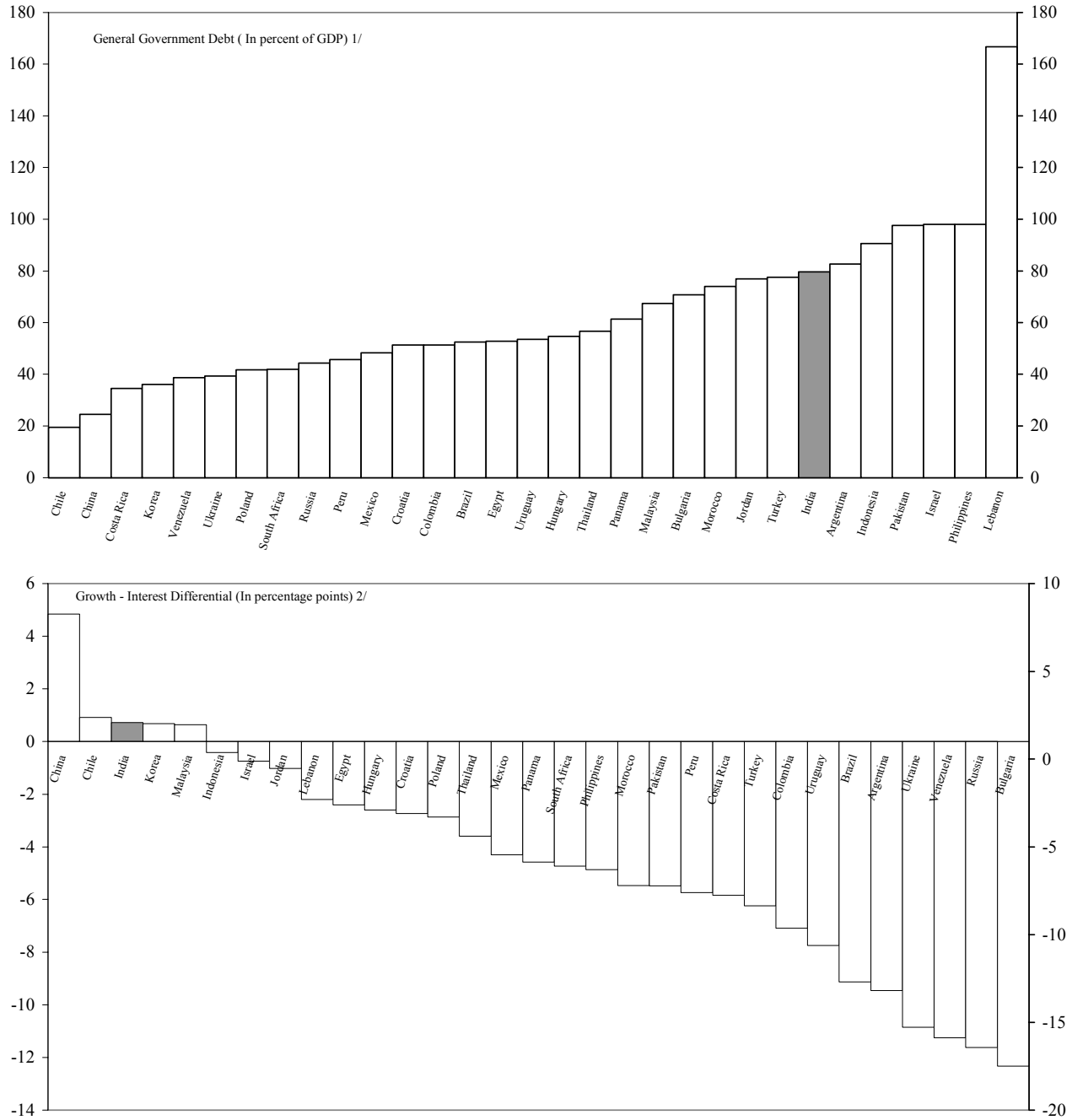


Figure 1. Emerging Market Economies: Debt Sustainability (concluded)



Source: World Economic Outlook database

1/ Average, 2000-2002.

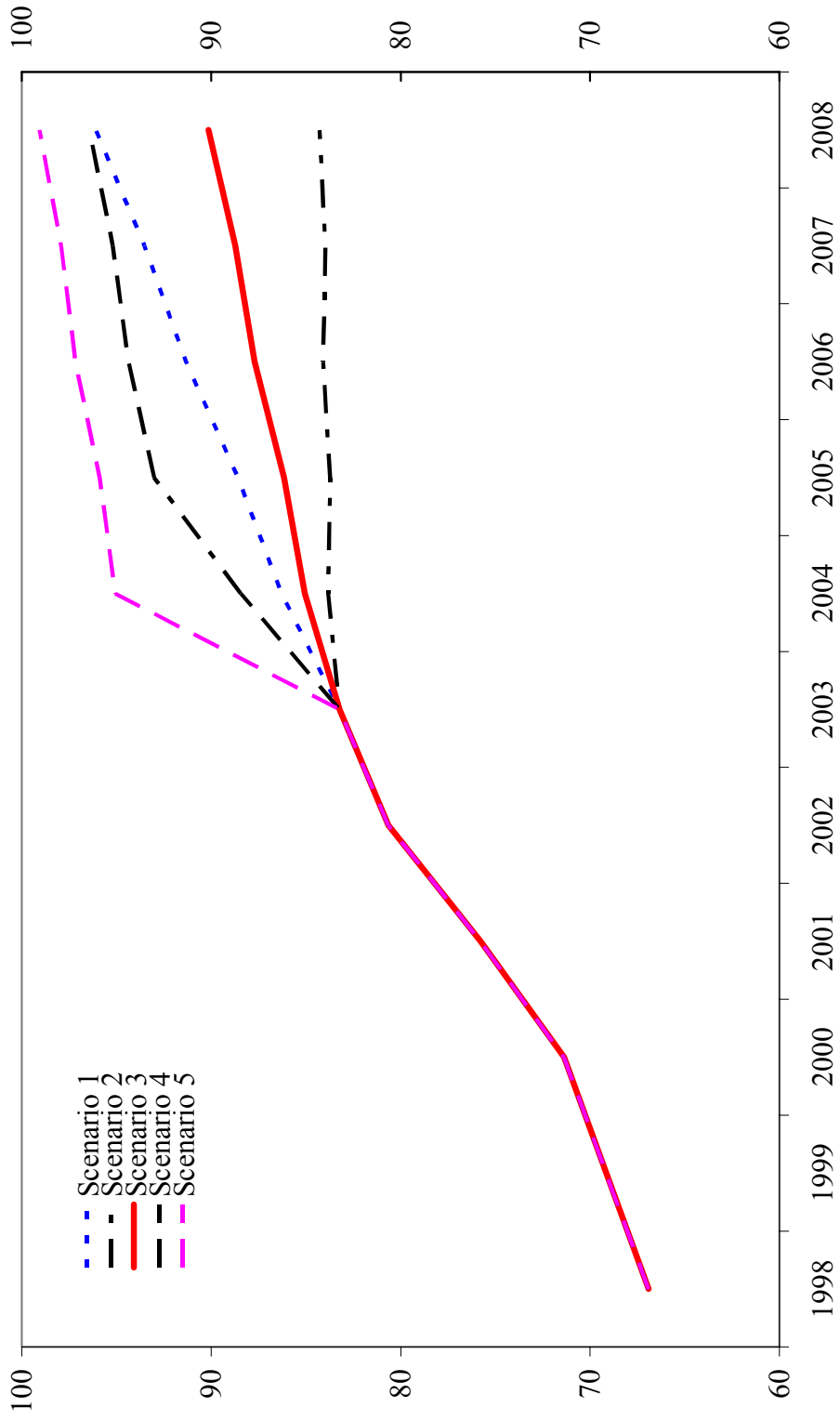
2/ Real interest rate average, 1998-2002, GDP growth average, 1990-2002.

of it, these findings are not good news for a country like India, which has a debt ratio of over 83 percent.

The usual practice in the IMF is to look at debt sustainability in terms of possible debt trajectories given fiscal policies and macroeconomic developments. Figure 2 summarizes the results from five debt sustainability scenarios:

- Scenario 1—the primary deficit, growth rate, and real interest rate (the average effective real interest rate on the debt) are kept at their 2003 levels. Thus the primary deficit is held at 4¼ percent of GDP and the growth-interest differential at slightly over 2 percentage points. In this scenario, the debt ratio increases to over 96 percent by 2008.
- Scenario 2—the primary deficit, growth rate, and real interest rate are set at their 10 year (1993–2002) average. The average primary deficit of just above 3 percent of GDP is roughly consistent with achieving the fiscal adjustment targets of the 2003 Fiscal Responsibility and Budget Management Act (FRBMA), and the growth-interest differential averages 3¾ percentage points. In this scenario, the debt ratio remains roughly constant between 2003 and 2008, much as if the primary gap was eliminated in 2003. Since the fiscal adjustment targets of the FRBMA are, by past standards, ambitious, while a growth-interest differential averaging 3¾ percentage points is implausible going forward (for reasons given below and discussed later in the paper), this scenario illustrates the formidable challenge posed by any attempt to eliminate the primary gap.
- Scenario 3—this is the current IMF baseline, in which the primary deficit averages 3¾ percent of GDP, based on modest fiscal adjustment, and the growth-interest differential averages 3 percentage points. In this scenario, the debt ratio increases to slightly above 90 percent by 2008.
- Scenario 4—the IMF baseline is subjected to combined one standard deviation shocks to the growth rate and the real interest rate in 2004 and 2005, producing a

Figure 2. India : Debt Sustainability Scenarios





growth-interest differential of  $-1\frac{1}{2}$  percentage points in each of these years. In this scenario, the debt ratio increases to nearly 97 percent by 2008, which when compared with scenario 3 begins to indicate the sensitivity of the debt dynamics to the growth-interest differential (this is described more fully below).

- Scenario 5—in the IMF baseline, the debt ratio in 2004 rises by 10 percentage points of GDP, most likely due to called guarantees.<sup>4</sup> In this scenario, the debt ratio increases to over 99 percent by 2008.

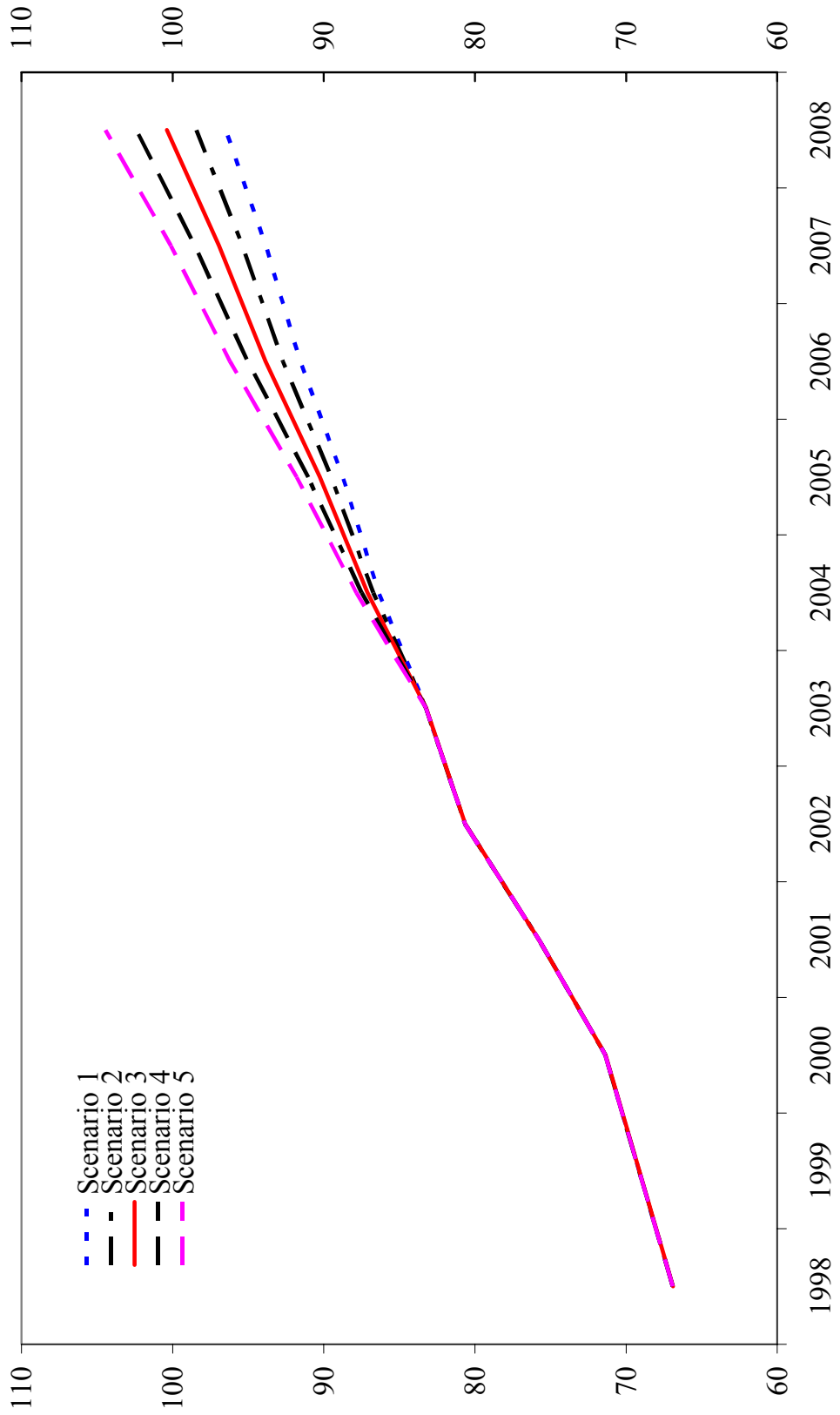
These scenarios, which are fairly standard, show how events could transpire that would push the debt ratio well above its current level. However, they are fairly mechanical, and a clear limitation is that they do not tell a believable story about the way events are likely to unfold if fiscal adjustment is delayed. In this connection, the likely evolution of the growth-interest differential plays a critical role. From averaging  $3\frac{3}{4}$  percentage points during the 1990s, the growth-interest differential fell sharply to average only 1 percentage point in 2000–02. This decline reflected a combination of slower growth and higher real interest rates. However, the growth-interest differential widened significantly in 2003, as growth picked up and, in particular, real interest rates fell sharply. Looking forward, it is obviously difficult to project what will happen to the growth-interest differential, but it is unlikely to be independent of the fiscal adjustment effort.

Assume that the primary deficit remains at its 2003 level of  $4\frac{1}{4}$  percent of GDP. Scenarios 1-5 in Figure 3 show the impact of growth-interest differentials in the range of 2 to -2 percentage points, with 2 percentage points being close to the 2003 level. By 2008, the debt ratio ranges from over 96 to over 104 percent of GDP. If fiscal adjustment is delayed, the outcome is likely to be at the upper end of this range, because mounting concerns about debt sustainability

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<sup>4</sup> Scenarios 4 and 5 are stress tests that are routinely part of IMF debt sustainability analysis. General government guarantees are currently around 12 percent of GDP.

Figure 3. India : Impact of Delayed Fiscal Adjustment



will cause interest rate risk premia to increase, and growth will be depressed. If the growth-interest differential averages -1 percentage point, the primary gap in 2008 would be 5¼ percent of GDP, compared with the 3½ percent of GDP reported above for 2000–02. The difference between these two figures, nearly 2 percent of GDP, is a measure of the costs of delaying fiscal adjustment. However, the debt ratio would end up being stabilized at over 100 percent of GDP, which experience suggests is well into crisis territory. Moreover, the fact that many countries with debt ratios similar to or lower than India face even more disadvantageous growth-interest differentials (see Figure 1), and given that lower growth is likely to increase the primary deficit and the probability that guarantees will be called, suggests that the outcome could be even worse than this.

### III. THE BALANCE SHEET APPROACH TO DEBT FINANCEABILITY

Debt sustainability and financeability are related but separate concepts. A debt path that may not be sustainable over the longer term (as in the case of India) is less problematic in the short term as long as investors are willing to finance it. By the same token, a debt path that may be sustainable over the longer term could be a serious problem in the short term if investors are unwilling to finance it. The balance sheet approach considers a number of factors in determining whether a debt path is financeable.<sup>5</sup>

First, flow imbalances matter because fiscal and current account deficits require the accumulation of new government and external liabilities; if investors become less willing to provide new financing, a financing crisis may occur. Flow imbalances also matter because large primary or resource gaps make it less likely that a country can adjust to the extent necessary to restore sustainability.

Second, a country needs not only to finance flow imbalances, but also to roll over existing and maturing liabilities. Hence, stocks matter in addition to flows, and the way in which

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<sup>5</sup> See Allen, Rosenberg, Keller, Setser, and Roubini (2002) and Roubini and Setser (2004) for more details on the balance sheet approach and its application to emerging market crises of the last decade.

these stocks are financed and refinanced gives rise to balance sheet vulnerabilities. These balance sheet vulnerabilities include liquidity/rollover risk, balance sheet risk, capital structure risk, and solvency risk.

- Liquidity/rollover risk arises in a situation where a country or government—or the private sector (i.e., banks, financial institutions, and firms)—have a mismatch between the maturity of liabilities and assets. If creditors are unwilling to roll over debts coming to maturity, and the country or government does not have enough liquid assets to repay those who roll-off their claims, a liquidity run may occur. Such a liquidity run cannot be easily addressed through the provision of liquidity by the central bank when the maturing debt that is being rolled off is in foreign currency and the stock of liquid foreign assets is less than the stock of maturing debt.
- Balance sheet risk reflects a mismatch between the currency denomination of the liabilities of a country or government (i.e., when a large fraction of the external or public debt is in foreign currency) and the currency denomination of its assets and/or revenue stream.
- Capital structure risk occurs when a country or government relies excessively on debt relative to equity (FDI for example) to finance its flow imbalances, since debt payments are not state-contingent while equity claims are. A country that finances its current account deficit with debt rather than FDI or portfolio investment in its equity market, and a government that relies on the issuance of debt rather than privatizing state-owned enterprises and other public assets (as a way to cover flow imbalances and reduce debt stocks), increases its capital structure risk.
- Solvency risk is due to an excessive accumulation of debt relative to the ability to service that debt. To measure external solvency risk, the external debt ratio has to be scaled to GDP or, better still, to exports, since the latter is the source of foreign currency receipts needed to service debt. By the same token, to measure government

solvency risk, government debt has to be scaled to GDP or, better still, to government revenue, since the latter is the source of the cash flow needed to service the debt.

Third, balance sheet vulnerabilities include intersectoral linkages, in that aggregate country measures of imbalances may at times hide intersectoral imbalances. For example, financial repression which results in banks being forced to hold government securities makes any government debt path more financeable in the short term; but over time, loading banks with government paper that may eventually be restructured makes bank balance sheets more fragile. Similarly, eventual financial distress of banks (and other financial institutions), contingent government liabilities deriving from guarantees of deposits in the financial system, and/or the implicit obligation to bail out insolvent state-owned enterprises, can all significantly weaken the balance sheet of a fiscally stretched sovereign.

#### **IV. BALANCE SHEET VULNERABILITIES IN INDIA**

While India's current debt path is unsustainable from a longer-term perspective, for the moment it appears to be financeable given that some of the vulnerabilities stressed by the balance sheet approach are, at first sight, not severe in India. However, a comparison with other emerging market economies that either are heavily indebted and have similar fiscal conditions and credit ratings, or have experienced episodes of financial crisis (Mexico, Korea, Thailand, Indonesia, Malaysia, Russia, Brazil (twice), Ecuador, Pakistan, Ukraine, Turkey, Argentina, and Uruguay), suggests that balance sheet and other macroeconomic vulnerabilities in India are present, and cannot be treated lightly.

Over the last decade, emerging market economies have experienced crises a combination of currency crises, banking and corporate crises, and sovereign debt crises. In the debt crisis cases, some countries outright defaulted on their external and/or domestic debt (Russia, Ecuador, and Argentina); some restructured their debt under the threat of default (Pakistan, Ukraine, and Uruguay); some avoided a near default only through a large IMF program (Mexico, Brazil, and Turkey); and some faced sovereign financing distress as attempts to backstop the banking and financial system during the crisis exposed low levels of foreign reserves relative to private debts being rolled off (Korea, Thailand, and Indonesia). While in

the main vulnerabilities in the Asian crisis countries were not fiscal in nature, in all other episodes fiscal imbalances were central. Hence, the view held after the Asian crisis that capital account crises are mostly due to private sector, as opposed to public sector, vulnerabilities is not correct; fiscal deficits and government debt are at the center of most emerging market crises.

#### **A. Some Factors Favorable to India**

There are a number of ways in which India is different and less vulnerable in terms of various balance sheet and macroeconomic indicators than other countries that experienced crises.

First, the **maturity of government and external debt** is mostly long term rather than short term (with average maturity of about 9 years), and the country has a large stock of foreign reserves (over \$90 billion in 2003); thus, liquidity risk for the sovereign is limited. Indeed, various measures of liquidity risk such as short-term debt to foreign reserves are relatively low compared to similarly or worse-ranked sovereigns, as indicated in Table 1, and sharply lower than in the run up to the 1991 crisis.<sup>6</sup>

Second, **most government debt is in local currency**, and thus currency mismatches are limited. Less than 10 percent of the debt is in foreign currency and the economy is not dollarized. Also, while India has a heavily managed exchange rate, it does not appear to be significantly overvalued. Thus, balance sheet risks from a combination of dollar debts and a currency collapse are quite limited.

Third, **government debt is held largely by domestic residents**; indeed, the stock of external debt of the country is only 21 percent of GDP, which is a quarter the size of the stock of public debt. High fiscal deficits have led to a crowding out of private investment rather than

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<sup>6</sup> Other measures of liquidity risk, such as M2 to foreign reserves, are high; however, given domestic financial repression and capital controls (see below), they are not an imminent claim on foreign reserves.

an increase in the current account deficit, and external debt accumulation has therefore been modest.

Fourth, **domestic financial repression and widespread capital controls** limit the possibility of a run by domestic and foreign investors on government debt. Domestic banks and financial institutions provide a captive demand for government debt given portfolio requirements, and other regulations and incentives, that either force or persuade them to finance and refinance fiscal deficits and government debt. At the same time, there has not been extensive capital account liberalization. Thus the risk of the type of financing or refinancing crisis faced by other emerging market economies is quite limited.

These more modest balance sheet vulnerabilities in India—and especially the smaller maturity mismatches and lower liquidity risk, smaller currency mismatches and lower balance sheet risk, and the lower external debt to GDP ratio (external solvency) and the smaller current account deficit—are evident when one compares India with other emerging market currency, banking, and debt crises in the last decade. Previous emerging market crises had many common characteristics and some differences. As Table 2 shows, some common

Table 1. Comparison of Macroeconomic and Financial Indicators for India and Other Sovereigns, Moody's, 2003 1/  
(In Percent)

Indicator	India (Ba1 Foreign Currency Ba2 Domestic Currency)	Similarly Rated Sovereigns (Developing Countries Rated Ba1 to Ba3)	Lower-Rated Sovereigns (Developing Countries Rated B1 to C)
General government financial balance/GDP	-11.6	-3.9	-4.5
General government revenues/GDP	19.8	21.9	26.0
General government debt/GDP	85.7	61.2	89.8
General government debt/ general government revenue	430.0	289.0	372.0
General government interest payment/general government revenue	34.0	20.0	21.0
General government currency and foreign currency-indexed debt/general government debt	7.8	63.5	72.2
Current account balance/GDP	0.4	-2.3	-3.3
External debt/GDP	20.7	50.6	76.6
External debt/current account receipts	120.7	130.4	219.4
M2/foreign reserves	5.0	3.2	5.6
Debt service ratio (interest + current year repayment of principal/current account receipts)	18.0	18.3	27.8
External vulnerability indicator (short-term debt/foreign reserves)	54.6	61.8	134.2
Liquidity ratio (relative to BIS banks)	33.0	32.9	42.3
Dollarization vulnerability indicator (liability dollarization in banks)	10.1	44.4	91.4
Gross investment/GDP	24.0	20.4	19.7
Gross domestic savings/GDP	24.3	15.5	16.2
Openness of the economy (sum of exports and imports of goods and services/GDP)	31.7	75.9	68.2

Source: Moody's Statistical Handbook, Country Credit, October 2003.

1/ All 2003 figures are estimates, but very similar figures are obtained for most indicators based on actual 2002 figures.



Table 2. Balance Sheet Vulnerabilities in India and Crisis Countries  
(In percent, unless otherwise indicated)

	Mexico/ 1994	Korea 1997	Thailand 1997	Indonesia 1997	Malaysia 1997	Russia 1997	Brazil 1998	Ecuador 1998	Pakistan 1998	Ukraine 1998	Turkey 2000	Argentina 2001	Uruguay 2001	Brazil 2002	India 2003
<b>Stock Imbalances</b>															
Liquidity/Rollover Risk															
Short-term foreign debt/reserves	203	777	493	175	94	255	126	181	189	327	246	184	320	142	<b>55</b>
M2/reserves		13.5	5.4	4.7	4.8	6.2	5.7	2	14.7	7.8	3.9	5	3.3	3.1	<b>5</b>
Country Solvency Risk															
External debt/GDP		33	72	58	44	35	31	68	68	29	60	52	81	41	<b>21</b>
External debt/exports		94	143	NA	51	140	369	267	347	66	203	380	365	300	<b>121</b>
Sovereign Solvency Risk															
Government debt/GDP	35	13	45	25	32	53	48	67	103	41	53	54	38	73	<b>85</b>
Government debt/revenue	155	65	249	262	137	148	143	486	646	113	203	282	191	211	<b>430</b>
Currency Mismatch Risk															
Net foreign currency external debt/GDP	Medium	Medium	Medium	Medium	Medium	Medium	Medium	High	Medium	Medium	Medium	High	High	Medium	<b>Low</b>
Foreign currency government debt/ total government debt	53	NA	13	100	14	60	NA	NA	52	68	50	90	83	25	<b>8</b>
Dollarization vulnerability indicator (Liability dollarization in banks)	NA	NA	5.7	68	5	56	0	High	168	64	96	215	132	0	<b>10</b>
Capital Structure Mismatch															
Equity-FDI/foreign liabilities FDI/GDP	Medium	Low	Medium	Medium	High	Low	High	Medium	Medium	Medium	Low	Low	Low	Medium	<b>Medium</b>
		-0.3	2.6	2.1	5.1	0.4	3.7	3.7	0.7	1.8	0.1	1.3	1.7	3.7	<b>0.7</b>
<b>Flow Imbalances</b>															
Current account deficit/GDP 2/	-7.1	-4.4	-7.9	-3.2	-4.4	0.5	-4.3	-8.6	-3.6	-3.1	-4.9	-1.7	-2.6	-1.7	<b>0.4</b>
Fiscal balance/GDP	-0.2	1.2	-2.7	-0.4	2.4	-7.6	-6.3	-4.1	-6.2	-2.7	-10.4	-3.3	-4.4	-5.2	<b>-11.6</b>
Primary balance/GDP 2/ 3/	2.1	0.6	2.6	2.9	4.7	-2.8	0	-1.3	0.5	-0.4	5.4	-1	-2.2	3.9	<b>-4.3</b>
General government interest payments/ general government revenue		NA	1	15	10	13	20	29	40	7	62	20	13	21	<b>34</b>
<b>Other Relevant Issues</b>															
Fixed exchange rates	Soft Peg	Soft Peg	Soft Peg	Soft Peg	Soft Peg	Peg	Peg	Managed & float	Heavily managed	Heavily managed	Quasi Currency B.	Currency Board	Peg	Managed Float	<b>Managed Float</b>
Currency overvaluation	High	Modest	High	Modest	Modest	High	High	Modest	Modest	Modest	Modest	High	High	No	<b>Modest</b>
Banking Sector Fragility															
Government debt/bank assets		<10	<10	<10	<10	31			30	14		21			<b>35</b>
Liquidity ratio relative to BIS banks		140	406	291	110	218	76	70	48	58	141	70	39	49	<b>27.6</b>
Overall banking system fragility	High	High	High	High	Medium	High	Medium	High	Medium	Medium	High	High	High	Medium	<b>High</b>
Political/electoral instability	High	Medium	Medium	High	Medium	High	Medium	High	High	Medium	High	High	Medium	High	<b>Medium</b>
Domestic financial repression	Low	Low	Low	Modest	Modest	Low	Low	Low	Significant	Significant	Low	Low	Low	Low	<b>High</b>
Capital account controls (Before the crisis)	Open regime	Open regime	Open regime	Open regime	Open regime	Open regime	Open regime	Open regime	Capital controls	Capital controls	Open regime	Open regime	Open regime	Open regime	<b>Strict controls</b>

Table 2. Balance Sheet Vulnerabilities in India and Crisis Countries (concluded)  
(In percent, unless otherwise indicated)

	Mexico/ 1994	Korea 1997	Thailand 1997	Indonesia 1997	Malaysia 1997	Russia 1997	Brazil 1998	Ecuador 1998	Pakistan 1998	Ukraine 1998	Turkey 2000	Argentina 2001	Uruguay 2001	Brazil 2002	India 2003
<b>Policy Adjustment, Bail-In, Bail-Outs, and Other Policies to Resolve the Crisis 4/</b>															
Output fall	Large	Large	Large	Very Large	Large	Small	Small	Very large	Modest	Modest	Large	Very large	Large	Small	
Currency crisis	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes from a float	No	No	Yes	Yes	Yes	No	
Banking crisis	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes	Yes	Yes	No	
Fiscal costs of banks' bailout/GDP															
Corporate financial crisis	Yes	Yes	Yes	Yes	Some	Yes	No	Yes	No	No	Yes	Yes	No	No	
Fiscal/domestic policy adjustment during the crisis	Large	Large	Large	Large	Modest	Modest	Modest	Large	Modest	Modest	Large	Large	Large	Modest	
Domestic bank run	No	No	No	Yes	No	Some	No	Yes	No	No	No	Yes	Yes	No	
Cross border bank run	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	No	
Deposit freeze	No	No	No	Some	No	No	No	Yes	Some	No	No	Yes	Some	No	
Default or coercive restructuring of sovereign debt	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	
Default on private corporate external debt	No	Some	Some	A lot	No	No	No	Yes	No	No	No	Yes, a lot	No	No	
Capital controls after crisis	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	Yes	No	No	
IMF program ("bail-out)	Large	Large	Large	Large	No	Large but stopped	Large	Small	Small	Small	Large	Large but stopped	Large	Large	
Bail-In or PSI	No PSI	Coercive on interbank	Coercive on some interbank	Coercive on some interbank	No PSI (apart from capital controls)	Default on GKO & London Club debt	Soft PSI Agreement as to Interbank rollover	Coercive Default & Reduction	Restruct. of Ext. Debt but no principal haircut	Restruct. of Ext. Debt but no principal haircut	Very soft PSI and Interbank rollover	Soft PSI at first. Then full default.	Restruct. of Ext. Debt but no principal haircut	Very soft PSI	
Paris club debt restructuring	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes	No	No	No	No	

Notes: Moody's Statistical Handbook, Country Credit, October 2003.

1/ Mexico data are not from Moody's but rather IMF data sets.

2/ Data for Asian countries current account and the primary balance are for 1996 as the 1997 data were affected by the onset of the crisis.

3/ Primary balance data are from IMF sources.

4/ Information on crisis resolution features are from Roubini and Setser (2003).

characteristics of most crisis episodes include widespread maturity mismatches, large currency mismatches (including liability dollarization), sizable current account deficits and, in some cases, large and growing stocks of external debt as a share of GDP. Since India does not share these characteristics, it looks less vulnerable to a balance sheet crisis than countries that experienced crises.<sup>7</sup> These countries also tended to have overvalued exchange rates and open capital accounts, which it has been noted is not the case in India.

### **B. A Number of Causes for Concern**

These more limited balance sheet vulnerabilities, as well as domestic financial repression and capital controls, have led many to believe that, while the fiscal position is unsustainable over the longer term, the short-term risks of a financial crisis are limited.<sup>8</sup> There are, however, a number of reasons why such a favorable assessment of the financeability of the debt path should be revisited and revised. Vulnerabilities may be larger than they appear on the surface: indeed, in many important dimensions India shares some of the vulnerabilities of countries that experienced crises in the last decade and has greater vulnerabilities than other emerging market economies with similar credit ratings. These vulnerabilities are now considered in some detail.

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<sup>7</sup> This is confirmed by Early Warning System (EWS) models which at present put the probability of currency crisis during the next 24 months in India in the range 3–12 percent, and the probability of a sovereign debt crisis in the next 12 months at 2 percent. See Manasse, Roubini and Schimmelpfenning (2003) for a recent EWS model of sovereign debt crises.

<sup>8</sup> In his comments on our paper, Arvind Panagariya refers to the conclusion in Ahluwalia (2002) that “India does not face any immediate danger of a capital account crisis” and that “the system is not seriously vulnerable to a run on bank deposits.” However, Ahluwalia also notes that the combination large fiscal imbalances, limited capital mobility, and a public sector dominated banking system, even if a sudden capital account crisis can be avoided, will result in “slow strangulation” instead. While we certainly agree with this conclusion, we feel that a crisis is likely before “slow strangulation” is allowed to take its full course.

## **Fiscal vulnerabilities**

### ***High fiscal deficits and debt***

India's fiscal deficit and government debt are already significantly larger than in most countries with a similar credit rating: the average debt ratio for countries with a Moody's rating of Ba1 to Ba3 is 61 percent of GDP in 2003, compared to 85 percent of GDP for India; the average fiscal deficit for similarly rated countries is under 4 percent of GDP, while it is 11½ percent of GDP for India.<sup>9</sup> Moreover, lower-rated countries (B1 to C) have a much lower fiscal deficit (4½ percent of GDP on average) than India (see Table 1). India also compares much worse, in terms of fiscal deficits and government debt, compared to countries that experienced financial crises; India's fiscal deficit, primary deficit, primary gap and debt (relative to GDP) are worse than for almost all the countries that experienced debt servicing difficulties in the last decade (see Table 2).<sup>1011</sup>

### ***High public debt to revenue ratio and low revenue to GDP ratio***

More importantly, the public debt to revenue ratio (a better measure of debt sustainability for a sovereign than the debt to GDP ratio) is much larger for India (430 percent) than for similarly rated countries (289 percent on average).<sup>12</sup> It is even larger than that of lower-rated countries (372 percent on average). This high ratio is in part a reflection of a low ratio of government revenue to GDP (under 20 percent of GDP), which while only slightly lower than the average for similarly rated countries (21 percent of GDP), is well below that for

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<sup>9</sup> Note that the fiscal data reported by Moody's are different to those discussed above.

<sup>10</sup> The main exceptions is Turkey, which has a fiscal deficit similar to India's (but since Turkey had high inflation, the real-inflation corrected fiscal deficit of Turkey in 2000 was much lower than that of India).

<sup>11</sup> For a detailed discussion of the sources of high deficits and debt, see Srinivasan (2002).

<sup>12</sup> The ability of a government to service its debts is related more to its ability to raise revenue than GDP. For any given primary gap, the ability to reduce it over time through revenue mobilization is smaller if the revenue to GDP ratio is larger.

lower-rated countries (26 percent of GDP). The debt-to-revenue ratio and the revenue-to-GDP ratio for India also compare poorly with those of countries that experienced financial crises. They look similar or worse than those of Russia, Ecuador, and Argentina which defaulted. It is true that India's revenue to GDP ratio is less volatile than that of other emerging market economies (as India's GDP growth is more stable) and this stability makes any debt to revenue ratio more sustainable.<sup>13</sup> But since the debt to revenue ratio is so high (both in absolute and relative terms), the stability of the revenue ratio is of little comfort. India's revenues may not fall sharply but they are also upwardly sticky; thus, the ability to raise revenue over time to make the debt path more sustainable is also severely limited.

### ***High interest payments as a share of government revenue***

The low ratio of revenue to GDP also means that interest payments as a share of revenue are extremely large (34 percent), and much higher than for similarly rated countries (20 percent) and for lower-rated countries (21 percent); they are also increasing (they were 28 percent in 1997). Further, interest payments relative to revenue are significantly higher (both in average and absolute terms) in India than most countries that did experience a crisis. This is despite the fact that most of the external government debt is on concessional terms and that domestic financial repression and capital controls keep interest rates well below market-determined levels and the levels in other emerging market economies.

### ***The positive growth-interest differential is disappearing***

Nominal and real interest rates on government debt have remained low in India because of financial repression and capital controls, but this situation may change over time. Indeed the differential between the growth rate and the real interest rate has shrunk in the last decade, will shrink further over time, and may eventually lead to a negative growth-interest differential (as in most countries not suffering financial repression), as financial liberalization

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<sup>13</sup> India's revenue to GDP ratio is one third as volatile as that of other emerging economies (see Hausman, 2003).

and leakages in the capital control system will put pressure on domestic interest rates.<sup>14</sup>

While financial repression and fiscal deficits have not led so far to current account deficits and external debt accumulation, they have certainly led to crowding out of public and private investment in the last few years. Moreover, even though private savings might be higher, this is in part a Ricardian phenomenon; private agents save more because of the expectation of having to service high government debt with future taxes. While growth rates have not yet significantly suffered because of financial repression, crowding out will eventually negatively affect potential growth as high deficits lead to higher real interest rates, lower investment, and a lower savings rate. Lower growth and higher real interest rates will in turn make debt sustainability and financeability even more shaky and elusive.

### ***Contingent liabilities are large and growing***

The general government, in addition to its explicit debt, has significant implicit/contingent liabilities deriving from the potential cost of having to clean up the banking system (discussed below), the losses of state-owned enterprises, central and state government guarantees, and payment arrears of state electricity boards. Some estimate these liabilities to amount to about 20 percent of GDP. To this it is necessary to add the liabilities deriving from the unfunded pension liabilities of India's public employees. In this regard, India shows many of the characteristics of emerging market economies with weak banking systems and large implicit and explicit contingent public sector liabilities that eventually trigger both a sovereign debt crisis and a banking crisis that are intertwined (Indonesia, Russia, Pakistan, Ecuador, Turkey, Argentina, Uruguay).

### **Banking sector vulnerabilities**

#### ***Heavy concentration of bank assets in government debt***

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<sup>14</sup> Indeed, apart from 2003 when GDP growth surged above its historic average, the growth-interest differential has sharply and persistently fallen from an average of about 8 percent in the 1991-96 period to near zero or negative in the 2000–2002 period.

Financial repression and capital controls have allowed the government to finance itself more cheaply than otherwise, but they create severe risks for the banking and financial system. Most private savings are captive to the government because of high statutory liquidity ratios, small saving schemes that are tax-preferred and channeled to government debt, and portfolio requirements for banks (banks are required to hold 25 percent of their deposits in government securities). Currently about 35 percent of the assets of the banking system are claims against the general government. In this respect, India situation looks worse than that in countries which have recently defaulted on their debt and/or restructured it on coercive terms. Government debt as a share of bank assets was 31 percent in Russia, 30 percent in Pakistan, 21 percent in Argentina, 14 percent in Ukraine, and significant in Ecuador and Uruguay.<sup>15</sup> While, in the short term, financial repression may ensure the financing and refinancing of the sovereign, similar forms of financial repression could not prevent a run on the banking system and the imposition of deposit freezes (in Russia, Ecuador, Argentina, Pakistan, and Uruguay), and a systemic banking crisis that ended up being very costly to the sovereign. Indeed, the costs of the bailout of the financial system were as high as 24 percent of GDP in Ecuador, are likely to end up being even higher than that in Argentina, and were also very large (ranging between 15 and 40 percent of GDP) in some other countries that experienced a banking and financial crisis (Korea, Thailand, Mexico, Indonesia, Turkey, Uruguay).

### ***The banking system is fragile***

The balance sheets of the Indian financial system are in worse shape than usually acknowledged. Banks not only hold large quantities of government debt that is of potentially lower quality than assumed, but also they are burdened with significant non-performing assets as a result of lending to state-owned enterprises and to the private sector. As discussed

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<sup>15</sup> Another example of a banking system being loaded with the debt of an insolvent sovereign is Lebanon, where over a third of bank assets are government paper, the debt ratio is about 160 percent and the fiscal deficit is 12 percent of GDP. Sovereign default has not occurred in Lebanon, partly because of a recent bailout of the country by a number of creditor governments. But the risk of a twin sovereign debt and banking crisis remains very high.

above, maturity mismatches leading to market risks and heavy reliance on government paper leading to large credit risk are crucial vulnerabilities of the financial system. Thus, the overall state of the banking and financial system is a concern. For example Moody's gives an overall very low grade/rating of "D" to the "weighted average bank financial strength"; this is as low or lower than in many other emerging market economies that suffered financial crises. It reflects concerns about supervision and regulation, capital adequacy ratios, disclosure and transparency, non-performing loans and exposure to the sovereign, to Indian states, and to inefficient state owned enterprises and other public entities. Moreover, some measures of foreign currency liquidity mismatches for the financial system suggest that the risk of a roll-off run should not be underestimated. In 1991, the external financing crisis was exacerbated by the roll-off of nonresident foreign currency deposits in the banking system. While the overall short-term debt coming to maturity is less than gross foreign reserves, other measures, such as Moody's external vulnerability indicator (which is the total of medium- to long-term nonresident foreign currency deposits in the banking system and short-term debt relative to reserves) show greater fragility to liquidity risk.<sup>16</sup> The Moody's indicator is 55 percent for India, not too far below the mean of 61 percent for similarly ranked sovereigns, some of which experienced a roll-off run in the last decade.

### ***Risk of a systemic banking crisis***

The cost of providing the government with financing on favorable terms in the short term could be a systemic banking crisis in the medium term. It is true that the banking system currently makes a positive spread—and thus earns profits—on holding government debt, because the return is larger than the cost of borrowing bank funds (the interest rate on deposits). But this short-term liquidity and positive return mask serious medium-term

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<sup>16</sup> While formally nonresident deposits with maturity over one year are not short term, they are included by Moody's in their measure of liquidity risk because "in a general run on the currency, depositors may attempt to withdraw longer-term deposits even if they have to pay a penalty to do so". As noted, in 1991 the withdrawal of nonresident deposits contributed to the external financing crisis. Pakistan had a similar experience of capital flight in 1998 and was forced to freeze nonresident deposits.



problems. If the debt were to be restructured down the line, mark-to-market evaluations of these losses may imply significant losses to the capital of the financial system. As in the case of most emerging market economies, government paper on balance sheets of Indian banks is considered to be safe; as a consequence, and mistakenly, capital is not therefore allocated to safeguarding against potential future losses. This can result in the sort of misleading capital adequacy ratios that have failed to signal financial distress in other countries that has occurred when debt restructuring eventually made implicit losses explicit (Russia, Pakistan, Ecuador, Argentina, and Uruguay).

Note also that if a bank run were to eventually occur—when and if depositors become concerned about the quality of the bank assets and the sustainability of government debt—the ability of the Indian government to stem the run via explicit guarantees of deposits may be limited. A solvent government running a low deficit and with little debt may credibly guarantee deposits since it has resources to finance a bailout of the financial system. But an insolvent government cannot credibly backstop the banking system and promise to protect deposits given that the cause of the run is, in the first place, concerns about the solvency of the sovereign. Thus the risks of a bank run and the necessity of a deposit freeze become more severe when the government is effectively insolvent or semi-insolvent.

Furthermore, the Indian banking system is involved in a significant amount of maturity intermediation. While deposits are mostly short-term, the assets of the banking system (especially its holdings of government paper) are of much longer maturity and duration. Thus banks are exposed to credit risk if there are doubts about the quality of the government paper they hold, and to interest rate/market risk, given the maturity mismatch. Thus, while maturity mismatches at the aggregate national level are small, the mismatches in the banking system are large and increasing. If interest rates were to increase due to financial liberalization, the deposit rate on bank liabilities would increase while the value of the fixed-rate medium- to

long-term government paper on their balance sheets would fall. As a consequence, on a mark-to-market basis, banks could suffer significant losses.<sup>17</sup>

### **External vulnerabilities**

#### ***Gross foreign reserves are high but net foreign assets are low***

Notwithstanding the small stock of foreign debt, the large stock of foreign reserves, and the existence of capital controls, the risk of an externally-triggered sovereign debt crisis should not be underestimated. Consider for example the stock of foreign reserves of the central bank: they have sharply increased from \$26 billion in 1997 to about \$90 billion in 2003. But this increase in reserves does not represent a true increase in the net foreign assets of the country. There are two ways in principle that a country can accumulate foreign reserves. First, it can run a current account surplus (with no private capital inflows); in this case, all the accumulation of reserves represents an increase in net foreign assets. Second, it can run a current account balance and accumulate reserves because there is a private capital inflow. In this case, gross reserves increase and gross foreign assets increase, but net foreign assets are unchanged as the increase in gross reserves is fully matched by an increase in foreign liabilities (the capital inflows). India resembles the latter case in that it has not been running current account surpluses. Actually, since it was running on average small current account deficits, the accumulation of gross reserves is matched by an even larger accumulation of foreign liabilities.

Hence the story in India is that inflows of capital, rather than current account surpluses, account for the large increase in the foreign reserves of the central bank. Then the issue becomes: how much of this inflow is “hot money” that could suddenly rush out of the country if economic and fiscal conditions lead to a panic and a liquidity run? On this matter, the situation is complicated. Some of the inflow is clearly “hot money” since it has taken the

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<sup>17</sup> See Patnaik and Shah (2002) for estimates of the potential losses of banks from increases in interest rates.

form of portfolio investment in Indian assets (especially in the stock market); this amounts to about \$26 billion between 1993 and 2003. Current Indian regulations do not restrict the ability of foreign investors to repatriate portfolio investment; thus investors could liquidate such investment and freely exit if they wish to do so. Will such inflows be resilient and not run in case of a fiscally-driven crisis? The answer is that, while until now such inflows have remained robust, there is some risk of exit if there was a financial crisis.<sup>18</sup> Note, in this respect, that such inflows shrank and became negative during the Asian and global crisis of 1997–98; also, if a fiscal crisis in India were to occur, the incentive to run and avoid losses would be significantly larger. Finally, a fiscal crisis would be associated with expected and actual currency depreciation that would lead portfolio investors to exit to hedge the currency risk of local currency investments. Capital controls on the exit of such flows may stem the flight, but expectations that capital controls on outflows would be extended to nonresidents may anticipate and trigger a run.

***Foreign direct investment is significant but not immune from risk***

Even FDI inflows may not shelter India from a risk of a run. Such FDI inflows cumulated to about \$26 billion by 2003. Usually, FDI investment is considered stable and a source of reduced vulnerabilities given that it is equity rather than debt, long-term rather than short-term, and in local currency rather than foreign currency. In practice, FDI investors are in for the long haul and cannot close factories or halt fixed investments overnight; it is therefore not hot money. But this stability of FDI is deceptive. Since FDI represents a local currency investment (unless it produces goods for exports), there is a meaningful currency risk involved in it. If there is a large expected real depreciation, FDI investors who do not usually hedge that risk ex-ante may have a strong incentive to hedge. Indeed, in many recent currency crisis episodes, informed FDI investors were the first ones to flee in the sense that, while their local currency investments are not easily liquidated, they had a strong incentive to hedge the currency risk in a crisis by covering forward their local currency positions or

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<sup>18</sup> See Gordon and Gupta (2003) for a discussion of the determinants of portfolio investment in India.

making outright purchases of foreign currency, thus putting sharp pressure on the exchange rate.

Thus, if expectations of a fiscal crisis were to emerge, one could expect that both portfolio investors and FDI investors would try to hedge the currency risk putting pressures on central bank reserves under a fixed rate regime (the increase in reserves following the inflow would be sharply reversed in an unrestricted outflow). Moreover, recent episodes of currency and sovereign debt crisis such as Russia and Argentina suggest that, in addition to currency depreciation losses, FDI investors may be subject to outright capital controls (Russia, Argentina) and effective expropriation risk (as in Argentina, where asymmetric pesification and freezing of utility tariffs effectively represented a broad capital levy on FDI).

A fiscal crisis in India could be associated with a capital flight of both short-term portfolio investment and longer-term FDI (the latter via currency hedging and shorting of local assets, rather than outright liquidation of FDI investment). It is true that there are still restrictions on the use of forward markets, but such restrictions apply more tightly to residents than nonresidents. For example, forward purchases can be made by those investors who need to make debt service payments; since FDI investors may have financed part or most of their FDI via foreign borrowing, they may effectively have access to the forward market under the guise of debt servicing payments. Similarly, foreign institutional investors are allowed to hedge in the currency market up to 30 percent of their cumulative portfolio investment, and they can outright liquidate and repatriate their investments at will. All this suggests that both portfolio investment and FDI can effectively exit and/or put pressure on the exchange rate and reserves if a fiscal crisis was expected.

***The risk of a currency crisis should not be underestimated***

While the nominal and real exchange rates are not grossly overvalued, neither was this the case in a number of crisis countries (for example, Korea and Indonesia). When a crisis occurs, the loss of liquidity in the foreign exchange market, and attempts by domestic and

international investors to flee and hedge currency risks, leads to severe exchange rate overshooting, well above the long-term fundamental value of the currency.<sup>19</sup> Thus overvaluation is not necessary to trigger a currency crisis and excessive nominal and real depreciation: overshooting is a systematic feature of currency crises even when the fundamental real exchange rate is not excessively overvalued.

Moreover, note that currently market pressures towards an appreciation of the Indian currency are somewhat artificially driven by short-term capital inflows (increases in foreign liabilities) that are being sterilized by the central bank. If concerns about the sustainability and financeability of government debt were to emerge, capital outflows could be quite rapid and put significant pressure on reserves, interest rates and the exchange rate. Thus what appears to be low liquidity risk given high reserves may rapidly change, and pressure on interest rates would have significant consequences for growth and fiscal balances, and for the debt dynamics. Also, while the balance sheet effects of a depreciation would be limited, the economic consequences of a sharp depreciation on real incomes could be significant. Finally, as argued above, expectations of a sharp depreciation could trigger rapid capital flight and an exit of international investors.

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<sup>19</sup> See Cavallo, Kissilev, Perri, and Roubini (2002) for evidence on such overshooting in currency crises and a model attempting to explain such overshooting.

## **Other vulnerabilities**

### ***Limited policy credibility and political instability***

As with many emerging market economies that experienced financial crises, India suffers from limited policy credibility, in part due to political instability and conflict. In other countries, elections and political conflict were important elements in triggering a broader currency and financial crisis (see Table 2). Election year political and policy uncertainty were the trigger for crises in Mexico, Korea, Brazil, Argentina. Political conflict (including violence) and instability played a role in triggering policy uncertainty and crisis in Mexico, Thailand, Indonesia, Russia, Ecuador, Pakistan, Ukraine, Turkey, and Argentina. India, while a democracy, is experiencing both internal political and external geo-strategic tensions, including: a fragile multi-party coalition government, fiscal pressures from the states, conflict between Hindus and Muslims, a serious dispute over Kashmir, and risk of military confrontation with Pakistan (although this has recently subsided and prospects for peace are promising). A flare up in any of these areas could increase investors' risk aversion and capital flight could ensue.

## **V. CONCLUSIONS**

In summary, India resembles in some important dimensions the vulnerabilities of countries that experienced sovereign defaults or near-defaults (Russia, Ecuador, Argentina, Pakistan, Ukraine, Uruguay). While in some dimensions, India is less vulnerable (modest rollover/liquidity risk, lack of currency mismatches and limited liability dollarization, smaller current account imbalances, lower external debt, financial repression and capital controls) in other dimensions it is as vulnerable if not more vulnerable. Indicators such as the fiscal deficit and primary deficit as a share of GDP, public debt as a share of GDP and of revenue, primary gaps, a heavily managed exchange rate, reliance on banks for financing of the deficit, weak banking and financial systems, and hot money inflows leading to increases in foreign liabilities all look as bad and often worse in India compared to other countries that experienced severe sovereign debt servicing problems. Many indicators also look worse in India compared to other emerging market economies with a similar or lower credit rating.

Excessive reliance on some indicators of vulnerability (liquidity risk and currency mismatches) that appear to have improved relative to the 1991 crisis and relative to other emerging market economies that experienced crises may be deceptive. India may be as vulnerable to a financing crisis as some other economies that have experienced severe financial turmoil. While a financing crisis may not be imminent, viewing the risk of a crisis as minimal over the medium term may turn out to underestimate the vulnerabilities of the current debt path. Indeed, the fact that the primary deficit has increased and become higher in spite of the acceleration of GDP growth in 2003 suggests that the cyclically adjusted primary deficit and primary gap are even wider than the raw figures. International comparisons are ominous: in Argentina investors started to be concerned about the sustainability of the debt in 1997 when, in spite of a growth acceleration after the tequila crisis and growth rates of over 8 percent, the primary balance remained in negative territory. In India, a significant acceleration of the growth rate to over 6 percent in 2003 has been associated with a further modest worsening of the primary balance, rather than an improvement, which is clear evidence of a structural deterioration of the primary gap. And, with elections coming up in 2004, the pressures for further electoral business cycle fiscal easing will be increased. Thus, the debt path is not only unsustainable, but it may also be the case that the debt dynamics are deteriorating.

It should also be observed that recent research, such as Reinhart, Rogoff and Savastano (2003) and IMF (2003), suggests that emerging market economies with high debt ratios often end up defaulting on their debts. In other words, such economies appear to be “debt intolerant” and unable to reduce their debt ratios via fiscal adjustment not based on capital levies. Given its high debt ratio, high deficit and large primary gap, India faces heightened risk of a debt crisis. While it has no history of default (and notably avoid default in 1991), it clearly wants to avoid the prospect of even near default. Thus, the urgency of starting a process of fiscal adjustment that will reduce the primary gap and stabilize the debt ratio cannot be overemphasized. Delay may not only lead to a higher debt ratio; it may also exacerbate financial vulnerabilities and possibly lead to external vulnerabilities that could

eventually trigger a crisis. This being the case, the time to act is now, before the 1991 crisis is a distant memory.



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