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Liberalizing Capital Flows in India:
Financial Repression, Macroeconomic
Policy and Gradual Reforms

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1. Introduction

After years of resistance to international economic integration, India has made significant progress liberalizing international trade and access to foreign investment since the early 1990s. These policy changes reflect widespread concern that the past inward orientation held down economic growth in India, especially in comparison to the growth of the developing countries of East Asia. The recent acceptance of economic liberalization and reform has allowed the relaxation of restrictions on foreign direct investment and inward portfolio capital flows. India retains tight controls on outward portfolio capital flows, restricting the access of residents to foreign capital markets and domestic markets in foreign currency securities. The relaxation of these controls and liberalization of the capital account remain controversial policy issues for India.

The round of economic reforms in the mid-1990s led to the publication of the Report of the Committee on Capital Account Convertibility by the Reserve Bank of India (Tarapore Report) in 1997 outlining a plan for achieving full capital account convertibility. Ironically, this report was published on the eve of the East Asian financial crises. It is hardly surprising that the absence of contagion effects for the Indian economy during these crises was taken as affirmation of the wisdom of controls on outward capital flows for India. Although capital account convertibility in developing countries became more controversial in the wake of the Asian crises, the liberalization of inward capital flows to the Indian economy has progressed in the last few years and the prospects for further capital account liberalization in South Asia appear to be improving again.

The strong theoretical case for international capital market integration for developing countries has received increasing scrutiny in empirical research. Empirical studies support the view that financial crises in recently liberalized economies are predominately to blame for ambiguous net gains from capital account convertibility in emerging market economies. They also reveal that domestic capital market development and regulation and the quality of governance in the public and private sectors raise the potential benefits from international financial integration and reduce the incidence and severity of crises. Developing country crises over the last two decades repeatedly reveal that the transition from financial repression to financial liberalization often leads to a

financial crash in an inadequately regulated financial system.¹ The financial crises of East Asia emphasized the importance of the regulation and supervision of domestic financial activity and of public sector guarantees of banking sector liabilities in recently liberalized economies.² Other crises, notably in Latin America, attest to the importance of macroeconomic imbalances for provoking capital account crises that reverse economic growth.

A critical issue in the debate over capital account convertibility for India is the vulnerability of a financially integrated, previously financially repressed, economy to capital account crises. Two related issues are what policy reforms need to be undertaken before the liberalization of outward capital controls and what policy measures might protect an open Indian financial system from crises. This paper considers the challenges to the capital account liberalization for India and the vulnerability of the Indian economy to post-liberalization capital account and financial crises. The level and growth of public sector debt and the state of the domestic banking sector are central issues. Many papers focus on the need for fiscal reform in India and discuss the growth of public debt, while others survey in detail the challenges for banking reform.³ The theme of this paper is on how macroeconomic policy and the legacy of financial repression in the Indian economy interact and matter for sequencing economic reforms and international financial integration.⁴

The paper first places international financial integration of the Indian economy in perspective by briefly reviewing the theoretical and recent empirical literature on the benefits of capital account liberalization for developing countries. The subsequent section gives an interpretative overview of lessons from recent crises and the literature on capital account crises to frame the discussion of the crisis vulnerabilities of the Indian economy. The fourth section discusses recent liberalization of inward capital flows by India and the impact of these policy reforms. The fifth section is the core of the paper and discusses the vulnerability of the Indian economy to financial and balance of payments crises and discusses the importance of the legacy of financial repression. The subsequent section summarizes the risks for capital account convertibility and the seventh section discusses the policy sequence for liberalization. The last section concludes. A general view of this paper is that India is in a good position for further liberalization and

that the unmet preconditions for capital account convertibility in India are desirable financial and macroeconomic policy reforms in their own right.

2. The Gains from International Financial Integration

The basic theoretical argument for the liberalization of capital flows is well known. Just as there are gains from contemporaneous trade in goods and services, there should be gains from trade in commodities across time. In neoclassical growth models, capital flows from relatively capital-abundant countries to a developing country allow higher rates of investment and economic growth without a greater sacrifice of current consumption in the recipient country. In this case, capital inflows allow the recipient country to invest and consume more than it produces when the marginal productivity of capital within its borders is higher than in the capital-rich regions of the world. Comparative advantage implies that capital-poor regions should borrow and repay their debts after their capital stocks and output per capita have converged towards those of the advanced economies. By reallocating savings and resources toward the most productive investment opportunities, capital flows should result in welfare gains from both recipient and originating regions.

The theoretical literature is not conclusive about the magnitude of the gains from convergence of the factor abundance ratios. Lucas [1990] argues that neoclassical growth models imply international capital flows and rates of convergence per capita GDP than are observed. Gourinchas and Jeanne [2003], however, calibrate a simple neoclassical growth model and find welfare gains from free international capital mobility between one and two percent of GDP for capital-poor countries. This estimate is approximately the same as the benefits of eliminating economic fluctuations for developing countries. Convergent growth models that assume away domestic financial market imperfections might be expected to underestimate the impact of financial market integration.

Recent empirical research on economic growth finds that factor productivity differences dominate factor abundance differences as a source of per capita income growth differentials across countries.⁵ Percentage differences in total factor productivity between advanced industrialized countries and developing countries such as India

substantially exceed percentage differences in capital stocks. This empirical evidence suggests that the importance of liberalization for growth may well rest on the relationship between international financial integration and productivity growth. Countries that are financially integrated do attract more foreign direct investment, which can contribute to productivity growth through technology transfer and spillovers. Interactions between financial integration and factor productivity could be more important than increasing net capital inflows.

Financial integration can raise welfare and growth by allowing the sharing of risk between savers and investors across borders. Access to international financial markets allows risk diversification for domestic residents, possibly increasing savings rates, and gives diversified foreign investors access to high return risky investment projects. Obstfeld [1994] develops an endogenous growth model with consumption risk that predicts recurrent gains from full international financial integration for developing countries between 0.5 and 5.3 percent of GDP. Prasad, et al [2003] survey studies of the gains from international risk diversification and estimate gains separately for more financially and less financially integrated economies. The estimated gains for the more integrated economies (which include India) exceed 2.5 percent of GDP, while the gains for less financially integrated economies are about 6 percent of GDP. These theoretical gains rely on financial integration reducing consumption volatility while output volatility can rise. National consumption volatility typically exceeds output volatility. For India, the volatility of consumption growth and output growth were 5 percent and 3 percent, respectively, between 1960 and 1999, and the ratio of consumption growth volatility to output growth volatility rose in the 1990s over the 1980s.⁶ Kose, Prasad and Terrones [2003] show that financial openness (as measured by capital flows) raises this ratio, while trade openness lowers it for a large sample of developing countries, contrary to the theoretical models.

In recent years, equity market reform in India has opened foreign access to domestic equity investment and access to foreign stock markets for domestic firms. Cross-country empirical studies find positive but small effects of international equity market liberalization on per capita income growth. These also show that equity market liberalization reduces production and consumption volatility.⁷

Capital account liberalization may also provide a means for forcing an end to financially repressive policies. The ability of resources to move across borders in response to current or anticipated future taxation of capital earnings and unsustainable fiscal or financial policies may impose discipline on public authorities enhancing domestic financial intermediation and investment. The adverse impact of raising effective rates of taxation on financial intermediation and capital earnings on investment can be much greater in an open economy than in a financially closed economy. Access of domestic savers to international capital markets limits the capacity of the public sector to borrow at low rates of interest domestically. Therefore, the incentives for tax reform and deficit reduction are enhanced by international financial integration.

3. Liberalization and Crisis Risk

The capital account crises in emerging market economies over the last decade have raised doubts about the net benefits of capital account liberalization for developing countries. In several cases, the liberalization of financially repressed economies led to rapid capital inflows followed by sudden reversals and financial crises. Such crises are costly for economic growth. However, in spite of the crises of 1997-98, compound growth rates were higher for most of the liberalized economies of East Asia, including Korea, Malaysia and Thailand, than for India since India began gradual reforms in the mid-1980s.⁸ The experience of capital account liberalization indicates that the benefits depend upon the vulnerability of a recently liberalized economy to financial crisis. The vulnerability of India to capital account crises following further liberalization is a central concern of this paper.

The debate on the empirical effects of capital account liberalization on economic growth is not very conclusive. The construction of indicators of capital account openness can significantly change results, thereby raising doubts about evidence that capital account liberalization fails to promote economic growth. Some provisional conclusions do emerge. Opening the capital account with significant macroeconomic imbalances reduces net gains and raises the prospects of subsequent crisis. Countries tend to benefit from liberalization when they can better absorb capital inflows by having higher levels of human capital, more developed domestic financial markets, and greater transparency in

financial and corporate governance and regulation. Measures of the prevalence of corruption also have significant effects on the benefits of openness. For example, greater transparency in governance and control of corruption are associated with higher levels of inward foreign direct investment and larger growth benefits of direct investment in developing countries.⁹

Several causes of crises in emerging markets have been identified. The first is that fiscal and external imbalances, particularly unsustainable fiscal policies, frequently lead to rapid exchange rate depreciations precipitating financial crises. Under a pegged exchange rate regime, the monetization of public sector budget deficits that is inconsistent with the pegged rate of currency depreciation will force its abandonment either sooner or later in a sudden outflow of international reserves. Unsustainable deficits and public debt that the private market participants expect to be met by future monetization can also lead to the collapse of a currency peg before the required monetary expansion or fiscal reform begins. Anticipated future monetization of unsustainable government debt can induce capital flow reversals and rapid reserve losses under a managed float when the central bank intervenes to resist depreciation.

Another aspect of financial crises in emerging market economies is the occurrence of banking crises. Although the association between banking and currency crises has received much attention for the frequency of coincident crises, banking crises alone often follow financial liberalization and are exacerbated by access to foreign capital inflows.¹⁰ The deterioration of the banking system in recently liberalized economies typically results from the combination of inadequate prudential regulation, supervision and enforcement with the increase in the potential volatility of bank deposits. Not only are emerging market financial crises involving banking crises costly in terms of economic growth, but costly banking crises following financial liberalization are not confined to developing countries or to pegged exchange rate regimes. The Japanese banking crisis was central to the poor economic performance of Japan over the last decade, and regulatory forbearance is largely responsible for that country's banking sector problems.¹¹

The fiscal impact of banking crises can contribute to financial crises. The outstanding stock of public debt usually does not account for contingent liabilities of the

public sector. Prominent among these liabilities in emerging market economies are explicit and implicit guarantees on deposits in domestic banks and other financial intermediaries. For the East Asian crisis countries, deposits that were not subject to deposit insurance or other explicit guarantees were guaranteed by the government after the fact (for example, household deposits in finance companies in Thailand).¹² These contingent liabilities can be realized suddenly in the event of a crisis, leading to a sudden increase in public debt that justifies the expectation of future monetization. Further, the possibility that the government will insure deposits creates moral hazard in banking, as banks lose their incentive to protect against losses that will be correlated with the rest of the banking system. Under a pegged exchange rate, this extends to the incentives to hedge against foreign currency risk so that the banking system will carry foreign currency denominated liabilities against domestic currency denominated assets.

Weak financial sector regulation and regulatory forbearance allow banks to accumulate net contingent claims against the government under deposit insurance schemes. Since experience shows that the foreswearing of public sector bailouts of the domestic financial system are not credible, regulation of the financial system is necessary to ensure against the accumulation of off-budget contingent liabilities that come on-budget in the event of a crisis. The reduction or elimination of capital account restrictions raises the resource base from which domestic banks can draw for generating implicit contingent claims against the government. The relationship between emerging market financial crises and poor financial regulation and prudential supervision implies the observation that better governance results in lower macroeconomic volatility under an open capital account.

One of the major roles of financial intermediation is to transform short-maturity deposits into long-maturity investments. Banking necessarily involves the management of maturity risk, and a major reason for bank regulation is to assure that this risk is hedged. The maturity problem also arises for international capital flows in general to developing countries. Short maturity lending arises endogenously in simple theoretical models in the presence of investment gestation lags. With gestation lags, a reversal of short-term lending can lead to a liquidity crisis even though the country could repay its debt in full if the reversal had not occurred. In such cases, long maturity loans are

welfare improving, but short maturity lending allows creditors to exit before the country is forced to restructure its debt. With short-term debt in the market, long-maturity debt becomes risky and long-term debt can demand a large risk premium leading debtors to borrow in short maturities.¹³ Under strict capital controls, a capital account reversal is not possible, so there is no gain to short-maturity lending over longer term lending. The implication is that debt maturities are endogenous to capital account liberalization. This point extends to public sector borrowing with policy uncertainty. Capital account liberalization may shorten the maturity of government debt. Similarly, developing country governments face difficulty (if not, impossibility) issuing international debt denominated in domestic currency.

The volatility of capital flows to emerging markets motivates the widespread view that direct foreign investment is more desirable. Direct foreign investment generates equity claims in firms that match the maturities of investment and are denominated in the currency of sales and expenses of the firm. Direct foreign investment flows are less vulnerable to sudden reversals and carry the potential growth benefits associated with technology transfer. Foreign direct investors, however, can hedge against their domestic currency assets in the foreign exchange market or repatriate earnings and liquidate investments into foreign currency if they anticipate exchange depreciation. Portfolio borrowing by domestic corporations and foreign direct investment are fungible to a significant extent. In the case of India, repatriation and liquidation of domestic investments to foreign currency by non-residents is now unrestricted so that reversals are possible.

One aspect of crises in emerging market economies has been the tendency to peg the exchange rate. Banking crises and fiscal crises can occur under floating exchange rates, but exchange rate pegs can exacerbate these significantly by diminishing the incentives of banks and corporations to hedge foreign currency risk. The risk of eventual large devaluations rather than of daily exchange rate fluctuations should also effect the incentives of foreign creditors to hedge risk and the maturity of the assets they acquire. There has been a strong tendency in India to resist exchange rate movements, just as there is in many emerging market economies as observed by Calvo and Reinhart [2001]. A managed float removes the implicit guarantees of a fixed exchange rate regime, but

resistance to fluctuations could still induce incentives in integrated capital markets to take on currency risk that creates contingent liabilities for the government.

Capital account liberalization allows rapid reversals of foreign capital inflows that force the contraction of domestic consumption or investment (or both). The recent experiences of crises in emerging market economies imply that sustainable fiscal policies, financial reform and regulatory improvement, and flexible exchange rate regimes reduce the likelihood of capital account crises. The accumulation of official reserves from capital inflows will reduce the impact of a capital account reversal if it should occur. Imposing selective capital controls is another but costly way to reduce the probability of crises. Selective capital controls distort financial intermediation if effective and are often ineffective for inhibiting capital flight.

4. Economic Reform in India and Capital Inflows

After Independence, India had a comparatively unrestricted financial system until the 1960s when the government began to impose controls for the purpose of directing credit towards development programs. Over the decade of the 1960s, interest rate restrictions and liquidity requirements were adopted and progressively tightened. The government established the state banks and nationalized the largest commercial banks by the end of the decade, giving authorities broader control over the allocation of credit across sectors and enterprises. Through the 1970s and into the 1980s, directed credit took a rising share of domestic lending and interest rate subsidies became common for targeted industries. With the start of economic reforms in 1985, the government began to reduce financial controls by partially deregulating bank deposit rates. In 1988, these controls were reinstated and the government began to relax ceilings on lending rates of interest. Progressive relaxation of restrictions on both bank deposit and lending rates of interest and the reduction of directing lending began by 1990. The gradual reduction in interest rate controls and directed lending proceeded throughout the 1990s.¹⁴

Until reforms began in the late 1980s, international capital inflows and outflows were restricted by administrative controls or outright prohibition on the purchase of foreign assets by residents, direct investment by foreigners and private external borrowing. After the balance of payments difficulties in 1991, authorities began to

gradually relax restrictions on inward capital flows and on currency convertibility for current account transactions. The rupee was made fully convertible for current account transactions in August 1994 when the government agreed to the obligations of Article VIII of the Articles of Agreement of the International Monetary Fund. Trade liberalization has also proceeded during the 1990s as tariff rates have been reduced substantially.

Over the last several years, restrictions on direct foreign investment, portfolio borrowing and foreign equity ownership have been relaxed. This was a significant turnaround from banning foreign investment and ownership to seeking direct foreign investment. Restrictions on the share of foreign ownership in enterprises for most sectors have been removed, and the upper bounds for automatic approval of direct and portfolio investments have been progressively raised. The procedures for large investments over these thresholds have also been simplified and clarified in an effort to reduce delays and arbitrary discretion. Foreign investment income is fully convertible to foreign currency for repatriation. External commercial borrowing has been relaxed but is regulated with respect to maturities and interest rate spreads.¹⁵

Effective restrictions continue on the acquisition of foreign financial assets by residents and on currency convertibility for capital account transactions. Recently, these restrictions have been slightly eased to allow domestic residents to invest in foreign equities. It is also apparent that some domestic investment, notably in equity, by domestic residents is intermediated through Mauritius to take advantage of favorable tax treatment under the reciprocal tax agreement. Direct deposits and equity and bond holdings by non-resident Indians are subject to favorable treatment, but remain small relative to the size of the financial sector.

The imposition of controls on cross-border financial transactions paralleled deep government intervention in domestic financial intermediation. As elsewhere, the initial motivation for financial controls was to direct savings to investment in targeted sectors as part of a development plan. State ownership of intermediaries, interest rate restrictions, foreign exchange controls and directed credit schemes were all part of the policies of financial repression in India. The government also required, and continues to require, the holding of a large share of bank assets in public debt instruments. These were held at

below market rates of interest, creating the implicit taxation of financial intermediation. Mandated lending to the public sector by the domestic banks became a significant source of revenue for the government. The transition of the role of financially repressive policies from development objectives to fiscal necessity has occurred in a number of developing countries.¹⁶ As discussed and estimated below, liberalization has brought a decrease in the fiscal revenues generated by financial repression.

Policies of financial repression impose implicit taxes on savings and investment that can vary widely by source and activity. Such policies can significantly distort and discourage capital accumulation and reduce economic growth.¹⁷ Capital controls distort different financial activities at different rates when they essentially eliminate private international financial transactions as they did in India in the 1970s and 1980s. The selective imposition and partial relaxation of controls (the current situation for India) also distorts financial activities in myriad ways that may not be recognized or easily quantified. Because wedges between rates of return to different vehicles for savings and investment opportunities can have large effects on the size of financial flows, the microeconomics of capital controls can have macroeconomic impacts.

One of the focal points of inward capital account liberalization is the encouragement of foreign direct investment in India. Total flows of foreign direct investment in India have increased sixty-fold in US dollar terms from 1990-91 to 2001-02 to over \$6 billion, and inward portfolio investment was \$2 billion in 2001-02. However, foreign direct investment in India was less than 6 percent of total foreign direct investment in the developing countries of Asia in 2001.¹⁸ The high growth rate of direct investment inflows is unsurprising starting from nothing in the late 1980s.

Comparisons to China are frequent in official reports and in the Indian press evidencing concerns that foreign direct investment is not higher. In 2001, foreign direct investment flows were 33.2 percent of GDP for China and 5.6 percent of GDP for India; while per capita flows were four times greater for China than for India, as a share of gross capital formation they were half as great in India than in China.¹⁹ The proper concern may be that while foreign direct investment is rising rapidly for India and the share of capital stock growth attributable to foreign investment is growing, the rate of investment is much lower in India than in China. Impediments to investment and disincentives to

save along with remaining restrictions on access to foreign capital might explain lower rates of foreign direct investment. Wei [1999] argues that a lack of transparency in governance and control of corruption in China and India inhibit inward direct foreign investment to both countries.²⁰ Along with red tape, widely varying taxes and regulatory policies in India and across the states of India may inhibit direct foreign investment. Further, gradualism itself, by creating uncertainty about the timing and nature of future reforms, could make direct investment riskier. The importance of fiscal and regulatory distortions is readily evidenced by the dominance of capital inflows for investment from Mauritius. Foreign direct investment inflows from Mauritius were three times as great as flows from the second largest contributor, the United States. Inhibition of investment directly by European, East Asian and North American corporations is unlikely to raise capital inflows and technology transfer.

5. Vulnerabilities of the Indian Economy to Crises

Three primary challenges for the success of capital account liberalization in India can be identified. The first is the high and rising ratio of outstanding public debt to GDP despite recent high growth rates of GDP. The second is the capacity of the domestic financial system to absorb foreign capital inflows. A third is the potential vulnerability of the financial sector to capital account crises with liberalization of capital outflows. All three have a common theme - the legacy of financial repression and its role in fiscal and financial policy in India. Recent economic reforms in the presence of financial repression provide the initial conditions for further liberalization and have implications for the potential vulnerabilities of the economy to capital account crises.

5.1 Fiscal sustainability

The high level of outstanding public sector debt and large primary deficits of the central and state governments lead to frequent calls for fiscal reform to facilitate deficit reduction. By international comparisons across emerging market economies, India's external sovereign debt in proportion to GDP is low. However, domestic public debt is high so that overall outstanding public debt exceeds 80 percent of GDP. The combined deficits of the center and states, inclusive of interest payments, are about ten percent of

GDP while the combined primary deficits average 3.5 percent of GDP from 1997 through 2002. Table 1 shows the combined central and state debt and deficit ratios since the early 1990s. The short-lived fiscal retrenchment during the middle of the 1990s and rising deficits during the last several years are both apparent.

The pattern of public debt accumulation for India suggests that the current financing path of public expenditures may not be sustainable over a long horizon. The possibility that current fiscal policies are unsustainable has been raised frequently.²¹ For example, Ahluwalia [2002] points out that public debt growth for India has met or exceeded the levels of growth for Russia, Turkey and Argentina before those countries' respective recent crises. Buitert and Patel [1997] formally tested and rejected public debt sustainability over the earlier period of rising public sector deficits that parallels the current increase. However, the recent growth rates of real GDP and low international real rates of interest can change even back of the envelope calculations. Roubini and Hemming [2004] argue that the current level of public debt is sustainable and will continue to rise toward steady state. Their conclusion is based on assumptions that the international macroeconomic environment of the past few years is a good approximation of the long-run environment for fiscal policy sustainability simulations which are probably inappropriate.

Public debt sustainability is typically assessed using a simple calculation of the dynamics of debt using recent growth rates, interest rates and primary public sector balances. The standard calculation simply uses the public sector flow budget identity equating the change in the debt to GDP ratio, d , to the primary surplus of the public sector plus the debt to GDP ratio times the difference between the real interest on public debt and the growth rate of real GDP. Table 2 reports series for real interest rates for domestic public debt in India and real GDP growth. The first column reports average real interest rates for internal government debt calculated as the difference between the weighted average nominal interest rate for central government securities and the wholesale price inflation rate (Mohan [2002]; data are from RBI, Handbook of Statistics). These interest rates are representative of other indices of interest rates on central and state public debt reported by the RBI. The second column reports a similar calculation using the ratio of interest payments to outstanding domestic public debt. The third column

repeats this calculation using the IMF World Economic Outlook database used by Roubini and Hemming. The third column, therefore, reports the real interest rate calculated using the real GDP deflator. The fourth column reports the real GDP growth rate calculated from the same source.

The current general government debt level of about 82 percent of GDP and primary deficit equal to about 3.6 percent of GDP are sustainable only if the growth rate of real GDP exceeds the real interest rate on government debt by 4.4 percent. This is clearly not the case. For the calculated real rates of interest reported in the first column of Table 2, the growth adjusted interest factor (real interest rate minus the real growth rate) averages 0.95 percent for the fiscal years 1997-98 through 2000-01. This implies that the debt to GDP ratio would remain constant if the primary balance improves from a deficit of 3.6 percent to a surplus of almost 0.8 percent of GDP. The fiscal gap, which is the amount by which the primary surplus must rise to keep the debt to GDP ratio constant, equals 4.4 percent of GDP using recent weighted averages of the interest rates on central government debt. This standard calculation leaves out seignorage revenues that accrue to the government. The monetary base for India grew at an average annual rate of 10 percent from 1997 through 2002. Seignorage revenue as a share of GDP during this period averaged about 1.4 percent (see Table 4 for data and sources). The revenues gained from expansion of the monetary base to meet growth and modest inflation should be added to the primary surplus of the consolidated public sector. This reduces the estimate of the fiscal gap to about 3 percent, and the implied growth rate of the public debt to GDP ratio equals 3.6 per annum. Using these interest rates, current fiscal and monetary policies are not sustainable.

The alternative of using the ratio of interest payments to outstanding debt and deflating yields an estimate of the real rate of interest that is 1.9 percentage points lower than the average growth rate over the period from 1997 through 2003. This implies that the debt to GDP ratio equal to 82 percent is sustainable if the primary balance improves by 2 percent of GDP to a deficit of 1.6 percent. Subtracting seignorage revenues, these interest rate estimates imply that an improvement in the primary surplus of 0.6 percent of GDP is needed to stabilize a debt to GDP ratio of 82 percent. The excess of the growth

rate over the interest rate also implies that the debt to GDP ratio would continue to rise until it reaches 116 percent of GDP.²²

A simple lesson from the public sector budget identity is that a positive debt to GDP ratio and positive primary deficit are sustainable only if the long-run real rate of interest on government debt is less than the real growth rate of the economy. This condition will only hold in a dynamically efficient economy if the interest rate on government debt is less than the opportunity, risk adjusted, interest rate. In this case, the government imposes an implicit tax on its creditors. The difference between the opportunity interest rate and the public sector borrowing rate multiplied by the outstanding public debt equals the revenues collected through these implicit taxes. Therefore, assessing long-run sustainability using an approximation of the long-run real interest rate less than the long-run growth rate of the real economy means that a portion of tax revenue is counted in the interest on government debt and not in the primary surplus. Such implicit revenues are approximated below.

The two calculations clearly indicate that the choice of the long-run real rate of interest, even if the recent growth experience of the Indian economy is expected to continue, is critical and error prone. It is not particularly realistic to adopt as permanent at least two characteristics of the current interest rates paid on government debt in India. Global real rates of interest are at historically very low levels, and India enjoys concessional terms on a significant share of its foreign public debt.²³ Excluding foreign debt interest from these calculations and using yields on public debt issued domestically may give a better estimate of future public debt sustainability than those implied by dividing aggregate data. One of the important characteristics of countries suffering repeated macroeconomic crises is the volatility of fiscal policy. The primary balances for India do not historically display very much volatility as revealed by Table 1, but the rising trend of the primary deficit as a share of GDP makes a sufficient case for fiscal adjustment.

The budget balances for the combined central and state governments do not give a complete accounting of total public sector liabilities. In addition to unfunded pension liabilities and various contingent liabilities, the government also guarantees debt issued by loss-making public enterprises. The largest of these for India are the losses of the State

Electricity Boards. The inclusion of these ongoing additions to public sector liabilities will increase the consolidated deficit by between 1.0 and 1.5 percent of GDP.²⁴ Additional explicit debt guarantees include borrowing for irrigation projects through special purpose vehicles and lending by banks and other non-bank financial institutions under state guarantees. The total contingent guarantees of the state and central governments are estimated to be 11.5 percent of GDP for 2002-03.²⁵ Pinto and Zahir [2003] report that pension liabilities for both the central and state governments are growing at approximately 20 percent per annum, although current pension expenditures are about two percent of GDP. The implicit and explicit deposit insurance guarantees of the public sector can be estimated by the net non-performing assets of the banking sector after loan-loss provisions are subtracted, and are less than two percent of GDP.²⁶

The high level of public debt and large public sector budget deficits with tight restrictions on international capital outflows from the private sector suggest that crowding out of domestic capital formation is taking place. Table 3 reports the ratios of gross private capital formation to GDP and of total (private and public) gross capital formation to GDP for India since 1990. The table shows that private capital formation has increased modestly, although public investment has contracted substantially. The decrease in public investment has a counterpart in the increase in the share of interest payments in public expenditures. Because inward foreign investment rose as restrictions on financial inflows were relaxed over the past several years, the very slight increase in the share of private capital formation in GDP may reflect increasing crowding out by public sector borrowing on top of the decline in the share of public infrastructure spending.

5.2 Fiscal consequences of gradual reforms

As a part of the reforms over the past decade, the government has progressively relaxed interest rate ceilings, reduced investment requirements of commercial banks in government debt and actively encouraged a domestic market in government debt instruments. These reforms have been part of the progressive reversal of financially repressive policies that were adopted over the decade of the 1960s.

By the 1980s, financial repression was an important means for financing public expenditures in India. The imposition of reserve requirements on commercial banks play an important role in raising public resources by implicitly taxing domestic financial intermediation. The cash reserve ratio (CCR) and statutory liquidity ratio (SLR) impose minimum levels for holdings of cash assets and public sector interest-bearing debt, respectively, as proportions of deposits in scheduled commercial banks. These vary significantly over time revealing their use as active measures of monetary and fiscal policy making, and both were reduced in recent years as shown in Figure 1. Interest rate restrictions were also substantially reduced in the 1990s, and government debt trades on the domestic financial market. These policy reforms imply that the implicit rate of taxation on financial intermediation has eased since 1993. Although the statutory reserve ratio was set to 25 percent of deposits, the scheduled commercial banks held over 40 percent of their total deposits in approved public sector securities at the end of 2003. Together, the scheduled commercial banks held over 60 percent of the consolidated central and state government debt at the end of 2002. Additional amounts are held by non-bank financial intermediaries and by the Life Insurance Corporation of India, which held an additional 20 percent of government debt, or over 70 percent of its assets, at the end of 2002. Two institutions, the State Bank of India and the Life Insurance Corporation of India, held 52 percent of government debt in 2003.²⁷ These holdings indicate a significant pre-emption of loan resources from the private sector to the government.

Financial repressive policies allow governments to finance public sector budget deficits through domestic credit creation at lower rates of inflation than would be possible in a financially integrated economy. Even in the absence of interest rate ceilings and the existence of market-determined yields on primary issues of government debt, capital controls provide the public sector with a captive capital market and allow lower than opportunity rates of interest for government debt. The fact that banks and other financial institutions hold more public debt than required by statute should not be taken as evidence that financial repression no longer plays a role in public finance. The commercial banking sector is dominated by government-owned banks (about 80 percent of deposits) and regulations mandate holdings by other financial entities. The Reserve

Bank of India reports average real rates of interest for the fiscal years 1996-97 through 2001-02 equal to 6.8 percent for the central government, 12.5 percent for borrowers and 1.9 percent for depositors.²⁸ While positive real rates of interest for public sector borrowing reveals financial liberalization, the high real rates of interest facing large corporate investors and a significant interest rate differential favoring government debt imply that intermediation remains hampered. There has, however, been a decline in the collection of implicit revenues from financial repression by fiscal authorities in India.

Table 4 reports calculations of public sector revenue from domestic public borrowing through financial repression in India for the period 1980-2002 after estimating the interest subsidy gained by the government borrowing on domestic financial markets. This decreased significantly after 1991 leading to the decline in financial repression revenues shown in Table 4. The estimates revise and update those made by Kletzer and Kohli [2002].²⁹ The implicit subsidy is calculated by estimating the difference between the average interest rate for government debt issued in India in rupees and the average opportunity interest rate for non-concessional government for borrowing from abroad. The opportunity interest rate estimate is formed by first dividing external interest payments to long-term debt by long-term debt and new disbursements after subtracting the sum of multilateral and bilateral debt issued on concessional terms. This gives the interest rate on non-concessional loans to India in US dollar terms. Actual rupee depreciation (end-of-year to end-of-year) is used to convert this average dollar interest rate to a rupee equivalent rate under the assumption that ex post uncovered interest parity holds. The interest rate on domestic government debt is calculated by dividing current year interest payments by current year outstanding government debt. The estimated interest rate differential is then multiplied by the central government debt to GDP ratio and the consolidated debt to GDP ratio of the central and state governments to obtain the first two columns reported in Table 4.

Financial repression revenues also include inflation taxation and a portion of traditional seignorage revenues. The real capital losses to the holders of government bonds due to inflation are included in the estimates of the real interest subsidy for public debt issued in rupees shown in Table 4. This includes the anticipated inflation tax to the extent that interest rates are controlled as well as the unanticipated inflation tax. The

impact of inflation taxes is illustrated by the effect of the depreciation of the rupee in July 1991 on financial repression revenues. Seignorage revenues are reported in the last column of Table 4. These are calculated as the change in reserve money as a ratio of GDP. Seignorage revenues, however, include revenues from the growth of output and financial deepening along with revenues generated by the imposition of reserve requirements imposed on the banking system.

The estimates reveal an important trend. Financial repression revenues clearly fall with the advancement of financial reforms beginning in 1993. Average revenues from the implicit subsidy to the government for the period 1980 through 1993 are about 8.2 percent of GDP. The average revenue from the estimated interest differential falls to 1.6 percent of GDP for the years 1994 through 2002. These calculations, however, cannot account for any missing currency risk premium. Another way to look at the interest differential between the external opportunity cost and domestic cost of public borrowing is compare the rates of interest on government-guaranteed bond issues, such as the Resurgent India Bonds issued (by the State Bank of India) in 1998 to attract capital inflows from non-resident Indian investors. The interest spread on the dollar-denominated portion of these bonds over 5-year treasuries was 2.49 percent, despite a reported lower spread over LIBOR for comparable bonds issued by similarly rated emerging market countries.³⁰

Seignorage revenues have also declined in recent years; average seignorage revenue over the entire period are slightly less than 2 percent of GDP, while seignorage revenue over from 1997 through 2002 averaged 1.4 percent of GDP. These declines coincide with a fall in actual inflation, but also suggest a decline in repressed inflation as financial restrictions were relaxed. The decrease in public sector revenue from financial repression is large and indicates some significant progress in financial policy reform.

The decline in revenues from financial repression followed financial sector reforms that have come in advance of, as yet unaccomplished, fiscal reforms needed to broaden the tax base, improve tax compliance and reduce tax distortions. The significant reduction in revenues from a highly distortionary source of revenue, the taxation of financial intermediation, without replacement through less distortionary means of taxation has contributed significantly to the growth of the general government budget

deficit and the rise in the public debt to GDP ratio. The rise in domestic borrowing by the government (perhaps coupled with incentives for banks to invest in government securities), however, continues to contribute to the repression of financial intermediation and capital formation. The completion of the task of reducing financial repression requires fiscal reform, as the holding of government debt by financial intermediaries at substantial levels does more than crowd out private investment. It inhibits financial intermediation between savers and investors. The capacity of banks to evaluate and monitor borrowers, diversify investment risk and diversify maturity structure risk between assets and liabilities is underutilized when bank assets are dominated by public debt. The creation of a public debt market in India has not been sufficient simply because the participants in this market are overwhelmingly state-owned financial intermediaries.

Financial repression is important for the growth of public debt in India because capital controls allow the government to avoid monetizing deficits by borrowing in a closed capital market. Liberalization of the capital account would reduce the capacity of the government to pre-empt domestic financial savings and realize a lower real interest rate than its opportunity interest rate. This could exacerbate the public debt problem by raising the real interest rate on public debt as the government relaxes its hold on a captive domestic institutional market for public debt issues. The increasing public debt to GDP ratio for India must eventually lead to fiscal reforms to close the fiscal gap or to monetization of public sector budget deficits, or a combination of the two. Liberalization of international financial transactions will raise the pressure for inflationary monetary growth and the need for fiscal reform.

5.3 Vulnerabilities of the financial system

The legacy of financial repression hampers domestic financial intermediation and raises the vulnerability of the banking system to crisis as international financial integration increases. These policies have included the pre-emption of assets by government borrowing, interest rate controls and directed lending to priority sectors. The scheduled commercial banks, which dominate financial intermediation, hold a large share of their assets in public sector debt, as noted, and in loans made to government mandated

priority sectors. At the end of March 2003, gross non-performing assets of the commercial banks were reported by the Reserve Bank of India to equal 9.5 percent of bank advances. The share of non-performing assets that the banks did not hold provisions against was 4.5 percent of bank advances. Directed credit to priority sectors accounted for about 31 percent of commercial bank assets, but about 40 percent of non-performing assets of the banks.³¹ In addition to the concentration of government debt held by the banks and non-bank financial intermediaries, directed credit leaves the financial system of India with limited resources for investment in growing industries.

The non-provisioned share of non-performing assets of the banking system is not large as a share of GDP (about 2 percent) in comparison with the post-crisis countries of East Asia, but it is not a modest share of bank assets net of government debt. Further, Bhattacharya and Patel [2003] argue that the official estimates may be as little as half of the actual share of non-performing assets on bank balance sheets. In addition, regulatory forbearance and state ownership of the banking sector could imply hidden contingent liabilities for the public sector. Regulatory forbearance may also be an important problem with an impact masked by the large share of assets held in government assets by the banks and required to be held by other financial intermediaries.

The experience of capital account liberalization elsewhere suggests that opening domestic financial markets to international capital flows exacerbates imprudent practices under weak regulations or regulatory forbearance. Non-performing assets are a burden to financial intermediation as well as an indicator of how crisis-prone the banking sector might be. The current levels of unprovisioned non-performing assets in the financial sector may underestimate and predict potential future non-performing bank loans in an integrated financial system after rapid growth in domestic financial intermediation. However, as pointed out by Bhattacharya and Patel [2003], non-performing assets of the Indian commercial banks are concentrated in industry, infrastructure projects and priority sectors rather than generated by loans for real estate and equity purchases as in the crisis countries of East Asia. Corporate governance and transparency as well as prudential regulatory enforcement will be important for maintaining financial sector stability and avoiding the rapid growth of contingent liabilities associated with financial liberalization in East Asia. Bhattacharya and Patel [2002] adopt the model of Dekle and Kletzer [2002]

for the East Asian crisis and non-crisis economies to the Indian economy and argue that financial regulatory forbearance is a similar source of concern.

The predominance of state-owned banking and the holding of government debt by these banks in excess of statutory requirements not only suggest that the public sector is a preferred borrower. It may imply that regulatory efforts and procedures are adapted to a liable shareholder. These could be poorly suited for regulating new private banks and non-bank financial intermediaries that borrow in an integrated capital market and whose shareholders face limited liability. Further, there is no reason to expect that the short-term external debt exposure of the Indian economy will remain at its current very low level. Financial liberalization and the integration of emerging market economies with private international financial markets tend to increase the short-term debt exposure of the financial system and the public sector. The capacity of the government to borrow domestically at medium to long maturities and the very low levels of short-term external indebtedness may be viewed as outcomes of financial repression and part of the pre-liberalization environment. The level of public indebtedness, its rate of increase or decrease and the potential for growing contingent liabilities with capital inflows may be better indicators of the vulnerability of a post-liberalization economy to subsequent financial crisis.

Because the banks hold over 40 percent of assets in public sector liabilities, treasury transactions are a primary activity of bankers and in recent years, have generated the bulk of bank profits. The long maturities and fixed nominal interest rates on government securities make these risky assets for banks to hold in the presence of interest rate volatility. The recent declines in interest rates generated capital gains on government securities held by the commercial banks and by other financial institutions (for example, in insurance). Prudent banking practices require that banks hedge against public debt issued at fixed interest rates by either issuing deposit liabilities with inflexible interest rates or trading interest-based derivatives. The liberalization of rates on many deposits and large holdings of government debt exposes the banks to interest rate risk that must be hedged. Patnaik and Shah [2004] analyze a sample of bank balance sheets to determine the extent of unhedged interest rate exposure in the Indian banking system and find it to be substantial. They conclude that the banking system is exposed to significant interest

rate risk. Unhedged interest rate exposure of financial intermediaries implies the need for improved regulatory oversight and prudential regulation as the financial system is further liberalized and opened to entry.

An overview of the literature on the net benefits from capital account liberalization reveals that general measures of governance and regulatory institutions in domestic finance are significantly associated with positive gains.³² Financial sector reform should address the inheritance of non-performing assets from directed credit in the state-owned banks, prudential regulation and enforcement to provide incentives to manage risk and opening the banking system to competition.

5.4 External vulnerabilities

The external debt to GDP ratio for India was 20 percent of GDP in 2003, of which 40 percent is government borrowing from official creditors primarily lent on concessional terms (37 percent of gross external debt carried concessional terms). External commercial borrowing accounted for 21 percent of gross external debt in 2003. The Government of India has not issued sovereign bonds on international markets, although corporate sector bond and bank borrowing increased as restrictions were relaxed. India is rated a speculative grade borrower, with ratings of BB and Ba2 by Standard and Poor's and Moody's, respectively. Compared with other emerging market economies with similar bond ratings, India has a low external debt to GDP ratio and high public debt to GDP ratio, as shown along with several other indicators by Roubini and Hemming. Importantly, the average maturity of external debt for India is about 9 years, and the average share of short-term debt in total external debt was only 4.6 percent from 1997 through 2002, consisting of trade-related credits and deposits of non-resident Indians.³³

The Indian economy appears to be far from vulnerable to a capital account crisis. The outstanding debt of the public sector is primarily held by domestic residents and is denominated in domestic currency. The outstanding foreign-currency denominated liabilities of the economy are small in proportion to GDP, and the external debt of 20 percent is well below the threshold for potential debt problems in emerging market economies of 30 percent observed by Reinhart, et al [2003]. Further, the share of short-

term debt in external debt in the mid-1990s for the East Asian economies that suffered crises in 1997-98 ranged between 20 and 50 percent, far higher than India's small share.

The external position of the Indian economy suggests a favorable environment for relaxing capital controls further and moving forward with capital account convertibility. The stock of international reserves rose rapidly over the past several years to 17.6 percent of GDP (\$113 billion) at the end of March 2004.³⁴ This stock of reserves rose during a period in which the current account was mostly in (small) deficit, although the current account balance recently became positive. Table 5 reports the accumulation of reserves, foreign debt and the short-term debt exposure of India over the 1990s. That implies that reserves were accumulated through foreign capital inflows and do not represent a net accumulation of foreign assets by the economy. This is not a particularly relevant observation for crisis vulnerability, although it raises issues about the best use of capital inflows. The international liquidity position of the central bank is strong by standard measures; reserves cover at least nine months of imports and about twenty times short-term external indebtedness. Indeed, liquid international reserves are being accumulated against longer maturity liabilities of the domestic corporate and financial sectors. The Reserve Bank of India's Report on Currency and Finance, 2002-03 contains a thorough analysis and international comparison of liquidity measures for the Indian economy.

The large accumulation of reserves by the Reserve Bank of India provides insurance against rapid capital outflows but at the cost of forgone interest earnings. Assets held by the central bank are offset by government debt held by the public. The differential in opportunity interest (not necessarily distorted market rates under capital controls) between domestic public debt and foreign treasuries represent a quasi-fiscal cost of sterilizing capital inflows. This difference adds to the consolidated public sector deficit, hence to depreciation pressure if future monetization of government liabilities is anticipated. Large reserve holdings can be most costly than beneficial and, thereby, induce exchange depreciation. These offsetting risks and the use of reserves as a self-protection mechanism against crises is discussed in Kletzer and Mody [2000].

Notes of caution may be modest, although full liberalization of the capital account should be expected to change the maturity structure of external debt and, perhaps, its currency composition. The current debt is dominated by government borrowing from

private sources, and capital inflows to private domestic capital markets are small and subject to continued restrictions. It would seem imprudent to assume that the maturity of new publicly guaranteed and non-guaranteed borrowing by domestic financial markets will not decline as capital markets become more integrated and there is more entry in the domestic financial markets. Managing the foreign currency exposure and maturity exposure of a liberalized banking system that is likely to enjoy the explicit and implicit guarantees of the public sector seen in other emerging market economies will be an eventual policy challenge of capital account liberalization.

5.5 Exchange rate management and financial repression

Capital controls allow policy makers to manage the nominal exchange rate and influence domestic rates of interest as independent objectives of monetary policy. When the capital account is liberalized, the government cannot use monetary policy to target interest rates and resist exchange rate movements indefinitely. The tendency to manage exchange rate movements even in the absence of a formal peg in emerging market economies is well documented and currency crises were central to many recent financial crises in emerging markets.

The behavior of the nominal exchange rate during the last decade under a managed float may be an indicator of the importance of limiting exchange rate movements in India. After the 17.38 percent devaluation of the rupee in July 1991, the rupee was pegged again to the US dollar until March 1993 when it was devalued another 19.2 percent. The formal exchange rate regime was then changed to a managed float. However, the rupee was virtually unchanged against the dollar until August 1995, suggesting a de facto peg to the dollar. From late 1995 to early 2003, the rupee depreciated at an annual average rate of 2.5 percent although the growth rate of the monetary base exceeded the rate of real GDP growth by about 7 percent annually. The standard deviation of monthly percentage changes in the rupee to the US dollar exchange rate from August 1995 to the end of 2003 was 1.33. This standard deviation is comparable to the standard deviation for the Malaysia from 1990 to the onset of the Thai currency crisis and is almost twice the average for the East Asian crisis countries excluding the Philippines.

The Reserve Bank of India has intervened in the foreign currency market in a number of ways. While short-term fluctuations are reduced through forward intervention (reported monthly as changes in net foreign sales of foreign exchange), it can be argued that the government implicitly pursues sterilized intervention. As argued and formally modeled by Kletzer and Kohli [2001], some of the means of financial repression also allow the central bank to influence the movement of the exchange rate. The cash reserve and statutory liquidity ratios were changed actively over the 1990s, changing private sector holding of outstanding public debt. Bank credit to the government is surprisingly closely correlated with changes in official reserves in the second half of the 1990s. During this period, official foreign reserves grew rapidly along with commercial bank credit to the public sector. The correlation between monthly increases in commercial bank credit to the government and reserve inflows over the entire period from August 1995 and October 2003 equals 0.40.³⁵ This suggests that capital inflows have been partially sterilized by increases in the holdings of public debt by the financial sector. Patnaik [2003] tests this sterilization hypothesis econometrically and finds that the changes in international reserves and holdings of government debt by the commercial banks do indeed move together. These results imply that the accumulation of reserves is a byproduct of the sterilization of capital inflows to manage the exchange rate. The willingness of state-owned banks to hold government debt in excess of the statutory liquidity ratio appears to play an important role in exchange rate management in India.

Past exchange rate management in India displays resistance to currency depreciation consistent with the experience of many other emerging market economies, especially in East Asia. The adoption of a floating exchange rate, albeit managed relatively tightly, reduces crisis vulnerability. The government can resist exchange rate movements while not offering any exchange parity guarantee as under a pegged exchange rate (or crawling peg or narrow target zone). The uncertainty that is induced, especially for short-term rates of change in the exchange rate, could lead to private sector hedging against currency risk. A possible source of concern is the revealed tendency of the government to lean against exchange rate movements that could result in sudden losses of reserves and capital account reversals under an open capital account.

6. The Risks of Capital Account Convertibility for India

Capital controls are instrumental to financial repression in India by separating domestic financial intermediation from international financial markets and capturing domestic savings for the financing of public sector budget deficits. The pre-emption of domestic financial resources for public finance reduces the intermediation of savings toward domestic capital accumulation and the incentives for banks to facilitate investment and innovation. Directed lending, interest rate restrictions and various restraints on lending have left the commercial banks with the burden of non-performing assets and the public sector with unrealized contingent liabilities with uncertain risks. Capital controls and various approval procedures, themselves, impose widely varying implied rates of taxation on different activities that distort the allocation of resources and reduce incentives to save and invest. The distortionary impact of capital controls on investment and savings gives a sufficient reason for reducing and eliminating impediments to capital flows. The risk of crises in emerging market economies also gives a sufficient reason preparing to manage an open capital account.

The vulnerability of the Indian economy to crises, with or without further relaxation of capital controls, rests on the impact of repression in domestic financial markets and fiscal policy. The two are linked. The high level of government indebtedness is sustained through borrowing on closed domestic financial markets. High levels of government debt impede the mobilization of household and enterprise savings for capital accumulation and leave bank balance sheets dominated by public debt instruments. Exposing state-owned banks hampered by lending to the government and high transactions costs to international competition could readily increase the cost of contingent public liabilities in the financial sector. The deposit base of the banks could easily shrink as savings seeks higher returns from more efficient intermediaries. This in turn could reduce the capacity of the government to borrow domestically at long maturities in domestic currency. Together, the liabilities of the government can rise as its need to borrow internationally or monetize its debt also increases.

The elimination of outward capital controls could easily lead to rising capital inflows and entry in the financial sector. At the same time, the capacity of the government to borrow on domestic financial markets on favorable terms should contract.

The current favorable terms for public sector borrowing from the commercial banks and other financial institutions include long maturities, large negative interest spreads compared to private lending, rupee denomination and, perhaps, under-priced risk premiums over international rates of interest in major currencies. One consequence of rising real rates of interest for government debt is due to the long maturity of public debt held by the commercial banks. The exposure to interest rate risk observed by Patnaik and Shah [2004] implies that financial opening could lead to net capital losses for the banks as interest rates rise on both deposits and public debt. These capital losses could pose an ultimate liability for the government. Liberalization could raise this risk by increasing competition for deposits, eliminating low and fixed interest rates on the liability side of bank balance sheets, or it could induce banks to hedge more on deeper markets.

Capital account convertibility would expose the public sector to international terms on its large overall debt and significant annual financing requirements. India's public debt burden, underestimated at 82 percent of GDP because of excluded state-owned enterprise losses and contingent liabilities, is higher than most countries that have suffered financial crises after liberalization.³⁶ However, the maturity structure of India's rupee denominated public debt means that a rapid crisis cannot evolve. The existing debt and fiscal policies are important to the extent that ongoing deficits need to be financed and amortizing public debt needs to be refinanced. Therefore, the capacity of the government to raise tax revenues for deficit reduction, reduce electricity board losses and other off-budget liabilities and avoid large contingent losses in the banking sector will determine the impact of the public debt burden on macroeconomic stability following capital account liberalization. Given the maturity of rupee denominated debt, the government may have the incentive to inflate away the debt. In the case of India, most of the debt is held by institutions that are either publicly owned or enjoy guarantees. The government has little to gain through unanticipated inflation and much to lose in reputational capital in international and domestic financial markets.

Domestic financial intermediaries suffer from their role as the primary creditors of the public sector and the incentive structure in state-owned banking. Ending capital controls does not eliminate the burden of financial repression without a reduction in the lending requirement imposed on the banking system by the government. Fiscal reforms

are necessary to improve the stability of the banking system with significant reduction in capital controls. The elimination of capital controls may also be necessary to improve financial intermediation, possibly through both entry and exit of intermediaries, by forcing a solution to the public sector finance problem.

Prudential regulation and enforcement are important for providing a stable financial environment. Capital controls can be forgiving of regulatory forbearance because the losses of the banking sector must accumulate through flows from domestic savings to domestic investment. Two-way international transactions allow cross-border stock shifts that can rapidly change financial sector balance sheets. Liquidity runs in a closed capital market are easier to contain than runs by foreign depositors. However, many countries have managed to regulate open financial sectors successfully and international standards provide reasonable guidelines to doing so. Detailed financial restrictions may inhibit financial instability at the cost of capital accumulation, while sound regulatory institutions and transparency in financial sector corporate governance (and corporate governance in general) can provide similar stability and more efficient allocations of capital.

7. Sequencing Liberalization and Reform in India

The rapid liberalization of a financially repressed economy often leads to large capital inflows and rapid expansion of domestic financial markets followed by a capital account crisis and economic contraction. The “Washington consensus” prescription for economic liberalization and international integration is to sequence reforms placing capital account convertibility as the last step after liberalizing trade, current account transactions and domestic financial markets. This prescription is frequently observed in the breach.³⁷ The domestic political economy of reform is the first reason that comes to mind. It may be difficult to form a coalition to support each step in a gradual reform, while suddenly expanding opportunities for financial transactions creates market support. The elimination of capital controls exposes domestic capital markets and macroeconomic policies to the discipline of international capital markets starting a race between financial reform and crash.

Indian policy is following a determined gradual path towards economic liberalization and international integration. Following the liberalization of transactions on the current account, restrictions on capital inflows have been relaxed steadily with an emphasis on encouraging long-term investment and lending. The relaxation of interest rate regulation and similar controls on domestic financial intermediation have partially reduced the impact of financial repression on domestic finance and is complemented by reforms in the equity market and development of a public debt market. The relaxation of restrictions on portfolio capital inflows is notable for its gradualism. Ceilings on interest rate spreads by debt maturities are imposed to discourage short-term and volatile foreign portfolio inflows, and restrictions on equity flows have been relaxed substantially. The pattern of liberalization of capital inflows in India has been the gradual raising of quantitative restrictions on inflows and the size of flows that are automatically approved. The gradual relaxation of restrictions on capital outflows would logically follow, while restrictions that discourage short-term inflows are part of the current policy agenda.

The level of public debt, size of the combined state and central government deficits and the interaction between public debt and domestic financial intermediation are cause for concern. Sequencing alone cannot ensure the smooth integration of the Indian economy with international financial markets. Although the external debt level of India is well within the range of countries with sustainable foreign debt, the public debt to GDP ratio and primary deficits of the public sector are very high, and fiscal reform is needed to assure sustainability of the public debt. The macroeconomic crisis of 1991 played out slowly with an essentially closed capital account. Reserves needed to be very low as a proportion of GDP for the sudden reversal of non-resident India deposits, a small share of total deposits, to provoke a balance of payments crisis. With an open capital account, the potential outflow of funds from domestic capital markets would be many times greater as domestic residents could withdraw from domestic banks and the bond and equity markets along with foreign investors. Any tendency to resist currency depreciation could raise the probability of a capital account reversal, although debt sustainability still matters for macroeconomic performance and growth under a pure float.

Capital controls mean that the government borrows on a captive domestic financial market regardless of the financial reforms to date. The real interest rate paid on

government debt must be lower than it would be if domestic households had access to international financial markets. Partial liberalization appears to contribute to the primary deficit of the public sector, and full liberalization could drive financing costs of public debt higher. Large public sector deficits do not simply substitute for domestic investment as a destination for domestic and foreign savings in the Indian economy; they appear to raise the cost of domestic financial intermediation and retard financial deepening.

International financial integration typically leads to both inward and outward gross capital flows. Gross capital flows, indeed, are much larger internationally than are net capital flows. With capital account liberalization, India could well experience a large outflow of domestic savings from high-cost domestic financial intermediaries to international capital markets. Shown by experience elsewhere, these gross outflows could be offset by lending and direct investment from abroad at lower intermediation costs. Taking advantage of foreign financial markets can be beneficial to the extent that higher income countries have comparative advantages in financial intermediation, but tax distortions can also induce capital flight and offshore intermediation. The end result of high domestic public debt and deficits under capital account convertibility is likely to be an exodus of domestic savings, contraction of domestic financial intermediation and a fiscal crisis accompanied by rising inflation.

As argued above, high levels of public debt and capital controls interact in India. Reducing financial repression increases the necessity of already desirable fiscal reforms. Prospective international financial integration increases the need for fiscal reform and containing public debt expansion. The priority for approaching capital account convertibility should be fiscal reform and reduction of the combined deficits of the center and states. Fiscal reforms are not only needed for fiscal sustainability to avoid macroeconomic crisis but are also conducive to financial reform and deepening.

The initial conditions for capital account convertibility in India are fairly strong with the exception of public finance. The very low short-maturity foreign debt exposure, low overall foreign debt, large stock of foreign reserves and flexible exchange rate place the Indian economy in a strong position by international comparison. It should be anticipated that the average maturities of foreign and public debt fall with international financial integration, but a prospective rise in short-term debt does not justify capital

controls. The stock of foreign reserves exceeds the current level of short-term debt several fold. Liberalization and further opening of the banking system requires regulatory improvement, but the present level of non-performing assets of the banking system is not excessive in comparison to the emerging markets.

The process of opening the Indian economy to foreign capital inflows is not complete and making India more attractive to foreign direct investment requires more than the relaxation of constraints on inflows and foreign ownership. Domestic policy distortions and regulatory uncertainty can inhibit investment inflows, perhaps significantly. Opening the capital account to outflows could also enhance foreign direct investment. To the extent that profitable investment uses the transfer of foreign technologies and skills, domestic savings that flows abroad might be seen as financing foreign investment in general equilibrium. Domestic savings that goes to foreign equity markets could find its way back in investments that transfer technologies, but also foreign investors may be more secure against adverse policy changes in an internationally integrated domestic financial market.

8. Conclusion

Capital controls play a central role in financial repression in India. These controls provide the government with the opportunity to sustain high levels of domestic debt by limiting competition for domestic financial savings. The closure of the capital account facilitated the taxation of financial intermediation and, hence, reduced incentives for tax reform to enhance tax revenues and promote efficiency in domestic investment. High public debt and repression of domestic financial intermediation are mutually reinforcing. The public debt burden of India poses a risk for capital account liberalization, creating a barrier to financial liberalization. Continued controls on international financial outflows reduce the incentives for deficit reduction.

The gradual liberalization of capital controls and financial sector reforms in India are having an effect. Financial sector reform has already reduced the imposition of public debt on financial intermediation. Less taxation of financial intermediation contributes to public sector deficits and is beginning to break the link between public finance and financial repression and raise the pressure for deficit reduction. The

relaxation of inward capital controls is successful in the sense that capital inflows are rising and gradual liberalization appears to be becoming the status quo.

Although fiscal imbalances pose a risk for capital account liberalization, a capital account crisis could play out slowly in India given the long maturity structure of the public debt denominated in domestic currency and issued at fixed interest rates and the current low proportion of foreign currency debt and of short maturity foreign debt. There are two aspects of the fiscal problem for financial integration. The primary deficit and amortizing public debt comprise the borrowing requirement of the government that would need to be financed on international terms under an open capital account. The second issue is that the banking system holds the overwhelming majority of the public debt. These become risky assets for the banks to hold with international financial integration. Any gain to the government from currency depreciation or rising interest spreads on public debt would be matched by losses by the banks. These holdings pose a threat to the banking system, and a capital account crisis could begin with exit by domestic depositors. In this case, deposit insurance could reduce exposure of the banking system to crisis. Limiting the contingent liability of the government created by deposit insurance so that it just offsets public sector capital gains requires institutional reform to ensure successful prudential regulation.

The potential gains from completing capital account liberalization for India could be significant. India has much to gain from direct foreign investment and access to foreign savings for domestic investment. The liberalization of capital inflows is not complete. Debt reduction may not be necessary before proceeding with the elimination of outward capital controls, but putting fiscal reforms in place to achieve deficit reduction probably is. The vulnerability of the banking sector to crisis implies that institutional reform, both fiscal and prudential, is needed.

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Table 1: Consolidated Center and State Government Debt and Deficits

Percentages of GDP

Fiscal Year	Public Debt	Gross Deficit	Primary Deficit	Interest Payments
1990-91	64.0	9.8	5.2	4.6
1991-92	62.9	7.3	2.4	4.9
1992-93	62.5	7.2	2.2	5.0
1993-94	64.6	8.5	3.4	5.2
1994-95	62.4	7.4	2.0	5.4
1995-96	60.3	6.8	1.6	5.2
1996-97	58.5	6.6	1.3	5.3
1997-98	60.3	7.5	2.2	5.3
1998-99	61.3	9.3	3.8	5.5
1999-00	64.0	9.8	4.0	5.9
2000-01	67.0	9.7	3.8	6.0
2001-02	73.0	10.6	4.1	6.4
2002-03	77.5	9.8	3.2	6.8

Sources: Reserve Bank of India, *Handbook of Statistics on the India Economy, 2002* and Reserve Bank of India, *Bulletin*, June 2004.

Table 2: Real Interest Rates for Government Debt in India

Fiscal Year	Weighted Average Rate, WPI deflated	Domestic Interest to Debt Ratio, WPI deflated	Interest Payments to Debt, GDP deflator	Real GDP Growth Rate
1990-91	1.1	-3.2	n.a.	6.0
1991-92	-1.9	-5.9	n.a.	2.1
1992-93	2.4	-2.0	1.4	4.2
1993-94	4.2	-0.4	2.2	5.0
1994-95	-0.6	-3.9	-1.1	6.8
1995-96	5.7	0.5	1.8	7.6
1996-97	9.1	4.5	-2.4	7.5
1997-98	7.6	4.4	2.2	5.0
1998-99	6.0	3.1	1.5	5.8
1999-00	8.5	6.0	4.1	6.7
2000-01	3.8	1.8	2.9	5.4
2001-02	5.8	5.2	5.2	4.0
2002-03	n.a.	4.3	6.2	4.7

Sources: Reserve Bank of India, *Handbook of Statistics on the Indian Economy, 2002* and International Monetary Fund, *World Economic Outlook, 2004*. Column 1: Weighted average of interest rates on central government debt minus WPI (RBI data); column 2: Ratio of consolidated government domestic interest by debt minus WPI (RBI data); column 3: Average real interest rate calculated from IMF, *World Economic Outlook, 2004*, database, deflated by GDP deflator; column 4: calculated from IMF, *World Economic Outlook, 2004*, database.

Table 3: Gross Capital Formation in India

Percentages of GDP

Year	Total Investment	Private Investment
1991	27.8	14.1
1992	24.2	13.9
1993	23.4	15.0
1994	22.8	15.6
1995	21.3	16.7
1996	20.6	18.3
1997	18.8	17.7
1998	17.2	16.6
1999	16.4	16.5
2000	15.9	17.0
2001	15.2	17.2
2002	15.0	17.3
2003	14.5	17.9

Source: International Monetary Fund, *World Economic Outlook*, 2004.

Table 4: Estimated Public Sector Revenues from Financial Repression

Percentages of GDP

Year	Revenues from Consolidated Public Debt	Revenues from Central Government Debt	Seignorage Revenues
1980	2.60	2.28	2.00
1981	8.36	7.18	0.92
1982	4.57	4.04	1.12
1983	6.99	6.14	2.68
1984	13.98	12.24	2.53
1985	2.16	1.91	1.06
1986	7.42	6.60	2.13
1987	0.90	0.81	2.45
1988	10.69	9.53	2.25
1989	10.27	9.13	3.01
1990	6.45	5.71	1.79
1991	27.50	24.22	1.79
1992	0.82	0.72	1.51
1993	11.87	10.44	3.25
1994	-0.80	-0.70	3.02
1995	7.25	6.31	2.12
1996	0.29	0.25	0.40
1997	5.04	4.36	1.74
1998	4.32	3.69	1.89
1999	-0.71	-0.59	1.10
2000	2.88	2.40	1.08
2001	-0.39	-0.33	1.51
2002	-3.18	-2.66	1.31

Sources: Author's calculations using data from International Monetary Fund, *International Financial Statistics*, 2004, World Bank, *Global Development Finance*, 2003, Reserve Bank of India, *Handbook of Statistics on the Indian Economy*, 2002 and Reserve Bank of India, *Annual Report*, 2002-03.

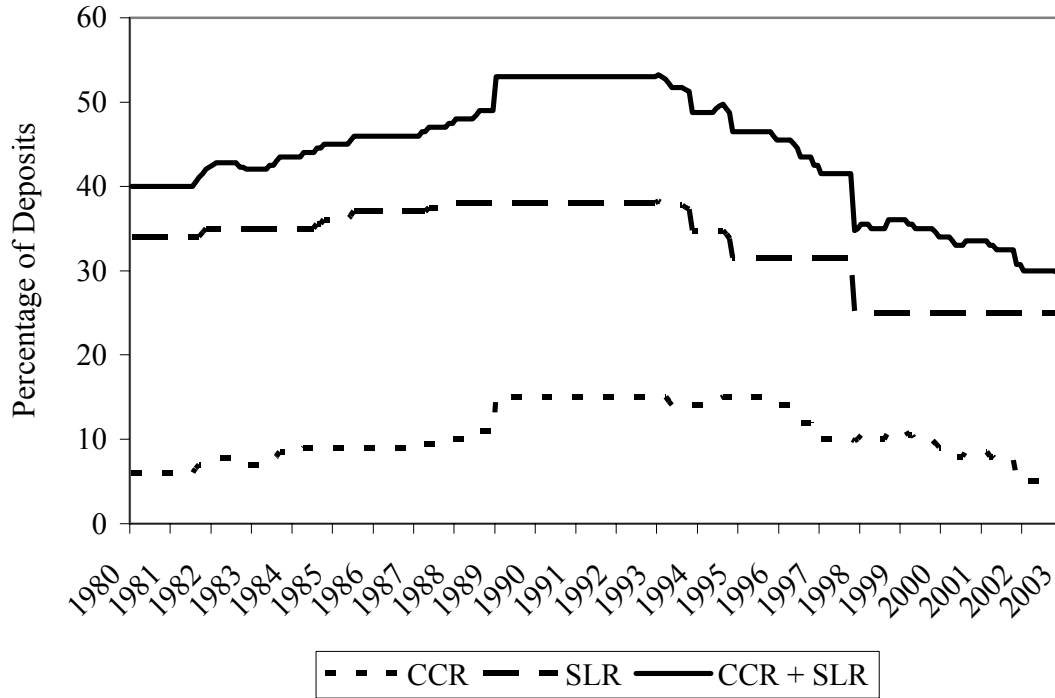
Table 5: Reserves, External Debt and Current Account Balance

Percentages of GDP

Fiscal Year	International Reserves	Total Foreign Debt	Short-term Foreign Debt	Current Account Balance
1990-91	2.1	26.8	2.7	-3.2
1991-92	3.2	28.7	3.0	-0.4
1992-93	4.5	38.7	3.2	-1.8
1993-94	8.0	37.5	2.7	-0.4
1994-95	9.2	33.8	1.3	-1.1
1995-96	6.7	30.8	1.3	-1.7
1996-97	7.6	27	1.4	-1.2
1997-98	7.7	24.5	1.8	-1.4
1998-99	8.4	24.3	1.3	-1.0
1999-00	9.3	23.6	1.0	-1.1
2000-01	9.5	22.1	0.9	-0.6
2001-02	12.0	22.4	0.8	0.3
2002-03	16.0	20.9	0.6	0.7

Sources: Reserve Bank of India, *Handbook of Statistics on the Indian Economy, 2002* and Reserve Bank of India, *Bulletin, June 2004*

Figure 1: Cash Reserve Ratio and Statutory Liquidity Ratio over Time



Source: Data used are from Reserve Bank of India, *Handbook of Statistics on the Indian Economy, 2002*, Table 41.

Endnotes

¹ This observation made by Diaz-Alejandro [1985] was particularly prescient for the 1990s.

² Indeed, the banking crisis in one of the most advanced economies, Japan, attests to the impact that weak prudential regulation and supervision can have on any economy with a bank-centered financial sector (see Dekle and Kletzer [2003]).

³ Recent detailed analyses of fiscal policy in India include, Pinto and Zahir [2003] and Singh and Srinivasan [2004]. A detailed analysis of financial sector reform and banking in India is made by Bhattacharya and Patel [2004].

⁴ Roubini and Hemming [2004] also discuss the crisis vulnerability of the Indian economy, concentrating on comparisons with recent crisis economies.

⁵ For example, Hall and Jones [1999].

⁶ From Kose, Prasad and Terrones [2003].

⁷ Bekaert, Harvey and Lundblad [2002] and Henry [2003] find that liberalizing foreign equity investment raises per capita income growth by between one and two percentage points per year over a five year horizon. Bekaert, Harvey and Lundblad [2002] also find that capital account liberalization raises consumption and output volatility in emerging market economies.

⁸ This statement is verified by the data in Maddison [2003] and elsewhere.

⁹ These conclusions are drawn from Prasad, et al [2003] which surveys the cross-country evidence on capital account liberalization. Rodrik [1998] initiated the current debate by finding an absence of benefits of financial openness. Arteta, Eichengreen and Wyplosz [2003] discuss the importance of measuring capital account openness.

¹⁰ Kaminsky and Reinhart [1999] show that twin crises have larger effects on output on average and that banking crises often precede macroeconomic crises.

¹¹ Dekle and Kletzer [2003] discuss this argument and present a model of evolving banking crises without a fixed exchange rate. Bhattacharya and Patel [2002] propose an extension of the moral hazard model of endogenous banking crises under exchange rate pegs in Dekle and Kletzer [2002] to India.

¹² See Dekle and Kletzer [2002] for a survey.

¹³ Rodrik and Velasco [1998] present a simple model demonstrating this.

¹⁴ Demetriades and Luintel [1996 and 1997] estimate the impact of banking controls on economic growth in India and conclude that these controls had a negative effect. Their index of financial repression for India based on quantitative restrictions on financial intermediation displays an upward trend from 1969 through 1984 followed by a decreasing trend beginning in 1988.

¹⁵ Details for restrictions on direct investment, portfolio investment and bank borrowing are described by the Reserve Bank of India in the Annual Report, 2002-03 and the Report on Currency and Finance, 2002-03.

¹⁶ This observation is documented by Fry [1988 and 1997] and Giovanni and de Melo [1993] among others.

¹⁷ There is a copious literature on this topic surveyed by Fry [1988 and 1997].

¹⁸ Data are from Reserve Bank of India, Report on Currency and Finance, 2002-03, Tables 6.6 and 6.4.

¹⁹ Comparisons are made in Reserve Bank of India, Report on Currency and Finance, 2002-03, chapter 6.

²⁰ Wei, Shang-Jin, "Can China and India double their inward foreign direct investment?" paper for NBER/NCAER conference, 1999. <http://www.nber.org/~confer/99/indiaf99/India-China-FDI.pdf>

²¹ Recent examples include Pinto and Zahir [2003], Roubini and Hemming [2004] and Srinivasan [2002].

²² Roubini and Hemming [2004] use the negative growth-adjusted interest rate term and calculate debt sustainability for several standard scenarios for primary deficits and GDP growth.

²³ Reynolds [2001] also uses a simple growth model to argue that India took advantage of low real interest rates to sustain the growth of public debt after 1996.

²⁴ This estimate is from Pinto and Zahir [2003] based on data from the Planning Commission.

²⁵ Reserve Bank of India, Annual Report, 2002-03, Table 4.16.

²⁶ Data from Reserve Bank of India, Report on trend and progress of banking in India, 2002-03.

²⁷ Data reported in this paragraph are from the Reserve Bank of India, Report on trend and progress of banking in India, 2002-03 and Handbook of Statistics on Indian Economy, 2002.

²⁸ Mohan [2002].

²⁹ The methodology is adapted from Giovanni and de Melo [1993].

³⁰ Reserve Bank of India, Report on Currency and Finance, 2002-03, p. 170.

³¹ Numbers given are for March 2003 and are reported in Reserve Bank of India, Report on trend and progress of banking in India, 2002-03.

³² See Prasad, et al [2003] for a thorough survey.

³³ The various figures given are from Reserve Bank of India, Annual Report, 2002-03, Report on Currency and Finance, 2002-03 and Handbook of Statistics on Indian Economy, 2002.

³⁴ Reserve Bank of India, Bulletin, June 2004.

³⁵ The data source for this calculation is the International Monetary Fund, International Financial Statistics, January 2003, where deposit bank credit to the government is converted to dollars using contemporaneous exchange rates.

³⁶ This comparison is made by several authors, most recently by Roubini and Hemming [2004], including publications of the Reserve Bank of India, such as the Report on Currency and Finance, 2002-03.

³⁷ Williamson and Maher [1998] discuss the record of putting capital account liberalization last first.