

### **Nepal: Selected Issues**

This selected issues paper on Nepal was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on May 17, 2010. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Nepal or the Executive Board of the IMF.

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NEPAL

**Selected Issues**

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Approved by the Asia and Pacific Department

May 17, 2010

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## I. NEPAL—CONSIDERATIONS IN THE CHOICE OF THE FISCAL STANCE<sup>1</sup>

### A. Introduction

1. **Over the past several years, Nepal has pursued a prudent fiscal policy, which has resulted in a significant reduction of public debt as a percentage of GDP.** Despite a decade-long civil war, the government managed to contain budget deficits at low levels: net domestic financing of the budget remained below 2 percent of GDP, in line with Fund staff recommendations. This has helped reduce domestic public debt from its peak of 64 percent of GDP in 2002/03 to 40 percent of GDP in 2008/09. Over the same period, external debt declined from 47 percent of GDP to 27 percent of GDP, as donors shifted support from loans to grants, and multilateral development banks disbursed fewer loans, in part due to the civil conflict and political instability which hampered progress on development projects. As a result, Nepal, which had been eligible for debt relief under the HIPC Initiative and considered at high risk of debt distress, moved to moderate risk of debt distress in 2008 without requesting debt relief.<sup>2</sup>

2. **This paper reexamines the fiscal stance in Nepal in light of recent developments.** After the end of the civil war in 2006, the peace process is leading to new demands for government spending. The generation of a “peace dividend” in the form of greater responsiveness of the state to the basic needs of its citizens is translating into ambitious social sector programs, chiefly in education and health care. More broadly, addressing the highly unequal income distribution in Nepal, providing support for specific disadvantaged groups, and the planned transformation of Nepal into a federal state will likely require more state intervention and financial resources. Lastly, significant investment in infrastructure is required to boost the economy’s productivity. In response, the government, supported by Fund technical assistance, has increased its efforts at revenue mobilization, largely through revenue administration reforms. However, the 2009/10 budget envisaged a domestically financed deficit slightly above 2 percent of GDP.

3. **The fiscal stance can be viewed from different angles.** Reduced public debt levels have created some fiscal space, and at the same time spending needs are increasing. However, the quality and productivity of public spending will need to be raised to utilize this space effectively. Fiscal policy goals can be ordered hierarchically: of first-order importance remains the achievement and maintenance of debt sustainability (IMF 2005). Furthermore, in Nepal, fiscal policy needs to be subordinated to the support of the fixed peg to the Indian

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<sup>1</sup> Prepared by Alexander Pitt.

<sup>2</sup> The authorities chose not to request assistance under HIPC for reputational reasons, and due to concerns over continued funding from some large donors if they were to accept debt relief.

rupee. Subject to these constraints, the fiscal deficit and debt stock should be targeted to maximize output growth.<sup>3</sup> Although some studies have found growth-optimizing deficits (Adam and Bevan, 2005, Gupta et al, 2005), there is no simple rule. Not only the size of the fiscal deficit but also the level, quality and composition of expenditure matter for growth outcomes and the achievement of political-economic goals such as the reduction of inequality. In assessing Nepal's position the paper will draw comparisons with a set of 31 other low-income countries (LICs).<sup>4</sup> The rest of the paper is organized as follows: Section B evaluates Nepal's public debt with respect to a number of prudential and growth-optimization criteria; section C assesses deficits, both in the short and medium term, and section D discusses the level and composition of spending. Section E concludes.

## B. Debt

### Prudential Criteria

4. **The optimal level of the fiscal deficit is constrained by the need to achieve and sustain a debt-to-GDP ratio with an acceptable level of vulnerability to distress.**<sup>5</sup> This section uses several approaches to determine an adequate upper ceiling for public debt. First, the debt sustainability analyses (DSA) framework of the World Bank and IMF for LICs is used to compare Nepal's debt to the benchmarks for external and public debt. Second, Nepal is compared with other LICs. Third, an approach that considers thresholds of public debt intolerance is explored.

5. **The DSA framework focuses on the net present value (NPV) of external public and publicly guaranteed debt, though public debt is also analyzed.** It considers a threshold of the NPV of external debt-to-GDP of 40 percent as consistent with moderate vulnerability, though the quality of public financial management institutions is also a factor in this assessment. Other metrics used in the DSA framework include the NPV of debt-to-exports, the NPV of debt-to-revenue, the NPV of debt service-to-exports and the NPV of debt service-to-revenue. Nepal's external debt is below all these thresholds in the baseline

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<sup>3</sup> For a low-income country, one can argue that it is not overall output growth that matters most, but poverty reduction. The two are treated as equivalent here, since sustained poverty reduction is highly correlated with economic growth.

<sup>4</sup> The comparator countries have been selected as countries that have per capita incomes of less than \$1,000. Nepal, with a per capita income of \$471, is roughly at the median of that sample.

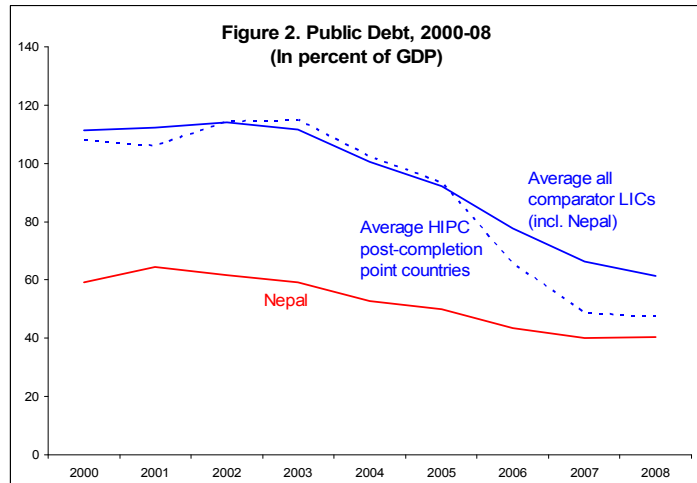
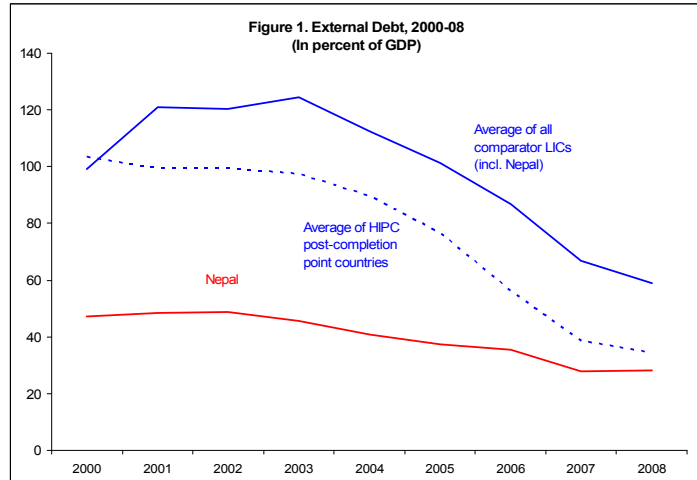
<sup>5</sup> The debt-to-GDP ratio is not the only benchmark of sustainability: other indicators, such as gross financing requirements and debt service indicators also play a role in assessing sustainability (see IMF 2005). However, for simplicity and for purposes of comparison, and given that the structure of Nepal's debt is long-term and not market-financed, this paper focuses on the debt-to-GDP ratios to assess debt sustainability.

scenario.<sup>6</sup> Regarding overall public debt levels, however, there are few studies specific to low-income countries. IMF (2003) suggests a threshold of public debt of only 25 percent of GDP, but this analysis is focused on emerging markets with access to financial markets, which tend to be more volatile than official sources of financing.

6. **Nepal's debt compares favorably with other LICs.** The face value of its total public debt is 40 percent of GDP, and of external debt 27 percent of GDP (35 and 21¾ percent in NPV terms, respectively). These values are comparable with post-completion point HIPC countries (Figure 1). In addition, if recent trends in donor financing towards more grant and less debt financing continue, external debt is likely to decline further as a percentage of GDP.<sup>7</sup>

Nepal's overall public debt levels are also comparable to post-completion point HIPC countries (Figure 2).

7. **At the same time, Nepal's debt-carrying capacity is higher than that of comparators.** Its domestic debt is incurred in a largely captive market which is, thanks to remittance inflows, deep relative to comparator LICs, suggesting that the government can tap a large pool of domestic savings.<sup>8</sup> In addition, Nepal's external borrowing is exclusively



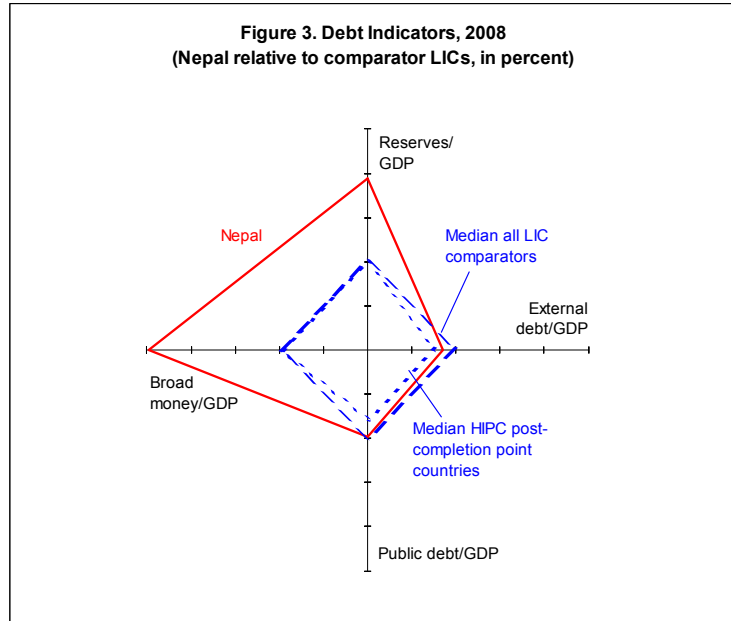
<sup>6</sup> See the Joint IMF/World Bank Debt Sustainability Analysis ([www.imf.org](http://www.imf.org)).

<sup>7</sup> Most bilateral donors have shifted to grant financing only, while IFIs—in light of Nepal's reduced debt vulnerability—have shifted back from grant financing only to a combination of grants and debt.

<sup>8</sup> However, the size of the financial system (broad money stands at 64 percent of GDP, well above comparators) could also increase public debt vulnerabilities as the financial sector is fragile and may require the injection of public funds.

long-term from official creditors. The country is therefore less exposed to market volatility and is thus likely to have higher prudential public debt thresholds than emerging markets and LICs that rely at least in part on international financial markets to finance their borrowing.

8. **A method to assess public debt sustainability for individual countries is to determine thresholds of debt intolerance.** Based on Reinhart et al (2003) and following Everaert (2008) and Nyberg and Topalova (2010), this approach captures the fact that different countries have significantly different thresholds of public debt beyond which they experience difficulties in accessing markets. Countries are grouped into three “clubs” with different levels of debt tolerance—proxied by the Institutional Investor Rating (IIR) of a country—(Club A includes the most creditworthy countries; while Club C countries are the most debt intolerant with no or little access to international credit markets).<sup>9</sup> In a second step, the relationship between a country’s debt intolerance and its level of public debt is estimated, controlling for high-inflation periods. The relation between public debt and the IIR rating is allowed to vary dependent on the club to which the country



**Table 1: Country Ratings, Public Debt Ratios, and Clubs 1/**

	(1)	(2)
Debt x Club A	0.4697 *** [0.0735]	0.4676 *** [0.0736]
Debt x Club B	-0.1370 *** [0.0443]	-0.1353 *** [0.0445]
Debt x Club C	-0.2280 *** [0.0446]	-0.2286 *** [0.0449]
Inflation	-31.5569 *** [8.0348]	-32.0689 *** [8.0928]
Nepal		-19.3349 *** [1.5181]
Constant	50.9153 *** [3.2015]	51.0721 *** [3.2176]
R2	0.68	0.69
N	142	142

Sources: Institutional Investor, WEO, Nepalese authorities, and Fund staff estimates.

1/ Robust standard errors in parentheses

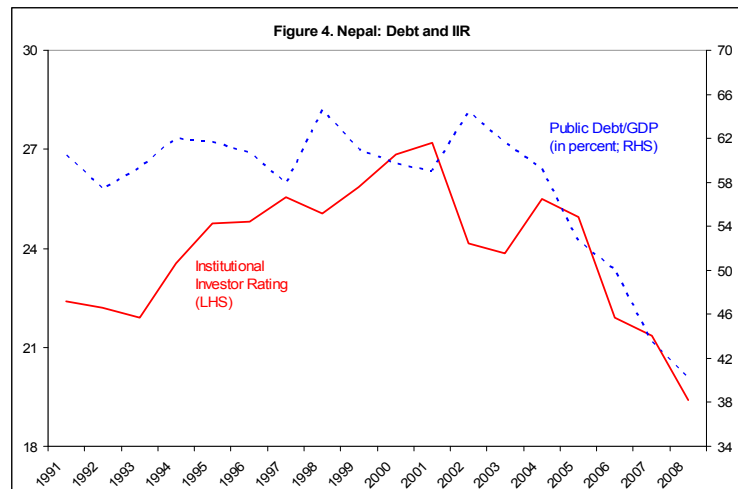
<sup>9</sup> IIR country ratings are published biannually by the Institutional Investor magazine, with each country receiving a rating between 0 and 100, with higher ratings implying higher creditworthiness.

belongs. There are two specifications: the first is general, the second includes a country dummy for Nepal to capture any additional risk premium beyond that reflected in the debt level. The results show that the country-specific factors are a significant determinant of Nepal's IIR rating, outweighing the effects of the debt level (Table 1). Indeed, the actual IIR ratings for Nepal are trending downward over time, even as public debt is declining (Figure 4). This is not surprising, given the political instability in recent years and other factors adversely affecting the investment climate. This analysis suggests that debt is not the primary determinant of creditworthiness, and the effort required to increase it to a level where Nepal moves from Club C to Club B (public debt would have to decline to below 10 percent of GDP) would not be worthwhile (Table 2).

9. **Nepal has room to expand its external debt.** On current trends, external debt is projected to decline gradually over the medium term, as annual net new disbursements are only around  $\frac{3}{4}$ –1 percent of GDP.<sup>10</sup> At the same time, domestic debt is projected to rise, while overall public debt remains constant. However, if more external financing—generally on concessional terms—could be mobilized, the goal of stabilizing debt could still be achieved provided domestic financing is commensurately reduced, taking into account the generally lower costs of external financing.<sup>11</sup> A special case are hydroelectric power plants, which could be funded by nonconcessional debt and involve foreign private sector partners. There are few such projects in the pipeline at present, but more could move forward should the political environment improve. Since such projects generate well-defined cashflows, they and their impact on debt and debt service could be evaluated individually and separately from overall debt flows.

**Table 2: Debt Thresholds for Nepal**

Specification (2)		
Debt/GDP	Predicted	
	IIR	Club
0	31.7	Club B2
10	29.5	ClubC
20	27.2	ClubC
30	24.9	ClubC
40	22.6	ClubC
50	20.3	ClubC
60	18.0	ClubC
70	15.7	ClubC
80	13.4	ClubC
90	11.2	ClubC
100	8.9	ClubC



<sup>10</sup> Even these projections assume an increase of net disbursements compared to recent years.

<sup>11</sup> However, external debt in Nepal is tied to donor-funded projects, and Nepal's limited implementation capacity precludes a large expansion of such projects.

## Growth Optimization

10. **The level of debt also has an impact on overall output growth.** Studies that have investigated the relation between debt levels and growth have focused on external debt. Clements et al (2003) find that external debt levels of around 50 percent of GDP at face value (or 20–25 percent of GDP in NPV terms) constitute a threshold for low-income countries beyond which the marginal impact of additional external debt becomes negative. Nepal’s debt is well below this threshold. Patillo et al (2002) find that the marginal impact of external debt becomes negative at a face value of about 20 percent of GDP. That study, however, includes emerging markets in its sample, which may render growth prospects more vulnerable to capital market volatility and hence reduces the optimal debt level. Even so, Nepal’s external debt is only slightly above this threshold, and is projected to fall below it in the next 2–3 years.

## Summary

11. **Overall, the considerations outlined above suggest that Nepal’s current public debt level is sustainable.** Both external and public debt are well within DSA thresholds and similar to comparator countries, and Nepal’s debt carrying capacity is high. At the same time, thresholds estimated for a larger group of market access countries have only limited relevance for Nepal, and the individual thresholds determined by the debt intolerance approach are dominated by non-debt considerations.

12. **However, the current debt stock is subject to risks, mainly emanating from the financial sector.** Two large state-controlled banks with negative net worth will need to be recapitalized, which could require public funds in the order of 2–3 percent of GDP. In addition, the current fragility of the financial sector may necessitate the utilization of additional public funds; stress tests suggest that in a crisis scenario, net fiscal costs could be in the range of 8 to 12 percent of GDP. These considerations suggest that a cushion be built into the public debt stock.

## C. Deficits

### Medium-Term Considerations

13. **For Nepal, the overall deficit consistent with debt stabilization would be around 3–3½ percent of GDP.** However, in Nepal the operational budget target has traditionally referred to the domestically financed deficit, largely because external loan financing remains difficult to target. The budget generally provides for significantly larger disbursements of external loans (as well as grants) than eventually materialize; this is because disbursements of donor-supported projects are difficult to predict, but at the same time the funds will need to be authorized in the event the project moves forward and external financing materializes. With projected net foreign financing in the medium term around ¾ percent of GDP, domestically financed deficits could be around 2¼ to 2½ percent of GDP to stabilize overall



public debt, although this would entail a rise in domestic debt even as external indebtedness declines; such deficits, however, could be absorbed given the large deposit base (at 50 percent of GDP).

14. **Once sustainable deficits at moderate debt levels are reached, further fiscal consolidation may not be beneficial (IMF 2005).** Then, the primary goal of the medium-term fiscal stance should move towards supporting growth. Adam and Bevan (2005) study the effect of the fiscal deficit on growth and conclude that a reduction of the deficit beyond 1½ percent of GDP yields no further gains in growth, though confidence intervals are large. Other studies find optimal deficit levels of 2½ percent of GDP. Gupta et al (2005) find that strong budget positions are generally associated with higher growth, but emphasizes that the composition of expenditures also matters: lower spending on wages leads to higher growth, though, once macroeconomic stability is reached, some current spending increases are possible without sacrificing growth. While somewhat higher than suggested in the literature, Nepal's overall projected deficit levels can be justified by large expenditure needs, in particular if the quality can be enhanced and the composition of spending can be tilted more towards investment (see below).

#### **Short-Term Considerations – Macroeconomic Management**

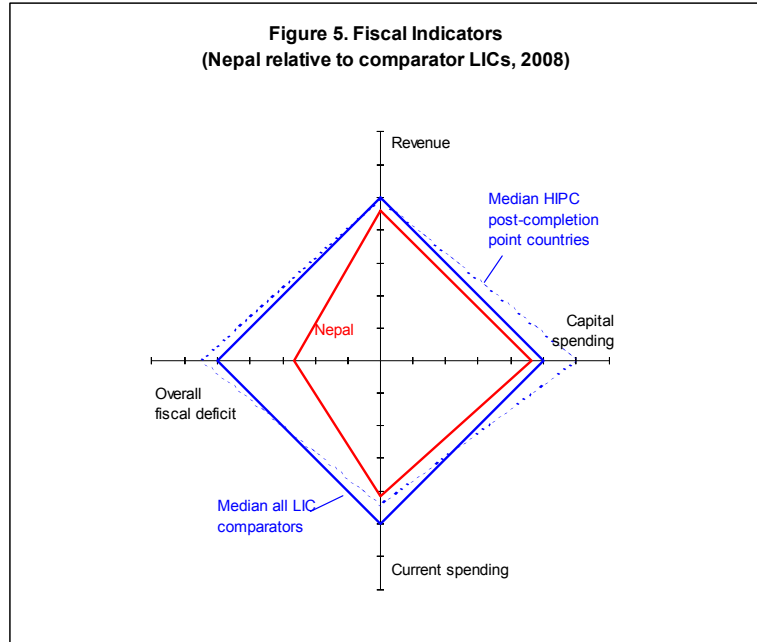
15. **In the short term, however, the need to support the exchange rate peg and to avoid crowding out suggests that domestically financed deficits remain close to current levels.** While monetary policy needs to be the main instrument to support the peg, fiscal policy should play a supporting role. Tightening monetary conditions—due to a deteriorating balance of payment and the monetary policy response required to support the peg—will entail a significant reduction in credit growth, and an expansion of government borrowing would further crowd out resources available to the private sector. Therefore, to minimize the negative impact of monetary tightening on the economy, and to facilitate the financial sector's adaptation to an environment of slower deposit growth as remittance growth slows, a strong fiscal expansion should be avoided in the near term.

#### **D. The Level and Composition of the Budget**

16. **Nepal's public expenditure is still below comparators, despite rapid increases over the past several years** (Figures 5 and 6). In particular, capital spending is well below that of countries that have passed the HIPC completion point. Large expenditure needs remain, both recurrent (especially health care and education) and capital. In addition, the peace process—notably the integration of Maoist combatants into the Nepal Army and the eventual reduction in the size of the army, as well as some reconstruction, will likely require higher temporary outlays.

17. **Revenues have risen significantly over the past years** (Figure 7). Driven by improvements in tax administration, in particular customs and the large taxpayers' office, and higher imports, total revenue of the central government has increased from a low of

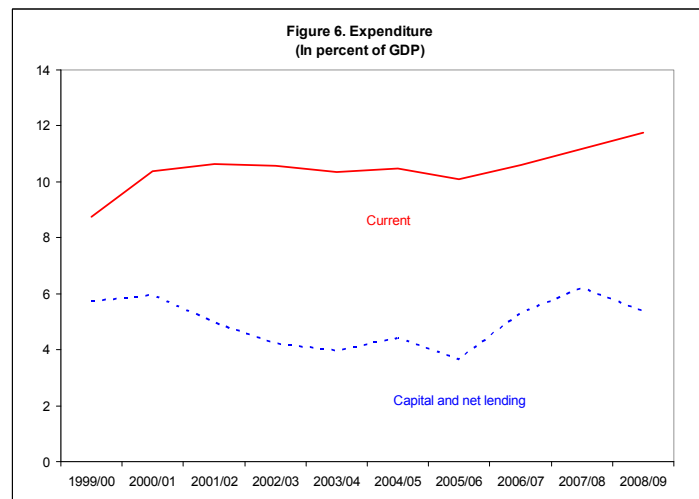
10<sup>3</sup>/<sub>4</sub> percent of GDP in 2005/06 to 14<sup>1</sup>/<sub>2</sub> percent of GDP in 2008/09, and is on course to rise by a further 1<sup>1</sup>/<sub>2</sub> percentage points of GDP in the current fiscal year. In addition, the end of the civil war has increased donor assistance (grants and gross loans), from 3<sup>1</sup>/<sub>2</sub> percent of GDP in 2005/06 to 4<sup>3</sup>/<sub>4</sub> percent of GDP in 2008/09. This performance has allowed the government to raise spending, while maintaining low deficits. Going forward, there is significant scope to further raise the revenue-to-GDP ratio, and the authorities striving to do so with reforms in the Customs and Inland Revenue Departments.



18. **However, in addition to overall amounts, the quality and composition of expenditure has a significant impact on growth.** Studies have found that public investment has a positive effect on growth, in particular in LICs. Briceño-Garmendia et al (2004) conclude that infrastructure investment in developing countries enhances growth, and Easterly and Rebelo (1993) find that investment in transport and communication is consistently positively correlated with growth. However, the effectiveness, or productivity, of public spending is affected by the level of governance: Tanzi and Davoodi (1997) argue that corruption, while increasing public investment, also reduces its quality and the productivity of public infrastructure, and lowers spending on operations and maintenance. Higher levels of corruption are also associated with lower revenues.

19. **For Nepal, these findings suggest that both investment and its quality need to be raised.**

Higher capital expenditure is required to boost growth. At the same time, the quality of spending needs to be raised to increase the efficiency with which resources are used and to avoid misallocations. In this, corruption is only one facet that needs to be addressed,



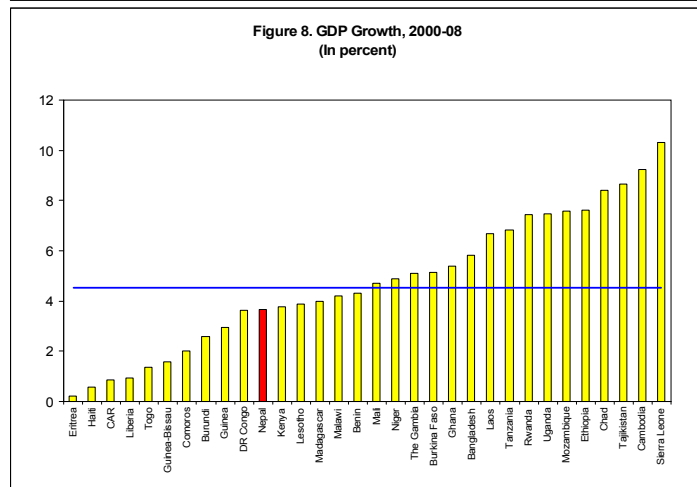
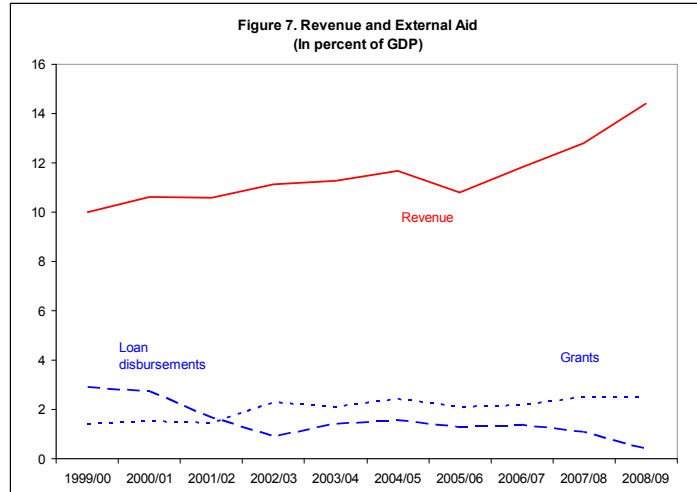
especially to improve maintenance and the quality of investment. Nepal is in line with comparator countries in the corruption perceptions index compiled by Transparency International (Nepal is ranked 143; the median of comparators is 141), but its growth over the past several years has been slower than that of comparators (Figure 8). Implementation capacity more broadly will need to be increased to raise public sector investment and absorb more donor funds. This requires far-reaching reforms in the civil service to improve accountability and accelerate decision-making.

### E. Conclusion

20. **Nepal's debt position has improved significantly over the past several years, warranting a reexamination of the fiscal stance.**

The current level of public debt compares well with other LICs, and external debt is well within DSA thresholds. Domestic debt is incurred in a deep market suggesting Nepal's debt-carrying capacity is relatively high. This would allow the government to relax fiscal policy somewhat, which could serve to meet spending needs arising from the peace process and could also finance higher capital spending and social expenditure, though this hinges on the alleviation of constraints to implementation capacity. Higher spending should also be accompanied by improvements in governance to raise the efficiency of public expenditure.

21. **However, the current macroeconomic situation argues for continued budgetary restraint in the short run.** Sustaining the peg requires the support of fiscal policy. At the same time, the fragility of the financial system creates contingent liabilities, which argue for keeping a cushion on the debt level. These short-term constraints suggest that in the short run the fiscal deficit should remain close to current levels even if, in the longer run, there would be some room for a wider deficit.



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## II. AN ANALYSIS OF SYSTEMIC RISKS IN NEPAL'S BANKING SECTOR IN THE WAKE OF THE GLOBAL CRISIS<sup>1</sup>

### A. INTRODUCTION

1. **Nepal's banking sector expanded dramatically in the past several years amid loose monetary policy, weak supervision, and proliferation of financial institutions.**<sup>2</sup> Credit growth accelerated from below 20 percent in 2006/2007 to over 30 percent in 2009/10, fueling asset price bubbles, in particular in the real estate sector. The rapid credit growth outpaced deposit mobilization and raised credit-to-deposit (CD) ratio to about 90 percent on average. While the number of licensed commercial banks increased from 17 to 27 in the last five years, the number of deposit-taking nonbank financial institutions has doubled to 216 since 2000.
2. **The rapid increase in credit and asset prices over the past several years has led to a buildup of systemic risks.** Key risks are: (i) rapid credit expansion, which may adversely affect loan quality down the line—mainly driven by largely unsterilized remittance inflows; (ii) real estate exposure of financial institutions accumulated from a real estate boom which may have begun to turn; (iii) high liquidity risk with some banks experiencing stress, as indicated by their bidding up deposit rates.
3. **Measures were introduced in 2009 to strengthen the financial sector.** The authorities imposed a set of macroprudential measures to limit liquidity risks and exposure to real estate. In addition, a moratorium on acceptance of new applications for financial institutions was imposed but was recently partially reversed for development banks and financial companies.<sup>3</sup>
4. **However, the financial system remains structurally weak.** Salient elements involve: (i) limited independence of the Nepal Rastra Bank (NRB)—which is affecting supervision and enforcement; (ii) state-owned banks with negative net worth and high levels of non-performing loans (Appendix I); (iii) large number of institutions which is straining the NRB's regulatory capacity and contributes to excessive risk taking; and (iv) the expansion of banking activities by players outside the remit of the NRB's supervision which is generating additional and unassessed risks. In addition, the enforcement of capital requirements remains uneven in the banking sector, creating potential vulnerabilities. Interventions such as

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<sup>2</sup> Peiris (2008) documents some challenges, risks, and vulnerabilities faced by the banking sector in Nepal.

<sup>3</sup> Nepal's banking sector comprises Class A institutions--commercial banks, Class B institutions--development banks, Class C institutions--financial companies and Class D institutions--microdevelopment banks.

prolonged reliance on moral suasion and regulatory forbearance increase risks, reduce transparency, and create systemic inefficiencies.

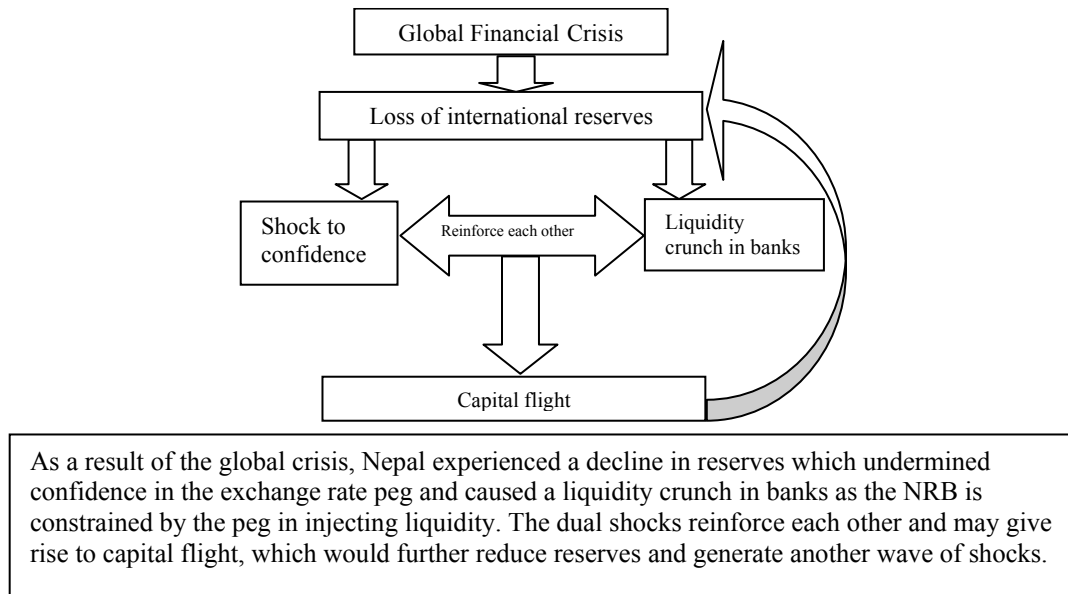
5. **This paper analyzes the impact of the global crisis on systemic stability.** The paper is organized as follows: section B discusses the impact of the global crisis and how macro-financial linkages may threaten the system; section C assesses the stability of the banking system by analyzing credit risk with a focus on asset market exposure, liquidity risk, and solvency risk through a Z-score analysis; section D concludes.

## **B. MACRO-FINANCIAL LINKAGES**

6. **As a result of the global crisis, remittances inflows to Nepal slowed significantly and resulted in a liquidity crunch in the banking sector in the first half of 2009/10.** The slowdown in remittance inflows from 31 percent (y/y) in 2008/09 to about 17 percent in the first half 2009/10 shifted the current account balance into a deficit not seen since 1998/99. As remittances slowed, foreign reserves fell sharply, and money growth slowed. Bank deposit growth also slowed to 22.6 percent (y/y) in January 2010, compared to 27.0 percent in the previous year, and interbank rates spiked to 15 percent in January from 2 percent in September 2009. Liquidity injections by the NRB brought interbank rates somewhat in recent months.

7. **Financial sector weaknesses, the exchange rate peg, and the deteriorating external position pose risks to the near-term outlook on financial stability.** Staff estimates that remittance inflows and money growth will remain weak. In this environment of heightened macroeconomic risks and a down-cycle after the long credit boom, banks will need to deleverage and consolidate their balance sheets in order to manage their liquidity and credit risk more effectively. The following flowchart depicts the critical elements of the transmission mechanism affecting Nepal.

### Transmission Mechanism of Global Financial Crisis



8. **A feedback loop between a prolonged liquidity crunch in the banking sector and diminished confidence in the peg would ultimately manifest in worsening asset quality.** Tighter liquidity could expose reportedly widespread evergreening practices and give rise to defaults by liquidity constrained firms. As a consequence, a feedback loop may develop between tight credit and asset quality deterioration, leading to a slowdown in economic activity and rising credit risk.

### C. ANALYSIS OF SYSTEMIC STABILITY OF BANKS

#### Financial Soundness Indicators

9. **Key FSIs (Table 1) have improved over the past few years and compare somewhat favorably with economies in the region, but may mask underlying weaknesses regarding data quality and accounting.** In addition, FSIs are backward looking indicators and, as such, have yet to reflect the effects of a correction in the credit boom.

- **Capital Adequacy.** Almost all commercial banks maintain capital in excess to the minimum statutory capital adequacy requirement (10 percent), although two small private banks and two large public banks did not fulfill the minimum CAR as of July 2009.<sup>4</sup> Nevertheless, widespread pledging of promoter shares as collateral for commercial loans puts banks' capital at risk by creating incentives for management to take excessive risk.

- **Asset Quality.** As a result of write-downs of bad loans and some improvement in recovery, the absolute amount of NPLs fell by 37 percent (y/y) as of mid-2009 mostly due to

<sup>4</sup> The Appendix presents further details on the situation of state-owned banks.

increased write-downs of legacy NPLs in the state banks. The ratio of nonperforming loans (NPLs) to total loans declined since 2003/04 to 2.4 percent from 5.8 percent for private commercial banks, and 10.5 percent from 55.1 percent for the state banks. However, favorable NPL ratios may be masked by evergreening of loans and rapid growth of the loan portfolio. Total loan loss provisions stood at 150 percent of NPL in mid-2009.

- **Profitability.** Profits, given high net interest margins (about 3.5 percent in 2009), remain strong, with the average return on assets close to 2.1 percent. As credit and liquidity tighten, profitability is expected to deteriorate as deposit rates and nonperforming loans rise.

Table 1. Nepal: Financial Soundness Indicators, 2005-2009

	2005	2006	2007	2008	2009
<b>Commercial Banks</b>					
Regulatory capital to risk-weighted assets	6.3	5.3	1.7	4.0	7.2
Nonperforming loans to total gross loans	-	13.2	10.6	6.1	3.5
Liquid assets to total assets	34.5	31.9	32.1	29.8	25.4
Profitability (Return on Assets)	0.8	-0.8	1.3	3.1	2.1
<b>State Banks</b>					
<b>Nepal Bank Limited</b>					
Regulatory capital to risk-weighted assets	-19.5	-29.7	-32.5	-22.6	-14.8
Nonperforming loans to total gross loans	49.6	18.2	13.5	9.0	5.9
Liquid assets to total assets	38.2	65.7	47.6	42.9	-
Profitability (Return on Assets)	3.7	3.4	0.6	0.6	1.6
<b>Rastriya Banijya Bank</b>					
Regulatory capital to risk-weighted assets	-40.5	-50.3	-48.5	-44.2	-37.7
Nonperforming loans to total gross loans	50.7	34.8	27.7	21.7	15.7
Liquid assets to total assets	17.0	35.3	34.4	36.7	-
Profitability (Return on Assets)	1.9	3.4	3.1	3.0	2.7

Sources: Authorities; and IMF staff estimates.

1/ Data from mid-July of respective years, which is the end of the fiscal year.



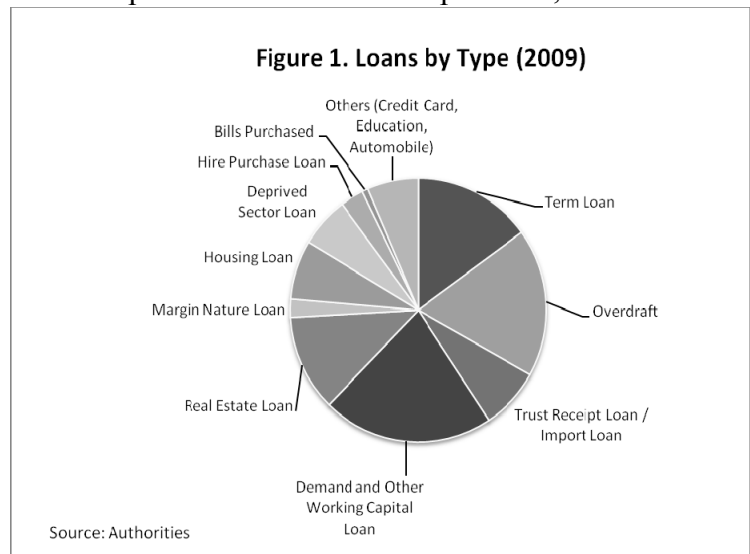
- **International Comparison.** A comparison of Nepal’s FSIs with other countries in the region is somewhat favorable.<sup>5</sup> Nepal stands out favorably in terms of profitability and loan loss provisioning. However, Nepal’s capital adequacy ratio is the lowest in the region, while its NPL ratio is close to the median.

## Credit Risk

10. **Asset market exposure is at the core of credit risk in Nepal.** This section discusses the extent to which a real estate bust could occur and, if it were to materialize, the ensuing cost. Exposure to the stock market is also discussed, though to a lesser extent due to limited data availability.

### *Real Estate Exposure*

11. **The banking sector is significantly exposed to the real estate sector.** Although direct real estate exposure accounts for about 20 percent of the total loan portfolio, the actual exposure could be higher due to loan misclassification problems. In addition, total exposure, including loans collateralized with real estate properties, account for 70 percent of total. Rapid credit growth has fueled real estate prices in recent year. Although no data exist on real estate and housing prices, land transactions in urban areas almost doubled in 2009 alone compared to the previous year, and prices in the Kathmandu valley were reported to have quintupled in some areas over recent years. These trends have started reversing in recent months.



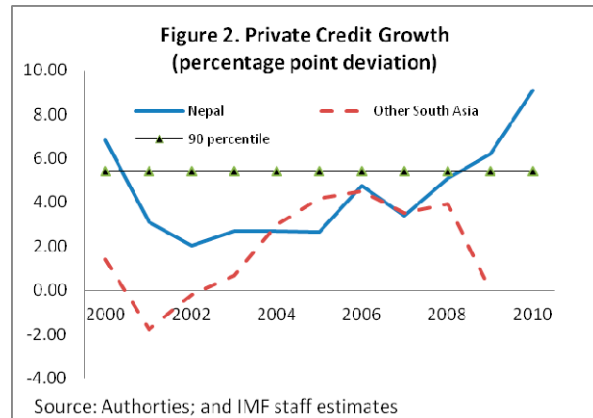
12. **The risk of a real estate bust is high and could trigger significant banking problems.** International experience suggests that large deviations in the ratios of credit, the current account, and investment to GDP often precede real estate price busts.<sup>6</sup> Nepal’s rapid credit growth and reportedly large increase in residential investment are consistent with patterns observed in the run-up to a housing price bust. In fact, signs of a possible real estate

<sup>5</sup> Comparators include Bangladesh, Cambodia, India, Thailand and Vietnam .

<sup>6</sup> See for example “Lessons for Monetary Policy from Asset Price Fluctuations,” World Economic Outlook (IMF October 2009). The study found that deviations in these leading macroeconomic indicators are positively correlated with the size of output losses. Interestingly, prior to a real estate bust, output growth does not deviate from its trend and inflation is below trend.

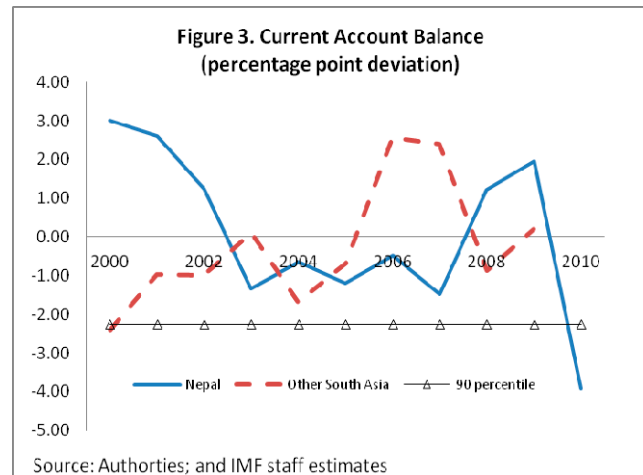
bust have emerged. As credit tightened recently, real estate prices outside Kathmandu are reported to have declined, and transactions of real estate have come to a standstill.

13. **Deviations in private credit and current account balance from their moving averages suggests a potential real estate price bust.** Though residential investment data is not available, it is reported to have accelerated dramatically. In fact, credit to the real estate sector surged by 131 percent (y/y) in 2009. The deviation of private credit from its 5-year moving average began to pick up in 2007, reaching levels substantially higher than other South Asian economies.<sup>7</sup>



Meanwhile, the current account is projected to register a 2 percent of GDP deficit in 2009/2010 after being in surplus in most years since 1998/99, with the deviation as high as 3.9 percentage points. The 90<sup>th</sup> percentile is used as the threshold to forewarn of an impending real estate price bust. Private credit breached the threshold in 2009, and the current account balance is expected to breach the threshold in 2010.<sup>8</sup>

14. **The combined deviation of the above indicators in Nepal increases the probability of a real estate price bust significantly.** In the World Economic Outlook published in October 2009, it was estimated that a one percentage point increase in current account deviation would increase the probability of a real estate bust by 3.2 percentage points; a one percentage point increase in residential investment corresponds to an increase of 2.5 percentage points in that probability; and a one percentage point increase in private credit is associated with 0.4 percentage points increase in that probability. As a result, Nepal's probability of a real estate



<sup>7</sup> Other South Asian economies include Bangladesh, Bhutan, India, Sri Lanka and Pakistan.

<sup>8</sup> The 90<sup>th</sup> percentile was found to maximize the ratio of correct predictions to false predictions.

bust is estimated to rise by 19 percentage points from the unconditional probability of 15 percent.<sup>9</sup>

15. **Stress tests suggest that a real estate price bust would be costly for Nepalese banks.** A 30 percent fall in real estate prices, in line with cross-country evidence, could affect the majority of the loan portfolio as most loans were issued in recent years and collateralized with real estate at inflated prices. Loss-given-default is assumed to be 75 percent given international experience, difficulty in recovering assets, and the impact of a real estate price bust on collateral value.<sup>10</sup> As a result, banks' non-performing loans (NPLs) could rise by more than 20 percentage points and reduce the capital of 14 private banks below the minimum CAR.

***Stock Market Exposure***

16. **Lending for purchases of stocks against stocks as collateral gives rise to pockets of risk but does not appear to be of systemic importance.** While such so-called margin lending constitutes a small share of total loans, the growth in margin lending has coincided with the boom in the stock market. At the peak of the stock market, margin lending was approximately 5 percent of the loan portfolio and 30 percent of the stock market float. Following the stock market bust after September 2008 and tightened regulations on margin lending, these loans have substantially declined to 2 percent of total loans.<sup>11</sup> However, risk exposure is concentrated in some banks with more than 10 percent of their collateral in the form of shares. In addition, the regulatory cap on margin lending loan at 100 percent of core capital against the collateral of shares is generous by international standards, especially considering the high volatility of Nepal's equity prices. Also, as the stock market is dominated by shares of financial institutions, increased margin lending gives rise to the risk of a negative feedback loop between stock market volatility and banking sector soundness.

17. **Pledging of bank promoter shares exacerbates credit risk and contagion between banks.** Bank promoters typically pledge their promoter shares as collateral for commercial loans. Nevertheless, given the fungible nature of money such lending practices put banks' capital at risk. Reportedly, share pledging has allowed promoters to fund new financial institutions or upgrade existing institutions. Pledging of promoters' shares has been sizeable with promoters in ten banks pledging 20–90 percent of their shares. Depletion of capital could therefore potentially be significant and would severely limit banks' buffers against loss. In addition, cross-lending between banks undermines systemic stability as it creates a channel of contagion between banks and exposure to a shallow stock market.

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<sup>9</sup> See "Lessons for Monetary Policy from Asset Price Fluctuations," World Economic Outlook (IMF October 2009). Although the study used a database of advanced economies to estimate a model of real estate busts, the result should be applicable to Nepal given its relatively large financial sector and high real estate exposure.

<sup>10</sup> For international experience, see, for example, Frye (2000) and Hu and Perraudin (2002).

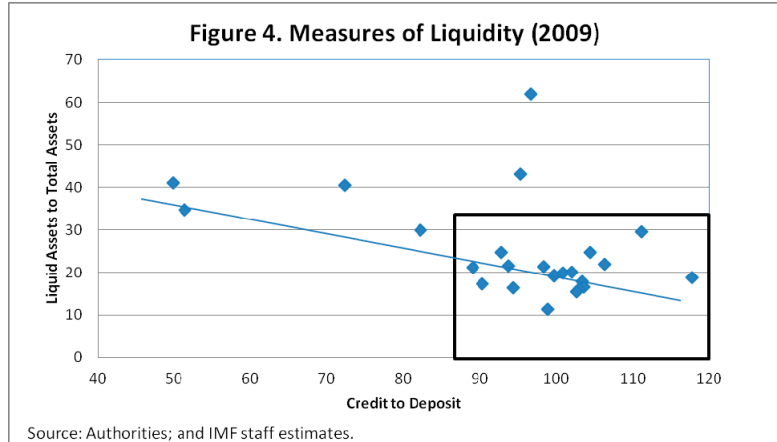
<sup>11</sup> In late 2009, NRB issued directives to bring down the limit of renewal of margin lending to 50 percent.

## Liquidity Risk

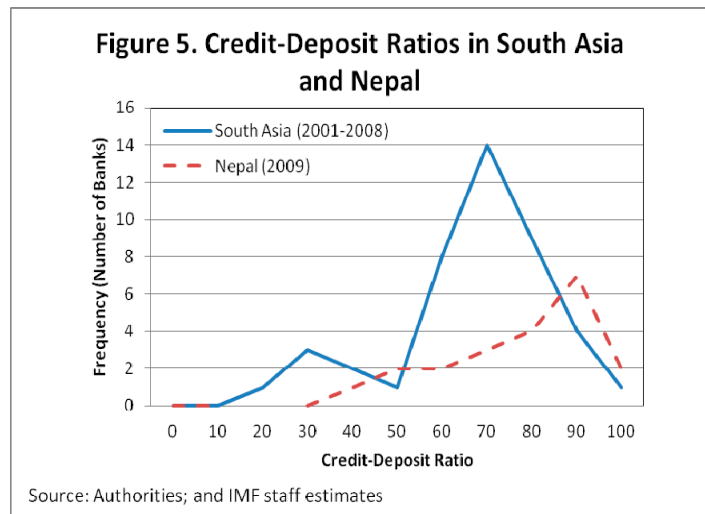
18. **Liquidity risk is high due to the credit boom, growing competition, and uneven liquidity management.** The aggregate liquid asset to total assets ratio of 25.4 percent does not appear to be low, but masks high liquidity risk due to the ease with which deposits can be

withdrawn and the significant heterogeneity in how banks manage liquidity risk. All deposits are easily withdrawn within a day; even time deposits can be withdrawn subject to only a small penalty. Liquidity management has been a major challenge. The share of illiquid loans in bank assets is

increasing throughout the system, and the average credit-to-deposit (CD) ratio for the banking system has increased from 60 percent over 2000–2006 to 88 percent by January 2010. New banks have been particularly aggressive in pursuing market share. As a result, approximately 20 percent of banking assets are now held by small new private banks with CD ratios exceeding 100 percent—very high by international standards. Other private banks tend to exhibit CD ratios in the range of 90–100 percent. On the other hand, the two state banks, which account for 1/5 of banking sector assets, have CD ratios close to 50 percent.



19. **Credit-to-deposit ratios are high by regional standards.** An examination of the frequency distribution of annual CD ratios over 2000–2008 in comparable countries—Bangladesh, Bhutan, India, Pakistan, and Sri Lanka—shows that the CD ratio tends to cluster around 60–70 percent. Nepal’s CD ratio of 88 percent as of January 2010 is high by regional standards (Figure 5).



20. **Stress tests show that banks’ liquidity positions are vulnerable to standard shocks.** At a daily deposit withdrawal rate of 8–10 percent, all banks would fail to meet the Statutory Liquidity Requirement (SLR) of 8 percent of total domestic deposits after 2 days,

while five to nine banks would become illiquid within 3 to 5 days.<sup>12</sup> As expected, banks that come under stress tend to exhibit high CD ratios. The two state banks and more conservatively managed private banks remain liquid. However, a stronger shock of 15 percent would result in the majority of banks becoming illiquid. Also, it is likely that liquidity stress in a few financial institutions creates panic and leads to faster deposit withdrawals in the system.

21. **Bank-by-bank plans might be needed to supplement the prudential measures recently introduced.** If overall deposit growth slows significantly, the credit-to-deposit regulation may become too tight. If banks fail to meet the measures due to exogenous factors rather than mismanagement, the NRB and banks will have to work together on a case-by-case basis to come up with a viable plan to eventually return banks to compliance.

22. **Simulation of credit growth given monetary projections suggests that meeting the CD regulation may be difficult in 2010/11 and 2011/12.** In our scenario, deposits are assumed to grow in line with monetary projections. Banks are assumed to achieve the CD ratio target, as required by regulation.<sup>13</sup> The share of core capital in loans is assumed to remain constant. As a result simulated credit growth is erratic--strong in mid-2010 then contracting in subsequent years. This suggests that the regulation might induce too rapid a contraction in credit unless deposit growth accelerates again.

Table 3. Simulation: Credit and Deposit Growth

	Jul. 2010	Jul. 2011	Jul. 2012
Credit to Deposit and Core Capital	95	85	80
Credit Growth, Projected (yoy)	22.4	-9.7	-3.8
Deposit Growth, Assumed (yoy)	13.6	14.6	14.0

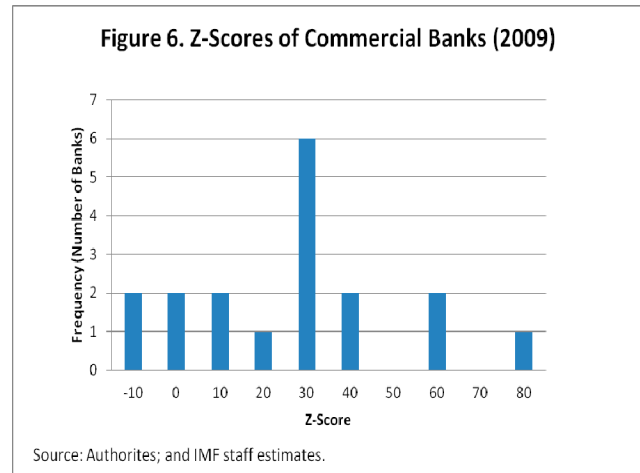
Source: IMF staff estimates

<sup>12</sup> The SLR is currently at 6 percent but will increase to 8 percent in mid-2010. However, the SLR has been recently relaxed to allow for call deposits to count toward the requirement which is contrary to best practice.

<sup>13</sup> The CD ratio is defined by the NRB as the ratio of credit to the sum of local currency deposits and core capital.

## Z-Score Analysis

23. **The Z-score analysis shows overall stability in the banking sector in 2009 but indicates pockets of potential solvency risk and may not fully reflect the deteriorating environment in which banks are operating.** The Z-score can be thought of as a measure of resilience, i.e. higher Z-scores imply stronger resilience to shocks.<sup>14</sup> Z-score analysis was performed on the 18 commercial banks for which there was adequate time-series data. Overall, the banking system as a whole registers a high Z-score and therefore low solvency risk. However, the Z-score analysis also highlights some challenges. The two large public banks are insolvent and therefore have negative Z-scores. A number of private commercial banks post relatively low Z-scores. In addition, strong profits posted during a credit boom and data quality issues have contributed to a positive bias in Z-scores, which going forward are expected to deteriorate.



## Potential Cost of a Systemic Banking Crisis

24. **International experience suggests that systemic banking crises are very costly.** A large cross-country study of systemic banking crises, covering 124 cases over the period 1970 to 2007 found that net fiscal costs associated with crisis management averaged 13 percent of GDP, output losses 20 percent of GDP, and peak NPLs 25 percent of total loans.<sup>15</sup> Output losses are computed by extrapolating trend real GDP and taking the sum of the differences between actual real GDP and trend real GDP expressed as a percentage of trend real GDP for the first four years after the onset of the crisis. The crisis experience of selected low-income countries in Asia comparable to Nepal is wide-ranging, but can

<sup>14</sup> The Z-score measures the number of standard deviations a return realization has to fall in order to deplete equity—under the assumption of normality of banks' returns. The primary dependent variable is the z-score as a measure of individual bank risk. The z-score has become a popular measure of bank soundness (see Hesse and Cihak, 2007 and IMF, 2009). Its popularity stems from the fact that it is directly related to the probability of a bank's insolvency, i.e., the probability that the value of its assets becomes lower than the value of the debt. The z-score can be summarized as  $z = (k + \mu) / \sigma$ , where  $k$  is equity capital as percent of assets,  $\mu$  is average after-tax return as percent on assets, and  $\sigma$  is standard deviation of the after-tax return on assets, as a proxy for return volatility.

<sup>15</sup> Laevan and Valencia (2008) define a systemic banking crisis as a state in which a country's corporate and financial sectors experience a large number of defaults and financial institutions and corporations face difficulties repaying contracts on time.

potentially be as costly as the average global experience. The peak ratio of NPLs to total loans within five years of the onset of a crisis tends to be large, ranging from 20 to 35 percent. Output losses vary widely from 2 to 35 percent of GDP.

Table 4. Selected Banking Crises in Asia

	Date	Peak NPL (%)	Gross fiscal cost (% GDP)	Output Loss (% GDP)	Minimum real GDP growth
Sri Lanka	1989	35	5	2.2	2.3
Bangladesh	1987	20	-	34.7	2.4
India	1993	20	-	3.1	4.9
Nepal	1988	29	-	0.0	4.3
Vietnam	1997	35	10	19.7	4.8

Source: Authorities; and IMF staff estimates.

25. **A systemic banking crisis scenario in Nepal could potentially be severe.** Countries that experienced a systemic banking crisis following a real estate bust saw peak NPLs in the range of 16-35 percent.<sup>16</sup> In light of this and strong indications that Nepal could suffer a costly asset price bust, we assume that a severe banking crisis scenario would entail a jump in NPLs by 25-35 percentage points.

26. **In a crisis scenario for Nepal, international experience suggests that the fiscal cost of crisis resolution can be high.** In previous crises, government recapitalization of banks constituted an important part of the crisis resolution phase. Net fiscal recapitalization cost averaged 6 percent of GDP and reached 37 percent of GDP in the case of Indonesia during the Asian crisis. For Nepal, a NPL shock of 25–35 percentage points within the bank-by-bank stress test framework results in net recapitalization needs of 7–9 percent of GDP (assuming CAR is brought to 8 percent). Typically the government has footed about half of the recapitalization bill. In addition, costs associated with emergency financial support and deposit guarantees typically constitute approximately 60 percent of total net fiscal costs.<sup>17</sup> As a result, the total net fiscal cost is estimated to be 8–12 percent of GDP.

<sup>16</sup> See the experiences of Japan, Norway, and Thailand, for example, in Laevan and Valencia (2008).

<sup>17</sup> In line with international experience, the government is assumed to recover one-quarter of gross fiscal recapitalization costs.

#### D. Conclusion

27. **Nepal's banking sector exhibits substantial vulnerabilities.** Under loose monetary conditions and lax supervision, rapid credit growth fueled asset prices and built up substantial credit and liquidity risks. In addition, two large public banks remain undercapitalized and saddled by legacy NPLs.
28. **As a result of the global crisis, Nepal's banking sector vulnerabilities have started to threaten systemic stability.** As international reserves declined, a liquidity crunch ensued in the banking sector. These shocks have shaken market confidence and led to slowed deposit growth, a stock market slump, and a significant cooling in the real estate market.
29. **The banking system carries high credit and liquidity risks with some banks facing high solvency risk.** Banks are significantly exposed to assets markets, in particular the real estate market. Macroeconomic indicators suggest a high probability of a real estate price bust which may have already begun and likely significant deterioration in asset quality going forward. A large portion of the banking sector is exposed to liquidity risk given slowed deposit growth and high CD ratios. These risks are likely to compound each other.
30. **The fiscal cost of a systemic banking crisis in Nepal can be high.** Staff estimates that the total net fiscal cost of a systemic crisis could reach 8–12 percent of GDP.



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## Appendix I: Nepal's State Banks

**Weaknesses in two state banks persist.** The two largest public banks—Nepal Bank Limited and Rastriya Banjiya Bank—weigh on the soundness of the banking system as a whole given that they comprise 1/5 of banking sector assets. Both banks have had negative net worth since 2001 and are saddled with high levels of legacy NPLs. Operational and financial restructuring under a World Bank financial sector restructuring project has yielded some improvements. The banks' positive operating profit, albeit amid credit and real estate booms, has allowed the banks to reduce their negative net worth. Loan recovery and write-offs have reduced the level of NPLs in these two banks but NPLs still remain high. A third state bank, the Agricultural Development Bank, was recently recapitalized and is now above the regulatory minimum.

**The weaknesses of the two largest public banks are the legacies of politically-motivated lending.** Nepal Bank Limited (NBL), Nepal's oldest bank, was established in 1937 by the government in joint ownership with the public. In 1998, the government reduced its ownership of the bank to 41 percent. However, connected lending and nonperforming loans, particularly by large and willful defaulters, rose significantly. As a result, NBL was taken over by the Nepal Rastra Bank (NRB) in 2002. Rastriya Banijya Bank (RBB) was established in 1966 and is fully government owned. It is the largest commercial bank and boasts Nepal's most extensive banking network with over 113 branches across the country. The NPL ratios of both banks peaked to above 60 percent resulted in 2001.

**Progress in resolving high levels of NPLs in the two state banks have been made.** Both banks' efforts to seize collateral from politically-connected defaulters were initially delayed by the judiciary. Debt recovery mechanisms introduced in 2003, such as blacklisting directives, the Debt Recovery Tribunal, and an Appellate Tribunal, have provided financial institutions with additional instruments to deal with NPLs. This has led to some recoveries from small- and medium-sized defaulters, but the banks have been reluctant to pursue large cases. External management teams at both banks have made progress during 2003–2006. Banks returned to profitability and management and credit evaluation practices were improved significantly.

**Public banks need swift recapitalization.** The continued inability of public banks to maintain adequate capital undermines supervisory discipline and the soundness of the banking system by distorting the level playing field among banks. As the current owner, the government should recapitalize NBL and RBB and ensure sound management practices to prevent a repeat of politically motivated lending. In the case of NBL, the original private shareholders should also bear the cost of recapitalization to maintain supervisory discipline.

**Additional capital may be raised through share issuance or direct sales of assets to a strategic partner.** International experience suggests that mismanagement in state-owned commercial banks is not uncommon (see Sri Lanka (1989), India (1993), Vietnam (1997),

Uruguay (2001), Turkey (1999), Indonesia (1994), China (1998)) and government ownership of banks is common in crisis countries, with the government owning about 31 percent of banking assets on average, and state-owned banks have been major contributors to financial crises. Successful privatization through share issuance needs a strong institutional environment and a well-developed capital market. In countries that lack strong institutions and deep capital markets, such as Nepal, direct sales of assets may be preferable.