

Sri Lanka: Selected Issues

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SRI LANKA

Selected Issues

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Approved by the Asia and Pacific Department

November 7, 2007

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I. SRI LANKA'S SOURCES OF GROWTH¹

A. Introduction

1. **Sri Lanka's economic growth has been generally robust even during times of adverse global and domestic macroeconomic conditions.** In the 1980s and 90s, Sri Lanka's economic growth averaged about 5 percent, despite a 20 year civil war with various levels of intensity. In 2000-2001, a significant slowdown in growth was associated with a widespread civil conflict. Following a ceasefire in 2002, the economy performed well with real GDP growth averaging 6.2 percent despite a number of external and domestic shocks, including high international oil prices, increased competition for apparel exports following the end of the Multi-Fiber Arrangement (MFA), and the continuing conflict between the Liberation Tigers of Tamil Eelam (LTTE) and the government. The growth pick up in 2006 was supported by a relatively calm political environment and high external support for tsunami reconstruction.
2. **Sustaining the current growth momentum and moving towards a higher economic growth path is possible but will be a challenge.** In its Ten Year Horizon Development Framework, the government of Sri Lanka envisages attaining growth of about 8 percent per annum, mainly through investments of about US\$4.5 billion (about 17 percent of GDP) in infrastructure projects in power, roads, water supply, and ports.
3. **This paper uses the growth accounting framework to assess the main sources of Sri Lanka's growth.** The framework helps shed light on what will be required to sustain the recent growth momentum and achieve even higher growth over the medium-term. It finds that while labor was the dominant factor contributing to growth in the 1980s, labor's contribution declined over time and was overtaken, to a large extent, by total factor productivity (TFP) and, to a lower extent, by physical and human capital accumulation.
4. **The paper proceeds as follows. Section B, provides some background to Sri Lanka's economic growth performance through stylized facts and dynamics of growth.** Section C describes the growth accounting framework employed in the paper. This framework is a useful tool in decomposing growth into components associated with changes in factor inputs and total factor productivity (TFP). Section D applies the growth accounting framework to Sri Lanka's data. Section E assesses Sri Lanka's potential growth. Section F concludes.

B. Stylized Facts and Dynamics of Growth

5. **Sri Lanka's economic growth performance is highly associated with investor confidence and external conditions.** Strong real GDP growth in the 1980s followed a period

¹ Prepared by Nombulelo Duma.

of economic liberalization that raised private sector investment to 19 percent of GDP between 1980 and 1985 from 10 percent in the 1970s. However, with ethnic tensions developing into a full-scale civil war in 1983 and the government shifting its focus away from economic reforms, private sector confidence declined and average growth fell to 3.7 percent between 1983 and 1989. A pick up in reforms, mainly of a structural adjustment nature, including rationalizing of public spending; liberalizing trade and payments; lowering controls on prices and interest rates; promoting private sector development; promoting foreign investment; reforming the financial sector; and expanding the export sector to garments, helped raise economic growth in the 1990s. However, this was followed by the economy's first recession in 2001 with negative growth of 1.5 percent reflecting a deterioration in the security situation, compounded by a global slowdown, higher oil prices, large imports of military equipment (that nearly resulted in a foreign exchange crisis), and severe drought.

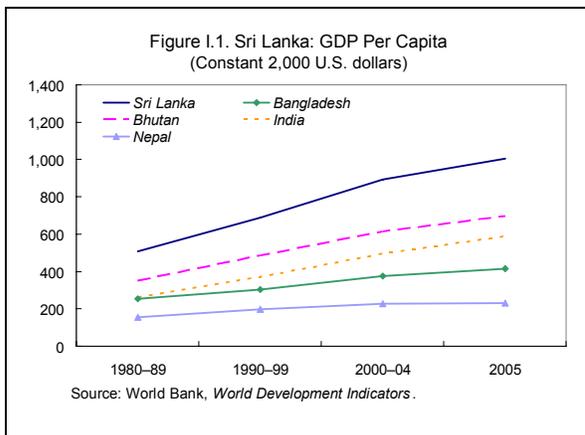


Table I.1. Sri Lanka: Human Development Index (HDI)

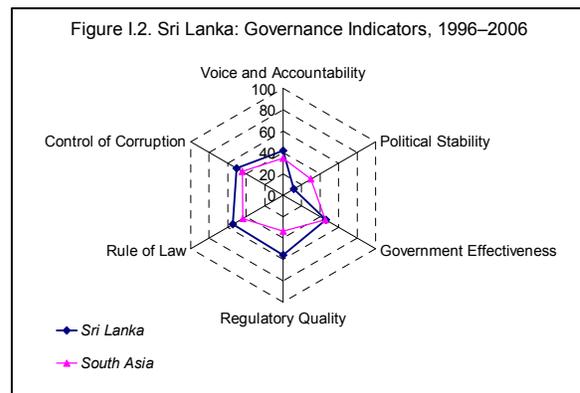
| Country | HDI Rank | Year | | | |
|------------|----------|------|------|------|------|
| | | 1980 | 1990 | 2000 | 2004 |
| Bangladesh | 137 | 0.37 | 0.42 | 0.51 | 0.53 |
| Sri Lanka | 93 | 0.65 | 0.71 | 0.75 | 0.76 |
| India | 126 | 0.44 | 0.52 | 0.58 | 0.61 |
| Nepal | 138 | 0.34 | 0.43 | 0.50 | 0.53 |
| Bhutan | 135 | ... | ... | ... | 0.54 |

Source: United Nations, *Human Development Report (2006)*.

6. Sri Lanka's strong growth performance has, on average, brought positive benefits to the economy and has benefited from a high quality labor force.

Unemployment has been declining (from 17.9 percent in 1981 to 15.9 percent in 1990, and 7.7 percent in 2005) and per capital income has been rising and exceeds that of most other South Asian economies (Figure 1). The quality of the labor force is high relative to other South Asian economies (see the United Nation's estimates of human development in the Human Development Report, 2006, Table 1) in view of high educational standards and literacy rates (at about 93 percent in Sri Lanka compared with about 56 percent in South Asia).

7. Also, Sri Lanka's governance indicators outpace those in most South Asian economies, except on political stability (Figure 2). World Bank indicators of governance (World Bank, 2007) indicate that Sri Lanka has, over the past 11 years, consistently scored better than other South



Asian economies on voice and accountability, control of corruption, rule of law, and regulatory quality. These indicators support strong economic performance. However, Sri Lanka has scored poorly during some periods on government effectiveness and consistently poorly on political stability.

8. The ethnic conflict that has dominated economics and politics in Sri Lanka over the last quarter century has constrained the economy's growth potential.

The conflict has been largely localized to the North and East, though with effects on other areas from time to time. As a result, the contribution of the North and East to economic activity has remained limited, while that of the Western Province has remained the highest in the country. In 2006, the Western Province's contribution to real GDP was about 60 percent (Table 2). The disparity in economic activity across regions has prevented geographically broad-based economic growth and has limited potential output.

Table I.2. Sri Lanka: Regional Contributions to Growth, 2006

| Province | Share of GDP |
|--------------------|--------------|
| West and northwest | 59.4 |
| South and central | 24.3 |
| North and east | 16.3 |
| National (Total) | 100.0 |

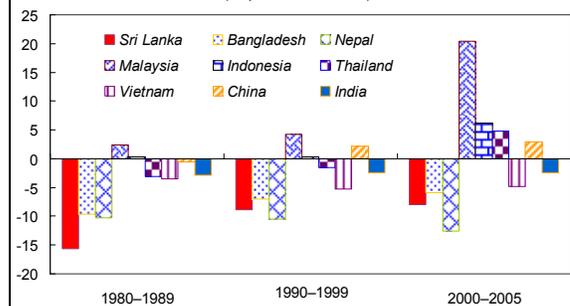
Source: Central Bank of Sri Lanka.

9. The conflict has contributed to wide disparities in income and poverty levels across the country. In addition, the agricultural sector's contribution to economic activity is falling. Given that the agricultural sector remains the main source of livelihood for rural areas, its declining role in economic activity is contributing to the widening rural-urban income gap and high poverty levels.²

10. Sri Lanka's overall economic growth performance is on par with other economies in South Asia and its per capita income is moving closer to some East Asian emerging markets. The dynamics of this growth, however, differ to some extent:

- Sri Lanka's growth is largely driven by domestic demand (especially consumption spending), with the ratio of domestic demand to total GDP generally higher than that of other countries in the region. External demand is lower than in most South

Figure I.3. Sri Lanka: External Demand (In percent of GDP)



Source: IMF, World Economic Outlook database.

² Poverty incidence in Sri Lanka is estimated at 23 percent in 2002. For rural areas, the incidence is even higher at 30 percent compared to 8 percent in urban areas. Though poverty incidence has fallen across areas between 1995/96 and 2002, it still remains high.

Asian and some East Asian economies and has remained negative over the past two decades (Figures 3). High growth economies tend to have a better contribution of external demand than that in Sri Lanka, reflecting a more dynamic and diverse export sector.

- Sri Lanka's gross capital formation is the lowest in the region (Figure 4.1) and current government spending is high. The Sri Lankan government has sustained high fiscal deficits (in the range of 8 percent and 9½ percent of GDP) and a high ratio of government spending to total GDP (estimated around 35 percent) for more than 10 years. Sri Lanka's government debt (averaging 101 percent of GDP over the past five years) far exceeds that of other economies in the region (for example an average of 63 percent of GDP in Nepal, 49 percent in Bangladesh, and 85 percent in India over the last five years).³ High growth economies tend to have a much higher ratio of gross public sector investment to GDP. Also, policies in favor of increased private sector economic participation help in raising economic growth (see for example Rodrik and Subramanian (2004) on India). Therefore, increased public sector investment spending while reducing the size of fiscal deficits (thereby reducing fiscal dominance in economic activity) can positively contribute to economic growth in Sri Lanka.
- On the production side, a clear distinction arises between South Asian economies and some East Asian emerging markets (Figure 4.2). In South Asia, agriculture generally has a higher share to GDP than in East Asia while the opposite applies to manufacturing. This indicates that Sri Lanka is not an outlier in South Asia in terms of the role that the agricultural sector still plays in the economy.

C. The Growth Accounting Framework

11. **The growth accounting framework is rooted in macroeconomic theory.** The initial foundations of this framework were presented in Solow (1957), Kendrick (1961), Denison (1962), and Jorgenson and Griliches (1967). This framework allows for an explicit modeling of growth in terms of contributions from underlying factor inputs. The framework is very useful when the factor inputs that matter for growth are substantially independent from those that determine technological change (Barro, 1998). As such, variants of the basic framework have been used, including additional factor inputs and a disaggregation of capital and labor among types or qualities (Jorgenson and Griliches, 1967) in an attempt to isolate growth effects related to pure technological progress (captured by the residual TFP). The basic neoclassical production function is given by the following equation:

³ These refer to central government debt in Sri Lanka, Nepal, and Bangladesh and general government debt in India.

$$Y = F(A, K, L) \quad (1)$$

Where, Y is real output; A is total factor productivity; K is the capital stock; and L is the size of the labor force.

12. **Following from the above framework and its application in a number of developing countries, an economies of scale Cobb-Douglas production function is applied in decomposing sources of growth in Sri Lanka.** The production function is of the form that links output to capital, labor, human capital, and total factor productivity:

$$Y_t = A_t K_t^\alpha H_t^\beta L_t^{1-\alpha-\beta} \quad (2)$$

Where, H is a measure of human capital; $\alpha \equiv r_k K/Y$ is the share of capital in output (with r representing the remuneration of capital); $\beta \equiv w_h H/Y$ is the share of human capital in output (with w_h representing the remuneration of skilled labor), and $(1-\beta-\alpha)$ measures the share of labor in output. In the production function presented, capital, human capital, and labor are observable from data, while TFP is not. From the specification in equation (2), TFP is derived in the following manner:

$$A_t = \frac{Y_t}{K_t^\alpha H_t^\beta L_t^{1-\alpha-\beta}} \quad (3)$$

TFP acts as a catch-all variable for anything else that is left unexplained by the other three factors.

Differentiation of equation (2), after taking logs, with respect to time yields:

$$y_t = a_t + \alpha * k_t + \beta * h_t + (1 - \alpha - \beta) l_t \quad (4)$$

This represents the function in terms of growth in output. Following from equation (4), growth in TFP is represented by:

$$a_t = y_t - \alpha * k_t - \beta * h_t - (1 - \alpha - \beta) * l_t \quad (5)$$

13. **The following discusses the data used as representatives of factor inputs in the application of the growth accounting framework in Sri Lanka.** The sample period considered in this work is determined by the availability of data necessary for analyzing the sources of growth.

Capital Input

14. **For Sri Lanka, the capital variable is not readily available and is therefore estimated using the perpetual inventory method (PIM) as is generally done in similar studies.** The PIM uses gross fixed capital formation (a flow variable) and an assumption on the depreciation rate of capital to derive the capital stock. According to this method, the capital stock is derived as follows (Figure 5):

$$K_t = (1 - \delta)K_{t-1} + I_t \quad (6)$$

15. **In equation (4) above, δ is the depreciation rate, and I is gross fixed capital formation. The formula is applied on a long time series of gross fixed capital formation, starting in 1959 (the earliest data point available for this series).** The depreciation rate used for Sri Lanka is 6.7 percent for the period before 1980 and 25 percent thereafter. This is a reasonable depreciation rate for Sri Lanka, taking into consideration the level of development of the economy and the many disruptions in capital formation in recent decades due to an unstable political environment, and the civil conflict. Also, this takes into account the depreciation rates allowed for tax purposes in Sri Lanka, ranging from 6 $\frac{1}{3}$ percent for buildings to as high as 33 $\frac{1}{3}$ percent for plant and machinery. Generally, depreciation rates of the capital stock used for developing economies tend to be much higher than those used for developed economies (around 7 percent). In similar studies for countries in East Asia, depreciation rates of 20 percent (Philippines) and even 60 percent (Indonesia) have been used (for example, Bu, 2004). Sensitivity analysis of Sri Lanka's estimates to different depreciation rates is performed and presented in Section IV below.

Labor Input

16. **Labor force data are used as a measure of labor input, as is usually done in similar studies, and some inferences can be drawn from it. Sri Lanka's labor force grew sharply in the 1980s (Figure 6), driven in part by population growth.** This contributed to a similarly sharp increase in unemployment from 12 percent to around 16 percent. From 1987 onwards, high labor migration due to improved opportunities for foreign employment contributed to a slowdown in both the growth of the labor force and unemployment. In the 1990s and 2000s, growth has been relatively constant around 9 percent annually. Employment growth has also tended to follow a similar trend indicating relatively constant absorption of the labor force into the formal sector. Also, labor migration has helped absorb Sri Lanka's labor force and helped reduce the rate of unemployment.

Human Capital Input

17. **Human capital is generally measured through average years of schooling of the working population.** In Sri Lanka, this variable was not readily available and had to be estimated by taking the maximum educational attainment of employed people in each level

(as a share of total) from the Labor Force Survey of 2005 and multiplying by the number of years of schooling in each grade level.⁴ This is then multiplied by the number of people employed to derive average years of schooling of the working population. The largest percent of those employed have completed middle school (grades 5 to 9) in Sri Lanka.

Total Factor Productivity

18. **As a residual in the growth accounting framework, TFP captures components of real GDP growth that are not explained by capital, labor, and human capital.** Also, the measurement of the other factor inputs affects growth in TFP (Musso and Westermann, 2005), and therefore TFP may reflect more than technological progress. When capital inputs are measured using the capital stock, TFP growth will tend to reflect changes in capital utilization. Also, when labor inputs are measured in terms of the labor force, TFP will pick up the absorption and utilization of the labor force. Similarly, when employed persons are used as a labor input, TFP will reflect the effect of changes in average hours worked per employed person. With human capital measured in average years of schooling of the working population, TFP picks up the utilization of this human capital.

19. **Technological progress is also reflected in TFP growth. However, disentangling the effect of pure technological progress from the effects of the measurement of the individual inputs described above is a challenge.** Disentangling technological progress has been subject to much debate and some studies have attempted to do it using measures of research and development (Griliches, 1973) and the spillover effects of investment in information and communication technologies (ICT). Evidence from these studies has, however, generally not been conclusive (Vijsselaar and Albers, 2002).

20. **Consistent with macroeconomic theory, a strong positive correlation between TFP growth and real GDP can be observed for Sri Lanka** (Figure 5). Growth accounting theory predicts that countries with high GDP and GDP per capita growth rates have high levels of technological progress. In Sri Lanka, it appears that TFP has positively contributed towards real GDP growth. This is in line with evidence on institutional and human capital aspects of the economy pointed out earlier. Though political instability has, in the past, prevented Sri Lanka from achieving consistently high economic growth, other institutional indicators that are often associated with positive influences on TFP growth have generally been strong relative to those in other South Asian economies.

⁴ These are educational attainments of employed persons as measured in Sri Lanka's Labour Force Survey (Department of Census and Statistics, 2005). These are below grade 5 (representing roughly 25 percent of total employed persons); grades 5–9 (roughly 45 percent of total); GCE (O.L)/NCGE (roughly 16 percent of total); and GCE (A.L)/HNCE (roughly 14 percent of total). For educational attainment at grade 5, the number of years of schooling is six; at grades 5–9, the number of years of schooling is ten; at GCE (O.L)/NCGE, the number of years of schooling is eleven; and at GCE (A.L)/HNCE, the number of years of schooling is sixteen.

D. Decomposition of Sources of Growth for Sri Lanka

21. **This section decomposes Sri Lanka's sources of growth for the past two and a half decades using the growth accounting framework presented above.** Estimates of the parameters for capital and human capital are 0.2 and 0.1,⁵ respectively. The estimate for the share of human capital to output uses the growth rate in real wages as a proxy for the remuneration of employees since data on rate of remuneration of skilled employees is not available.⁶

22. **The parameters estimated for Sri Lanka differ slightly from those in similar studies in South Asia and East Asian economies.** In other similar studies, the share of capital in output tends to fall in the range of 0.3 to 0.4; the rate of depreciation of the capital stock can vary from as low as 4 percent to as high as 60 percent given a number of country specific factors including the impact of domestic and external shocks, and stages of economic development; and the main contributor to growth varies between countries and can vary over time given, in part, changes in the structure of the economy and implementation of reforms.

23. **In Sri Lanka, factor contributions to growth have evolved over time.** In

the 1980s, labor was the main contributor to growth and its contribution declined and was overtaken, to a large extent, by TFP in the 1990s and the 2000s and to a lower extent by the accumulation of both physical and human capital (Table 3). The evolution in the contribution of labor to economic activity is consistent with the evolution in the

Table I.3. Sri Lanka: Average Annual Contributions to Growth
(Model with human capital)

| | 1980s | 1990s | 2000–05 | 2003–06 |
|---------------------|-------|-------|---------|---------|
| Output | 4.2 | 5.1 | 4.3 | 6.2 |
| Factor productivity | 0.5 | 2.9 | 2.7 | 3.1 |
| Physical capital | 0.0 | 1.2 | 0.8 | 1.4 |
| Human capital | 0.7 | 0.3 | 0.4 | 0.6 |
| Labor | 3.1 | 0.7 | 0.3 | 1.1 |

Table I.4. Sri Lanka: Growth Under Three Scenarios
(Average annual contributions to growth)

| | 1990s | 2000–05 | 2003–05 | 2003–06 | 2007–2011 | | |
|---------------------|-------|---------|---------|---------|-----------|----------|----------|
| | | | | | Low TFP | Med. TFP | High TFP |
| Output | 5.1 | 4.3 | 5.8 | 6.2 | 4.3 | 5.5 | 7.0 |
| Factor Productivity | 2.9 | 2.7 | 4.2 | 3.1 | 2.5 | 3.7 | 5.2 |
| Physical Capital | 1.2 | 0.8 | 1.1 | 1.4 | 1.0 | 1.0 | 1.0 |
| Human Capital | 0.3 | 0.4 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 |
| Labor | 0.7 | 0.3 | -0.1 | 1.1 | 0.3 | 0.3 | 0.3 |

⁵ The parameter derived for β was below 0.1, but 0.1 was used since the estimation is highly dependent on less reliable data for human capital and the real wage in Sri Lanka. Also, results do not vary much if β of less than 0.1 is used. Also, results based on a production function using parameters from studies in other economies in the region provide another robustness check of the results and the sensitivity of estimates of TFP to different parameters (sensitivity analysis is presented later in this section).

⁶ This assumes that real wages of skilled employees have generally been growing in a similar manner as real wages of the rest of the labor force.

contribution of the most labor intensive sector to economic growth (i.e., agriculture) as discussed earlier. Official data (Ministry of Labour Relations and Manpower, 2006) also indicates that labor productivity (measured as output per employed person) declined from about 12 percent in the early 1980s to about a negative 1 percent in 2003, contributing to a decline in the contribution of labor to output. The contribution of both TFP and physical capital increased substantially in the 1990s, supported by reforms implemented during this period resulting in a slight pickup in investment. In the 1990s and 2000s, growth has been mostly accounted for by TFP growth, with its contribution surpassing that of both human capital and labor.

24. **Improving Sri Lanka's growth potential depends on the country's ability to better utilize its factors of production (i.e., its main sources of growth).** Following the current trend of labor and capital contributions, Table 4 shows three scenarios of likely TFP contributions to growth. The table shows that achieving high real GDP growth will require growth in TFP that exceeds its growth in the past. Similarly, achieving high real GDP growth with moderate growth in TFP will require contributions from the other factor inputs at levels higher than in the past.

Sensitivity Analysis

25. **Since estimates of TFP can be sensitive to assumptions made about the depreciation rate of capital and shares of factor inputs, sensitivity analysis was performed.** The depreciation rate used prior to the period of the civil conflict starting mainly in the 1980s is 6.7 percent. After 1980, the depreciation rates explored were 15 percent, 20 percent, 25 percent, and 30 percent. Figures 5 and 8 presents growth in the capital stock and TFP given these depreciation rates. It is evident from these figures that applying different depreciation rates does not result in much variation in estimates of growth in the capital stock and TFP. Also, applying the shares mostly used in similar studies in developing countries (0.3 as the share of capital and 0.35 as the share of human capital) does not result in much variation in TFP growth (Figure 7).

E. Potential Output and the Output Gap

26. **Levels of actual factor inputs tend to differ, in practice, from their potential levels, generating a gap between actual and potential real GDP.** This gap, called the output gap, is a measure of the difference between the actual output that an economy has achieved and the output that an economy can achieve at full capacity. When the gap is positive, it means that actual output exceeds full capacity and when it is negative, actual output is below full capacity. From equation (2) a country's potential output can be expressed as:

$$Y_t^P = Y_t \left(\frac{\mathcal{E}_{K,t}^P}{\mathcal{E}_{K,t}^C} \right)^\alpha \left(\frac{\mathcal{E}_{H,t}^P}{\mathcal{E}_{H,t}^C} \right)^\beta \left(\frac{\mathcal{E}_{L,t}^P}{\mathcal{E}_{L,t}^C} \right)^{1-\alpha-\beta} \quad (7)$$

The derivation of equation (7) is described in Appendix I. On equation (7), \mathcal{E}_i^P and \mathcal{E}_i^C are potential and actual rates of factor utilization for factor i respectively. In this case, \mathcal{E}_K^C is the actual rate of utilization of capital and \mathcal{E}_K^P is the potential rate of utilization of capital.

Similarly, \mathcal{E}_L^C is the actual rate of employment and \mathcal{E}_L^P is the potential rate of employment (one minus the estimated natural rate of unemployment). For Sri Lanka, data on actual capacity utilization rates is already available from the CEIC database while that of the natural rate on unemployment (NAIRU) is calculated via Okun's law, which provides for a relationship between changes in the rate of unemployment and the difference between actual and potential real GDP. According to Okun's law, unemployment above the inflation-threshold unemployment rate reduces GDP below potential.

27. Estimates of Sri Lanka's output gap using the production function approach show that the output gap was positive in the late 1990s and also more recently

(Figure 9). Figure 9 also plots the output gap estimated through a pure statistical approach (HP-filter) for comparison. Both estimates of the output gap show that actual output was above potential during the late 1990s and more recently. Episodes of positive output gaps correspond with periods during which inflation was relatively high and/or increasing, partly as a result of a loose monetary policy stance.

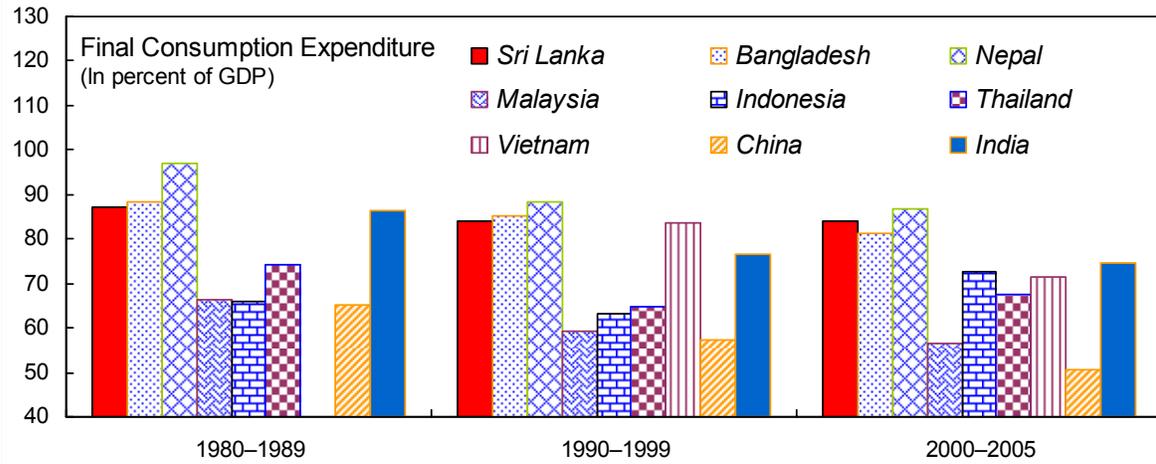
F. Policy Issues and Conclusion

28. The growth accounting framework has shown that labor was the major factor contributing to growth through the 1980s and that later, TFP took over as the main contributor. The slowdown in the contribution of sectors that are labor intensive, together with faster growth in sectors that are capital intensive and have higher productivity levels, resulted in TFP overtaking other factor inputs as the main contributor to growth. Also, the productivity of physical capital slowed down in recent years, largely due to neglect and fast depreciation as a result of the political conflict and wars.

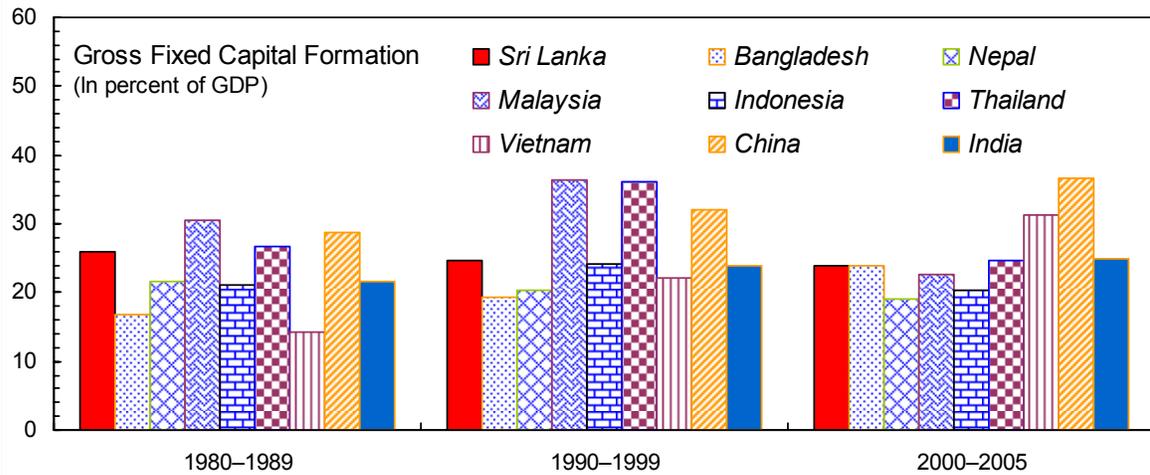
29. Unlocking higher growth than in the recent past will require a multifaceted approach. This includes, but is not limited to, a stable political and macroeconomic environment; reforms necessary to improve the productivity of factor inputs through productive investments; and creating space for the private sector partly through a reduction in fiscal dominance. A stable political environment is a necessary but not sufficient condition for growth going forward. Prudent monetary and fiscal policies are necessary to attain stability in the macroeconomic environment. On the structural side, the government's Ten

Year Horizon Development Framework, intended at raising the economy's growth potential, envisages a significant scaling up of investment and improving overall productivity in major economic sectors including power, roads, water supply, and ports during 2007-09. This is expected to be supported by both public and private investments (both domestically and foreign), thereby creating some space for private sector involvement in economic development. The modalities of financing for these projects are crucial in ensuring that they do not overload the already high government debt burden (estimated at 87.5 percent of GDP in 2006) and do not undermine the government's fiscal consolidation and debt sustainability efforts, thereby hindering future growth potential.

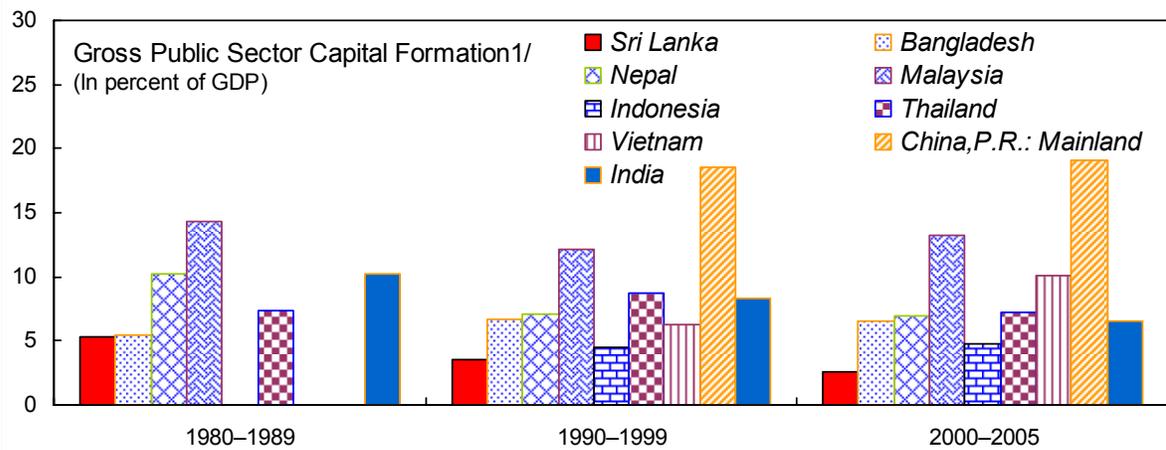
Figure I.4a. Sri Lanka: Regional Comparisons of Expenditure Components



Source: IMF, *World Economic Outlook* database.



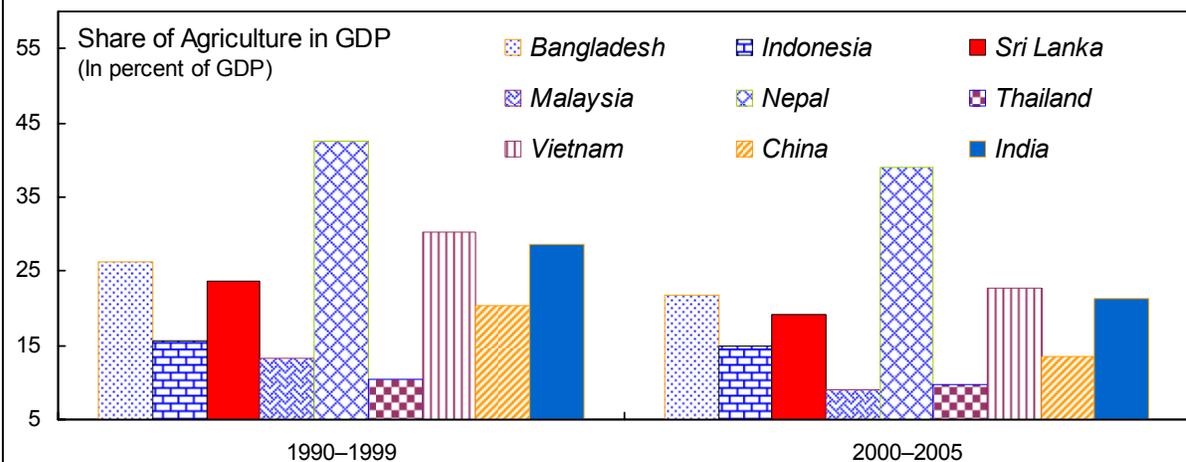
Source: IMF, *World Economic Outlook* database.



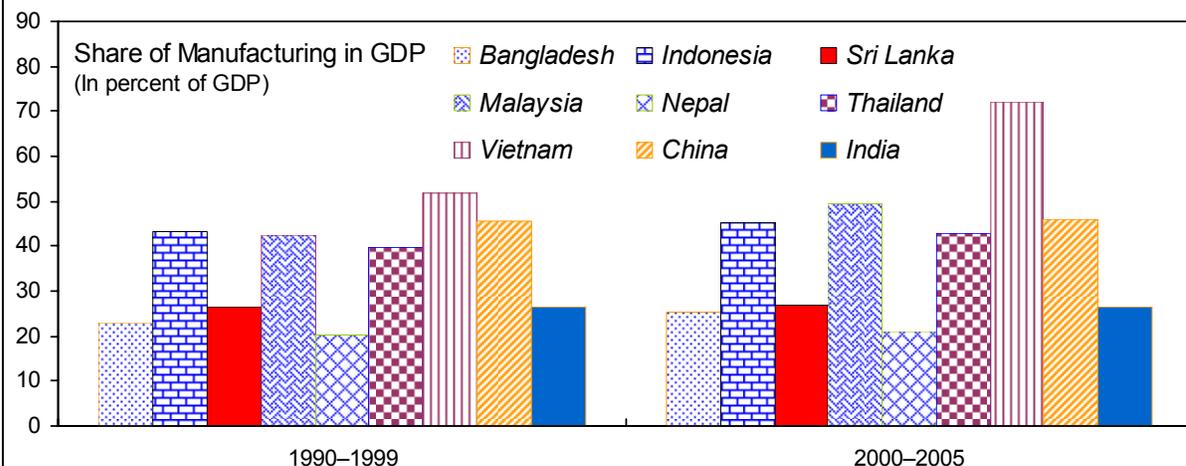
Source: IMF, *World Economic Outlook* database.

1/ Bangladesh and Nepal are central governments. Data is not available for some countries in the 1980s.

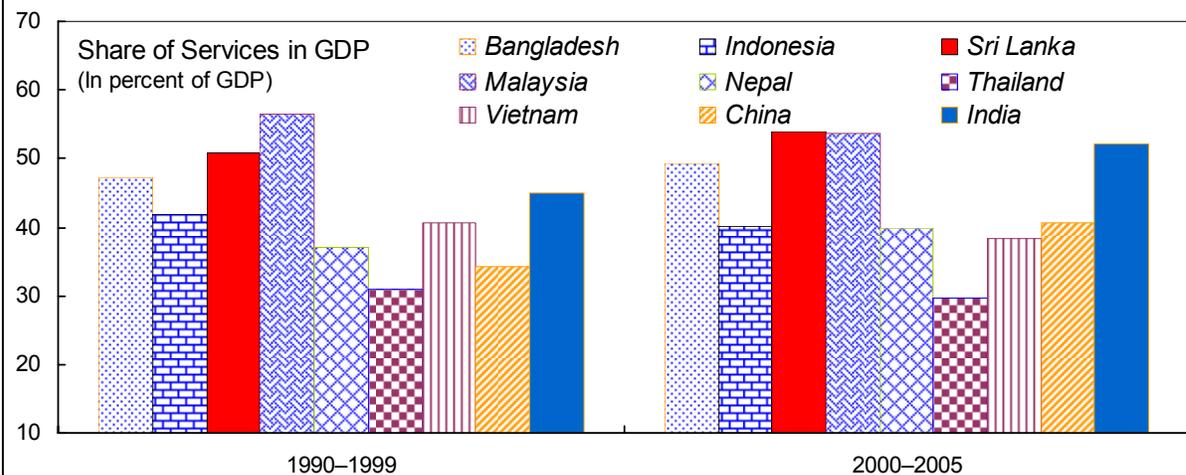
Figure I.4b. Sri Lanka: Regional Comparisons of Production Components



Sources: CEIC Data Co., Ltd.; country authorities; and IMF, *International Financial Statistics*.



Sources: CEIC Data Co., Ltd.; country authorities; and IMF, *International Financial Statistics*.



Sources: CEIC Data Co., Ltd.; country authorities; and IMF, *International Financial Statistics*.

Figure I.5. Sri Lanka: Capital Stock and Capacity Utilization Rates

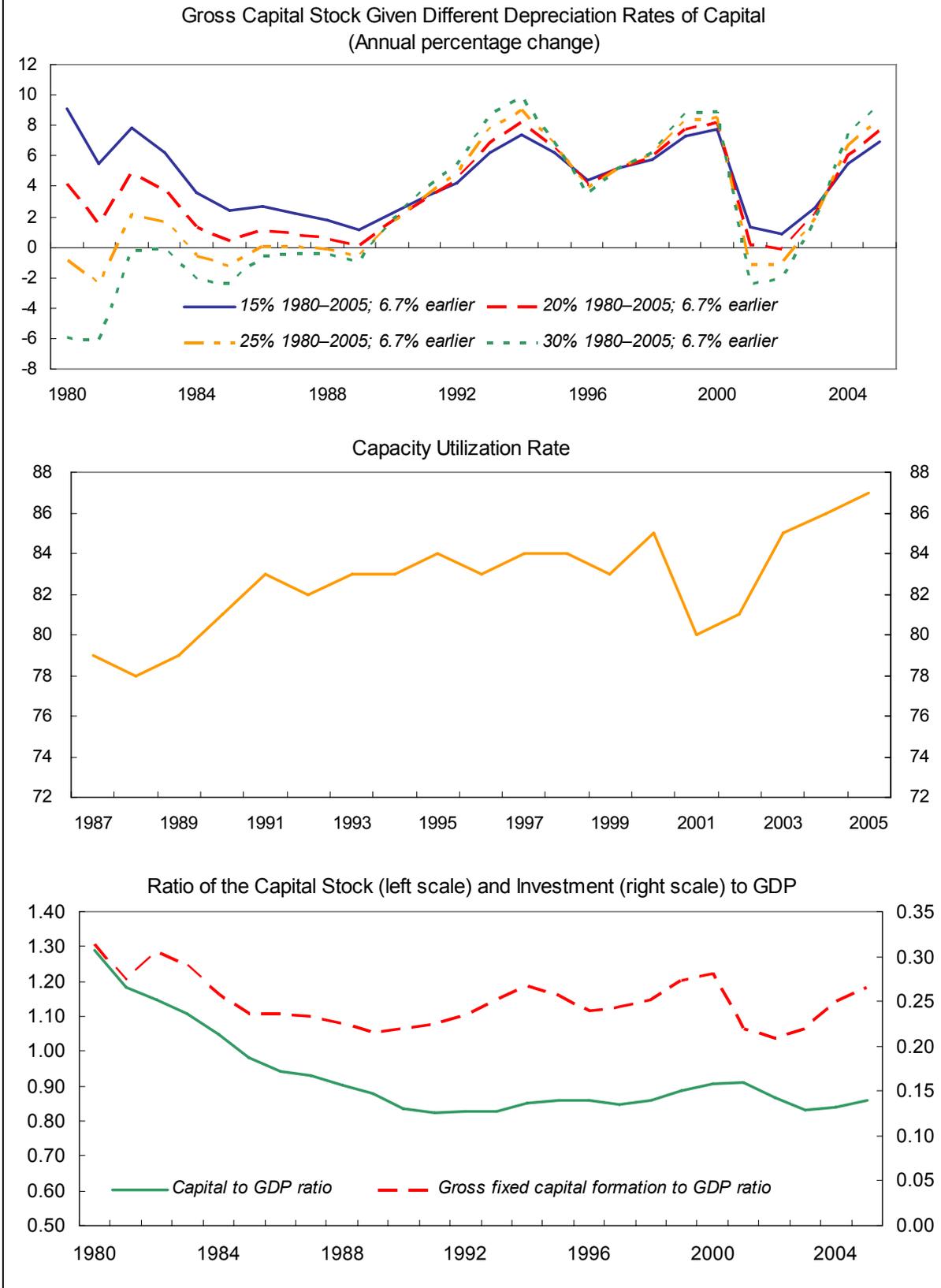
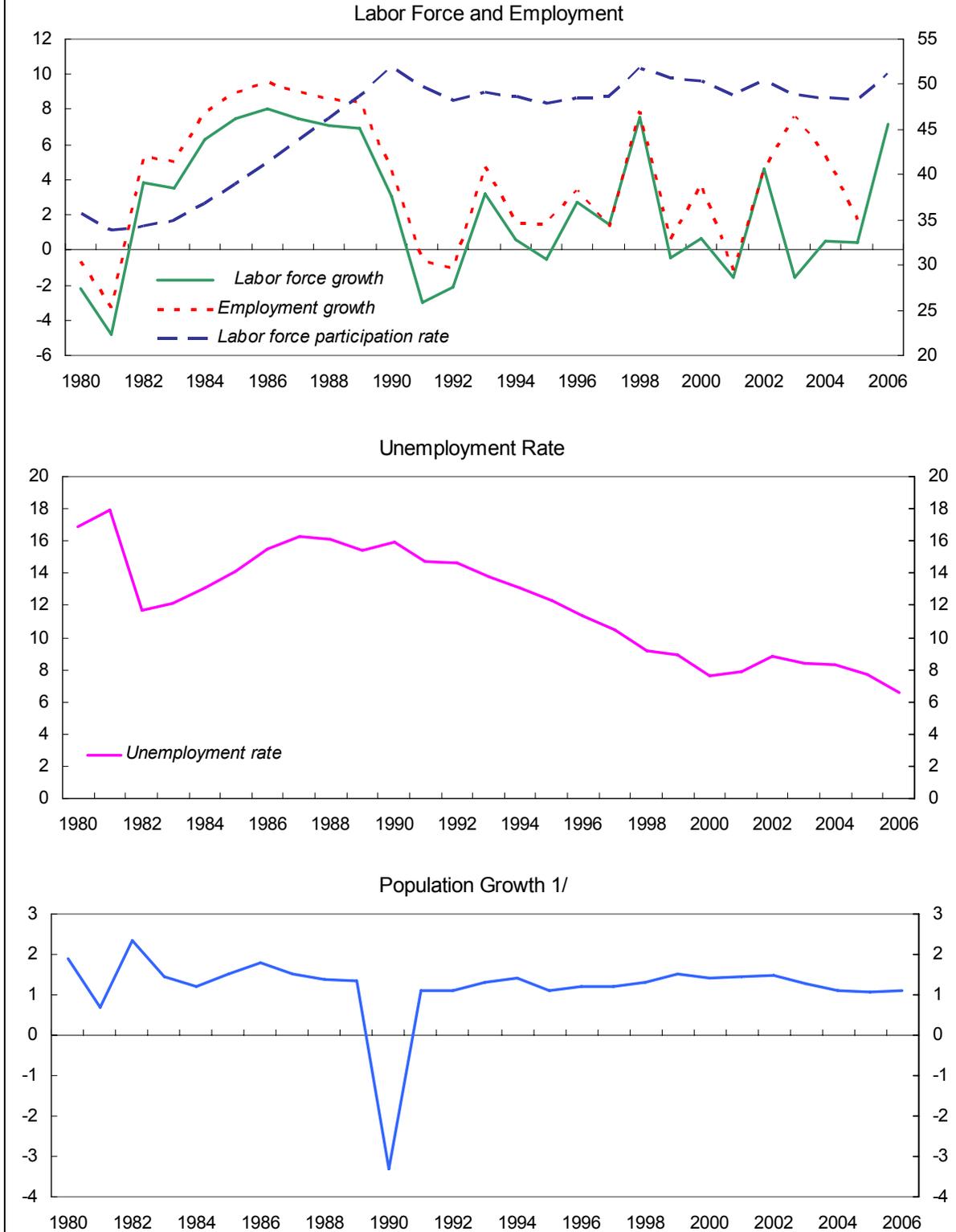


Figure I.6. Sri Lanka: Employment, Labor, and Population



1/ The structural break in population growth in 1990 is due to changes in the source of population numbers published by the CBSL from the Registrar General's Department to the 2001 Census.

Figure I.7. Sri Lanka: TFP and Real GDP Growth

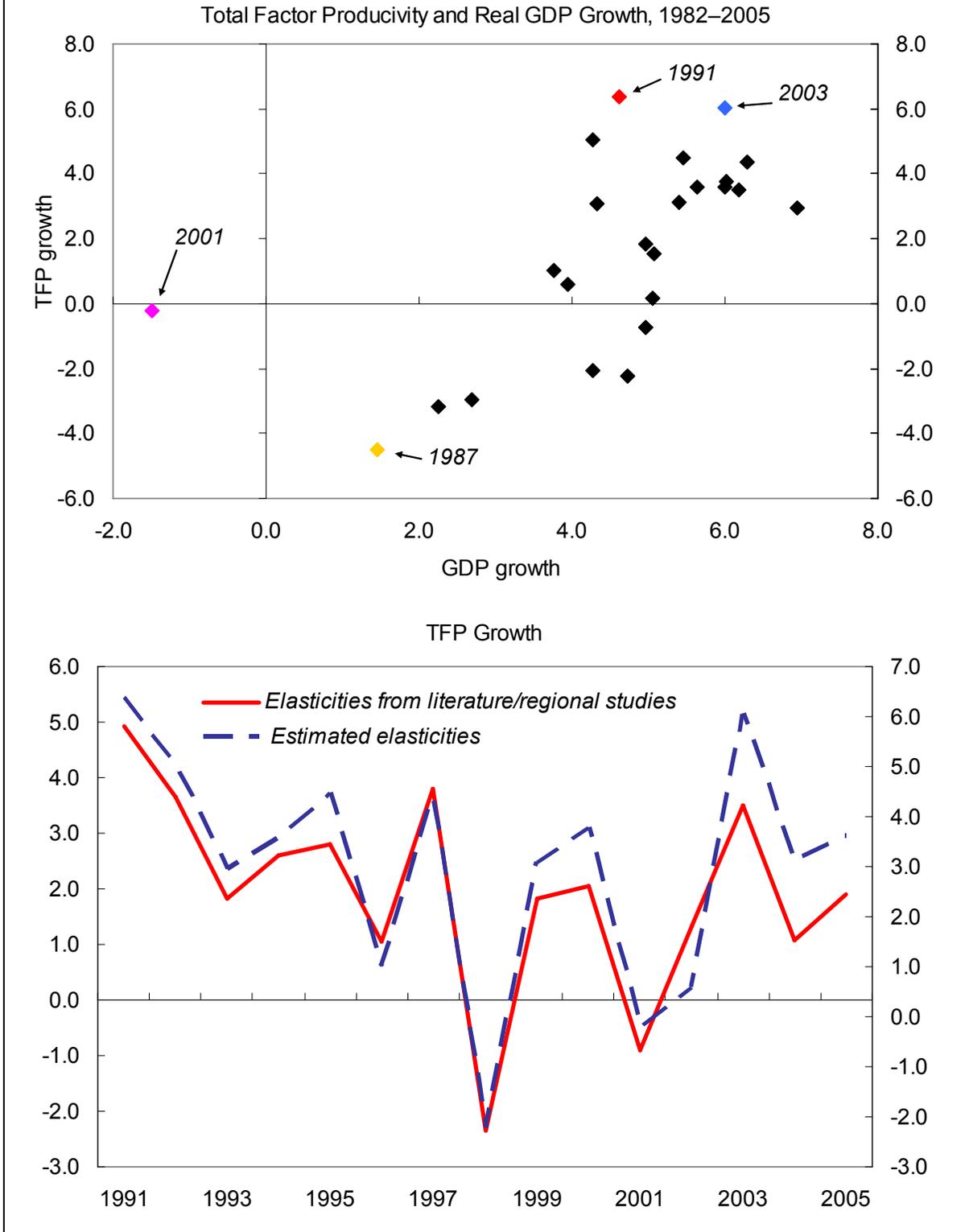


Figure I.8. Sri Lanka: TFP Growth with Different Depreciation Rates of Capital Stock

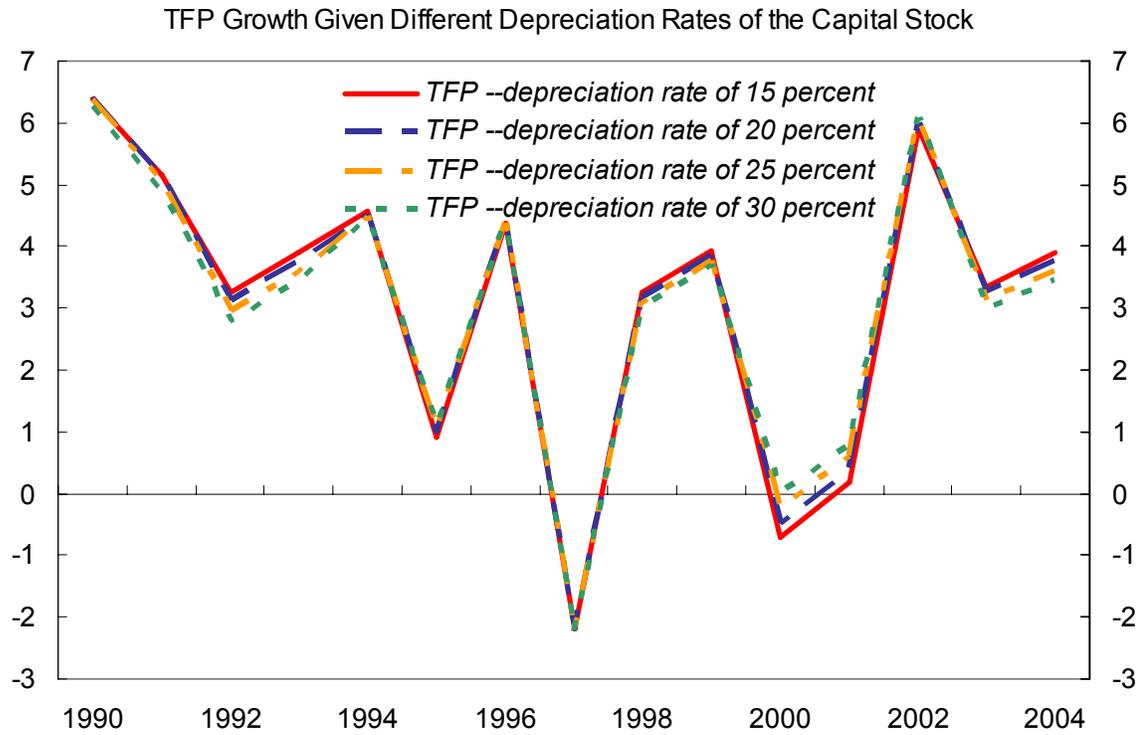
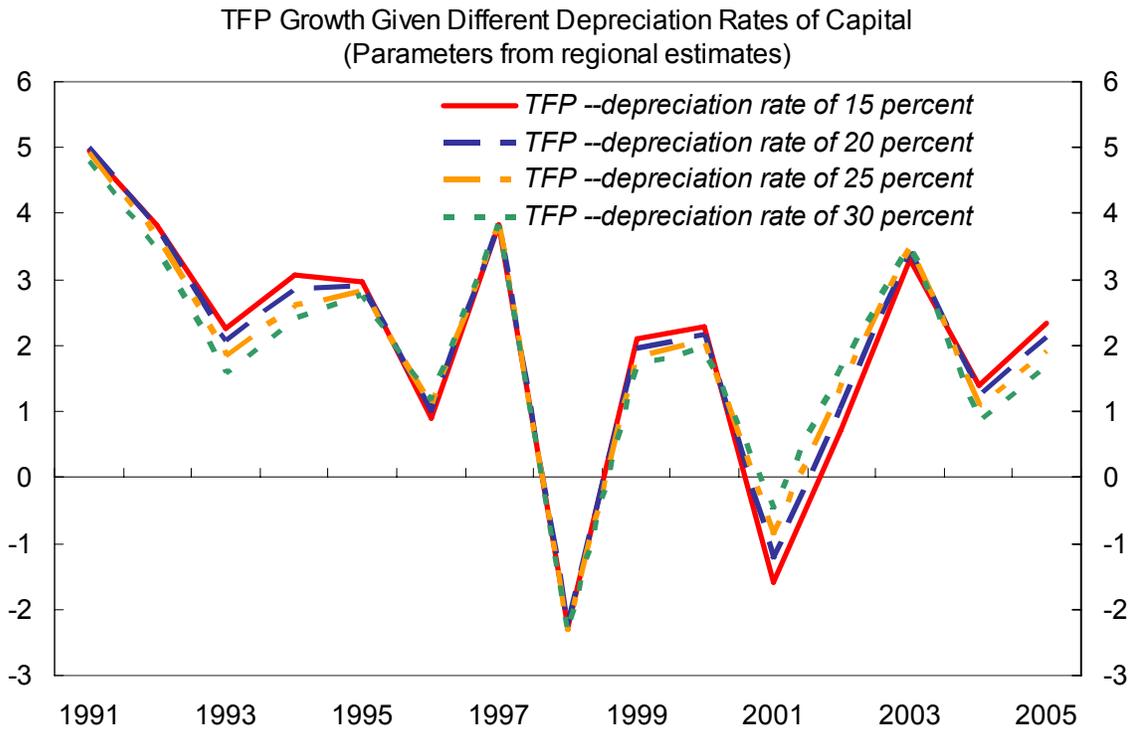
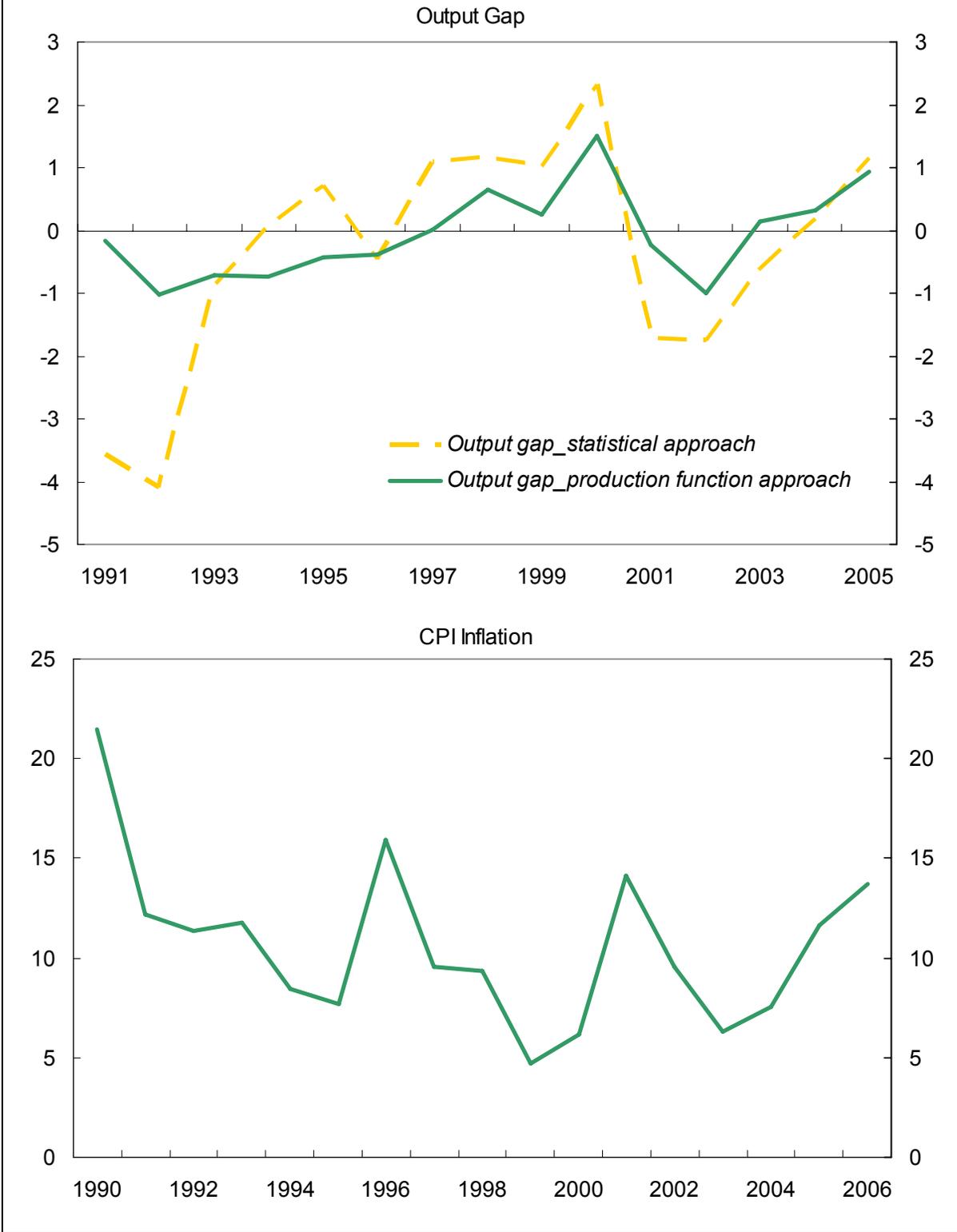


Figure I.9. Sri Lanka: The Output Gap and Inflation



APPENDIX I: ESTIMATING POTENTIAL OUTPUT

Given the level of output observed in the economy represented by equation (2), the potential output is:

$$Y_t^P = A_t (K_t^P)^\alpha (H_t^P)^\beta (L_t^P)^{1-\alpha-\beta} \quad (8)$$

Dividing equation (8) by equation (2) yields:

$$Y_t^P = Y_t \frac{A_t (K_t^P)^\alpha (H_t^P)^\beta (L_t^P)^{1-\alpha-\beta}}{A_t (K_t^C)^\alpha (H_t^C)^\beta (L_t^C)^{1-\alpha-\beta}} = Y_t \left(\frac{K_t^P}{K_t^C} \right)^\alpha \left(\frac{H_t^P}{H_t^C} \right)^\beta \left(\frac{L_t^P}{L_t^C} \right)^{1-\alpha-\beta} \quad (9)$$

Where potential employment at time t is:

$$L_t^P = \varepsilon_{L,t}^P L_t \quad (10)$$

Where $\varepsilon_{L,t}^P$ is the potential employment rate (1 minus the NAIRU) and L_t is the labor force.

Actual employment is:

$$L_t^C = \varepsilon_{L,t}^C L_t \quad (11)$$

Where $\varepsilon_{L,t}^C$ is the actual employment rate (i.e., 1 minus the actual unemployment rate).

Similarly, the potential physical capital stock at time t is:

$$K_t^P = \varepsilon_{K,t}^P K_t \quad (12)$$

Where $\varepsilon_{K,t}^P$ is the potential utilization rate and K_t is the stock of capital at time t. The utilized capital stock is:

$$K_t^C = \varepsilon_{K,t}^C K_t \quad (13)$$

Where $\varepsilon_{K,t}^C$ is the actual utilization rate. A similar set of equations apply to human capital.

Plugging the above equations into (9) yields:

$$Y_t^P = Y_t \left(\frac{\mathcal{E}_{K,t}^P}{\mathcal{E}_{K,t}^C} \right)^\alpha \left(\frac{\mathcal{E}_{H,t}^P}{\mathcal{E}_{H,t}^C} \right)^\beta \left(\frac{\mathcal{E}_{L,t}^P}{\mathcal{E}_{L,t}^C} \right)^{1-\alpha-\beta} \quad (14)$$

Assuming the ratio between potential and actual utilization rates of human capital and labor is the same (i.e., $\frac{\mathcal{E}_{L,t}^P}{\mathcal{E}_{L,t}^C} = \frac{\mathcal{E}_{H,t}^P}{\mathcal{E}_{H,t}^C}$), equation (14) reduces to:

$$Y_t^P = Y_t \left(\frac{\mathcal{E}_{K,t}^P}{\mathcal{E}_{K,t}^C} \right)^\alpha \left(\frac{\mathcal{E}_{L,t}^P}{\mathcal{E}_{L,t}^C} \right)^{1-\alpha} \quad (15)$$

The assumption above is reasonable. Since workers with high human capital are less likely to be unemployed than labor in general, the actual rate of unemployment of human capital is likely to be smaller than that of labor. Similarly, given that the natural rate of unemployment for human capital is likely to be lower than that of labor, the assumption that the ratio between potential and actual utilization rates of human capital and labor is the same is reasonable. This assumption is a weaker assumption than that actual and natural rates of unemployment of labor and human capital are identical.

References

- Barro, Robert J., 1998, “Notes on Growth Accounting,” NBER Working Paper No. 6654, (Cambridge, Massachusetts: National Bureau of Economic Research).
- Bu, Yisheng, 2006, “Fixed Capital Stock Depreciation in Developing Countries: Some Evidence from Firm Level Data,” *Journal of Development Studies*, Vol. 42, No. 5, pp. 881–901.
- Bosworth, Barry, P. and Susan, M. Collins, 2003, “The Empirics of Growth: An Update,” mimeo, (Washington: Brookings Institution).
- _____, 1996, “Economic Growth in East Asia: Accumulation Versus Assimilation,” Brookings Papers on Economic Activity, No. 2, (Washington: Brookings Institution).
- Denison, Edward F., 1962, *The Sources of Economic Growth in the United States and the Alternatives Before Us*, Committee for Economic Development, Supplementary Paper No. 13 (Washington).
- Department of Census and Statistics, 2005, *Sri Lanka Labour Force Survey* (Colombo, Sri Lanka).
- Fernandez, Enric, 2005, “Economic Growth in Sri Lanka: Record and Prospects,” *Selected Issues and Statistical Appendix*, IMF Country Report No. 05/337 (Washington: International Monetary Fund).
- Griliches, Zvi, 1973, “Research Expenditures and Growth Accounting,” in *Science and Technology in Economic Growth*, ed. by B.R. Williams (New York: Macmillan Publishers Ltd.).
- Jorgenson, Dale W., and Zvi Griliches, 1967, “The Explanation of Productivity Change,” *Review of Economic Studies*, Vol. 34 (July), pp. 249–280.
- Kendrick, John W., 1961, *Productivity Trends in the United States* (Cambridge, Massachusetts: National Bureau of Economic Research).
- Ministry of Finance and Planning, 2007, *Mahinda Chintana: Vision for a New Sri Lanka A Ten Year Horizon Development Framework 2006–2016*. Available via the Internet: <http://www.treasury.gov.lk/sldf2007-new.htm>.
- Ministry of Labour Relations and Manpower, 2006, *Labour Market Information Bulletin*, Vol. 01, No. 03 (Colombo, Sri Lanka).

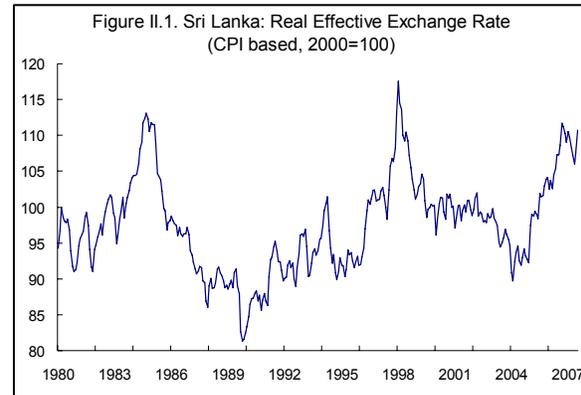
- Musso, Alberto, and Thomas Westermann, 2005, *Assessing Potential Output Growth in the Euro Area: A Growth Accounting Perspective*, ECB Occasional Paper No. 22 (Frankfurt: European Central Bank).
- Rodrik, Dani, and Arvind Subramanian, 2004, “Why India Can Grow at 7 percent a Year or More: Projections and Reflections,” IMF Working Paper 04/118 (Washington: International Monetary Fund).
- Solow, Robert M., 1957, “Technical Change and the Aggregate Production Function,” *Review of Economics and Statistics*, Vol. 39 (August), pp. 312–320.
- United Nations, 2006, *Human Development Report* (New York).
- Vijselaar, F. and R. Albers, 2002, “New Technologies and Productivity Growth in the Euro Area,” ECB Working Paper No. 122 (Frankfurt: European Central Bank).
- World Bank, 2007, *Governance Matters 2007: Worldwide Governance Indicators, 1996–2006*, Available via the Internet: http://info.worldbank.org/governance/wgi2007/sc_chart.asp.
- World Bank, 2006, *World Development Indicators* (Washington).

II. IS SRI LANKA'S EXTERNAL COMPETITIVENESS OF CONCERN?¹

A. Introduction

1. **Recent appreciation of the real effective exchange rate (REER) together with a series of exogenous shocks to the external sector, has sparked concerns regarding Sri Lanka's external competitiveness.**²

Between 2005–2006, the CPI-based REER appreciated by 14 percent following a trend depreciation of 23 percent over 1998–2004. High domestic inflation and reduced nominal exchange rate flexibility accounted, to a large extent, for the recent appreciation in the REER. Over the same period Sri Lanka experienced a series of



external and domestic shocks including the December 2004 tsunami, the expiration of the Multi-Fiber Agreement in end-2005, increases in global oil prices, and a resumption of the internal ethnic conflict in 2006. The implications of these developments for Sri Lanka's external competitiveness are assessed in this paper.

2. **This paper examines a broad set of indicators for the Sri Lankan economy to assess the implications of these developments for Sri Lanka's external competitiveness.**

Trends in export performance, relative prices and indicators of structural competitiveness are examined. In addition, the analysis estimates the equilibrium real effective exchange rate (EREER) using several methodologies in order to determine whether the current level of the REER is appropriate. We proceed as follows: Section II discusses the performance in the tradable sector since 1980, followed by an assessment of production cost competitiveness in Section III. Estimates of the EREER are presented in Section IV, and indicators of structural competitiveness detailed in Section V. Finally Section VI concludes. Tradable Sector Performance

B. Tradable Sector Performance

Current Account Balance and External Sector Trends

3. **Since 2001, Sri Lanka's non-oil current account balance has been in surplus, improving from a deficit of 1.3 percent of GDP between 1990–2001 to a surplus of**

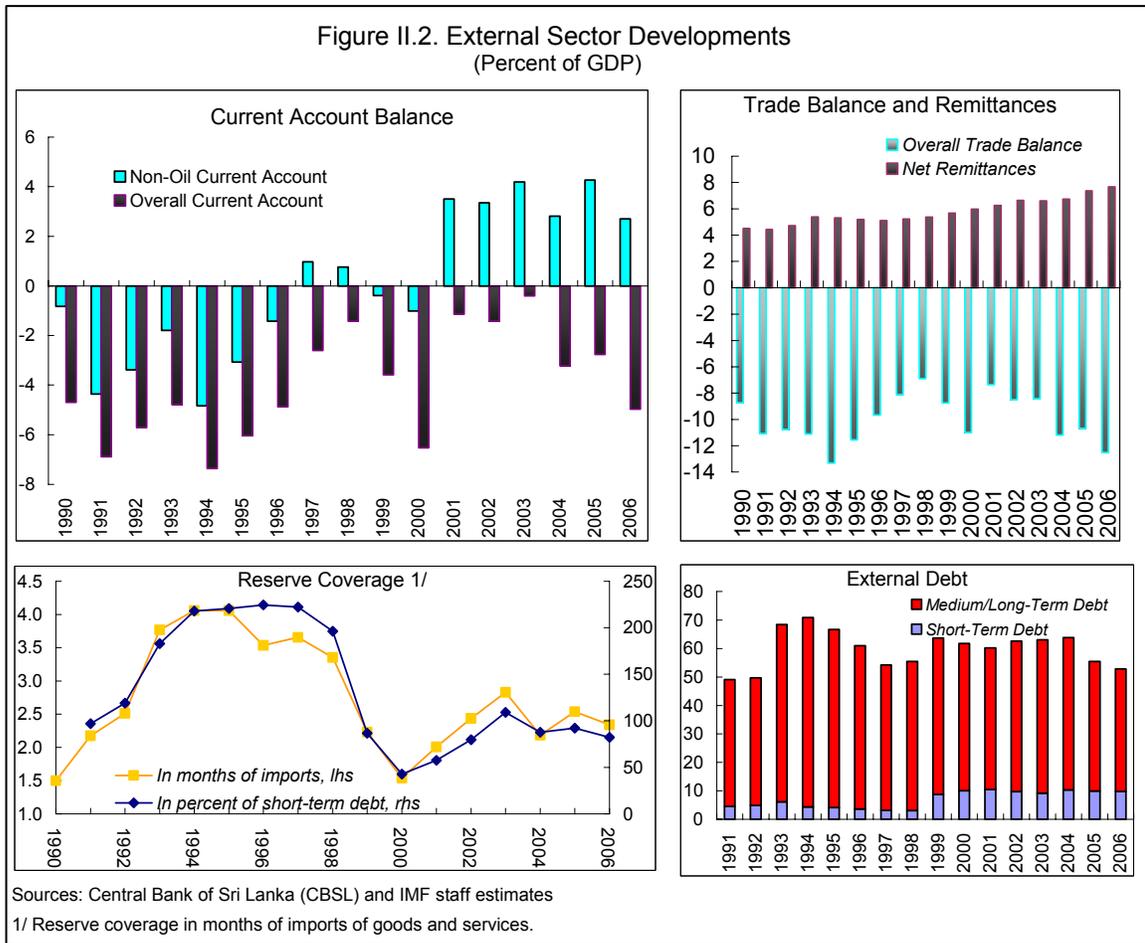
¹ Prepared by Lupin Rahman.

² External competitiveness is taken to describe a country's capacity to export goods and services more cost-effectively than others. Edwards (1989) defines external competitiveness more narrowly as the capacity of firms in the tradable sector to export and remain profitable in the long-term.

3.5 percent of GDP over 2002–2006 (Figure II.2). Over this period the total current account balance also improved by an average of 2 percent of GDP, in spite of rising oil prices in 2005 and 2006. Two factors underlie these trends—strong growth in remittance inflows which have increased from 4.6 percent of GDP in 1990 to 7.7 percent of GDP in 2006; and improvements in the non-oil trade balance from a deficit of 6.5 percent of GDP over the 1990–2001 to 4.2 percent of GDP over 2002–2006. The latter has been driven by buoyant export growth and reduced non-oil import demand, following a collapse in both components during 1998–2001, a period of intense civil conflict. Taken together, the overall trade balance has remained broadly comparable at a deficit of 10 percent of GDP between the two periods. In the first half of 2007, strong apparel export growth strengthened the trade balance to 10.5 percent of GDP. Nevertheless, the current account deficit for 2007 as a whole is projected to remain high at 5 percent of GDP on account of high oil prices and mega infrastructure imports.

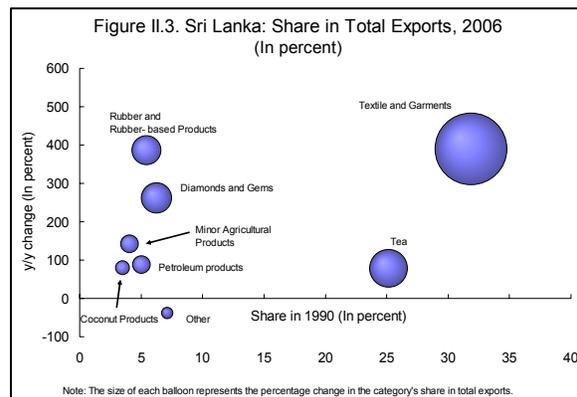
4. **Underlying external vulnerabilities exist and reserve coverage has remained below 3 months of imports (GNS) since 1999.** Increases in oil prices, high public debt and external debt service, together with low levels of foreign direct investment, have contributed to Sri Lanka's underlying external vulnerability. Between 2005–2006, oil imports increased by about 1.5 percent of GDP (\$400 million) to over \$2 billion. Over the same period, the government's reliance on fairly short-term dollar-denominated domestic commercial borrowing added to balance of payments pressures and exacerbated external risks. By end-2006 reserve coverage was at 2.4 months of imports (82 percent of short-term debt), and is expected to remain at this level in 2007.

5. **Sri Lanka's external debt stock at about 53 percent of GDP in 2006, combined with a persistently high public domestic debt stock of 93 percent, is also of concern.** Being largely concessional, external debt, with NPV rates of 35 percent of GDP, is below the debt-distress level of 40 percent of GDP applicable to Sri Lanka, leaving limited room for maneuver. Moreover, although external short-term debt is a relatively small share of total external debt, increased domestic dollar-denominated borrowing from commercial sources at short-medium maturities, has increased the underlying risks to reserves. At end-2006, the stock of such dollar-denominated domestic borrowing stood at \$1.6 billion, about 63 percent of reserves.



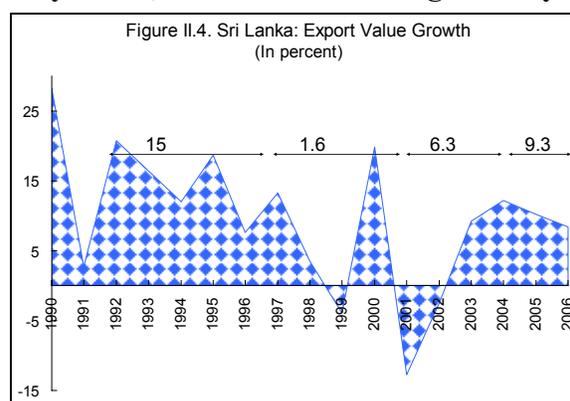
Export Sector Performance

6. **Between 1990–2006 Sri Lanka rapidly transformed from an agricultural to a manufactured goods exporter.** Apparel and textiles, in particular, grew to dominate the export sector and comprised 45 percent of all goods exports in 2006. Nevertheless, despite a steady decline over the 1990s, agricultural exports (including tea, coconut products, and spices) remain an important component of Sri Lanka’s export base comprising about 20 percent of total exports in 2006. Shares of rubber exports and gem processing are also increasingly steadily.



7. Export value growth boomed in the early 1990s, and since 2002 has gradually recovered from its sharp decline over 1998–2001.

Export volume growth has followed a similar path, average real growth rates being about 5 percent (year-on-year) over 2002–2006 compared with 7 percent in the 1990s. The impact of the expiration in early 2005 of the Multi-Fiber Agreement is unclear although there has been a decline in real export growth rates from 7.7 percent in 2004 to 4 percent in 2006, driven mainly by the apparels sector. Data for the first half of 2007, however, indicate a rebound in both total and apparels exports. Nevertheless, the contribution to GDP of exports of goods and services at 2 percent of GDP is low, both from a historical and regional perspective.

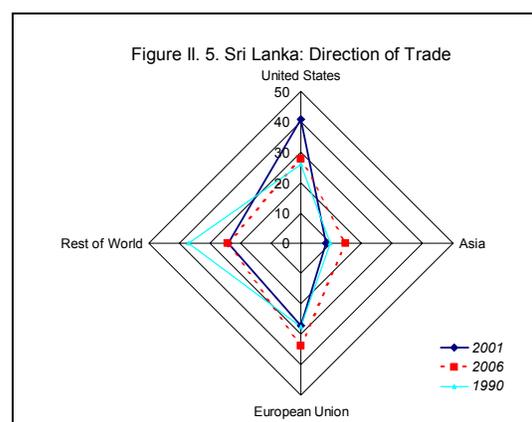


8. Sri Lanka's share of world exports which compares favorably with other South Asian economies has been on a steady decline since 2001 (Table II.1). Increased competition in the apparels sector and limited preferential access to the U.S. market has implied that Sri Lanka's world market share (controlling for the effect of China and India) has not kept in line with GDP growth. This is particularly worrisome as world market shares of Sri Lanka's regional competitors, for example that of Bangladesh, Vietnam, and Cambodia, have been increasing over this period.

Table II.1 : Share of World Exports (Excluding India and China)

| | 1990–1997 | 1998–2001 | 2002–2006 |
|------------|-----------|-----------|-----------|
| Sri Lanka | 0.074 | 0.087 | 0.071 |
| Pakistan | 0.179 | 0.155 | 0.163 |
| Bangladesh | 0.060 | 0.087 | 0.095 |
| Cambodia | 0.006 | 0.019 | 0.024 |
| Vietnam | 0.105 | 0.222 | 0.316 |

Source: Direction of Trade Statistics Database



9. These trends are reflected in the shift in exports since 2001 away from the United States and towards the European Union, both major destinations for Sri Lanka's exports (Figure II.5). In particular, Sri Lanka's share of the U.S. apparel and textiles market declined from 2.25 percent in 2001 to 2 percent in 2006. Over the same period, U.S. market shares of other garments exporters have been steadily rising—for example, Bangladesh saw an increase in her U.S. market share from 3.1 percent in 2001 to 3.5 percent in 2006. Market structure and limits to economies of scale in production and distribution may be important factors underlying this development. More encouraging is

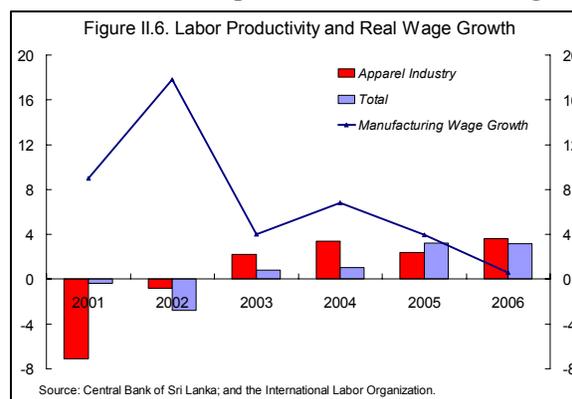
the growth of Sri Lanka's E.U. apparel and textiles market share from 0.62 percent in 2001 to 0.73 percent in 2006 as Sri Lanka increased its utilization of the E.U.'s Generalized System of Preferences (GSP II).³ This is in spite of the competitive market and strong growth rates of market shares for other garments exporters to the European Union.

10. **Going forward, Sri Lanka is expected to further increase its garments exports to the European Union as it improves backward interlinkages to the textiles sector and takes advantage of changes in the GSP II's rules of origin.** This preferential agreement has been expanded to include some of the ASEAN countries and is expected to be renewed to 2015 when it expires in end-2008. As further gains in the low-end apparels market share become increasingly difficult, Sri Lanka's apparel industry is attempting to upgrade to higher-value items such as lingerie and knitwear. It has also launched an "ethical garments" marketing campaign in the United States to emphasize the high labor standards in place in the industry and the minimal use of child labor.

C. Production Cost and Relative Price Analysis

11. **Labor productivity growth, including in the apparel industry, has been historically low in comparison to regional competitors.** The apparel sector's labor productivity growth averaged at 2 percent over 2002–2006, compared with sustained higher rates in India (about 3.5 percent total labor productivity growth) and Bangladesh (about 14 percent growth for the cotton and apparel sector).

12. **Overall, Sri Lanka's labor costs appear to be in the medium range of competitors.** The available data on wages suggest that while real wage growth in manufacturing has not kept in line with productivity growth, there has been a marked slowdown since 2002.⁴ Moreover, according to the World Bank's *Doing Business Survey*, in 2006 Sri Lanka's nonwage labor costs (aside from firing costs which are unusually high) were one of the lowest in South Asia and compared favorably with those in the East Asian and Pacific countries (Table II.2).



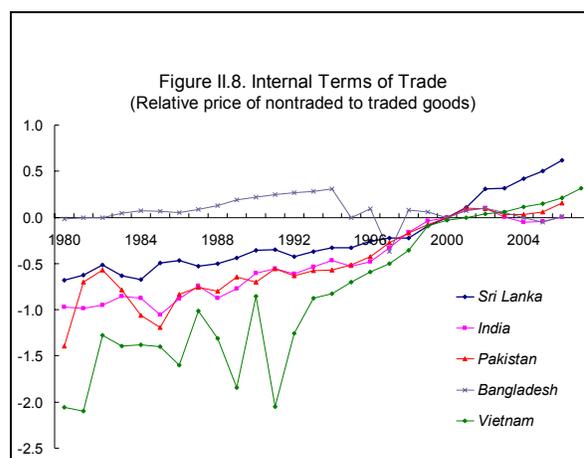
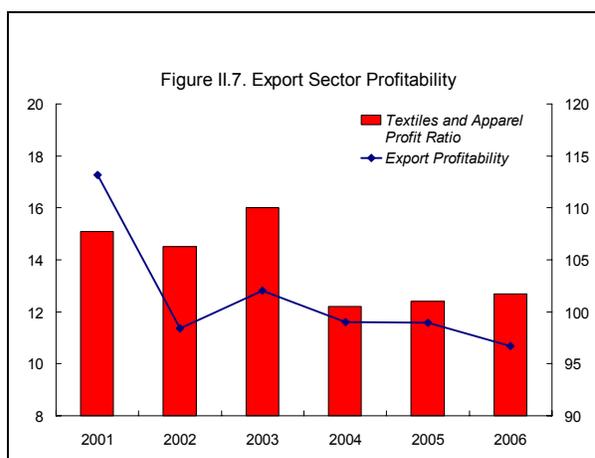
³ The E.U.s GSP (II) provides for preferential duty treatment (a reduced rate of import duty or, even, duty-free) of imported goods originating in beneficiary countries.

⁴ Trends in Sri Lanka's nominal and real wages are limited by the coverage and quality of data which focuses on the workers in wages boards only and hence does not reflect the complete distribution of private sector wages. The data used in this paper are from the International Labor Organization based on an annual survey of industries.

| Employing Workers (2006) | Sri Lanka | Bangladesh | Cambodia | India | Pakistan | Vietnam | South Asia | East Asia and Pacific |
|----------------------------------|-----------|------------|----------|-------|----------|---------|------------|-----------------------|
| Difficulty of Hiring Index | 0 | 11 | 56 | 33 | 78 | 0 | 42 | 24 |
| Rigidity of Hours Index | 20 | 40 | 60 | 20 | 20 | 40 | 25 | 25 |
| Difficulty of Firing Index | 60 | 40 | 30 | 70 | 30 | 70 | 38 | 20 |
| Rigidity of Employment Index | 27 | 30 | 49 | 41 | 43 | 37 | 35 | 23 |
| Nonwage labor cost (% of salary) | 15 | 0 | 0 | 16.8 | 12 | 17 | 7 | 9 |
| Firing costs (weeks of wages) | 178 | 51 | 39 | 56 | 90 | 87 | 72 | 42 |

Source: *Doing Business 2006, World Bank*

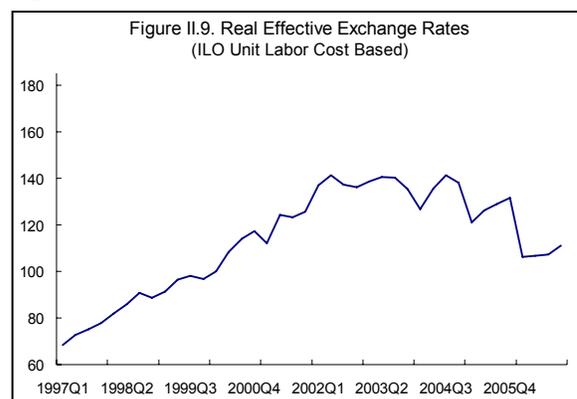
13. **These developments, together with increased competition in the apparel sector, have reduced export profit margins although profit ratios remain high.** Estimates of export profitability, using the ratio of export prices to manufacturing wages as a proxy for profitability, shows a trend decline of about 5 percent from 2003 to 2006. Analysis of profit ratios in the textile and apparel sector, calculated from estimates of the cost and value of total production, also reflects a slight decline from 2003 but points to profit margins of about 13 percent for the sector and 15 percent for industry as a whole. This suggests that while profit margins may be squeezed, there is still a fairly large margin for exporters to work within.



14. **Nevertheless, indicators of the internal real exchange rate suggest a steady loss of competitiveness of the traded goods sector.**⁵ Figure II.8 suggests that the prices received by firms operating in the nontraded goods sector have increased relative to the traded sector, implying that the relative returns to investing in the traded goods sector have declined. This is expected given the declining trends in export profitability, the higher productivity growth

⁵ The internal exchange rate (or terms of trade) measures the relative price of nontradable to tradable goods and is an indicator of the relative attractiveness of production in the nontraded goods sector. See Hinkle and Montiel (1999) for a detailed discussion.

in the nontraded/services sector, and the increasing trend of remittance inflows which are more likely to be spent on domestic goods and services. Estimates of the REER based on unit-labor costs⁶ in manufacturing corroborate this, showing a trend appreciation from 1998 (Figure II.9). The difference in the trend between the CPI-based REER and ULC-based REER may be due to the weight of administered prices in the CPI and also as ULC measures omit nonlabor costs (e.g. energy costs and the effective cost of funds) facing producers.



D. Estimates of the Equilibrium Exchange Rate

15. **To fully address the question of whether Sri Lanka’s external competitiveness is of concern, an assessment of the exchange rate level is needed.** This should ideally be based on an equilibrium level, such as is consistent with internal and external balance or a sustainable level of the current account. This section estimates the equilibrium real exchange rate (EREER) using several methodologies developed in the literature. In addition to the fact that estimates of the EREER tend to be sensitive to the methodology used, several caveats should be borne in mind: first, for the case of Sri Lanka, whose economy has been affected several times by decades of conflict and other exogenous shocks, whether an “equilibrium” such that internal and external balance are achieved has ever been reached at any point in the recent past may be debatable. Second, given this history, the use of the past to inform analysis of the post-peace agreement period since 2002 may lead to estimation errors. Finally, data availability together with quality and frequency issues hamper the precise estimation of the theorized relationships. These factors imply a fairly wide confidence band over the estimated levels of the equilibrium exchange rate and on the assessment of the actual exchange rate level.

Behavioral Equilibrium Exchange Rate Approach (BEER)

16. **The BEER approach estimates the EREER by econometrically identifying structural determinants of the long-term real exchange rate using a reduced-form exchange rate model.**⁷ Economic fundamentals which have been viewed in the literature as having permanent effects on the long-run real exchange rate include the net foreign asset (NFA) position, terms of trade, trade openness, government consumption, and relative

⁶ ULC-based REERs were calculated using rough estimates for unit labor costs from total value added to wage bill in manufacturing.

⁷ This analysis uses the framework proposed by MacDonald (1997) and MacDonald and Clark (1999).

productivity differentials. Figure II.10 shows the evolution of these variables over 1980–2006 and their bivariate relationship with the REER:

- i. **The NFA position of an economy can affect the real exchange rate in two ways.** A higher NFA position implies a positive wealth effect which raises domestic demand for and the price of nontradables. Secondly, higher income from foreign assets improves the external current account. In equilibrium this would need an offsetting lower trade balance from a more appreciated real exchange rate. Sri Lanka's NFA position appears to track developments in the REER up to 2001 after which the series diverge substantially, with NFA rising by 3 percent of GDP over 2001–2004 while the REER depreciated by 7 percent. This is also reflected in the correlation coefficient between the REER and NFA, which is positive prior to 2001 and high and negative after.
- ii. **An improvement in the terms of trade would generally tend to appreciate the real exchange rate if the wealth effect dominates the substitution effect.** Higher export prices result in higher wages in both traded and nontraded sectors resulting in higher prices for nontradable and a real appreciation. The wealth effect associated with improved terms of trade will also raise demand for, and the price of, nontradables in the economy. On the other hand, higher prices for nontradables may shift demand towards imported goods, depreciating the real exchange rate. Sri Lanka's terms of trade in goods and services is correlated positively with the REER up to 2004, suggesting that wealth and price effects dominated the substitution effect. The deterioration of the terms of trade due to high oil prices in 2005–2006 and the expected REER depreciation (in the absence of pass-through of oil prices onto domestic goods) may have therefore somewhat offset the appreciation due to tsunami inflows and high domestic inflation.

| | Log REER | Openness | Log Relative Productivity | Log Terms of Trade | Government Consumption % GDP | NFA % GDP |
|------------------------------|----------|----------|---------------------------|--------------------|------------------------------|-----------|
| Log REER | 1.00 | | | | | |
| Openness | 0.17 | 1.00 | | | | |
| Log Relative Productivity | -0.34 | -0.23 | 1.00 | | | |
| Log Terms of Trade | 0.32 | 0.37 | -0.39 | 1.00 | | |
| Government Consumption % GDP | -0.03 | 0.01 | 0.60 | 0.24 | 1.00 | |
| NFA % GDP | 0.06 | 0.30 | -0.10 | 0.83 | 0.35 | 1.00 |

Source: Central Bank of Sri Lanka; and IMF staff estimates

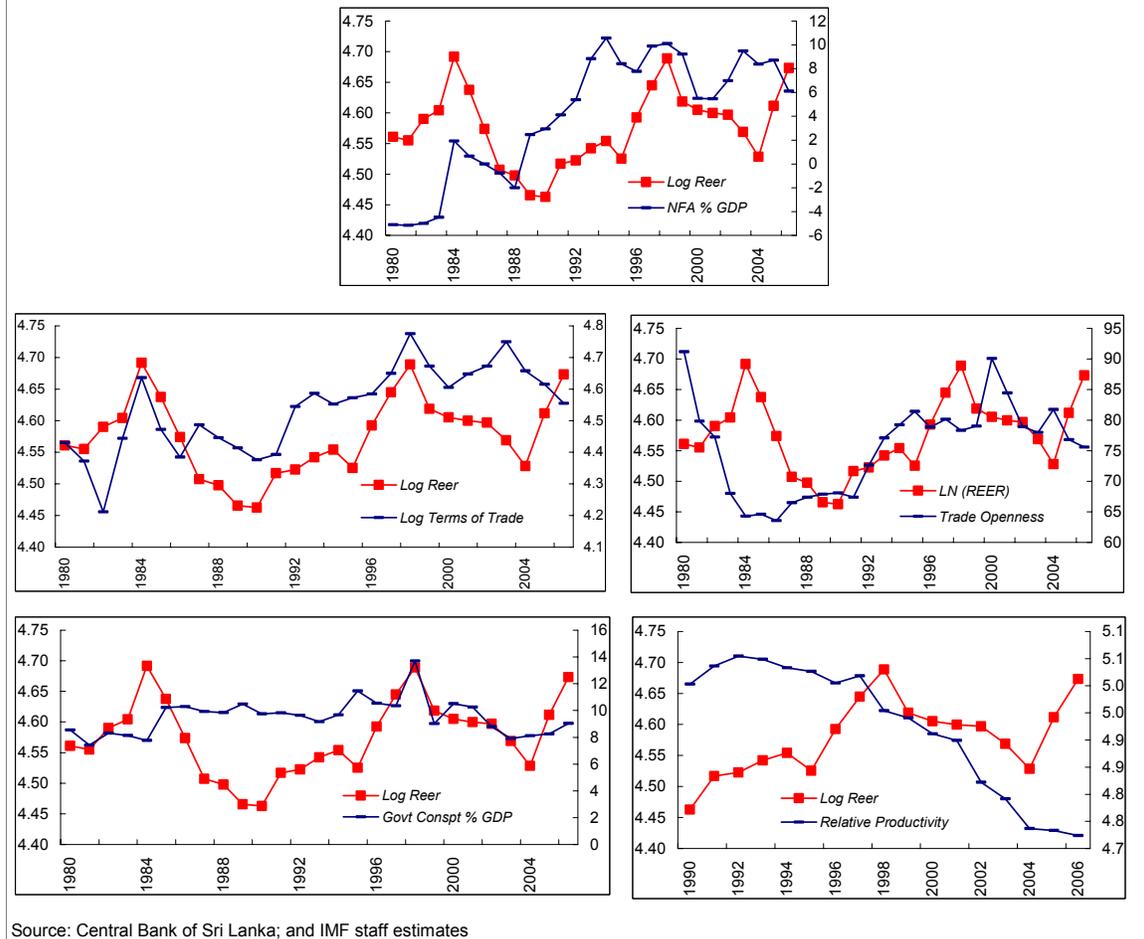
- iii. **The effect of trade liberalization or openness also can operate via multiple channels.** A more open trade regime generally is associated with a more depreciated real exchange rate when the removal of restrictions reduces the domestic price of tradables and discourages import substitution. On the other hand, if trade restrictions were primarily used to keep domestic prices of primary products low, then increasing trade openness may raise the overall price level and the real exchange rate. The bivariate relationship

between trade openness and the REER in Sri Lanka is positive, fairly strong but volatile. As with the other variables there seems to be a divergence in 2004 where the relationship is negative. This may be due to endogeneity of the trade openness variable, measured by the share of exports and imports to total GDP, to the REER appreciation.

- iv. **Higher government consumption is associated with a real appreciation assuming a large share of government expenditure is on nontradables.** For the case of Sri Lanka, this bivariate relationship is not strong and correlation is weakly negative. This could be because government spending is dominated by defense expenditure and interest payments, both of which would be associated with a worsening current account due to higher import spending and transfers.
- v. **Relative productivity differentials between traded to nontraded goods tend to appreciate the real exchange rate.** As less developed countries converge to advanced economies, productivity improvements in the traded sector lead to increases in wages and prices in the nontraded sector and an real appreciation (the so-called Balassa-Samuelson Effect)⁸. Low productivity in the traded sector, compared to both the non-traded sector and other countries, has implied a trend decline in relative productivity since 1998 (Figure II.10).

⁸ Balassa (1964) and Samuelson (1964).

Figure II.10. The Real Effective Exchange Rate and its Long-Run Determinants, 1980–2006



17. **A vector error correction framework (VECM) using the maximum likelihood estimator of Johansen is used to estimate the long-run relationship between the REER and the structural determinants discussed above.** Augmented Dickey Fuller unit root tests indicate that all the variables are nonstationary series in levels but stationary in first differences (I(1)). Johansen cointegration tests applied to several specifications including the endogenous variables indicate the presence of at least one cointegrating equation. This suggests there is a long-run equilibrium relationship among the variables and that the VECM framework could be reasonably applied. Nevertheless, the small sample size and the various episodes of intense conflict (controlled for using dummies), warrants some caution in the interpretation of the econometric results.

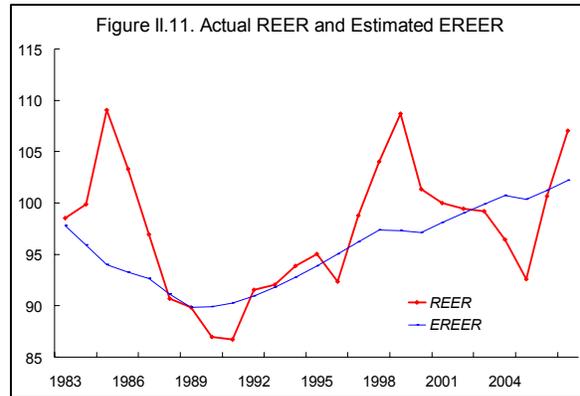
18. **In line with theoretical priors, the VECM results indicate that improvements in the terms of trade and higher government consumption appreciate the exchange rate.⁹**

⁹ Although the VECM results are somewhat sensitive to the specification used, the general tendencies are as described.

Moreover, openness has tended to appreciate the exchange rate, perhaps as previously, trade barriers were kept prices artificially low. Somewhat counter intuitively, NFA as a percentage of GDP is negatively related to the REER, a finding which may be driven by the sensitivity of NFA to the conflict Sri Lanka has experienced and the quality of the data series itself.¹⁰ VECM estimation including relative productivity (which is available from 1990 onwards) was not possible due to limited data points. However, OLS estimates suggest there is a negative but insignificant association between the REER and relative productivity.

19. The VECM estimates indicate a trend appreciation in the equilibrium REER of about 13 percent over 1990–2006.

Hodrick-Prescott filters of the structural determinants of the REER were used to calculate the equilibrium REER for Sri Lanka for several models specifications. Trade openness, the terms of trade, NFA as a share of GDP and government consumption all exhibit upward trends in their long-run path which may have appreciated the EREER. These estimates suggest that the REER was largely overvalued during 1998-2001 and moderately undervalued over 2002–2004 during the peace accord.



Based on the estimated EREER from this approach, the end-2006 REER appears to be slightly overvalued in the range of 2–7 percent.

The Macroeconomic Balance Approach

20. Another approach to estimating the equilibrium REER is the macroeconomic balance approach which focuses on the REER that simultaneously achieves internal and external balance.

This involves (i) estimation of the underlying current account, which is the actual current account deficit adjusted for output gaps and lagged effects of past real exchange rate movements; (ii) estimation of the structural current account, which measures the medium-term domestic

| | Structural | Underlying | Actual |
|---------|------------|------------|--------|
| 1980–85 | -0.6 | ... | -11.7 |
| 1986–90 | -0.6 | -3.2 | -7.8 |
| 1992–97 | 1.0 | -3.8 | -5.2 |
| 1998–00 | 0.9 | -1.8 | -3.8 |
| 2002–04 | 0.8 | 0.2 | -1.7 |
| 2005–06 | 1.3 | -1.7 | -3.9 |

Notes: 1991 and 2001 excluded as outliers.

¹⁰ A similar result was found when using the stock of reserves as a share of GDP.

savings and investment relation; and (iii) calculation of the real exchange rate which would bring the underlying current account to the level of the structural current account. This methodology is useful in that it encompasses a medium-term view of the economy, taking into account the net external position of the country, particularly relevant for Sri Lanka given its high level of public debt. Nevertheless, as mentioned previously, the assumption of internal-external balance may be debatable given the number of shocks Sri Lanka has faced and given the prolonged civil conflict. Therefore, these caveats should be borne in mind when assessing the estimation results.

21. We find that the five-year average structural current account surplus is about 1.3 percent for Sri Lanka, and the underlying current account to be about 1.7 percent deficit.¹¹ This latter estimate takes into account the effect of the output gap, remittances, and trade responses to past REER changes. There is therefore a 3 percent adjustment needed in the current account to achieve internal and external balance, which could be achieved by a mixture of mobilizing remittance transfers and adjustments in the trade balance. If we assume this is completely borne by the adjustments in the trade balance, then based on the estimated elasticities, a REER depreciation of about 10–13 percent is needed. On the other hand, given Sri Lanka’s development path, a balanced structural current account may be more appropriate. This would require a 1.7 percent adjustment in the underlying current account and a REER depreciation of about 7–8 percent.

The macroeconomic balance approach suggests that the current REER may be moderately overvalued in the range of 7–13 percent.

E. Structural Competitiveness

22. Indicators of Sri Lanka’s structural competitiveness compare favorably with those in the region. Access to telecommunications is one of the highest in South Asia, second only to Vietnam; and over 90 percent of the road network is paved reflecting, in part, Sri Lanka’s small geographical area. Energy sector issues confound the region as a whole, particularly the high costs of electricity and its volatile distribution; in this regard Sri Lanka is not an outlier and the government’s planned reforms in the energy sector will go some way to ameliorate these barriers to competitiveness. Sri Lanka’s institutional framework and the quality of public sector management, measured by the World Bank’s CPIA, is considered to be moderate but ranks highly compared to its neighbors in South Asia. Moreover, the perception of corruption in Sri Lanka, as measured by Transparency International, is fairly low compared with the region.

¹¹ Estimates for the underlying and structural current account are derived from coefficients from cross-country equations estimated by Isard et al (2001) for the trade equations and Chin and Hito (2005) for the savings/investment relation.

23. **Sri Lanka's business climate indicators and legal framework are also fairly competitive** (Table II.5). The number of procedures and cost of starting a business are one of the lowest in the region, and the duration (in number of days) is moderate. Similarly, enforcing contracts is cheaper and involves fewer procedures in Sri Lanka compared with other South Asian countries. These advantages have recently come to light within the international business environment which ranks Sri Lanka favorably with respect to its global competitiveness and as a location for global services: The World Economic Forum in 2006 ranked Sri Lanka (79th) as more competitive than Pakistan (91st), Bangladesh (99th) and Nepal (110th). In addition, A. T. Kearney's Global Services Location Index for 2006 includes Sri Lanka at rank 29 for being one of the top 45 off-shore locations for global services noting its widespread use of English, strong education system, and increasingly open and well-regulated business environments.

| | Starting a Business | | | Enforcing Contracts | | |
|------------|---------------------|-----------------|-----------------|---------------------|-----------------|------------------|
| | Procedure (number) | Duration (days) | Cost (% GNI pc) | Procedures (number) | Duration (days) | Cost (% of debt) |
| Sri Lanka | 8 | 50 | 9 | 20 | 837 | 21 |
| Pakistan | 11 | 24 | 21 | 55 | 880 | 23 |
| Bangladesh | 8 | 37 | 88 | 50 | 1,442 | 46 |
| Nepal | 7 | 31 | 79 | 28 | 590 | 24 |
| Cambodia | 10 | 86 | 236 | 31 | 401 | 121 |
| Vietnam | 11 | 50 | 45 | 37 | 295 | 31 |
| India | 11 | 35 | 74 | 56 | 1,420 | 36 |
| Bhutan | 10 | 62 | 17 | 34 | 275 | 20 |

Source: World Bank, *Doing Business 2006*.

F. Assessment and Policy Recommendation

24. **The analysis presented in this paper indicates that Sri Lanka's external competitiveness is adequate.** Estimates of the equilibrium REER using various approaches indicates that the current level of the REER is broadly in line with economic fundamentals. The appreciation in the REER over 2005–2006 reflected a moderate deviation from the long run path, driven by high domestic inflation and intervention in the foreign exchange markets to limit nominal depreciation. These effects have begun to unwind in the first half of 2007 when the REER depreciated by about 1.5–2.5 percent. While export growth had declined slightly in real terms over 2005–2006, they have rebounded in the first half of 2007, led by growth in the apparel and textiles. The tradable goods sector also continues to enjoy relatively high profit margins, which may be an indication of Sri Lanka's comparative advantage in certain commodity markets.

25. **Nevertheless, greater exchange rate flexibility is essential to safeguard reserves in light of Sri Lanka's near-term external risks.** Given the persistent nature of high oil prices, a rising debt service burden going forward, and low levels of reserves, growing

pressures on the foreign exchange market could occur in the period ahead and should not be resisted. In this context, greater flexibility in the nominal exchange rate is advisable, while limiting intervention to smoothing excessive volatility. This would go some way to contain external vulnerabilities and safeguard reserves.

26. **Ultimately, although competitiveness may not be of immediate concern, it warrants monitoring going forward.** The export base remains narrow, vulnerable to global commodity and apparel price changes, and dependent on preferential access for market share. Moreover, Sri Lanka's labor productivity is low by regional standards and the internal terms of trade are skewed towards the nontraded sector suggesting that investing in the tradable sector is becoming increasingly less attractive. Looking forward, ensuring peace and macroeconomic stability will be key to attracting the needed foreign direct investment to develop the export sector, necessary for economic development and transition to an emerging market economy.

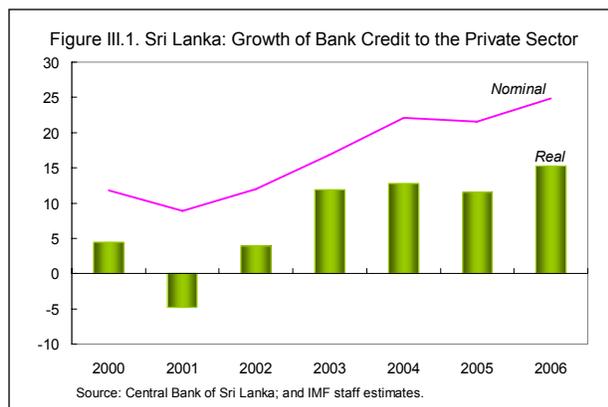
REFERENCES

- Balassa, Bela, 1964, "The Purchasing Power Parity Doctrine: A Reappraisal," *Journal of Political Economy*, 72, pp. 584–96.
- Chinn, Menzie and Iro Hito, 2005, "Current Account Balances, Financial Development, and Institutions: Assaying the World's Savings Glut," NBER Working Paper 11761 (Cambridge Massachusetts: National Bureau of Economic Research).
- Clark, Peter, and Ronald MacDonald, 1999, "Exchange Rates and Economic Fundamentals: A Methodological Comparison of Beers and Feers," in J. Stin and R. MacDonald (eds.) *Equilibrium Exchange Rates* (Kluwer: Boston), pp. 285–322.
- Edwards, Sebastian, 1989, "*Real Exchange Rates, Devaluation and Adjustment*," (Cambridge: MIT Press).
- Hinkle, Lawrence E. and Peter J. Montiel, 1999, "*Exchange Rate Misalignment—Concepts and Measurement for Developing Countries*," World Bank Research Publication (Oxford: Oxford University Press).
- Isard, Peter, Hamid Faruquee, Russell Kincaid, and Martin Fetherston, 2001, "Methodology for Current Account and Exchange Rate Assessments," *Occasional Paper* No. 209 (Washington: International Monetary Fund).
- MacDonald, Ronald, 1997, "What Determines Real Exchange Rates?: The Long and The Short of It", *International Financial Markets, Institutions and Money*, 8, 117–53.
- MacDonald, Ronald, 2007, "*Exchange Rate Economics: Theories and Evidence*", (London and New York: Routledge).
- Samuelson, Paul A., 1964, "Theoretical Notes on Trade Problems," *Review of Economics and Statistics*, 46, pp. 145–54.

III. MACROECONOMIC CHALLENGES OF HIGH PRIVATE SECTOR CREDIT GROWTH¹

A. Background

1. **Sri Lanka has been experiencing rapid private sector credit growth, fueled by robust growth in economic activity in a low, or sometimes negative, real interest rate environment.** Over the last three years, annual growth in private sector credit has ranged between 22 percent and 26 percent, well above the 10-year average of 15 percent (Figure III.1). The credit expansion has been uneven across sectors of the economy. In particular, growth in consumer, housing, and financial sector lending surpassed 45 percent (y/y) in March 2007, raising concerns over excessive credit growth.



Robust economic activity, rising personal incomes, capital inflows, and negative real interest rates have supported this credit expansion. On one hand, this phenomenon may be simply the result of financial deepening that will benefit the economy in terms of increased efficiency and economic growth. On the other hand, the recent expansion could reflect a credit boom with implications for financial stability. This note attempts to shed some light into the causes and consequences of rapid credit growth and key policy challenges. The note concludes that while the current expansion largely reflects financial deepening, sectoral risks have increased and asset prices have risen significantly. Continued monitoring of credit indicators as well as implementation of macroeconomic and prudential measures will be warranted to prevent an overexpansion in credit that could lead to overheating pressures, asset price bubbles, and deterioration in credit quality.

2. **The main stylized facts about private credit in Sri Lanka are similar to those in other countries in the region.** Private lending is the dominant component of domestic credit, accounting for over $\frac{3}{4}$ of total credit. Flows through commercial banks constitute the most significant part of the overall intermediation, but specialized banks and finance institutions have become increasingly important and currently conduct 20 percent of all lending operations to the private sector. The share of credit extended to the private sector by state-owned banks has been declining for the last few years, in favor of domestic and foreign private banks, and currently stands at about 31 percent. In terms of maturity, more than half of all loans extended by commercial banks are short term (less than one year), albeit this share has been declining slowly since the 1990s. The main destination sector of private credit is trading (29 percent), followed by consumer loans (19 percent) and housing loans

¹ Prepared by Marta Ruiz-Arranz.

(16 percent). About 25 percent of total lending is in foreign currency, backed largely by foreign currency deposits (FCDs). The ratio of FCDs to rupee deposits has remained relatively stable over the past 5 years, at around 28 percent, but the stock of FCDs has increased from less than 7 percent of GDP in 1999 to around 8 percent of GDP currently.

B. Is This Rapid Credit Growth a Phenomenon of Financial Deepening?

3. **Bank credit to the private sector (BCPS) as ratio to GDP has increased during recent years, but it is still low compared to India and other emerging countries in Asia.** At about 34 percent of GDP, Sri Lanka's credit ratio is slightly above the average for low-income countries in Asia, but significant below the ratio in India (53 percent) and in emerging Asia (91 percent).² The cumulative change in the BCPS from 2000–06 was about 5½ percentage points, compared to 13 percent of GDP on average for low income Asia and 19 percent of GDP for India. When credit growth starts from a lower base, one can broadly expect that a high growth rate may be sustainable for a longer period. This is a phenomenon shared largely with other countries in the region, including Bangladesh, Nepal, and Cambodia (Table III.1).

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | Average 2000–06 | Change 2000–06 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------------------|-------------------|
| Sri Lanka | 28.97 | 28.19 | 28.09 | 29.49 | 31.26 | 32.59 | 34.35 | 30.42 | 5.37 |
| Low-income Asia | 19.19 | 21.35 | 22.56 | 25.24 | 27.83 | 29.97 | 31.92 | 25.44 | 12.73 |
| Bangladesh | 22.89 | 24.92 | 27.12 | 29.22 | 31.15 | 32.16 | 34.22 | 28.81 | 11.33 |
| Bhutan | 6.35 | 10.62 | 11.29 | 13.86 | 15.94 | 18.64 | 18.34 | 13.58 | 11.99 |
| Cambodia | 6.37 | 6.01 | 6.32 | 7.32 | 7.95 | 9.37 | 12.44 | 7.97 | 6.07 |
| Lao | 16.76 | 17.80 | 14.31 | 10.98 | 10.19 | 9.24 | 8.08 | 12.48 | -8.68 |
| Nepal | 31.08 | 33.18 | 33.52 | 35.63 | 37.39 | 39.31 | 42.39 | 36.07 | 11.31 |
| Mongolia | 5.87 | 10.80 | 16.71 | 27.06 | 30.01 | 32.56 | 34.36 | 22.61 | 27.61 |
| Vietnam | 35.26 | 39.29 | 43.13 | 48.37 | 58.72 | 65.90 | 71.20 | 51.70 | 35.94 |
| Emerging Asia | 88.36 | 88.72 | 90.68 | 92.18 | 90.44 | 90.25 | 91.21 | 90.27 | 2.85 |
| ASEAN-4 | 80.96 | 78.91 | 78.83 | 75.11 | 72.87 | 70.75 | 67.21 | 74.95 | -13.75 |
| NIEs | 125.50 | 129.32 | 126.23 | 127.59 | 125.38 | 127.83 | 129.84 | 127.38 | 4.34 |
| China | 112.32 | 111.26 | 118.85 | 127.15 | 120.09 | 113.94 | 114.39 | 116.86 | 2.07 |
| India | 34.66 | 35.41 | 38.82 | 38.89 | 43.43 | 48.49 | 53.41 | 41.87 | 18.76 |

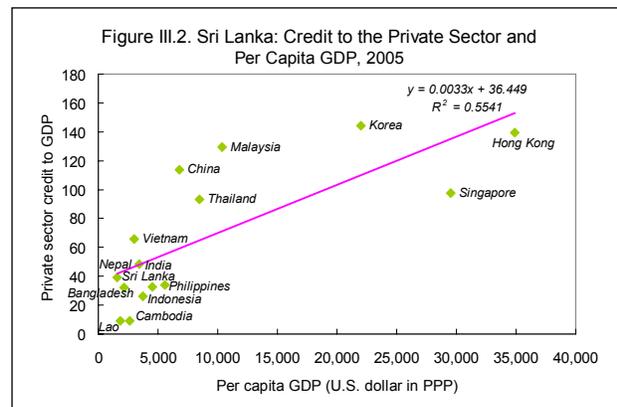
Source: CEIC Data Company Ltd.

4. **The recent increase may reflect, therefore, a catch-up effect from low levels.** Indeed, the BCPS ratio is below the “equilibrium level” estimated for other emerging

² Low-income Asia includes Bangladesh, Bhutan, Cambodia, Lao PDR, Mongolia, Nepal, Sri Lanka, and Vietnam.

economies. For instance, Cotarelli and others (2003), Schadler and others (2005), and Tiffin (2006) estimate equilibrium credit to GDP ratios for transition economies in Europe and find that the predicted long-term values range between 65 and 75 percent. In addition, the BCPS ratio has not deviated substantially from its stochastic trend, suggesting that Sri Lanka is not currently experiencing a lending boom but increased intermediation that is consistent with the historically normal pace of credit growth. In Gourinchas and others (2001) a lending boom is defined as an episode where the BCPS ratio deviates from a rolling backward looking, country-specific trend that represents the historically “normal” pace of credit growth. Applying a Hodrik-Prescott (HP) filter to Sri Lanka’s BCPS ratio for the period 1970–2006, the absolute deviation of the BCPS ratio from the trend component in 2006 was estimated at 1.8 percent of GDP and the relative deviation was 5.4 percent. These values are considerably below the threshold risk levels considered in the paper—ranging from 4.8 percent to 6.4 percent of GDP for absolute deviations, and from 24.9 percent to 31.1 percent for the relative ones.³

5. **The behavior of credit growth in real terms also suggests that the observed lending expansion may not be a lending boom.** Real private credit growth has only ranged between 11½ percent and 15¼ percent since 2003. In Mendoza and Terrones (2004) a credit expansion in a given country is identified as a boom if real credit growth exceeds the standard deviation of that country’s credit fluctuations around trend (estimated using the HP filter) by a factor of 1.75.⁴ In Sri Lanka this threshold level is estimated at around 23 percent, which is significantly above the 14 percent real growth realized in 2006.



6. **Sri Lanka’s private sector credit to GDP ratio is expected to increase further as its GDP per capita improves.** As the literature has established, there exists a positive relationship between the level of economic development (measured by GDP per capita) and financial sector depth (measured as credit to the private sector to GDP). A simple regression analysis for low income and emerging Asia, suggests that Sri Lanka has a credit to GDP ratio lower than would be expected given its level of economic development (Figure III.2). This is also the case for other LICs in Asia, including Laos, Cambodia, and Bangladesh and two of

³ This result is robust to changes in the sample period.

⁴ The threshold is motivated by the fact that, if yearly credit deviations from trend were normally distributed, there would be a 5 percent probability of observing these extreme values.

the ASEAN-4 economies (Indonesia and Philippines). Sri Lanka's transition towards emerging economy is, therefore, expected to be associated with an increase in both the demand and the supply for credit. Improvements in the financial infrastructure, adoption of new banking supervision and regulation practices (Basel II) as well as improvements in the legal framework relating to the financial system will greatly facilitate the supply of credit while containing underlying risks. In addition, the planned mega infrastructure projects, expansion in foreign direct investment and increased market liberalization are among the demand factors that will continue to support the expansion of domestic credit in the near term.

C. Risks Associated with Rapid Credit Growth

7. **Strong credit growth could increase macroeconomic risks and undermine financial stability.** Empirical evidence for other regions suggests that episodes of rapid credit growth have often been associated with an overheating economy and a worsening of the current account. Overheating pressures could lead to inflation, and rising current account imbalances. When the level of external debt is high and reserves are below comfortable levels, rapid credit growth could make the economy vulnerable to sudden stops and balance of payment crises. Besides its impact on macroeconomic stability, rapid credit expansion can have important implications for financial stability. This will require banks' risk management systems to be able to keep pace, thereby preventing lower credit standards and lower average quality of borrowers. Increased household indebtedness and loan concentration to specific sectors of the economy can also add to vulnerabilities. How is Sri Lanka managing the risks associated to rapid credit growth?

8. **In recent years, increased intermediation in Sri Lanka has been accompanied by improvements in credit quality.** Standard indicators of banking sector soundness are relatively strong. In particular, the quality of banking sector assets, measured by the volume of non performing loans (NPLs), has improved significantly and provisioning has increased by 60 percent since 2001. In December 2006, the NPL of commercial banks stood at 5.6 percent (from 14½ percent in 2002), while the net NPL ratio went below 2 percent. Most recent data for the first half of 2007 suggest that NPLs are maintained around the same level despite the strong growth in loans. Other indicators of capital adequacy and profitability have also risen (Table III.2). These improvements have been broad-based and observed in domestic, foreign as well as state-owned banks. The backward looking nature of these indicators, however, precludes an assessment of the impact of the most recent expansion on credit quality. Rapid credit growth may raise concerns about the future health of the banking sector and this calls for caution as regards assessing recent developments.

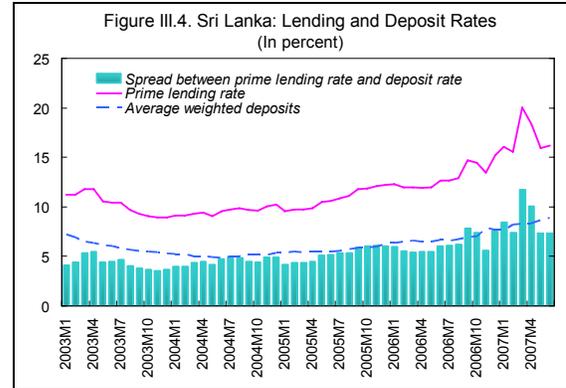
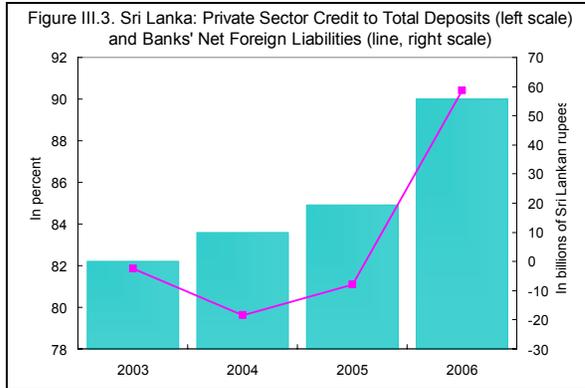
| | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------------------|------|------|------|------|------|
| Gross Nonperforming ratio | 14.3 | 12.3 | 9.1 | 7.0 | 5.7 |
| Net Nonperforming ratio | 7.4 | 5.4 | 3.3 | 2.4 | 1.9 |
| Core capital ratio (Tier 1) | 11.7 | 11.3 | 11.4 | 13.2 | 12.2 |
| Capital adequacy ratio | 12.3 | 11.9 | 11.4 | 13.4 | 13.5 |
| Return on assets | 1.4 | 1.7 | 1.7 | 1.9 | 1.9 |
| Return on equity | 19.0 | 21.8 | 18.1 | 16.4 | 17.4 |

Source: Central Bank of Sri Lanka.

9. **Notwithstanding the good performance on bank soundness indicators, stress tests reveal vulnerabilities to credit risk and interest rate shocks.**⁵ It is estimated that if 10 percent of all borrowers in each loan category were reclassified and downgraded by one notch in all banks, the banking system would not be severely undercapitalized on average, but more than half of the banking system assets would undergo a reduction in their capital adequacy ratio below the 10 percent minimum capital requirement. In addition, more than half of the banking system assets are highly vulnerable to changes in interest rates due to large maturity mismatches between assets and liabilities in some large banks.

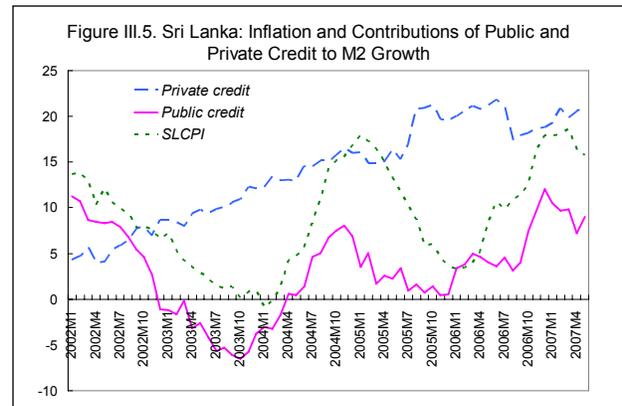
10. **The recent acceleration in credit growth also poses liquidity risks as the growth of deposits has been outpaced by that of loans.** The ability of banks to mobilize deposits has deteriorated as suggested by the large increase in credit to deposit ratios, by 6 percentage points in 2006 alone (Figure III.3). Banks have increased the share of their assets devoted to private credit (from 44 percent in 2002 to 57 percent in May 2007) and reduced the share of their deposit liabilities. Stress tests suggest that most banks' liquidity positions would not be able to withstand moderate shocks to deposits and, unless additional deposit sources are mobilized, banks may face funding gaps in the near future. Underpinning the increasing trend in credit to deposit ratios are: (i) the widening spread between lending and deposits rates, which stands above 7 percent (Figure III.4); (ii) increasingly negative real interest rates during 2006; and (iii) the extensive use by commercial banks of the reverse repo facilities of the CBSL to obtain liquidity and finance the private sector during 2005–06, which reduced the incentives of the banks to attract alternative funding sources. Since January 2007, the CBSL has limited access to, and used moral suasion to discourage the usage of its reverse repo window, while allowing interbanks rates to increase substantially. This together with increased competition and efficiency in the banking sector should contribute to narrow the spread between lending and deposit rates and lead to a stronger deposit base. Furthermore, the recent moderation in inflation and the pickup in market interest rates should also have a positive impact on the growth of deposits relative to credit.

⁵ Aide-Mémoire, Sri Lanka FSAP Update, June 2007.



11. The increased reliance on foreign funding in financing credit growth may increase external vulnerabilities.

The growth of foreign liabilities has accelerated with the rapid expansion of credit, both public and private, increasing the vulnerability of the banking sector to external shocks (Figure III.3). At the same time, the foreign currency lending to foreign currency deposit ratio has increased from 79 percent in March 2005 to 111 percent in April 2007. A reversal of global conditions, including higher interest rates, could increase repayment difficulties for borrowers with substantial foreign liabilities.

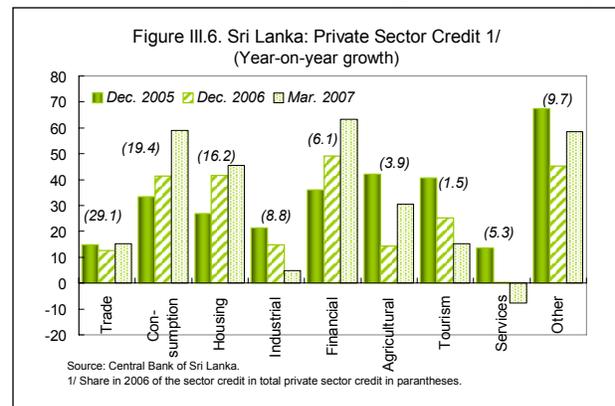


12. **Excessive private credit growth raises the risk of resurgence in inflation.** One problem with rapid credit growth is the increased liquidity in the economy that could fuel inflationary pressures. In Sri Lanka, inflation started to accelerate from mid 2006 in an environment of strong credit growth and reached 19 percent in March 2007. As suggested by Figure III.5, inflation appears to be more synchronized with public credit developments than with private sector credit—the correlation between inflation and public credit growth is 0.8, while that between inflation and private credit growth is less than 0.3—and there have been episodes where inflation was declining while private credit was accelerating. Nevertheless, close monitoring is warranted, as private credit remains the dominant contributor to M2 growth and liquidity in the economy.

13. **Sectoral risks have also increased with credit flowing to some sectors of the economy and contributing to asset price inflation.** Rising personal incomes—Sri Lanka’s GDP per capita reached \$1355 in 2006, from \$870 in 2002—has boosted households’ consumption and encouraged borrowing. Like in many other countries, the most rapid source of credit growth in Sri Lanka has been into property, and property prices have increased substantially. Mortgage and consumer lending, which account for 35 percent of total credit to the private sector, expanded by 41½ percent in 2006, well above the average aggregate credit growth, and accelerated to 60 percent and 45 percent, respectively, in March 2007 (Figure III.6). Financial sector lending is also growing extremely rapidly (60 percent in March 2007) while the services sector is experiencing negative credit growth. Very rapid credit growth, together with low loan diversification in banks’ portfolios, could accentuate credit and liquidity risks and increase the risks associated to real estate booms. Despite the lack of a real estate price index, there is evidence of buildup in asset price inflation, as suggested by the 20 percent annual growth in the cost of construction index, the 28 percent growth in land prices, and the 40 percent increase in the Colombo All Share Index during 2006.

14. **Excessive sectoral loan concentration could lead to a deterioration in household balance sheets, macroeconomic imbalances, and asset price bubbles.** This concern is compounded by other macroeconomic risks, such as resurgence of inflation, higher interest rates and worsening in the security situation, that might affect some borrowers’ capacity to repay their loans. Under these conditions, banks’ risk assessment and risk management capacities are instrumental to avoid misallocation of credit and a decline in the average quality of borrowers.

15. **Other risks could stem from increased pressures to the current account associated with higher imports.** During the second half of 2006 and first quarter of 2007, growth in consumer goods imports—that account for 20 percent of non-oil imports—was particularly strong (monthly average of over 30 percent). Higher wages and robust growth in remittances may have contributed to this strong growth, but it is crucial to continue monitoring consumer lending in order to identify potential risks. There is also evidence that investment imports are picking up (25 percent growth y/y in May 2007) and are expected to continue strong as implementation of the mega infrastructure projects keeps pace.



D. Policy Options

16. **The policy response over concerns about excessive credit growth should in general include macroeconomic as well as prudential measures.** In Sri Lanka, as elsewhere, a higher rate of growth can be sustained longer with positive impact in terms of financial development and growth if the monetary and financial systems are well managed. In this sense, the recent monetary tightening by the CBSL and the set of prudential regulations implemented during 2006 and 2007 are likely to have a positive impact on limiting financial sector risks and vulnerabilities. These measures include strengthening the requirements on classification and provisioning of NPLs (a general provisioning requirement of 1 percent was imposed on all performing advances of commercial banks), the introduction of a capital charge for market risk, and prudential norms for classification and valuation of the bank's investment position. Furthermore, risk weights in respect of loans secured by primary mortgages over residential properties were increased and maximum limits of accommodation granted by banks were revised to address credit concentration risks. Going forward, the tight monetary stance should continue and prudential regulations should be strengthened to contain excessive exposures of banks to sectoral risks, improve their risk management infrastructure, and maintain underwriting standards for consumer loans, including credit card operations.

17. **Implementation of macro stress testing is also instrumental to assess the resilience of the banking and financial sector and to assess sectoral risks.** This could be supported by the implementation of Basel II in 2008, which is likely to address many of the banking credit risk concerns, as it requires banks to allocate enough capital on account of risks. Since bank lending behavior tends to be procyclical, it is important not to underestimate risks during the expansionary phases of the business cycle, as the one experienced in recent years in Sri Lanka. Credit standards should be tightened during these phases to avoid credit losses when the economic downturn occurs.

18. **Since credit booms are not easy to identify, rapid credit growth should be a source of concern when it is accompanied by growing macroeconomic or financial imbalances.** Credit booms are usually associated with investment booms, higher current account deficits, increased banks' credit to deposit ratios, and increases in the price of nontradable goods and real state. These constitute warning signs for policy action.

E. Conclusion

19. **The key policy question is how to minimize the risks of overheating and banking sector distress while taking advantage of the growth and efficiency gains derived from financial deepening.** Sri Lanka has been experiencing for some time now credit growth above its historical average. While this can largely be associated with financial deepening, the cyclical upturn and favorable external financing conditions, it has raised concerns because loan concentration has increased. Rapid growth is expected to continue as

Sri Lanka's GDP per capita increases. This phenomenon might not necessarily be harmful for financial sector health if banks' risks management systems are well functioning and appropriate macroeconomic policies are implemented. Close monitoring of credit indicators, in particular lending to the household sector, is needed to assure that Sri Lanka continues to reap the benefits of financial deepening without undermining macroeconomic and financial stability.

References

- Cotarelli, C., G. Dell’Ariccia, and I. Vladkova-Hollar, 2003, “Early Birds, Late Risers, and Sleeping Beauties: Bank Credit Growth to the Private Sector in Central and Eastern Europe and the Balkans,” *Journal of Banking and Finance*, Vol. 29 pp. 83–104.
- Enoch C., and I. Otker-Robe, 2007, *Rapid Credit Growth in Central and Eastern Europe: Endless Boom or Early Warning?* (Washington: International Monetary Fund).
- Gourinchas, P., R. Valdes, and O. Landerretche, 2001, “Lending Booms: Latin America and the World,” *Economia*, Vol. 1, pp. 47–99.
- Hilbers, P., I. Otker-Robe, C. Pazarbasioglu, and G. Johnsen, 2005, “Assessing and Managing Rapid Credit Growth and the Role of Supervisory and Prudential Policies,” IMF Working Paper 05/151 (Washington: International Monetary Fund).
- International Monetary Fund, 2004, “Are Credit Booms in Emerging Markets a Concern?,” in *World Economic Outlook: April 2004, Advancing Structural Reforms*, World Economic and Financial Surveys (Washington).
- Lueth, E., 2005, “High Interest Spreads in the Banking Sector—Causes and Remedies,” in *Sri Lanka—Selected Issues*, IMF Country Report No. 05/337 (Washington: International Monetary Fund).
- Schadler, S., P. Drummond, L. Kuijs, Z. Murgasova, and R. van Elkan, 2005, “Credit Booms: Risks and Responses,” in *Adopting the Euro in Central Europe: Challenges of the Next Step in European Integration*, IMF Occasional Paper No. 234 (Washington: International Monetary Fund).