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Sri Lanka

From Peace Dividend to Sustained Growth Acceleration

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Abstract

Following the cessation of hostilities in May 2009, the Government of Sri Lanka has announced a suitably ambitious macroeconomic vision to capitalize on the peace dividend. Its goals include growing at 8 percent or more per year and lowering government indebtedness from around 80 to 60 percent of GDP by 2015. This paper's main finding is that while some post-conflict bounce is only to be expected, sustaining high growth presents significant challenges. A substantial rise in the national investment and savings rates will be needed to sustain growth rates of 8 percent even when accompanied by a significant rise in total factor productivity growth. With the government's balance sheet constrained by its desire to lower public indebtedness, private investment will need to become the engine of growth. This places high priority on better infrastructure, clear signals about the relative roles of the public and private sectors, and hard budget constraints and competition both to strengthen the investment climate and spur technological upgrading in pursuit of faster productivity growth.

Sri Lanka: From Peace Dividend to Sustained Growth Acceleration

Daminda Fonseka, Brian Pinto, Mona Prasad and Francis Rowe[1]

I.   INTRODUCTION

The cessation of hostilities in May 2009 presents an historic opportunity for Sri Lanka to embark on an economic trajectory filled with new and abundant promise for all its citizens. In this paper, we define policy priorities designed to convert the momentum from Sri Lanka's peace dividend into a sustained growth acceleration. By a "sustained growth acceleration" we mean growing at rates substantially higher than the historical average of 5.0 percent (see Figure 1) for a prolonged period of time. Indeed, the centerpiece of the government's economic vision is attaining and maintaining a medium-run target of 8 percent growth or more.[2]

Figure 1. Sri Lanka: Real GDP Growth
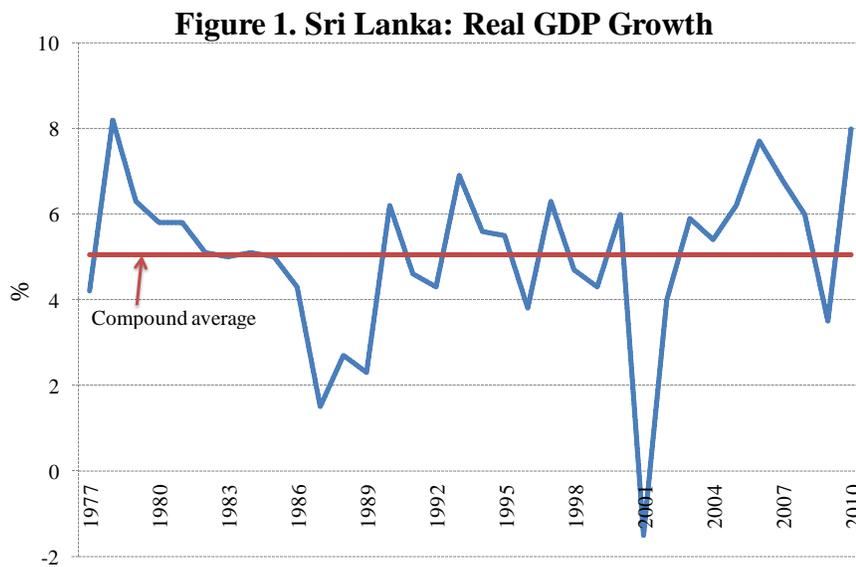
Source: Central Bank of Sri Lanka (CBSL)

The economic growth literature distinguishes between growth accelerations that are sustained and those that are unsustainable (Hausmann, Pritchett and Rodrik 2005). Sustained growth accelerations are associated with fundamental economic reform, while unsustainable growth accelerations are associated with positive external shocks and financial sector liberalization. Nevertheless, both types of growth accelerations are driven largely by

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[2] In fact, real GDP growth touched 8 percent in 2010 compared to an average of 5 percent over the previous 10 years 2000-09; but this was in part because of a rebound from the effects of the global financial crisis. Similarly, while growth in 2011 is estimated at a little over 8 percent, the compound average growth rate over the three years 2009-11 is around 6.5 percent.

idiosyncratic, and many times, country specific causes. Moreover, growth accelerations are more likely for poorer countries, i.e. convergence forces come into play. Perhaps the most encouraging finding is that growth accelerations are fairly common.

Section II sets out three channels for the peace dividend: reintegration of conflict-affected areas; macro-fiscal; and microeconomic. While the three channels will interact with and complement each other, our assessment is that the first two are more likely to contribute to a one-time positive shift in output levels than a sustained increase in the growth rate. The microeconomic channel and the private sector are likely to be the most powerful at the margin in delivering a sustained growth acceleration via an increase in total factor productivity (TFP) growth. There are two reasons for this: first, the government's balance sheet is highly constrained by its high indebtedness and its desire to reduce this. Second, experience from countries as diverse as India, Kenya and Poland indicate that profit-maximizing firms operating in an atmosphere of competition, hard budget constraints and competitive real exchange rates offer the best hope for upgrading technology and efficiency in pursuit of faster productivity growth. Import competition has been a particularly important spur.

Section III explores the government's debt dynamics systematically—not simply because the government wants to reduce its indebtedness but because a sustainable fiscal position is a necessary underpinning for fast, long run growth.[3] We show that the impressive reduction in the government's debt-to-GDP ratio between 2002 and 2010 was driven in important part by the inflation tax on debt, helped by a pick-up in growth. In view of the low inflation target, reducing indebtedness further must rely much more on sustained and even faster growth.

Section IV presents results from a growth simulation exercise asking what level of national savings is needed for meeting the government's growth target. The results show that a

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[3] Sustainable debt dynamics and moderate indebtedness reduce macroeconomic uncertainty, lower the chances of crowding out and create fiscal space both for key public investments as well as allowing countercyclical fiscal policy.

substantial rise in national savings will be needed to deliver 8 percent growth. This will be made easier by increasing government savings and creating conditions for a big increase in productivity growth. The private sector will need to play a key role in the latter and this brings us to section V on the microeconomic foundations of growth. Section VI concludes with a summary of policy priorities.

The results in this paper are derived from a combination of the Government of Sri Lanka's (GoSL) macro-fiscal vision, cross-country experience from fast-growing economies and economic theory. GoSL's key macro-fiscal targets are as follows:[4]

- Double per capita income from US $2000 in 2009 to US $4000 by 2016

- Reduce government debt-to-GDP from 81 percent in 2010 to 60 percent in 2015

- Raise government savings from minus 2-3 percent of GDP to plus 1.5 percent

- Aim for inflation based on GDP deflator of 6 percent per year

- Target growth at 8 percent per year over the medium run.

II.   CAPITALIZING ON THE PEACE DIVIDEND

In principle, the peace dividend for Sri Lanka would flow through the following channels:

- Reintegration channel: The reintegration of the war-torn North and East into the economy would fuel a natural expansion of output.

- Macro-fiscal channel: This would exert positive benefits through two sub-channels. First, real interest rates on government borrowing would tend to decline along with sovereign risk premia (see Figure 2) while the currency would tend to appreciate as capital flowed in to take advantage of 'undervalued' Sri Lankan assets, financial and real. As a result, the

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[4] *Source:* Roadmap, Central Bank of Sri Lanka

government's debt dynamics would improve. Second, the government would be able to reduce security-related spending and increase development spending.

- Microeconomic channel: Longer business horizons and the falling cost of capital for the private sector facilitated by growing political stability and fiscal consolidation would strengthen the microeconomic foundations for growth.   Rising confidence would make Sri Lanka a more attractive destination for FDI, prompt foreign buyers to source more of their purchases from Sri Lanka and push established domestic businesses to explore diversification into new areas. The net result would be an increase in investment and faster growth.

Figure 2. Sri Lanka: Declining Sovereign Risk

The graph plots the Sri Lankan government bond spread minus the average emerging market sovereign bond spread and is meant to capture Sri Lanka specific risk

Conflict Ends May 2009

Source: World Bank GEM
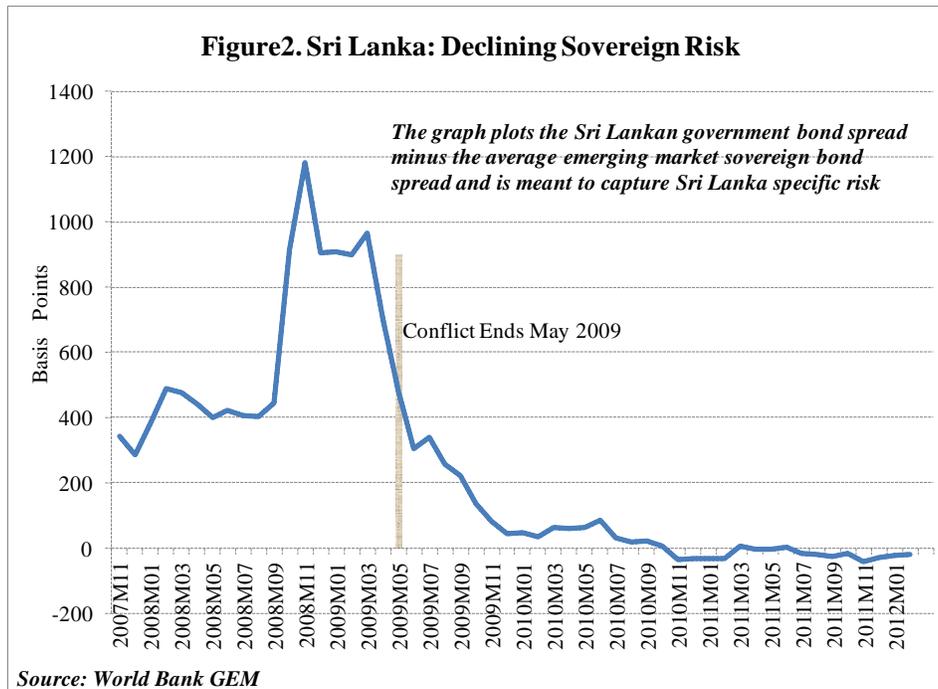
The strength of the reintegration channel would depend upon how important the North and East were in income generation prior to the conflict and how quickly economic activity there can pick up. Prior to the onset of the war in 1983 the North and East Provinces accounted for a small share of national output and employment. In 1983, the contribution to national industrial value added of both provinces was less than 10 percent (approximately 2 percent of GDP), while

the employment shares were also less than 10 percent of total employment in the economy.[5] The structure of the economy was dominated by agriculture – 33 percent of total output and 80 percent of employment – and the produce obtained (e.g. onions and chilies) was mainly for domestic consumption and not for export. More than one half of the country's fish catch in 1980 came from the North and the East.

During the war period, it is estimated that the area under cultivation in the North and the East fell by between 50 and 80 percent, paddy production fell off almost entirely, and industrial production virtually halted. The bulk of the reduction was concentrated in the North, while paddy production in the East was essentially unchanged over the period. Migration out of the areas took place, both to other parts of the Island and to foreign destinations, but the population share of these areas was still about 13 percent in 2001, although, the depletion of the social and economic infrastructure during the war means that the human capital stock has fallen behind the rest of the country. It is also the case that some of the agriculture activities in the North were not totally abandoned; they simply moved to other areas like Puttalam, and may not be expected to return.

With this background, the contribution of the North and the East to future economic growth prospects will likely be modest. Reconstruction activities will provide a one-time boost in growth, but beyond that it seems that small-holder agriculture and the fisheries sector will be the main sources of continued growth. Looking back at the response in the North and East after the 2002 cease fire agreement can provide some indication of what we might expect. The agriculture and fishing sectors grew more than 30 percent per year over the 2002-2004 period. The combined share of paddy production in the North and East increased by 4 percentage points to 31 percent of national production by 2003. Tourism rebounded in the East with the rebound in tourist arrivals to all parts of the country. While those developments were impressive in that the growth was broad-based and likely pro-poor, the small overall share of these provinces in country-wide GDP and employment meant that they were a modest driver of national growth.

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[5] The population in the two provinces was about 14 percent of the country's total.

To exploit the potential of the North and the East, infrastructure would need to be improved and private investors would need to take an active interest in those regions. This channel is therefore likely to mesh with the macro-fiscal channels (diversion of security spending towards infrastructure and reconstruction) and the microeconomic channel.

On the macro-fiscal channel, the relatively closed capital account combined with the dominant role of state banks acted to keep real interest rates at highly negative levels in the recent past. Going forward, the effect of falling risk premia on interest rates may be offset by growing external financial integration, keeping real interest rates at positive levels (as assumed in official medium-run projections). Therefore, the main macro-fiscal benefit is going to stem from the ability to reduce security-related spending and reverse the trend decline in revenue mobilization (in important part by eliminating the tax breaks doled out by the Board of Investment, which should no longer be needed to compensate for the erstwhile risky environment). This would facilitate achieving the large increase in public savings needed for sustainable rapid growth.

While falling risk premia may not have large benefits for the government in terms of lower real interest rates, the impact on the private sector would be beneficial to the extent that it was implicitly subsidizing the borrowing costs of the government. Overall, given longer horizons and greater stability, the microeconomic channel could become a powerful channel for the peace dividend and sustainable long run growth as firms invest in new technology and branch out into new areas, spurring faster TFP growth.

As noted earlier, the three channels for the peace dividend are linked and complementary. Eventually, their overall contribution to Sri Lanka's growth prospects will depend on improvements in the country's growth fundamentals. Box 1 spells out the ramifications of the term 'growth fundamentals' for Sri Lanka.

Box 1: Growth Fundamentals in Sri Lanka's Context

In Sri Lanka's case, a distinction is worth making between factors which will result in a one-time upward shift in the level of output and self-sustaining growth as a result of innovation and technological upgrading. The post-war bounce from reintegration and the full utilization of excess capacity are examples of one-time positive shifts in output.

To get onto a trajectory of sustained, faster growth, Sri Lanka will need to raise national savings rates and create conditions for faster TFP growth: an enduring result in the empirical growth literature is that long-run per capita growth is driven eventually by TFP growth. Cross-country experience indicates that a sustainable government debt trajectory is a necessary foundation for solid, long-run growth. At the microeconomic level, competition, especially from imports, and hard budget constraints will provide the incentive for profit-maximizing firms to adopt new technology, expand their product mix and find new markets, all of which will contribute to faster productivity growth. At a deeper level, meeting these requirements calls for good governance and strong fiscal, financial and judicial institutions. These are needed to ensure well-managed public finances on the one hand and the property rights, level playing field and predictable environment on the other that will give private firms, domestic and foreign, the confidence to make long-run investment commitments.

Three other Sri Lanka-specific issues are worth emphasizing:

- The critical importance of good leadership as emphasized in the Commission on Growth and Development 2009 report, in particular, the assurance of inclusion combined with a long-term development vision
- Nurturing ethnic peace and social stability
- Taking advantage of Sri Lanka's favorable geography in relation to China and India.

III. MACRO-FISCAL UNDERPINNINGS OF LONG RUN GROWTH

GoSL has set itself the target of growing at 8 percent or more per year in real terms over the medium term in pursuit of doubling per capita income to $4,000 by 2016 starting from $2,000 in 2009. How do the two targets, doubling nominal US dollar GDP per capita and achieving real GDP growth of 8 percent, mesh with each other? Box 2 goes through the accounting reconciliation. Its main point is that the doubling of per capita income from $1,000 in 2004 to $2,000 in 2009 involved a large real appreciation of the Sri Lankan rupee against the US dollar, of 7.5 percent per year; had the real exchange rate been flat, dollar income would have increased only by 40 percent and not 100 percent. Looking ahead, keeping up this pace of real appreciation would almost surely create severe competitiveness problems for Sri Lanka (see Rowe, Mishra and Rodarte 2011). Fortunately, repeating the above calculation for the period 2009 to 2016 shows that a flat real exchange rate will achieve a doubling of dollar per capita income ***provided*** the real GDP growth target of 8 percent is achieved. It almost goes without saying that lasting peace is a

pre-requisite for improvements in the country's growth fundamentals to realize better development outcomes (Chen, Loayza and Reynal-Querol 2008). In other words, Sri Lanka will have to pay close attention to the growth fundamentals outlined in Box 1.

Box 2: Doubling US dollar per capita GDP between 2009 and 2016

Per Capita GDP, US$

Source: CEIC data
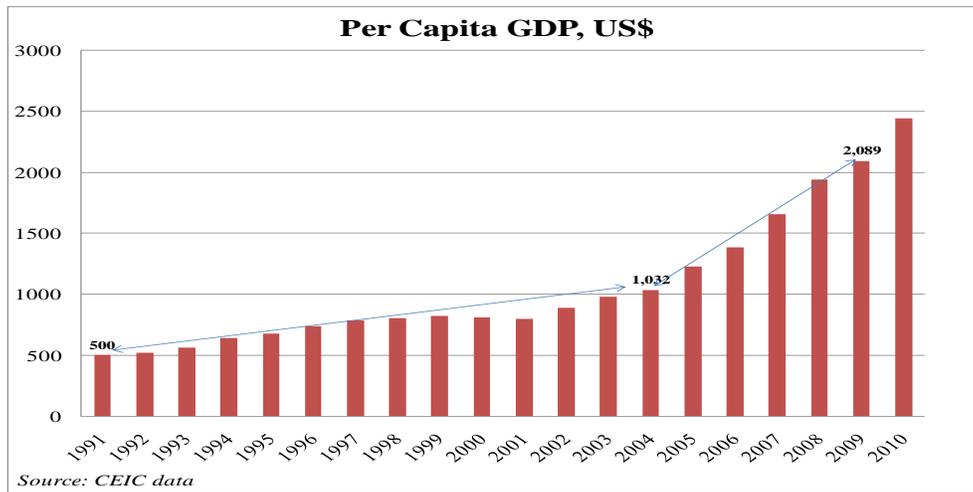
Sri Lanka took 13 years to double its nominal dollar per capita GDP from US$ 500 in 1991 to US$ 1,000 in 2004. Five years later, in 2009, per capita income had doubled once again to roughly US$ 2,000 as shown in the figure. The Mahinda Chinthana's vision is to achieve another doubling of dollar per capita income by 2016.

To get a better sense of the challenge involved, we use the following identity:

$$(1 + G\$) = \frac{(1+g)(1+\rho)(1+\pi^*)}{(1+pgr)},$$

where $G\$$ is nominal US dollar per capita growth, g is real GDP growth, ρ is the growth in the bilateral Sri Lankan rupee-US dollar real exchange rate (defined such that a positive value is an appreciation), π^* is U.S. inflation and pgr is the population growth (all compound annual average growth rates).

During the period 2004 – 2009, real GDP growth was 6 percent with the population growth rate at 1 percent, implying per capita growth of 5 percent per year. Yet dollar per capita GDP grew at a huge 15 percent per year. Assuming 2 percent US inflation, the above identity tells us that the big driver of $G\$$ was a rapidly appreciating bilateral real exchange rate, recording an annual average appreciation of 7.5 percent.

Experience from emerging markets the world over demonstrates that sustainable public finances are an essential underpinning for fast growth. Achieving low inflation rates is not enough. Public debt has to be on a trajectory deemed sustainable by the markets. Otherwise, there may be concerns about monetization of the debt and a rise in inflation, which could keep nominal and real interest rates high. This section starts by discussing broad fiscal outcomes of the past with a view to better understanding what future fiscal outcomes might look like. Next it

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looks at the management of the public finances from the prism of debt sustainability and shows how the underlying determinants of the path of the debt-to-GDP ratio ("debt dynamics") are likely to change quite drastically going forward. In particular, reducing indebtedness further will have to rely more on faster growth and higher primary fiscal surpluses than on inflation, which was a prime factor (along with moderate growth) in eroding the government debt-to-GDP ratio over 2005-08. Lastly, the implications of GoSL's medium run fiscal targets for government saving are discussed.

a. A Brief History of Fiscal Policy in Sri Lanka

Before 1977, Sri Lanka's development strategy was based on import substitution with the government aiming to create a comprehensive welfare state. Its enviable social development indicators for its stage of development testify to the importance placed on social expenditures in the budget. An extensive network of welfare expenditures and consumer subsidies was paid for with trade tax revenues. In 1985, export taxes and import tariffs made up 30 percent of revenues.

Fiscal outcomes in Sri Lanka over the past three decades display three main features. First, revenue from trade taxes has been in secular decline since 1985, reaching 18 percent of revenues in 2010 as a result of the post 1977 reforms, which liberalized external trade. Falling trade taxes led to falling fiscal revenues: government revenues as a share of GDP declined from 23 percent in 1980 to just 14 percent in 2010. The good news is that the 2011 Budget has initiated a systematic effort to increase revenue mobilization through new tax instruments and improved tax policy, including by revisiting the tax breaks provided by the Board of Investment (BOI).

Second, government subsidies to both consumers and state owned enterprises have been consistently significant in expenditures, ranging from 4 to 7 percent of GDP over the years.

 Third, since the outbreak of the conflict in 1983 defense expenditures have consumed an ever-growing share of total expenditure. With social expenditure and subsides being protected, capital spending has borne the brunt of cuts after 1980 to keep fiscal deficits under control

(Figure 3). However, these cuts were not enough to offset the decline in revenues, resulting in a fiscal deficit that has averaged 10 percent over the last thirty years.

Figure 3. Sri Lanka: Drivers of Fiscal Outcomes

(a). Government Revenues and Capital Expenditure (1977-2010)
(As a percent of GDP)

(b). Sri Lanka: Overseas Development Assistance (ODA) and Military Expenditures *(% of GDP)*

Source: CBSL
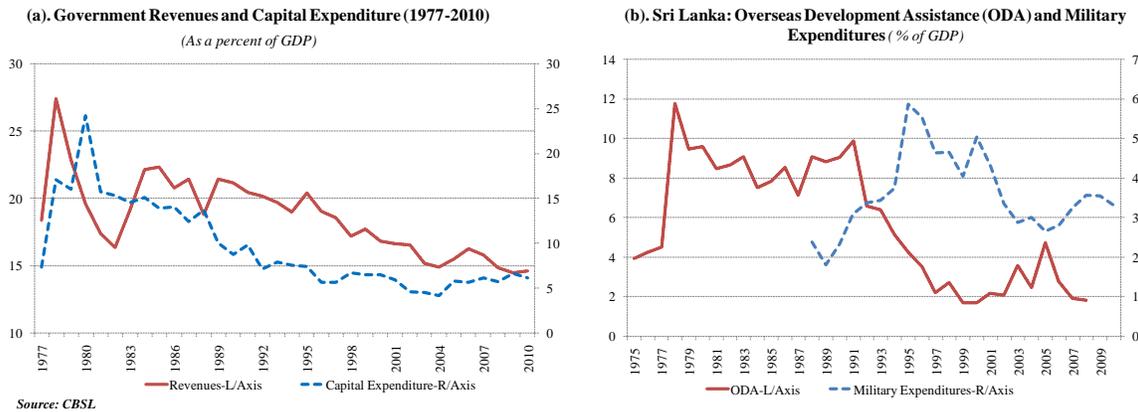
A direct consequence is that interest costs have grown from 4.6 percent of GDP in 1985 to an average 6 percent of GDP for much of the recent decade. Rising interest costs started to kick in during the 1990s when there was a dramatic fall in concessional sources of financing as the conflict intensified. Overseas development assistance fell from on average 8.5 percent of GDP in the 1980s to just 2 percent of GDP by 2000, as shown in Figure 3 (b). Non-concessional external debt and much more expensive domestic debt became the main sources of financing in these years, helping to drive up both the stock of debt and interest costs.

b. *Debt Dynamics*

We focus on government debt dynamics since the late 1990s, which have been driven by the interaction among aid inflows, the conflict, inflation and economic growth outcomes. Going forward, debt dynamics are likely to be quite different from the historical evolution described here. In particular, faster growth and raising primary fiscal surpluses will need to be the focal points if Sri Lanka is to attain its goal of reducing government indebtedness to 60 percent by 2016.

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Figure 4 plots the ratio of government debt to GDP ("debt ratio") from 1997 to 2010. It peaked at 106 percent in 2002 after rising by some 23 percentage points of GDP starting in 1997. It then fell by some 20 percentage points between 2002 and 2009.

Figure 4. Government Debt and Fiscal Deficit (1997-2010)
(% of GDP)
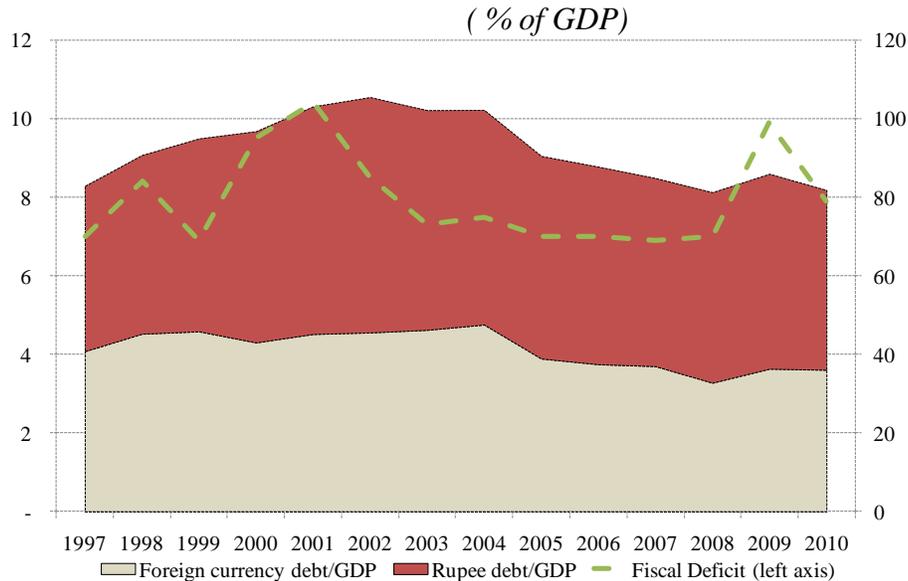
Source: CEIC data.

To get a better sense of the underlying factors driving this debt trajectory, we carried out a decomposition exercise aimed at apportioning changes in the debt ratio over the period 1998-2010 to the primary fiscal deficit, real GDP growth, the real interest rate and the real exchange rate.[6] In addition to these main drivers of debt dynamics, the effect of revenues from privatization ('divestment') and other, unidentified factors are shown in the last two rows of Table 1. The way to interpret the numbers in the table is as follows: the first row gives the actual change in the debt ratio for each sub-period in percentage points of GDP per year (the reason for such "annualization" is that the sub-periods are not equal in length). For example, over 1998-2004, debt increased by an average rate of 2.8 percentage points of GDP per year, while it fell by some 3 percentage points per year over 2006-08. The numbers in the other rows give the average annual impact of each underlying factor for each sub-period in percentage points of GDP: a

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[6] The technical details and derivations can be found in the appendix to Aizenman and Pinto (2005).

positive (negative) number means that the factor concerned raised (lowered) the debt ratio during that sub-period.

Table 1 : Factors Explaining Government Debt to GDP Path[a/]

	1998-2004	2005	2006-08	2009-2010
Change in Government Debt / GDP	2.76	-11.72	-3.08	0.28
Underlying factors:				
Primary balance	2.17	2.13	1.95	2.55
Real GPD growth	-3.79	-6.01	-5.62	-4.57
Real Interest Rate	*1.68*	*-1.36*	*-1.11*	*2.49*
Real Exchange Rate	*0.81*	*-3.92*	*-1.98*	*-2.48*
Privatization	-0.3	-0.04	0	0
Other factors	2.19	-2.84	3.58	2.30

[a/] The numbers in the table are the *average annual* impact of each factor for each sub-period of time in percentage points of GDP.
Source: CBSL Annual Reports, Bank staff calculations.

If we compare the debt build-up phase, 1998-2004 (when debt rose sharply and stayed above 100 percent of GDP until 2004) with the subsequent rapid decline over 2005-2010:[7]

- The primary fiscal deficit hovered around 2 percent of GDP—there was not significant change here

- Faster growth over 2005-2010 resulted in an *additional* erosion in the debt ratio equal to 1.5 percentage points of GDP per year (-3.8 over 1998-2004 compared to -5.3 over 2005-2010)

- Combined real interest rate and real exchange rate impact went from +2.5 percentage points of GDP over 1998-2004 to -2.4 percentage points over 2005-2010, a swing of close to 5 percentage points per year. This was the biggest factor by far and explicable largely by a pick-up in inflation, as we shall see below.

Almost half of the 24 percentage point reduction in the debt ratio between 2002 and 2010 occurred that year, which followed the devastating tsunami of December 2004. Nominal interest rates dropped significantly and the currency appreciated in nominal and real terms as aid inflows

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[7] These observations are based on comparing the numbers for 1998-2004 with those for 2005-2010. The reason for splitting up the latter period in Table 1 will become apparent below.

surged by 2 percentage points of GDP. Inflation rose to double-digit levels. The drop in real interest rates to negative levels and the appreciation of the real exchange rate explain almost half the fall in the debt ratio that year; while a pick-up in growth as tsunami-related reconstruction began explains the rest of the decline.

After 2005, ODA flows declined, the conflict intensified and domestic inflation started to accelerate in part due to the international food and fuel prices crisis of 2007-08. Real exchange rate appreciation and a decline in real interest rates continued to play an important role in reducing the debt ratio during 2006-08. Again, robust real GDP growth pulled the ratio in the same direction, while the primary deficit acted to halt an otherwise bigger decline in the ratio.

The years 2009-10 are isolated for two reasons. First, these years reflect the impact of the global financial crisis on Sri Lanka and the subsequent rebound from it; growth fell to 3.5 percent in 2009 and then accelerated to 8 percent part of which may be explicable by the peace dividend. Second, these years provide the first hint that the debt dynamics in Sri Lanka are about to change in fundamental ways. Overall, the debt ratio remained largely unchanged from its 2008 level of 81 percent of GDP. As in the previous two periods, the strong appreciation of the real exchange rate reduced the debt burden, but unlike in the past, the real interest rate effect increased it by an almost offsetting amount.

c. *Role of Inflation*

This brings us to a critical point: inflation has played a significant role in reducing the debt ratio since 2005. Figure 5(a) depicts the composite real interest rate over the period 1998 to 2009; the composite real interest rate captures the joint impact of real interest rates and the real exchange rate on total indebtedness, foreign currency and rupee.[8] It was consistently positive

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[8] See technical annex for derivation. The advantage of working with the composite real interest rate is that it readily enables a comparison with the real interest rate used for projections of the debt ratio into the future—which are often done in a single currency environment (note that Table 1 separates the real interest rate and exchange rate effects).

until 2005, when it entered strongly negative territory as inflation picked up during the years 2005-08 and became a major factor in the erosion of the debt ratio.

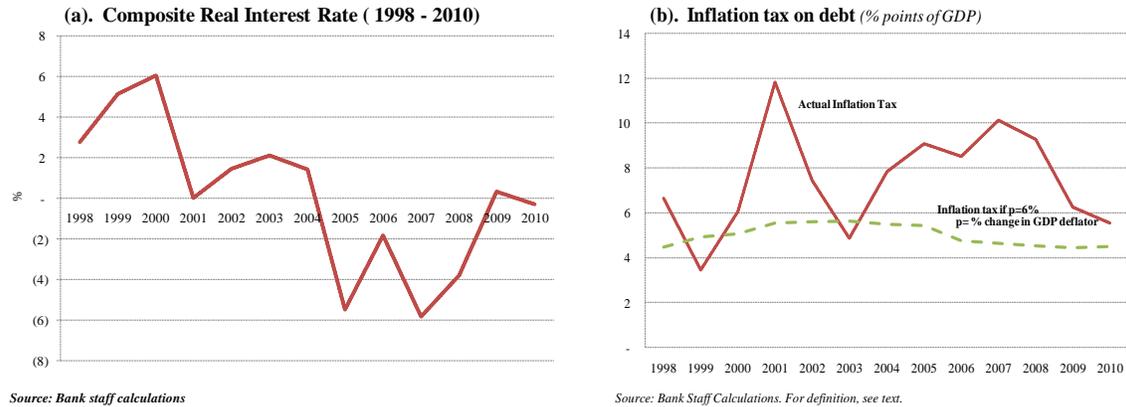**Figure 5. Sri Lanka: Inflation and Debt Dynamics**

(a). Composite Real Interest Rate (1998 - 2010)

(b). Inflation tax on debt *(% points of GDP)*

Source: Bank staff calculations

Source: Bank Staff Calculations. For definition, see text.

Figure 5 (b) depicts the implicit revenues secured by GoSL from inflation, labeled "inflation tax on debt", which averaged a huge 9 percentage points of GDP per year over the four years 2005-08. There is no free lunch: if inflation persists, rational investors in government securities would soon demand higher nominal interest rates and the rupee would tend to depreciate, reducing the effective proceeds from the inflation tax. For example, the proceeds from the inflation tax on debt were close to 12 percent of GDP in 2001 but neutralized by high nominal interest rates and a large depreciation of the rupee (leading to a zero composite real interest rate as shown in Figure 5(a)). But this was not the case over 2005-08, leading to large, negative composite real interest rates over this period. Three reasons for the relatively muted response of nominal interest rates and the exchange rate might be the large inflow of foreign aid after the tsunami; the dominant role of state banks in the domestic government debt market combined with the unseemly optics of demanding high nominal rates during a war effort; and the relatively closed capital account, limiting the menu of alternative investments.

Going forward, the situation promises to be dramatically different. The composite real interest rate being assumed by GoSL in its medium-term program is *plus* 3 percent, indicating that it is not banking on negative real interest rates. This incorporates a major switch in the

government's debt dynamics. The Central Bank has also announced a medium-term target of 6 percent for the GDP deflator. The implications of this are captured by the dotted line in Figure 5 (b), which computes the inflation tax at the target rate of 6 percent. The difference between the two graphs is a measure of the 'excess' inflation tax on debt over this historical period, which shrank dramatically in 2009 as inflation fell to single-digit levels. With the Central Bank's single digit inflation target for the medium-term and a more-or-less flat real exchange rate, the expectation of positive real interest rate going forward is well founded.

Additionally, the central bank is engaged in a systematic opening up of the capital account (Box 3). This too will limit the ability to use the inflation tax as investors will now have alternatives, increasing the inflation elasticity of rupee-denominated assets. Therefore, going forward, one should expect a sharply reduced role for inflation in curbing indebtedness. In other words, reducing indebtedness to 60 percent of GDP is going to require faster growth and fiscal reform to raise primary fiscal surpluses.

Box 3: Financial Liberalization – Growth or Vulnerability?

The goal of the financial system is to help with resource mobilization and allocation as well as risk management in pursuit of faster long-run growth. It can, however, itself become a costly source of vulnerability. In particular, emerging economies pursuing open capital accounts and external financial integration have often found that the eventual result was higher macroeconomic vulnerability than faster growth. Vulnerability was more apt to take hold in countries where public finances were weak, exchange rates fixed, international liquidity low (low foreign exchange reserves relative to the claims on them) and current account deficits large.

At the same time, emerging market countries like India and China, which are growing rapidly, have moved cautiously on external financial integration and relied substantially on national savings in order to finance investment and growth.

Sri Lanka has an excellent credit history: it has never defaulted on its debt even during the long civil war. Risk premia have fallen sharply following the end of the war (see Figure 2) and growing confidence in economic policy. GoSL has announced a medium-term plan to lower its fiscal deficit and the government's debt-to-GDP ratio.

Armed with these strengths, CBSL has embarked upon an extensive liberalization of the capital account. Experience indicates that this program needs to be implemented cautiously. While there has been a substantial build up in foreign exchange reserves under the IMF program, these were less than short-term external debt at the end of 2011. And the equivalent of some $2.4 billion in government securities issued in the domestic market is held by foreign portfolio investors—although a cap of 12.5 percent has been placed on foreign investment in the government debt market.

d. *Fiscal Targets and Government Saving*

As stipulated in the Fiscal Management (Responsibility) Act No 3 of 2003, GoSL announced its medium-term macro fiscal framework in November 2010 covering the period up to 2013, in which it intends to maintain government capital expenditure at 6.5 percent of GDP while lowering the fiscal deficit to 5 percent of GDP by 2013. These targets imply significant challenges for the management of the public finances as can be readily seen from the accounting identity in equation (1). Equation (1) says that the fiscal deficit is simply the difference between government investment (annual capital expenditure) and government saving (revenue minus current spending):

$$(1) \qquad \frac{G-T}{GDP} = \frac{I^G}{GDP} - \frac{S^G}{GDP} ,$$

where the left hand side is the ratio of the fiscal deficit (total expenditure G minus total revenues T) to GDP and I^G and S^G are government capital expenditure and saving respectively. If the fiscal deficit is to be brought down to 5 percent of GDP while capital expenditure is kept at 6.5 percent of GDP, it follows from (1) that government savings will have to be raised from the current levels averaging *minus* 2 to 3 percent to *plus* 1.5 percent, a significant swing of 3.5 to 4.5 percentage points of GDP in very short order.

A similar effort is needed to ensure that government debt falls to 60 percent of GDP by 2015. This will require the primary surplus to be raised from minus 2 percent of GDP on average over the last decade to zero immediately followed by a gradual increase to a little over 1percent of GDP by 2015.[9] Slower growth or higher real interest rates will require a bigger fiscal effort.

In the next section, we focus on long-run growth dynamics and the sustainability of the post-conflict growth acceleration.

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[9] This calculation assumes a linear reduction in the debt ratio from 81 percent in 2010 to 60 percent in 2015, a real interest rate of 3 percent and real GDP growth of 8 percent per year. Once the goal of 60 percent is reached, Sri Lanka will be able to run primary deficits of close to 3 percent of GDP yet maintain the 60 percent debt ratio; but this crucially rests on the persistence of a differential of 5 percentage points between the real growth rate and real interest rate and the desirability of keeping the debt ratio at 60 percent.

IV.   SUSTAINABILITY OF HIGH GROWTH

This section sets out the challenge of sustaining the high growth rates. As a starting point, Box 4 lays out the "growth arithmetic" commonly used to ascertain the savings rates Sri Lanka would need to fulfill its growth aspirations. While this framework is helpful in assessing the savings effort needed from the public and private sectors to achieve economic growth targets, the arithmetic runs into trouble because it assumes a constant incremental capital-output ratio (ICOR), which is equivalent to assuming constant marginal returns to capital. In practice, with capital subject to diminishing marginal returns, the savings rate needed to support a target growth rate will rise over time for given total factor productivity, labor force and human capital growth rates. For the same reason, we would expect to see an increase in the ratio of capital to output over time. Therefore, a dynamic framework allowing for diminishing marginal returns to capital is needed to get a better sense of the medium-to-long term links between savings and growth.

Box 4: Harrod-Domar Growth Arithmetic: Simple, but Incomplete

Numerical calculations of the savings rate needed to support a target growth rate are commonly carried out using the Harrod-Domar equation. This equation can be obtained as follows:

$$g \equiv \frac{\Delta Y}{Y} = \left(\frac{\Delta Y}{\Delta K}\right)\left(\frac{\Delta K}{Y}\right),$$

where g is the growth rate of real GDP, Y, and K is the physical capital stock. The first term in brackets on the right-hand side is the inverse of the incremental capital-output ratio (ICOR) while the second is the investment rate. The simplest version of the framework assumes a closed economy so that the investment rate equals the savings rate, s. Therefore, given a target growth rate $g*$, the required savings rate $s*$ based on the equation is the ICOR multiplied by $g*$.

Given the Sri Lankan real GDP growth target of 8 percent and an ICOR of 4.5, the required investment rate would be 36 percent of GDP. If one assumes a sustainable current account deficit of 4 percent of GDP, then the required national savings rate s* would be 32 percent. Suppose the ICOR goes down to 4 as a result of growing productivity and efficiency as part of the peace dividend. Then s* would fall to 28 percent.

With national savings averaging 22 percent of GDP over the last decade, the increase in the savings rate would need to be 6 percent of GDP. Achieving the fiscal target of raising government savings from -2 percent to +1.5 percent of GDP would require an increase in the private savings rate of an additional 2.5 percent of GDP, which is eminently feasible.

While this appealing framework indicates that a target growth rate of 8 percent is readily within grasp, it is subject to pitfalls beyond the very short run. These are discussed in the text.

With this in mind, we present results below drawn from a dynamic simulation framework calibrated with parameters and data drawn from Sri Lanka's own past experience as well as that

of other developing countries using a modified Solow growth model.[10] In this model, growth is driven by the following main variables:

- **Total Factor Productivity (TFP) growth**: The growth rate of TFP is exogenous in the simulation framework. Historically, it has averaged around 1 percent per year in Sri Lanka. In Scenario 1, it is assumed to accelerate to 1.75 percent, which represents a substantial increase. A further acceleration to 2.5 percent is assumed under Scenario 2, a TFP growth rate few countries exhibit over long periods.[11]

- **Capital accumulation**: The capital-to-output ratio for 2010 is determined by the perpetual inventory method with an assumed 8 percent depreciation rate (details may be found in Hevia and Loayza 2011, henceforth, H-L). The subsequent dynamics of the capital stock are determined by the path of national savings and the current account deficit with suitable adjustments for depreciation.

- **Savings:** National savings is the sum of private savings and government (public) savings. Private savings is treated as endogenous and depends upon income and demographic variables (such as the ratio of old-age or young-age population to working age population) as well as public saving (through so-called Ricardian effects). Public savings could either be given as a policy variable (as determined by the announced fiscal targets, for example) or as a balancing figure needed to attain a required national savings rate.

- **Labor force and Human Capital growth**: The ratio of working age population to total population ("labor force") is based on demographic projections while the quality of the work force ("human capital") is determined in accordance with the number of years of schooling and the returns to education. Both variables are exogenous.

- **External sustainability**: The simulation framework assumes that Sri Lanka will be able to increase net external indebtedness along a path which yields a sustainable current account deficit in the 4 percent of GDP range.

The simulation framework (Annex 2 presents the underlying equation) is used to answer two types of questions: what is the national savings rate needed to support a given growth target? And for a given target for public savings, what growth path will emerge? Figure 6 summarizes the results from Scenario 1 with 1.75 percent TFP growth. Panel (a) shows the national savings

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[10] The framework and detailed results are contained in Hevia and Loayza (2011).

[11] As Hevia and Loayza (2011) note, 1.75 percent is the average TFP growth rate in the top 25 percent of countries in a worldwide sample; 2.5 percent would constitute a "miracle" scenario.

trajectory required for 8 percent real GDP growth (which translates to 7.2 percent per capita

growth) over 2011-2015. The national savings rate has to increase to 41 percent by 2015 in order

to deliver this growth rate.

Figure 6. Growth Scenario 1

TFP Growth 1.75 percent

GDP Growth per Capita Target = 7.2% over 2011-2015

(a).

(b).
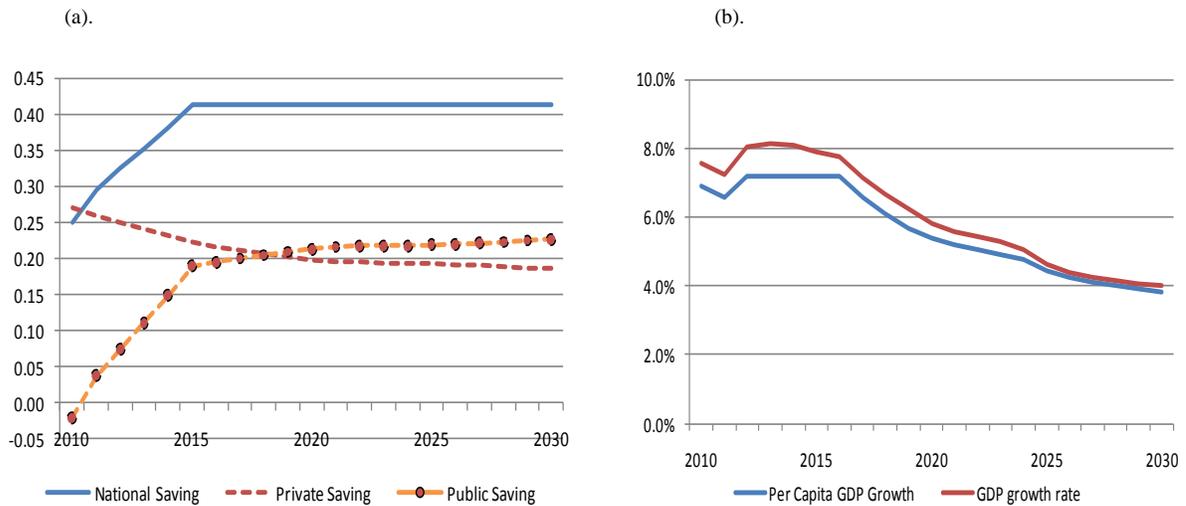
Source: Hevia and Loayza (2011)

How will the required savings rate of 41 percent for Sri Lanka be split between private

and public savings? With private savings determined endogenously, most of the action will need

to come from raising public savings, as shown in the figure. Public savings will need to increase

from negative levels in 2010 to close to 20 percent of GDP in 2015 and eventually plateau around

23 percent of GDP. Going beyond 2015, the simulation assumes that the 41 percent national

savings rate will be maintained into the future. However, as a consequence of diminishing

marginal returns to capital, the growth rate of GDP declines to 4 percent by 2030 even if the

savings rate of 41 percent is maintained. Indeed, to keep real GDP growth at 8 percent over the

long run, the national savings would have to continuously rise above 41 percent. Box 5 provides

an explanation for why the savings rate must keep rising to achieve a given growth target.

Box 5: Why the Savings Rate Must Keep Rising with a Given Growth Target

Why must the savings rate rise continuously in the neoclassical framework underpinning the Hevia-Loayza simulation model to maintain a target growth rate? With the growth rates of TFP, human capital, the labor force, and population given exogenously, (let's refer to their sum as z), the only way for the growth rate of GDP to stay constant at some target level g^* is for the capital stock to grow at a constant rate. For this to happen in the presence of diminishing marginal returns to capital, a fundamental assumption in the neoclassical framework, the savings rate must continuously increase.

Let output, Y, be given by: $Y = AK^\alpha(\theta E)^{1-\alpha}$, where A is TFP, K is the stock of physical capital, E is the working age population ("number of workers") augmented by the human capital variable, θ, to obtain effective labor input, and $0 < \alpha < 1$ is the elasticity of output with respect to capital (α being less than 1 implies diminishing marginal returns to capital). Then we can write the growth equation:

(i) $g \equiv \hat{Y} = \alpha\hat{K} + [\hat{A} + (1-\alpha)(\hat{\theta} + \hat{\varepsilon} + \lambda)]$,

where a "^" refers to the growth rate of a variable: $\hat{Y} = dY/Y$ is the growth rate of output, $\hat{K}$ is the growth rate of the capital stock, $\hat{A}$ is TFP growth, and $\hat{\theta}$ is the growth rate of human capital. We can write $E = (E/N).N$, where ε is the ratio of working age population, E, to total population, N, which then gives $\hat{E} = \hat{\varepsilon} + \lambda$, where λ is the population growth rate, completing the expression on the right-hand-side of equation (i). The expression in square brackets is the z referred to in the first paragraph of this box.

It follows from (i), for a given z and target growth rate g^*, that $\hat{K}$ must satisfy:

(ii) $\hat{K} = \frac{g^*-z}{\alpha}$.

In other words, the capital stock must grow at the constant rate given by this equation. Now $\hat{K} = [(s+c)Y - \delta K]/K$, where s is the national savings rate, c (assumed constant) is the ratio of the current account deficit to output, and δ is the rate of depreciation of capital. This can be rewritten:

(iii) $\hat{K} = (s+c)\left(\frac{Y}{K}\right) - \delta$.

Combining (ii) and (iii) gives us an expression for the required savings rate, s*, to meet a given growth target, g*:

(iv) $s^* = \left(\frac{g^*-z}{\alpha} + \delta\right)\left(\frac{K}{Y}\right) - c$.
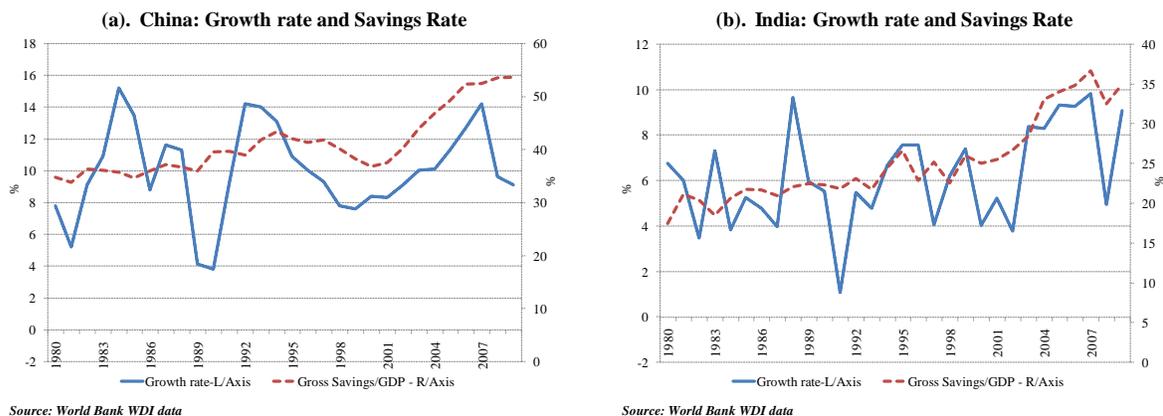
In equation (iv), K/Y is the reciprocal of the average product of capital, APK. Since APK goes down with K because of diminishing marginal returns (recall that APK is proportional to the marginal product of capital with the Cobb-Douglas production function assumed for Y), it follows from (iv) that s must rise over time to maintain growth at its target level of g^*.

Two corollaries emerge from the above:

- Suppose the savings rate is raised to meet a given growth target in line with (iv) and then held constant. In this case, growth will slow until it reaches its steady-state value given by $\frac{\hat{A}}{1-\alpha} + \hat{\theta} + \lambda$ along a balanced growth path (meaning that the capital stock grows at the same rate), that is, the asymptotic growth rate of GDP is determined by TFP growth, human capital and population growth (the assumption is that the ratio of working age population to total population eventually stabilizes). Using (i), it follows that in steady state, $\hat{Y} = \hat{A} + \left[\frac{\alpha}{1-\alpha}\hat{A} + \alpha\{\hat{\theta} + \lambda\}\right] + (1-\alpha)(\hat{\theta} + \lambda)$, which is simply a way of decomposing the expression for steady-state growth earlier in this bullet into components attributable to TFP, capital accumulation, human capital and population growth (as in Table 2 below).
- Any forces which lead to non-diminishing marginal returns to capital ("endogenous growth") will obviously be beneficial and require a lower savings rate for a given growth target. (Some of this is discussed in section V on the microfoundations of growth.)

Notice from Figures 7(a) and (b), which show savings and growth rates for China and India, that the need for high savings rates for sustained fast growth is hardly extravagant.

Figure 7. National Savings and Growth: China and India

(a). China: Growth rate and Savings Rate

Growth rate-L/Axis — Gross Savings/GDP - R/Axis

Source: World Bank WDI data

(b). India: Growth rate and Savings Rate

Growth rate-L/Axis — Gross Savings/GDP - R/Axis

Source: World Bank WDI data

This exercise brings out two points: first, achieving 8 percent growth over the medium term in Sri Lanka will call for a huge fiscal effort to increase public savings substantially. Second, even assuming the required level of savings is achieved, it will not suffice to maintain an 8 percent growth rate over the long run. Since achieving the desired level of public savings may not be feasible, Figures 8 (a) and (b) shows the growth dynamics consistent with the targeted level of public savings of 1.5 percent of GDP to be attained by 2012. This will constrain the overall level of national savings to a little over 25 percent of GDP in the medium run, leveling off at just below 25 percent over the long run. Sri Lanka does not reach the 8 percent growth target even over the medium run and the growth rate drops to less than 4 percent over the longer run.

Figures 9 (a) and (b) depict Scenario 2 reconciling the government's growth targets with its savings target of 1.5 percent of GDP. The key difference from the previous simulation is the assumption that TFP will grow at 2.5 percent per year over the long term. Based on cross-country experience, this is not impossible but is hard to achieve: this is a highly optimistic scenario. National savings need to rise to approximately 27 percent over the long-term; recall from Figure 7 that this is substantially less than the savings rates achieved by China and India.

Real GDP growth is maintained at the 8 percent target until 2014 and then declines although it stays above 6 percent until the end of the decade. Eventually, it settles at a rate which is similar to Sri Lanka's historical average growth rate of 5 percent.

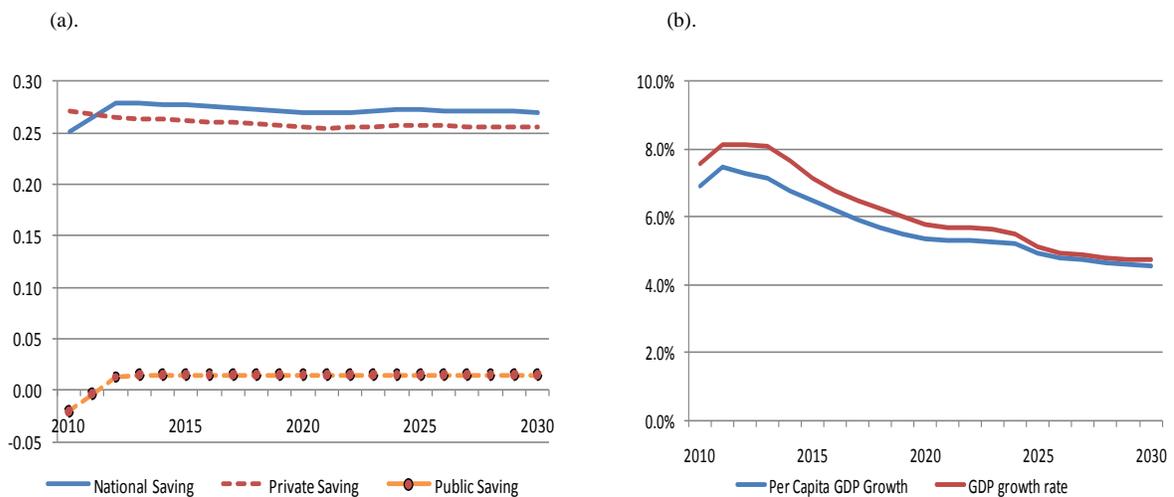**Figure 8. Growth Scenario 1 With Government Savings of 1.5% of GDP**

TFP Growth 1.75 percent

(a).

(b).
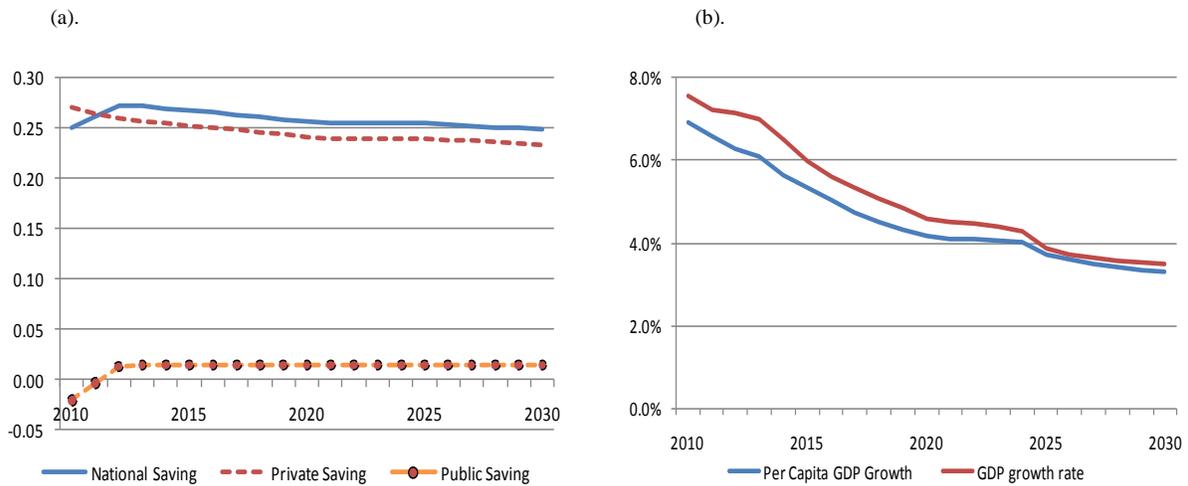
Figure 9. Growth Scenario 2

TFP Growth 2.5 percent

Public Saving / GDP = 1.5% by 2013

(a).

(b).

Source: Hevia and Loayza (2011)

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Table 2 illustrates the challenges inherent in the long run growth dynamics when the public (government) savings rate is constrained. It presents a decomposition of the various factors contributing to growth in the Optimistic Scenario with government savings rising to its target of 1.5 percent of GDP. One of the striking features is the negative contribution to growth from the labor force for most of the simulation period because the working age population is expected to experience a decline until at least 2020.

Table 2. Sri Lanka: Growth Simulation results with TFP g=2.5%/year and Government Savings reaching 1.5% of GDP by 2012

	Year			
	2012	2015	2020	2030
Real GDP growth	8.1	7.1	5.7	4.7
GDP per capita growth	7.3	6.4	5.3	4.5
Contribution to per capita GDP growth[a]				
TFP	2.5	2.5	2.5	2.5
Physical Capital	4.6	3.8	2.7	1.8
Human Capital	0.2	0.3	0.2	0.2
Labor Force	-0.1	-0.1	-0.1	0.0

Source: Authors' calculations based on Hevia and Loayza 2011.
[a] Percentage points

In sum, the realization of an 8 percent growth rate sustained over the long term will require significant increases in the national savings rate. Achieving high rates of TFP growth and increasing government savings beyond levels currently contemplated will make it easier to achieve the required savings rates—the first by lowering the need for capital accumulation and hence the savings rate itself; and the second by putting less pressure on private savings rates. Such effort will help offset the diminishing returns to capital and adverse effects of Sri Lanka's demographics. The challenge then is to create conditions conducive to large and sustained productivity improvements in the context of lower public indebtedness and an attractive investment climate. The next section discusses the micro foundations of growth.

V.   MICRO-FOUNDATIONS FOR SUSTAINED GROWTH

The private sector investment response in the post-conflict era is hugely important for a simple reason: the government's role in additional investment is constrained by its balance sheet and the medium-run fiscal and debt targets it has announced. As noted in the introduction, the peace dividend is likely to have some of its strongest echoes in improved growth fundamentals reflected eventually in the emergence of internationally competitive firms and banks. We briefly touch upon four areas that are vitally important for this link to be firmly established and thereby generate a sustained growth acceleration.

a.   *Credibility and Signaling*

In any situation involving a big change, the private sector, foreign and domestic, is going to 'wait and see'. Three main reasons seem to explain the 'wait and see' observed post-conflict in Sri Lanka. First, based on informal interviews conducted for this study, few expected the war to end so quickly. Second, investors want positive signals from the government: key signals are discussed below. Third, the external environment is uncertain. Global growth is expected to slow in 2011 and Sri Lankan exports are heavily dependent upon the USA and EU. Besides, the Euro periphery is mired in a debt crisis.

A huge advantage GoSL has in creating an enabling environment for sustained rapid growth is its big political majority. This enables the government to be decisive in creating an attractive environment for private business and going for some quick wins to signal its intentions. Indeed, positive signals have already been transmitted via the 2011 Budget with its list of tax reforms and plans to clarify the role of the Board of Investment and the release of the Central Bank's Roadmap. The 2011 Budget has been extolled both for its content and maintaining continuity with the 2010 Budget and the medium-term fiscal and debt targets. The challenge is to establish the credibility of the signals through decisive implementation of the adopted macro-fiscal framework.

A critical positive step is the reduction in marginal tax rates from 35 to 28 percent for corporate income, the reduction of personal income taxes and the extension of income tax to public servants. The VAT has been reduced from 22 to 12 percent and from 20 to 12 percent for the financial sector. The decision to bring public sector employees into the tax net was widely praised as promoting a "tax culture".

Areas where the private sector is seeking clarity include:

- Relative roles of the public and private sector: A clear policy statement and consistent adherence to it regarding the role of the state in economic activity will be needed to provide an unambiguous signal to domestic and foreign investors that the private sector will be the future engine of economic growth in Sri Lanka.

- Role of the Board of Investment: Many remarked that with the end of conflict, the Board of Investment will need to reinvent itself. In particular, the need for *ad hoc* tax breaks will diminish. However, the precise role to be played by the BoI needs to be defined.

The big majority of the government also enables it to take decisive steps in promoting ethnic peace and healing. The criticality of social and ethnic peace in promoting long-run growth is demonstrated in several empirical studies, e.g. Rodrik (1999). Reconstruction, ethnic healing and the restoration of trust are likely to take several years, calling for a sustained effort.

b. *Private Investment Incentives*

The general decline in country risk in the immediate post-conflict environment should lower the cost of capital for domestic firms, while the adoption of sound policies should lengthen investment horizons for both domestic and foreign investors. The positive impact can be shown by the equation:

(2) $MPK = r + \delta,$

which captures the standard condition that profit maximizing private investors will invest until the marginal product of capital MPK equals the real interest rate, r, plus depreciation, δ. In a conflict environment, the right-hand-side would also include a premium to compensate for the associated risk. On the assumption of diminishing marginal returns to capital, this would lower the optimal capital stock and therefore investment. Reducing or eliminating this risk premium would have the opposite effect and increase investment. Similarly, the lengthening of horizons would enlarge the set of potential investments firms would consider, some of which may take several years to reach break-even volumes or involve set-up costs in introducing and marketing new products—considerations that would not be appealing in a conflict situation. Companies are likely to be induced to implement projects put on hold during the conflict while foreign investors could be expected to pay more attention to the country.

However, the above will only lead to a one-time positive effect on output. The real gains to Sri Lanka will come from a sustained increase in productivity as a result of technological upgrading catalyzed by the falling cost of capital and rising returns to private capital at least for a period. This can be shown by the formalism:

(3) $\qquad MPK = f(TFP, HK, I^G, \varepsilon),$

where the right-hand-side lists the variables that the *MPK* depends upon: total factor productivity or technology, *TFP*; human capital, *HK*; public investments, including those in infrastructure, I^G; and an index of externalities, ε, which could include positive spillovers and agglomeration effects and promote endogenous growth.[12] By raising the marginal returns to capital, these factors can play a major role in stimulating investment. Some of these factors have a public good characteristic, importantly, investments in infrastructure and human capital, which could be facilitated by reduced public spending on security as part of the peace dividend. But there is also a private aspect: firms could upgrade their technology confident that their property rights will be

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[12] This formalism is similar to equation (4), page 8, in Hausmann, Rodrik and Velasco (2005).

protected and that a lasting peace will prevent any disruption of operations or damage to fixed

assets. However, they will need incentives to do so, and experience shows that firms are more

likely to invest when in better technology and raise productivity when there is pressure on their

profit margins and they realize that (apart from the promise of strong institutions, the protection

of property rights and reliable infrastructure) there will be no special help forthcoming from the

government. In other words, when hard budget constraints and competition, both from domestic

and foreign sources, are present.[13] Box 6 discusses competitiveness in Sri Lanka (with more

details in Annex 3), while the next section focuses on hard budget constraints for state-owned

enterprises.

Box 6. Sri Lanka: A Survey of Constraints to Doing Business

A scan of the recent survey-based indicators of the business climate and overall competitiveness in Sri Lanka reveals a promising outlook for the business environment provided the commitment to implement stated government policy remains strong. The main take away from the survey-based evidence is that macroeconomic policy constraints have been consistently at or near the top of the main constraints to doing business in Sri Lanka.

Sri Lanka ranks 89 out of 183 countries in the World Bank Group's overall "Doing Business" rankings in 2012, with tax policy being long considered a major drag on private sector investment. The same result comes out when looking at recent Global Competitiveness reports. Sri Lanka ranks 62 out of 139 countries in the overall Global Competitiveness Index (GCI) 2010-11. Sri Lanka seems to be lagging in terms of *Macroeconomic environment*, especially when it comes to Government budget balance, Government debt, and Country credit rating. *Labor market efficiency* and *Technological readiness* come out quite low (Sri Lanka ranks 128, 111 and 85 out of 139 countries respectively).

The emergence of internationally competitive firms in Sri Lanka will also depend importantly on the trade regime. Here too the conclusion is that it is squarely in the hands of the government to improve the trade regime. Although Sri Lanka is not an outlier, the transactions costs of trading across borders are significantly higher than in comparator countries. Bureaucratic procedures rather than infrastructure-imposed or technical constraints are the major source of high transactions costs incurred by exporters and importers alike. Redundant regulations and red tape as well as outdated customs procedures that are not compatible with requirements of modern trading are impeding the participation of Sri Lankan firms in more sophisticated forms of division of labor based on production fragmentation or global value chains.

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c. *Hardening Budget Constraints for State-owned Enterprises*

Hardening budget constraints for state-owned or public enterprises (PEs) is important for

two reasons: the first is that they can help contain the fiscal burden. Transfers from the budget

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[13] Some of the clearest evidence on the efficacy of hard budgets and competition comes from the transition countries of Central and Eastern Europe. See Pinto, Belka and Krajewski (1993), Carlin, Fries, Schaffer and Seabright (1999) and chapter 7 of European Bank for Reconstruction and Development (1999).

(capital and recurrent) to public enterprises have averaged 1.5 percent of GDP or 6 percent of total expenditures in recent years. The stock of debt held by PEs adds to the fiscal burden, as does the issuance of government guarantees to support PEs. The Ceylon Electricity Board's (CEB) electricity tariffs have always been below the cost of production, forcing it to finance most of its operations with debt. The Ceylon Petroleum Corporation (CPC) is the largest importer of oil in the country, accounting for about 20 percent of total imports and 5 percent of GDP. The CPC subsidizes the CEB, transport utilities and other government departments implying that the CPC is also forced to borrow for its operations. These circular debts and government guarantees amounted to 3.25 percent of GDP in 2010.

The second reason is related to the first: to ensure that PEs involved in infrastructure provision or carrying out public investments do so efficiently, as this would enhance the profitability and attractiveness of private investment. The Government has recently taken measures to raise efficiency in CEB and CPC. CPC is expected to run a small surplus this year resulting from price increases and measures to improve operational efficiency. The outlook for medium-term term losses at the CEB appear contained if the cheap, coal-fired and hydropower capacity comes on stream as expected. Going forward, restoring profitability *and* efficiency to such companies as CEB constitutes a crucial step in hardening budget constraints. This in turn will have significant implications for general competitiveness via the pricing of critical inputs like electricity while creating pressures for innovation and efficiency.

Box 7: Snapshot of Public Enterprise sector in Sri Lanka

The state-owned or public enterprise sector in Sri Lanka has been an important part of the economic policy debate in the country for the last thirty years. Before the first wave of economic liberalization reforms in 1977, over 60 percent of manufacturing was in the public sector and accounted for half of all manufacturing employment, while public entities accounted for nearly 90 percent of all imports and 30 percent of exports.[14] Post-1977 reforms greatly reduced these numbers, but public enterprises (PEs) are still an important part of the economic landscape.

The government had a controlling interest in 107 public enterprises in 2009. These PEs are involved in many commercial activities, including finance (26), infrastructure (11), agriculture (9), plantations (11), construction and manufacturing (16) services (16) and healthcare (6). Taken together, the turnover in PEs amounted to almost 17 percent of GDP in 2009. However, this may underestimate the true extent of the influence on economic activity as, for example, the two state-owned banks account for over 50 percent of the assets of the banking system. Moreover, government has invested directly or indirectly in 52 PE subsidiary companies and has golden share holding rights in 23 regional plantation companies. The largest SOEs are the CEB and CPC.

In addition to hardening budgets, an important item on the PE agenda (Box 7 provides a snapshot of the public enterprise sector) is to develop a strategic vision regarding their role vis-à-vis the private sector, which as noted above, is something private investors are seeking. The Government has recently taken over management of Sri Lankan Airlines and Sri Lanka telecom, taken ownership of Sri Lanka Insurance Corporation and Shell Gas, and land ownership of Lanka Marines Services and Waters Edge Ltd. It is important clarify the state of play regarding these specific companies and related future plans.

d. *Infrastructure and Human Capital*

Public investments in infrastructure and human capital need to be linked to Sri Lanka's anticipated future sources of growth. At the macroeconomic level (and as captured in the results of the simulation exercise), long run per capita growth is driven by TFP growth, growth in the labor force and human capital and capital accumulation as influenced by savings, domestic and foreign. At a more micro level, growth will be driven by the investment decisions of private actors in agriculture, manufacturing and services. One view expressed during interviews is that Sri Lanka is too small to permit manufacturing to become a significant driver of long-run growth. Another view commonly expressed was that there is a shortage of low-skilled workers; on the

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[14] World Bank (2004).

other hand, it would be relatively easy to attract high-skill workers back to the country from the diaspora. Further, raising funds even in large volumes was not seen as a serious problem.

The government itself is positioning services as the future engine of growth. Its development policy framework highlights the importance of bolstering infrastructure for achieving its economic growth targets via the five hubs concept—a naval hub, an aviation hub, a commercial hub, an energy hub and a knowledge hub in South Asia. In this connection, IMF Staff note in the 2010 Article IV Consultation that Sri Lanka's strategic geographical location and comparative advantage in services could be the engine of growth in the medium-to-long term.

The 2011 budget sets public investment at 6.5 percent of GDP in the medium-term expenditure framework. While fiscal consolidation efforts will continue, the government has made it clear that public investment spending will remain at this level. In fact, public infrastructure spending has been significant in recent years. Donor commitments since 2005 have totaled 20 percent of 2010 GDP, although actual disbursements have been half of that amount (see Table 3). The five main areas of commitments are: roads, power and energy, water supply and sanitation, railways, and ports and aviation. The main donor in each area is: Japan in roads, China in power and energy, Japan and the ADB in water supply, India in railways, and China and the ADB in ports. Overall, China and Japan are the two largest financiers of infrastructure in the country. Some of the signature projects are the Hambantota Port (China), the Southern Expressway (Japan/ADB) and the Puttalam Coal Power Project (China).

Table 3. Sri Lanka: Infrastructure Financing, 2005 -2010 (US$, millions)

Category	Commitment	Disbursement	Key Donor
Road Sector	2,553	1,293	Japan
Power & Energy Sector	1,886	1,311	China
Water supply and sanitation	1,168	657	Japan/ADB
Transport Sector - Railways	1,165	n.a.	India
Ports and Aviation Sector	1,136	564	China
Total	7,907	3,825	

Source: Ministry of Finance

However, positioning services as an engine of growth would require significant investments in human capital as well as the ability to attract talent from the diaspora. In this connection, it is worth noting that even traditional services such as tourism can be upgraded, for example by adopting more sophisticated forms like medical tourism.

VI. CONCLUDING REMARKS AND POLICY PRIORITIES

This paper has drawn upon cross-country experience and economic theory to draw out the policy implications of GoSL's macro-fiscal vision announced after the cessation of hostilities. The vision, set out in the introduction, includes the following goals: doubling nominal US dollar per capita income; cutting fiscal deficits and government indebtedness substantially; lowering inflation; and growing at 8 percent per year over the medium term. Policies formulated to achieve these multiple goals must ensure consistency. For example, allowing the rupee/dollar rate to appreciate in real terms as it has in the recent past will help to double per capita nominal dollar income and speedily reduce government indebtedness (since close to 45 percent of government debt is denominated in foreign currency). But this approach will lower competitiveness and jeopardize the 8 percent growth target, in turn impeding continued poverty alleviation. An effective way of ensuring consistency would be to establish a hierarchy among the various goals with the 8 percent growth given top billing. This would be in keeping with GoSL's emphasis on enhancing welfare and inclusion. It would also automatically help attain the dollar per capita income target. Similarly, the fiscal and debt targets should be viewed not as ends in themselves but as facilitating faster growth. Given this hierarchy, three sets of policy priorities emerge.

The first policy priority is to increase the national savings rate. The simulation results demonstrate that converting the peace dividend into sustained 8 percent real GDP growth will require a national savings rate of above 40 percent of GDP *even* if TFP grows at 1.75 percent per year compared to the historical average of 1 percent. This represents a substantial increase from current savings rates of around 25 percent. Adhering to or even exceeding the government's

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target of raising its savings rate to 1.5 percent of GDP will obviously help in this quest. At the same time, attracting FDI and skilled human capital from the Sri Lankan Diaspora will make a big difference. Both will help to take the pressure off national savings rates by essentially tapping foreign sources for augmenting physical and human capital.[15]

The second policy priority is to create conditions for faster growth which will make it easier to attain higher savings rates. This can be achieved in two ways. The first is to ensure that the government raises its primary fiscal surpluses, which must be done in order to meet its target of lowering government indebtedness, in a manner that is growth-promoting. For example, cutting security expenditure as part of the peace dividend and reversing the trend decline in fiscal revenues by tax base broadening and improving compliance would be far preferable to cutting government capital expenditure or raising marginal tax rates in terms of long-run growth.

The second way of spurring growth is to create conditions for faster TFP growth. For example, if TFP were to grow at 2.5 percent per year compared to the historical record of 1 percent, the savings rate needed to support 8 percent growth comes down to less than 30 percent. This would not be easy to do since there are few countries which ever attain this magnitude of TFP growth on a sustained basis. Nevertheless, considerable opportunity exists for speeding up TFP growth through the implementation of hard budget constraints and competition, as discussed in section V on the microfoundations for growth. In particular, a companion study shows that there is ample scope for quickly increasing import competition. Nominal protection rates are high in Sri Lanka.[16] Dispersion is also high, obscuring price signals for resource allocation. Export outcomes have been fairly stagnant over the past couple of decades and there has been little dynamism apart from garments—but even garments is now an old story. Fostering outward orientation and increasing import competition is probably the most powerful policy instrument

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[15] NB: The simulation results already allow for foreign savings to be tapped in the form of a current account deficit (CAD) of approximately 4 percent of GDP. Attracting large amounts of FDI may permit a higher, sustainable CAD.
[16] See Kaminsky and Ng (2012).

available to GoSL to set off faster TFP growth. It is important to harden budgets for the public sector as well to ensure its efficient operation and the provision of infrastructure services in power, transport, ports and communications at internationally competitive prices.

The third policy priority is to transmit unequivocally positive signals to the private sector about its role as the engine of growth going forward. Doing so is crucially important for two reasons. The first is a pragmatic one. Sri Lanka's government balance sheet is heavily constrained by indebtedness and the desire to lower this significantly over the medium term, implying that much of the needed additional investment will have to come from the private sector. The second reason is that experience from countries as varied as India, Kenya and Poland show that profit maximizing firms operating in an atmosphere of competition (domestic and especially from imports), hard budget constraints and competitive real exchange rates offer the best hope for upgrading technology and efficiency in pursuit of faster productivity growth.

The three policy priorities will feed off each other and therefore need to be implemented as a package. As growth takes off on the back of higher government savings rates and faster TFP growth, the savings rate is likely to increase, helping with additional capital accumulation. And both FDI and skilled human capital from the Diaspora are more likely to be attracted under assurances of inclusion and the maintenance of ethnic peace; a stable macroeconomic environment; and unambiguously positive signals for the private sector.

To conclude, faster growth needs to be made the centerpiece of GoSL's vision. While reducing fiscal deficits and government indebtedness are important, these targets should not be seen as ends in themselves, but rather as promoting economic growth. Ultimately, it is sustained fast growth that will enable all the other targets—including the doubling of per capita dollar income and reducing government indebtedness—to be achieved in a lasting manner.

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Annex 1: Composite Real Interest Rate and Inflation Tax on Debt

Composite real interest rate:

The composite real interest rate refers to the r^c in the following difference equation for the ratio of government debt to GDP:

(A1) $d_t = d_{t-1} + pd_t + \frac{r_t^c - g_t}{1 + g_t} d_{t-1}$, where:[17]

d is the ratio of end-year government debt to GDP
pd is ratio of primary fiscal deficit to GDP
g is real GDP growth
r^c is composite real interest rate
t is subscript for year.

In equation (A1), r^c is an amalgam of the real interest rate <u>and</u> real exchange rate effects. Assume there are only two currencies: local currency (Rs); and dollars ($). Let:

i_t^d = nominal interest rate on rupee debt t $= \frac{interest\ payment\ on\ rupee\ debt\ in\ year\ t}{rupee\ debt\ at\ end\ of\ year\ (t-1)}$

$i_t^\$$ = nominal interest rate on $ debt $= \frac{interest\ payment\ on\ \$\ debt\ (in\ Rs)during\ year\ t}{\$\ debt\ (in\ Rs)at\ end\ of\ year\ (t-1)}$

Note that $i_t^\$$ is the <u>dollar</u> interest rate. To get the <u>rupee</u> equivalent rate, i_t^f, we adjust for exchange rate gains/losses. Let X denote the Rs/$ nominal exchange rate and $D^\$$ dollar debt expressed in dollars. Then:

$i_t^f = i_t^\$ + \frac{D_{t-1}^\$ (X_t - X_{t-1})}{D_{t-1}^\$ X_{t-1}}$. (The numerator of the second term on the right-hand-side of this equation is just the exchange rate gain/loss in Rs). Hence we get:
$i_t^f = i_t^\$ + \hat{x}$, where $\hat{x}$ is the rate of depreciation of the Rs/$ rate (this equation is just standard interest parity).

Now get the composite nominal interest, i^c, which is just a weighted average of i^d and i^f:
$i_t^c = w i_t^d + (1 - w) i_t^f$, where:
w is the weight of rupee debt in total debt at the end of the previous year given by $w = \frac{D_{t-1}^R}{D_{t-1}}$, where
D_{t-1}^R is rupee debt at the end of the previous year and $D_{t-1} = D_{t-1}^R + D_{t-1}^\$ X_{t-1}$ is total debt at the end of the previous year in rupees.

Then $r^c = (\frac{1 + i^c}{1 + \pi})$ - 1, where π is the percentage change in the GDP deflator.
NB: A faster way of calculating i^c is to use the formula
$i_t^c = (total\ interest\ payment\ in\ Rs\ in\ year\ t + D_{t-1}^\$ (X_t - X_{t-1})/D_{t-1}$.

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[17] In this simple formulation, we leave out privatization revenues and abstract from factors such as bailout costs, which in addition to the fiscal deficit could add to government debt.

Inflation tax on Debt (ITD):

(A2) $ITD_t = \left(\frac{\pi_t}{(1+\pi_t)(1+g_t)}\right) d_{t-1}$ in percentage points of GDP.

To see why the inflation tax applies to total debt, go back to (A1):

(A1) $d_t = d_{t-1} + pd_t + \left(\frac{r_t^c - g_t}{1+g_t}\right) d_{t-1}$

$r_t^c = \frac{1+i_t^c}{1+\pi_t} - 1$, where i^c is the composite nominal interest rate.

$\qquad = \frac{i_{t-}^c \pi_t}{1+\pi_t} = \frac{w i_t^d + (1-w)i_t^f - \pi_t}{1+\pi_t}$.

Numerator of the last expression immediately above can be rewritten:

$w(i_t^d - \pi_t) + (1-w)(i_t^\$ + \hat{x}_t - \pi_t)$

Hence, $r_t^c = \frac{w(i_t^d - \pi_t) + (1-w)(i_t^\$ + \hat{x} - \pi_t)}{1+\pi_t}$.

The intuition is that higher inflation would be offset by higher nominal interest rates and higher expected exchange rate depreciation. So what you gain in inflation, you lose on higher nominal interest rates on rupee debt and higher depreciation on $ debt. Plugging the expression for r^c into (A1) and separating out the effects of inflation gives (A2).

Annex 2. Savings and Growth in Sri Lanka: Simulation Methodology

To illustrate the linkages between savings and growth in Sri Lanka we follow the methodology presented in Hevia and Loayza (2011). They use a simple setup that consists of a single sector open economy model where output is produced by combining capital and effective units of labor inputs. Effective labor grows by increases in human capital (years of schooling) and the growth rate of the workforce. The following equation, that links growth rate of output per capita to the national saving ratio, the growth rate of productivity, the growth rate of the workforce, the increase in human capital and the capital-output ratio, is parameterized using Sri Lanka data:

$$1 + \gamma_{yt} = (1 + \gamma_{At})[\frac{1 - \delta\{\sigma_{t-1}\beta_t(1 + \gamma_{yt})(1 + \gamma_{Nt}) - \beta_{t-1}\}\frac{y_{t-1}}{k_{t-1}}}{1 + \gamma_{Nt}}]^\alpha \ [\exp\{\phi(z_t - z_{t-1})\}(1 + \gamma_{et})]^{1-\alpha}$$

where γ_{yt} is the growth rate of per capita output, γ_{At} is the growth rate of productivity, γ_{Nt} is the growth rate of the population, γ_{et} is the growth rate of the labor force variable (ratio of working age population to total population, which varies through time with changing demographical patterns), $\exp(\phi z)$, where $\exp(.)$ denotes the exponential function, is used to express labor in efficiency units per worker with z years of schooling (an index of human capital), y/k is the output-to capital ratio, α is the share of capital in total income, δ is the depreciation rate, σ is the national savings to output ratio, and β is the ratio of net foreign liabilities to GDP. This equation indicates that per capita output growth is positively related to productivity growth, working age population growth relative to population growth, human capital growth, and the national saving ratio.

A brief description of the sources and the *calculations* behind the parameters required to simulate the model for Sri Lanka's economy follows[18]:

Capital accumulation and depreciation rate. The current capital-output ratio: $k_t/y_t = 1.314$. This is the ratio estimated for the year 2010, using a perpetual inventory method to accumulate investment in order to produce a measure of the capital stock. Given the war-related destruction of factories, transport facilities, buildings, and other forms of capital, a fixed and relatively low depreciation rate (0.04 - 0.08, as in most of the literature) is not reasonable. The depreciation rate to varies in the model, and in order to identify it, a constant rate of TFP growth equal to 0.0107 is assumed – i.e. the average reported for Sri Lanka in the last decades by Jorgenson and Vu (2005), Collins (2007), and Son (2010). The capital share in output: $\alpha = 0.35$. This is the average across countries that Bernanke and Gürkaynak (2002) obtain using adjusted factor payment data from national accounts. There is no comparable Sri Lanka-specific estimate for the capital share.

Education and human capital. The annual increase in education: $(z_t - z_{t-1}) = 0.05104$. Education is proxied by the average number of schooling years in the adult population. This estimate for the annual increase in schooling is taken from the Barro and Lee (2010) dataset and corresponds to the average annual change for the period 1990-2010. The annual rate of return to education: $\phi = 0.07$. This rate of return is used in Bernanke and Gürkaynak (2002) and Collins (2007) in their growth accounting exercises, which also consider the average number of schooling years in the adult population as the proxy for education (and human capital in general).

[18] For details, see Hevia and Loayza (2011).

Labor market. The annual growth rate of the labor force is obtained from the future demographic projections for Sri Lanka population aged 15-70 years old, presented in United Nations (2011), *World Population Prospects: The 2008 Revision*.

Current account sustainability. The ratio of net foreign liabilities to GDP, β, is assumed to rise from its current value of 0.45 to 0.60 gradually in 15 years. This approximately corresponds to the government's target of a current account deficit of 4-5% of GDP over the next 5 years and declining afterwards. The current ratio of net foreign liabilities to GDP is obtained from updating the Lane and Milesi-Ferreti (2007) database. Official "international investment position" for Sri Lanka is not available in the IMF's Balance of Payments Statistics.

TFP, Real GDP growth, savings rate and TFP growth. The real GDP growth target is set at 8 percent. This target for the medium term has appeared in many Sri Lankan government publications (e.g. Mahinda Chinthana) and speeches (e.g. 2011 Budget Speech). The initial national savings rate is 25 percent. Growth simulation results presented in this paper are based on two scenarios: in Scenario 1, TFP growth is assumed at 1.75 percent, the average TFP growth rate for the top quarter of countries in a worldwide sample (see Bernanke and Gürkaynak 2002). This is far above the 1 percent TFP growth rate estimated for Sri Lanka (Collins, 2007, Son, 2010). For Scenario2, TFP growth is set at an optimistic level of 2.5 percent.

**Annex 3. Sri Lanka: Business Climate Indicators**

(a) Global Competitiveness Report for Sri Lanka 2007-2010
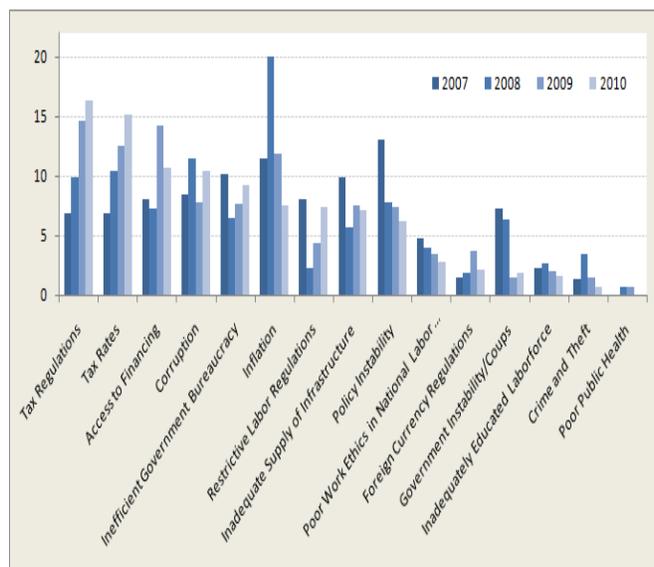
Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Source:http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/index.htm

(b) The Global Competitiveness Index 2010/11
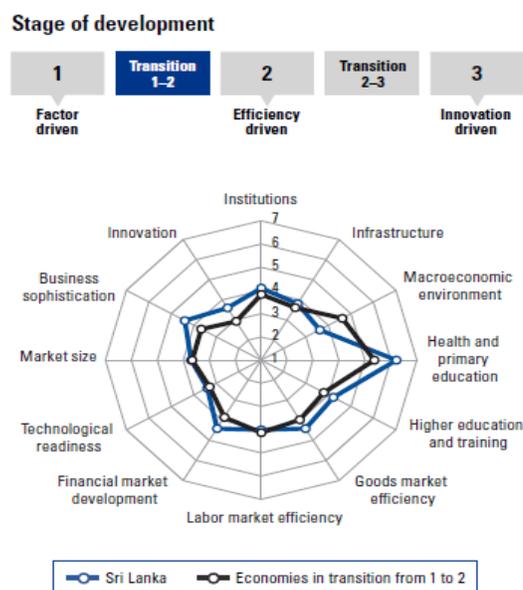
Note: The Global Competitiveness Report classify countries in, or transitioning in between, three stages of economic development: (i) factor driven, (ii) efficiency driven, and (iii) innovation driven.

Source: GCI 2010/11, World Economic Forum

(c) Policy-induced and logistics-related barriers in Sri Lanka and other comparator countries in 2010 (%)

	INDIA		MALAYSIA		MAURITIUS		KOREA		SRI LANKA		THAILAND	
Nature of Export Procedures	Days	US$	Days	US$	Days	US$	Days	US$	**Days**	**US$**	Days	US$
Policy-induced barriers	59	50	67	33	71	73	38	12	**71**	**62**	64	51
Logistics-related barriers	41	50	33	67	29	27	63	88	**29**	**38**	36	49
Nature of Import Procedures	Days	US$	Days	US$	Days	US$	Days	US$	**Days**	**US$**	Days	US$
Policy-induced barriers	57	53	71	33	79	70	50	12	**75**	**64**	77	47
Logistics-related barriers	43	47	29	67	21	30	50	88	**25**	**36**	23	53

Source: Calculated from data downloaded from http://www.doingbusiness.org/