CHARTING A PATH FOR DEBT SUSTAINABILITY IN SRI LANKA

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Introduction

Since December 2018, Sri Lanka has been downgraded three notches in rating by S&P, Moody's and Fitch Ratings. The rating level on Sri Lanka's international sovereign bonds is currently at CCC+, Caa1 and CCC for S&P, Moody's and Fitch Ratings respectively. These ratings signify that Sri Lanka's bonds are classified as being at a very high risk of default.

This situation is a historical first for Sri Lanka. While many of Sri Lanka's key macroeconomic indicators have, in the past, recorded more negative levels, Sri Lanka has never in the past been evaluated as being at such a serious level of risk in terms of defaulting on its debt. The World Bank in the first half of 2021 forecast for Sri Lanka that "public and publicly guaranteed debt is expected to reach 115% of GDP in 2021 and to rise further in 2022-2023"[1].

Despite these evaluations/projections, there is at present no formal debt sustainability analysis for Sri Lanka that has been published, either by the government or international organisations. Consequently, there is also a lack of clarity with regard to the minimum necessary improvements that Sri Lanka would need to make to ensure that it does not move into a situation of debt default. The present working-paper is a response to that analytical gap. This paper develops and sets out four criteria which, if met, would enable Sri Lanka to sustain its current level of debt, without moving into default, provided a fifth condition, that Sri Lanka receives adequate short-term liquidity in terms of foreign reserves, is also met.

That is, the present analysis holds on to the substantive difference between insolvency and illiquidity – without conflating the two as certain methods of debt sustainability analysis might do. While it is correct that a short-term lack of liquidity can also lead to default on debt, just as a situation of insolvency would, recognising the difference between insolvency and illiquidity in terms of triggering default remains quite important in terms of working out practical solutions.

The analytical conditions set out here provide a practical, implementable path for steering out of insolvency. If this path is accepted and implemented, it would be a basis for building confidence and improving Sri Lanka's credit ratings in the medium term, and in the short term it would be a method for mitigating the foreign reserve liquidity draining dynamics that arise from the concern that Sri Lanka does not have a path for debt sustainability.

The most significant factor that creates an opportunity for Sri Lanka to improve its debt sustainability arose from the reduction of local interest rates in the wake of the COVID-19 related stimulus policies. The consequent reduction in the marginal cost of debt denominated in the local currency has resulted in a period when the LKR is at a real interest rate that is close to zero.

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[1] The World Bank, 2021,'South Asia Vaccinates', South Asia Economic Focus, available at: 9781464817007.pdf (worldbank.org), [Last Accessed: 14.10.2021]

1. Sri Lanka's debt stress indicators

There are at present four macroeconomic indicators that point to Sri Lanka facing a high level of stress with regard to the sustainability of its debt. These are set out to provide context to the analysis.

- Increase in debt to GDP ratio

- Interest cost on debt

- Revenue to GDP

- Primary Deficits

As some of the numbers reported by the government of Sri Lanka do not represent a fully correct picture of macroeconomic indicators, where relevant, the numbers used in this report have been appropriately adjusted, and those adjustments are explained in Note 2. These adjustments result in the analysis reflecting a higher level of expenditure and budget deficit for 2020.

Increase in the debt to GDP ratio

One macroeconomic indicator of debt stress is the debt to GDP ratio. Sri Lanka's debt to GDP ratio has in the past had a cyclical pattern, with a tendency to trend upwards. In 2020 there was a rapid unprecedented increase in the debt to GDP ratio from 86.8% to 101%. This was driven mainly by the budget deficit which increased to 14% of GDP and the decline in real GDP growth by 3.6%.

The government's budget tabled in November 2019 projected a debt to GDP ratio of 95.1% for 2020. However, an independent analysis published by Verité Research provided alternative estimations, placing it at 101.5%[2]. In April 2021, the annual report of the Central Bank confirmed the central government debt to GDP at 101.0% as the final outcome. 2020 is only the third time in Sri Lanka's history that the central government debt to GDP has moved from being below 100% to above it (see Exhibit 1).

In the past, when debt to GDP increased above 100%, the longest it has remained above 100% is 4 years. In 2001, the debt to GDP increased to 103.3% and returned to below 100% in 2005. It then recorded a gradual decline to 69% in 2012.[3] Since 2012, the debt to GDP ratio has been increasing year on year, with the exception of 2017.[4]

It should also be noted that the actual public debt is higher than what is reported as central government debt in the official presentation. This is because, firstly, the central government

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[2] Verité Research, (2021),'Public Report on Budget', available at https://publicfinance.lk/en/topics/Public-Report-on-the-2021-Budget:-Assessment-of-the-Fiscal,-Financial-and-Economic-Assumptions-used-in-the-Budget-Estimates-1620726658, [Last Accessed: 14.10.2021]

[3] It is important to note that the debt to GDP fell dramatically in 2010 from 82.6% to 71.2%. This was mainly due to a 17.3% increase in nominal GDP as a result of the GDP rebasing and methodological change in the national accounts of Sri Lanka

[4] The Central Bank of Sri Lanka Website, Economic and Financial Reports, Annual Reports, available at: https://www.cbsl.gov.lk/en/publications/economic-and-financial-reports/annual-reports [Last Accessed 14.10.2021]

debt does not include government guaranteed debt by State Owned Enterprises (SOEs), and debt initially recorded as being central government debt is sometimes moved to the books of these SOEs. Secondly, there are accounting anomalies which result in under-reporting the full capital payments that will become due on central government debt. These issues are explained briefly in Note 3.

FIGURE 1: CENTRAL GOVERNMENT DEBT AS A SHARE OF GDP (1950 TO 2020)
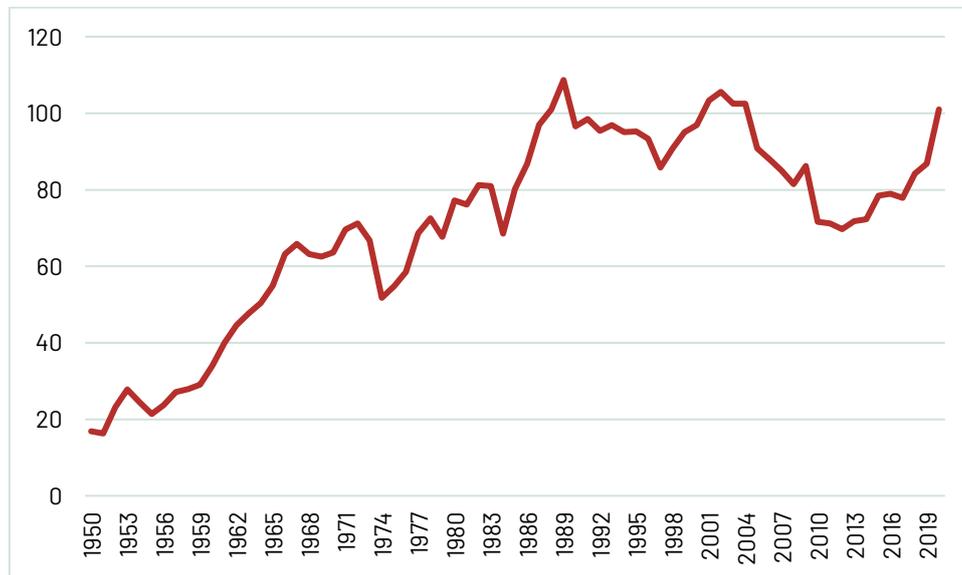
Source: CBSL Annual Report

Interest cost on debt

The debt stress that results from a high debt to GDP ratio is very much predicated on the profile of that debt and the cost of servicing that debt. Therefore, an alternative measure of debt stress is the interest cost to GDP or interest cost to government revenue. Sri Lanka's interest cost on debt increased to 6.5% of GDP in 2020, from 6% of GDP in 2019.

FIGURE 2: GOVERNMENT INTEREST EXPENDITURE AS A SHARE OF GDP (2000 TO 2020)
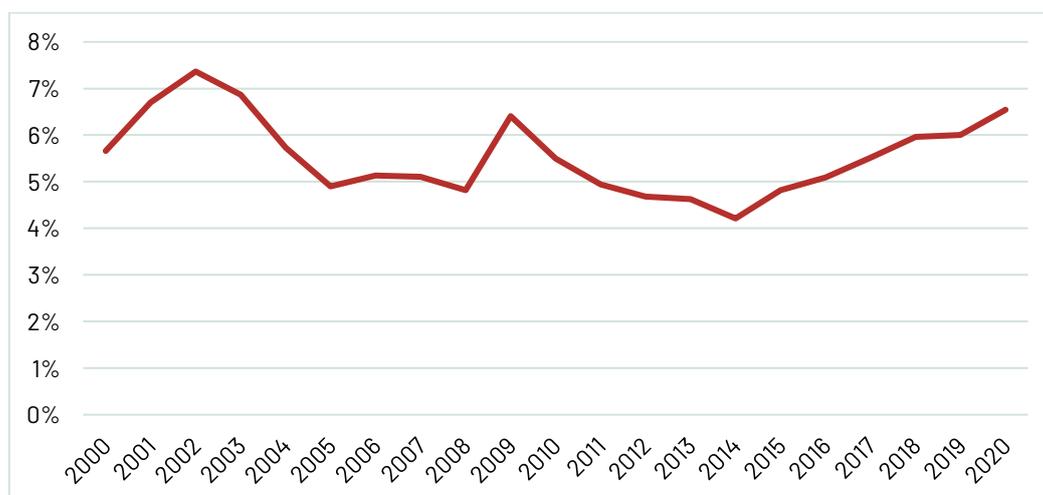
Source: CBSL Annual Report

A historical profile of Sri Lanka's interest cost to GDP shows that the current levels have been exceeded only between 2001 and 2003, with a record high of 7.4% in 2002. Just after the end of the protracted military conflict in 2009 the interest cost to GDP was at 6.4%, which is close to the present level.

In the last 10 years, since the record low of 4.2% in 2014, the interest cost to GDP has been increasing year on year, with the exception of 2019, when it remained at 6%.

However, in the case of Sri Lanka, where 46% of the debt is denominated in foreign currency, the depreciation of the local currency functions as a hidden form of interest that is capitalised. Therefore, the simple outlay of interest does not reflect the full effective interest cost – that is, the increase in liabilities that results from simply holding the debt without making capital repayments.

Revenue to GDP

An alternative measure of the interest cost on debt is the cost as a ratio of government revenue, as opposed to GDP, since government's immediate ability to repay is a function of revenue, more so than GDP. Presently, as a percentage of revenue, the interest cost has gone up to 71%. Prior to 2019 interest cost as a percentage of revenue was less than 50%. This is driven partly by the fall in revenue – which fell to 9.2% of GDP in 2020 from being at 12.6% in 2019.

Much of the reduction in revenue (as a proportion of GDP) is attributable to the tax cuts implemented at the beginning of 2020. The tax cuts amounted to around 3% of GDP.

The measures taken by the government to protect foreign currency reserves by curtailing imports has also had an impact on revenue – as a significant portion of government revenue is derived from import related taxes and levies.[5]

However, the revenue as a share of GDP for 2020 is the lowest it has been in the post-independence history of Sri Lanka.

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[5] Taxes on imported goods account for almost half of the government revenue, and 15% of the imports were entirely restricted in 2020 including motor vehicles, which is the largest source of import tax revenue for the government. For more information, see http://publicfinance.lk/2021/02/05/taxes-on-motor-vehicle-imports/ [Last accessed 14.10.2021]

FIGURE 3: GOVERNMENT REVENUE AND GRANTS AS A SHARE OF GDP (1950 TO 2020)
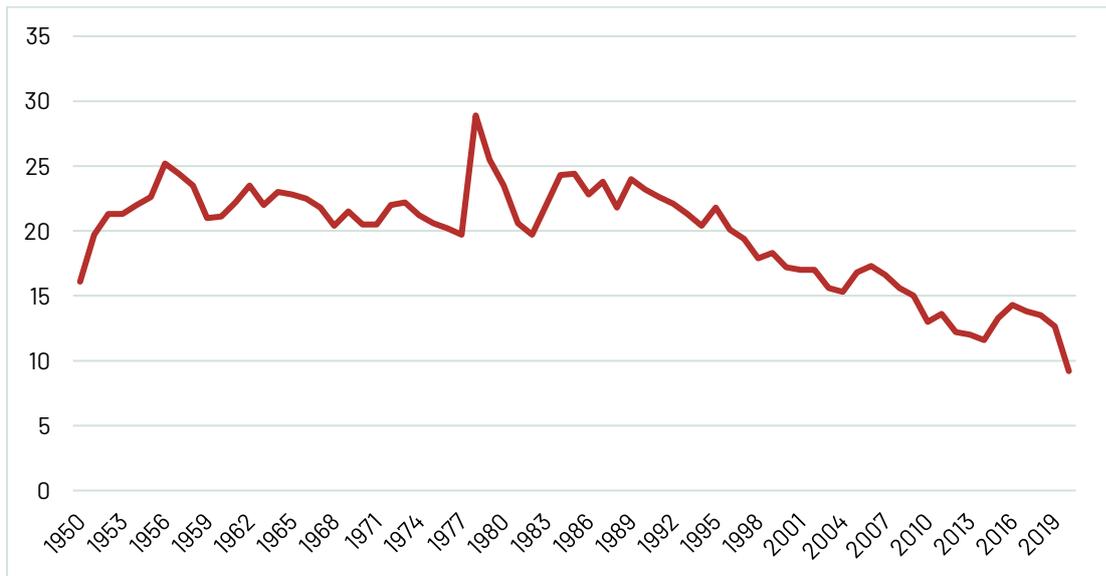
Source: CBSL Annual Report

Primary deficits

High budget deficits, which need to be then financed through borrowing, result in increasing debt. In 2020, the budget deficit figure rose to 14% of GDP, a stark increase compared to 6.8% in 2019.[6]

A budget deficit is usefully evaluated in two parts: (i) the primary deficit; (ii) interest payments on debt. The primary deficit is the budget deficit when interest payments are excluded from the expenditure figures.

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[6] This budget deficit figure is different to that reported by the CBSL in its 2020 annual report as those numbers are not consistent with the previous years and hence cannot be used for comparison across years. Details on this are available in Note 2.

FIGURE 4: GOVERNMENT BUDGET BALANCE AND PRIMARY BALANCE AS A SHARE OF GDP (1950 TO 2020)
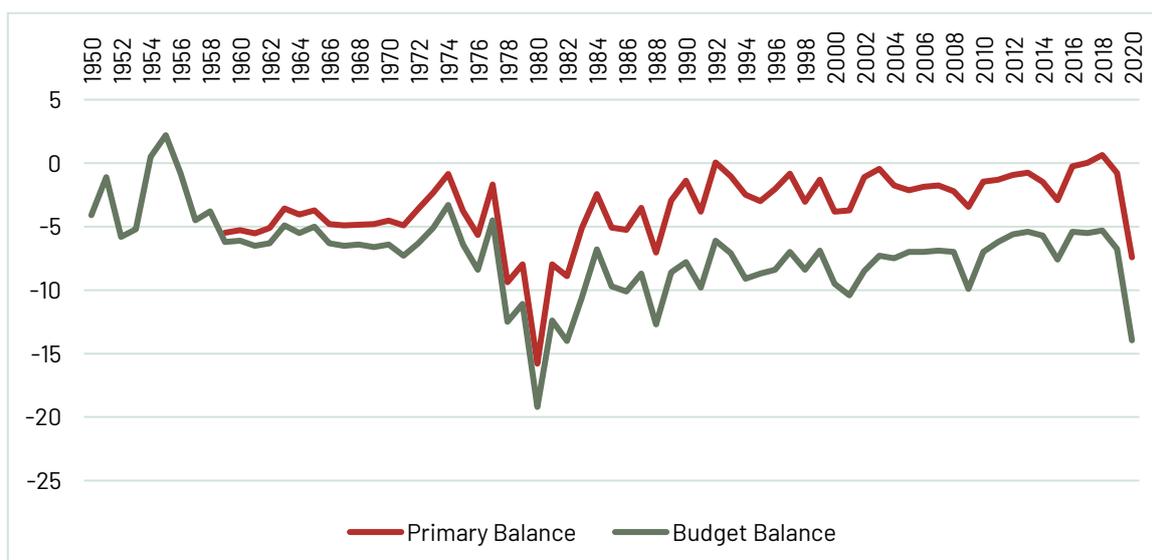
Source: CBSL Annual Report

In addition to the above debt stress indicators, there is an additional dynamic that has caused Sri Lanka's debt repayment to come under pressure. That is, Sri Lanka lost the confidence of international capital markets in 2020, triggering a separate liquidity stress in terms of repaying international debt obligations.

FIGURE 5: PROJECTED EXTERNAL DEBT SERVICE PAYMENT (2015 TO 2025)
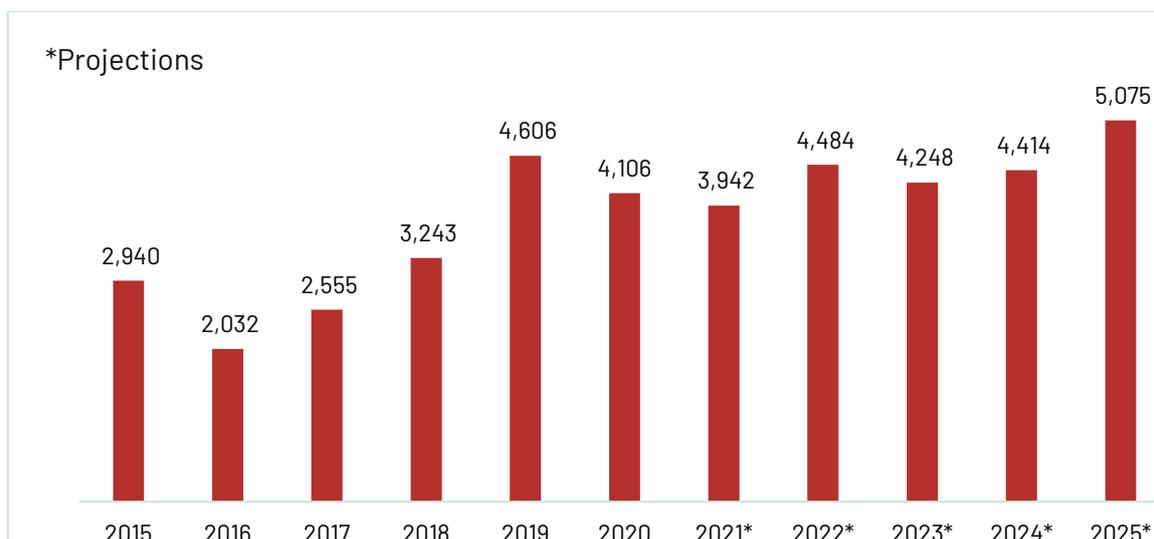
Source: CBSL, MoF Annual Reports 2020

For the next 5 years, from 2021 to 2025, the annual average repayments due on servicing external debt maturities is USD 4,400 million.[7] In contrast, from 2015 to 2018, the government only had to repay an annual average of USD 2,700 million as external debt repayment. To meet those debt repayments, during 2015 to 2018, the government was able to borrow on average

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[7] Data from Department of External Resources, Ministry of Finance

USD 1,900 million through ISBs in a year.[8] Since the beginning of 2020, the yields on the ISBs have surged to more than twice that of pre-2020 levels. Further, the credit rating of the sovereign bonds were also downgraded multiple times in 2020 to reach C grade (nearer to default) in ratings issued by Moody's, S&P and Fitch Ratings in the latter part of 2020.[9] The present inability to borrow from the international markets has reduced the debt re-financing capacity of the government, thereby forcing the government to use its already depleting reserves—reduced from USD 7,600 million at the end of 2019 to USD 4,000 million at the end of May 2021—to meet the external debt obligations.

Despite the severity of the problem, there is no analytical framework available in the public domain to address the debt sustainability in post-COVID Sri Lanka. Even the budget released for the year 2021 did not mention any remedial strategies to improve the situation. In contrast, if the assumptions and numbers mentioned in the budget are implemented, the situation will only become more severe, increasing the debt to GDP ratio to 115% by 2025.[10]

Given this background, this paper is an attempt to address the lack of an analytical framework by identifying the parameters that define debt dynamics and the formulations required to achieve debt sustainability.

2. Debt sustainability

Debt sustainability can be defined quite simply as the condition of being able to service existing debt obligations without an increase in the debt to GDP ratio.

However, the more widely used definition of debt sustainability is that of the IMF, which is as follows:

> "In general terms, public debt can be regarded as sustainable when the primary balance needed to at least stabilise debt under both the baseline and realistic shock scenarios is economically and politically feasible, such that the level of debt is consistent with an acceptably low rollover risk and with preserving potential growth at a satisfactory level."[11]

This definition includes both solvency and liquidity requirements. Insolvency occurs when the debtor is incapable of raising enough revenue in the long run to meet its debt obligations.[12] Illiquidity occurs when the debtor is unable to meet its obligations when they come due.[13] Therefore, both solvency and liquidity are essential to ascertain whether the debt of a country can be sustainably serviced.

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[8] In 2019, the government had to borrow USD 4,400 million as it borrowed in advance expecting a volatile political environment in 2020
[9] Website of World Government Bonds, 2021, 'Sri Lanka Government Bonds – Yields Curve', available at: http://www.worldgovernmentbonds.com/country/sri-lanka/ [Last Accessed 14.10.2021]
[10] Verité Research (2020), 'Public Report on Budget 2021', available at: https://publicfinance.lk/en/topics/Public-Report-on-the-2021-Budget:-Assessment-of-the-Fiscal,-Financial-and-Economic-Assumptions-used-in-the-Budget-Estimates-1620726658, [Last Accessed: 14.10.2021]
[11] International Monetary Fund, (2013), 'Staff Guidance Note for Public Debt Sustainability Analysis in Market-Access Countries', available at: https://www.imf.org/external/np/pp/eng/2013/050913.pdf [Last accessed: 14.10.2021]
[12] UNCTAD Virtual Institute, Definitions, available at: https://vi.unctad.org/debt/debt/m1/definition.html [Last Accessed: 14.10.2021]
[13] Ibid.,

The IMF definition also includes political risk by stipulating that the envisaged path for debt sustainabilty should consist of policies that are <u>politically and economically feasible</u>. The sustainable path itself would mean a set of policies that can stabilise the debt to GDP ratio (achieve solvency) with acceptable low rollover risk (maintain liquidity).[14]

This paper intends to assess the solvency and liquidity aspects of debt sustainability **separately**. That is, to first identify whether there are any politically and economically feasible policies that can stabilise debt to GDP ratio, and secondly, to evaluate whether the liquidity dynamics under any set of politically and economically feasible policies provide an acceptably low rollover risk.

3. Solvency of public debt

In this separated analysis, therefore, the public debt is considered to be solvent if the debt to GDP ratio can stabilise at the current level over time. This is met by charting a path where the debt to GDP level does not increase or is expected to stop increasing in the short term. That is, the solvency condition is not directly linked to the **level** of debt. Rather, it is linked to the dynamics of the **change in the level of debt** – which (mathematically) is the first derivative of the level of debt.

$$Debt\ to\ GDP\ ratio = \frac{Debt}{GDP}$$

In the debt to GDP ratio, whatever that starting ratio, when the numerator–which is government debt–is not growing faster than the denominator, which is the Gross Domestic Product (GDP), the debt is sustainable – that is, the debt to GDP ratio is stabilised.

The key variables that affect the debt to GDP ratio can be identified through a government budget constraint.

3.1. Government Budget Constraint (GBC)

The standard debt-based real GBC can be written as follows:

$$G_t - T_t + (1 + r_t)B_{t-1} = B_t \tag{1.1}$$

where G_t is real government spending in goods and services during period t, T_t equals real government revenue (taxes minus transfers) during period t, B_{t-1} is the real value of the outstanding debt at the end of period t–1 or, equivalently, at the beginning of period t and $(1 + r_t) = \frac{(1+i_t)}{(1+\pi_t)}$, where r_t is real interest rate, i_t is nominal interest rate and π_t is inflation rate.

The real GBC measured relative to GDP can be obtained by dividing both sides of the equation by real GDP, Y_t, which yields

$$d_t + \frac{1 + r_t}{1 + g_{Yt}} b_{t-1} = b_t \tag{1.2}$$

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[14] International Monetary Fund, (2021), 'Review of The Debt Sustainability Framework For Market Access Countries', available at: https://www.imf.org/en/Publications/Policy-Papers/Issues/2021/02/03/Review-of-The-Debt-Sustainability-Framework-For-Market-Access-Countries-50060 [Last accessed 14.10.2021]

where $d_t = g_t - t_t$ is the real primary deficit to GDP ratio, with g_t giving the real government spending as a proportion of real GDP in period t, t_t being real government revenue as a proportion of GDP in period t, b_t being the real stock of outstanding debt as a proportion of GDP at the end of period t and g_{Yt} being the growth rate of the real GDP.

The term $\frac{1+r_t}{1+g_{Yt}}$ can be approximately written as $1 + i_t - \pi_t - g_{Yt}$, whenever i_t, π_t and g_{Yt} are close to zero. We can define the variable ρ_t as:

$$\rho_t = i_t - \pi_t - g_{Yt} \tag{1.3}$$

which is the real interest rate on government debt adjusted for output growth, so that the real GBC as a proportion of GDP can be written as

$$d_t + (1 + \rho_t)b_{t-1} = b_t \tag{1.4}$$

or, equivalently, as

$$d_t + \rho_t b_{t-1} = b_t - b_{t-1} = \Delta b_t \tag{1.5}$$

Equation (1.5) shows that changes in the debt to GDP ratio (i.e., Δb_t) can be determined by two terms. The first term is the primary deficit ratio and the second term is the real interest rate adjusted for GDP growth. In other words, when the primary deficit as a percentage of GDP increases or when the real interest rate adjusted for GDP growth is greater than zero, the debt to GDP will increase as the government needs to borrow so much to finance the deficit and/or pay the interest expenses, such that the resulting growth in debt outstrips the growth in GDP.

GBC for foreign debt

This equation will change slightly when debt is denominated in foreign currency terms. Foreign currency denominated debt will have interest rates and capital repayments in foreign currency and therefore, the cost of servicing that debt will also be increased by any depreciation of the exchange rate.

The real GBC measured relative to GDP for foreign currency denominated debt will be as follows:

$$d_t + \frac{\left(1 + i_t^f\right)(1 + e_t)}{(1 + g_{Yt})(1 + \pi_t)} b_{t-1} = b_t \tag{2.1}$$

where $d_t = g_t - t_t$ is the real primary deficit to GDP ratio, with g_t giving real government spending as a proportion of real GDP in period t, i_t^f being the nominal foreign interest rate, e_t being the depreciation rate of the domestic currency[15] and π_t being the domestic inflation rate.

The term $\frac{\left(1+i_t^f\right)(1+e_t)}{(1+g_{Yt})(1+\pi_t)}$ can be approximately written as $1 + i_t^f + e_t - \pi_t - g_{Yt}$, whenever i_t, e_t, π_t and g_{Yt} are close to zero. We can define the variable ρ_t as:

$$\rho_t^f = i_t^f + e_t - \pi_t - g_{Yt} \tag{2.2}$$

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[15] This is the amount by which the foreign debt increases due to depreciation of the domestic currency. This is an aggregate increase in the foreign debt that occurs due to the change in different foreign currency denominated debts.

so that the real GBC for foreign debt as a proportion of GDP can be written as

$$d_t + (1 + \rho_t^f)b_{t-1}^f = b_t^f \tag{2.3}$$

or, equivalently, as

$$d_t + \rho_t^f b_{t-1} = b_t^f - b_{t-1}^f = \Delta b_t^f \tag{2.4}$$

Equation (2.4) shows that changes in the foreign debt to GDP ratio (i.e., Δb_t^f) can be determined by two terms that are related to the increase in nominal GDP (real GDP growth plus inflation). The first term is the primary deficit ratio and the second term is ρ_t^f, which is the sum of the increase in (a) the interest rate on foreign debt and (b) depreciation of the domestic currency. Therefore, in this equation, debt to GDP increases if the primary deficit as a percentage of GDP increases or if the interest rate on foreign debt plus currency depreciation outstrips the increases in nominal GDP.

GBC for both domestic and foreign debt

Incorporating both domestic and foreign debt into the equation would give the following equation on debt:

$$d_t + (1 + \rho_t)b_{t-1} = b_t \tag{3.1}$$

where,

(1) $\rho_t^d = i_t^d - \pi_t - g_{Yt}$, which is domestic interest rate (i_t^d) minus inflation (π_t) and real GDP growth rate (g_{Yt}).

(2) $\rho_t^f = i_t^f + e_t - \pi_t - g_{Yt}$, which is foreign interest rate (i_t^f) plus depreciation rate of the domestic currency minus inflation (π_t) and real GDP growth rate (g_{Yt}).

(3) $\rho_t = (\rho_t^d \times \frac{b^d{}_{t-1}}{b_{t-1}}) + (\rho_t^f \times \frac{b^f{}_{t-1}}{b_{t-1}})$, which is the weighted average of domestic and foreign real interest rates as a share of GDP. The weightage is based on the amount of domestic and foreign debt held as a share of total debt for the previous year.

3.2.   Conditions for stabilising debt

In general, the condition for stabilising debt is:

$$b_t \leq b_{t-1} \tag{4.1}$$

That is, the debt to GDP ratio in the current year should be less than or equal to the debt to GDP ratio in the previous year.

As $b_t = d_t + (1 + \rho_t)b_{t-1}$, substituting this in equation (4.1) gives,

$$d_t + (1 + \rho_t)b_{t-1} \leq b_{t-1} \tag{4.2}$$

Hence,

$$d_t \leq -\rho_t b_{t-1} \tag{4.3}$$

Therefore, for debt to stabilise, the primary deficit (d_t) should be less than or equal to the previous year's debt multiplied by the real interest rate as a share of GDP.

This condition can be set out separately for domestic and foreign debt by substituting $\rho_t = (\rho_t^d \times \frac{b_{t-1}^d}{b_{t-1}}) + (\rho_t^f \times \frac{b_{t-1}^f}{b_{t-1}})$ in equation (4.3) as follows:

$$d_t \leq -(\rho_t^d b_{t-1}^d + \rho_t^f b_{t-1}^f)$$

To derive our conditions for stabilising debt, we stipulate that the increase in domestic debt will be sufficient to at least finance the entirety of the primary deficit. Then the separate debt stabilisation conditions for the domestic debt and foreign debt will be as follows:

<u>Domestic debt</u>: $d_t \leq -\rho_t^d b_{t-1}^d$

<u>Foreign debt</u>: $0 \leq -\rho_t^f b_{t-1}^f$

Using the above, we can derive two conditions that are sufficient for stabilising domestic debt and another two conditions that are sufficient for stabilising foreign debt.

Domestic debt

Domestic debt condition 1: Domestic real interest rate is zero or negative $[(i_t^d) \leq (\pi_t)]$.

Zero real interest rates eliminate (i_t^d) and (π_t) from the equation $\rho_t^d = i_t^d - \pi_t - g_{Yt}$ thereby leaving $\rho_t^d = -g_{Yt}$.

Substituting $\rho_t^d = -g_{Yt}$ into the debt stabilising condition for domestic debt

$d_t \leq -\rho_t^d b_{t-1}^d$, gives $d_t \leq g_{Yt} b_{t-1}^d$.

Hence,

Domestic debt condition 2: Primary deficit d_t is less than the multiple of real GDP growth rate and domestic debt as a share of GDP, $d_t < g_{Yt} b_{t-1}^d$.

Foreign debt

Foreign debt condition 1: The local currency depreciation rate is no higher than the rate of local currency inflation $[(e_t) \leq (\pi_t)]$.

When depreciation rate is equal to inflation, it eliminates (e_t) and (π_t) from the equation $\rho_t^f = i_t^f + e_t - \pi_t - g_{Yt}$, thereby leaving $\rho_t^f = i_t^f - g_{Yt}$.

Substituting $\rho_t^f = i_t^f - g_{Yt}$ into the debt stabilising condition for foreign debt, which is $0 \leq -\rho_t^f b_{t-1}^f$, gives $i_t^f \leq g_{Yt}$.

Hence,

Foreign debt condition 2: Foreign interest rate no higher than real GDP growth $[(i_t^f) \leq (g_{Yt})]$.

3.3.   Assessing the possibility of Sri Lanka meeting these debt sustainability conditions

Domestic debt condition 1: Real Interest rates are zero

The one-year treasury bill rate at the end of 2020 was at approximately 5%. The interest rates on domestic debt are expected to be around 6-7%. Together with past debt obtained at higher rates, the rate of inflation can also be expected to be around 6-7% in 2021 on currently observed trends. This provides a scenario in which there is effectively (approximately) a zero real interest rate. This arises from the ability of the government to have a high degree of influence on the local interest rate. If the government exercises a higher inflation tolerance and external sector pressures are managed better, this condition–of a zero real interest rate on local debt–is within the scope of achievable outcomes.

Domestic debt condition 2: Primary deficit less than half the rate of real GDP growth rate

Sri Lanka's domestic debt was approximately 55% of the GDP in 2020. Therefore, the condition $d_t < g_{Yt}b^d_{t-1}$ could be stated as $d_t < 0.55g_{Yt}$. The model provides the condition that GDP growth should be higher than the primary deficit as a share of GDP. Therefore, for the purpose of describing the model if GDP growth is at 5% in the future, then the maximum primary deficit that would meet the debt sustainability/stabilising condition would be 3%.

Foreign debt condition 1: Currency depreciation is equal to or less than inflation

The theoretical 'law of one price', applied to exchange rate assessments[16] suggests "the percentage change in the nominal exchange rate between any two currencies will equal the difference between the percentage changes in the price levels of the two corresponding countries" (Isard et al.,2001).

Further, empirical evidence shows a strong relationship between changes in exchange rates and inflation differentials over a longer—more than 6 years—time horizon. Even past data on Sri Lanka shows the inflation rate differentials have more or less been similar to the depreciation rate. Data from the last 20 years (2000 – 2019) shows that the average annualised inflation differential of Sri Lanka and the United States amounts to 5.8%. The annualised rate of depreciation of the Sri Lankan Rupee against the United States Dollar was 4.9% in the same period.

This second condition, therefore, is one where the future depreciation rate is equal to or less than the future inflation rate. Even assuming a close to zero inflation in countries owning the currencies in which Sri Lanka maintains its reserves, if the government continues to exercise a higher inflation tolerance and currency pressures are managed in line with past performance, this condition is also within the scope of achievable outcomes.

Foreign debt condition 2: Interest rate on foreign debt is equal to or less than real GDP growth

In 2019, the foreign interest rates, calculated as a share of foreign interest over the foreign debt in the previous year, was at 3.9%. Therefore, the condition would be satisfied at a real GDP growth rate of 3.9% or above.

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[16] Isard, Peter, Faruqee, Hameed, Kincaid, G. Russell and Fetherston, Martin. (2001). 'Methodology for Current Account and Exchange Rate Assessments.', International Monetary Fund Occasional Paper no. 209 (December)

However, given that the marginal rate of foreign debt is higher, the weighted average cost of foreign debt could be subject to a gradual increase. The following calculations provide some boundary conditions in which the condition can yet be satisfied.

If a GDP growth rate of 5% is achieved in the next 3 years, and all interest and maturities on foreign debt are re-financed through raising an equal quantum of foreign debt, this condition could still be satisfied, if the weighted average marginal cost of foreign debt is no more than 7%.

If a GDP growth rate of 5% is achieved in the next 3 years, and only half of all interest and maturities on foreign debt are re-financed through commercial foreign debt, and the other half is raised through concessionary foreign debt at the rate of 2%, this condition could still be satisfied, even if the weighted average marginal cost of the commercial foreign debt went up to 12%.

Overall prognosis for debt sustainability in terms of solvency

Overall, the weighted average of $\rho_t^d = -5\%$ and $\rho_t^f = -1.1\%$ gives $\rho_t = -3.3\%$. Using the overall condition to stabilise debt ($d_t < -\rho_t b_{t-1}$), a primary deficit of less than 3.3% is sufficient to stabilise debt, as the debt was closer to 100% of GDP in 2020; or for every 1% increase(decrease) in primary deficit, 1% increase(decrease) in real GDP growth is necessary.
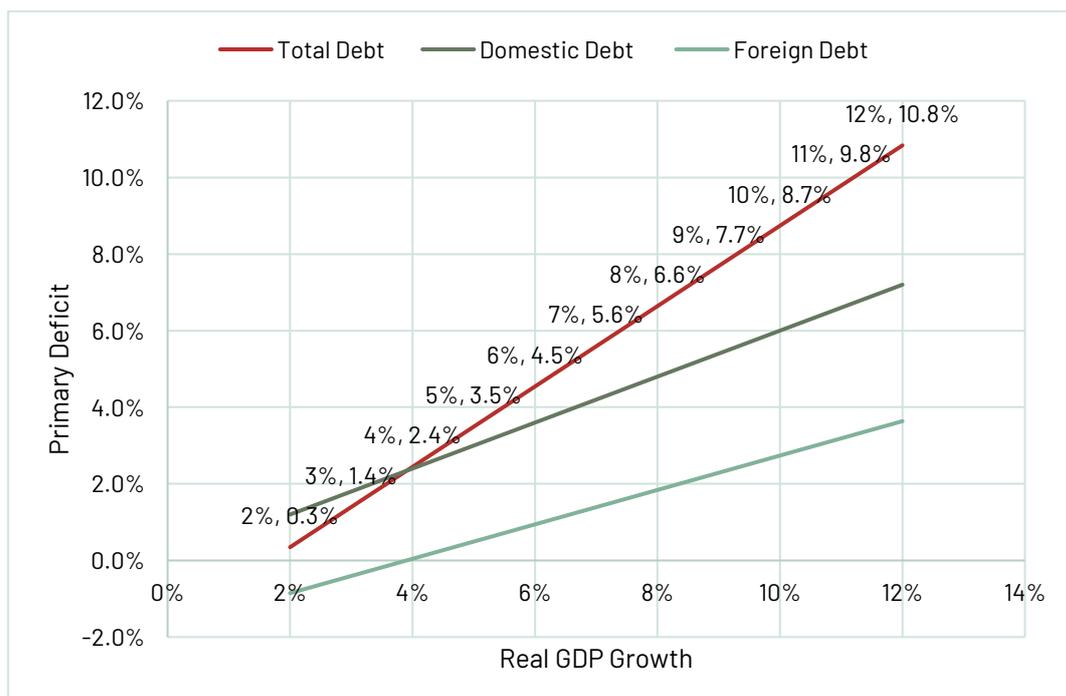
Foreign Exchange liquidity and reserves – the critical short term constraint

The most pressing debt related challenge facing Sri Lanka, moving forward from 2021 onwards, is with regard to US Dollar liquidity. Given the fact that Sri Lanka has lost access to global capital markets, the country has been unable to raise sovereign bonds to re-finance external debt maturities. As a result, debt maturities have had to be settled using existing reserves. This has caused reserves to decline steeply and put in doubt Sri Lanka's ability to raise the necessary USD liquidity to meet upcoming liabilities.

Sri Lanka's foreign reserves as at end February 2021 were USD 4,500 million (3 months of imports). Despite the expected inflows, the projected outflows can be expected to reduce the reserves further. For the year 2021, Sri Lanka has external sovereign debt repayments of USD 4,300 million and Sri Lanka Development Bonds (SLDB) capital repayments of USD 1,325 million. The current account deficit in 2021 is also likely to increase compared to 2020 as economic recovery will lead to higher import demand and global oil prices have also increased significantly compared to 2020.

Exhibit 6 below projects, based on information available as at June 2021, the drain on reserves during 2021 and 2022 considering the major sources of inflows and outflows in the balance of payments. The projection assumes that FDI and bilateral/multilateral loans are equal to the average of the last 5 years. The projection also excludes the SLDB capital maturities.

FIGURE 6: PROJECTED FOREIGN CURRENCY INFLOWS AND OUTFLOWS

Description	2021	2022
Inflows	3,648	2,172
Long term loans	1,882	1,400
Foreign Direct Investments (FDI)	772	772
IMF SDR allocation	780	0
Bangladesh swap	250	0
Outflows	6,692	5,290

Current account deficit	3,918	1,869
Sovereign debt maturity excluding interest	2,774	3,421
Net inflows	(3,008)	(3,118)
Year-end foreign reserves	2,657	-

The projection indicates that given these assumptions on inflows, current account deficit and sovereign debt maturities, reserves will decline to USD 2,657 million by end 2021 and be completely depleted by the end of 2022. This analysis underlines the importance of Sri Lanka regaining access to global capital markets to be able to re-finance debt and replenish its foreign reserves.

A key risk to the above projection is a higher current account deficit due to higher import growth. This creates an important interaction between the debt sustainability model and the liquidity projection. The dynamics of a negative or low real interest rate on the LKR, which supports debt sustainability, would typically lead to higher import demand in a recovering economy, which in turn would create stress on the current account deficit and accelerate the liquidity problem. At present, this stress has been mitigated by policy-based restrictions on imports.

4. The possibility of a good or bad equilibrium

Being solvent does not prevent the government from facing a liquidity crisis; and the lack of a liquidity crisis does not mean that a government is solvent.

In plotting a path for Sri Lanka an economic analysis would have to contend with the basic problem of multiple equilibria. On a given set of government policies a government can move towards a good or a bad equilibrium in terms of liquidity (and by extension, solvency), based on the expectations held by lenders. That is, the expectations of lenders have a tendency to become self-fulfilling prophecies.

When lenders have positive expectations, it leads to reduced borrowing costs and moves the debt dynamics towards a good equilibrium, in which the country can be on a sustainable path (of solvency and sustainability).

When lenders have negative expectations, it leads to increased borrowing costs and moves debt dynamics towards a bad equilibrium, in which the country effectively loses market access and debt can enter an unsustainable path.

Therefore, the path to debt both solvency and liquidity depends not only on the policies undertaken by the government, but also on the ability of the government to generate confidence with regard to the adequacy and sustainability of those polices in terms of Sri Lanka meeting its debt obligations as they become due.

This working paper has set of four specific conditions which Sri Lanka focus on, to establish the sustainability of its debt. These conditions are:

1. Use monetary policy instruments to support a domestic real interest rate is not more than zero

2. Use fiscal policy instruments to keep the primary deficit at not more than the multiple of LKR debt as a share of GDP and the real GDP growth rate – currently c. 55% of the GDP growth rate.

3. Maintain economic and market conditions such that local currency depreciation rate is no higher than the rate of local currency inflation – as has been the case in the last several decades.

4. Maintain decisions on international borrowing such that the interest rate on foreign debt is no higher than the real GDP growth rate

There is a fifth condition that arises when considering the issue of liquidity, separately from the issue of solvency – which can then have feed-back impact on achieving the solvency condition as well.

5. Regain access to international markets at borrowing rates that don't jeopardise debt solvency –marginal rates of 7% and below would allow for the weighted average rate to remain within this solvency condition.

The foregoing analysis provides two important conclusions. First, there is a path for Sri Lanka being solvent with regard to its debt, and the four conditions that have been derived and set out is this paper set out the basic hand-rails for staying on that path. Second, the ability to stay

within the hand-rails of the solvency condition would tend to depend also on generating confidence, on Sri Lanka's actions to remain solvent and improving Sri Lanka's credit ratings thereby. If the government is not able to commit to the above solvency measures early and build confidence around those commitments, then it risks remaining locked out of international borrowing, depleting its reserves, and arriving at a liquidity crisis, which would force a negotiated restructuring of debt or a disorderly default.

Annexures

Note 1

Empirical assessment of the debt sustainability conditions from past data

An assessment of the past fiscal numbers shows that whenever the primary deficit is too high and ρ_t has a high positive value, the debt to GDP tends to increase and vice versa. More specifically, when the condition $d_t < -\rho_t b_{t-1}$ is satisfied—when column $-\rho_t b_{t-1} - d_t$ in the table is positive—the debt to GDP always tends to reduce. The reverse is also true; when the condition $d_t < -\rho_t b_{t-1}$ is not satisfied—when column $-\rho_t b_{t-1} - d_t$ in the table is negative—the debt to GDP always tends to increase, except in 4 years.

From 2002 to 2005, the value of the debt was influenced by proceeds from privatisation.[17] In 2002 to 2003 and 2010 to 2011, the GDP numbers varied due to the change in the GDP calculation methodology, which meant that the nominal GDP, including the rate of inflation and the real GDP growth rate combined increased. Both of these are exogenous factors that are not included in the debt sustainability equation.

Year	Primary deficit	ρ_t	$-\rho_t b_{t-1}$	$-\rho_t b_{t-1} - d_t$	Debt to GDP
2002	1.1%	1.4%	-1.4%	-2.5%	105.6
2003	0.4%	3.3%	-3.5%	-3.9%	102.5
2004	1.8%	-4.1%	4.2%	2.4%	102.5
2005	2.1%	-4.4%	4.5%	2.4%	90.8
2006	1.9%	-6.9%	6.2%	4.4%	88.0
2007	1.8%	-10.3%	9.1%	7.3%	85.1
2008	2.2%	-10.7%	9.1%	6.9%	81.5
2009	3.4%	1.9%	-1.6%	-5.0%	86.2
2010	1.5%	-5.4%	4.7%	3.2%	71.6
2011	1.3%	-1.7%	1.2%	-0.1%	71.2
2012	0.9%	-7.6%	5.4%	4.5%	69.7
2013	0.8%	-1.7%	1.2%	0.5%	71.8
2014	1.5%	-1.7%	1.2%	-0.3%	72.3

2015	2.9%	5.6%	-4.1%	-7.0%	78.5
2016	0.2%	0.1%	-0.1%	-0.4%	79.0
2017	0.0%	-1.9%	1.5%	1.5%	77.9
2018	-0.6%	8.0%	-6.2%	-5.6%	83.7
2019	0.8%	2.3%	-1.9%	-2.7%	86.8
2020	7.4%	9.8%	-8.5%	-15.9%	101.0

Data and assumptions used

1. The domestic interest rate used is the domestic interest payments divided by the domestic debt in the mid-year.
2. The foreign interest rate used is the foreign interest payments divided by the foreign debt in the mid-year.
3. Depreciation rate is assumed to be the increase in the foreign debt due to exchange rate variation (as reported by CBSL) over foreign debt.
4. Inflation is the percentage change in the GDP deflator.
5. The actual real GDP growth is the real GDP growth figure.

Note 2

Incorrect accounting measure understates significant increase in government expenditure in 2020

The government expenditure for 2020 and the revised figure for 2019, as reported in the 2020 CBSL Annual Report, are incorrect.

The Annual Report of the Central Bank of Sri Lanka 2020 states that the government expenditure for the year 2020 was 20.3% of GDP. In 2019, the expenditure as a percentage of GDP was revised to 22.2% from the previously reported figure of 19.4%. The CBSL reported numbers are incorrect because the government expenditure for 2019 was adjusted by shifting a sum of LKR 422.6 billion, incurred in 2020, to 2019. This was done with a view of accounting for the payment of arrears spilled over from 2019.[18] This overstates expenditure in 2019 and understates expenditure in 2020.

The Annual Report of the Ministry of Finance 2019 states that Sri Lanka's national accounting system uses the modified cash-based accounting method.[19] Under this method, expenditure and revenue are only recognised when cash is paid or received, which means unspent budget allocations are cancelled at the end of the financial year. According to modified cash-based accounting, it is not permissible to record an expenditure outlay of Rs. 422.6 billion made in 2020 in the accounts of 2019. It is also inaccurate to deviate from cash-based accounting for expenditure and not apply the same accounting measure to revenue in arriving at the budget deficit. Deviating from accounting principles to understate expenditure creates a false impression of fiscal health and is tantamount to accounting fraud.

Therefore, after adjusting for the error, the government expenditure for 2020 was LKR 3,340 billion (23.1% of GDP) while the expenditure for 2019 remains at LKR 2,915 billion (19.4% of GDP).

The adjusted budget balance for 2020 was 14% of GDP not -11.1% of GDP as reported in the CBSL Annual Report for 2020, and the budget deficit for 2019 remains at 6.8% of GDP.

Year	Total expenditure (LKR millions)	Budget balance (LKR millions)	Total expenditure (share of GDP)	Budget balance (share of GDP)
As reported in CBSL Annual Report 2020				
2019	3,337,896	–1,016,483	22.2	–9.6
2020	3,040,996	–1,667,688	20.3	–11.1
Actual figure after adjustment				
2019	2,915,291	–1,016,483	19.4	–6.8

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[18] The Central Bank of Sri Lanka, (2020), Annual Report 2020, Pg., 155. Available at: https://www.cbsl.gov.lk/en/publications/economic-and-financial-reports/annual-reports/annual-report-2020 [Last accessed 14.10.2021]

[19] Ministry of Finance Sri Lanka, (2019) Annual Report 2019, Page., 196. Available at: http://oldportal.treasury.gov.lk/publications/annual-report [Last accessed 14.10.2021]

| 2020 | 3,463,603 | -2,090,295 | 23.1 | -14.0 |

Extract taken from PublicFinance.lk - https://publicfinance.lk/en/topics/Incorrect-accounting-measure-understates-significant-increase-in-government-expenditure-in-2020-1620901580

Note 3

The general understanding of public/government debt is the central government debt as a share of GDP. Data on this can be traced back to the 1950s.

However, the actual liability of the government is more than the central government debt as it includes public corporation debt as well. In 2020 there is a further element which should be considered, which is the residual face value of International Sovereign Bond (ISB) debt. The inclusion of both public corporation debt and face value of ISB debt increase the total liabilities of the government to 112.4% of GDP in 2020.

FIGURE 7: TOTAL PUBLIC DEBT OF SRI LANKA, SHARE OF GDP

	2018	**2019**	**2020**
Central government debt	84%	87%	101%
Under-reported ISB debt	1.9%	1.2%	2.7%
Public corporation debt	8.0%	7.5%	8.7%
Total debt (adjusted)	**94.1%**	**95.5%**	**112.4%**

Calculations based on CBSL data

Public corporation debt

It is important to consider public corporation debt in total debt, since there have been instances of debt being shifted from the government balance sheet to State Owned Enterprises (SOEs) and vice versa. For instance, the government transferred some of the central government debt to the balance sheets of SOEs in 2014.

The total debt held by these public corporations amounted to LKR 1,309 billion or 8.7% of GDP in 2020. The total public debt amounts to 109.7% of GDP with the addition of the public corporation debt to central government debt.

Residual face value of ISBs

The total value of debt in the form of ISBs for 2020 is reported in the CBSL Annual Report as LKR 2,212 billion including LKR 416 billion reported as domestic debt. However, this figure is reported in book value/market value terms. That means the value of debt changes based on the price of ISBs in the market. Sri Lanka's ISB prices declined significantly in 2020 following credit rating downgrades.

While ISB debt has been recorded at market value, at the end of the maturity period the government pays back the face value of the ISB and not the market value, unless the government is able to buy back the ISB at current prices in the market, which is improbable given the lack of reserves or other financing sources to purchase the entirety of outstanding ISB debt. Therefore, the actual liability that needs to be paid by the government is the face value of the ISBs. This increases the total liabilities to be paid by the government by LKR 408 billion (equivalent to 2.7% of GDP) in 2020. As a result, the total liabilities of the government increase to 112.4% of GDP in 2020.

FIGURE 8: UNDER-REPORTED INTERNATIONAL SOVEREIGN DEBT, LKR MILLIONS

	2018	2019	2020
Value of ISB reported (book value)	2,220,411	2,545,876	2,212,335
Face value of ISB	2,494,538	2,733,532	2,619,061
Additional Liabilities (diff. in FV & BV)	274,127	187,656	406,726
Additional liabilities (share of GDP)	1.9%	1.2%	2.7%

Calculations based on CBSL data