

# MOBILIZING REVENUE IN SRI LANKA<sup>1</sup>

*Sri Lanka has substantial scope to mobilize revenue by strengthening income taxes and VAT. Currently, Sri Lanka's tax-to-GDP ratio is among the lowest in the world, and its tax system stands out with its low rates, small base, and complexity. Aligning its PIT rate schedule with other Asian emerging market economies and removing sector-specific CIT exemptions could generate around 0.7 percent of GDP in additional revenue. Since Sri Lanka's VAT rate is low compared to peers, there is scope to mobilize additional revenue from rate increases. However, such a reform should be accompanied by base broadening measures and enhanced revenue collection efficiency. Indirect tax reform should be comprehensive and reduce the complexity of the system, by combining the removal of VAT exemptions with a phasing-out of para-tariffs.*

## A. Introduction

**1. From an international perspective, persistently large fiscal deficits in Sri Lanka reflect relatively low tax revenues, not excessively high government expenditures.** In a bid to promote production and reduce the cost of living, the current government revamped the tax structure shortly after taking office, legislating a variety of rate cuts and exemption increases to the Personal Income Tax (PIT), Corporate Income Tax (CIT), and Value Added Tax (VAT) in December 2019. Largely as a result, Sri Lanka's tax-to-GDP ratio fell to a historic low of 8.1 percent in 2020 and is now among the lowest in the world.<sup>2</sup>

**2. The government has pledged to keep the current low-tax regime unchanged over the medium-term for simplicity and predictability.** For 2020, it raised the tax free allowance for the PIT from 500,000 to 3,000,000 LKR, and cut the top marginal tax rate from 24 to 18 percent, substantially reducing the effective tax rate at all income levels. The government also cut the standard CIT rate from 28 to 24 percent, and raised exemptions for many sectors. In particular, the agriculture and information technology sectors are now fully CIT exempt. In addition, the government cut the standard VAT rate from 15 to 8 percent, and introduced additional exemptions. Furthermore, it simplified the tax system by eliminating the Nation Building Tax, the Economic Service Charge, and the Debt Repayment Levy.<sup>3</sup> In a bid to boost Foreign Direct Investment (FDI), the government removed all restrictions on the Strategic Development Projects Act, under which firms executing projects deemed strategically important can be granted tax exemptions for up to 25 years. Finally, the government has proposed a new Special Goods and Services Tax (SGST), to replace various taxes and levies on liquor, vehicles, cigarettes, telecommunications, and gambling.

<sup>1</sup> Prepared by Klaus Hellwig and Francis Vitek.

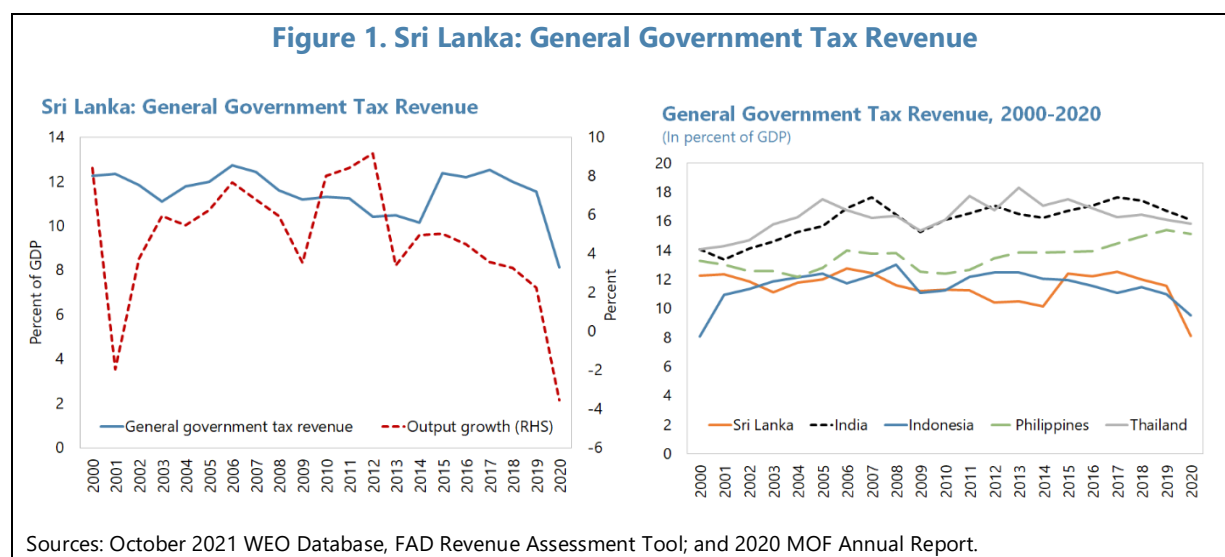
<sup>2</sup> Non-tax revenues, at around 1 percent of GDP, are also relatively low by international comparison.

<sup>3</sup> The Nation Building Tax was a 2 percent turnover tax on businesses. The Economic Service Charge was a 0.5 percent turnover tax on businesses deductible from any income taxes payable. The Debt Repayment Levy was a 7 percent tax on value added from the provision of financial services by licensed banks and finance companies.

**3. This chapter assesses the current tax system in Sri Lanka, and discusses tax policy reform options.** Our tax assessment focuses on the personal, corporate and indirect taxes, and is supported by peer country comparisons. These comparators are Asian emerging market economies having similar levels of economic development as Sri Lanka. The reform options we discuss take into consideration the need to mobilize revenue while promoting economic efficiency and equity. They are consistent with long-standing policy advice by IMF experts in the context of IMF-supported programs, Article IV consultations, and technical assistance.

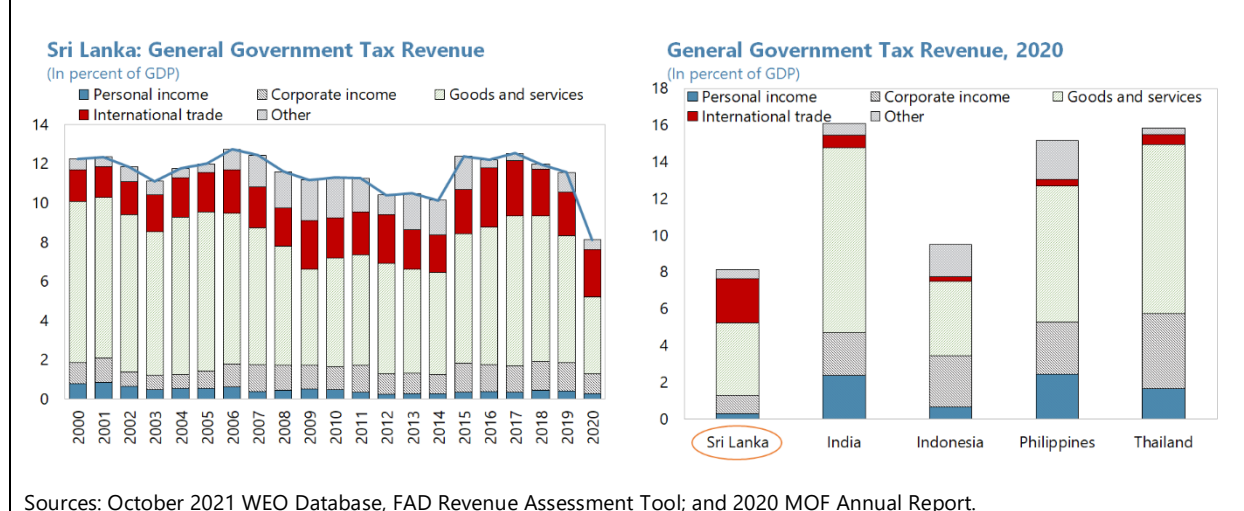
## B. Tax Revenue Performance

**4. Sri Lanka's tax revenue performance has long fallen short of its comparators, and deteriorated sharply in 2020 (Figure 1).** Total tax revenue was fairly stable at around 10 to 12 percent of GDP over the period 2000 to 2019. It was resilient to plunges in output growth in 2001, 2009, and 2013. However, during the recession in 2020 caused by the COVID-19 pandemic, total tax revenue fell sharply to 8 percent of GDP, due to the tax cuts, cyclical effects, suspension of non-priority imports, and lockdown measures. Throughout this period, Sri Lanka's tax-to-GDP ratio was below the average across its comparators, and this revenue underperformance has been rising.



**5. Sri Lanka's primary source of tax revenue has been taxes on goods and services (Figure 2).** Indeed, on average over the period from 2000 to 2020, taxes on goods and services accounted for 58 percent of total tax revenue. Sri Lanka's secondary revenue source was taxes on international trade, which accounted for 19 percent of total tax revenue on average over this period. Relative to its comparators, in 2020 Sri Lanka relied much more on taxes on international trade as a source of revenue. At the same time, it relied much less on PIT and CIT, which only generated 1.3 percent of GDP in revenue.

Figure 2. Sri Lanka: Tax Revenue Composition



**6. The number of registered taxpayers in Sri Lanka fell sharply following the 2019 tax reforms (Table 1).** As a result of the higher tax exemptions and more generous registration thresholds, relatively few Sri Lankan individuals and businesses are now captured by the tax system. Due to the change in the PIT rate structure and withholding regime, the number of registered income tax payers fell by 32 percent in 2020. In addition, more than three-quarters of previously registered VAT payers dropped out of the tax net. Finally, a large number of businesses that were previously only captured by the Nation Building Tax are no longer registered.

Table 1. Sri Lanka: Number of Registrations: Selected Taxes

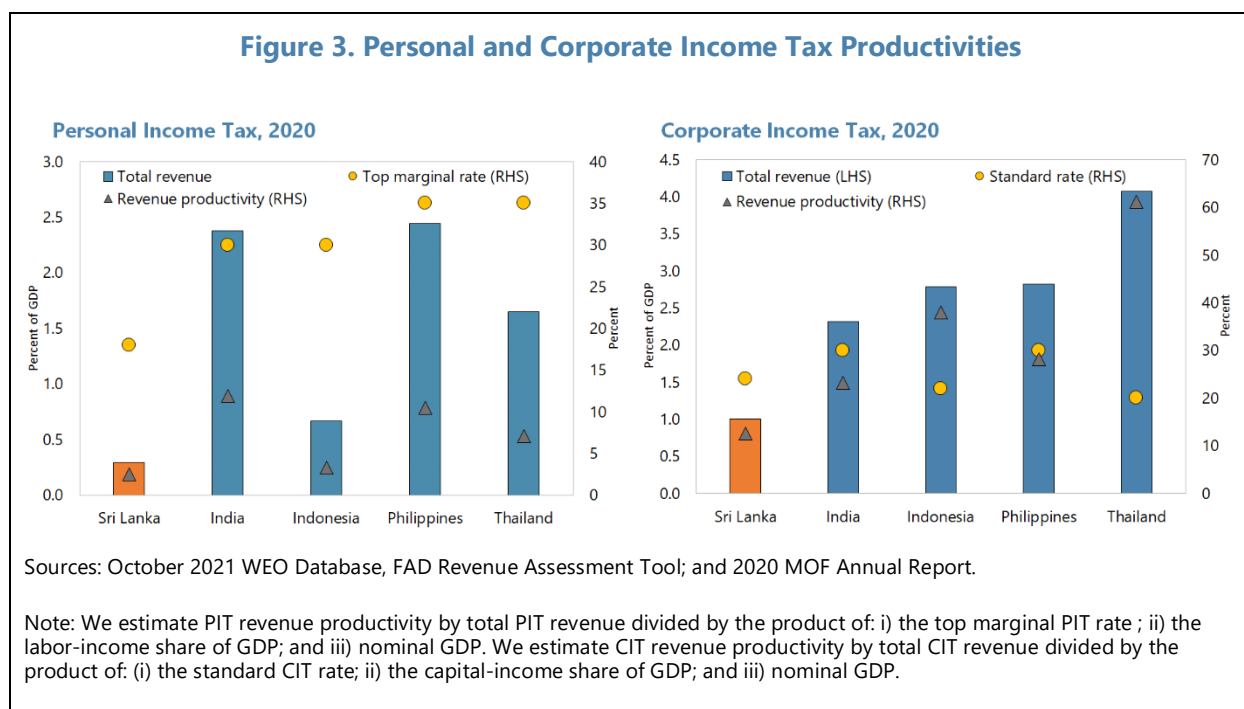
	end-2019	end-2020
Income taxes	1,522,911	1,036,014
Corporate income tax	56,460	60,721
Non-corporate income taxes	1,449,092	975,293
Individuals	281,105	292,712
Partnerships	17,300	16,949
Bodies of persons	804	804
Employees paying under mandatory or voluntary withholding schemes	1,149,883	664,828
Economic Service Charge	17,359	-
Value-added tax	28,914	8,152
Nation Building Tax	92,028	-

Source: Inland Revenue Department

## C. Personal and Corporate Income Taxes

**7. Sri Lanka has low PIT and CIT revenue productivities (Figure 3).** In 2020, Sri Lanka had the lowest PIT revenue-to-GDP ratio among its comparators, as well as the lowest top marginal PIT rate. It also had a lower CIT revenue-to-GDP ratio than all of its comparators, despite a near average standard CIT rate. As shown in Figure 3, Sri Lanka's CIT and PIT revenue productivities are low compared to its comparators, which means that the PIT and CIT generated less revenue in Sri Lanka

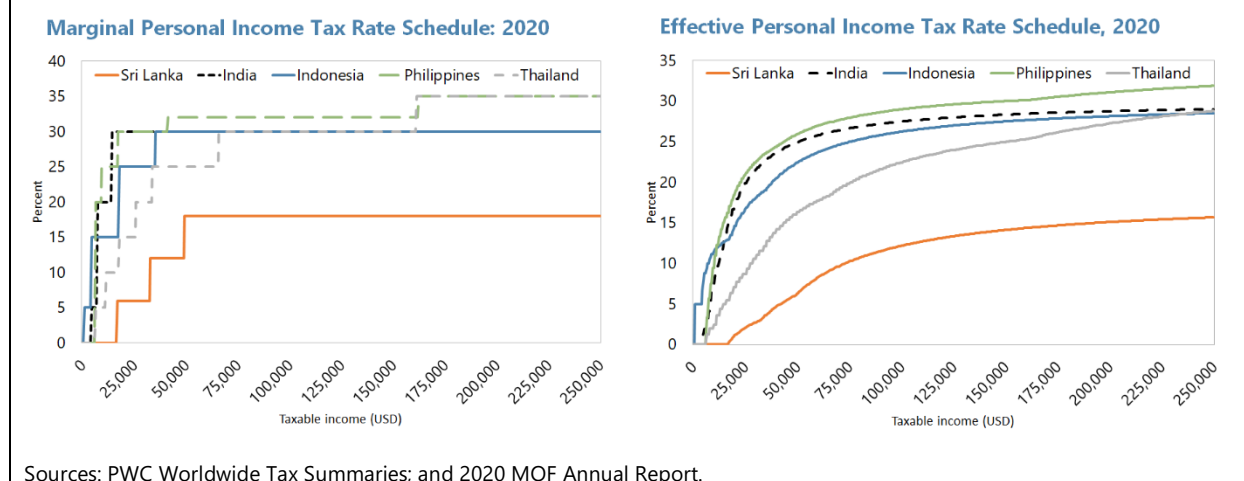
relative to proxy measures of potential revenue. This indicates some combination of high tax exemptions and low tax collection efficiency.



## Personal Income Taxes

**8. Sri Lanka's marginal and effective PIT rate schedules are very low (Figure 4).** For 2020, it raised the tax-free allowance for the PIT from 500,000 to 3,000,000 LKR, and cut the top marginal tax rate from 24 to 18 percent. In internationally comparable terms, Sri Lanka's revised tax-free allowance amounted to about 16,200 USD, versus 0 to about 5,000 USD across its comparators. At the same time, its revised top marginal tax rate of 18 percent fell far short of its comparators, where it ranged from 30 to 35 percent. Sri Lanka's high tax exemption threshold and low top marginal tax rate imply much lower effective PIT rates than in its comparators, at all income levels. The PIT is designed to make the tax system progressive, by imposing the tax burden disproportionately on high income earners. Raising Sri Lanka's PIT rate schedule from its very low level could make the tax system considerably more progressive.

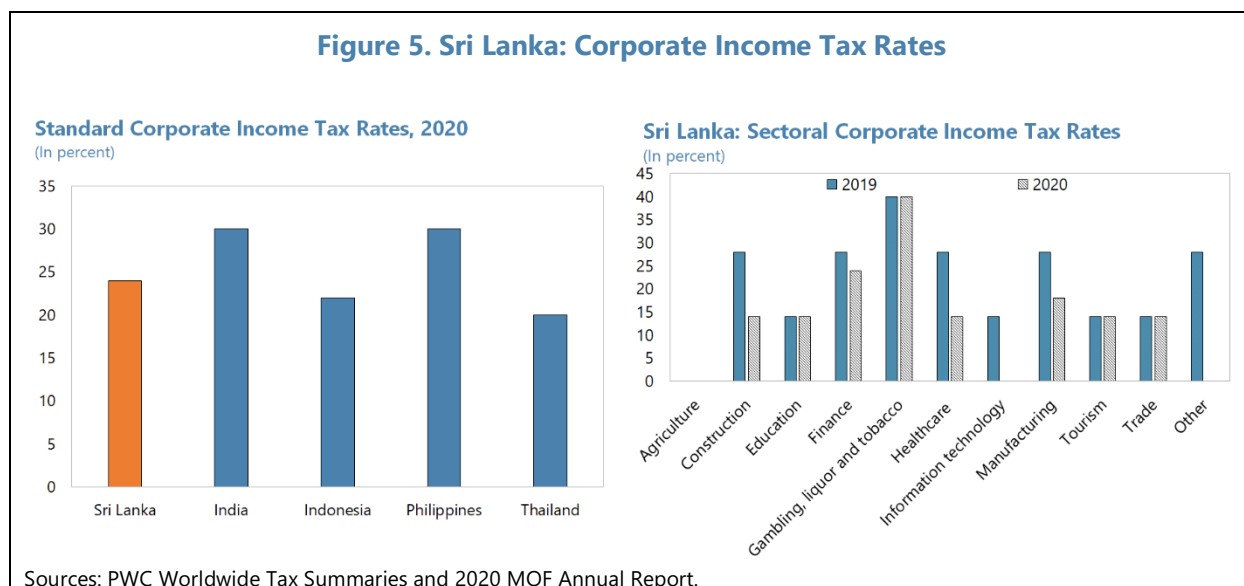
Figure 4. Marginal and Effective Personal Income Tax Rate Schedules



**9. There is scope to mobilize revenue in Sri Lanka through PIT reforms.** Based on Sri Lanka's relative revenue performance, we estimate that adopting a marginal PIT rate schedule broadly in line with those of its comparators would raise PIT revenue by an additional 0.2 percent points of GDP, up from its 2020 level of 0.3 percent of GDP. This hypothetical marginal PIT rate schedule sets the tax-free allowance at 600,000 LKR, and raises the marginal tax rate in 10 percentage point increments for each additional 600,000 LKR of taxable income, up to a top marginal tax rate of 30 percent. Based on Sri Lanka's household income distribution, we estimate that this hypothetical marginal PIT rate schedule would be strongly progressive, imposing an estimated 82 percent of the tax burden on households in the top 10 percent of the income distribution, and none on those in the bottom 60 percent.

### Corporate Income Taxes

**10. For 2020, Sri Lanka's standard CIT rate was cut, and exemptions were increased for many sectors (Figure 5).** Its standard CIT rate was cut from 28 to 24 percent, versus 20 to 30 percent across its comparators. But Sri Lanka's near average standard CIT rate was subject to widespread sector-specific exemptions, unlike in its comparators where it applied more or less uniformly across the entire economy. In Sri Lanka, only the financial and the gambling, liquor and tobacco sectors were subject to at least the standard CIT rate in 2020. Many sectors received CIT exemption increases in 2020, while the agriculture and information technology sectors were fully CIT exempt. Moreover, the government removed all restrictions on the Strategic Development Projects Act in 2020, under which firms executing FDI projects deemed strategically important can be granted CIT and other tax exemptions for up to 25 years. Granting sector-specific and firm-specific CIT exemptions erodes the tax base, reduces tax collection efficiency, and distorts the allocation of resources in the economy.



**11. There is scope to mobilize revenue in Sri Lanka through CIT reforms.** Based on Sri Lanka's sectoral CIT revenue composition, we estimate that imposing the standard CIT rate of 24 percent economy-wide would raise CIT revenue by an additional 0.5 percent of GDP, up from its 2020 level of 1.0 percent of GDP. This hypothetical CIT rate structure would eliminate all of the sector-specific exemptions that undermine efficient revenue collection. It would also help bring Sri Lanka into conformity with the OECD-led Inclusive Framework to reform the international corporate tax system, which includes a global minimum CIT rate of 15 percent, applicable to the global profits of large multinational corporations.

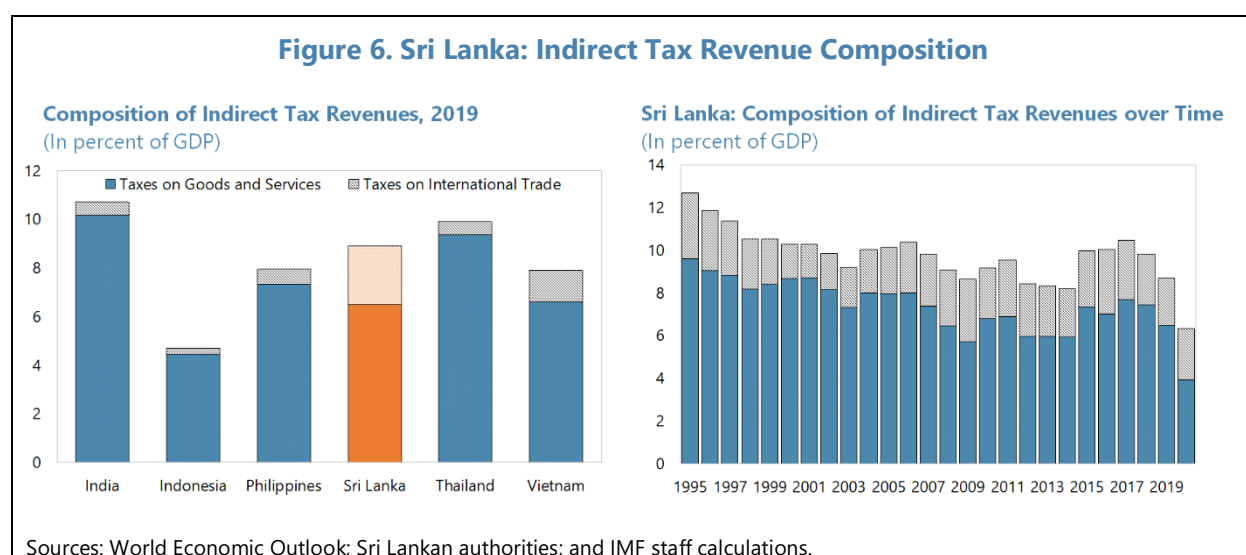
## D. Indirect Taxes

**12. Indirect taxes take various forms with different functions.** They can be used to alter the relative prices of goods and services, and thereby affect consumption choices. For example, excises are imposed on fuel in most countries, to make consumers internalize the negative environmental externalities from consuming it, consider buying more fuel-efficient cars, or switch to public transportation. Taxes on international trade, in particular import duties, were important historically to mobilize revenue, and to shield domestic firms from foreign competition by raising the relative prices of imported goods. However, following decades of global tariff reductions, taxes on international trade are now relatively low in many countries. Indirect taxes are also used to promote distributional equity in many countries, by imposing lower taxes on goods consumed by low-income households. But in practice, other instruments such as progressive income taxes, property taxes and social transfers tend to be more efficient at redistributing income, as they better target low-income households. A VAT has a larger tax base than excises and taxes on international trade.

**13. A VAT with few exemptions is an efficient vehicle to mobilize revenue, while excises can both generate revenues and correct negative externalities.** A VAT is more growth-friendly than a turnover tax, as it avoids the cascading of the tax burden along the supply chain, by taxing only the value added portion of turnover. Since a VAT and excises have distinct policy purposes,

excisable goods should also be subject to the VAT. Goods having negative consumption externalities that are typically subject to excises include fuel, liquor and tobacco. A simple indirect tax framework minimizes administrative costs and the compliance burden for firms, whereas a complex framework favors those who know how to find loopholes or game the system. International experience suggests that complex tax incentives can create opportunities for rent seeking and corruption.<sup>4</sup> In a similar vein, an IMF analysis has found that tax complexity is among the policy variables most robustly correlated with measures of corruption.<sup>5</sup>

**14. In Sri Lanka, revenue from taxes on goods and services declined over time, and reliance on international trade taxes is high.** Despite a gradual decline since the 1990s, Sri Lanka's indirect tax revenue in 2019 was comparable to that of its comparators (Figure 6). However, indirect tax revenue relied relatively heavily on taxes on international trade rather than taxes on goods and services. After the 2019 tax reforms, revenue collection from taxes on goods and services dropped significantly, due to the cut in the standard VAT rate and the elimination of the Nation Building Tax. The falls in economic activity and imports in 2020 due to the recession associated with the COVID-19 pandemic also contributed to the collapse in revenue from taxes on goods and services.



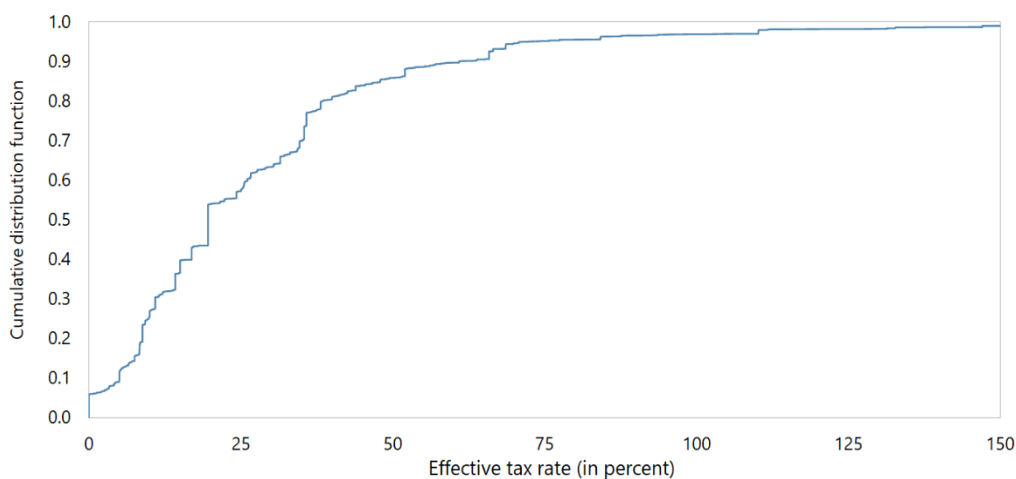
**15. Despite recent streamlining efforts, the indirect tax structure in Sri Lanka remains complex, and effective tax rates on many imported goods are high (Figure 7).** At least 11 levies and other excises have been eliminated over the past 5 years. In addition, the Nation Building Tax (a broad-based turnover tax that overlapped significantly with the VAT) was eliminated in 2019. Nevertheless, there remain a number of excise-like taxes and para-tariffs that are applied to the same tax base, in addition to differentiated import duties. As a result, effective tax rates vary widely across products. Figure 7 illustrates the complexity of the tax code in the case of imported goods. It

<sup>4</sup> See [“Options for Low Income Countries’ Effective and Efficient Use of Tax Incentives for Investment”](#), IMF, OECD, UN, and World Bank, 2015.

<sup>5</sup> See [“Curbing Corruption”](#), April 2019 Fiscal Monitor, IMF.

shows that under the 2020 tax schedule, no taxes are levied on 5 percent of imports. And around 50 percent of imports entered the country with an effective tax rate of less than 20 percent. But for other goods, the overlapping tariffs, para-tariffs and taxes added up to high effective tax rates, undermining the competitiveness of the economy. For example, as shown in Figure 7, around 10 percent of imports entered the country subject to effective tax rates of over 60 percent.

**Figure 7. Sri Lanka: Distribution of Effective Tax Rates across Imported Goods: 2020**



Sources: Sri Lankan authorities, UN-COMTRADE, and IMF staff estimates.

Note: The Figure shows the distribution of effective tax rates across products, based on the import tariff and tax schedule for 2020, as published by Sri Lanka Customs. Tax rates are weighted by the latest available (i.e., 2017) product-level CIF import values as reported by the COMTRADE database.

**16. The complexity of the indirect tax structure is further increased by the Special Commodities Levy (SCL).** Goods and services subject to the SCL are exempt from other taxes and levies such as customs duties, excises, and VAT. The indirect tax schedule has frequently changed, through the addition and removal of VAT exemptions, changes to product-specific excise rates, and movements of products into or out of the SCL regime. For example, in 2020 alone there were 20 separate directives changing the SCL schedule.<sup>6</sup>

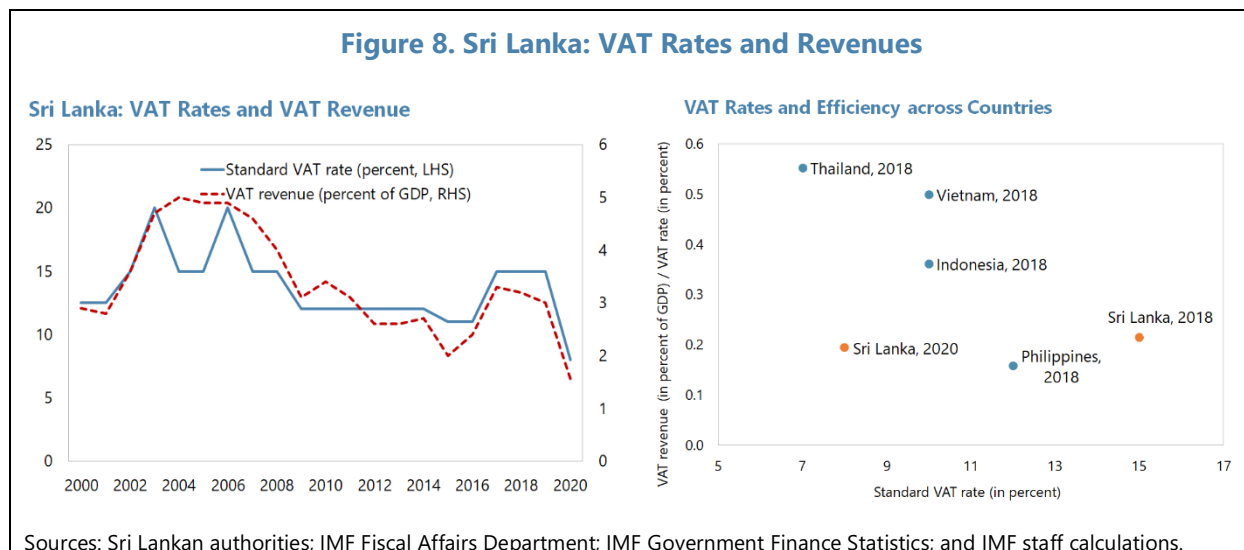
### Value Added Tax

**17. Sri Lanka's VAT revenues, already low by international standards, fell to a historic low in 2020 (Figure 8).** The drop in VAT revenues from 3 percent of GDP in 2019 to 1.6 percent in 2020 is largely explained by the cut in the standard VAT rate from 15 to 8 percent. While Sri Lanka's VAT rate is now below the average across Asian emerging market and developing economies of around 12 percent, the low standard rate alone cannot explain the low level of VAT revenues. As a share of GDP, VAT revenues in Indonesia, Thailand and Vietnam have exceeded that in Sri Lanka, despite relatively low standard VAT rates. As shown in the right-hand side of Figure 8, in Sri Lanka a

<sup>6</sup> See <http://www.customs.gov.lk/customs-tariff/>.



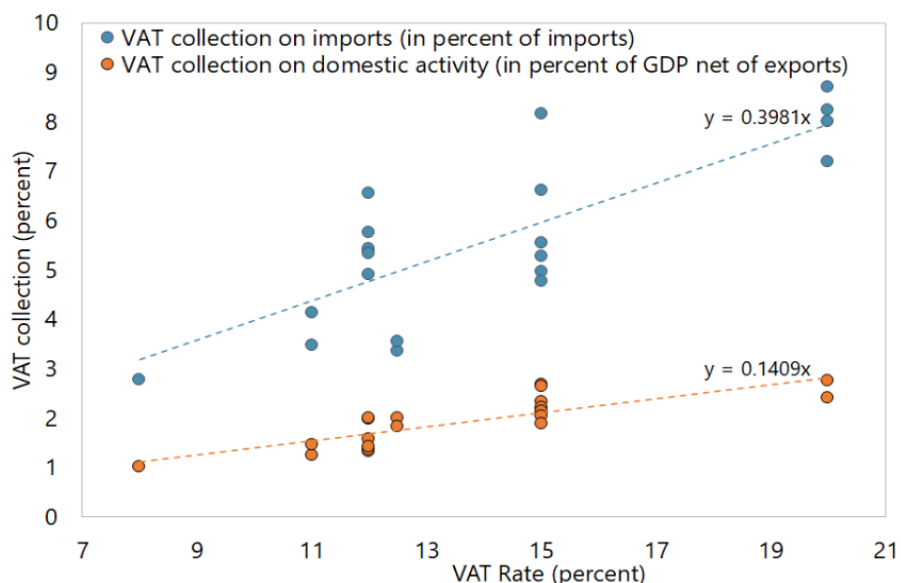
one percentage point increase in the standard VAT rate is associated with a 0.2 percent of GDP increase in tax revenues, whereas for Thailand and Vietnam the corresponding increase is close to 0.5 percent of GDP. According to the Asian Development Bank, Sri Lanka has the lowest VAT revenue productivity in Asia.<sup>7</sup>



**18. In Sri Lanka, the links between statutory VAT rates and revenues are relatively weak.**

Figure 9 shows that the relationship between VAT rates and revenues in Sri Lanka is particularly weak in the case of domestic activity. A one percentage point increase in the VAT rate is associated with a 0.4 percentage point increase in the effective VAT rate on imports, but only a 0.14 percentage point increase in the effective VAT rate on domestic activity. These weak relationships are further evidence that large shares of imports and domestic activity are not subject to VAT. This suggests that VAT revenue could be significantly raised by broadening the tax base and enhancing compliance.

<sup>7</sup> See ADB, 2020, "A Comparative Analysis of Tax Administration in Asia and the Pacific."

**Figure 9. Sri Lanka: VAT Revenue Efficiency for Imports and Domestic Activity, 2000–2020**

Sources: Sri Lankan authorities; and IMF staff estimates.

Note: The chart plots annual VAT collection as a share of the associated economic activity (i.e., imports or domestic production) against the standard VAT rate.

**19. Product-level data point to large VAT revenue shortfalls (Figure 10).** In Sri Lanka, many products and taxpayers are VAT exempt, implying that the effective VAT rate (calculated as the ratio of import VAT collection to the potential import VAT base) was only 2.1 percent in 2020, about one-quarter of the statutory VAT rate. Based on our estimates, in 2020 only about half of all imports—8.4 billion USD—fell into a product group in which the standard VAT rate of 8 percent was fully applied, whereas about a quarter of imports—4.2 billion USD—were fully VAT exempt. The remainder of imports fell under product groups in which only some products were subject to VAT.<sup>8</sup> Product-specific exemptions are most prevalent for vehicles, textiles, food, and fuel. Figure 10 shows that, according to staff estimates, these product-specific exemptions alone reduced the effective VAT rate by 2.8 percentage points. In addition, the coverage of products by the SCL reduced the effective VAT rate by 0.4 percentage points, since products that fall under the SCL are VAT exempt. Finally, the effective VAT rate was reduced by exemptions granted to certain taxpayers, in particular several state-owned enterprises, as well as special projects approved by the Board of Investment (BOI). In Figure 10, these taxpayer-specific exemptions are captured by the residual term.

<sup>8</sup> Import data from COMTRADE are reported at the HS6 product level, whereas import taxes are defined at the more granular HS8 level. Some HS6 product groups include both taxed and untaxed HS8 products.

**Figure 10. Sri Lanka: Statutory and Effective VAT Rates on Imports in 2020**  
(In Percent)

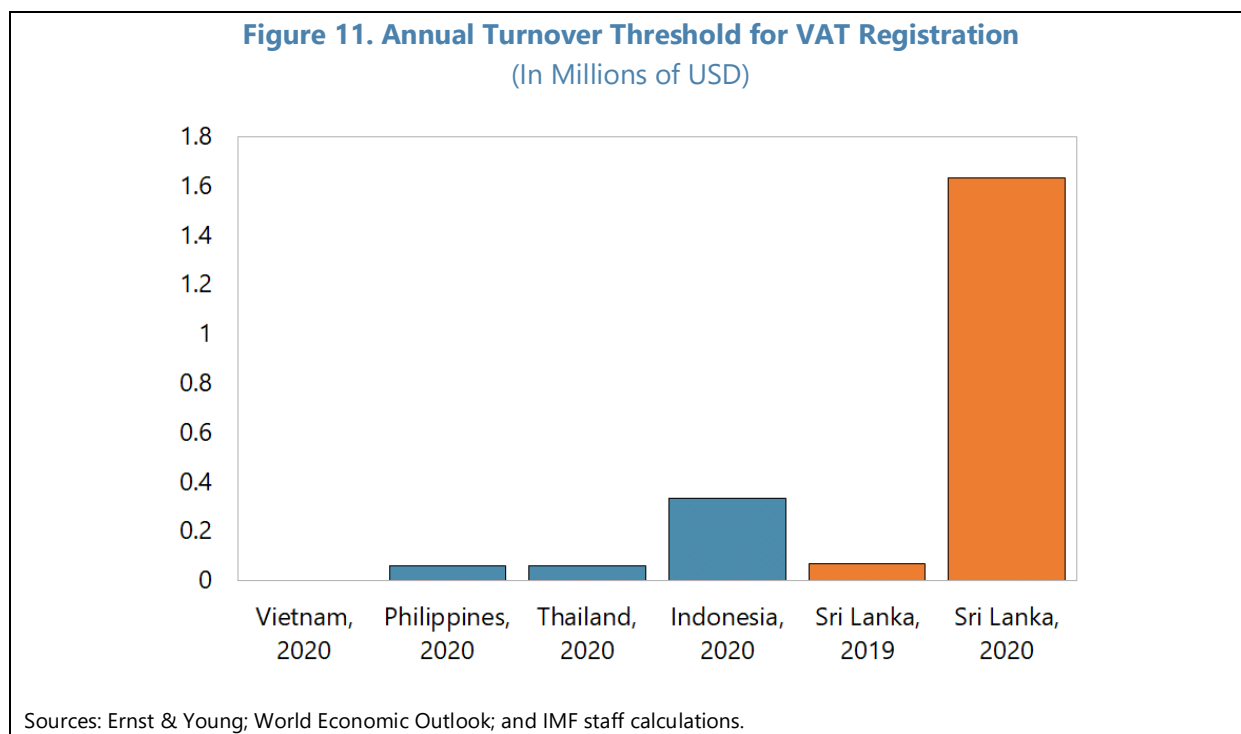


Sources: Sri Lankan authorities, UN-COMTRADE, and IMF staff estimates.

Notes: (i) Effective tax rate is computed as the ratio of the 2020 import VAT collection and the potential import VAT base (i.e., CIF value of 2020 imports, multiplied by 1.1 and by an adjustment factor reflecting that excises and import duties are included in the VAT base); (ii) "products" refers to losses from product-specific exemptions; (iii) "SCL" refers to losses from goods that are covered by the Special Commodities Levy and hence VAT exempt; (iv) the "Residual" includes losses from importer-specific exemptions.

**20. The VAT on domestic activity is also subject to many exemptions.** To incentivize investment, Sri Lanka offers broad sectoral exemptions (agriculture, information technology, some manufacturing) as well as targeted exemptions (tax holidays for Sri Lankans returning from abroad to start a business).

**21. The VAT registration threshold in Sri Lanka was raised significantly in 2020, putting it among the highest in the world (Figure 11).** It rose from 12 million to 300 million LKR, which is much higher than in comparators. This lightened the tax compliance burden for many medium-sized firms, but also drastically reduced the number of VAT payers. Indeed, there were only 8,152 registered VAT payers at end-2020, down from 28,914 at end-2019. Given that VAT revenues are highly concentrated among the largest taxpayers, the immediate revenue impact of this measure has been less than proportional to the decrease in VAT payers. However, a smaller roster of VAT taxpayers could contribute to compliance weaknesses, as information for invoice matching is becoming more limited with fewer taxpayers.



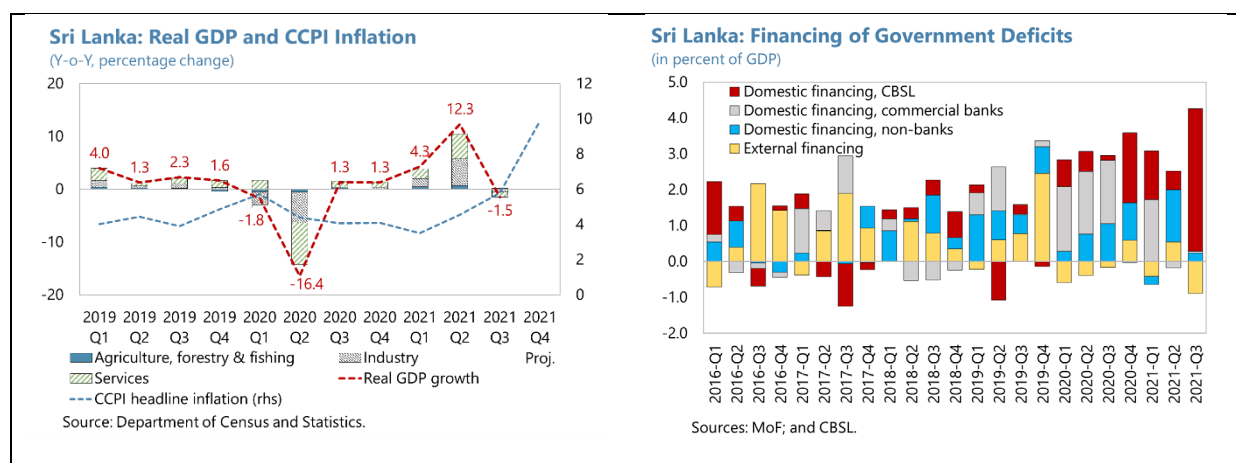
**22. There is scope to mobilize revenue in Sri Lanka through VAT reforms.** Sri Lanka's standard VAT rate is relatively low compared to peers, and additional revenue could be mobilized by raising it. However, such a reform should go hand in hand with base broadening measures and enhanced revenue collection efficiency. Our analysis has shown that tax exemptions for specific products and taxpayers account for a large share of revenue losses from VAT. Indirect tax reform should be comprehensive and reduce the complexity of the tax system, by combining the removal of VAT exemptions with a phasing-out of para-tariffs.

# GOVERNMENT FINANCING DURING COVID-19 AND ITS IMPLICATIONS FOR MONEY AND INFLATION IN SRI LANKA<sup>1</sup>

The Central Bank of Sri Lanka (CBSL) has provided the government with a large amount of direct financing through primary market purchases of treasury bills during the pandemic. These purchases have helped stabilize the treasury security market and lower the government financing costs, but also inevitably led to an unprecedented increase in money supply. A battery of empirical analyses point to potential inflationary pressures from this large money expansion at least in the long run: estimated impulse response suggests that a one percent increase in M1 leads to higher inflation by 0.4-0.5 percent after ten quarters. Cross-country analyses suggest that the money and inflation relationship would be stronger for countries with weaker fiscal and external positions, providing relevant insights into Sri Lanka at this juncture.

## A. Government Financing Challenges and the Authorities' Policy Response

**1. Government financing needs increased sharply during the pandemic.** The 2019 tax cuts, the COVID-19 impact on revenues, and the pandemic relief measures widened fiscal deficits to 12.8 percent of GDP in 2020 and 11.4 percent of GDP in 2021. The government's loss of access to international capital markets and foreign investors' exit from the local currency debt market together created a large budget financing gap that needed to be filled by other financing sources. The sharp improvement in the private sector savings-investment balance during the pandemic, as economic activities contracted, created space for domestic banks to absorb more government debt, but it was not enough.



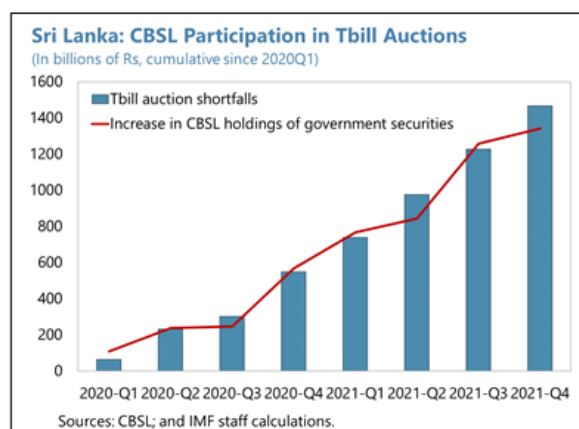
<sup>1</sup> Prepared by Mike Li.

**2. In this context, the Central Bank of Sri Lanka (CBSL) significantly stepped up its direct financing of the government.** The central bank's net credit to the government increased by 9 percent of GDP between March 2020 and September 2021, mainly through its primary market purchases of treasury bills.<sup>2</sup> In doing so, the CBSL acted as a noncompetitive bidder to absorb auction shortfalls resulting from the rate cap imposed on 364-day bills (starting from April 2020, and later removed in September 2021), as bids received above the cap were rejected.

## B. Consequences of the Policy Response

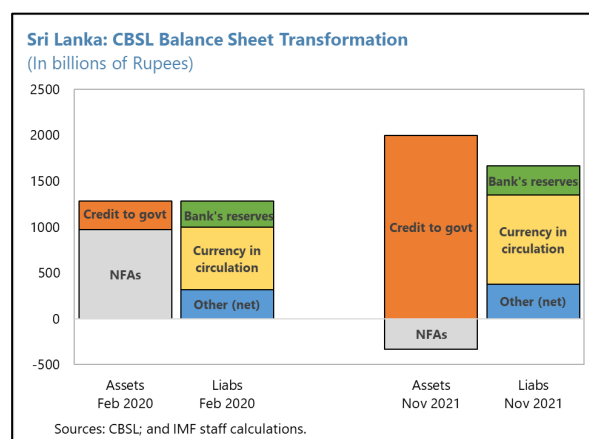
**3. The CBSL's direct financing of the government significantly eased the government's financing constraints.**

The central bank's direct purchases of treasury bills were aimed at "fulfilling funding requirements of the Government and suppressing the yields on government securities" (according to the CBSL's 2020 Annual Report). In this regard, the policy has achieved what it was set out to do—the budget financing gap was filled, and the government securities market was stabilized with rates falling to historical low levels. A counterfactual could have been a much tighter fiscal stance, while the economy faced an unprecedented shock from COVID-19.



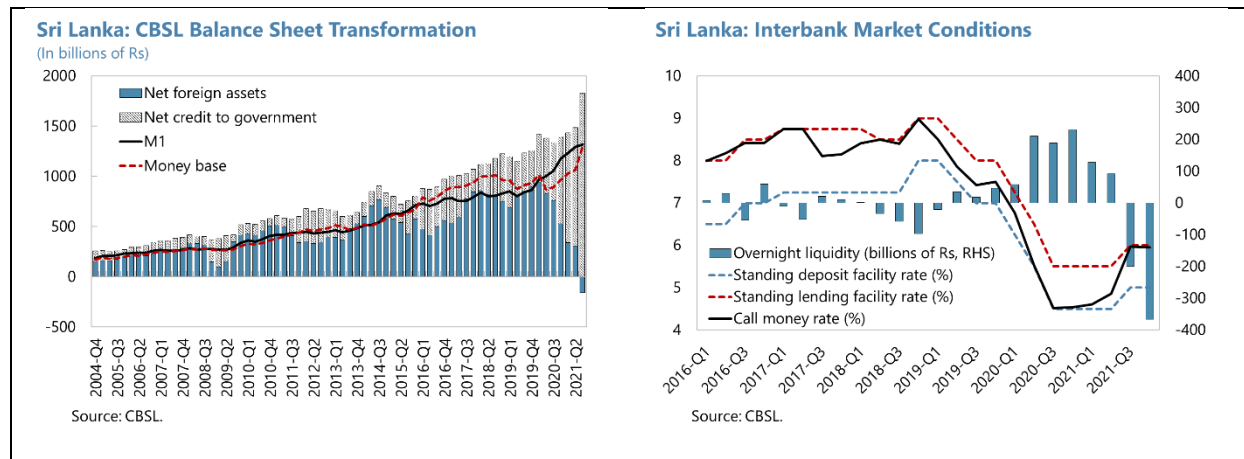
**4. The CBSL's increased claims on the government also contributed to a rapid money expansion.**

The monetary base has increased by 34 percent since the onset of the pandemic, as Rupees were created to finance the CBSL's purchases of government securities, despite the drawdown of FX reserves. The narrow money supply (M1) grew by 36 percent (year-on-year, YoY) in December 2020 and 24 percent in November 2021, reflecting a strong growth in demand deposit. The large liquidity injection was unsterilized and, together with the policy easing through conventional policy instruments (policy rates and statutory reserve ratio cuts to historical low levels), initially led to significant excess liquidity in the interbank market, part of which

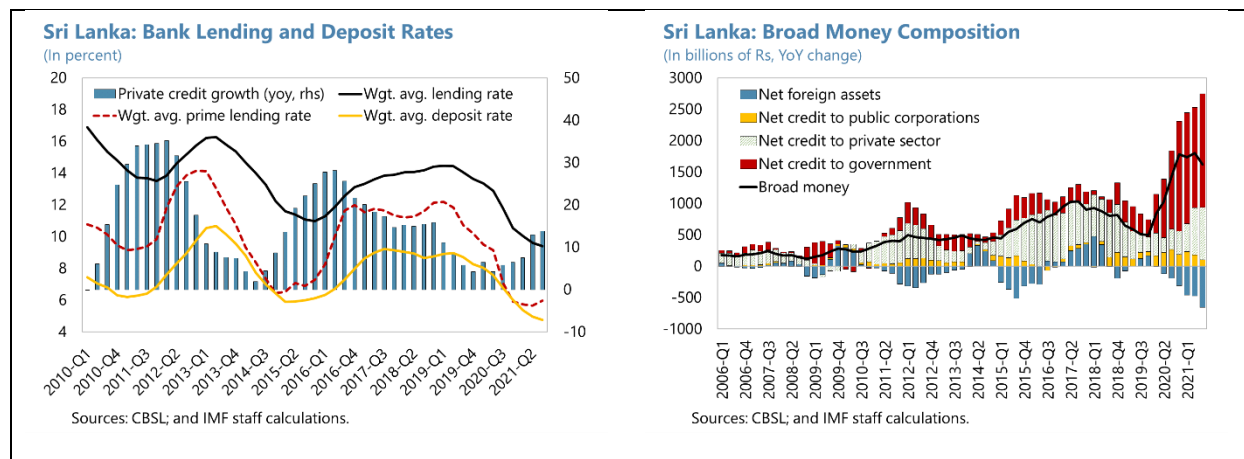


<sup>2</sup> The CBSL's provisional advances to the government (which are legally capped at 10 percent of estimated government revenues for the year in which they are made) were fully utilized during the pandemic. The CBSL also increased its treasury securities holdings through special operations to offset its FX provision to the government in meeting the principal payments of international sovereign bonds in October 2020, July 2021, and January 2022.

was channeled to private sector credit growth as loan demand recovered. The excess liquidity was eliminated after monetary policy was tightened in August 2021.

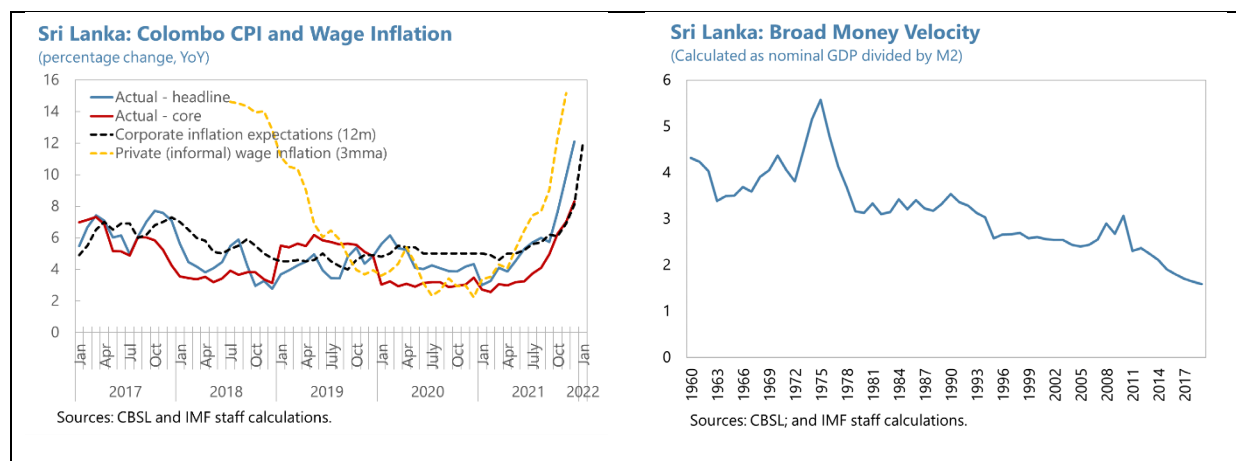


**5. This unprecedented money expansion has slowly transmitted to the real economy.** The decline in money market rates was passed through to bank lending rates, which helped support a rebound in private credit demand and in turn a nascent economic recovery in the first half of 2021. Historically, private credit in Sri Lanka tended to respond strongly (albeit with some lag) to money expansion and to low interest rate environment. This said, lending to the government (by both the CBSL and commercial banks) has been the key contributor to broad money growth thus far during the pandemic, differing from previous episodes of large money expansion.



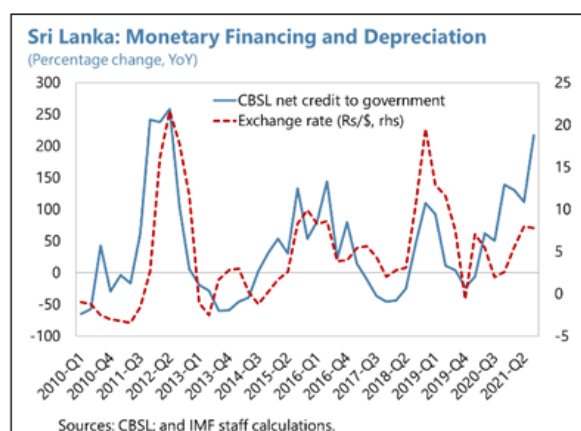
## C. Policy Response's Impact on Inflation

**6. Inflation was broadly in check during 2020.** A large slack in the economy and the 2019 VAT rate cut (implemented in 2020) held down inflation. Also, from a Quantity Theory of Money ( $MV=PQ$ ) point of view, the multiyear downtrend in money velocity, which further decelerated during the pandemic due to less frequent cash transactions, also helped partially offset the large money expansion.



**7. However, inflation quickly gathered speed in 2021.** Colombo CPI (CCPI) inflation has steadily risen since April 2021, reflecting exchange rate depreciation, supply shortages, increases in administered fuel and food prices (reflecting higher international prices), and a recovery in demand in the backdrop of the large money expansion.<sup>3</sup> Headline inflation has breached the 4–6 percent target band of the CBSL and rose to 14.2 percent in January 2022. Core inflation rose from 2.7 percent in January 2021 to 9.9 percent a year later. With rising private sector wages and inflation expectations as well as the public sector wage increase announced in January 2022, price pressures could become more persistent. Meanwhile, supply side pressures may persist to the extent that their root causes, including acute FX shortages, prolong.

**8. In this regard, Sri Lanka’s past experience offers invaluable insights into the inflation dynamics.** During 2014-17, inflation eventually exceeded 6 percent (the upper bound of the CBSL’s current target band) following a large money expansion (Figure 1). In resemblance to the ongoing developments, the 2014-17 episode of high inflation started with a sharp increase in the central bank’s net credit to the government and an associated M1 expansion. The overall monetary conditions were also eased through policy rate cuts. Private credit responded very strongly, while inflation only started on an upward trajectory in mid-2015, about six quarters from the beginning of this episode. The exchange rate started to depreciate soon after. Eventually, the large money expansion of the 2014-17 episode was unwound, but the inflation and exchange rate pressures lingered on for some time. These developments are broadly consistent with the strong co-



<sup>3</sup> The elevated food inflation reflects not only higher global prices but also supply shortages attributed to the temporary restriction (between May and November 2021) of use and importation of chemical fertilizer which adversely affected agricultural production.



movement observed historically between the increase in the CBSL's net credit to the government and exchange rate depreciation, which has passed through to inflation.

## D. Empirical Analysis on the Relationship between Money and Inflation

**9. This section revisits empirical evidence on the relationship between money supply and inflation in Sri Lanka.** Milton Friedman (1970) famously said: "Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output." In this regard, money supply in excess of long run equilibrium money demand is expected to give rise to inflationary pressures by having too much money chasing too few goods. To abstract from the uncertainty surrounding short-run dynamics, the analyses in this section focus more on the long-run equilibrium relation between money supply and inflation.

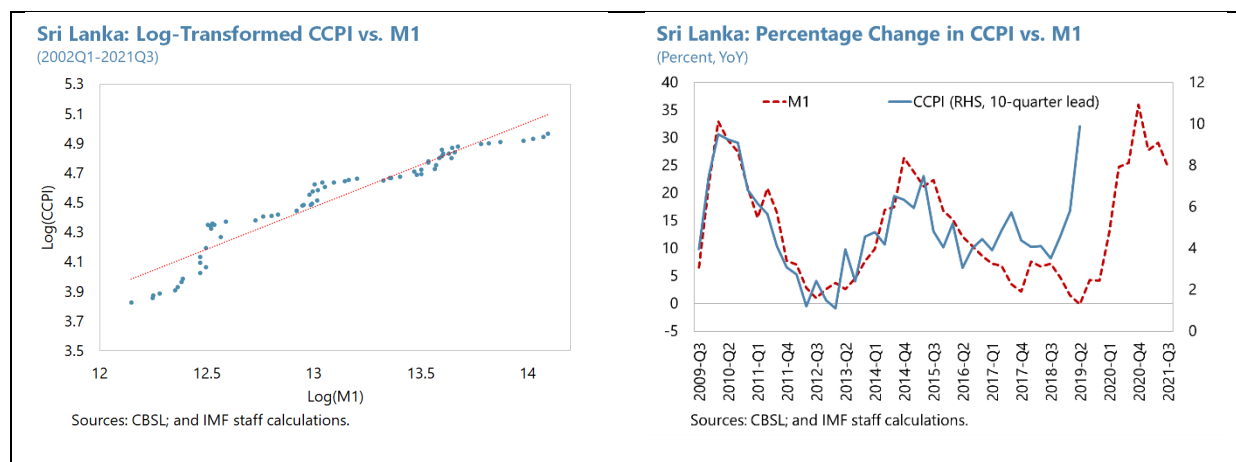
**10. There is already rich empirical literature on inflation dynamics and determinants in Sri Lanka.** Ratnasiri (2009) used both vector autoregression (VAR) and vector error correction (VEC) models to estimate a money demand function that factors in income, price, interest rate, exchange rate, and an exogenous rice price, and found money supply's significant role in determining inflation in the long run. Kulatunge (2015) confirmed this finding using a more updated dataset and an alternative VEC specification which also incorporates the impact of government spending on inflation. Amarasekara (2009) delved into the transmission mechanism with recursive and semi-structural VARs and found that money supply affects inflation mostly through the interest rate and with a relatively long lag. In a more recent study, Jegajeevan et al (2019) pointed to a potentially weakening relationship between money supply and inflation in Sri Lanka since 2010.

**11. Studies based on a broader set of countries can also help understand the inflation risks Sri Lanka is currently facing.** Agur et al (2022) examined the relationship between monetary aggregates and inflation using a panel data with annual data from the 1950s covering 195 countries. Using the local projection model based on Jordà (2005), the paper found a clear relationship between money growth and inflation, which tends to be stronger in cases of a high initial level of inflation, weak central bank independence, or large fiscal deficits which would imply higher risk of fiscal dominance.<sup>4</sup> Monetary policy credibility, which can weaken the money-inflation relationship by anchoring inflation expectations, would be eroded under these conditions. Supply side pressures currently play a significant role in inflation in Sri Lanka; in this regard, Kim and Lee (2013) found that previous episodes of high food and energy inflation raised inflation expectations in Asia. Relatedly, IMF (2021) cautions that a persistent breach of the inflation target could risk de-anchoring expectations, suggesting that transitory price shocks could lead to permanently higher inflation.

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<sup>4</sup> Jordà (2005) introduces a flexible alternative to standard VAR models, which rely on global projections that are most efficient for one-period ahead forecast. His local projections approach does not constrain the shape of the impulse response function—which is instead constructed based on coefficients estimated at each forecast horizon—and is thus less sensitive to misspecification.

**12. Three empirical approaches are taken to analyze money supply's long-run impact on inflation in Sri Lanka.** Seasonally adjusted quarterly data covering the period of 2000Q1 to 2021Q3 (to the extent of availability) are used. Money supply is represented by M1, which is found to be most strongly correlated with the CBSL's net credit to the government (which is of particular interest to this paper) and the inflation dynamics in the past. Most findings of these analyses are robust against the choice between M1 and M2 as the proxy of money supply.



- a. Firstly, a bivariate VEC model for CCPI and M1 are estimated. Cointegration tests confirm the existence of a positive long-run relationship between these two variables.<sup>5</sup> The estimated bivariate VEC model implies a long-run money supply elasticity of price level at 0.4, broadly in line with the finding of Ratnasiri (2009). This indicates that the CCPI tends to increase by 0.4 percent for every 1 percent increase in the M1 over the long run. The error correction term of the model points to a relatively lengthy adjustment process, i.e., a relatively slow correction for deviations from the long-run equilibrium relation.

$$\Delta Y_t = A(L)\Delta Y_t + \Pi Y_{t-1} + \varepsilon_t,$$

where  $Y = [c, \text{CCPI}, \text{M1}]$ ;  $L$  (lag operator) = 4; and  $\Pi$  (cointegration rank) = 1.

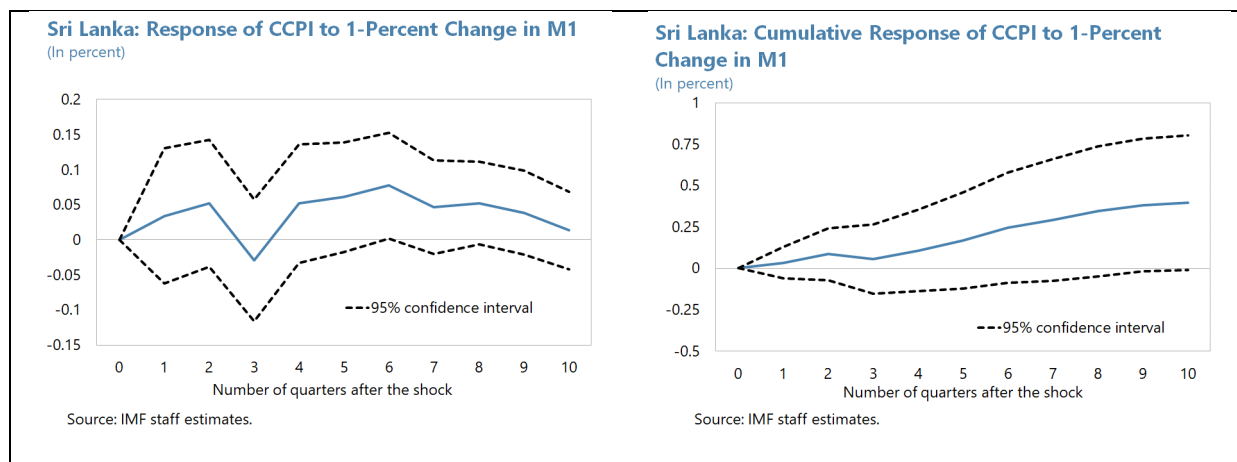
- b. Secondly, an unrestricted VAR model is estimated with a similar specification as in Ratnasiri (2009) and Jegajeevan et al (2019). Variables comprise the first differences of CCPI, M1, real GDP, and the Rs/\$ exchange rate, as well as the call market rate. International food prices are included as an exogenous variable, given the importance of food inflation in Sri Lanka. The impulse response function (IRF) of the VAR model results in a positive response of the CCPI inflation to the M1 shock, which peaks in six quarters. The cumulative IRF points to about 0.4 percentage point increase in the CCPI inflation over a period of ten quarters after a

<sup>5</sup> Two or more nonstationary variables are cointegrated if there exists at least one linear combination of these variables whose residuals is stationary.

1 percent shock to the M1, broadly consistent with the long-run elasticity estimated in the cointegration model above.<sup>6</sup>

$$y_t = A_0 + A_1 y_{t-1} + \dots + A_p y_{t-p} + Bx_t + \varepsilon_t;$$

where  $y = [\text{CCPI}, \text{M1}, \text{real GDP}, \text{Rs}/\text{\$ exchange rate}, \text{call market rate}]$ ,  $x = [\text{international food prices}]$ ; and  $p$  (lags) = 4.

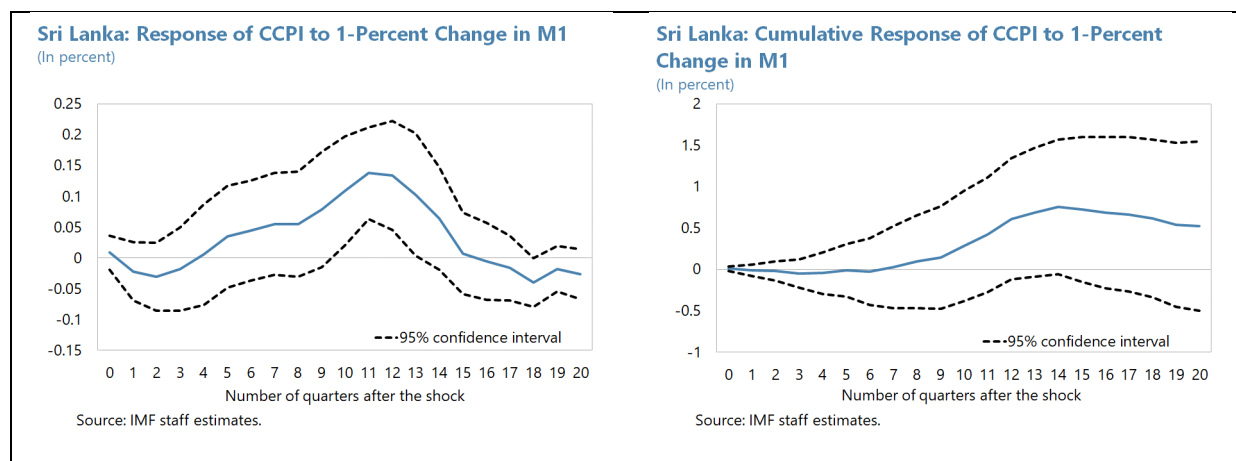


- c. Lastly, as in Agur et al (2022), the relationship between money supply and inflation is explored based on the Quantity Theory of Money ( $PQ=MV$ ). Instead of assuming a stable money velocity, the local projections approach as in Jordà (2005) is applied to assess the relationship at different horizons, which is then used to generate the impulse response. The IRF shows a slower transmission from the M1 shock to the CCPI inflation than that of the VAR estimated above, with the impact peaking ten quarters after the shock. The cumulative response analysis points to a similar but slightly more pronounced impact: an increase of about 0.5 percentage point is expected in the CCPI inflation over a period of ten quarters after a 1 percent shock to the M1.

$$\pi_{it+h} = \beta_{h0} d \log M_{it} + Z_{it} \Gamma_h + \varepsilon_{ith}$$

where  $Z_{it}$  is a set of controls including the lagged values of M1, CCPI and real GDP growth.

<sup>6</sup> The relatively wide confidence interval can be attributed to a relatively small sample size.



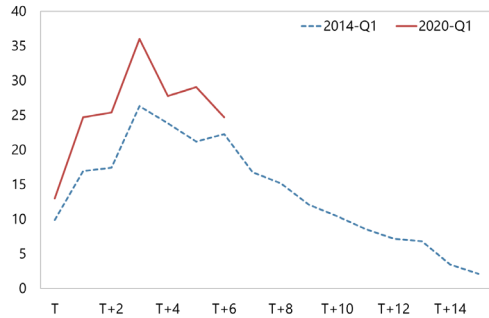
**13. Overall, these empirical findings support the proposition that large money expansion can give rise to inflationary pressures in Sri Lanka.** The long-run equilibrium relationship between money supply and inflation in Sri Lanka appears to remain intact. Short-run dynamics can be more uncertain as deviation from the long-run equilibrium does happen and can take time to correct, leading to delayed response of inflation. This can be attributed to a slow monetary policy transmission or other “frictions” such as price administration and exchange rate stabilization measures. However, the empirical analyses suggest that inflation tends to eventually catch up with money expansion—estimated impulse response suggests that a one percent increase in M1 leads to higher inflation by 0.4-0.5 percent after ten quarters. Cross-country analyses suggest that the money and inflation relationship would be stronger for countries with weaker fiscal and external positions, providing relevant insights into Sri Lanka at this juncture.

**Figure 1. Sri Lanka: 2014–17 Episode and Its Resemblance to the Current Episode**  
 (In quarters, the legends mark the starting point of the episodes)

Similar to the current episode, the 2014-17 episode also started with a rapid expansion of the money supply (M1),

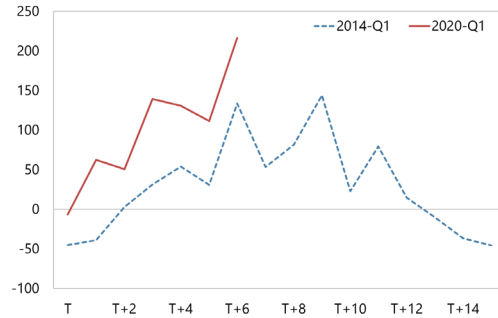
...

**M1 - Narrow Money Supply**  
 (Percentage change, YoY)



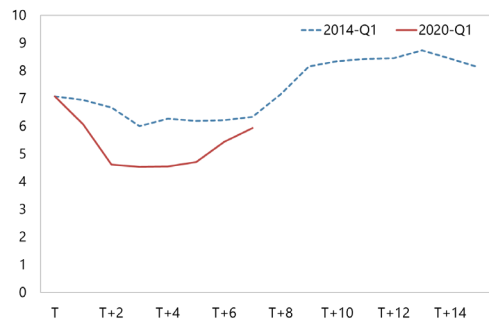
... driven by a sharp increase in the CBSL's net credit to the government, ...

**CBSL Net Credit to the Government**  
 (Percentage change, YoY)



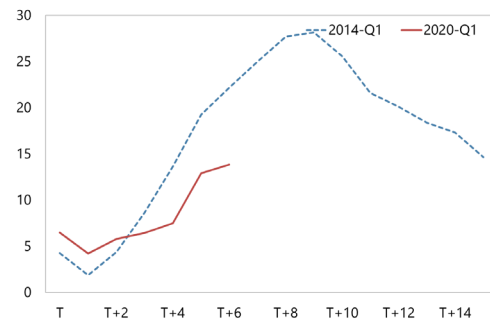
... while the monetary policy stance was eased.

**Call Market Rate**  
 (Percent)



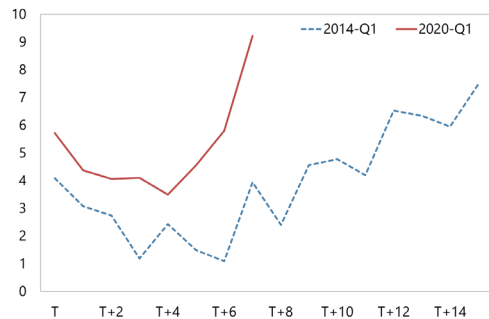
Private credit started to respond strongly to the looser monetary conditions in about three quarters.

**Private Credit**  
 (Percentage change, YoY)



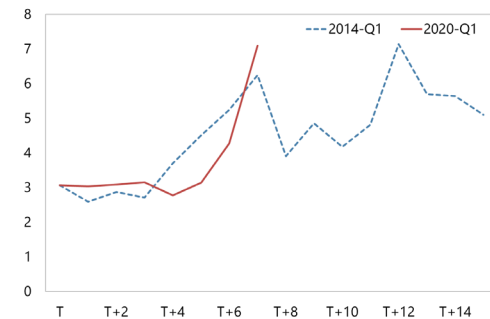
Inflation was initially subdued, but started to take off in about six-to-eight quarters and persisted even after the monetary policy stance started to tighten, ...

**CCPI Headline Inflation**  
 (Percentage change, YoY)



... reflecting in part underlying price pressures as evidenced by the core inflation, ...

**CCPI Core Inflation**  
 (Percentage change, YoY)



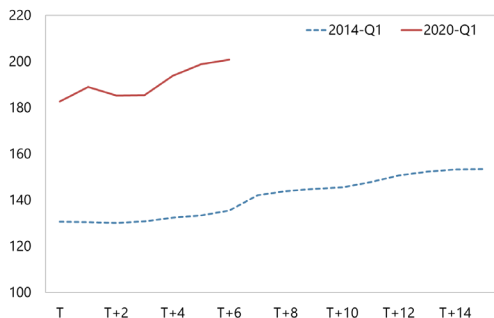
### Figure 1. Sri Lanka: 2014-17 Episode and Its Resemblance to the Current Episode (Concluded)

(In quarters, the legends mark the starting point of the episodes)

... and to some extent the currency depreciation, which followed the large money expansion, ...

#### Exchange Rate

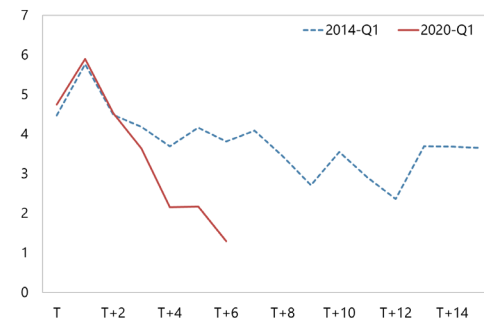
(Rs per \$)



... as the external position weakened. Compared to the 2014-17 episode, the current episode features a much weaker external position, ...

#### Gross International Reserves

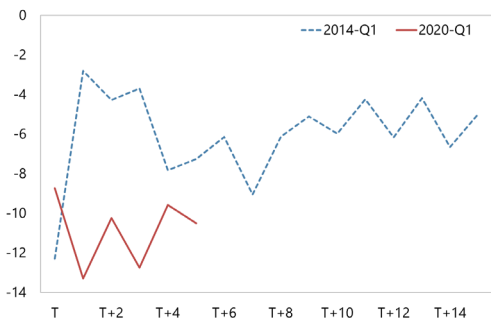
(Months of imports of goods and services)



..., a much weaker fiscal position, ...

#### Budget Deficit

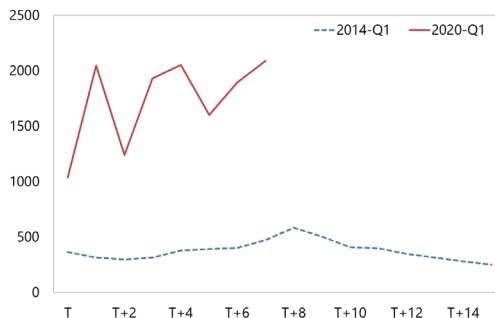
(Percent of GDP)



..., and much tighter financing conditions, with the government effectively cut off from international capital markets due to debt sustainability related concerns.

#### EMBI Spreads

(Basis points)



Sources: CBSL; JP Morgan Chase & Co.; IMF staff calculations.

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