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SRI LANKA

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SRI LANKA

SELECTED ISSUES

May 17, 2018

Approved By
Asia and Pacific Department

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ANNEXES

SRI LANKA: STRUCTURAL TRANSFORMATION—THE NEW FRONTIER[1]

With its relatively static trade structure, Sri Lanka lacks the economic complexity and diversification expected of a middle-income Asian economy. Simplifying tax policy, gradually liberalizing tariffs and para-tariffs, and easing the regulatory burden on businesses could help restore competitiveness, private-sector dynamism, and increase the country's productivity.

1. Sri Lanka is ready to shift towards more private-sector-led growth, building on its significant upgrade in infrastructure after the war and ongoing reform efforts. Sri Lanka has gone through defining transitions over the past decade. In 2009, the country embarked in a major post-war scale up of infrastructure in a relatively brief period. Reforms continued in 2015, following a peaceful and democratic transition of power to the coalition government. The current economic environment offers a window of opportunity for evaluating remaining structural weaknesses and working towards macro-economic resilience and enhancing competitiveness. Among others, simplification of tax systems, including trade tariffs and para-tariffs, through predictable, fair, and automated mechanisms, can remove uncertainties that hold back trade and investment decisions and support the needed shift towards more private sector-led growth. Stable and transparent regulatory systems would also make Sri Lanka's business environment more attractive for long-term foreign investment and support trade integration.

A. Growth Story

2. Sri Lanka has a compelling growth story. The economy has grown at an average of 5 percent over the last four decades, amidst the 30-year civil conflict, weather calamities, and swings in economic policy orientation depending on ruling parties' ideology. Sri Lanka seesawed between protectionist and liberalization strategies: state control and import substitution in early 70s; two waves of liberalization in early 80s and 90s; closing up again in early 2000s at the height of the war; and then opening up again since the end of the war (text table below).

3. Strong economic growth has led to a significant decline in poverty rates (text table below). While a recent IMF study (IMF, forthcoming) finds that emerging markets experienced a significant increase in average growth rates in the 2000s, particularly in Asia, only half of these emerging markets are converging with developed countries in per capita income levels. Remarkably, Sri Lanka has halved its poverty gap over the last decade. Nevertheless, challenges in terms of inclusiveness, regional disparities, quality of education, and gender equality remain.[2]

[1] Prepared by Eteri Kvintradze, Amitha Sundararaj, and Misa Takebe.

[2] World Bank (2015a).

Table 1. Sri Lanka: Economic Policy Orientation 1970–2018[1]

Period	Status	Key policies
1970-1977	State control and import-substitution industrialization strategy	Since 1960, a combination of change in political leadership and balance of payments challenges led to the government's adoption of protectionist import substitution industrialization policies. 1970-1977 saw further government intervention through efforts in creating a socialist society.
1977-1987	Liberalization	The first round of reforms carried out during 1977-79 included, a. trade policy reforms (removal of quantitative restrictions and replacement of tariffs) b. opening up the economy to foreign direct investment (FDI) including incentives for export oriented FDI (establishment of a Free Trade Zone scheme and constitutional guarantee against nationalization of foreign assets without compensation) c. Abolition of multiple exchange rates and a sharp devaluation d. Introduction of limits on direct public sector participation in the economy
1988 -2002	Second wave of liberalization in the 1990s	The impact of the first round of liberalization reforms was not fully realized. Delays and inconsistencies in the implementation of the reforms affected the ability to attract FDI. The conflict limited economic activities to 2 provinces (12 percent of the population). The second round of liberalization was implemented in 1990 and included privatization and deregulatory reforms (e.g., privatization of telecommunications and conversion of large plantations to the private sector under 100-year lease agreements). Import tariffs were rationalized in 1993 to a three-band tariff structure and in 1997 all textile tariffs were abolished.
2002 -2009	Closing up before the end of the war in 2009	Following the second wave, the reform process began to lose momentum due to fiscal pressures to finance the civil war and an economic recession. For example, the planned reduction of tariffs into single band was abandoned and tariffs started to be adjusted frequently in an ad-hoc manner.
2010-2018	Post-war infrastructure scale up and ongoing reforms	Rapid infrastructure development of rural and conflict-affected areas of the country and the revival of the SME sector were the key policy priorities under the new policy. The current coalition government, elected in 2015, has stated its commitment to outward oriented, knowledge-based social market economy in its Vision 2025 program.

[1] Athukorala and Rajapatirana, S. (2000) and Athukorala (2017).

Sri Lanka: Poverty and Inequality, 2002-2016

	2002	2006/ 2007	2009/ 2010	2012/ 2013	2016
Poverty indicators					
Poverty headcount ratio (percent of population)					
US$1.90 a day (2011 PPP)	8.3	3.8	2.4	1.9	0.7
National poverty lines	22.7	15.3	8.9	6.7	4.1
Poverty gap (percent)	5.1	3.1	1.7	1.2	0.6
Severity (percent)	1.6	0.9	0.5	0.3	0.1
Inequality indicators					
Gini coefficient	0.40	0.40	0.36	0.39	0.45
Theil index	0.32	0.33	0.27	0.32	...
p90/p10 ratio	5.12	4.98	4.30	4.74	...

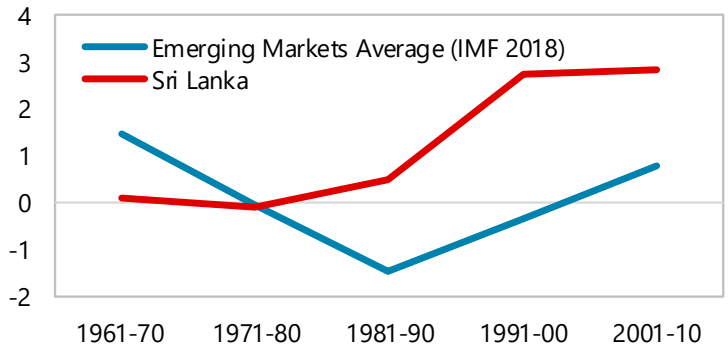
Source: World Bank (2016) and Department of Census and Statistics - HIES 2016.

4. The remainder of the paper is organized as follows. A growth accounting framework is used in this section to investigate the main sources of growth in Sri Lanka during the period of 1960-2016, including through sectoral decomposition and reallocation effects. The following section presents an overview of competitiveness challenges and reform opportunities going forward.

Aggregate TFP Accounting

5. A simple Solow residual growth accounting shows that capital was the most important contributor to growth over the past five decades.[3] Capital accumulation peaked after the trade and economic policy liberalization of the late-70s driven by FDI inflows, dropped during the war, and picked up again with the reconstruction since 2010. With the opening up of the economy in the 70s, TFP contribution to growth also improved considerably reaching about 3 percent even during the height of the war (text table) and exceeded the average for emerging markets.

Total Factor Productivity Residual
(Average across time period, in percent)



Source: IMF (2018) and staff calculations.

[3] See Annex I for different methods of growth accounting, description of data sources, utilization rates, and sensitivity analysis.

6. The war is also found to have significantly affected production factor utilization rates. Factor utilization adjustment is a relevant concept in empirical studies of re-organization of production structures in an economy due to a war or a major economic transition.[4] It allows to better capture factor contributions versus TFP residual and separate contribution of sectoral reallocation effects discussed later in the section. In the case of Sri Lanka, capital utilization rates have dropped considerably at the peak of the war, while labor utilization rates have also been possibly affected by recurrent natural disasters (Annex I).

Sri Lanka: Sources of Growth – Solow Residual, 1961-2016
(Average growth rate, in percent)

					Contribution of:	
	Output	Employment	Capital	Output per Worker	Capital per Worker	Factor Productivity
1961-70	4.7	2.5	9.5	2.2	2.1	0.1
1971-77	2.9	1.7	9.0	1.2	2.2	-1.0
1978-87	5.4	2.9	11.0	2.5	2.4	0.1
1988-02	4.6	1.1	4.5	3.5	1.0	2.5
2003-09	6.0	1.6	5.4	4.3	1.1	3.2
2010-16	6.3	1.1	7.8	5.1	2.0	3.1

Sources: Central Bank of Sri Lanka, World Development Indicators, Penn World Tables and staff calculations.

7. However, the post-war capital injection does not appear to have resulted in immediate TFP enhancements, taking factor utilization rates into account. The contribution of capital accumulation to growth picked up during the post-war reconstruction period, driven by mega-scale public infrastructure development projects. Interestingly, the TFP residual halved during this period and has continued to decline in recent years.[5] Unlike the 70-80s when capital deepening was mainly driven by investments in tradable sectors and followed by a significant productivity pick up,[6] the nature of the post-war capital deepening was different, mainly driven by mega-scale infrastructure projects financed by the public sector and FDI remained stagnant, below 2 percent of GDP since 1998 (text table below).[7] Reforms to ease the business environment and trade are still at the early stages of implementation. As showed by other episodes of infrastructure scale-up in different countries, business environment liberalization is an important catalyst of private sector led growth.[8]

[4] Blanchard and Kremer (1997) predict that disorganization releases production inputs which are reallocated to other sectors less susceptible to disorganization. The process of reallocation is gradual and disorganization ends once old relationships are reorganized. Empirical studies of disorganization use utilization adjustment to better capture factor contributions and reallocation effects on growth. Utilization adjusted TFP residual could be lower or higher than a simple Solow residual depending on the downward or upward trends in utilization rates. For example, higher capacity utilization rates will result in increased capital contribution to growth compared to lower utilization rates.

[5] See IMF Country Report No. 17/253, Box 2 (https://www.imf.org/en/Publications/CR/Issues/2017/08/10/Sri-Lanka-Second-Review-under-the-Extended-Arrangement-under-the-Extended-Fund-Facility-45178).

[6] Athukorala and Rajapatirana (2000).

[7] FDI new inflows dropped to 1.1 percent of GDP in 2016, compared, for example, to 6.1 percent of GDP in Vietnam for the same period (WDI).

[8] April 2015 World Economic Outlook, Chapter 3 (http://www.imf.org/external/pubs/ft/weo/2015/01/).

Sri Lanka: Sources of Growth, Adjusted for Utilization, 1961-2016
(Average growth rate, in percent)

	Output	Employment	Capital	Output per Worker	Contribution of: Capital per Worker	Factor Productivity
1961-70	4.7	...	...	...	...	...
1971-77	2.9	5.2	7.7	-2.3	0.7	-3.0
1978-87	5.4	2.8	14.2	2.6	3.4	-0.8
1988-02	4.6	1.0	4.7	3.6	1.1	2.5
2003-09	6.0	1.9	1.7	4.1	-0.1	4.1
2010-16	6.3	0.9	12.0	5.4	3.3	2.1

Sources: Central Bank of Sri Lanka, World Development Indicators, Penn World Tables and staff calculations.

Sectoral Decomposition and Factor Reallocation

8. Sri Lanka's economic structure has also changed over the years. The contribution of agriculture to output and employment declined over the years as labor moved to manufacturing and other sectors. While agriculture and manufacturing employ a significant share of the population, services, construction, and other sectors have become with time the main employers and output drivers in Sri Lanka (text table below).

Sri Lanka: Sectoral Shares, 1960-2016
(In percent)

	Sectoral Shares in Output			Sectoral Shares in Employment		
	Agriculture	Manufacturing	All Other Sectors	Agriculture	Manufacturing	All Other Sectors
1960*	26	16	58	53	9	38
1971	22	19	59	49	9	42
1978	21	16	63	49	12	39
1988	17	17	66	45	13	42
1990	17	18	65	45	13	42
2003	11	21	68	32	16	53
2010	9	20	70	31	16	54
2016	8	17	75	25	17	58

Source: Central Bank of Sri Lanka and Penn World Tables.
Notes: other sectors are construction, quarrying and mining, and services.
* Sectoral Share in Employment as of 1963.

9. The productivity of the manufacturing sector has been declining since the 1990s. Manufacturing sector TFP has dropped despite growing capital investments.[9] In 2010–2016, capital per worker in manufacturing sector almost doubled, while TFP has significantly declined. The recent agricultural growth was mainly driven by better access to land in the Eastern and Northern provinces previously affected by the conflict. Construction and services are the fastest growing sectors with the highest productivity rates. Expansion of real estate, logistics, transport, and tourism related services quickly followed the post-war infrastructure scale up (text table below).

[9] The largest manufacturing subsectors are food and beverages, textiles, rubber, and chemicals.

Sri Lanka: Sectoral Growth Accounting, Adjusted for Utilization, 1990-2016
(Average growth rate, in percent)

	Output	Employment	Capital	Output per Worker	Contribution of: Capital per Worker	Factor Productivity
Agriculture Sector						
1990-2002	2.0	-1.2	4.6	3.3	1.8	1.5
2003-2009	3.4	1.0	0.3	2.5	-0.2	2.7
2010-2016	3.4	-1.8	12.6	5.2	4.3	0.9
Manufacturing Sector						
1990-2002	6.7	3.2	2.1	3.5	-0.3	3.8
2003-2009	5.1	2.5	5.5	2.6	0.9	1.7
2010-2016	3.6	1.0	8.2	2.6	2.2	0.5
All Other Sectors (Construction and Services)						
1990-2002	5.0	2.8	4.6	2.2	0.6	1.7
2003-2009	6.6	2.4	1.6	4.3	-0.2	4.5
2010-2016	7.3	2.2	12.1	5.1	3.0	2.1

Sources: Central Bank of Sri Lanka, Department of Census and Statistics, Food and Agriculture Organization, Penn World Tables and staff calculations.

10. The shift of employment towards more productive sectors has benefited overall productivity. The factor reallocation effect on overall growth has been positive and increased after the war. Labor has moved from relatively low productive sectors such as agriculture and manufacturing to more productive services and construction (text table below). The positive contribution of factor reallocation to growth has doubled since the war, after an almost three-fold drop during the war due to physical restrictions in affected regions.

Sri Lanka: Reallocation Effect on Growth Adjusted for Utilization, 1990-2016
(Average growth rate, in percent)

	Output per Worker				Contribution to Growth			
	Agriculture	Manufacturing	All other sectors	Total	Agriculture	Manufacturing	All other sectors	Reallocation
1990-2002	3.3	3.5	2.2	3.8	0.5	0.6	1.5	1.2
2003-2009	2.5	2.6	4.3	4.1	0.3	0.5	2.9	0.4
2010-2016	5.2	2.6	5.1	5.4	0.5	0.5	3.6	0.8

Source: Staff calculations.

B. Competitiveness Challenges and Opportunities[10]

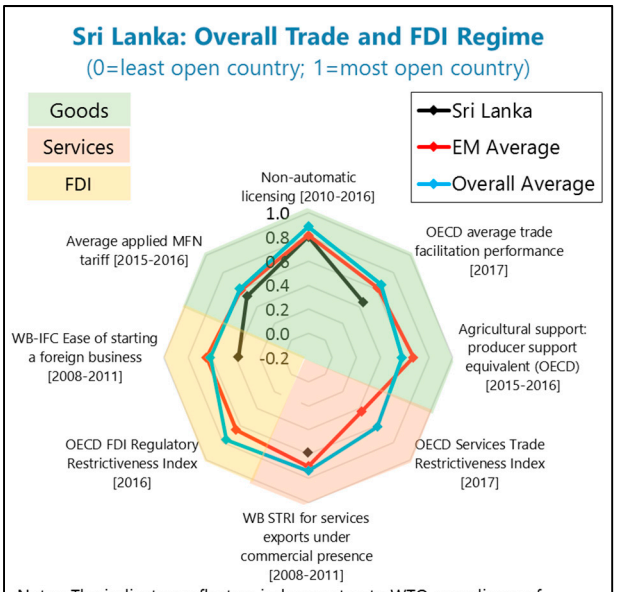
Trade Openness

11. Despite significant productivity growth in the post-war period, Sri Lanka has not been able to diversify exports and its share in global trade has been declining gradually. Unlike its East Asian neighbors, Sri Lanka's export structure has not changed in decades and remains

[10] This section uses five perception-based indicators (Doing Business Indicators by the World Bank, Global Competitiveness Index and Perceived Infrastructure Quality Index by the World Economic Forum, International Trade Center series on non-tariff measures, and Worldwide Governance Indicators by the Brookings Institution and the World Bank). The accuracy of the indicators can be biased by experts' views. These non-IMF indicators provide qualitative information but do not represent the IMF's assessment.

concentrated on garments, tea, and rubber products (Annex II). The static export structure reflects lack of competitive forces to drive trade dynamism, innovation, and diversification.

12. Sri Lanka's weakness in trade competitiveness partly stems from its restrictive trade policies. According to trade policy indicators recently developed by the IMF, Sri Lanka's trade and FDI regimes are more restrictive than the average emerging market in all key areas.[11] In particular, the country is more distant from the emerging market average in the categories of trade facilitation performance and ease of starting a foreign business.[12] These findings are consistent with those of the World Economic Forum's Enabling Trade Index 2016, which scores Sri Lanka at 4.1 out of 7 mainly due to market access, tariff rates and tariffs faced in destination markets.



Notes: The indicators reflect no judgement as to WTO compliance of underlying measures, nor whether certain measures (such as trade defense) are an appropriate response to the action of other countries. The "ease of starting a business" indicator is based on perceptions as part of an established IFC survey process. Year of data is in square brackets. Available indicators are presented for Sri Lanka. Please see IMF WP/18/32 for details.
Sources: WTO, World Tariff Profiles; UNCTAD TRAINS and COMTRADE; OECD; WB STRI, World Bank; Global Trade Alert; and IMF staff estimates.

13. The introduction of para-tariffs has significantly increased the degree of protectionism. Introduction of para-tariffs[13] during the last decade has effectively doubled the protection rates making the present import regime one of the most complex and protectionist in the world.[14] Para-tariffs not only increase monetary costs for firms but also procedural costs. A recent survey by the International Trade Center[15] finds that the biggest challenges from para-tariffs are lack of information and extensive documentation as well as delays in processing, which is particularly hard to bear for small firms.

[11] The indicators are designed to help assessing three key trade policy areas (trade in goods, trade in services, and FDI) by marking 0 to the country with the most restrictive value and 1 to the country with the least restrictive value among 96 countries. For more details, please see Cerdeiro and Nam (2018).

[12] Trade facilitation performance is the average of 11 dimensions of the World Trade Organization's Trade Facilitation Agreement (such as information availability, appeal procedures, fees and charges, and documentation formalities). The MFN tariff in the indicators does not cover para tariffs, which play an important role in Sri Lanka.

[13] Para-tariffs are non-tariff barriers to trade and include the Ports and Airports Development Levy (PAL), the Commodity Export Subsidy Scheme (CESS), and the Special Commodity Levy (SCL). The Export Development Board (EDB) Levy, which was another type of para-tariffs, was eliminated 2012.

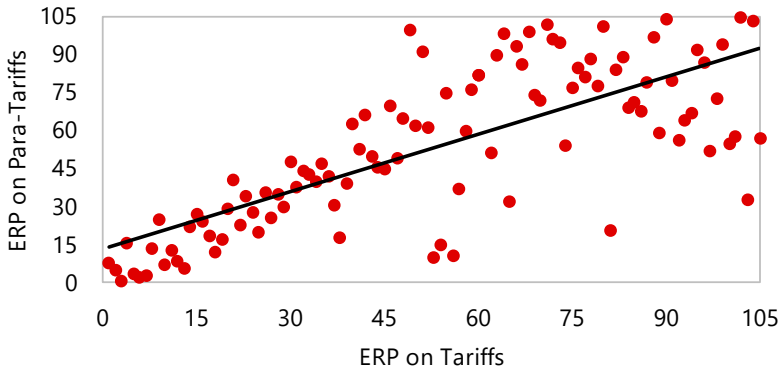
[14] The increase in para-tariffs was not only to protect domestic industries but also to support the declining revenue base.

[15] A survey was conducted by International Trade Center covering over 500 businesses on their views regarding non-tariff measures. The results can be accessed through http://www.intracen.org/publications/ntm/SriLanka/.

14. The most protected segments of the economy benefit from both high tariffs and para-tariffs. In addition, some sub-sectors have a third layer of protection on their inputs through selected tax holidays or exemptions. Consequently, the effective rate of protection (ERP) for the top 10 most protected sectors reach between 170 and 524 percent as of 2015 (text table).[16] Interestingly, some of the most protected sectors do not necessarily represent strategic development or high employment activities, but appear effective in lobbying for protection.[17] Moreover, the increase in the web of protective barriers seem to coincide with the decline in total contribution of state-owned establishments to sectoral value added (text table below). Furthermore, it appears that the government gave up direct ownership in some sectors, but simultaneously ensured the lasting protection of private companies in those same sectors.

Sri Lanka: Effective Rates of Protection

(Ranking across 105 sub-sectors, 1 = highest rate, 2015)



Source: Department of Census and Statistics.

Sri Lanka: Top Ten Most Protected Sectors in Manufacturing, 2015

(ERP range: 170-524 percent)

Ranking	Sector
1	Processing and preserving of fruit and vegetables
2	Manufacture of bakery products
3	Manufacture of macaroni, noodles, couscous and similar farinaceous products
4	Manufacture of refined petroleum products
5	Manufacture of refractory products
6	Distilling, rectifying and blending of spirits & Manufacture of wines
7	Manufacture of other porcelain and ceramic products
8	Manufacture of articles of concrete, cement and plaster
9	Manufacture of soft drinks; production of mineral waters and other bottled waters
10	Manufacture of dairy products

Source: Department of Census and Statistics and Staff Calculations

[16] The Effective Rate of Protection (ERP) is calculated by Department of Census and Statistics and is defined as the difference between value added (per unit of output) in domestic prices and value added in world prices, expressed as a percentage of the latter. See Annex I.

[17] Protection is granted by tariff, non-tariff, and/or tax exemptions.

Sri Lanka: Contribution of Government Establishments in Manufacturing Value Added, 1970-2014

(In percent of total value added)

	1970	1974	1981	1988	1993	1998	2005	2010	2014
Food, beverages and tobacco products	24	42	42	44	17	19	7	3	2
Textiles, wearing apparel and leather products	11	37	72	39	1	11	0	0	0
Wood and wood products	73	92	92	74	46	35	14	27	63
Paper and paper products	43	69	66	45	38	19	3	2	0
Chemical and chemical products, rubber and plastic products	46	70	43	28	3	16	5	14	3
Non-metallic mineral products	72	82	87	60	28	50	3	1	0
Basic metals, machinery and transport equipment	87	91	46	31	15	8	0	0	0
Total Manufacturing	30	66	64	42	10	17	2	3	2

Sources: Athukorala and Rajapathirana (2000) and Department of Census and Statistics.

15. In order to address these challenges, as part of the Vision 2025 priorities, the government announced that it will adopt a time-bound plan to eliminate para-tariffs and conduct a comprehensive review of tariffs. The government has committed to eliminate 1200 lines of para-tariffs in the 2018 budget and is developing a 3-year plan to fully phase out remaining para-tariffs through subsequent budgets. Policy discussions are ongoing on a comprehensive review of tariffs and developing a time-bound plan for convergence to a relatively simplified structure. Streamlining the administrative processes and simplifying the structure of para-tariffs and tariffs will have a beneficial impact on trade.

Box 1. Summary of Trade Reforms under the World Bank Program[1]

Sri Lanka launched various reforms under the World Bank's trade and competitiveness program. The program, launched in March 2017, focuses on three areas: (i) improving the investment climate, (ii) eliminating barriers to trade, and (iii) fostering enterprise competitiveness. The following key achievements were made in each area:

- **Improving the investment climate.** The program aims to reform the business environment, enhance investment promotion, and strengthen the effectiveness of investment incentives. Under the program, the Investment Climate Reform Road Map and Action Plans were launched. Task Forces detailed time-bound actions to deliver. Moreover, sectors with high FDI potential were identified and an Investment Promotion Certification program was completed in January 2018. With the new Inland Revenue Act, the government also switched its investment incentive scheme from tax holidays, which reward profit making, to investment allowances, which incentivize investment in April 2018.
- **Eliminating barriers to trade.** The program aims to eliminate policy obstacles and regulatory barriers to trade. Under the program, a trade vision document to set an overall framework for trade facilitation reforms was adopted. In addition, the National Trade Facilitation Committee (NTFC) Secretariat became fully operational. The National Trade Facilitation Action Plan was also finalized.
- **Fostering enterprise competitiveness.** The program aims to leverage innovation and entrepreneurship for export competitiveness and enhance the competitiveness of the tourism sector. Under the program, the Tourism Vision 2025 and the Tourism Strategic Action Plan were approved by the Cabinet Committee. Subsequently the Innovation and Entrepreneurship Roadmap to develop Innovation and Entrepreneurship Strategy, Intellectual Property Rights Framework and National Quality Infrastructure Strategy were adopted by the Cabinet.

[1]Based on World Bank Group (2017) and other sources.

16. Moreover, the focus of the trade policy discussions is gradually shifting towards an enabling environment for investment. Despite its complex and expensive system of tax incentives to promote investment, Sri Lanka's foreign investment has remained below 2 percent of GDP over the past twenty years. In addition, new FDI in the past few years has been predominantly infrastructure oriented with only a relatively small proportion reaching sectors that are associated with global value chains.[18] With the new Inland Revenue Act, (IRA; see paragraph 19) the authorities have moved away from inefficient case-by-case customizations of tax incentives towards a more transparent, even-handed, and predictable framework. In line with this shift, the country has also launched various trade sector reforms with the help of the World Bank (box below).

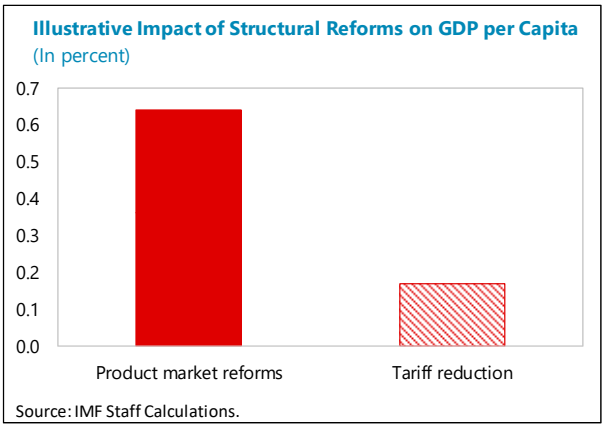
Business Environment and Other Competitiveness Challenges

17. The country faces several structural and competitiveness challenges to achieve the goal of becoming a regional hub for trade and services. Beyond its trade liberalization agenda, several competitiveness obstacles remain to be addressed to jump start investment and regional integration. The rest of this section provides an overview of key competitiveness challenges and opportunities and summarizes some of the authorities' reform initiatives in this area (text table).

Sri Lanka: Competitiveness Challenges and Opportunities

Challenges	Opportunities
Weak trade competitiveness	New trade agreements
Closed economy	Access to EU GSP
Regulatory favoritism	Removing para-tariffs
Worsening doing business ranking	New IRA with new investment incentives
Complex tax system	New infrastructure
Declining population growth	High literacy
Weak skills	Female labor force participation

18. Structural reforms could have a significant impact on long-term growth in Sri Lanka. For Sri Lanka to reach the average level of emerging market economies over a ten-year period, the annual real GDP growth could be increased by about 0.6 percentage points per year through product market reforms and around 0.2 percentage points per year through a trade tariff reduction, based on a framework by Lusinyan (2017) (box below).[19] An empirical study



[18] On average, manufacturing sector received 22-25 percent of total FDIs during the period 2014–2017.

[19] Among the structural variables used by Lusinyan (2017), Sri Lanka has lost its competitiveness especially in terms of product market regulations and trade tariffs over the last decade. Product market regulations are gauged by the Regulatory Quality index of the World Governance Indicators, which measures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Trade tariffs are gauged by the World Economic Forum, which is a trade-weighted average applied tariff rate, including para-tariffs.

by Weerasinghe (2005) also finds that an increase in openness would raise Sri Lanka's growth through both improvements in total factor productivity and accumulation of physical and human capital.

Box 2. Estimation of the Impact of Structural Reforms in Emerging Market Economies

Past literature found that structural reforms could have a significant impact on long-term economic growth. Lusinyan (2017) developed a methodology to quantify the impact of structural reforms on growth (denoted *z* in the equation below), by separating the reforms' impact on capital accumulation, labor utilization, and productivity/technical efficiency, using data from 32 emerging market economies and 27 advanced economies in the period between 1980 and 2016 following Égert and Gal (2016).[1] The paper found that the largest impact comes through the productivity/efficiency channel. The greatest efficiency tends to be brought in by regulatory reforms in the product market. It also found that reducing trade tariffs and lowing costs of starting a business have a great impact through the capital accumulation channel.

$$\underbrace{\Delta ln\left(\frac{Y}{N}\right)}_{\text{GDP growth per capita}} = \underbrace{\frac{\alpha}{1-\alpha}\Delta ln\left(\frac{K}{Y}\{z\}\right)}_{\text{Change in capital-output ratio}} + \underbrace{\Delta ln\left(\frac{E}{WP}\{z\}\right)}_{\text{Change in employment rate}} + \underbrace{\frac{1}{1-\alpha}(\Delta TE\{z\})}_{\text{Change in technical efficiency}}$$

[1] Emerging market economies include Argentina, Brazil, Bulgaria, Czech Republic, Chile, China, Colombia, Estonia, Cyprus, Estonia, Hungary, India, Indonesia, Korea, Latvia, Lithuania, Malaysia, Malta, Mexico, Pakistan, Peru, Philippines, Poland, Romania, Russia, Slovak Republic, Slovenia, South Africa, Thailand, Turkey, Ukraine, Venezuela, and Vietnam.

19. Sri Lanka's IRA legal reform, approved last October 2017, is a remarkable step to modernize the tax regime and create a more predictable business environment. Sri Lanka's complex and volatile tax system has been harming business for decades.[20] Over the past four decades, tax expenditures have been used extensively to achieve a variety of goals such as promoting investment, strategic development, job creation, protecting key industries, and the socially vulnerable. Once tax incentives were granted, they were rarely repealed, leading to proliferation of tax expenditures without necessarily delivering on development goals. Recent studies even show that incentives benefit a large portion of firms which would be profitable even without incentives.[21] Tax incentives were not well targeted and costly in terms of forgone revenue.[22] To address these weaknesses, the new IRA decisively moves away from a complex combination of redistributive and development objectives embedded in the colonial tax laws. It also gives a clear guidance for long-term investment decisions, firmly shifting from fragmented and ambiguous decision-making around investment incentives, to transparent, unified, and even-handed legal framework.

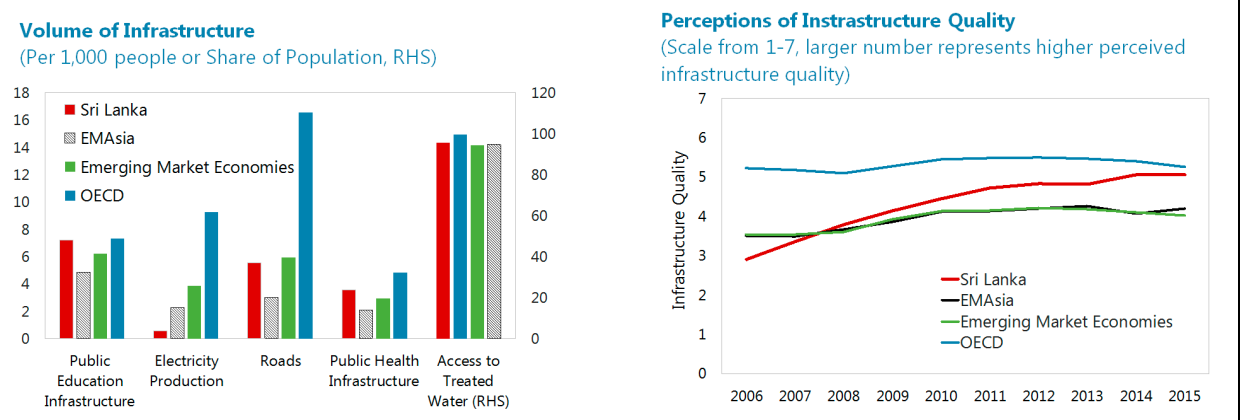
[20] Presidential Taxation Commission Report 2010, extracted from Waidyasekera (2016).

[21] World Bank (2016b).

[22] More than one percentage point of GDP, two third of actual revenue collected, is lost to Corporate Income Tax incentives annually.

20. Transportation networks could be further developed and access to land should be improved. After the post-war reconstruction, Sri Lanka has one of the best road and port infrastructure in the South Asian region. That said, more remains to be done in developing road and transportation networks with the North-East regions to enable better inland trade integration as well as tourism access to these regions. Access to land also remains problematic for investors. The state ownership of land is more than 80 percent[23] and the process of obtaining lease and permits is excessively burdensome with a number of different legislations and parallel forms of land registration involved. The government is considering developing a consolidated land cadaster system and easing lease and permit procedures.

Infrastructure in Sri Lanka



Note: Public education infrastructure is measured as secondary teachers per 1,000 persons; Electricity production per capita as kWh per 1,000 persons; Roads per capita as km per 1,000 persons; and Public health infrastructure as hospital beds per 1,000 persons. The most recent year is used for each indicator depending on the availability of data.

Sources: World Economic Forum, World Bank and IMF staff Estimates.

21. The quality of education can be further strengthened. Sri Lanka has a remarkable 93 percent literacy rate, widespread access to education, high completion rates in both primary and secondary education, and gender parity in general education. However, the quality of general education lags other upper middle-income countries.[24] Although access to primary and secondary education is impressive, achievement is modest with only one third of primary school children mastering language and mathematics skills. Moreover, while the proportion of Sri Lankans with secondary education are comparable to that of East Asian countries, Sri Lanka's tertiary education numbers are much lower than in East Asian countries.

22. Despite high access to education, the overall skills of the workforce need to be upgraded. In the WEF Global Competitiveness Index, restrictive labor regulations (4th most problematic) and poor work ethics (2nd most problematic), inadequately educated workforce, and

[23] World Bank (2015a), Page 74.

[24] World Bank (2015a), Page 5.

insufficient capacity to innovate were quoted among the top problematic factors for business.[25] There is a need to build up quality of primary and secondary education, expand supply of vocational training and technical skills, and introduce soft skills in the general education. For example, only 28 percent of workers can use computers and only 20 percent are proficient in English, with lower ratios in rural regions when over 75 per cent of employers expect a high-skill worker have English language and computer skills.[26] Employers are also demanding soft skills such as teamwork, presentation, and decision making which are not fully incorporated in education and training systems.

23. Sri Lanka's low unemployment rate masks segmentation in the labor market and an increasing dependency ratio. Sri Lanka's demographic dividend is quickly narrowing, unlike in other South Asian economies, as working age population is expected to grow slowly (13–14 percent rate) and then gradually decline, raising over time the number of elderly people that need to be supported by active workers. Low unemployment rates (4 percent) mask several problems such as high youth unemployment (22 percent), low female labor force participation rate (36 percent)[27] and skilled labor shortages in manufacturing and construction. An estimated two-third of workers are employed informally. Policies to better enable youth employment and female labor force participation may help to address the aging population challenge in the context of large development needs.

C. Conclusions

24. The government has ambitious plans to achieve upper middle-income country status in 2025 by transforming Sri Lanka in an Indian Ocean Hub for trade, investment, and services. Unlike the 70-80s when investment in the tradable sectors led the productivity boost, the post-war capital deepening was mainly driven by mega-scale public-financed infrastructure projects, which did not seem to result in immediate productivity gains, as reforms to enable the business environment lagged. Sri Lanka's static export structure signifies an absence of competitive forces to drive trade dynamism, innovation, and diversification: for over two decades exports have remained concentrated on garments, tea, and rubber products with a declining share in global trade. Introduction of para-tariffs barriers during the last decade has effectively doubled the protection rate, making the present trade regime one of the most complex and protectionist in the world. Despite operating a complex and an expensive system of tax incentives to promote investment, FDI remains low.

25. Stable and transparent regulatory systems would make Sri Lanka's business environment more attractive for long-term investment and support trade integration. Breaking from the past, Sri Lanka's new IRA, approved in October 2017, decisively moves to a

[25] The ranking of these factors is based on World Economic Forum's Executive Opinion Survey with a sample size of 75–100 for Sri Lanka on their ranking of the five most problematic factors for doing business in the country, with a rank between 1 (most problematic) and 5 (http://reports.weforum.org/global-competitiveness-index-2017-2018/).

[26] World Bank (2015a), Page 14.

[27] Annual labor force survey 2016, Department of Census and Statistics.

transparent, unified, and even-handed legal framework, from the previous ad hoc, fragmented, and ambiguous tax investment incentives. Consistent implementation of this new rule-based system could help unlock long-term investment decisions. A simplification of tax systems, including trade tariffs and para-tariffs, through predictable, fair, and automated mechanisms, can remove uncertainties that hold back trade and investment decisions and support the needed shift towards more private sector-led growth. Reviewing trade barriers and developing a phased and sequenced strategy for gradual removal of restrictions is a first necessary step towards enabling more competitive trade. In this regard, the authorities' decision to gradually rationalize para-tariffs and set up automated approval systems is a welcome step. Ongoing open consultative processes on reform strategies can also help building public consensus in support of these important objectives.

Annex I. TFP Accounting and Data Sources

This section summarizes the three methods of aggregate TFP accounting presented in the paper as well as the data sources for the estimations and sensitivity analysis.

Methodologies

Solow Residual TFP

$$Y_t = A_t . K_t^{\alpha} . (L_t)^{(1-\alpha)}$$

$$\Delta \ln A = \Delta ln\, Y - \alpha \Delta lnK - (1-\alpha)\Delta lnL$$

Human Capital Adjusted TFP

$$Y_t = A_t . (K_t)^{\alpha} . (h_t L_t)^{(1-\alpha)}$$

$$\Delta \ln A = \Delta ln\, Y - \alpha \Delta lnK - (1-\alpha)\Delta lnL_t - (1-\alpha)\Delta lnh_t$$

Capital and Labor Utilization Adjusted TFP

$$Y_t = A_t . (z_t K_t)^{\alpha} . (h_t L_t)^{(1-\alpha)}$$

Differentiating the production function and dropping time subscripts yields:

$$\Delta \ln A = \Delta ln\, Y - \alpha \Delta lnK - (1-\alpha)\Delta lnL - \alpha \Delta lnz_t - (1-\alpha)\Delta lnU_t$$

Where output Y_t is a function of A_t (TFP), the stock of physical capital K_t and $z_t$is the capital utilization. Human Capital adjustment is denoted by h_t and utilization adjusted labor, which is the product of a labor utilization U_t times persons engaged given by L_t. α is the output elasticity of physical capital, and 1- α is the output elasticity of augmented labor.

We use Bosworth and Collins (2006)'s approach to show reallocation effects in the growth accounts. Sectoral decomposition is applied to aggregate labor productivity growth to separate the sectoral reallocation effects, the first term on the right-hand side, from the sectoral composition effect, the second term. Employment shares are denoted by s and value-added shares by s^y, sectors are denoted by j.

$$\hat{y} = \sum_j \hat{s}_j \, y_j + \sum_j s_j^y \, \hat{y}_j$$

Data Definition and Sources

The accuracy of the growth accounting exercise depends on the correctness of the methodologies, as well as the measurement of factor inputs and factor shares. Studies show that differences in methodology and data sets have produced significantly different estimates of TFP growth rates (Weerasinghe 2005). Therefore, while this study uses widely accepted methodologies and assumptions which have reached consensus in the literature, it is also important to note the limitations that arise from inconsistencies and quality of data.

Output

Gross domestic production, real growth rates and sectoral contribution were obtained from the Special Appendix Table of Annual Report 2016 and Economic Social Statistics 2017 by Central Bank of Sri Lanka (CBSL). GDP deflator (2010=100) was taken from World Development Indicators. The sectoral real growth rate is calculated as the year-on-year change in gross domestic production/gross value added in constant prices with different base years and those growth rates are used to extrapolate sectoral and aggregate real GDP in 2010 prices. The National Account estimates were revised in 1970, 1982, and 1996 by the Central Bank of Sri Lanka and Department of Census and Statistics in 2002 and 2010. Due to such rebasing exercises, a consistent long series of real output was not readily available and therefore, was estimated using the real growth rates of different base years in 2010 prices (see also sensitivity analysis below).

Capital

Gross fixed capital formation in constant local currency, inventories in constant local currency and adjusted savings: consumption of fixed capital (% of GNI) obtained from World Development Indicators. Capital stock was estimated under the perpetual inventory method with 7 percent depreciation rate using gross fixed capital formation and changes in inventories.

Labor

Number of persons engaged, share of labor compensation in GDP and annual average hours worked were taken from Penn World Tables. Sectoral labor shares as a percent of total employment was taken from labor force surveys (1990 onwards) and similar surveys (before 1990) of Department of Census and Statistics obtained from CBSL Annual Report 2000 (Special Statistical Appendix – Table 4). The missing values in between the periods are imputed using fixed growth assumption.

The labor information for Sri Lanka comes from many sources. The labor data prior to 1990 comes from Census of Population, Socio Economic Survey and Land and Labor Utilization Survey that have been conducted at irregular intervals. The primary source of the labor force and employment, Labor Force Survey conducted by the Department of Census and Statistics (DCS) only since 1990. However, due to the ongoing conflict in the country, two provinces were inaccessible to conduct the survey regularly. Such inclusions and exclusions and different coverages of the surveys shows up in the national data as anomalies. Therefore, the persons engaged information from the Penn World tables were considered in place of it.

Utilization Rates

CBSL publishes capacity utilization series in annual reports based on factory industrial production surveys on output and usage of installed capacity. Capacity utilization rates for 1968–1975 are taken from CBSL Annual Report 2000, Special Appendix Table 14 and were extracted from "The Economy of Sri Lanka". Labor utilization rates are estimated using the average annual hours worked by the persons engaged available in the Penn World Tables (PWT) until 2014 and CBSL's new series on gross value added per hour worked since 2014. The maximum workable hours in a week is assumed to be 40.

Sri Lanka. Utilization of Capital and Labor (Period Averages)

	Labor	Capital	Capital/Labor
1971-77	0.83	0.63	-0.21
1978-87	0.95	0.75	-0.21
1988-02	0.95	0.82	-0.12
2003-09	0.97	0.83	-0.14
2010-16	0.97	0.79	-0.18

Source: Central Bank of Sri Lanka and Penn World Tables

Labor and Capital Share of Income

In using Cobb-Douglas production function to conduct growth accounting exercise, constant returns to scale are assumed. In the growth accounting literature, the capital share of income varies between 0.3-0.4 for emerging market countries. However, for this study, the labor share of income was taken as 0.7, a 15-year average based on the data available in Penn World Table on labor share of income for Sri Lanka. Therefore, the capital share is 0.3. The following sub-section presents the results of sensitivity analysis carried out for various depreciation rates, capital share of income and human capital adjustment.

Human Capital Index and Literacy Rate

Human Capital Index for Sri Lanka published by the Penn World Table 9.0 is based on the average years of schooling from Barro and Lee (BL, 2013) and an assumed rate of return to education, based on Mincer equation estimates around the world (Psacharopoulos, 1994). The free education policy was implemented in the late 1945. In 1911, the literacy rate of Sri Lanka was 31% and in 1971 it was improved to 78.1%. Therefore, high rates of human capital development during the early 1970s are in line with the policies prevailed.

Sri Lanka. Human Capital Index (Average growth rates)

	Human Capital Index
1961-70	3.6
1971-77	1.7
1978-87	3.0
1988-02	3.3
2003-09	0.1
2010-16	-0.2

Source: Penn World Tables

Agriculture

FAO Agriculture Capital Stock (ACS) database publishes country-by-country data on physical investment in agriculture, forestry and fishing as measured by the System of National Accounts (SNA) concept of Gross Fixed Capital Formation (GFCF) since 1990. For this study, the GFCF in current local currency for agriculture deflated by deflator (2010=100) was taken without any adjustments. Then the perpetual inventory method with 7 percent depreciation was employed to estimate the capital stock. The depreciation rate is in line with consumption of fixed capital as a per cent of agriculture value added available in the FAO database. Bosworth and Collins (2007) add land as an input for agriculture growth accounting. However, following their observation that addition of land does not make a substantial difference to results, we omit land from our study.

Industry, Manufacturing

Employment and gross additions to fixed capital formation for manufacturing and industries (without construction activities) were taken from the Annual Survey of Industries by Department of Census and Statistics. The missing values and 2015–16 values for gross fixed capital formation were calculated using the total capital stock growth rate.

Effective Rate of Protection

Effective rates of protection are derived from Input – Output Tables published by Department of Census and Statistics. The Department of Census and Statistics calculated nominal and effective rates of protection for 127 industries using nominal tariff rates, input shares of industries from Supply-Use Table and Symmetric Input Output Table (SIOT) framework of Sri Lanka for 2010 and 2015. Unlike the traditional approach to calculate ERP, the I/O tale approach is complete and consistent, as it covers all the inputs, outputs and accounts for the usage of tradables.

$$ERP_j = \frac{t_j - \sum_{i=1}^{n} a_{ij}\, t_i}{1 - \sum_{i=1}^{n} a_{ij}}$$

Where t_j - nominal tariff on j,
t_i - nominal tariff on i and
a_{ij} - the share of final value of j accounted for by input i.

Sensitivity Analysis

In the calculations below using the 2002 base year growth rates for the period 2010–2015, TFP growth rates increase by 0.4–0.5 percent range for different methodologies.

Sri Lanka: Sources of Growth - Sensitivity Analysis
(Average growth rate, in percent)

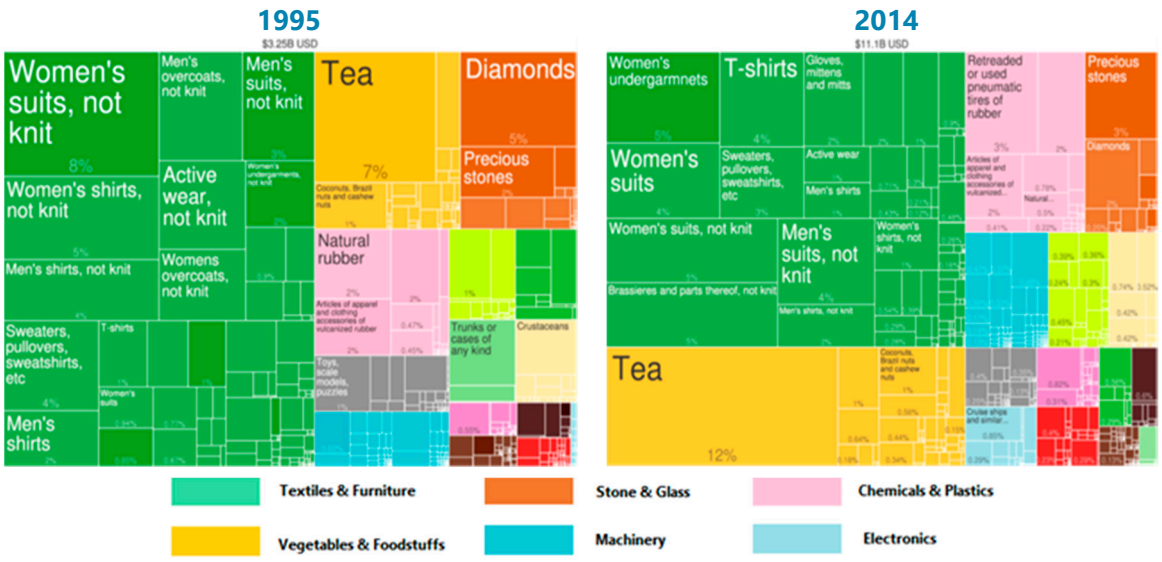
	Output	Employment	Capital	Contribution of: Factor Productivity
Solow Residual with Human Capital (HC) Adjustment				
1961-70	4.7	4.3	2.8	-2.5
1971-77	2.9	2.4	2.7	-2.2
1978-87	5.4	4.2	3.3	-2.1
1988-02	4.6	3.1	1.4	0.1
2003-09	6.0	1.2	1.6	3.1
2010-16	6.3	0.6	2.3	3.3
Capacity Utilization and HC Adjustment				
1971-77	2.9	2.4	2.3	-1.8
1978-87	5.4	4.2	4.3	-3.0
1988-02	4.6	3.1	1.4	0.1
2003-09	6.0	1.2	0.5	4.2
2010-16	6.3	0.6	3.6	2.0
Capacity and Labor Utilization and HC Adjustment				
1971-77	2.9	4.8	2.3	-4.2
1978-87	5.4	4.1	4.3	-3.0
1988-02	4.6	3.1	1.4	0.1
2003-09	6.0	1.4	0.5	4.0
2010-16	6.3	0.5	3.6	2.2
Solow Residual: Depreciation 5% and Capital share 0.3				
1961-70	4.7	1.8	2.7	0.2
1971-77	2.9	1.2	2.6	-0.9
1978-87	5.4	2.0	3.2	0.1
1988-02	4.6	0.8	1.4	2.4
2003-09	6.0	1.1	1.6	3.2
2010-16	6.3	0.8	2.3	3.2
Utilization Adjusted: Depreciation 5% and Capital share 0.3				
1971-77	2.9	3.7	2.2	-3.0
1978-87	5.4	2.0	4.2	-0.8
1988-02	4.6	0.7	1.5	2.4
2003-09	6.0	1.3	0.5	4.1
2010-16	6.3	0.6	3.6	2.1
Solow Residual: Depreciation 7% and Capital share 0.4				
1961-70	4.7	1.5	3.8	-0.6
1971-77	2.9	1.0	3.6	-1.7
1978-87	5.4	1.7	4.4	-0.7
1988-02	4.6	0.7	1.8	2.1
2003-09	6.0	1.0	2.1	2.8
2010-16	6.3	0.7	3.1	2.5
Utilization Adjusted: Depreciation 7% and Capital share 0.4				
1971-77	2.9	3.1	3.1	-3.3
1978-87	5.4	1.7	5.7	-2.0
1988-02	4.6	0.6	1.9	2.1
2003-09	6.0	1.1	0.7	4.1
2010-16	6.3	0.5	4.8	1.0

Source: Central Bank of Sri Lanka, Department of Census and Statistics, Food and Agriculture Organization, Penn World Tables, and staff calculations.

Annex II. Export Structure

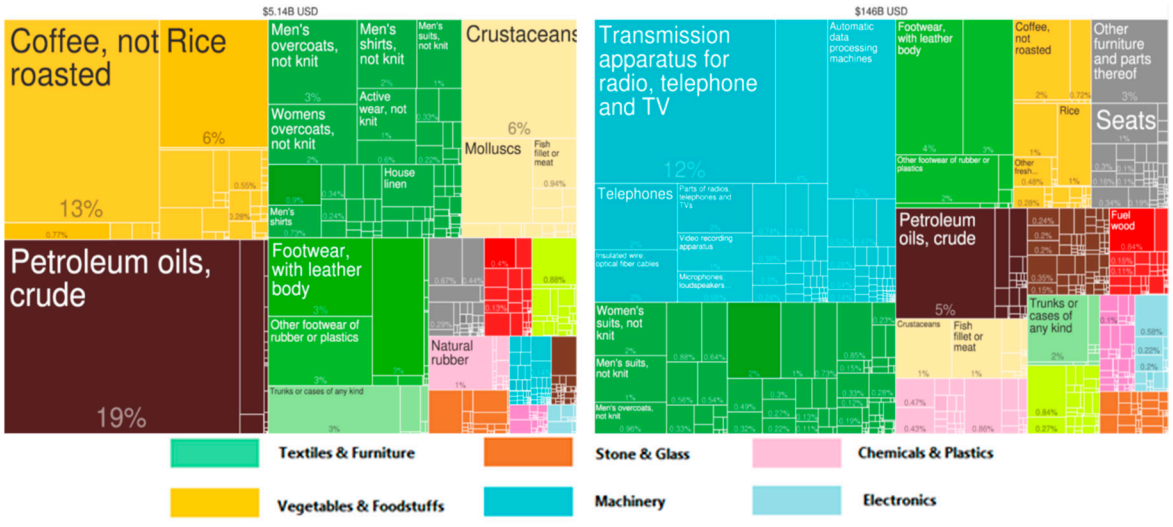
Sri Lanka and Vietnam had a relatively similar export composition in 1995, mainly concentrated in agriculture good and textiles. Vietnam was able to diversify exports towards light electronics and manufacturing, while Sri Lanka's export structure remained mostly unchanged in past two decades.

Sri Lanka: Export Structure



Source: http://atlas.cid.harvard.edu/

Vietnam: Export Structure



Source: http://atlas.cid.harvard.edu/

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FEMALE LABOR FORCE PARTICIPATION: A NEW ENGINE OF GROWTH FOR SRI LANKA?[1]

Sri Lanka has been a trendsetter in the region in advancing gender parity in education and health. Yet, this has not been reflected in more active female labor force participation (FLFP), which is low compared to its emerging market peers and even some low-income developing countries in the region. Closing this gap is especially important as Sri Lanka faces an aging population with a labor force that could start shrinking as early as 2026. Given the potential for significant economic gains from integrating the female labor force into the labor market, the authorities' Vision 2025 identifies policies to bridge this gap. Specifically, the Sri Lankan authorities aim to provide child care facilities, improve access to transportation, facilitate part-time and flexible work arrangements, improve maternity benefits for private sector employees, and increase access to tertiary education and vocational training. While these measures are steps in the right direction, Sri Lanka may also benefit from a more systematic approach through implementing gender responsive budgeting.

A. The Gender Gap

1. Sri Lanka has largely eliminated gender disparities in key aspects of education and health care but women still face disadvantages in economic and political life. Sri Lanka has exceeded gender parity in terms of health with the World Development Indicators showing a higher life expectancy for females at birth and lower levels of child mortality for females (under the age of 5 years). The World Economic Forum's Global Gender Report (2017) also ranked Sri Lanka first among 144 countries in the category of health and survival. In terms of education, Sri Lanka has almost reached parity in primary education and exceeds parity in tertiary education. However, a significant gender gap persists in terms of women's participation in the labor market which has remained low for decades. Women make up over fifty percent of the total population but less than around one-third of the total employed population. The labor force participation rate in Sri Lanka was 37 percent for women compared to 75 percent for men in 2017. In addition, the gap in the average monthly wage between men and women is estimated at 14.9 percent (World Bank, 2018). Based on the World Economic Forum's Global Gender Report (2017), Sri Lanka performs well below its peers in the category of Economic Participation and Opportunity. The surprising outcome is that Sri Lanka's performance in this category has been declining in the past decade, not only in terms of economic participation but also in terms of political empowerment.

[1] Prepared by Sarwat Jahan.

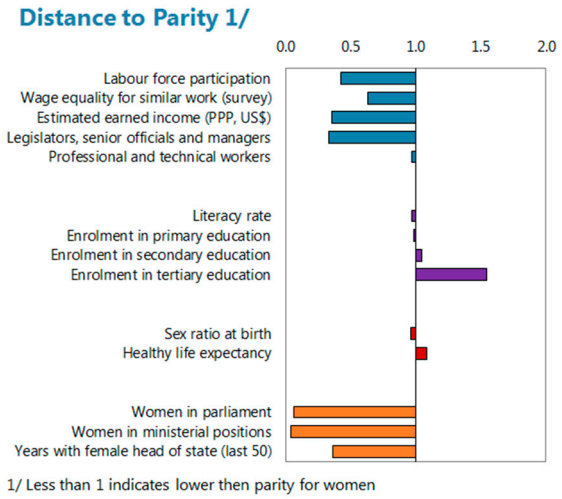
Figure 1. A Snapshot of Gender Parity in Sri Lanka

Sri Lanka has almost closed the gender gap in education and exceeded gender parity in health ….

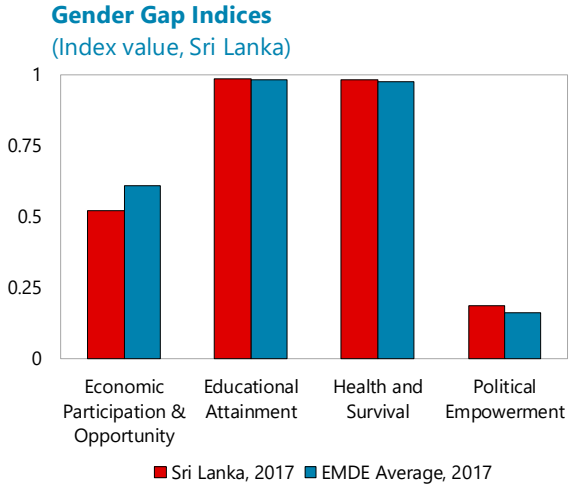
Selected Gender Parity Indicators

Indicator Name	2015
School Enrollment, primary, female (% net)	96.3
School Enrollment, primary, male (% net)	98.0
School Enrollment, tertiary, female (% gross)	24.0
School Enrollment, tertiary, male (% gross)	15.6
Mortality Rate, under-5, female (per 1,000 live births)	8.7
Mortality Rate, under-5, male (per 1,000 live births)	10.5
Life expectancy at birth, female	78.4
Life expectancy at birth, male	71.7
Proportion of women in ministerial level position (%)	4.3

…. but it has a long way to reach gender parity in female labor force participation…



… as it currently scores low globally in terms of economic participation of females…



…. and its score has been falling in that category over the past decade.

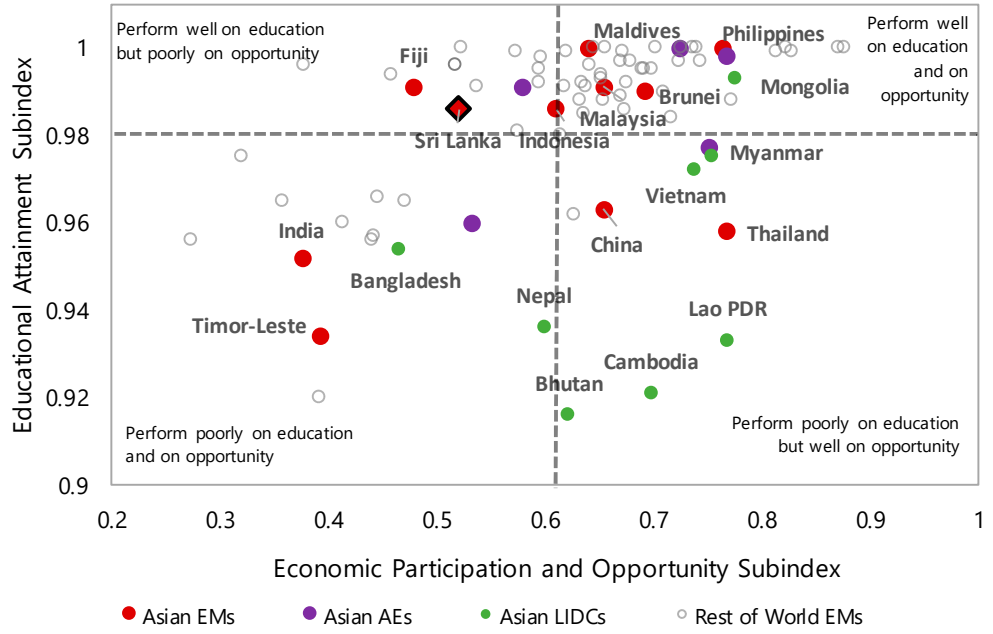
Overview Table	2006 Score	2017 Score
Global Gender Gap score	0.72	0.67
Economic Participation & Opportunity	0.55	0.52
Educational Attainment	0.99	0.99
Health and Survival	0.98	0.98
Political Empowerment	0.37	0.19

Note: Higher score indicates greater gender parity

Notes: The Economic Participation and Opportunity sub-index is based on five indicators, one of which uses a survey to determine wage equality between women and men for similar work. The accuracy of this sub-index can be biased by experts' views (instead of facts on wage equality). This non-IMF indicator provides qualitative information about wage equality based survey. They do not represent the IMF's assessment of the level of wage equality in Sri Lanka.
Source for Chart 1: World Development Indicators, World Bank.
Source for Charts 2, 3 and 4: Global Gender Report 2017, World Economic Forum.

2. Sri Lanka lags behind in gender parity in the labor force compared to its emerging market (EM) peers. In Sri Lanka, provision of free state education, supported by extensive incentives such as free textbooks, free uniforms, scholarships, subsidized transport for all, and free school meals for the children of the economically disadvantaged, has resulted in a rapid rise in female participation rates at school to over 95 percent, on nearly equal footing with the best EM performers in the region. However, Sri Lanka ranks below all ASEAN countries and also several low-income developing countries in terms of economic opportunity for women.

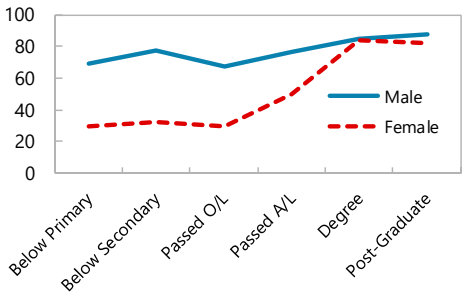
Link between Education and Economic Participation & Opportunity



Notes: The sub-index ranges between 0 to 1 with a higher number indicating a greater parity. The Y-axis has been truncated for easier presentation of countries. The dashed lines show the global averages, which is 0.98 for educational attainment and 0.62 for economic participation and opportunity.
Sources: Global Gender Report 2017, World Economic Forum; and IMF Staff Calculations

3. There is a wide heterogeneity in female labor force participation based on the level of education. According to the World Bank (2018), FLFP shows a skewed-U-shaped curve with respect to education. Although O-level education is still associated with the lowest FLFP rates, the 2015 rate is about 35 percent.[2] In 2015, the FLFP rate increased sharply to more than 85 percent for women with university education (as opposed to less than 80 percent in 2009).

Sri Lanka: Labor Force Participation Rates, 2015
(In percent)



Source: World Bank (2018) & Sri Lanka Labour Force Survey (2015)

[2] O-level and A-level refer to education up to 10 and 12 years of schooling.

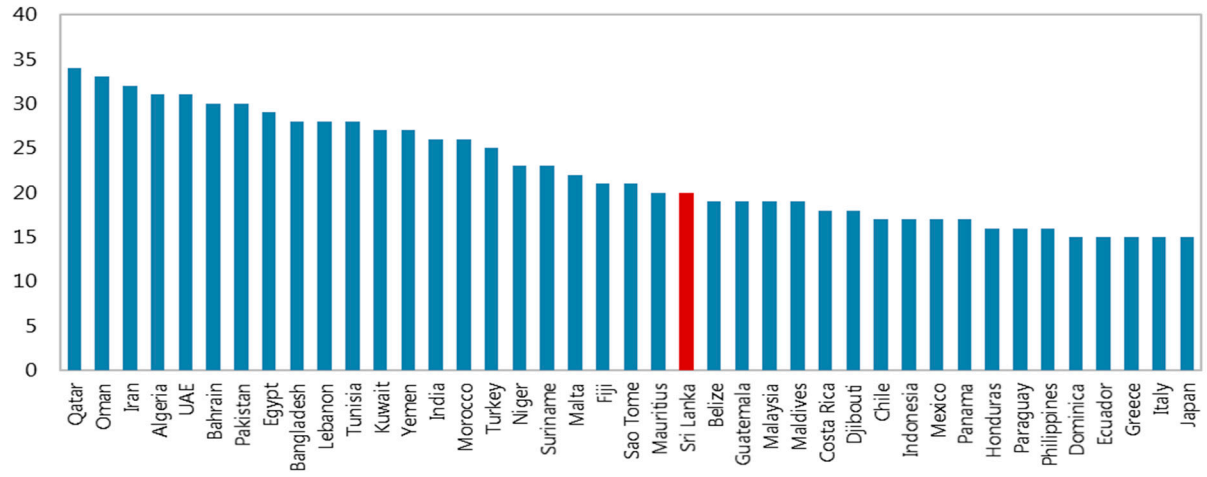
B. Macroeconomic Impact of Female Labor Force Participation on Growth

4. The macroeconomic gains resulting from gender equality in the labor market have been amply demonstrated in the economic literature. A variety of models and empirical studies have suggested that improving gender parity may result in significant economic dividends, which vary depending on country specific circumstances and challenges. For Sri Lanka, a literature review of model simulations and regressions show that there could be significant gains from closing the gender gap in the labor market.

Occupational Choice Model

5. An occupational choice model shows that significant income losses can be caused by misallocations of women in the labor force. Cuberes and Teigner (2014) simulate an occupational choice model, with several frictions on economic participation and wages of women, and show that gender gaps in entrepreneurship and labor force participation significantly reduce per capita income. In this general equilibrium model, agents are endowed with a random entrepreneurship skill that determines their optimal occupation. Agents choose to work as either employers, self-employed, or employees. However, female labor market frictions prevent an optimal choice by women among these activities.[3] These frictions may reflect discrimination, differences in optimal choices of women, or other demand and supply factors.

GDP Losses due to Economic Gender Gaps in Selected Countries
(In percent of GDP)



Note: Losses are estimated for a particular year for each country and can thus be interpreted as a one-off increase in GDP if gender gaps were to be removed.
Source: Cuberes and Teigneir (2014)

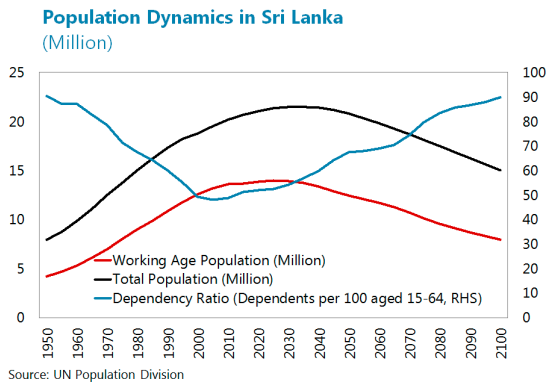
[3] The model omits the possibility of women producing some type of good in the household sector or in the informal economy which is consistent with standard GDP definitions. See Cuberes and Teigner (2014) for more details on the model.

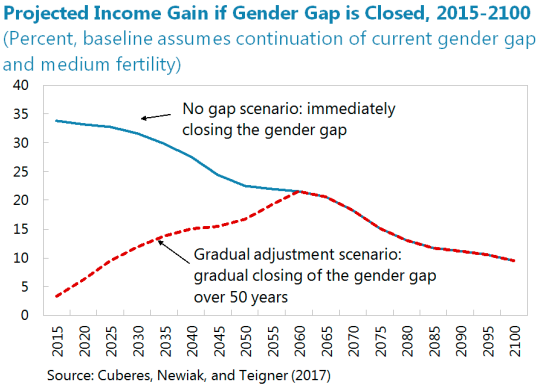
6. The results show that Sri Lanka is currently losing out on a significant share of income due to gender gaps in the labor market. The costs associated with gender gaps in labor force participation and entrepreneurship are currently as high as 20 percent of income per capita compared to a situation where women have the same level of labor force and entrepreneurship participation as men (figure on the previous page shows countries for which the loss in GDP from existing gender gaps is at least 15 percent).

Simulations and Demographics

7. Reducing the gender gap in Sri Lanka could also help offset the negative impact of the demographic transition on growth. Sri Lanka is in the midst of a demographic transition with its population growth slowing, and the United Nations population division shows that its dependency ratio, defined as the size of the non-working-age population to the working-age population (ages 15–64), has already started to rise (left panel on figure below). With a lower share of the population in the labor force, real GDP per capita growth in Sri Lanka would decline, everything else held equal. However, it may be possible to reverse this trend by integrating the pool of educated women in the labor force, especially those with an A-level degree or lower.

Sri Lanka: Demographic Transition and Growth





8. Simulating the implication of an increase in the dependency ratio for men and women suggests that policies to eliminate gender gaps could also offset the negative demographics effects. Cuberes, Newiak, and Teigner (2017) model the implications of a (relative) decline in the labor force by placing a restriction on both the male and female workforce to capture the increase in the dependency ratio for men and women over time. The effects of these declines are then explored under four scenarios: (1) no change in gender gaps in the labor market; (2) a constant decrease in gender gaps over time, with their elimination in 50 years; (3) a constant decrease in gender gaps over time, with their elimination in 100 years; and (4) a constant decrease in gender gaps over time, with their elimination in 150 years. The results show that decreasing gender gaps in the labor market could substantially mitigate the economic cost of population aging, even with relatively slow decreases in gender gaps.

9. In the case of Sri Lanka, simulation results show that there will be an overall income gains of about 16 percent in 2040 if gender gaps are closed in 50 years. Under this scenario, the income gains would be about 21 percent in 2065 when the gender gap is completely closed. Policies to speed up gender gap declines would, of course, yield higher gains.[4]

Econometric Estimations

10. Cross-country econometric analysis has also identified significant economic and fiscal gains from closing gender gaps. At the G-20 Summit in Brisbane, Australia in 2014, the G20 nations pledged to reduce the gap in participation rates between men and women by 25 per cent by the year 2025, the so-called "25 by 25" target (G20, 2014). Applying this target to all countries, a study by ILO (2017a) reveals that reducing gender gaps in the labor market could increase the global labor force by 204 million by 2025, equivalent to an increase of 5.4 per cent (table below). Holding unemployment rates and male participation rates constant, this would boost global employment by 189 million (or 5.3 per cent), which could in turn increase global GDP by 3.9 per cent or US$5.8 trillion (equivalent to raising average global GDP growth over the next eight years by almost half a percentage point). The achievement of such a goal could also unlock large potential tax revenues. For example, global tax revenue could increase by US$1.5 trillion given currently projected government revenue shares in GDP, most of it in emerging (US$990 billion) and developed countries (US$530 billion).

11. Accordingly, Southern Asia, one of the regions with the largest gender gaps, would see the highest benefits in terms of growth. According to the ILO, countries in Southern Asia could increase their average annual GDP growth by over a percentage point by reaching gender parity by 2025. While country-specific estimates are not available, the regional analysis suggests that Sri Lanka could increase GDP around the same magnitude.[5,6] Of course, in order to estimate the economic impact of the "25 by 25" scenario, a number of assumptions were necessary. The first is obviously that the female participation rate increases such that the gap between the male and the female participation rate, by country, decreases by 25 per cent by 2025. The second is that each additional woman in the labor market succeeds in finding a job at the same rate as those currently in the labor market, i.e. the female unemployment rate remains unchanged. Finally, it assumes that these additional women attain 80 per cent of the average labor productivity in the respective year and country to take into consideration prevailing sectoral and occupational segregation, i.e. the fact that women are currently employed in lower productivity sectors and occupations.

[4] These results hold under the assumptions that increases in FLFP do not have a negative impact on fertility rates, on male participation rates, and on human capital accumulation (i.e., spending less time with their parents does not impact negatively the human capital accumulation of the younger generations).

[5] Countries in the Southern Asia region in the ILO study include Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka. The average FLFP rate for this region is estimated to be about 29 percent, below Sri Lanka's 36 percent rate.

[6] The McKinsey Global Institute Report (2015) "The Power of Parity" that suggests even larger gains from increasing gender parity (i.e., increasing gender parity could add up to 28 trillion to annual global GDP in 2025 and up to 0.4 trillion to annual GDP for countries in South Asia—excluding India).

Effects of Reducing Gender Gaps in the Labor Market by 2025

Country/Region	Labor Force		Employment		GDP
	Millions	Percent	Millions	Percent	Percent
World	203.9	5.4	188.6	5.3	3.9
Developing countries	7.8	2.1	7.1	2.0	2.0
Emerging countries	175.5	6.3	162.4	6.2	4.8
Developed countries	20.6	3.3	19.0	3.3	2.6
Nothern Africa	11.4	13.0	9.1	11.8	9.5
Sub-Saharan Africa	11.1	2.2	10.1	2.1	2.2
Latin America and the Caribbean	17.4	5.0	15.8	4.9	4.0
Nothern America	4.8	2.5	4.5	2.5	2.0
Arab States	7.8	11.8	6.0	10.2	7.1
Eastern Asia	27.3	3.0	26.2	3.0	2.5
South-Eastern Asia and the Pacific	15.9	4.1	15.0	4.0	3.5
Southern Asia	92.7	11.1	87.7	11.0	9.2
Nothern, Southern, and Western Europe	5.7	2.6	5.1	2.6	2.0
Eastern Europe	4.5	3.3	4.2	3.3	2.6
Central and Western Asia	5.3	6.6	4.8	6.5	5.7

Note: GDP shows the percentage difference in projected additional GDP in 2025, using PPP exchange rates.

Sources: ILO (2017) and ILO estimation based on ILO's Trends Econometric Models, November 2016

C. Policies to Close the Gender Gap

12. Boosting FLFP in Sri Lanka is macro-critical and has prompted the authorities to initiate several new strategies. The authorities' Vision *2025* outlines a medium-term strategy to provide affordable child care facilities, improve access to transportation, facilitate part-time and flexible work arrangements, improve maternity benefits for private sector employees, and improve access to tertiary education and vocational training. The Sri Lankan authorities are also taking steps to increase female representation in politics.[7] In the short-term, the 2018 budget already includes several proposals to support gender equality in the labor force (see Annex II). Moreover, the cabinet recently approved a strategy to invest at least 25 percent of the provision on state projects for uplifting of rural economy for women and ensure their participation in these projects. While these reforms will certainly help to boost FLFP, Sri Lanka can also benefit from a more systematic approach through effective gender responsive budgeting.

[7] For example, the 2018 local elections had already allocated 25 percent quota to women in local government.

Gender Responsive Budgeting[8]

13. Gender responsive budgeting is an approach to budgeting that uses fiscal policy and administration to promote gender equality. Gender-responsive budgeting (GRB) in a broad sense can involve both the adoption of fiscal policies related to gender equality and gender-responsive public financial management (PFM).[9] Thus, fiscal policy and PFM practices are complementary. GRB efforts are intended to commit governments to weighing the benefits and costs of policies that would promote gender equality, and to include appropriate measures in the budget in response to this evaluation. The key point is not whether an initiative is labeled as "gender budgeting" but whether fiscal policies and PFM practices and tools are formulated and implemented with a view to promoting and achieving gender equality objectives, and allocating adequate resources for achieving them. It is important to note that GRB is not primarily an issue of additional resources for gender development, nor is it confined to specifically targeted programs for women. GRB is an analysis of the entire budget process through a gender lens to identify the gender differential impacts and to translate gender commitments into budgetary commitments. This section discusses a conceptual framework for Sri Lanka by focusing on: (i) the fiscal policies that are related to gender objectives; and (ii) the PFM practices that allow these policies to be operationalized efficiently and effectively.

14. Sri Lanka joined the Commonwealth's gender budgeting pilot project already in 1997.[10] Various budgets since then have mentioned the importance of reducing the gender gap and have committed various initiatives, but not necessarily with systematic attention to female labor force participation. In fact, there were no proper implementing or monitoring mechanism to ensure that budgetary allocations were made to the ministries and provincial councils with systemic gender budgeting approaches. The 2018 budget commits to supporting female labor force participation (Annex II) but a mapping of specific measures to the stated outcomes would be more effective in yielding results.

15. Going forward, the Sri Lankan authorities are considering implementing gender budgeting in twenty ministries on a pilot basis in the near future. In November 2016, the Cabinet approved of the plan to establish gender mainstreaming program in every ministry which would be implemented under the supervision of the Additional Secretary/Director of each relevant

[8] This section draws on the analysis and policy discussion in IMF (2017a).

[9] A narrower approach would limit the focus to PFM practices, mainly related to the various stages of the budget cycle—preparation, allocation, prioritization, execution, monitoring and evaluation—that are gender-responsive (Stotsky, 2016).

[10] Several Asian countries have also introduced gender responsive budgeting including Australia, Bangladesh, Bhutan, India, Indonesia, Malaysia, Mongolia, Nepal, South Korea, and the Philippines to name a few (Chakraborty, 2003 and 2016).

ministry.[11] To make the gender responsive budgeting a success this time, the authorities have mobilized gender focal points in ministries as well as in provincial councils. While this is a step in the right direction, it will also be necessary to provide the necessary training to the focal points at the ministries and provincial councils to implement gender budgeting. The Ministry of Finance should play a stronger leadership role in institutionalizing gender within the conceptual and decision-making framework of budgeting and PFM.

16. In this context, some of the policy instruments can be considered as follows:

***I. Fiscal policy instruments*.** Fiscal policy instruments of relevance to gain gender equality include the use of tax and tax benefits to increase the supply of female labor, improved family benefits, subsidized child-care, other social benefits that increase the net return to women's work, and incentives for businesses to encourage the hiring of women (IMF, 2017a,b). Implementation of adequate fiscal reforms can help Sri Lanka increase its fiscal space. As a result, finances can be channeled towards more productive uses such as social spending in education, health and social safety net. Social protection and social security systems can, in turn, support greater female labor market participation (FLFP) and enhance inclusive growth. As mentioned earlier, these policies are increasingly relevant for Sri Lanka given the shrinking demographic dividend with ageing populations and higher old-age dependency ratios. In particular:

- **Subsidies and tax incentives**. On the demand side of the labor market, initiatives include public subsidies and tax incentives to businesses to encourage the hiring of women, including from underrepresented or minority groups. However, it is also necessary to assess the fiscal costs of these measures. In Sri Lanka, the new IRA has a clean framework that does not specify any specific tax policy positions directed towards FLFP. However, the new IRA has both a basic relief (in the amount of LKR 500,00 for each year) and an increased employment income relief (in the amount of 700,000) that can be offset against employment income, which can be a motivation to females to join the labor force as there would be no tax payable on income up to this level of combined relief.

- **General expenditure policies**. On the expenditure side, policies to support female labor supply include improved family benefits such as paid parental leave, subsidized child-care, and other social benefits that increase the net return to women's work. Policies can also specifically target low-income families while having a gender perspective. For low-income families, there are various tax reliefs, such as the earned income tax credit, for example in the United States (US), or a combination of tax and transfers in the UK and other G7 countries.

- **Building human capital through better health**. Universal access to free health care services for seven decades has resulted in a decline in mortality rates, especially among women. Nonetheless, district-wide disparities are high, with the highest mortality rates in the plantation and the North-east districts. Utilization of health care services such as antenatal and postnatal

[11] Secretary to Ministry of Women and Child affairs would oversee the supervision and follow-up of this program along with two non-government members and the Additional Secretary/Director of each relevant ministry (for details see Cabinet Memorandum No. MWCA/CM/2016/11.)

care and immunization, and institutional births are near universal, but the rising cost of drugs in an unregulated market creates hardships for the poor. Greater focus on these areas are needed (ILO, 2016; Solotaroff et.al., and World Bank, 2013).

- **Closing skills mismatch through education:** Girls have higher enrollment and retention rates in secondary education and higher performance levels at public examinations. The percentages of female students in universities and non-vocational tertiary education are higher than that of male students. However, wide gender imbalances in enrollment in technological courses including information technology in higher education and technical-related courses in vocational education institutions limit their access to high skilled and remunerative employment in technology-related fields. To mitigate skill mismatches and shortages, educational initiatives may be needed to narrow the skill gap. An expansion of the technical and vocational education and training (TVET) programs along with strengthening the National Vocational Qualification system, with island-wide accreditation of providers could boost skill development (ADB, 2015, ILO, 2015, 2016 and 2017b; World Bank, 2013).

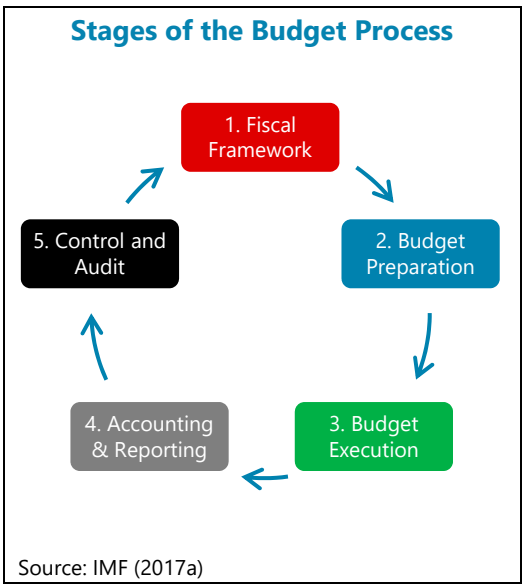
- **Fair and equivalent coverage for women under social insurance programs**. Reforms of social security and pensions systems can take account of women's relatively intermittent work history, the greater incidence of part-time work, lower earnings, and the need for parental leave.

- **Child-care provision.** *Vision 2025* identifies improving access to good quality and affordable child care facilities as a key factor to facilitate female FLFP. Revenue based fiscal consolidation can make space for government initiatives to support schemes that make child care affordable. Studies have shown that providing childcare subsidies to women can be broadly budget neutral as higher income tax payments from women compensate the childcare subsidy cost (Kolovich et.al, 2017). Many countries have also started to make child-care provisions, for example, the Egyptian authorities increased budget resources to public nurseries in 2016 and they are developing an integral strategy to improve the quality of child care services. Canada amended its child care benefit regime in 2016 with the new Canada Child Benefit to provide increased support to low and middle- income families (compared to previous benefit, which was universal). The UK, in 2015, increased childcare support for low-income working parents by providing tax allowance for childcare. In Sri Lanka, the authorities are considering the introduction of an easy credit system with banks for private entrepreneurs to run day care centers. Authorities are also considering redefining the selection of the target group that is receives various state subsidies. By defining the target group through a proper criterion, necessary funds can be saved which can then be channeled to provide child care benefits.

- **Safe transportation:** Among other issues *Vision 2025* identifies transportation as an element to boost FLFP- an issue that has also been raised by both the WB and ILO. Improvements in providing safe transportation for women is critical to lower the risk of the gender based violence

that is highly prevalent on transportation and in public spaces.[12] Recently, several countries have proactively initiated safe transportation programs. Among the most important results of Mexico City's gender budgeting is that public transport buses limited to women only were set up in conjunction with the *Viajemos Seguras* (Let's Travel Safely) Program. The aim was to ensure that women could travel safely around the city, which is essential for their well-being and their integration into work life (Fragoso and Enríquez, 2018). In Kerala, the 2017–18 Gender and Child Budgeting plan calls out two target areas: (1) skill development, employment generation, and livelihood security with a priority to vulnerable women, and (2) preventing violence against women. To achieve these goals, the budget includes planned allocations aimed at supporting entrepreneurship, skills training and development, child care, and gender-friendly infrastructure, among other programs (Kolovich and Loungani, 2018).

II. Public Financial Management. PFM tools that can be used to promote FLFP include gender budget statements, gender impact assessments, performance-related budget frameworks, and gender audits. The Ministry of Finance plays a key role in promoting and coordinating gender budgeting, and associated analytical tools. PFM institutions play an enabling role in operationalizing gender-responsive fiscal policies, such as those discussed above. PFM systems can be adapted to achieve improved gender outcomes at the various stages of the budget cycle which include the setting of fiscal policy goals and targets; the preparation of the annual budget and its approval by the legislature; the control and execution of the approved budget, and the collection of revenues; the preparation of accounts and financial reports; and the independent oversight and audit of the budget. It is important that fiscal policies relating to gender be fully integrated into the above-mentioned framework, at all stages in the cycle. Gender-responsive budgeting does not require a new approach to budgeting, rather an explicit recognition of the existence of gender elements paired with an adaptation and reinforcement of existing institutions and tools. The key point is to define the critical entry points of the cycle for gender-related issues, including the tools to assess policies, and the assurance that the policies approved by the government are funded and implemented efficiently and effectively.



Source: IMF (2017a)

17. Several countries have recently adopted innovative PFM initiatives to promote gender equality in the labor force. Examples include:

- In Morocco the "Gender Report" has become a cornerstone of Morocco's gender budgeting initiative, which identifies key areas where gender gaps existed, offers assessments, and sets

[12] Sri Lanka has a National Action Plan to Address Sexual and Gender Based Violence (2016-2020) however stronger implementation of specific measures is needed including in providing safe transportation.

goals for future performance. The report has evolved over time. The earliest versions, from 2005-2007, included gender-based analysis of government policies and programs. The 2008 version examined performance indicators for operating and capital budgets. Subsequent Reports added an evaluation of measurable indicators of human rights. Some ministries report sectoral- and sex-disaggregated data such as a breakdown of staff by sex or expenditures on women's programs (Kolovich and Shibuya, 2016).

- Uganda introduced a Gender and Equity Compliance Certificate into their Public Finance Management Act in 2015. The Act calls upon all ministries, departments, and agencies to ensure that their budget frameworks and Ministerial Policy statements address gender oriented goals. Their budgets would be approved once a certificate was issued to reflect that gender oriented goals were addressed (Stotsky et.al, 2016).

Other Policies

18. Some policies that are non-fiscal in nature also have gender related objectives, e.g., equal opportunities legislation (IMF 2015a,b). Some of the measures are discussed below in the context of Sri Lanka:

- **Labor Legislations:** The constitution of Sri Lanka supports non-discrimination in employment and occupation. Nonetheless, improving FLFP in Sri Lanka also requires enhanced review and enforcement of clauses in labor laws, anti-harassment measures, and maternity leave—especially related to leave provisions in the private sector. Recommended activities include the following (Solotaroff et.al, 2018; and ILO, 2016):
    - Review labor laws for clauses that restrict women's access to employment. For example, proper benefits and remuneration from flexible work arrangements such as part-time work, telework, working from home, and/or working at night can be introduced through legislative reforms to enable greater employment opportunities for women (either by amending the clauses under the current Shop and Office Employees Act No. 15 of 1954 or issuing a new act).
    - Ensure that laws are correctly interpreted for part-time and flexible work arrangements with benefits;
    - Expand application of maternity leave legislation to improve benefits and enforcement in the private sector and introduction of paternity leave; and
    - Enhance safety regulation and labor monitoring audits of the workplace.

- **Access to Financial Services:** In general, access to finance is not an issue in the urban areas. However, women who live in the plantation sector predominantly in the North-east provinces, and in other "pockets of poverty" in Sri Lanka need a greater presence of financial institutions. Strengthening women' access to finance would help promote entrepreneurship among women and contribute to their participation in the labor market. Several recent studies have also shown the positive impact of female CEOs on firm profitability, management, and innovation (Christiansen et.al., 2016). In the case of Sri Lanka, access to finance should not only compose of microfinance institutions but also formal financial institutions.

D. Conclusions

19. Increasing female labor force participation in Sri Lanka is not only macro-critical but also urgent given the country's demographic transition, with a rapidly ageing population and shrinking labor force. The drivers of low FLFP include a low proportion of high skilled female workers and persistent skill mismatches between labor supply and demand; outdated clauses in labor laws that can be amended to facilitate part-time and flexible work arrangements; absence of good quality and affordable child care facilities; poor enforcement of laws which could provide social protection, especially in transportation. The Sri Lanka Government has already formulated several strategies to address these constraints. However, additional measures can be adopted by systematically engaging in gender responsive budgeting, leveraging as appropriate on the experience of other countries. Non-fiscal measures can also be adopted to update clauses in labor laws and promote greater financial inclusion.

Annex I. Structure of the Global Gender Gap Index

Subindex	Variable	Source
Economic Participation and Opportunity	Ratio: female labour force participation over male value	International Labour Organization, *ILOSTAT* database, 2016 or latest available data
	Wage equality between women and men for similar work (survey data, normalized on a 0-to-1 scale)	World Economic Forum, *Executive Opinion Survey (EOS), 2016-17*
	Ratio: female estimated earned income over male value	World Economic Forum calculations based on the United Nations Development Programme methodology (refer to *Human Development Report 2007/2008*)
	Ratio: female legislators, senior officials and managers over male value	International Labour Organization, *ILOSTAT* database, 2016 or latest available data
	Ratio: female professional and technical workers over male value	International Labour Organization, *ILOSTAT* database, 2016 or latest available data
Educational Attainment	Ratio: female literacy rate over male value	United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics, *Education indicators,* database, 2016 or latest available data
	Ratio: female net primary enrolment rate over male value	UNESCO Institute for Statistics, *Education indicators* database, 2016 or latest available data
	Ratio: female net secondary enrolment rate over male value	UNESCO Institute for Statistics, *Education indicators* database, 2016 or latest available data
	Ratio: female gross tertiary enrolment ratio over male value	UNESCO Institute for Statistics, *Education indicators* database, 2016 or latest available data
Health and Survival	Sex ratio at birth (converted to female-over-male ratio)	United Nations Population Division, *World Population Prospects,* 2016 or latest available data
	Ratio: female healthy life expectancy over male value	World Health Organization, *Global Health Observatory* database, 2015 or latest available data
Political Empowerment	Ratio: females with seats in parliament over male value	Inter-Parliamentary Union, *Women in Politics: 2017,* reflecting elections/appointments up to 1 June 2017
	Ratio: females at ministerial level over male value	Inter-Parliamentary Union, *Women in Politics: 2017,* reflecting appointments up to 1 January 2017
	Ratio: number of years with a female head of state (last 50 years) over male value	World Economic Forum calculations, reflecting situation as of 30 June 2017

Annex II. Measures Outlined in 2018 Budget to Achieve Gender Equality

1. Number of female entrepreneurs engaged in sustainable enterprise utilizing small and medium-sized enterprises (SMEs) loans/subsidies.
2. Increased percentage of women participation in labor force.
3. Increased number of female headed households that have built houses through financial assistance programs.
4. Increased percentage of females who obtain National Vocational Qualifications (NVQ).
5. Number of national policies and projects aimed at employing the female migrant returnees and potential migrant females.
6. Increased number of females in decision making positions attained through policy interventions.
7. Number of public institutions that have maintained gender disaggregation data system.
8. Number of institutions that have taken measures to improve gender friendly work environment and day care facilities.
9. Number of policies and guidelines are in place and effectively implemented to ensure gender concerns are addressed in rescue, relief, rehabilitation, and reconstruction stages of disasters.
10. Number of police women and children bureau units of police stations are enabled to handle women and children issues in a sensitive and effective manner.
11. Number of gender discriminatory laws, policies, and procedures that are amended, enacted and/or implemented.
12. Amount of allocation made to complement Multi-Sectoral National Action Plan to address sexual and gender-based violence (SGBV).

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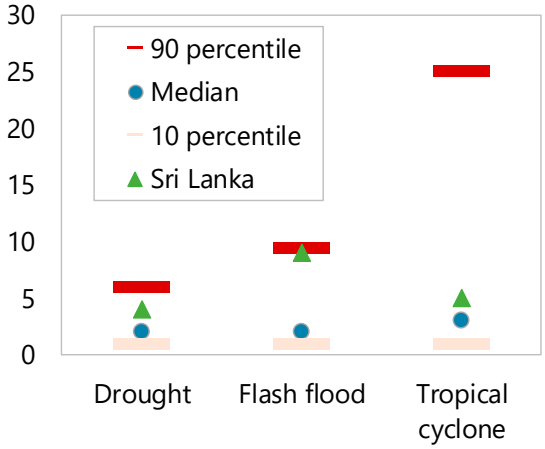
COPING WITH NATURAL DISASTER RISKS IN SRI LANKA[1]

Sri Lanka has been prone to weather-related natural disasters, possibly reflecting climate change. While the government has started to build up resiliency against disasters by introducing disaster insurance schemes and increasing mitigation spending, it can further improve disaster preparedness by undertaking policy measures in the near term. First, a contingency budget for emergency cash support and infrastructure rehabilitation can be introduced within the budget. Second, the planned introduction of an automatic pricing mechanism for electricity, combined with well-targeted safety nets, can contain fiscal risks from droughts. Third, the risk management of disaster insurance schemes can be improved to maximize its effectiveness for post-disaster reconstruction while minimizing costs. Beyond the near term, there is a need to develop a comprehensive disaster risk financing strategy that is consistent with Sri Lanka's debt sustainability, and build up capacity for innovative risk transfer approaches such as parametric insurance.

A. Introduction

1. Sri Lanka is prone to natural disasters. Weather-related natural disasters, from severe floods to extreme droughts, are recurrent events in Sri Lanka, with greater frequency than in other countries (see chart). Large-scale flooding took place in May 2016 and was followed by a historically severe drought across the country in late 2016. The monsoon in May 2017 then triggered devastating floods and landslides in the southwest regions, claiming more than 200 lives and damaging more than 9,000 houses. Climate change would be a possible culprit for this erratic weather pattern—as global warming is projected to make monsoon rainfall more variable in South Asia, with greater frequency of devastating floods and droughts (World Bank, 2013).

Weather-Related Natural Disasters
(Number of occurrences, 2000-17, advanced & developing economies)



Sources: International Disaster Database (EM-DAT); and IMF staff calculations.

2. The recent floods and drought impacted economic growth, raised inflation, and worsened the trade deficit in 2017. With two rice cultivation cycles disrupted since fall 2016, agriculture GDP contracted by 3.8 percent and 0.8 percent in 2016 and 2017, respectively. The food shortage contributed to food inflation accelerating to 14.4 percent y/y in December 2017 and an increase in food imports by about US$200 million in

[1] Prepared by Masahiro Nozaki (IMF) and Samantha Cook (World Bank, Senior Financial Sector Specialist, Disaster Risk Finance and Insurance Program, Finance, Competitiveness and Innovation).

2017 (0.2 percent of annual GDP). Moreover, the drought forced a shift in power generation from hydro to more expensive thermal sources, raising oil imports by about US$900 million (1 percent of GDP) in 2017. The impact has been felt disproportionately by the poor: while more than 2 million people have been affected by the floods and drought, the number of food-insecure households was estimated at 277,000 in August 2017, with 30 percent of them possibly consuming less than the daily minimum calorie intake (World Food Program, 2017). The property damage from the floods is also more difficult for poor households to overcome.

3. The authorities' long-run economic strategy (*Vision 2025*) pledges to prioritize environmental protection and disaster management. It acknowledges that weak environment and disaster management have raised Sri Lanka's vulnerability to natural disasters. The government thus commits to take steps to improve disaster management, including a national disaster reserve fund for post-disaster reconstruction. This would require assessment of Sri Lanka's disaster risk profile, development of a risk management framework, and identification and refinement of policy toolkits.

4. Against this backdrop, this note discusses policy options to cope with natural disaster risks in Sri Lanka. Section B reviews general principles for disaster mitigation policies and discusses their application to Sri Lanka. Section C discusses policy options including contingency budgeting, electricity pricing reforms to mitigate the fiscal risks of droughts, as well as disaster-linked insurance schemes. Section D concludes.

B. Developing National Disaster Risk Management Framework

5. Enhancing resilience to natural disasters and climate change requires a comprehensive, multi-pillar risk management framework (IMF, 2016). Key elements of such a framework include: (1) identifying and assessing natural disaster risks; (2) developing self-insurance through fiscal and external buffers; (3) risk reduction through structural reforms and targeted investments in infrastructure; and (4) risk transfer through disaster risk insurance, multilateral risk pools and precautionary instruments.

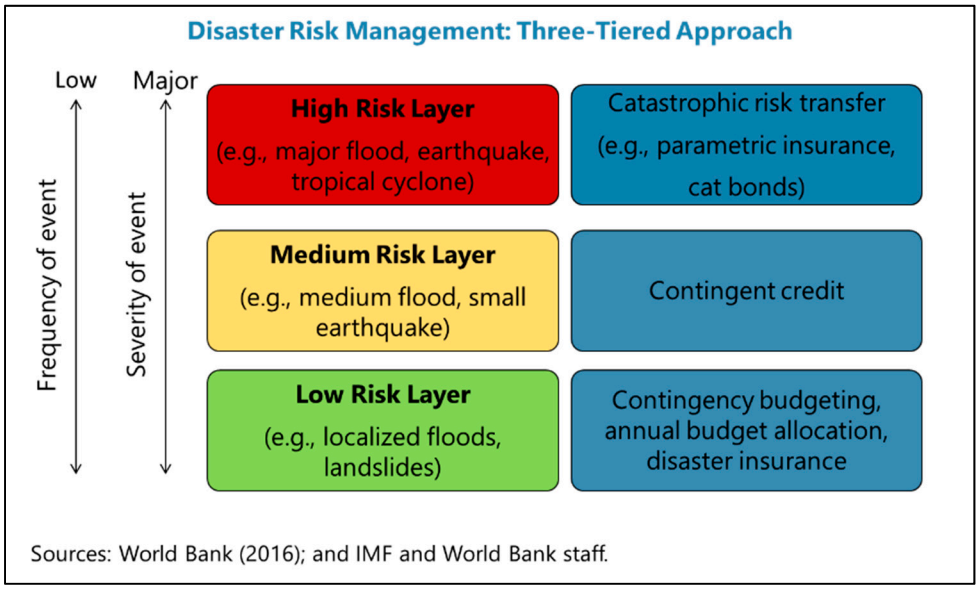
6. Once identified, disaster risks could be financed through a combination of financial instruments. World Bank (2012) proposes a three-tiered approach, based on the return period of natural disasters (see figure).[2]

- ***Low-risk layer*** (for disasters with return periods of about 5 years or less): The annual budget allocation or contingency budget could finance recurrent disaster losses such as localized floods or landslides. Disaster-linked social protection can also be used to protect vulnerable households.

[2] When a natural disaster has a 10-year return period, it means the probability of its occurrence is 10 percent per year. A 100-year disaster has a probability of occurrence of 1 percent per year. This means that over a long period of time, a disaster of that magnitude will, on average, occur once every 100 years (it does not mean it occurs exactly once every 100 years).

- ***Medium-risk layer*** (for disasters with return periods of about 5–20 years): Contingent credit could allow governments to draw down funds quickly after a natural disaster. This could finance losses from disasters that are more severe but less frequent.

- ***High-risk layer*** (for disasters with return periods greater than 20 years): For low-frequency, high severity risks, governments could transfer risks to the international capital and insurance markets for example through catastrophe bonds and catastrophe derivatives.



7. Sri Lanka's natural disaster risk profile is characterized by a mixture of high-frequency, low-severity events and a few single large-loss events. World Bank (2016) assessed the country's risk profile based on historical data for 1998–2012 on ex-post disaster spending for relief assistance as well as housing and road reconstruction (the 2004 Indian Ocean earthquake and tsunami is not included in the analysis). It found that floods were relatively frequent and less variable in terms of impact severity, and that cyclones and droughts were infrequent and typically had more severe impacts. Over the long term, the combined average annual loss from natural disasters is estimated at about 0.5 percent of GDP, comprising 0.32 percent of GD P for floods, 0.05 percent of GDP for droughts, and the remainder for landslides and cyclones. For high-risk layer events, Sri Lanka is estimated to face disaster costs of about 2.4 percent of GDP once every 100 years.

8. A comprehensive natural disaster risk financing strategy should be developed, taking account of Sri Lanka's natural disaster risk profile and public debt sustainability. As near-term policy options, contingency budgeting and well-designed disaster insurance could address risks, including for low-risk layer disasters within available fiscal space. An automatic pricing mechanism for electricity would also help to contain contingent fiscal liabilities arising from droughts. The next section will elaborate on these areas. Beyond the near term, use of contingent credit for medium-risk layer disasters should be informed by the experience with the World Bank Development Policy Loan with Catastrophe Deferred Drawdown Option (Cat-DDO), with its size and trigger optimized to

safeguard public debt sustainability.[3] Further, introducing innovative risk transfer options such as parametric disaster insurance, catastrophe risk pools, and catastrophe bonds (box below) would require further buildup of infrastructure and regulatory and implementation capacity.

Box 1. Innovative Transfer Options

Innovative approaches for sharing natural disaster risks have emerged over the past decade.

Parametric disaster insurance. Unlike a conventional insurance scheme where a payout would be assessed against actual incurred costs, parametric insurance pays out as soon as third-party data confirm a disaster event based on pre-defined parameters. Insurance contracts can be tailored to key risks and vulnerabilities in each country, such as hurricane wind speed or earthquake intensity. While this scheme has an advantage of fast post-disaster payouts, implementation is data intensive and requires detailed databases on assets including property values and locations as well as the development of a model to estimate losses incurred following a disaster. Furthermore, cost can be high because the market for parametric insurance is still developing with only a few players developing models that are accepted by the financial markets.

Catastrophe risk pools. Disaster risks can be pooled across regions, generating economies of scale by reducing costs of operation, capital, and information required to develop parametric insurance products. Risk can be pooled within a country (e.g., Turkey's Catastrophe Insurance Pool) or across countries (e.g., sovereign catastrophe risk pools that cover the Caribbean and Latin America, Africa, and the Pacific). By putting a price tag on risk, risk pools also increase the value of risk information and create incentives to invest in risk reduction.

Catastrophe (CAT) bonds. CAT bonds offer institutional investors high coupons, but in the event of a disaster, the principal is forgiven, freeing the resources for disaster response. Principal forgiveness depends on the chosen parametric trigger, based upon scientifically measurable characteristics of a hazard. This facilitates rapid response in the event of a disaster, while at the same time protecting investors from moral hazard arising from asymmetric information. Mexico became the first sovereign to issue CAT bonds in 2006 and subsequently issued in 2009 and 2012 using the World Bank's MultiCat Program, a catastrophe bond issuance platform that allows governments to use a standard framework to buy insurance on affordable terms through the capital markets. The World Bank has also issued a CAT bond for the CCRIF, the parametric insurance facility for Caribbean countries.

Sources: IMF (2016), Annex IV; World Bank (2016); and World Bank (2017).

[3] The Cat-DDO became effective in August 2014, with the total amount of $102 million (0.13 percent of the 2014 GDP), allowing the government to draw down, upon declaring a state of emergency, following an adverse natural event. The full amount was drawn in August 2016 to finance disaster-related spending for the May 2016 flooding.

C. Near-Term Options to Mitigate Disaster Financing Risks

9. Weather-related natural disasters can result in large ex-post fiscal costs often requiring budget reallocation. The table below tabulates the central government's disaster-related spending for 2017 (actual) and 2018 (budgeted). Spending is categorized into mitigation (e.g., early weather warning system, relocation of vulnerable houses), rehabilitation (reconstruction of roads and water supply facilities damaged by the disasters), cash support (income support for farmers affected by the drought), insurance (premiums for disaster-linked insurance schemes), and others. In 2017, the central government spent Rs 54 billion (0.4 percent of GDP) to cope with the floods and drought, with rehabilitation spending comprising about two thirds of total. It also spent Rs 5 billion (0.04 percent of GDP) for cash support. Because spending for rehabilitation and cash support had not been appropriated in the original budget, the government had to revise and realign the budget by mid-year to create space for such spending. In contrast, the 2018 budget includes mitigation projects amounting to Rs 15 billion (0.1 percent of GDP), but does not appropriate spending for rehabilitation and cash support. Therefore, if severe weather calamities were to reoccur in 2018, a budget realignment exercise might again be necessary, which can delay the response to disasters.

Sri Lanka: Government Spending on Natural Disasters, 2017-18

	2017 Actual		2018 Budget	
	Rs bn	% GDP	Rs bn	% GDP
Total	**53.5**	**0.41**	**21.0**	**0.15**
1. Mitigation	0.4	0.00	15.2	0.11
2. Rehabilitation	34.4	0.26	0.6	0.00
3. Cash support	5.2	0.04	0.0	0.00
4. Insurance	5.5	0.04	3.5	0.02
5. Other	8.0	0.06	1.7	0.01

Sources: Sri Lanka's Ministry of Finance; and IMF staff calculations.

Contingency Budgeting

10. Contingency budgeting can strengthen fiscal resiliency to natural disasters. Incorporating a contingency budget for emergency cash support and infrastructure rehabilitation in the central government budget would facilitate and speed up, if needed, ex-post assistance for families and communities damaged by natural disasters. The size of the contingency budget should be determined within the total spending envelope, in line with the fiscal balance target, to help mitigate the impact of disaster-related spending on public debt sustainability. If the fund for contingency appropriations is unused, it can be channeled to build up reserves for future disasters, with stringent governance and transparency requirements (box below). Over the medium term, the framework can be developed into a natural disaster reserve fund as used in Mexico (box below).

Box 2. Use of Dedicated Contingency Funds

Countries building up budgetary reserves to address natural disaster risks may choose to utilize a dedicated fund. The main characteristics of such funds are that they have a dedicated financing source, specific governance and investment rules, and very restrictive rules regarding the way the resources are to be utilized. They are attractive for building up reserves because they provide considerable flexibility in timing expenditures across years, and can hold money in reserve, away from the demands placed on the general budget funds, until it is needed.

However, many of these funds are extra-budgetary (EBFs), meaning that they are kept outside of the usual budget process and follow different allocation rules. EBFs are less transparent and, by not being part of the regular budget process, allocate resources without taking account of alternative budget needs. A well-designed framework should have the following characteristics:

- The fund should be consolidated with budget information to allow assessment of the overall fiscal situation; at a minimum, the fund balance should appear in financial statements, and drawdowns from the fund should appear in budget execution reports.
- There should be a standing appropriation that allows for spending immediately after certain trigger event (such as a declaration of a disaster emergency by the executive).
- It should have clear rules governing the use of the resources; follow normal government accounting standards; prepare and publish audited financial statements; define governance rules; and adopt prudent and transparent investment policies. In general, normal PFM rules should apply, but procurement rules for immediate disaster response should be adjusted to allow for quicker procurement.
- It should be limited to respond to disasters with large fiscal impacts: hence, drawdowns should only start above a threshold size, or a minimum total cost estimate. Smaller expenditure needs should be covered through budget contingencies.
- The size of the fund should be determined by taking into account (i) expected damages, (ii) likely available support from the international community (incl. IMF support), (iii) ability to borrow in an emergency, and (iv) opportunity costs for building up buffers. The fund should not get too large because (i) its primary purpose is to "buy time" by covering immediate expenses during which time longer-term financing can be arranged, and (ii) a large fund will generate pressures to tap it for other purposes.
- The fund is a funding source, not an implementing agency. Hence, spending authority should rest with implementing agencies who decide and execute post-disaster spending. The fund typically should not have staff dedicated to it.

Source: IMF (2016), Annex VIII.

Box 3. Mexico's Natural Disaster Fund (FONDEN)

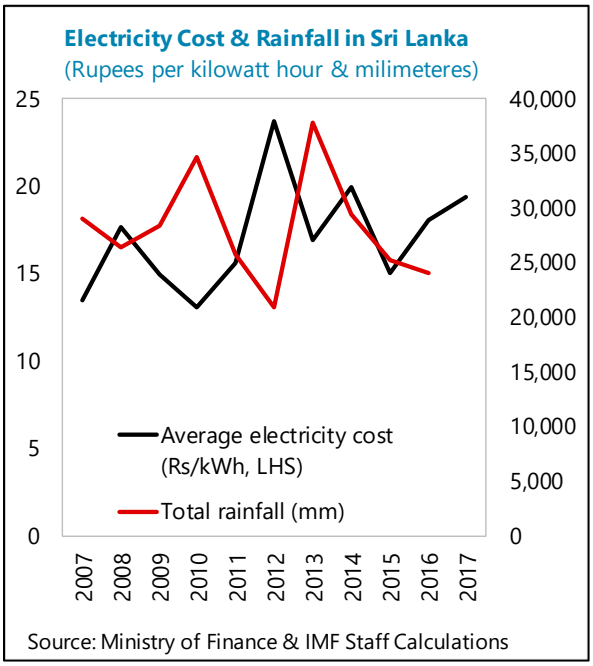
The Government of Mexico created the Natural Disaster Fund (FONDEN) in 1996 in response to the delays faced in the post-disaster financing of emergency and recovery activities. FONDEN is a financial mechanism to provide the federal agencies and the Mexican states with post-disaster financial resources. FONDEN's mandate is to (a) finance post-disaster emergency assistance (through a revolving fund), and (b) provide the 32 Mexican states and the line ministries (for example, the Ministry of Infrastructure, Ministry of Health, Ministry of Education, and Ministry of Human Development) with financial resources in the case that losses from natural disasters exceed their budget capacity.

FONDEN provides finance towards post-disaster recovery and reconstruction of public assets (100 percent of federal assets and 50 percent of state and municipal assets) and low-income houses. In 1999, the FONDEN Trust Fund was established to help finance the FONDEN program through a catastrophe reserve fund that accumulates the unspent disaster budget of each year.

Source: World Bank (2012).

Drought and Electricity Costs: Fiscal Risk Mitigation

11. Droughts pose a significant fiscal risk due to Sri Lanka's reliance on hydro electricity generation and administered tariffs. Hydropower generation accounts for 30 percent of the total electricity generation capacity in Sri Lanka. Thus, droughts result in low hydro utilization and boost need for thermal generation (coal and oil), raising the cost of supplying electricity—the 2017 drought raised the average electricity cost to about Rs 20 per kWh (see chart). Unless end-user tariffs are adjusted to cost-recovery levels, elevated electricity costs result in quasi-fiscal losses for the Ceylon Electricity Board (CEB). In fact, as end-user tariffs have not been adjusted since 2014, CEB incurred losses of 0.4 percent of GDP in 2017.



Source: Ministry of Finance & IMF Staff Calculations

12. Cost-reflective tariff adjustments, together with well-targeted cash transfers, can help mitigate these risks. Electricity subsidies should be contained because they tend to benefit the rich more than the poor. An automatic tariff adjustment mechanism under the 2015 tariff methodology—cabinet approval is expected by September 2018—would minimize such subsidies. The 2015 tariff methodology introduces price stability by fixing tariffs over a period of six months, protecting end-users from volatility in the exchange rate, international prices of fuel and coal, and weather conditions. Tariffs also reflect a forecast of likely developments in supply and cost for the forthcoming six months, ensuring that discrepancies between cost and price are eliminated over

time. To mitigate the distributional impact of higher end-user electricity tariffs on the poorer segments of the population, lifeline tariffs[4] and/or targeted cash transfers can be used. Ongoing reforms on social safety nets to improve targeting and coverage of existing social assistance programs are critical to support these efforts.

Improving Natural Disaster Risk Insurance

13. Public insurance schemes are currently in place to cover the population against disaster risks. The National Natural Disaster Insurance Scheme (NNDIS) was introduced in April 2016, administered by the state-owned National Insurance Trust Fund (NITF).[5] It covers all households and small- and medium-sized enterprises for property losses up to Rs 2.5 million caused by disasters including cyclones, floods, and earthquakes (droughts are excluded), with premium paid by the government. The NITF then purchases reinsurance from the international reinsurance market to provide financial protection to their capital. In addition, crop insurance schemes administered by state-owned insurers cover farmers against crop losses due to natural disasters including droughts and floods.

14. There is scope to improve the risk management of the NNDIS. The flooding in 2016 and 2017 resulted in net losses for the NNDIS, estimated at about Rs 2 billion for 2016-17 (0.02 percent of GDP). This reflects relatively high costs for reinsurance (about Rs 800 million for 2017), which was not fully offset by the premium paid by the government (Rs 500 million). Improving risk management for the NNDIS would help to keep contingent liabilities at bay. Options include thoroughly assessing the risk exposure of the NNDIS, based on asset values and average payouts to households; minimizing reinsurance costs by carefully choosing risk layers to be covered, deductibles, and coverage limits; and transitioning to a targeted scheme to focus on poor and vulnerable households (e.g., reducing the maximum property losses for richer households and encouraging them to buy insurance from private insurers). The new Social Registry being developed by the Welfare Benefits Board can collect data on assets to be insured and target poor households in a way that is consistent with other welfare programs operated by the government. Further, the NITF should clearly demarcate risk exposure by insurance schemes and functions (e.g., separating accounts between the NNDIS and the reinsurance). The World Bank is providing technical assistance in this area.

15. Disaster insurance schemes can be further strengthened. The government should consider introducing a catastrophe insurance program for public assets, which can facilitate post-disaster reconstruction of damaged infrastructure such as roads and bridges. Standardizing insurance cover across key public assets would generate economies of scale and diversification benefits, thereby lowering premiums. The effectiveness of existing crop insurance schemes can be

[4] Lifeline tariffs are subsidized tariffs to support low income households. For example, in Kenya, a lifeline tariff was introduced for households that consume less than 50kWh per month, a threshold commonly used in Africa as a subsistence-level benchmark.

[5] Established in 2006, the NITF is an insurance and reinsurance institution fully-owned by the government. Aiming at providing a safety-net and protection for all needy sectors, the NITF is mandated to provide affordable insurance coverage against riot and terrorism; crop insurance; and health and general insurance. It provides reinsurance to the domestic insurance industry.

improved by assessing risk exposure, reviewing the payment trigger, and evaluating the potential benefits of risk pooling. In this context, the 2018 Budget announced establishment of a weather-indexed crop insurance scheme for rice paddies and other crops such as maize and soya, under a contributory scheme with the premium paid by both farmers and the government.

D. Conclusions

16. Given its exposure to frequent weather calamities, Sri Lanka could greatly benefit from a comprehensive disaster risk financing framework. The country has been prone to weather-related natural disasters, possibly reflecting climate change, with recent floods and droughts taking a heavy toll on Sri Lankan people and the economy. The government started to build up resiliency against disasters by introducing disaster insurance schemes and increasing mitigation spending. This note highlights three near-term policy measures to improve disaster preparedness. First, a contingency budget for emergency cash support and infrastructure rehabilitation can be introduced in the government budget within the total spending envelope consistent with the fiscal balance target. Second, the planned introduction of an automatic pricing mechanism for electricity, combined with well-targeted safety nets, can contain fiscal risks from droughts. Third, the risk management of disaster insurance schemes can be improved to maximize its effectiveness for post-disaster reconstruction while minimizing costs. Beyond the near term, there is a need to develop a comprehensive disaster risk financing strategy that is consistent with Sri Lanka's debt sustainability, and build up infrastructure and implementation capacity that are necessary for innovative risk transfer approaches such as parametric insurance, catastrophe risk pools, and catastrophic bonds.

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SRI LANKA'S CREDIT EXPANSION: ENGINEERING A SOFT LANDING WHILE FINANCING GROWTH?[1]

Private sector credit growth in Sri Lanka has recently moderated but continues to grow significantly faster than nominal GDP growth. Financial soundness indicators so far suggest a broadly healthy financial system and stress tests do not point to systemic risks. However, the rapid credit expansion of the past two years calls for heightened vigilance regarding potential underlying vulnerabilities, notably in the real estate sector. While monetary tightening in 2016-17 has helped to rein in credit growth, macro-prudential measures can be formulated and implemented to preempt emerging risks, including in the real estate sector. More generally, Sri Lanka will benefit from ongoing efforts to strengthen supervision and its macroprudential framework, as well as bolstering its crisis management and resolution frameworks.

A. Current State of Credit Growth

1. Over the last two years, Sri Lanka has experienced fast credit growth, beyond what its financial deepening needs would warrant. Sri Lanka's credit to GDP ratio is among one of the lowest in Asian Emerging Markets and also low compared to several low-income countries (first graph in panel). However, while there is a need to deepen the financial sector in Sri Lanka, credit should expand at a sustainable pace. Sri Lanka has experienced several episodes of rapid credit expansion in the past, including in 2010-2012 (second graph in panel). Yet, the current credit expansion has not translated, like in the past, into higher levels of domestically financed private investment (total private investment excluding foreign direct investment) and in turn real GDP growth.[2]

2. While credit growth has moderated since mid-2016, further deceleration would help mitigate financial stability concerns. During 2016-17, the CBSL maintained a tightening bias and also introduced macro-prudential measures by imposing limits on loan-to-value (LTV) ratios on motor vehicle loans.[3] Partly in response to these policy actions, credit growth to the private sector fell from its peak of 28.5 percent in July 2016 to 14.7 percent in December 2017. As a result, the change in the credit-to-GDP ratio is now below the crisis threshold of 3 percent, while the credit gap has narrowed to around 6 percent.[4] In April 2018, the Central Bank of Sri Lanka (CBSL) cut the policy rate by 25 basis points in view of low inflation which also resulted in high real interest rates. Developments in credit growth as a result of this monetary loosening will need to be closely monitored as its effect is likely to come with a lag.

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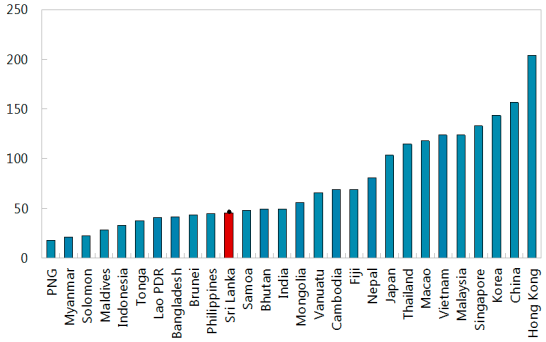
[1] Prepared by Sarwat Jahan and Peter Lindner.
[2] Average real GDP growth was below 5 percent during the rapid credit expansion of 2015-2017, compared to the episode in 2010-2012, when real GDP growth averaged 8.5 percent.
[3] Following two policy rates hikes in 2016 and a third one in March 2017, market lending interest rates increased by about 300 bps since 2016. However, CBSL relaxed monetary policy in April 2018 which may impact credit growth.
[4] Credit to GDP gap is a widely used indicator for financial sector stress. Following the Bank for International Settlements methodology, a threshold of 10 percent or more signals a high potential of crisis for advanced and emerging markets (Basel Committee on Banking Supervision, 2010; Borio and Drehmann, 2009; and Drehmann et.al., 2011). Another warning threshold is the year on year change of 3 percent in the credit-to-GDP ratio (IMF, 2011).

Figure 1. Current State of Credit Growth in Sri Lanka

Sri Lanka has one of the lowest credit-to-GDP ratios in the region…

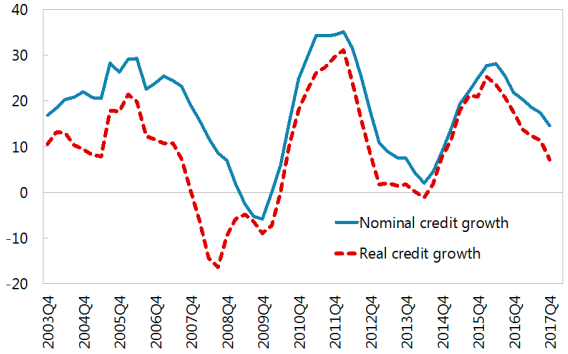
Credit to GDP Ratios in Asia-Pacific, 2016
(In percent)



Note: Dot represents value for Sri Lanka in 2017.

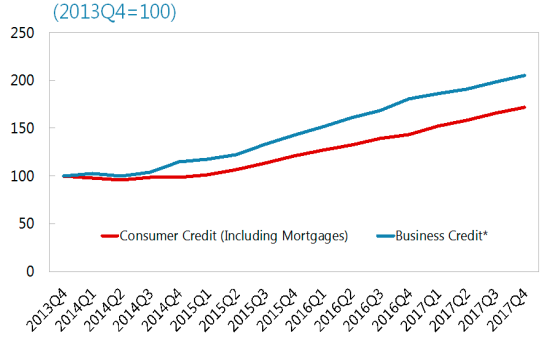
…but recently there has been rapid multi-year growth…

Private Sector Credit Growth
(In percent, y/y)



…with credit channeled to both consumers & businesses…

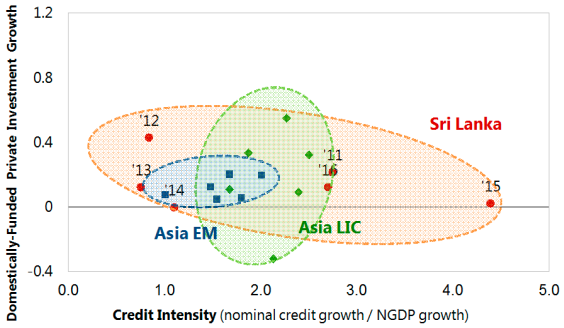
Credit to the Private Sector
(2013Q4=100)



*=business credit includes loans to the private sector for agriculture, industry and services activities, with the exception of credit for personal mortgages.

…and the credit expansion has not always translated into high domestically financed private investment…

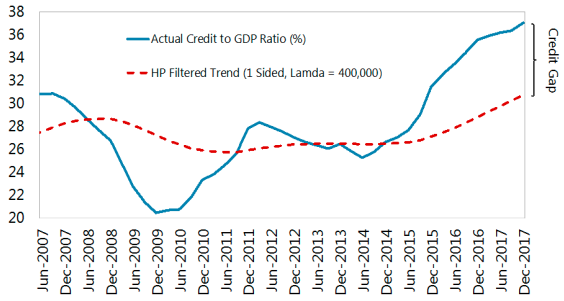
Credit Intensity and Domestic Private Investment



Notes: Asia LIC includes Bangladesh, Myanmar, Mongolia, Cambodia, and Vietnam. Asia EM includes India, Indonesia, Malaysia, Philippines, and Thailand.

…and there is a large credit gap…

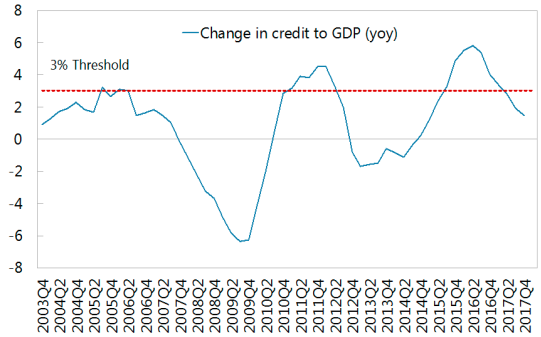
Credit to GDP Ratio and its Cyclical Trend
(In percent of GDP)



Note: Credit gaps were computed using the one-sided Hodrick-Prescott filter, with quarterly data and a relatively high smoothing parameter (lambda equal to 400,000). Various values of lambda were used, all of which gave a positive credit gap.

…but the credit-to-GDP ratio is below the warning threshold.

Credit to GDP Ratio
(In percentage points, yoy change)

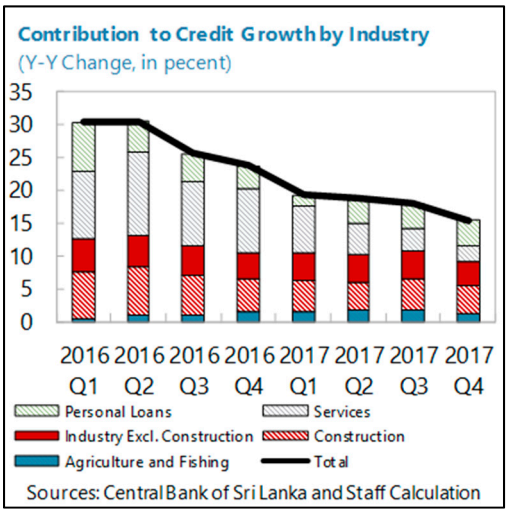


Sources: Central Bank of Sri Lanka, World Economic Outlook, International Financial Statistics, and IMF Staff Calculations

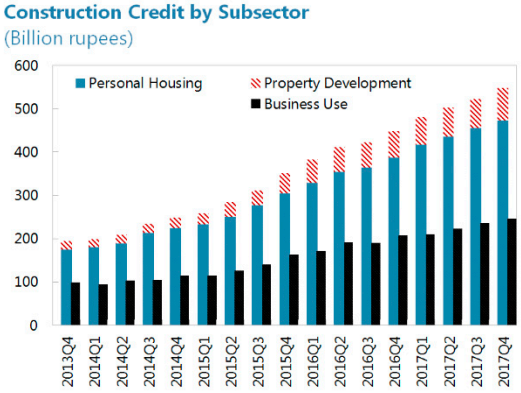
B. Assessing Underlying Risks in the Financial Sector

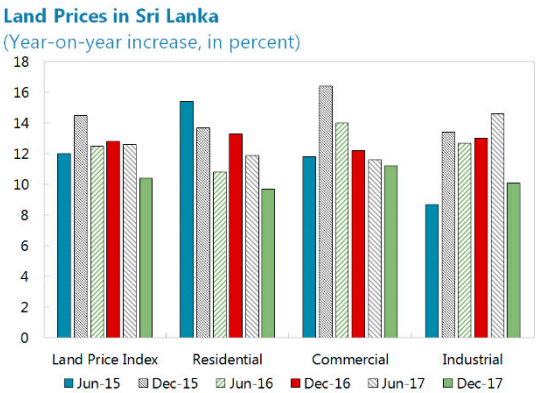
Credit Concentration in Construction

3. Notwithstanding the recent deceleration, credit growth remains elevated, particularly in the construction sector. Real estate market (personal housing and property development) expansion has continued unabated, and credit to construction is currently the highest contributor to overall credit growth. Currently, the real estate market makes up of 11.2 percent of total outstanding loans. Decomposed analysis of construction credit indicates that most of this credit has been utilized for personal housing, but credit to property development has also increased since 2014. Although the bulk of purchases of luxury condominiums, and some of the construction of office and hotel buildings, may reportedly rely on foreign financing, the increasing credit concentration in the real estate sector can lead to rising financial risks. If rapid construction leads to an oversupply in the real estate market, lower prices and a slowdown in construction activity would likely follow and trigger stress among the often-leveraged builders. Lower prices for luxury condominiums, even with few secondary market transactions, will depress the values of existing housing, entailing a negative wealth effect. Overbuilding would, through these channels, adversely impact the banking sector and economic activity.



Credit Growth in Construction and Land Prices





Note: 'Business Use' refers to building and housing contractors, construction of business premises, hotels & restaurants as well as infrastructure development.

Sources: World Economic Forum, World Bank and IMF staff Estimates.

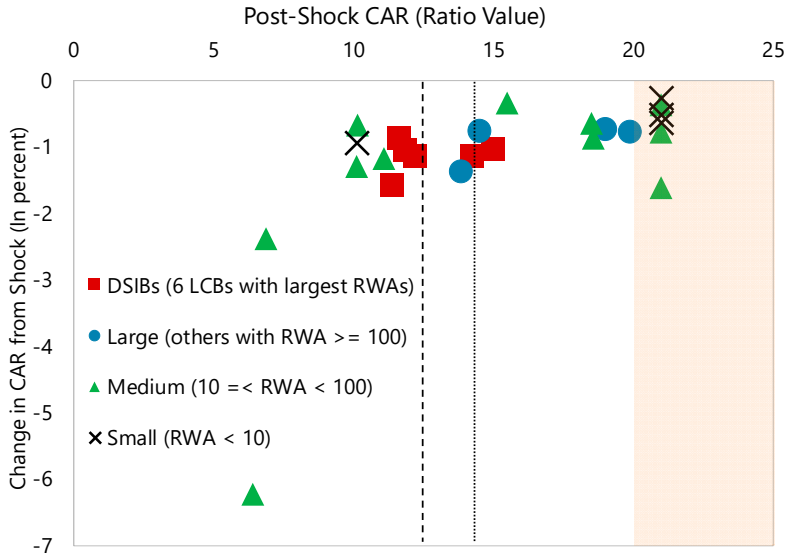
4. Standard indicators of banking sector soundness are broadly healthy but may not adequately capture underlying vulnerabilities. In December 2017, the NPL ratio of commercial banks stood at 2.5 percent with NPLs in the construction sector at about 3.5 percent.

Other indicators of capital adequacy and profitability also point to a healthy financial sector. The backward-looking nature of these indicators, however, precludes an assessment of the impact of the most recent real estate-focused credit expansion on loan quality. More than half of the real estate loans were extended after 2014, making it difficult to assess their ultimate performance. Land prices have continued to increase since the onset of the credit boom in 2015 (outpacing the headline inflation). A significant slowdown in housing and construction could raise NPLs in real estate, raising concerns on the health of the banking sector.

Stress Test for an Adverse Scenario

5. The potential for a systemic crisis remains a tail risk, despite emerging vulnerabilities. An illustrative stress test of Sri Lanka's banking system shows that the banking system would be able to withstand an adverse shock to the housing and construction sectors. The shock scenario assumes that 20 percent of construction loans default, with a loss severity of 60 percent, while 10 percent of retail mortgages default, with a loss severity of 30 percent. Under the assumed shock scenario, the capital adequacy ratio of 11 out of 26 banks decreases by more than 1 percentage point, but only two would see their CAR fall by more than 2 percentage points.[5] However, about 10 banks would fall below the CAR required by Basel III in January 2019 under the scenario. These losses are not systemic in nature, although they would necessitate additional capital injections to remain compliant with Basel III requirements, which would range from Rs. 57 million to Rs. 21.1 billion.

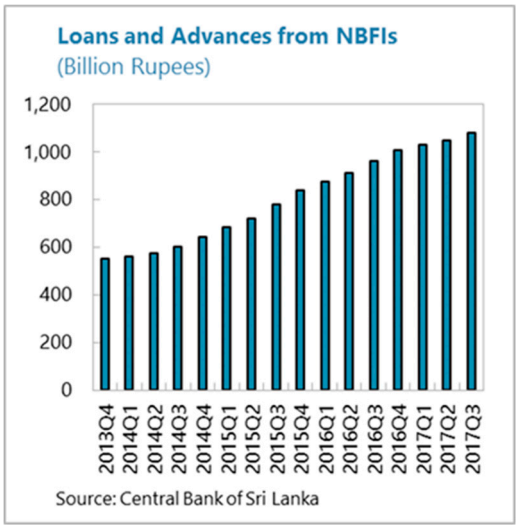
Simulation Results– Post-Shock CAR vs. ΔCAR



Note: A) The long-dashed line indicates the minimum 12.5 percent CAR required of all banks as of 1/1/2019. B) The dotted line indicates the minimum 14 percent CAR required of DSIBs as of 1/1/2019. C) The shaded area contains the six banks with a post-stress CAR more than 20 percent.
Sources: FITCH Connect; and IMF staff.

[5] The stress test is based on end-2016 balance sheet data for Sri Lanka's licensed commercial banks, as reported by *FITCH Connect* (FC). It should be noted that the two banks exhibiting the most severe losses have significant exposure to residential mortgages, many of which are collateralized with borrowers' balances in the EPF pension fund. For background on stress test methodology, see Jones and Karasulu (2006), and Lindner and Jung (2014).

Growing Importance of Non-Bank Financial Institutions



6. Risks from rapid credit growth in Sri Lanka are further complicated by the growing importance of non-bank financial institutions. While banks are the main providers of private credit, private credit from NBFIs increased as a share of GDP from 5.8 percent in 2014 to about 8.4 percent in 2017 Q3 (loans almost doubled from about 0.5 billion rupees to about 1 billion rupees during this period). As NBFIs largely serve the riskier part of the population,[6] periodic bankruptcies of NBFIs have occurred, with 6 NBFIs currently insolvent. The aggregate financial soundness indicators of NBFIs do not point to vulnerabilities and this sector is too small to constitute a systemic risk. Nevertheless, NBFI's regulation and supervision need to be strengthened as the riskiness and importance of these companies increases. For examples, some NBFIs have been operating without a proper license, while the absence of a proper resolution framework for NBFIs has led to CBSL overseeing insolvent institutions for years at a time, often with budgetary impacts from restitution.

C. Policy Response

7. The authorities' policy response to curb excessive credit growth should continue to include macroeconomic as well as macro-prudential measures. Prudent monetary policy by the CBSL as well as the implementation of macro-prudential measures have helped limit financial sector risks and vulnerabilities. As price stability is the prime (and sole) objective of monetary policy, a coherent monetary policy framework can stabilize inflation by ensuring that excessive credit growth does not fuel inflation. Going forward, a data-dependent monetary stance can ensure that the market lending rates are at the appropriate level to stem excessive credit growth so that inflation stays within CBSL's targeted band. In certain countries, fiscal policy has also helped to curb excessive credit growth in the real estate sector. Currently, the CBSL also has two macroprudential policies in place to control credit growth: (i) LTVs on motor vehicles which were lowered in 2016/17 and have been effective in curbing excessive credit growth to this sector,[7] and (ii) appropriate valuation procedures of immovable property (i.e, land and buildings) for use as collateral in securing loans. In addition, the authorities are expanding the land price index to ensure better monitoring of the real estate sector. Banks are implementing Sri Lanka's Basel III requirements, with all banks scheduled to abide by the criteria set by CBSL by January 1, 2019, strengthening the banking sector by increasing capital buffers and requiring consolidation of banks that do not meet the thresholds. While these

[6] NBFIs provide lending to the underbanked portion of the population and SMEs, providing mainly vehicle loans, leases, and to a limited degree mortgages.

[7] However, in January 2018, the LTVs on certain environmentally friendly motor vehicles was raised to support their greater use.

measures will be conducive to ensuring financial stability, Sri Lanka may benefit from designing a more holistic macro-prudential framework. Towards this goal, this section presents additional macro-prudential measures currently envisaged or that could be potentially included in the CBSL's toolkit.

Banks

- **Better credit risk management**. CBSL can continue to strengthen its supervision by (i) ascertaining that banks' make sure that borrowers use loans in line with the stated purpose of those loans; (ii) assessing existing regulations on large exposures and align them with international best practices, as necessary; and (iii) conducting regular validation exercises to ensure accurate reporting.

- **Targeted macro-prudential policies**. As part of the planned amendments to the central bank law i.e., the Monetary Law Act, the CBSL plans to strengthen its financial sector oversight. This could provide an opportunity to design a comprehensive and integrated macro-prudential framework to identify and assess potential threats to financial stability. Additional measures used in other countries which have helped address specific vulnerabilities, include: (i) improved sectoral asset classification to enable the introduction of sectoral concentration limits; (ii) increased risk weights applicable to real-estate loans; (iii) expedited collection of real-estate and personal income data to enable the introduction of limits on debt-to-income and loan-to-value ratios; (iv) consider introducing caps on debt payment-to-income (DTI) ratios that will cap the size of the debt service payments ; (v) bring the Single Borrower Limit (SBL) and related-party lending regulations into line with international norms and apply the SBL at a consolidated level; and (v) utilize data from the credit information bureau in macroprudential analysis and continue to develop top-down stress testing.

- **Adherence to Basel III**. The implementation of Basel III, that started on a staggered basis in July 2017, will address several of the issues related to banking stability, as it requires banks to hold additional capital against their risk-weighted assets. It will be important for CBSL to ensure that all banks continue to meet the implementation targets set forth by the CBSL so that banks are up to the new standards by January 2019. In addition, CBSL can improve its capacity to evaluate banks' Internal Capital Adequacy Assessment Processes (ICAAP) and set bank- and finance company-specific minimum Capital Adequacy Ratios (CAR), which is also under the principles of Basel III.

Non-bank Financial Institutions

- **Strengthening non-bank supervision and regulation**. The CBSL has started the resolution process of a few insolvent NBFIs and the Resolution and Enforcement Department started its operations from early January 2018 Further steps towards improvements in their supervision and regulation can be taken through key reforms including: (i) improve the surveillance of the wider financial sector to identify and shut down financial institutions operating without proper license; (ii) improve the risk-based supervision of NBFIs, and implement sufficiently strict and frequent audits of NBFIs to prevent large failures; (iii) develop and implement a resolution process for financial institutions based on global best practices; (iv) define explicitly the

responsibilities of managers and owners of financial firms, and hold them responsible for wrongdoing; and (v) be transparent to all stakeholders about their responsibilities and the procedures the CBSL is using.

Sri Lanka: Policy Options to Limit Excess Credit Growth

Macro-Economic Policies	
Policy Area	**Policy Option**
Monetary Policy	A data-dependent monetary stance to ensure market interest rates are at the appropriate level to stem excessive credit growth so that inflation stays within the central bank's target band.
Fiscal Policies* (based on other experiences of other country)	Calibration of transfer taxes or stamp duties on real estate sales, which could be varied countercyclically over booms and busts.
Prudential Policies	
Banking and NBFIs Regulation, Supervision, and Resolution	Implementation of Basel III to meet the capital requirements by Jan. 2019 as outlined by CBSL.
	Enhancement of the regulations of NBFIs bringing it in line with commercial banks.
	Development of a framework to monitor and measure interlinkages among financial institutions.
	(i) Enhancement of the resolution framework; (ii) Assessment of the adequacy/limits on the deposit protection scheme.
Crisis Preparation and Management Framework	Strengthening of the Financial System Oversight Committee by (i) setting up a working group on priority risks and (ii) developing a set of crisis prevention procedures.

*If credit growth on real estate does not abate gradually or if there are renewed pressure on credit growth in this sector.

System-wide Reforms

Beyond the above-mentioned preventative measures, the following system wide reforms can be established to mitigate, in case a credit boom were nonetheless to materialize, the negative effects of a bust on the financial sector.

- **Comprehensive crisis preparedness and management framework.** CBSL will benefit from introducing a framework for prompt corrective action in the event of a crisis. The interagency Financial System Oversight Committee and CBSL's Financial System Stability Committee can play leadership roles in terms of providing guidance on systemic financial risk evaluation in Sri Lanka, and build a viable framework for the conduct of crisis operations that includes include crisis management plans and exercises. The capacity of the CBSL's Macroprudential Surveillance Department can be strengthened further so it can provide appropriate support to the above committees and become a thought leader in crisis management.

- **Deposit Insurance Scheme.** The current limit of the deposit insurance scheme was increased to Rs. 600,000 but remains low compared to other countries with similar per-capita income.

It may be necessary to reassess the limit up to which the deposit insurance fund reimburses depositors to ensure that the threshold is appropriate.

D. Conclusions

8. Sri Lanka's significant credit growth for more than two consecutive years warrants attention. While a portion of this credit growth can be associated with financial deepening, loan concentration, notably in the real estate sector, raises concerns. Current macro-financial indicators do not point to systemic risks but low NPLs may not be reflective of the underlying vulnerabilities calling for heightened vigilance. The authorities' efforts to improve the financial infrastructure, adopt new banking supervision and regulation practices (Basel III) as well as revise the legal framework relating to the financial system (such as the Banking Law Act) will strengthen the financial sector and help maintain financial stability. In the short-term, the CBSL should maintain a prudent data-dependent monetary stance to ensure that excessive credit growth does not lead to inflationary pressures. The adoption of an overall macro-prudential framework would also strengthen financial stability. This framework can include measures such as loan-to-value ratio or higher risk weights on mortgages and construction, calibrated to the specific needs of Sri Lanka. Over the medium-term, policy efforts should continue to focus on strengthening the supervision and regulation as well as the resolution frameworks of both the banking and non-bank financial institutions.

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TOWARD SECOND-GENERATION FISCAL RULES IN SRI LANKA[1]

Since their inception in 2003, fiscal rules in Sri Lanka have largely been unsuccessful in achieving the objective of reducing "government debt to prudent levels."[2] Over this same period the number of countries using fiscal rules has increased as have the number of design features. Techniques for rule selection and calibration have similarly evolved. This note utilizes the latest methods to select and calibrate second-generation fiscal rules for Sri Lanka and draws on cross-country experiences to highlight best practices for enhancing monitoring and enforcement. This could ensure that hard won gains from recent consolidation will be locked over the medium term.

A. Background

Fiscal rules in Sri Lanka

1. The Fiscal Management (Responsibility) Act was legislated in 2003 and subsequently revised in 2013 and 2016. The FM(R)A contains rules on debt, budget deficit and government guarantees (text table). However, the Act contains few enforcement mechanisms and does not prescribe corrective action in the event any of the targets are breached—it only requires that the government explain to Parliament the reason for the departure, steps the government plans to take to "overcome the causes necessitating such departure," and the amount of the time the departure will last. Although the Act allows for departure from the requirements of the Act only under "exceptional circumstances" and only with the approval of Parliament, no formal escape clauses are specified and in practice the thresholds are serially breached with little consequence.

Summary of Key Provisions in Fiscal Management (Responsibility) Act

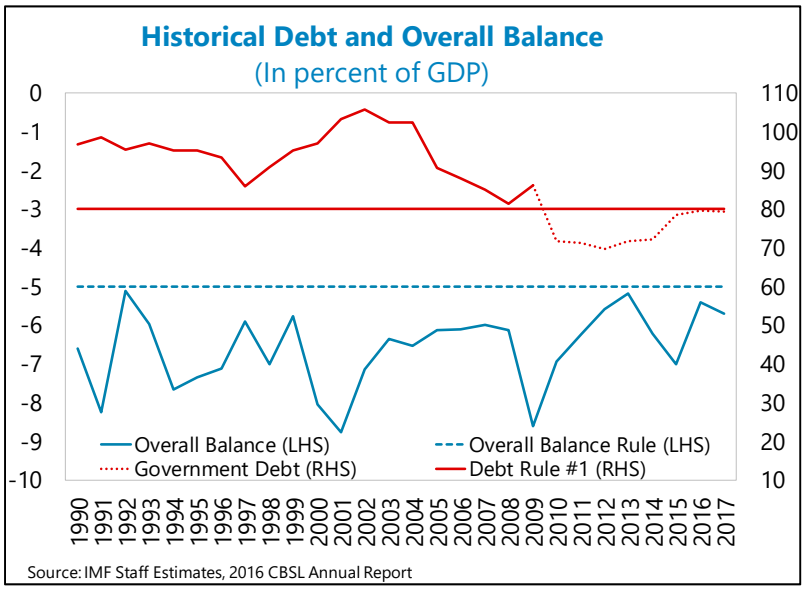
Legislation	Budget Deficit	Debt	Guarantees
Original (2003)	Not greater than 5% of GDP by end 2006 and thereafter.	Not greater than 85% by end 2006, less than 60% by end 2013.	3-year moving average not exceeding 4.5% of GDP.
Amendment (2013)	Unchanged	Not greater than 80% by end 2013, 60% by end 2020.	Limit revised to 7.0% of GDP.
Amendment (2016)	Unchanged	Unchanged	Limit revised to 10% of GDP.

[1] Prepared by Jeff Danforth.

[2] Fiscal Management (Responsibility) Act, No. 3 of 2003.

2. The rules have not been effective in achieving their objectives. While the central government debt ratio fell from around 106 percent in 2002 to around 88 percent of GDP by 2006,[3] it never met the original objective of the rule. Debt was around 72 percent of GDP in 2013 but nearly 80 percent of GDP by 2017. The overall deficit has never been less than 5 percent of GDP over the period from 1990 to 2017.

3. Achievement of the targets specified by the rule was made difficult in the early years of its operation by a string of economic shocks. Sri Lanka experienced a devastating Tsunami in December 2004 which directly impacted the economy. Corresponding reconstruction costs increased deficits and debt. Rising commodity prices and the global financial crisis in 2007–08, and increased military spending at the end of the civil war (followed by resettlement, reconstruction and rehabilitation costs in 2008-09) further exacerbated the fiscal situation likely contributing to the relaxation of the targets in 2013 (Ehelepola, 2017). Deviations from targets since then are more difficult to pin on macroeconomic surprises reinforcing the view that there are few political consequences for breaking fiscal rules. This could be also due to the perception that the existing targets are unrealistic making misses by successive governments "reasonable."



B. Principles Underpinning Effective Fiscal Rules

4. Effective fiscal rules should be able to correct policy biases in an efficient manner according to country-specific preferences. Key criteria are listed below (IMF 2018a). Partly in response to the Global Financial Crisis, second-generation fiscal rules tend to place a greater emphasis on flexibility, operational clarity, and enhanced monitoring and enforcement (IMF 2018c).

[3] The figures prior to 2010 are based on the historical debt statistics published by the central bank (Annual Report, statistical appendix Table 7) which, unlike debt ratios contained in the World Economic Outlook, do not adjust historical GDP levels when GDP is rebased.

- *Sustainability*. Compliance with the rule should ensure long-term debt sustainability.
- *Stabilization*. Following the rule should not increase economic volatility. Economic stabilization requires that the rule let automatic stabilizers operate and/or allows discretionary countercyclical changes in taxes or expenditures.
- *Simplicity*. The rule should be easily understood by decision makers and the public.
- *Operational Guidance*. It should be possible to translate the rule into clear guidance in the annual budget process. Budget aggregates targeted by the rule should be largely under the control of the policymaker.
- *Resilience*. A rule should be in place for a sustained period to build credibility, and it should not be easily abandoned after a shock.
- *Ease of monitoring and enforcement*. Compliance with the rule should be easy to verify and there should be costs associated with deviations from targets.

5. Best practices suggest building fiscal frameworks around two pillars: a fiscal anchor linked to the country-specific objective of fiscal policy, and an operational rule on fiscal aggregates (IMF, 2018b). The debt-to-GDP ratio provides a natural fiscal anchor; however, it does not offer operational guidance in the short-run so fiscal frameworks should also include shorter-term operational rule(s) which are under the direct control of governments and have a close and predictable link to debt dynamics. The text table below provides the pros and cons of the most common operational rules.

6. Golden rules and adjusted budget balance rules are likely less well suited to Sri Lanka. A golden rule, which excludes capital spending from the deficit limit, is well suited for protecting capital spending but does not provide and effective speed limit on debt accumulation, as additional borrowing can take place to finance the public investment. Adjusted budget balances (e.g., adjusted for the cycle, or structural component of the economy like commodity revenues) are also less appropriate for Sri Lanka. Operating these rules requires estimating the output gap which is inherently uncertain in a small open economy subject to external shocks like Sri Lanka and communicating changes in the rule due to changes in the cycle can be difficult.

7. Expenditure rules can improve fiscal stability but have weaker links to debt sustainability. Expenditure rules, typically defined as caps on real expenditure growth, are easy to communicate with clear operational guidance and are typically used for their enhanced stabilization properties as they constrain spending when revenues are high. Such rules do not necessarily strengthen debt sustainability as they do not cover budget revenues. In countries undergoing fiscal consolidation, such as Sri Lanka, an expenditure rule could shift the burden of adjustment unnecessarily towards needed infrastructure and social spending. In expansionary periods, such a rule could hamper revenue mobilization by encouraging reductions in taxes or increase in exemptions. Similarly, a revenue rule could outline a path for increased revenues over the medium term. This may not ensure debt sustainability given lack of constraints on spending. They also tend to be heavily pro-cyclical.

Advantages of Select Operational Rules

Rule Type	Advantages	Disadvantages
Budget balance rules		
Overall balance	Easy to communicate and very clear operational guidance.	Potential for pro-cyclicality.
Golden	Protects public investment and enhances intergenerational equity.	Weak link to debt sustainability and risk of creative accounting.
Cyclically adjusted and structural	Enhances economic stabilization, good operational guidance.	Difficult to compute and monitor.
Over the cycle	Good for stabilization.	Difficult to monitor and enforce.
Expenditure rules	Easy to communicate and monitor with clear operational guidance.	Could lead to changes in expenditure composition to comply with rule
Revenue rules	Can help raise revenue or limit tax burden.	Can be procyclical

8. Sri Lanka's current fiscal rule appropriately uses the overall budget deficit as the operational target. The simplicity of the budget deficit together with its direct link to debt dynamics makes it a good choice for an operational rule. On the downside, overall balance rules are poor at enhancing economic stabilization as they tend to be procyclical and the desire to satisfy the rule can lead to excessive cuts in capital spending, which are politically easier to pass than current spending or tax increases. A variant of the overall balance rule, called the "primary balance rule," excludes interest payments from the balance – appealing as it is more directly under the control of policymakers. But this exclusion can weaken the link to debt sustainability and financing needs, especially in high-debt cases, if the rule threshold is not reassessed regularly.

C. Rule Calibration

9. Once an appropriate fiscal policy anchor and operational rule have been selected, it is important that they be calibrated to achieve the objectives set out by the rules. This section follows the methodology of the IMF's How-to Note on calibrating fiscal rules (IMF, 2018b) which outlines four general principles:

- *Calibration should be comprehensive and consistent*. To minimize risks of inconsistency and conflict between rules, the fiscal framework should be assessed as a whole and the thresholds should be calibrated in a consistent manner. In particular, there should be a clear relationship between the debt and fiscal balance ceilings.

- *Calibration should be sequenced*. The framework should be structured around two types of rules – a fiscal anchor (with debt-to-GDP being a natural candidate) and an operational rule. The debt ceiling should preferably be set first, taking into account debt sustainability and the need to protect the country against adverse shocks followed by the operational rule.

- *Calibration should be prudent*. Governments should take account of fiscal risks in setting fiscal targets and preserve buffers to accommodate shocks.

- *Calibration should be updated regularly but not too frequently*. Fiscal rules are designed to be robust to macroeconomic shocks but conditions may evolve over time necessitating periodic updates.

Calibrating the Debt Ceiling

10. The debt limit and debt ceiling can be calibrated using stochastic simulations. The method followed in this section takes a cautious approach by identifying a debt ceiling that ensures debt remains below a known "debt limit" with high probability even when negative macroeconomic and contingent liability shocks occur. The calibration is done in two steps following IMF (2018b).[4] The first step is to identify the debt limit. Second, the distribution of macroeconomic and fiscal shocks is estimated and used to simulate potential debt trajectories over a medium-term projection horizon. A debt ceiling is computed such that debt will remain below a debt limit over the medium term with high probability, despite the potential for negative shocks.

Step 1: Setting a Debt Limit

11. For the purposes of this simulation we have assumed a debt limit for Sri Lanka of 70 percent of GDP over the medium term. This corresponds to the target announced in the recently published Vision 2025 document and the debt distress threshold for emerging market economies, as also identified by the current IMF Debt Sustainability Analysis (DSA) methodology (IMF, 2013).

Step 2: Estimating the Effect of Shocks on Debt

12. Stochastic simulations were used to gauge the potential impact of macroeconomic and fiscal shocks on debt over the medium term. This requires estimating the joint distribution of macroeconomic variables (see Annex I for details). The set of variables used in the joint distribution include GDP growth, interest rates on government debt (foreign and domestic), exchange rate and contingent liabilities. To be consistent with the medium-term path under the EFF-supported program, the initial year chosen for the simulations was 2021 with the assumption that all macroeconomic projections presented in the Debt Sustainability Analysis for the IMF Staff Report for the 2018 Article IV Consultation and the EFF 4th Review ("May 2018 DSA") will materialize up to 2020 (text table below).[5]

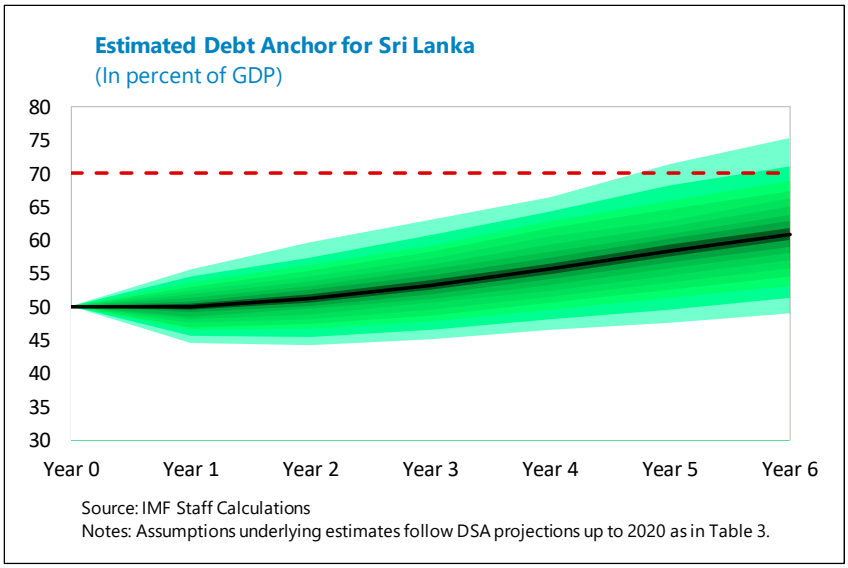
[4] This method was developed by Debrun and others (2017) and Baum and others (2017). Earlier research on stochastic simulations of debt trajectories includes IMF (2003), Ferrucci and Penalver (2003), Garcia and Rigobon (2004), and Celasun and others (2007).

[5] This allows us to abstract away from uncertainty related to projections assumed under the program and also corresponds to the year that could conceivable be the first year of operation of a second-generation fiscal rule.

Assumptions used for Simulations[6]	
Variable	**Assumption (values in 2020)**
Debt-to-GDP	79.5%
Overall budget balance (% GDP)	-3.5%
Primary budget balance (% GDP)	2.1%
Real GDP growth	4.7%
Real effective interest rate (domestic)	6.6%
Real effective interest rate (foreign)	-0.2%
Foreign debt share	44%

13. Each simulation produces a path for the macroeconomic variables over a medium-term projection horizon, where the variables have been subject to shocks in each period. Then, medium-term debt trajectories consistent with each simulated path of macroeconomic variables are obtained from the system of simultaneous equations formed by the debt accumulation equation (i.e., government budget constraint) and a fiscal reaction function in which the level of the primary balance may respond to the level of debt and realizations of macroeconomic variables (see Annex III for derivation of the fiscal reaction function). The fiscal reaction function includes a fiscal shock realized each period.[7]

14. Debt trajectories produced using stochastic simulations are summarized in a fan chart. The simulations suggest that a debt anchor of 50 percent is sufficient to ensure that debt stays below the debt limit of 70 percent with 90 percent certainty.



Source: IMF Staff Calculations
Notes: Assumptions underlying estimates follow DSA projections up to 2020 as in Table 3.

[6] Consistent with the May 2018 DSA. The debt-to-GDP ratio is equal to central government debt plus guaranteed debt.

[7] The distribution of fiscal shocks is calibrated based on deviations between actual fiscal responses observed (i.e. actual levels of the primary balance) and the fiscal response predicted by the fiscal reaction function over the sample.

Step 3: Calibrating the Operational Rule

15. Debt and deficits are tied through an accounting identity. A country's debt is the cumulative stock of past deficit flows, while the (overall) deficit captures the annual change in the country's debt.[8] Mathematically the relationship between gross debt and the overall balance is an accounting identity:

$$D_t = D_{t-1} - OB_t \implies d_t = \frac{1}{(1+\gamma_t)} d_{t-1} - ob_t$$

where D_t is the nominal level of debt at the end of period t, γ_t is the nominal growth rate of GDP, with small letters denoting a variable as a share of GDP. The debt dynamics equation is then

$$d_t = (1+\lambda_t^o) d_{t-1} - ob_t$$

with ob_t denoting the overall balance ratio in period t, $\lambda_t^o = -\gamma_t/(1+\gamma_t)$ denoting the growth-adjusted interest rate.

16. A variety of overall deficit limits are analyzed to assess the implications for the year of convergence to the targeted debt level. The initial year is set at 2021 and the initial debt level is set conservatively at 79.5 percent of GDP, which is equal to the level of central government debt and debt guaranteed by the central government projected in the May 2018 DSA. The baseline scenario assumes unchanged policy with an overall deficit of 3.5 percent of GDP from 2021 onwards.[9]

17. Text table below shows that under the baseline scenario, Sri Lanka's public debt will reach the debt anchor (50 percent of GDP) only by 2034. Sensitivity analysis shows that with higher nominal growth (12 percent versus 10 percent in the baseline) the convergence to the debt anchor could happen 5 years sooner. However, with slower growth or larger operating deficits, convergence would be beyond 2050.

18. Pivoting to a smaller overall deficit after the initial ceiling is reached would accelerate convergence and reduce risks to debt sustainability. Under an active policy scenario that gradually transitions from a 3.5 percent overall deficit in 2020 to 2 percent, debt would reach 50 percent of GDP by 2029 – five years faster than under the baseline.

[8] In practice the link between debt and deficits can be influenced by accumulation of financial assets, currency fluctuations, and non-debt financing of deficits but these effects tend to temporary.

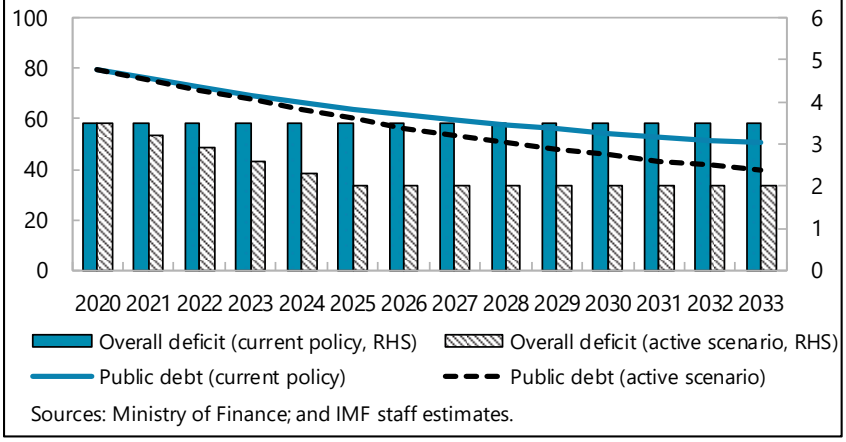
[9] Since the overall balance would be a target for the central government this is equivalent to the SOE sector running balanced budget throughout the project.

Sri Lanka: Convergence Scenarios for the Debt Ratio[10]
(In percent of GDP, unless otherwise noted)

	Assumptions			Convergence		
Scenario	**Initial Debt Level**	**Overall Balance**	**Nominal GDP Growth Rate (%)**	**Year Debt Ratio < 70%**	**Year Debt Ratio < 60%**	**Year Debt Ratio < 50%**
Baseline	79.5	-3.5	10.0	2023	2027	2034
Stronger growth	79.5	-3.5	12.0	2022	2025	2029
Smaller deficit	79.5	-2.0	10.0	2023	2025	2029
Weaker growth	79.5	-3.5	8.0	2025	2033	2052
Larger deficit	79.5	-5.0	10.0	2026	2037	--

Note: The smaller deficit scenario assumes gradual reduction in deficits from 3.5 percent in 2021 to 2 percent in 2025.

Sri Lanka: Fiscal Deficit and Public Debt Paths
(In percent of GDP)



Sources: Ministry of Finance; and IMF staff estimates.

D. Additional Design Features for Effective Fiscal Rules

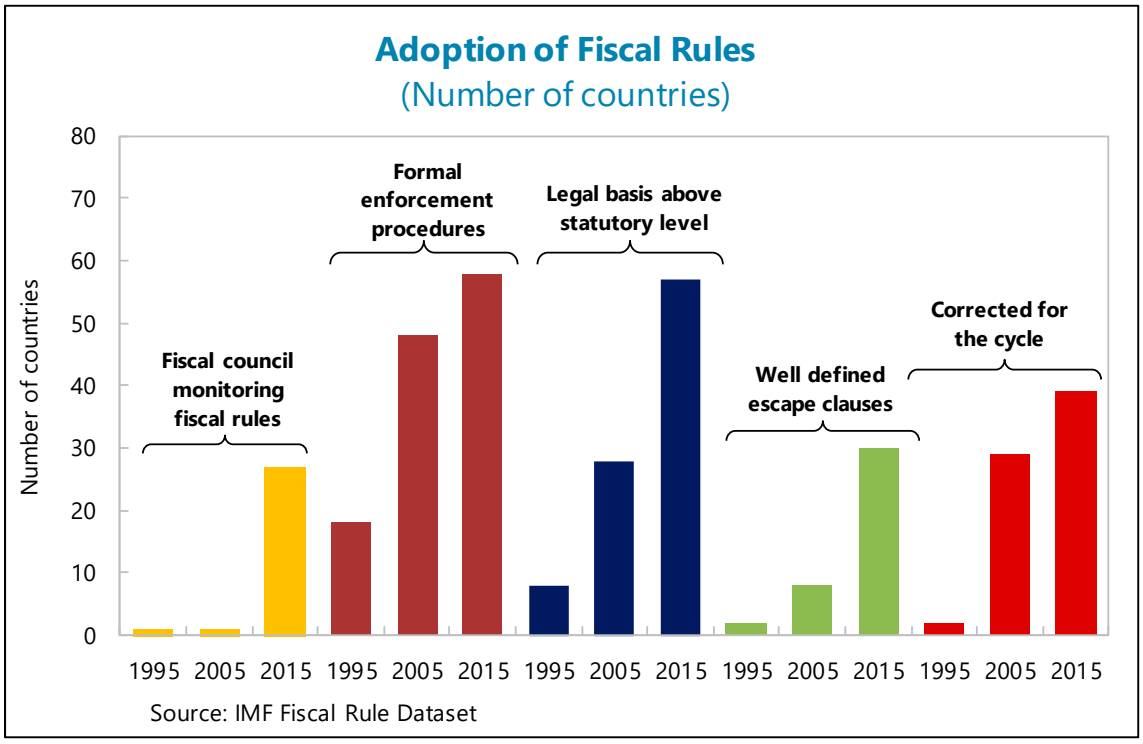
19. The mere introduction of fiscal rules does not guarantee success. Sri Lanka's second-generation fiscal rule should draw on other countries' experiences with rule design and enforcement. Best practices suggest fiscal rules should have broad institutional and economic coverage, contain escape clauses to deal with unforeseen events automatic correction mechanisms to define what should be done in the case of a breach. Effective monitoring of fiscal rules is also often carried out by an independent fiscal council.

Evolution of Fiscal Rules Around the World

20. The number of countries using fiscal rules has increased steadily over the last 25 years rising from just a handful in 1990 to around 90 in 2015 (Fiscal Rules Database). The rules

[10] The initial debt level is the 2020 figure from the May 2018 DSA.

themselves have also evolved and now commonly contain features to improve their effectiveness and flexibility. Many countries have adopted rules that adjust for the economic cycle, have well defined escape clauses, and formal enforcement procedures. Monitoring has also greatly improved as nearly 30 countries now use fiscal councils to independently monitor fiscal rules.



Enhancing Compliance

21. Compliance can be improved through the introduction of correction mechanisms which stipulate what policy makers should do in the event a particular rule is breached. Mechanisms typically have two parts—the trigger and the correction action (IMF, 2018c). Triggers can be designed such that they are activated after a fiscal rule has been breached or when there is an elevated risk of a rule being breached in the future.[11] Assessing when a rule has been breached can be done either quantitatively (e.g. when a threshold has been crossed) or qualitatively when a fiscal council or policymakers determine a significant breach has occurred. While the quantitative trigger prevents the use of discretion by policy makers to avoid potentially painful corrective action, the qualitative trigger prevents potentially burdensome corrective actions for insignificant deviations from target. The period over which compliance or deviation from the rule is assessed is also important. Some countries have corrective mechanisms that are triggered by deviations from target in a single year, others use an average over two previous years (Finland, Ireland and Italy) or cumulative deviations (Germany).

[11] For example, if in-year spending outturns suggest a risk of breaching a budget balance or expenditure rule, budget allocations could be scaled back. Such a mechanism requires efficient and timely monitoring of budget execution and spending commitments.

22. The corrective actions prescribed under the mechanism should restore compliance with the rule. There are many considerations for achieving this, including:

- *Size of the corrective action.* The mechanism can merely force the operational target back below the threshold or require policy makers to fully compensate for the deviation by undershooting the threshold by the amount of the breach in subsequent years. Fully offsetting the size of the breach ensures that there is little to no impact on the permanent level of the debt stock from breaches in the operational target.
- *Timeframe for correction.* The time given to complete the corrective action can range from immediate correction (in-year for the preemptive trigger or next year's budget) to several years. The time to correct an operational target could also vary depending on how close the country is to its debt limit (i.e., a shorter correction horizon could be defined for cases when the country is near its debt limit).
- *Policy mix.* Some corrective actions give full discretion to policy makers on achieving consolidation (e.g., either through revenue measures or expenditure cuts) while others prescribe a specific action (e.g., across the board expenditure cuts).

23. Fiscal rules coverage should also be broad based to counter the risk that rules are circumvented by fiscal or quasi-fiscal activities taking place outside the rule (e.g., through the activities of state-owned enterprises). As noted above, a broad rule could be one that covers the largest portion of fiscal activities that impact the rule's objective (e.g., a budget balance rule is more comprehensive than revenue or expenditure rules) but it could also mean covering particularly risky state enterprises under the rule.[12] Brazil, for example, has a fiscal rule that covers the nonfinancial public sector (e.g., federal government, social security, states and municipalities, state and local enterprises and the central bank).

Escape Clauses

24. Escape clauses can formalize the circumstances when fiscal targets could be breached for justifiable reasons (e.g., natural disaster events, recessions). Indeed, the widespread breaches of existing fiscal rules following the Global Financial Crisis led many countries to consider and implement escape clauses into their second-generation fiscal rules. Well-designed escape clauses should have:

- A limited and clearly defined set of events that can trigger the clause. These should not include cyclical events.
- Time limits on how long fiscal policy can deviate from the targets laid out in the rule under the escape clause.
- A requirement for fiscal policy to return to the targets after the operation of the escape clause is terminated.

[12] This is the approach taken simulations contained in the section on calibrating the rule.

Improving Monitoring

25. Even the best-designed fiscal rules can still be ineffective if they are not underpinned by strong fiscal forecasting capabilities and monitored by a credible entity. Dedicated macro-fiscal units with strong forecasting abilities aid in the coordination of macroeconomic and fiscal projections and ease the monitoring and assessment of progress against a given rule. After the Global Financial Crisis, a number of countries assigned the responsibility of monitoring fiscal rules to fiscal councils (Beetsma and others, 2018), to increase the political incentive to adhere to rules by raising the cost of non-compliance. It is important that such institutions be truly independent and credible. While fiscal councils have been common in Europe, countries outside the EU that have created fiscal councils to monitor fiscal rules include Brazil, Chile, Colombia, and Peru.

26. Governments rarely want to tie their own hands by limiting discretionary fiscal policy and performance against binding fiscal rules. Sri Lanka's mixed experience with the enforcement of fiscal rules since 2013 is no different. There seems to be significant scope to upgrade the existing rule, by adding correction mechanisms and effective monitoring, while at the same time improving flexibility to deal with justifiable macroeconomic shocks. These enhancements would provide an important signal to the markets that rules will now be taken seriously, with benefits in terms of improved credit worthiness and lower financing costs. Furthermore, fiscal rules can be effective in ringfencing the conduct of fiscal policy from political cycle considerations—ensuring electoral promises by ruling and opposition parties alike are bound by the same rules.

E. Conclusions

27. Focusing on the principles of simplicity and operational guidance, a fiscal rule that is anchored by the debt ratio and utilizes the overall balance as an operational target seems appropriate for Sri Lanka. The latest calibration techniques suggest that over the medium to long term a debt anchor of 50 percent of GDP would be appropriate to ensure debt stays below 70 percent of GDP with 90 percent probability. Achieving the fiscal consolidation path outlined in the May 2018 DSA up to 2020 and then gradually reducing the overall deficit from 3.5 percent of GDP to 2 percent over the period from 2021 to 2026 would accelerate convergence to the debt anchor by 2029 and reduce risks to debt sustainability. To improve compliance with the rule and enhance flexibility in the event of unforeseen events, a second-generation fiscal rule for Sri Lanka should include appropriately designed enforcement mechanisms and escape clauses. Consideration should also be given to strengthening macro-fiscal forecasting through a dedicated unit and utilizing a fiscal council to independently monitor compliance with the rule.

Annex I. Deriving the Debt Ceiling Threshold

This Annex reproduces Method 1 of rule calibration contained in the How-to Note (see IMF 2018a for details). This method requires the characterization of the joint distribution of the macroeconomic variables needed to project the public debt ratio. For advanced and emerging market economies, these variables are growth, the average interest rate on debt and the exchange rate. Characterizing the joint distribution is done by directly calibrating a joint multivariate distribution where only annual data are available.

Direct Calibration of a Multivariate Distribution

A multivariate normal (or student-t) distribution of key macroeconomic variables can be calibrated based on historical co-movements of macroeconomic variables. *N* sequences of 6-year projections can be obtained by drawing repeatedly from this distribution.

A multivariate normal distribution of a k-dimensional vector of macroeconomic variables can be written as:

$$x \sim N_k(\mu, \Sigma)$$

with the k-dimensional mean vector

$$\mu = (E[X_1], E[X_2], \dots, E[X_k])$$

and the $k \times k$ covariance matrix

$$\Sigma = \left(cov(X_i, X_j)\right), \text{ for all } i = 1,2, \dots, k; j = 1,2, \dots, .k$$

The parameters μ, Σ can be calibrated based on the historical mean, variance and co-variance of macroeconomic variables.

Calibrating the Debt Ceiling

The debt ceiling is calibrated as follows:

- A set of macroeconomic variables are forecast over a 6-year projection horizon *N* times by drawing directly from the calibrated multivariate distribution of macroeconomic variables each year.
- The *N* sets of macroeconomic variable forecasts are used to generate *N* trajectories of the primary balance, using a fiscal reaction function and the previous year level of debt. The distribution of fiscal shocks is calibrated based on estimated deviations between actual fiscal responses observed (i.e., actual levels of the primary balance) and the fiscal response predicted by the fiscal reaction function within the sample.
- The *N* corresponding trajectories of debt (starting at the current debt level) are obtained by the system of simultaneous equations formed by the debt accumulation equation

(government budget constraint) and the fiscal reaction function. The debt accumulation equation is:

$$d_t = \left(1 + \left(\frac{r_t - g_t}{1 + g_t}\right)\right) d_{t-1} - pb_t + SFA_t$$

where d_t is debt (as a ratio of GDP), r_t is the average effective real interest rate on debt, g_t is the real GDP growth rate, pb_t is the primary balance (as a ratio of GDP) and SFA_t is the stock-flow adjustment (as a ratio of GDP). The debt accumulation equation includes a constant stock flow adjustment (SFA) each period, that could potentially account for realization of contingent liabilities.

- If the 95th debt percentile (or other chosen percentile) of the debt ratio distribution in any year over the projection horizon is not sufficiently close to the maximum debt limit (MDL), the "starting level" of debt is adjusted by a small amount (0.4 percent or below) and steps 1-3 are repeated based on this new "starting level" of debt.

Steps 1-4 are repeated until the 95th percentile of the debt level falls into a small interval around the MDL in any year over the medium-term projection horizon: $Debt^{95} \in [MDL - 0.4; MDL + 0.4]$. The "starting level" of debt satisfying this criterion is called the debt ceiling, i.e., the level of debt from which its projection does not exceed the MDL with 95 percent likelihood over the medium-term projection horizon. The safety margin is computed as the MDL minus the debt ceiling.

Annex II. Fiscal Reaction Function[1]

A Fiscal Reaction Function (FRF) is a rule linking a particular level of the primary balance to prevailing macroeconomic and fiscal conditions. The FRF applicable for emerging market economies is based on the specification of Bohn (1998). Other research on fiscal reaction functions in advanced or emerging market economies includes Abiad and Ostry (2005), Celasun and Kang (2006), and IMF (2003a).

The coefficients of the FRF are estimated econometrically to capture historical fiscal behavior. The specification to be estimated is:

$$pb_{it} = \alpha_i + \beta_1 pb_{it-1} + \beta_2 ygap_{it} D_{it} + \beta_3 ygap_{it}(1 - D_{it}) + \rho d_{it-1} + \varepsilon_{it} \quad (1)$$

Where pb_{it} is the primary balance (as a ratio of GDP) of country i in year t, d_{it} is debt (as a ratio of GDP), $ygap_{it}$ is the output gap, D_{it} is an indicator variable taking the value of one when the output gap is positive, α_i is the country specific intercept term (fixed effect) and ε_{it} is a random error term, $\varepsilon_{it} \sim N(0, \sigma^2)$. The FRF allows for an asymmetric response to the output gap, so that the primary balance may deteriorate more when the output gap is negative, than it improves when positive $(\beta_3 > \beta_2)$. The output gap is projected over the forecast horizon using GDP growth forecasts obtained from simulations (based on the joint distribution of macroeconomic variables) combined with an HP filter to estimate potential output.

The FRF used in the simulations has been estimated in a cross-country regression including 25 EMs.[2] Coefficient estimate are as follows:

$$\alpha_i = -0.027, \qquad \beta_1 = 0.466, \qquad \beta_2 = 0, \qquad \beta_{3=}0.199, \qquad \rho = 0.0645.$$

[1] Reproduced from IMF (2018b).

[2] Countries included: Brazil, Bulgaria, Chile, China, Colombia, Egypt, Hungary, India, Indonesia, Kazakhstan, Kenya, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, and Ukraine.

Annex III. Estimating the Stock-Flow Adjustment

The stock-flow adjustment can be estimated as the difference between fitted values of the debt equation and actual debt data (expressed as ratios to GDP)[1]:

$$d_t = \frac{1}{1+g_t}\left[d_{t-1} + (\alpha^d r_t^d + \alpha^f r_t^f)\,\mathrm{d}_{t-1} + \Delta\varepsilon_t(1+r_t^f)\alpha^f d_{t-1} \right] - pb_t + SFA_t$$

$$SFA_t = d_t - \frac{1}{1+g_t}\left[d_{t-1} + (\alpha^d r_t^d + \alpha^f r_t^f)\,\mathrm{d}_{t-1} + \Delta\varepsilon_t(1+r_t^f)\alpha^f d_{t-1} \right] + pb_t$$

d is the debt-to-GDP ratio, g is the real growth rate, α^d and α^f are the ratios of domestic and foreign currency denominated to total debt, and r_t^d and r_t^f are the real interest rates on domestic and foreign currency denominated loans, respectively; $\Delta\varepsilon$ is the real exchange rate depreciation.

[1] For a derivation of this equation, See IMF (2013), Annex I.

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