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PUBLIC INVESTMENT FOR CLOSING THE SDG FINANCING GAP: SRI LANKAN PERSPECTIVE

LAKMINI FERNANDO



INSTITUTE OF POLICY STUDIES OF SRI LANKA

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Lakmini Fernando is a Research Fellow at IPS with primary research interest in Development Economics, Public Finance and Climate Change. She has expertise in econometric data analysis, research design and causal methodologies.

Lakmini holds a BSc in Agriculture from the University of Peradeniya, a Master of Development Economics (Advanced) from the University of Queensland, Australia and a PhD in Economics from the University of Adelaide, Australia.
lakmini@ips.lk

Please address orders to:
Institute of Policy Studies of Sri Lanka
100/20, Independence Avenue, Colombo 7, Sri Lanka.
Tel: +94 11 2143100 Fax: +94 11 2665065
Email: ips@ips.lk
Website: www.ips.lk
Blog 'Talking Economics': www.ips.lk/talkingeconomics
Twitter: [www.twitter.com/TalkEconomicsSL](https://twitter.com/TalkEconomicsSL)
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74**

**Public Investment for Closing the SDG Financing Gap:
Sri Lankan Perspective**

LAKMINI FERNANDO

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Abbreviations

CO ₂	Carbon Dioxide
EME	Emerging Market Economy
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GNI	Gross National Income
HIC	High-income Country
ICT	Information and Communications and Technology
ICOR	Incremental Capital Output Ratio
IMF	International Monetary Fund
LDC	Least Developed Country
LIC	Low-income Country
MDG	Millennium Development Goal
MIC	Middle-income Country
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PIP	Public Investment Programme
PPP	Public-private Partnership
SDG	Sustainable Development Goal
SOC	Social Cost of Carbon
USD	United States Dollar

Abstract

Realising 'United Nations 2030 Agenda for Sustainable Development' requires massive investment allocation as limited financial resource availability decelerated the achievement of sustainable development goals (SDGs). Economic crisis loomed with the COVID-19 pandemic, has further hindered SDG progress. Therefore, the achievement of 2030 Agenda relies on the effectiveness of recovery strategies and financial capabilities.

Public investment plays a significant role in 2030 Agenda, however, systemic research on the nexus between public investment and SDGs is limited. Hence, assessing SDGs investment gap is significant and supports sufficient flow of funds to 2030 Agenda. The additional investment requirement in 2030 to reach key SDGs is 4% of the gross domestic product (GDP) for emerging market economies (EMEs) and 15% for low-income countries (LICs). Using an input-outcome based innovative costing methodology, Sri Lanka's additional investment requirement for SDGs by 2030 is estimated to be around United States Dollars (USD) 1.4 trillion (Tn) or 12.5 percentage points of GDP. On average, public investment has been around 5-7% of GDP over the last decade, hence, allocation of additional funds for SDGs is challenging.

The 2030 Agenda requires placing equal importance on economic, social and environmental objectives. However, Sri Lanka's public investment ratio in these three dimensions is 80:19:1 and it is long been skewed towards infrastructure development. The SDG framework can be used as a foresight planning tool to minimise these disparities. Further, strengthened domestic resource mobilisation, use of innovative financing options and enhanced institutional quality are vital to achieve the 2030 Agenda for Sri Lanka.

1. Introduction

Aiming to transform economies to sustained, inclusive and environmentally friendly development, the United Nations' 193 member states formed the '2030 Agenda for Sustainable Development' in September 2015. The 2030 Agenda includes 17 goals and 169 targets and sets out development priorities for 15 years. It requires country-specific and wide-ranging efforts from implementation to follow-up, including the mainstreaming of Sustainable Development Goals (SDGs) to national development planning and budgeting and addressing the investment and capacity gaps (Asadikia, Rajabifard, & Kalantari, 2022; UN, 2019).

“The risk of SDG achievement is higher for developing countries, as most of these are either fragile or conflict-affected economies characterised by poverty and shortfall of budgetary financing. In a post-pandemic world, SDG investments are likely to be higher, with a further rise estimated in pre-pandemic spending by 14% of gross domestic product (GDP).”

Despite its undeniable importance, since its inception, the flow of investments to the Agenda 2030 has been inadequate (UN, 2019). To date, no single country has been on track to achieve the SDGs by 2030 (Sachs, Lafortune, Kroll, Fuller, & Woelm, 2022; UN-IATF, 2019), hence mobilisation of financial resources for SDGs is critical. Developing economies must invest between United States Dollars (USD) 3.9 trillion (Tn) annually to achieve SDGs by 2030 (UNCTAD, 2014). With an annual investment of only USD 1.4 Tn, the estimated annual investment gap is USD 2.5 Tn. The risk of SDG achievement is higher for developing countries, as most of these are either fragile or conflict-affected economies characterised by poverty and shortfall of budgetary financing. In a post-pandemic world, SDG investments are likely to be higher, with a further rise estimated in pre-pandemic spending by 14% of gross domestic product (GDP) (Benedek, Gemayel, Senhadji, & Tieman, 2021). The effectiveness of recovery strategies and fund availability are, therefore, vital in achieving the 2030 Agenda.

Public investment stimulates the economic activity and productivity of a given country. According to Wagner's Law, public investment and tax revenue increase with per capita income. Thus, fiscal policy is more influential in advanced economies (IMF, 2017). However, its importance and crowding-in effects on private investment in avoiding secular stagnation and the savings surplus in all economies should not be overlooked (Rabnawaz & Jafar, 2015). Further, public investment can boost local and foreign investments.

Undertaking a comprehensive 'SDG fiscal needs assessment' is a pre-requisite for effective SDG planning and budgeting at the country level (Sachs, McCord, Maennling, Smith, & Fajans-Turner, 2019), so is for Sri Lanka (Tilakaratna & Sooriyamudali, 2019; VNR, 2018). The investment needs assessment provides the basis to overcome financing gaps and enhances governments' preparedness to ensure better financial flows to sustainable development initiatives. The relevant systemic research in this regard is, however, underdeveloped. To the best of the author's knowledge, this is the first study to comprehensively assess SDG financing needs in Sri Lanka, significantly contributing to the existing SDG-related literature.

The purpose of this study is to conduct a comprehensive fiscal needs assessment to ensure meaningful SDG progress in Sri Lanka. The study comprises two main objectives. First, it outlines various financing modalities useful to meet the SDG financing gap. Second, the investment gap to achieve SDGs by 2030 is estimated focusing on investment in human, social and physical capital which receive the major allocation of the national budget. In particular, investment needs for five sectors - education, health, roads, electricity and water and sanitation - are assessed by employing a modified version of the costing methodology proposed by Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto (2019). Accordingly, Sri Lanka's additional investment requirement approximates USD 1.4 Tn or 12 percentage points of GDP in 2030. These results are more consistent with the additional expenditure estimates of low-income economies. On average, the total public investment in Sri Lanka ranged from 5-7% of GDP over the last decade, hence, the allocation of additional funds for SDGs is challenging.



The remainder of the study is organised as follows. Section 2 details the SDG progress. Section 3 discusses macroeconomic risks and challenges in Sri Lanka. Section 4 presents innovative financing strategies for SDGs, while Section 5 presents trends in public investment. Section 6 describes the investment assessment of SDGs and Section 7 contains the results and discussion. Finally, Section 8 presents conclusions and policy implications.

2. Progress of 2030 Agenda for Sustainable Development

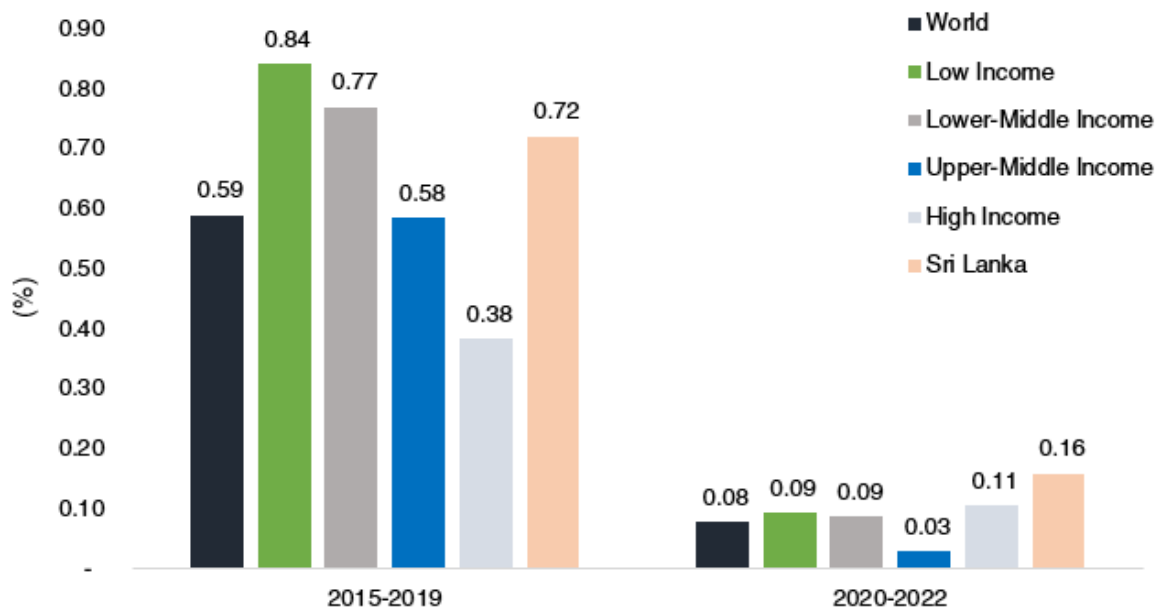
Since its adoption in 2015, SDG progress has been unequal across countries. The SDG progress varies the most within developing economies than other country groups. Comparatively, low-income economies show a higher rate of SDG growth progress than rich countries. Recent public health emergencies and security crises have further diverted attention away from these long-term development goals (Sachs, Lafortune, Kroll, Fuller, & Woelm, 2022). Hence, after the coronavirus (COVID-19) outbreak, no country has made progress on the SDGs, and all countries are yet to reach pre-pandemic level progress.

“Considering the severity of multiple crises (economic, social and political), Sri Lanka is currently facing, progress in SDG Index creates much ambiguity on the sensitivity of SDG monitoring and reporting mechanisms.”

During 2015-2019, the pre-pandemic SDG progress on the SDG Index,¹ is at an average of 0.59 points, a year which is described as a 'too slow' rate to achieve the SDGs by 2030 (Figure 1). Yet, Sri Lanka records an above the world average rate of 0.72 points yearly. The post-pandemic SDG progress is lower and progress on the SDG Index is stagnated across all income groups. In contrast, Sri Lanka has a comparatively higher progress rate of 0.16 points a year, while lower-middle and upper-middle income countries record a very low progress rate of 0.09 points a year. Considering the severity of multiple crises (economic, social and political), Sri Lanka is currently facing, progress in SDG Index creates much ambiguity on the sensitivity of SDG monitoring and reporting mechanisms. The existing systems might require serious modifications to better capture the country's prevailing socio-economic and political underdevelopment.

¹ The SDG Index is an assessment of each country's overall performance on the 17 SDGs, giving equal weight to each Goal. The score signifies a country's position between the worst possible outcome (score of 0) and the target (score of 100) (Sachs, Lafortune, Kroll, Fuller, & Woelm, 2022).

Figure 1: Growth Rate of the SDG Index Score

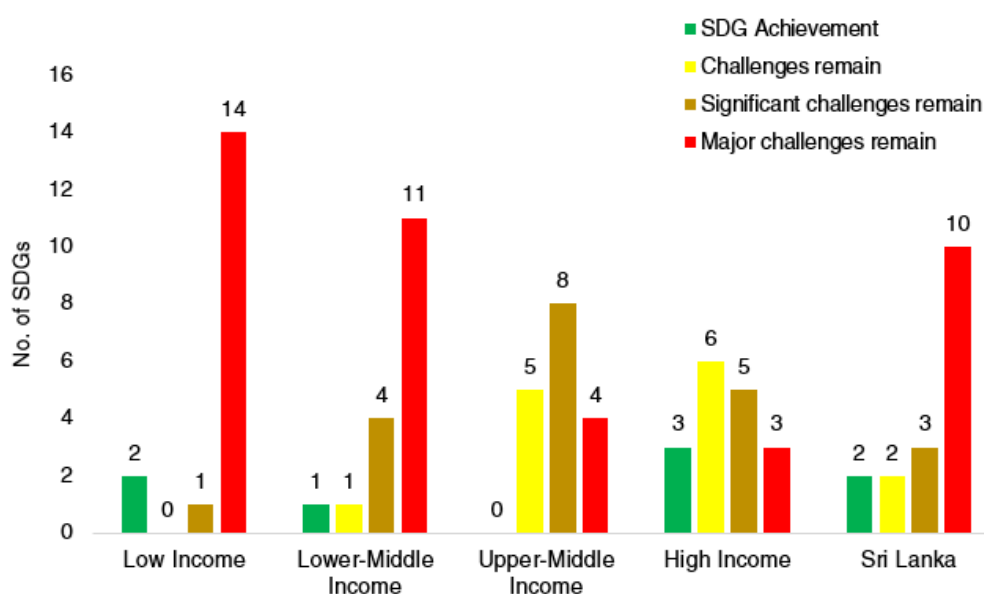


Source: Sachs, J., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press.

2.1 Heterogeneous SDG Progress by Income

The level and the trends in SDG progress suggest that, on average, countries with higher per capita income have better SDG outcomes (Figures 2 and 3) and the positive trends continue even during the crisis in almost all income categories (Figure A1 in Annexes). As shown in Figure 2, SDG achievement is the highest in the high-income category (for three SDGs), whereas the lowest achievement is seen in the upper-middle income category (zero SDGs). Sri Lanka has achieved two SDGs: SDG 4 on

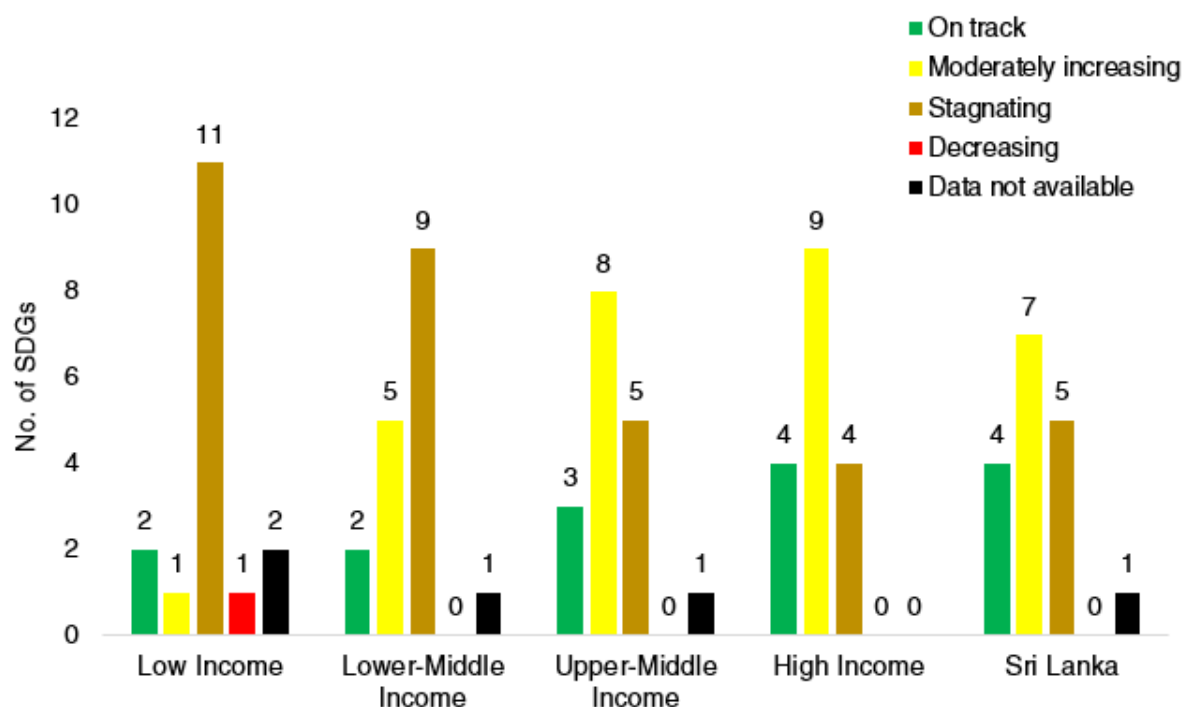
Figure 2: Level of SDG Progress



Source: Sachs, J., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press.

quality education and SDG 13 on climate action. Yet, school/university closures, increased youth unemployment and lower investments and preparedness in climate change adaptation and mitigation in the country collectively suggest that reported progress needs modifications to show the existing ground realities (Deyshappriya, 2020; UNICEF, 2021). If the real picture is not captured, it is doubtful whether Sri Lanka will be able to achieve the anticipated qualitative improvements in the 2030 Agenda.

Figure 3: Trends in SDG Progress



Source: Sachs, J., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press.

As shown in Figure 3, the best SDG trends are reported from high-income countries (HICs) with four SDGs on track, while low-income and lower-middle income countries with only two SDGs on track. Only countries in low-income country (LIC) category show a decreasing trend in SDGs. Sri Lanka is on track for four SDGs: SDG 1 on no poverty; SDG 4 on quality education; SDG 12 on responsible consumption and production and SDG 13 on climate action. No SDG with a decreasing trend but one SDG with no data to report the progress (i.e. SDG 10 on reduced inequalities). The seven SDGs with moderately increasing trends and five SDGs with stagnating trends in Sri Lanka require more attention to ensure achievement by 2030 (Box 1).

Monitoring the SDG progress is a tedious task for countries' statistical systems. In comparison to SDGs, the data requirement for Millennium Development Goals (MDGs) is considerably low,² as depicted in Figure 4. On the one hand, even with fewer numbers, country reporting is limited and approximates 68% of the MDG indicators. On the other hand, the SDG indicators are high in number

² MDGs: Goals-8; Targets-21; Indicators-66.

SDGs: Goals-17; Targets-169; Indicators-248.

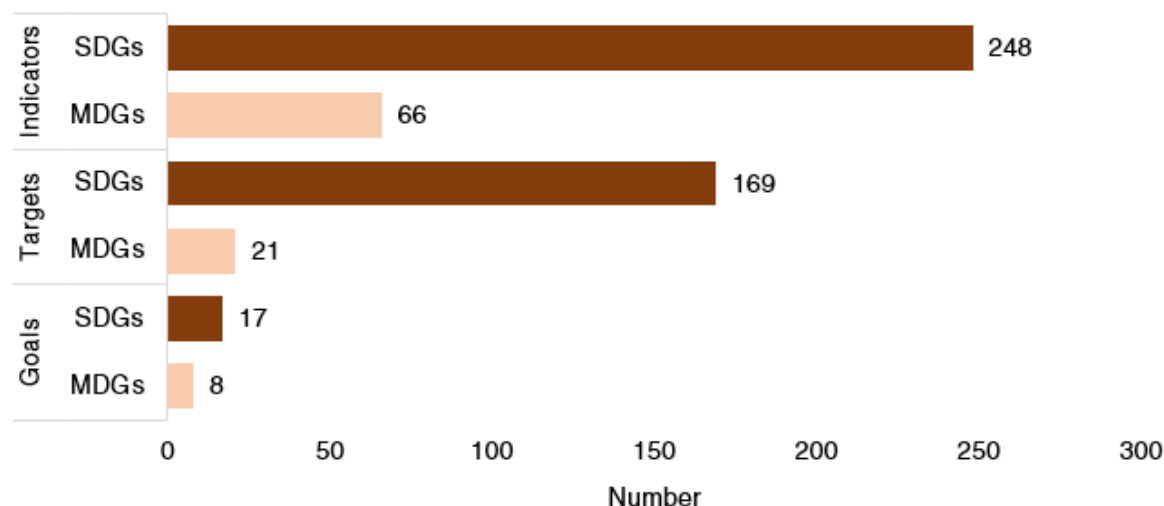
Box 1: Moderately Increasing and Stagnating SDGs in Sri Lanka

Moderately increasing SDGs (7)	Stagnating SDGs (5)
2 Zero Hunger	5 Gender Equality
3 Good Health and Wellbeing	8 Decent Work and Economic Growth
6 Clean Water and Sanitation	15 Life on Land
7 Affordable Clean Energy	16 Peace, Justice and Strong Institutions
9 Industry, Innovation and Infrastructure	17 Partnerships for the Goals
11 Sustainable Cities and Communities	
14 Life Below Water	

Source: Sachs, J., Laforune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press.

and complexity. In 2017, when the SDG global indicator framework was adopted, 84 (34%) of the 248 indicators did not have any internationally established methodology or standards. Hence, the difficulties in providing data on SDG indicators remain a major concern. For Sri Lanka, data are readily available only for 46 SDG indicators through the Department of Census and Statistics (DCS), the key national statistical institution in Sri Lanka (DCS, 2017).

Figure 4: Key Statistics of MDGs and SDGs



Source: Based on Sustainable Development Goal indicators website (<https://unstats.un.org/sdgs/>).

2.2 Heterogeneous SDG Progress by Region

Sri Lanka shows moderately satisfactory SDG progress compared to the East and South Asia regions (Table 1). Overall, the Organisation for Economic Co-operation and Development (OECD) countries are closer to achieving the targets than any other country group. On the contrary, Sub-Saharan Africa has the lowest SDG progress with major challenges remaining for 14 of the SDGs. Although sub-Saharan countries are anticipated to make some progress towards the SDGs, 18 out of 44 countries in the region are at risk of achieving the SDGs by 2030. Gaps in good and inclusive

governance, a growing youth labour force and the need for job creation are some obstacles that impact achieving the socio-economic goals (SDGs 1-9) and managing key environmental challenges (Brookings, 2020). These countries, however, perform better than the rest of the world on SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action). Many of these countries emit less than 2 tonnes of carbon dioxide (CO₂) per person each year. Yet, these are often the countries most vulnerable to climate change impacts. As such, it can potentially reverse the development gains and food security and raise the risk of natural disasters (Omisore, 2018). Further, strengthening public-sector as well as statistical capacities are major concerns in all these countries, as emphasised under SDG 16 (Peace, Justice and Strong Institutions). In this context, Sri Lanka's SDG progress again surfaces ambiguity. For instance, Latin America and the Caribbean region, which has comparatively better functioning institutions, too, were unable to record better SDG progress.

Table 1: SDG Progress by Region

(No. of SDGs)

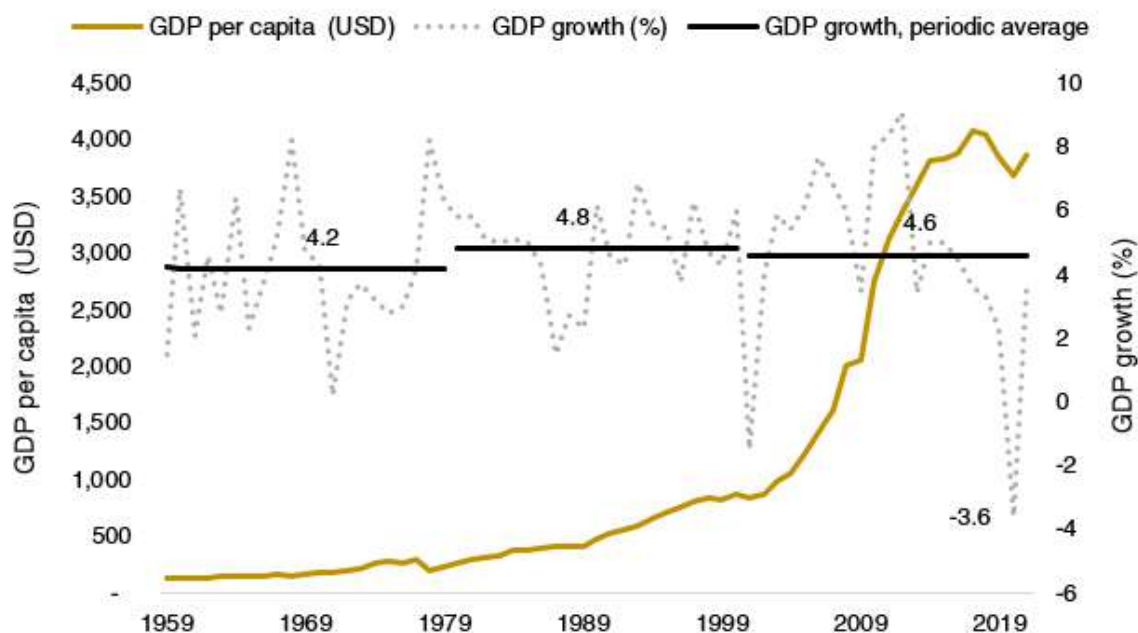
Level and Trends in SDG Progress	East and South Asia	Eastern Europe & Central Asia	Latin America & the Caribbean	Middle East & North Africa	Oceania	Sub-Saharan Africa	Small Island Developing States	OECD Countries	Sri Lanka
Level									
SDG achievement	1	0	0	0	1	1	0	3	2
Challenges remain	2	5	6	2	0	1	2	6	2
Significant challenges remain	8	8	5	7	2	1	7	5	3
Major challenges remain	6	3	6	8	11	14	8	3	10
Data not available	0	1	0	0	3	0	2	0	0
Trends									
On track	2	2	2	2	1	2	0	4	4
Moderately increasing	8	9	6	5	1	1	2	9	7
Stagnating	6	5	7	9	10	13	15	4	5
Decreasing	0	0	1	0	1	0	0	0	0
Data not available	1	1	1	1	4	1	0	0	1

Source: SDG dashboard and SDG Progress Report 2022.

3. Macroeconomic Risks and Challenges in Sri Lanka

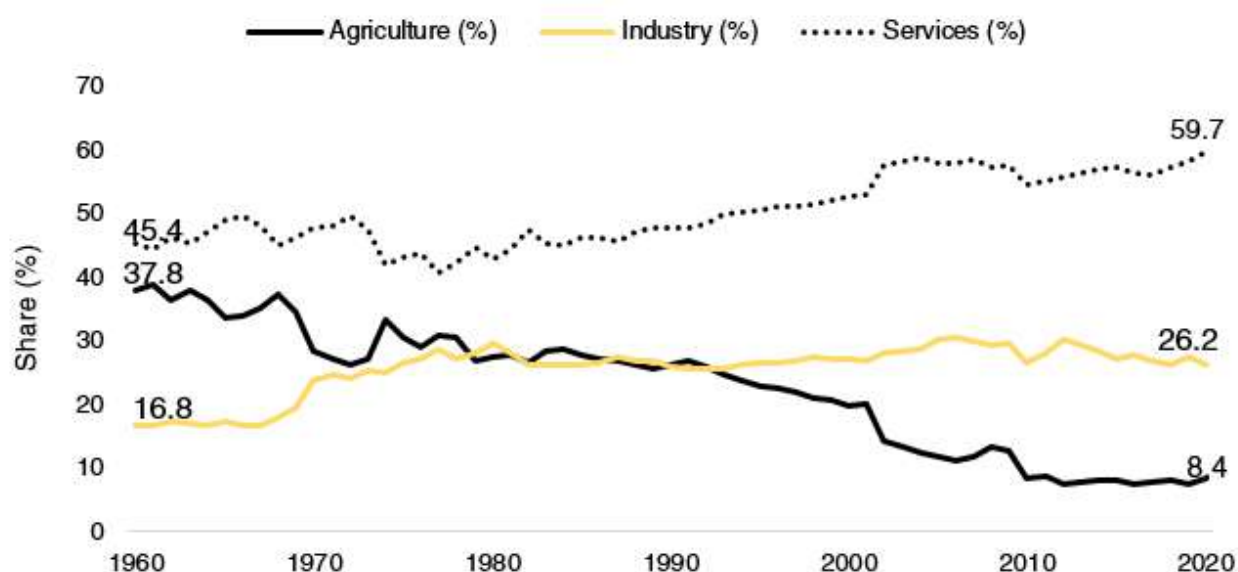
Sri Lanka, a developing economy with rich human capital and moderately high per capita income (Isenman, 1980; Sen, 1981) is now witnessing a high degree of macroeconomic volatility characterised by high deficits and public debt. Sri Lanka was keenly poised for growth at the time of independence in 1948 and again with the major policy shift in 1977 from an inward-oriented and import-substitution to being outward-oriented and export promotion-based economy. However, Sri Lanka's high pre-pandemic growth has declined to a historically low level of -3.6% (negative) in 2020 (Figure 5). The traditional agricultural economy has leapfrogged into a service-oriented economy without considerable developments in the industrial sector, a major hindrance to the productive capacity of the economy (Figure 6). Policy inconsistencies and delayed implementation of necessary structural reforms have further deteriorated the economy.

Figure 5: Evolution of GDP Per Capita and Economic Growth of Sri Lanka (1960-2021)



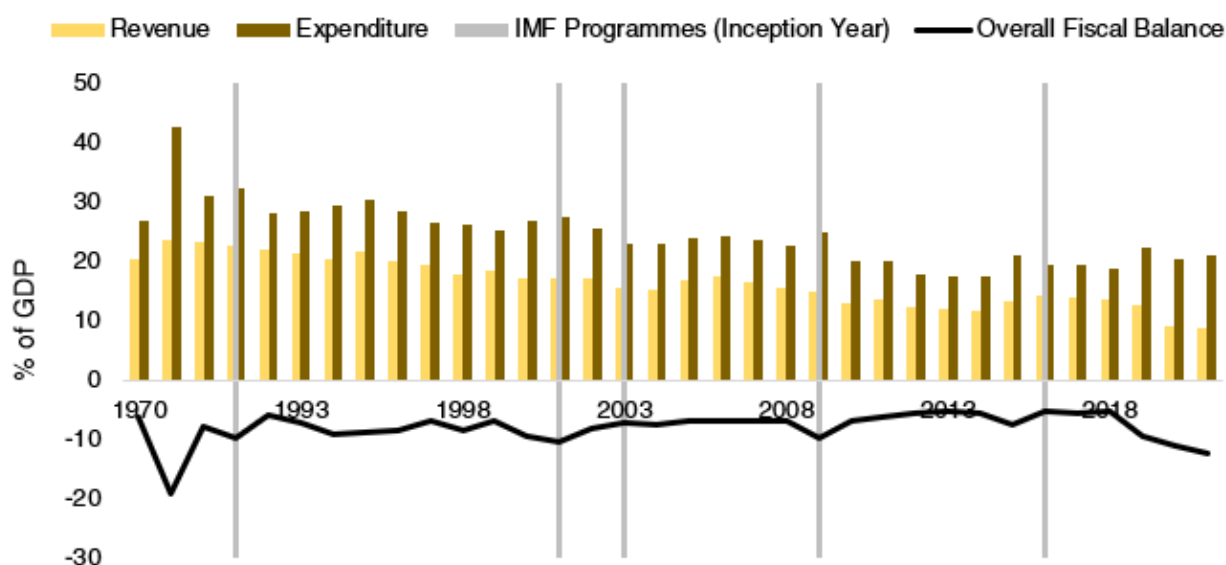
Source: Central Bank of Sri Lanka. (2021). *Annual Report*. Colombo: Central Bank of Sri Lanka.

Sri Lanka displays signs of a twin deficit. Country's national expenditure exceeds its national income, and its production of tradable goods and services is inadequate (Weerakoon, 2017). By 2021, government revenue had plummeted to 8.7% of GDP (from 17.2% in 2000), and Sri Lanka's fiscal deficit stood at 12.2% of GDP (Figure 7). The overall debt was 104.6% of GDP, while foreign debt was 38.6% of GDP in 2021 (Figure 8). Since the 1980s, Sri Lanka's debt stood above the safe debt threshold of 65% of GDP for middle-income countries (MICs). Sri Lanka's macroeconomic projections consistently appeared overly optimistic compared to the International Monetary Fund (IMF) and the Asian Development Bank (ADB) forecasts, while projections were being shared or partially shared during periods of high uncertainty (Figure 9).

Figure 6: Structural Composition (1960-2021).

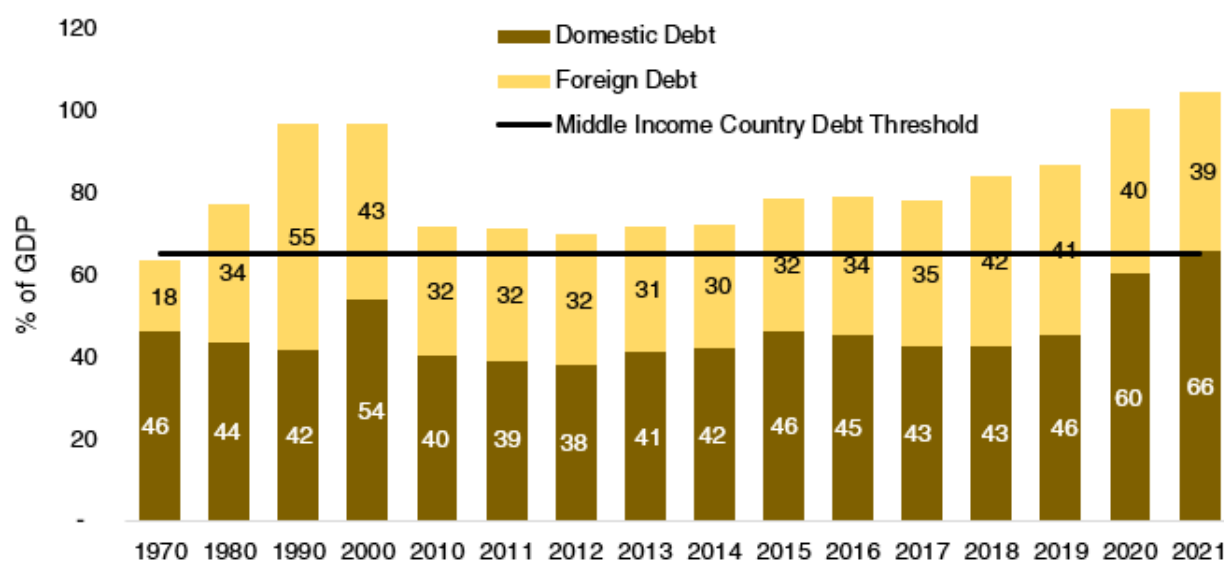
Source: Central Bank of Sri Lanka. (2021). *Annual Report*. Colombo: Central Bank of Sri Lanka.

Except for during 1992-2000, Sri Lanka continues to suffer balance of payment (BOP) crises. The country had 16 arrangements with the IMF and although a certain degree of cushioning the economy is witnessed, the conditionalities on structural reforms have never been completed. After several discussion rounds, the 17th bailout package was granted in March 2023. Sri Lanka's high public expenditure needs are characterised by an ageing demographic profile. Debt stabilisation through building a primary surplus, credible fiscal policy conduct and domestic revenue mobilisation is crucial in the consolidation process. This needs to be further supported with non-debt creating foreign currency inflows to ensure fiscal sustainability.

Figure 7: Fiscal Sector Performance.

Source: Central Bank of Sri Lanka. (2021). *Annual Report*. Colombo: Central Bank of Sri Lanka.

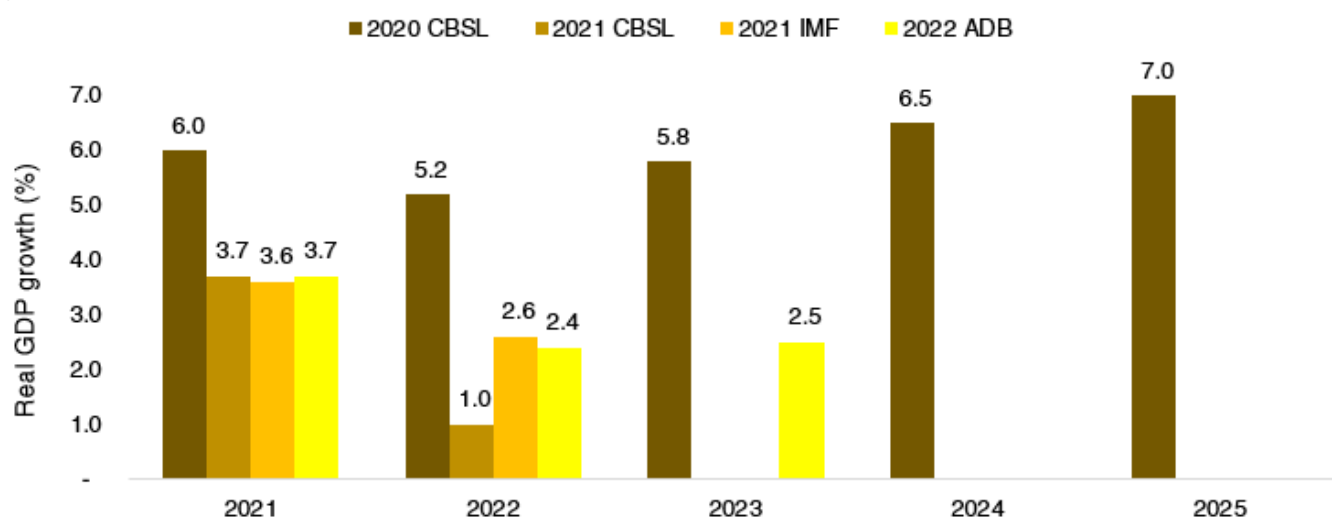
Figure 8: Trends in Government Debt Profile



Notes: The MIC debt threshold of 65% of GDP is the author's calculation using the Global Debt Database of the IMF. Since the 1980s, Sri Lanka's debt has lied above this threshold.

Source: Global Debt Database, accessed from IMF <https://www.imf.org/external/datamapper/datasets/GDD>.

Figure 9: Medium-term Real GDP Growth Projections (2021-2025)



Notes: 3.7% growth is actual in 2021 CBSL and 2022 ADB.

Source: Ministry of Finance. (2022). *Annual Report*. Colombo: Ministry of Finance; Central Bank of Sri Lanka. (2021). *Annual Report*. Colombo: Central Bank of Sri Lanka; and ADB. (2022). *Sri Lanka's GDP Growth Projected to Dip Amid Macroeconomic Challenges and External Headwinds*.

4. Financing Strategies for SDGs

Achieving the SDGs depends mainly on adequate availability of financial resources. The annual financing gap to achieve the SDGs in developing countries is USD 2.5-3.0 Tn. This financial limitation is due to various factors: 1). Uneven economic growth, unsustainable production and consumption, rising debt and climate change; 2). Limited fiscal space and institutional capacity to formulate a pipeline of SDG investment projects and weak financial systems; and 3). Misaligned incentives and regulations, limited awareness and difficulties in identifying, measuring and reporting on sustainable investments. It is estimated that the SDGs could provide USD 12 Tn of market opportunities, create 380 million (Mn) new jobs and save USD 26 Tn via climate change interventions by 2030 (BSDC, 2017). SDG 17 identifies five targets for global financial cooperation in SDG public financing (Box 2): strengthened domestic resource mobilisation, official development assistance (ODA), other financial resources, debt relief and restructuring and promotion of financial investment in the world's poorest countries.

Box 2: SDG 17: Partnerships for Goals

- 17.1** Strengthen domestic resource mobilisation, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.
- 17.2** Developed countries to implement fully their ODA commitments, including the commitment by many developed countries to achieve the target of 0.7% of GNI for ODA (ODA/GNI) to developing countries and 0.15 to 0.20% of ODA/GNI to LDCs; ODA providers are encouraged to consider setting a target to provide at least 0.20% of ODA/GNI to LDCs.
- 17.3** Mobilise additional financial resources for developing countries from multiple sources.
- 17.4** Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress.
- 17.5** Adopt and implement investment promotion regimes for least developed countries.

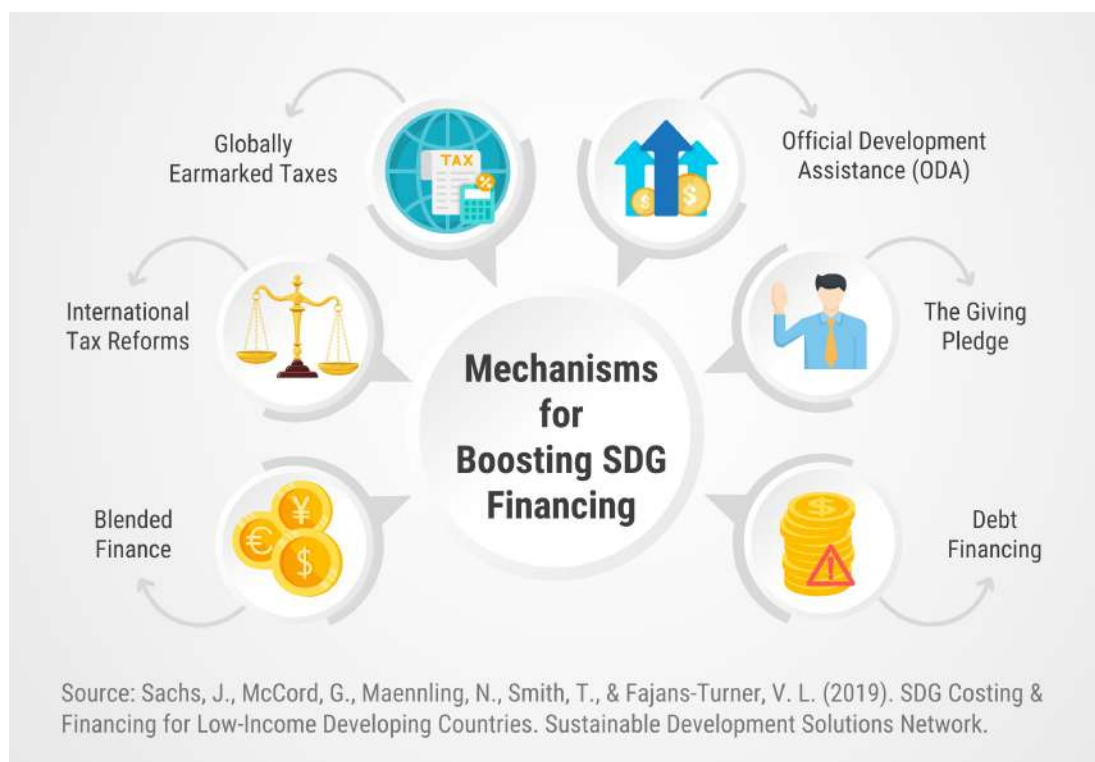
Source: United Nations. (2023). *Sustainable Development Report*. New York: United Nations.

Having a robust mainstreaming strategy that aligns SDGs well into the national development agenda and a consistent and predictable financing plan is crucial for SDG achievement (SOE, 2022). The mainstreaming strategy should focus on strengthened macroeconomic management, combating corruption and improving governance, strengthening transparency and accountability and fostering an enabling business environment. Financing SDGs should be a mix of traditional and non-traditional financing means. As such, developing countries are required to boost the tax-to-GDP ratio by at least 5% of GDP in the next decade (Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto, 2019). Addressing spending inefficiencies in particular, is critical - countries need to spend more and better. Similarly, appropriate tax reforms will help increased savings. In addition to domestic resources, the scale of the additional spending needs in developing countries requires support from all stakeholders - including the private sector, donors, philanthropists and international financial institutions. Delivering ODA targets can help close development gaps in many low-income developing countries. Further, the national

reform agenda that maps the SDGs to national circumstances should be able to articulate the complementary role of various development partners.

“Financing SDGs should be a mix of traditional and non-traditional financing means. As such, developing countries are required to boost the tax-to-GDP ratio by at least 5% of GDP in the next decade.”

Given the limitations in traditional financing sources, innovative financing is essential to accelerate the mobilisation of the private sector for development. Innovative financing is defined as "mechanisms of raising funds or stimulating actions in support of international development that go beyond traditional spending approaches by either the public or private sector, and distinguishes these from innovative uses of traditional development finance (such as counter-cyclical lending, debt swaps



and issuing guarantees) and incentives designed to enhance aid effectiveness (including results-based aid and cash-on-delivery)" (Langmore, 2011).

The following six areas have been introduced as mechanisms to generate increased financing for SDGs (Sachs, McCord, Maennling, Smith, & Fajans-Turner, 2019):

I. Blended Finance for SDG Infrastructure

Blended financing is where developing countries receive support from developed nations and international organisations to enable domestic conditions for private investments in social and

environmental causes. Therefore, the infrastructure financing requirement of USD 200 billion (Bn) per year could be financed through project financing, including private equity and debt. These projects could generate incomes from public tolls and tariff charges on roads, rail, water, sanitation and power. However, zero-toll on infrastructure (e.g. roadways) and the inability of poor communities to pay commercial rates are some challenges anticipated in private or blended financing.

Financing through private capital markets could be either through direct government borrowing or public-private partnerships (PPPs), where private companies acquire a direct equity stake in the infrastructure projects. Infrastructure financing is, however, a challenge for LICs as private-market financing is constrained by limited economic capacity. For instance, in 2017, least developed countries (LDCs) received only 6% (USD 13.4 Bn) of the private finance mobilised by official development finance, while MICs received 74% (USD 152 Bn) (OECD, 2021). Therefore, it is critical that developing country policymakers are supported with the effective implementation of blended finance.

II. International Tax Reforms

Tax havens are estimated at USD 24 Tn to USD 36 Tn, most of which belong to the top 0.1% of the wealthiest individuals (Henry, 2016). Tax havens are a massive system of tax avoidance and tax evasion by the rich (Shaxson, 2019). The estimated revenue loss through tax havens is 1-2% of the GDP and for developing countries, it is 1.3% of GDP (USD 36 Bn per year) during 2019-2030. A decrease in corporate tax rates (27.5% in 2006 to 23.03% in 2018), is another major issue developing economies face. Each country cuts its tax rate to keep the rate lower than in peer countries, resulting in an ongoing trend of falling corporate tax payments.

Low-income developing countries would benefit through a concerted global effort on tax reforms. Strengthening tax administration, increasing transparency and reporting and addressing hard-to-tax environments (e.g. digital economy) are suggested to minimise tax avoidance (Benon, Baer, & Toro, 2002). A global minimum tax was agreed in 2021 to address base erosion and profit shifting. Accordingly, multinational enterprises will be subject to a floor rate of 15% for tax in every country of operation from 2023 onwards, preventing these multinational enterprises from paying taxes. These reforms are expected to increase tax collection, which supports the achievement of SDGs as indicated in SDG Target 17.1 (i.e. to strengthen domestic resource mobilisation, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection).

The impact of global minimum tax depends on the interaction with domestic tax policies and how the fiscal regimes in different countries have changed. For some developing countries, the 15% minimum will see a revenue loss due to other jurisdictions, such as tax exemptions already given to sectors, investors and regions. Therefore, developing countries need to review their domestic tax and investment frameworks, and modify those tax incentives likely to be affected by a global minimum tax.

III. Globally Earmarked Taxes

The global taxation system is useful for raising revenue earmarked for SDGs. This could be as an additional to ODA or as a direct transfer from tax collections outside ODA, such as ultra-high net worth (wealth taxation), financial transactions tax and carbon tax (to fund climate-related infrastructure) (Sachs, McCord, Maennling, Smith, & Fajans-Turner, 2019).

Wealth taxation: the richest people are in the world's richest countries. Ten countries comprise 73% of the global high-net worth population (Managi & Kumar, 2018). A 1% tax on billionaire citizens solely in OECD countries would raise around USD 58.7 Bn. A 2% tax on this same population would raise USD 117.4 bn.

Financial transactions tax: Financial markets trade large amounts of dollars in the form of stocks and bonds - collectively are termed securities. A Financial Transactions Tax (FTT) is imposed as a levy on the purchase of securities and on transactions involving derivatives (Sachs, McCord, Maennling, Smith, & Fajans-Turner, 2019). In the European region, it could raise Euro (EUR) 57 Bn annually by imposing a tax of 0.1% on securities and 0.01% on derivatives (EU, 2013).

Carbon taxes: A global carbon tax can raise revenues for SDGs, especially in reducing greenhouse gas (GHG) emissions. In 2018, carbon pricing initiatives represented 20.1% of global GHG emissions and generated USD 82 Bn (World Bank, 2019). The annual emissions of the HICs are around 40% of the world's emissions, accounting for 14 Bn tonnes of CO₂ per year (IMF, 2019). If just USD 4 per tonne were earmarked for international transfers, USD 50 Bn in revenue could be raised yearly.³

IV. Increasing ODA

Only five OECD countries (Luxembourg, Germany, Denmark, Switzerland and France) currently achieve the 0.7% of Gross National Income (GNI) target for ODA. A rise in ODA from the current 0.31% of GNI to the target of 0.7% of GNI would raise roughly USD 200 Bn per year in ODA, most of which could be directed towards the SDG financing gap.

V. The Giving Pledge

A promise by the world's wealthiest individuals to dedicate most of their wealth to charitable causes. Starting with just 40 US pledgers in 2010, the Giving Pledge now has 230 pledgers from 28 countries (GivingPledge, 2022). Their combined net worth is around USD 1 Tn. The number of billionaire signatories to the Giving Pledge remains below a negligible 10% of the world's billionaires, which The Giving Pledge could mobilise a certain proportion of the funds to meet the SDG financing gap.

VI. Debt Financing and its Limits

Debt financing is an important source of public financing, yet excessive debt may crowd out other sources of public spending, leading to debt crisis and high inflation. Additional borrowing to support the SDGs should be consistent with prudent macroeconomic frameworks. In these circumstances, ODA and blended finance can lead to higher (unsustainable) debt levels. The IMF Debt Limits Policy and the World Bank's Non-Concessional Borrowing Policy are effective tools to ensure sustainable debt management in developing countries. Evaluating current debt capacities relative to achieving the SDGs is vital to examine the potential case for debt relief to redirect scarce fiscal resources towards the SDGs. This effort should focus on the accumulated debts owed to official creditors such as the multilateral development banks, bilateral donor governments, and international commercial banks.

³ The estimated social cost of carbon (SOC) is far higher than USD 4 per tonne, and is currently put at around USD 40 per tonne. Higher carbon-tax revenues reflecting the SOC would presumably be earmarked to decarbonisation within the HICs themselves (Sachs, McCord, Maennling, Smith, & Fajans-Turner, 2019).

5. Public Investment and Growth Prospects

5.1 Quality of Public Investment

As noted previously, increasing public investment helped revive economic activity (IMF, 2022a). In the absence of debt burdens, a 1% increase in high quality public investment boosts GDP by 2.7%, private investment by 10% and employment by 1.2%. Moreover, public investment is critical in economic recovery, and generates 2-8 jobs for every million USD spent on traditional infrastructure and 5-14 jobs for every million spent on research and development (R&D), green electricity and efficient buildings. During uncertain times, public investment can boost private investment as it signals government's commitment to sustainable growth and development (IMF, 2022a).

“During uncertain times, public investment can boost private investment as it signals government's commitment to sustainable growth and development.”

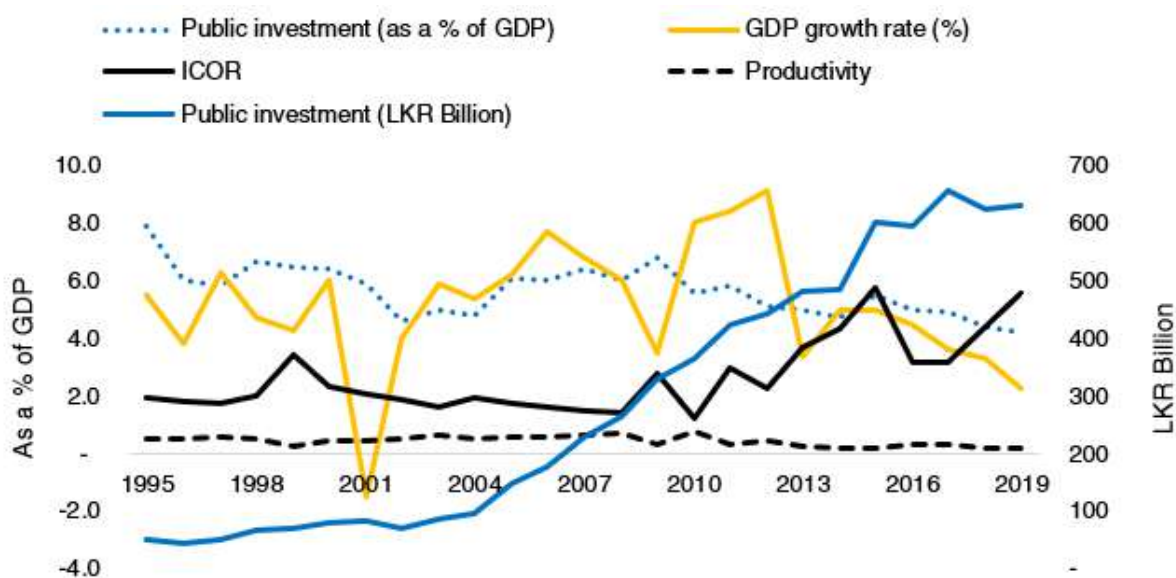
Global investment in developing countries was weak even before the pandemic. In a post-pandemic world, the development priorities have changed drastically. A clear shift is evident in investment requirements to sectors critical in controlling the impact of pandemic: health, education, safe buildings, safe transportation and digital infrastructure. Therefore, the reprioritisation of pipeline projects aligned to post-crisis priorities is vital. For instance, infrastructure maintenance is desired over new constructions. In a setting where the existing macroeconomic instabilities discourage borrowing to encourage investments, governments need to choose investment projects wisely to maintain the quality of investment projects. Upsurge in investments carries the risk of corruption and the cost of individual projects. A key priority, the efficiency of infrastructure projects, could be improved via good governance in project management (IMF, 2020b).

Low-income economies show ambiguous or negligible growth effects in public infrastructure investment (Easterly & Rebelo, 1993). The main reason for this is that investment spending is not a good proxy for the accumulation of productive assets in these countries. Deficiencies in growth effects are owing to weak institutions and corrupt bureaucracies (Esfahani & Ramírez, 2003). The institutional quality impacts the volatility and quality of public investment as the governments may use public investment as a vehicle of rent seeking (Grigoli & Mills, 2014). Public investment lowers the cost of producing intermediate inputs, thereby fostering specialisation (Duggal, Saltzman, & Klein, 2007). The extent of specialisation and private capital depends largely on public oversight and enforcement. Corruption reduces the effectiveness of government oversight of bureaucrats and, therefore, reduces the effectiveness of government spending. Bureaucrats falsely report high-quality high-cost procurement, while providing low-quality low-cost products. The quality of public investment declines; yet, public spending escalates, reducing the growth prospects. As a result, low-income economies are characterised by lower growth and the absence of specialisation. This indicates the need for better appraisal, and reporting and monitoring mechanisms to ensure efficient public investment management.

5.2 Public Investment Trends and Efficiency

Sri Lanka is a mixed-economy, and its growth is driven by both private and public sector investments (IPS, 2011). The average growth during 2000-2005 was 4%, whereas during 2006-2010 it was 6.4%. Higher growth was significant despite the war inflicting the economy from 2006-2009. Overall, the highest public investment allocation of 6.3% of GDP was during 2005-2009. Then, it declined to 5.2% and 4.8% during the 2010-2014 and 2015-2019, respectively. The higher investment allocation in 2005-2009 was due mainly to the increased defence expenditure. Overall, the public investment shows a declining trend in Sri Lanka (Figure 10).

Figure 10: Productivity of Capital and Economic Growth



Source: Central Bank of Sri Lanka. (2022). *Annual Report*. Colombo: Central Bank of Sri Lanka.

The level of investment and efficiency of the economy in converting that investment to output (measured by incremental capital output ratio - ICOR) are critical factors of economic growth. On average, the ICOR in the economy was close to 4 during 2015-2019, with an investment level between 29% of GDP. If the investment increases to 32-35% of GDP, a growth rate of 8% could be achieved (IPS, 2011). However, increasing investment is challenging owing to existing socio-economic and geo-political dynamics. The disaggregated figures of the total investment indicate that the private sector contribution is 24.7% and the public sector contribution is only 4.8% of GDP during 2015-2019. In 2021, public investment further decreased to 4.5% of GDP. Hence, any increase in investment needs to come through private sector.

Public investment is critical for development, particularly for the sectors where private sector participation is limited due to high uncertainty and long duration for return on investment. These sectors could be categorised into nine SDGs: no poverty (SDG 1), zero hunger (SDG 2), good health and well-being (SDG 3), education (SDG 4), gender equality (SDG 5) and infrastructure development (SDG 6,7,9, and 11).

Sri Lanka's public investment mainly focuses on infrastructure development (60% of total investment). Although vital for connectivity, this alone is inadequate for sustainable development. In Sri Lanka, the highest spending is on infrastructure, whereas the lowest is on education. Government expenditure

on education and health is the highest in advanced economies than in low-income developing economies and EMEs (Table 2). Notably, Sri Lanka's infrastructure spending is double that of advanced economies although education spending is even less than in low-income countries. Thus, spending in Sri Lanka needs re-assessment, given the importance of public expenditures for inclusive growth (Haque, 2003).

Table 2 shows the government spending based on the functional classification. A similar sectoral analysis of the public investment based on the medium-term Public Investment Programme (PIP) is shown in Table 3. The PIP maps the medium-term economic development strategy within the national development framework to which Sri Lanka is firmly committed. On average, public investment is around 5.4% of GDP during the last two decades. Tables 2 and 3 and Figure 11 suggest possible discrepancies between the development policies and planning and spending pattern. This could be due to several reasons: 1). The annual budgetary allocations have not closely followed the vision shared in the PIP; 2). PIP contains only the capital expenditures. As such, the changes might be driven owing to the inclusion of current expenditures; and 3). Poor link between scientific analysis between PIP and the macroeconomic projections.

“Sri Lanka's public investment mainly focuses on infrastructure development (60% of total investment). Although vital for connectivity, this alone is inadequate for sustainable development.”

Table 2: Spending by Functional Classification and Income Group

(% of GDP)

Sector	2016			2016	2019
	Low-income Economies	Emerging Market Economies	Advanced Economies	Sri Lanka	
	(n=29)	(n=58)	(n=34)		
Education, Health, Infrastructure	4.9	7.3	15.5	8.5	8.2
Education	2.3	3.2	5.2	2.0	1.9
Health	0.9	2.3	7.8	1.6	1.6
Transport	0.9	1.5	1.9	2.1	1.6
Fuel and Energy	0.4	0.2	0.3	0.4	0.5
Water and other amenities	0.4	0.1	0.3	2.5	2.6
Social Protection	1.6	6.7	13.0	5.1	0.0
Defence, Order and Safety	2.1	2.7	3.9	2.6	2.2
Other	9.3	12.7	8.1	3.4	9.1
Total	17.9	29.4	40.5	19.6	19.5

Notes: Sample size in parentheses. The figures reported correspond to the GDP-weighted average country. (n = number of countries)

Sources: Gaspar, V., Amaglobeli, M. D., Garcia-Escribano, M. M., Prady, D., & Soto, M. (2019). *Fiscal policy and development: Human, social, and physical investments for the SDGs*. Washington, D.C.: International Monetary Fund and IMF. (2023). *Government Finance Statistics*.

Table 3: Investments as per PIP 2017-2020 and 2021-2024

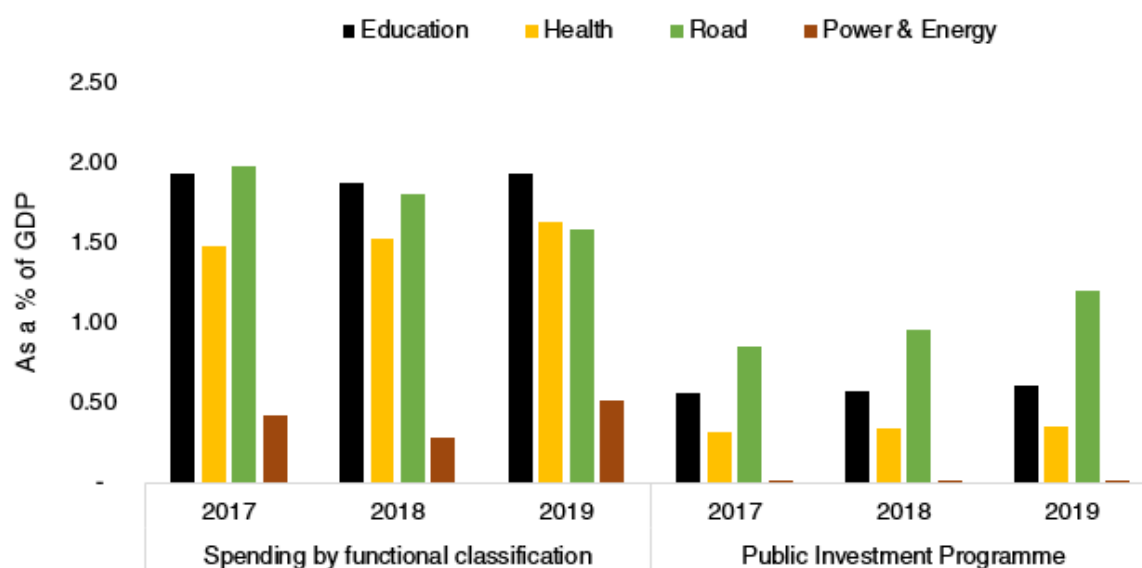
(Average Allocation as a % of Total Public Investment)

Sector	PIP 2017-2020	PIP 2021-2024
Education, Health, Infrastructure	58.8	74.6
Education	10.7	6.1
Health	6.2	8.4
Transport	5.1	6.0
Power & Energy	0.2	0.1
Other infrastructure	36.6	54.0
Social Protection	1.2	1.4
Defence, Order and Safety	9.7	7.5
Other	30.4	16.6
Total	100.0	100.0

Notes: PIP 2017-2020 and PIP 2021-2024 contain public investment under 26 different sectors. Table 3 is a direct comparison of PIPs to the sectors in the IMF Government Finance Statistics.

Sources: Author's calculation based on NPD. (2017). *Public Investment Programme 2017-2020*. Colombo: Department of National Planning and NPD. (2021). *Public Investment Programme 2021-2024*. Colombo: Department of National Planning.

Figure 11: Government Spending and Public Investment



Notes: A comparison between actual spending and investment in four sectors, education, health, road and power & energy is shown in Figure 11. Spending data are from the IMF's functional classification and investment data are from the PIP of the Department of National Planning, Sri Lanka. The IMF functional classification for Sri Lanka does not contain data separately for the water and sanitation sector, rather, included under the 'other infrastructure' category. Therefore, the comparison is limited to four sectors. Magnitudes of spending and investment figures in Sri Lanka are not comparable indicating mismatch between annual budget and medium-term investment decisions.

Sources: IMF. (2023). *Government Finance Statistics*. and NPD. (2017). *Public Investment Programme 2017-2020*. Colombo: Department of National Planning.

Inconsistency between sectoral allocations of public investment and government spending challenges the credibility of the PIP. Further, comparing government policy objectives and PIP sectoral allocations also suggests a mismatch. The Box 3 highlights the national development priorities indicated in the PIP 2017-2020 and PIP 2021-2024. The PIP 2021-2024 clearly deviates from the development policy priorities of its main policy document, the 'Vistas and Prosperity and Splendour'. For instance, despite 'a technology-based society' being a key development priority, the Technology and Information and Communications and Technology (ICT) sector received only 1.7% of the total investment in the PIP 2021-2024. This is significantly lower than the 3.1% allocation in the previous PIP 2017-2020 (Table A1 in the Annex).

Box 3: National Development Policy Priorities of PIPs

Policy Statement of Prime Minister, November 5, 2015 (Main policy document for PIP 2017-2020)	National Development Policy Framework: Vistas of Prosperity and Splendour (Main policy document for PIP 2021-2024)
• Generating 1 Mn employment opportunities • Enhancing income levels • Development of rural economies • Ensure land ownership to rural and estate sectors, the middle class, government employee and creating a wide and strong middle class.	• A country free from corruption • A safe and secure country for all • A productive citizen and a happy family • People-centric economy • A technology-based society • A new approach in national spatial system • A sustainable environmental policy • A righteous, disciplined and law-abiding society • Dialogue with the village

Source: NPD. (2017). *Public Investment Programme 2017-2020*. Colombo: Department of National Planning and NPD. (2021). *Public Investment Programme 2021-2024*. Colombo: Department of National Planning.

6. Investment Assessment of SDGs: An Analytical Approach

Addressing investment gaps is vital to realise the 2030 Agenda for Sustainable Development. Both traditional and non-traditional means of financing are critical for the meaningful progress of the SDGs. Considering the importance of public investment in catalysing economic activity, this section presents a comprehensive fiscal needs assessment for Sri Lanka to ensure the timely achievement of SDGs by 2030.

6.1 Conceptual Framework

Public investment is a vital source in the economic recovery strategy (IMF, 2020a), therefore, it is often used as a basis for fiscal needs assessments for SDGs. The fiscal responses during a crisis are country-specific and depend on the fiscal space. During a crisis, increased public investment boosts private sector confidence (Bachmann & Sims, 2012). A gradual increase in public investment financed by borrowing could create positive short- and long-term multipliers, if there are no fluctuations in the interest rates (Buffie, 2012). However, there is a risk that deteriorating debt dynamics will constrain the investments. As such, substantial market borrowing could increase risk premium, undermining the short-term growth prospects of public investment (Huidrom, Kose, Lim, & Ohnsorge, 2019). Financing constraints and competing spending priorities have already put on hold most foreign-financed projects in developing economies, including Sri Lanka.

“Financing the investment gap for SDGs would not be feasible without addressing the inefficiencies in policy formulation and institutional structure (Glass, 2019). A clear shift in the functioning of public institutions is, therefore, a necessary condition to ensure sustainable growth prospects for the country.”

Given the high uncertainty and the need for a swift recovery, this fiscal needs assessment comprehends the importance of increasing the effectiveness of public financial management in Sri Lanka. Financing the investment gap for SDGs would not be feasible without addressing the inefficiencies in policy formulation and institutional structure (Glass, 2019). A clear shift in the functioning of public institutions is, therefore, a necessary condition to ensure sustainable growth prospects for the country.

Figure 12 below provides the conceptual framework for the investment assessment of SDGs. It indicates the role of public investment in transforming the country into a more inclusive, smart and sustainable economy in future.

Figure 12: Conceptual Framework

Notes: Priority sectors are based on Gaspar, V., Amaglobeli, M. D., Garcia-Escribano, M. M., Prady, D., & Soto, M. (2019). These five sectors - education, health, roads, power and energy and water and sanitation - are significant to the sustainability of any economy. In Sri Lanka, the national development frameworks have identified these as vital sectors and allocated a significant share of investment in most recent PIPs.

Sources: IMF. (2020a). *Fiscal Monitor October 2020: Public Investment for the Recovery*. Washington, D.C.: International Monetary Fund.

6.2 Methodology and Data

The study estimates the additional cost of achieving high performance across five SDG areas (education, health, roads, electricity, water and sanitation), using a modified version of the input-outcome approach proposed by Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto (2019). These five sectors receive approximately 60% of the total public investment in the PIP 2021-2024 (Education: 6%, Health: 8%; Roads: 31%; Power & Energy: 0.1%,⁴ Water and Sanitation: 12% of total investment).

In this assessment, development outcomes are assumed to be a function of inputs (Table 4). Then, by using the input variables of a high-performing developing country, the level of investment to reach a high development outcome is estimated. A high-performing country is selected from the East and South Asian region considering several factors like similarities in the level of development and the SDG Index scores (Table A2 in the Annex). Accordingly, Thailand and Malaysia are the two reference countries used in the assessment.

Sri Lanka's investment requirement in 2019 is calculated considering investments in each SDG sector, denoted by $s(b, x^{2019})$. This is a function of input, b , and other factors, x . Then, the investment requirement in 2030 is estimated for given b^* considering the values of a high-performing Asian economy, Thailand and Malaysia, and the projections for Sri Lanka for 2030.

⁴ Public investments for three sectors - ports and aviation, water and sanitation and power & energy - are recorded as off-budgetary investment in the PIP 2021-2024. If these investments are also considered, total investment in power & energy sector approximates to 4% of total public investment.

Accordingly, 2030 government investment assessment for Sri Lanka is derived as follows:

Additional government expenditure requirement as a % of GDP

$$= \frac{s(b^*, x^{2030})}{GDP^{2030}} - \frac{s(b^{2019}, x^{2019})}{GDP^{2019}}$$

Additional government expenditure requirement in LKR.Mn

$$= GDP^{2030} * \left[\frac{s(b^*, x^{2030})}{GDP^{2030}} - \frac{s(b^{2019}, x^{2019})}{GDP^{2019}} \right] * \frac{GDP \text{ deflator}^{2019}}{GDP \text{ deflator}^{2030}}$$

Table 4: Input-Outcome Approach in Five Sectors and Data Sources

Outcome Indicator	Inputs	Source	Reference
Education: SDG 4	Education sector expenditure (as a % of GDP)	WDI	Malaysia
Health: SDG 3	Health sector per capita consumption (PPP, Current USD)	WDI	Malaysia
Roads: SDG 9.1.1	Road network(Number of kilometres)	RDA	ADB Needs Assessment
Power & Electricity: SDG 7.1.1	Access to electricity (%)	WDI	Malaysia
Water & Sanitation: SDG 6.1 and 6.2	Providing advanced water, sanitation and hand washing facilities (USD)	WASH	Thailand

Notes: ADB needs assessment (ADB, 2017); RDA: Road Development Authority, Sri Lanka; WASH: Water, sanitation and hygiene (WASH) methodology, World Bank (Hutton & Varughese, 2016); WDI: World Development Indicators, World Bank.

Sources: Gaspar, V., Amaglobeli, M. D., Garcia-Escribano, M. M., Prady, D., & Soto, M. (2019). *Fiscal policy and development: Human, social, and physical investments for the SDGs*. Washington, D.C.: International Monetary Fund

Education: The outcome indicator to be achieved is SDG 4 on ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. The costing parameter used is education expenditure as a percentage of GDP by the government. General government expenditure on education (current, capital, and transfers) is expressed as a percentage of GDP. It includes expenditures funded by transfers from international sources to the government (WDI, 2022). The additional investment assessment is estimated considering the average expenditure in high performing countries during 2010-2015 and controlling for the variation in population and GDP per capita.

Health: The outcome indicator to be achieved is SDG 3 on ensuring healthy lives and promoting well-being for all at all ages. The estimation strategy for the health sector is similar to the above assessment for the education sector. The only difference is the input variable. Instead of the government

expenditure share in GDP, per capita health expenditure is used as it is a more representative variable for this sector. The variation in population and GDP per capita are also controlled in the estimation.

Roads: The estimation is to achieve target 9.1 on developing quality, reliable, sustainable and resilient infrastructure to support economic development and human wellbeing, focusing on affordable and equitable access for all (land transport only). The main concern is indicator 9.1.1, which prioritises the proportion of the rural population living within a 2 km radius of an all-season road.

The total road network of Sri Lanka spans 117,012 kilometres (km). Of these, only 10% are considered national roads and highways. The balance is the rural roads, including provincial roads, local roads and other roads managed by Forest Department and Irrigation Department. According to an assessment by the ADB, 80% of the rural road network remains unpaved or ranges from fair to very poor condition (ADB, 2017). As a result, the rural population does not receive all-weather connectivity to markets, employment, education, or health opportunities, thus hindering the socio-economic development of rural areas. The majority of the population in Sri Lanka lived in rural areas (approximately 82%). Therefore, the estimation assumes an 80% improvement in rural roads. The unit cost of USD 500,000 estimated to construct one km is the basis for costing the additional investment requirement for roads (limi, et al., 2016).

Electricity: The estimation is to achieve the target 7.1 on ensuring universal access to affordable, reliable and modern energy services. The two main SDG indicators used in the calculations are 'population with access to electricity' and 'population with primary reliance on clean fuels and technology'. Hence, considering the need to provide a consistent power supply and shift toward renewable energy, the reference used is the consumption level of a high-performing country, while considering other variables like an increase in per capita consumption in line with real GDP per capita. The World Bank's (2013) calculation of unit cost per kilowatt of USD 2,250 is used to assess the additional investment requirement in the power & energy sector.

Water and Sanitation: The estimation is to achieve target 6.1 on achieving universal and equitable access to safe and affordable drinking water for all and target 6.2 on achieving access to adequate and equitable sanitation and hygiene for all and ending open defecation. Therefore, this estimation employs the global costs of meeting the water, sanitation and hygiene (WASH) targets of the SDG of the World Bank (Hutton & Varughese, 2016). Accordingly, the assessment considers urban and rural sector costs under three categories: water, sanitation and hand-washing stations.

7. Results and Discussion

Table 5 shows the additional investment requirement for Sri Lanka to deliver the SDGs by 2030. The estimated total additional investment requirement is USD 1.4 Tn and this is equivalent to 12 percentage points of GDP. This estimation is more consistent with that of the low-income economies, which requires an additional investment of 15 percentage points of GDP by 2030 (Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto, 2019). The education and health sector investment requirement is 5.4 percentage points of GDP, while roads, power & energy and water and sanitation sectors show an additional investment requirement of 6.3 percentage points of GDP. In absolute terms, this is translated into USD 666 Bn and USD 777 Bn, respectively. As such, the main share (54%) of the additional investment is allocated for physical capital, while only 46% of the investment is allocated for human capital development.

Table 5: Additional Investment Estimates by 2030

(Percentage Points of GDP)

Sector	Low-income Economies	Emerging Market Economies	Sri Lanka	
			% Points of GDP	USD Bn
Education	8.3	2.0	4.1	506
Health			1.3	160
Roads	7.1	2.1	3.0	375
Power & Energy			1.9	240
Water and Sanitation			1.3	162
Total	15.4	4.1	11.6	1,443

Note: Additional investment estimates of low-income economies and EMEs are derived from Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto (2019).

Source: Gaspar, V., Amaglobeli, M. D., Garcia-Escribano, M. M., Prady, D., & Soto, M. (2019). *Fiscal policy and development: Human, Social, and Physical Investments for the SDGs*. Washington, D.C.: International Monetary Fund.

7.1 Sustainable Investments

The Agenda 2030 requires placing equal importance on economic, social and environmental objectives. However, Sri Lanka's public investment ratio in these three dimensions is 80:19:1, which has long been skewed toward infrastructure development. Investment to road sector up by more than 80% from 2017-2020 to 2021-2024, while during the same period, education and technology/ ICT sectors show a drastic drop in investment, 33% and 36%, respectively. These disparities have jeopardised the commitment to meet the development goals. Hence, Agenda 2030 could be used to encourage sustainable public investment: use the SDG framework as a foresight planning tool to review and correct sectoral investments and use SDGs in national goal-setting by extending short- and medium-term targets into long-term targets.

For Sri Lanka, the education sector has the largest additional financing requirement of 4.1% points of GDP followed by the roads, and power & energy sectors with 3.0% and 1.9% points of GDP, respectively.

Although Sri Lanka's Human Development Index is on par with advanced economies, the education system is unable to address the evolving needs in the local and global labour markets. For instance, Table 6 below suggests that unlike in advanced economies, in the Asia region, Sri Lanka's high number of years of schooling has not clearly translated into economic gains. Further, South Korea, which previously had similar schooling years and GDP per capita to Sri Lanka during the period 1961-1970 currently shows remarkable progress in education development. Hence, policy reforms are necessary to bring not only quantitative but also qualitative improvements to the education system.

Table 6: Schooling and Economic Development

Period	Japan		Republic of Korea		Singapore		Sri Lanka	
	Schooling (Mean Years)	GDP Per Capita (USD)	Schooling (Mean Years)	GDP Per Capita (USD)	Schooling (Mean Years)	GDP Per Capita (USD)	Schooling (Mean Years)	GDP Per Capita (USD)
1961-1970	7	1,153	4	182	3	503	4	160
1971-1980	8	5,398	6	871	4	2,648	6	242
1981-1990	9	15,471	8	3,603	5	7,805	7	367
1991-2000	10	36,313	10	10,461	7	21,548	9	713
2001-2010	11	37,665	11	18,471	10	32,453	11	1,499
2011-2017	12	41,505	12	28,090	11	56,805	11	3,684

Source: WDI. (2022). *World Development Indicators*. Retrieved from World Bank: <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>.

Previous studies suggest that annual infrastructure needs in developing countries will be USD 864 Bn in 2030 and will be the highest in the East and South Asia region with USD 501 Bn (WB, 2013). The highly populated two countries, China and India, will drive infrastructure demand to achieve high-speed connectivity. However, the above figures seem underestimated as overall national infrastructure investment for Asia has been estimated to be around USD 8 Tn during the period 2010-2020 (ADB, 2010). Therefore, findings must be interpreted cautiously, as the assessments are sensitive to the estimation strategy.

Public investment is essential to raise long-term economic growth and thereby, to progress toward SDGs (IMF, 2020a). Public investment in infrastructure development reduces inequality by fostering structural transformation, eventually converging rural and urban areas in low-income economies (Fabrizio, et al., 2017). Further, public investment helps preserve fiscal space, yet, toward this end, it is important that policymakers implement investments with the highest social pay-offs. Investment needs are continuously growing, but public investment has been declining since 2010, narrowing the capital-stock-to-GDP and public-to-private-capital ratios.

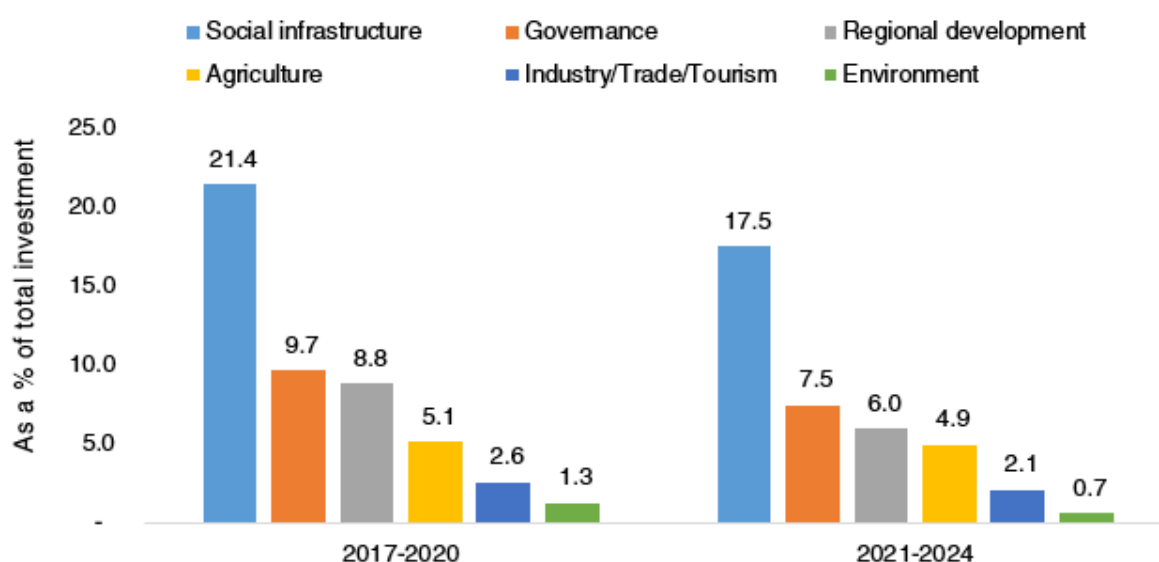
Public investment is falling in several key sectors - education, agriculture, technology & ICT, industry and the environment - weakening society's qualitative improvements (Figure 13). In contrast, investments in commercial infrastructure development show a remarkable rise. This includes investments in roads, transport, ports and aviation, power & energy, irrigation, water supply and sewerage, housing and urban development. Unlike many other emerging economies, Sri Lanka allocates considerably high (more than two-thirds of total investment) for physical capital improvement. Yet, its efficient conversion into output is worth studying, considering the global benchmarks/standards for input/output conversions.

Digital infrastructure investments show a considerable decline over the reference period. The sector needs to attract more investments from the private sector. Sri Lanka's population with internet access has increased significantly from 10% in 2004 to 34% in 2020. However, in 2018, the improvement is only comparable to LICs, with 32% internet access, while emerging market economies and advanced economies show 72% and 86% access, respectively. Disparities in computer literacy and internet

“Digital gap can have an adverse impact on economic convergence across countries and inclusive growth within countries.”

access must be addressed with high priority as this directly impacts online learning and business activities. In addition, for the effective implementation of the social-distancing rules it is necessary the countries are supported to close the digital financing gap (Chiou & Tucker, 2020). Otherwise, the digital gap can have an adverse impact on economic convergence across countries and inclusive growth within countries.

Figure 13: Declining Public Investment in Key Sectors of Sri Lanka



Notes: Social infrastructure includes investments in general education, higher education, skills education, labour, health, sports, culture and heritage and technology and ICT. Governance includes investments in the judicial system and prison reforms, national security, public management, social integration and foreign affairs. Agriculture includes investments in crop agriculture, livestock, plantation, fisheries and land. The environment includes investments in environment and disaster management.

Sources: NPD. (2017). *Public Investment Programme 2017-2020*. Colombo: Department of National Planning and NPD. (2021). *Public Investment Programme 2021-2024*. Colombo: Department of National Planning.

The investment in climate change mitigation and adaptation is another key concern. Globally, the emission reduction to a level consistent with a target of a 2°C. Though, Sri Lanka has not entered so far into a binding commitment, renewable energy investments and long-term disaster management protocols must be strengthened through public and private investments. According to the IMF, the required level of increase in investment is 2%-2.3% to mitigate the impacts of climate change (Huidrom, Kose, Lim, & Ohnsorge, 2019). However, the shift to low-carbon technologies is indeed a challenge for low-income economies compared to emerging market and advanced economies.

Public investment can boost growth and employment generation. Literature suggests public investment has larger short-term fiscal multipliers than public consumption (Geckert & Rannenberg, 2018). Macroeconomic conditions and investment quality affect the size of the multiplier. Multipliers are larger when countries are less open to trade as fewer imports reduce leakages of benefits to other countries. Larger multipliers are observed during recessions and in countries with fixed exchange regimes (Chodorow-Reich, 2019).

7.2 Closing the SDG Financing Gap

The additional investment is a huge challenge for Sri Lanka considering the severity of the current economic deterioration. Enormous resource mobilisation is essential to meet this financing gap. Public sector alone cannot fund the investment gap and private sector participation is a must. Hence, both traditional and non-traditional means of financing are critical for the meaningful progress of the SDGs. For instance, although infrastructure investment is traditionally a public sector responsibility, this trend is now changing toward PPPs. Therefore, policymakers have an important role in creating a favourable investment climate. Macroeconomic management, combating corruption, improving governance, and strengthening transparency and accountability are key factors in creating an enabling business environment (Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto, 2019). The quality of governance highly correlates with investment inflow (WB, 2013), a major concern for improvement if Sri Lanka needs to attract investment from global sources. The Expansion of social sector investment - education and health - is another factor signalling the government's commitment to creating a favourable investment climate. Furthermore, the level of development of the financial sector is important in mobilising resources to the most productive investment opportunities (Levine 2005). Henceforth, economic reforms that create an investor-friendly environment will facilitate the internationalisation of funding sources and attract innovative financing strategies (WB, 2013).

Crowdsourced capital is an instrument to finance infrastructure developments in developing economies (WB, 2013). This includes rotating savings, credit associations and community finance associations (Besley, Stephen, & Glenn, 1993). Islamic finance is another form of financing widely used in infrastructure development in the Middle East. Although, it is suggested as a credible source for long-term cross-border infrastructure development financing (WB, 2013), economic, legal and systemic challenges remain a major concern (Kammer, et al., 2015).

Investment needs to be understood in parallel to the current account identities: savings and capital flows (WB, 2013). The difference in national savings and investment equals a country's net capital flows. There is a high correlation between savings and investment, implying poor capital mobility (Kraay & Jaume, 2000). Saving shocks in major economies affects the investment pattern in developing countries. Public policies and borrowing in major economies can contract the global supply of savings,

which in turn lowers investment in developing countries. Monitoring local and global economic dynamics and adopting timely policy reforms could enhance resilience to such shocks.

7.3 Ensuring High Quality in Public Investment

The global economic downturn makes improving public investment challenging for any economy. Yet, public investment is critical during the recovery process. Hence, efficient public financial management is of high importance. In this regard, a timely and effective push to investment is vital to resurge speedily from the crisis (Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto, 2019). Further, countries must invest in development projects considering their readiness and quality. Regrettably, developing countries mostly have few projects of this nature (Jones & Rothschild, 2011). Hence, four essential steps to consider in this regard are: maintenance of existing infrastructure, reviewing and reprioritising existing projects, creating and maintaining a pipeline of projects that can deliver within a few years and to start planning for new development priorities stemming from the crisis. This facilitates identifying quality investments that can be started promptly and prepare economies for the future.

The crisis creates the opportunity to introduce development transformations. Review of existing portfolios and reprioritisation of projects for implementation is advisable to ensure a swift recovery and uninterrupted investment inflows. A well-coordinated system of planning, budgeting and monitoring makes investments more productive. Project readiness should be a key qualifying factor in the project pipeline. Otherwise, delays in project implementation could escalate project costs unnecessarily. Further, project appraisal and selection (priority) processes should follow a scientific methodology (Chaponda, Matsumoto, & Murara, 2020) to ensure that only high-quality investment projects are included in the project pipeline. An independent review of projects and transparent communication lowers the likelihood of investing in unsustainable projects (Gaspar, Amaglobeli, Garcia-Escribano, Prady, & Soto, 2019). Essentially, a transparent selection criterion must be in place for an investment project (despite of the project size) and should be disclosed to the general public. For smaller projects where a systematic appraisal cannot be followed, it is advisable to get investment decisions approved via an Independent Task Force. This may require changes in policy-setting as the existing system may not be in favour of external independent reviews on project selection.

Investment in maintenance projects is vital during a crisis. Maintenance projects are small, short duration, less complex and support a speedy recovery. Maintenance contributes to preserving investments through alleviating the wear and tear of assets, sustaining service delivery quality and limiting waste (Wang, Al-Saadi, Lu, & Jasim, 2020). Poor maintenance increases rehabilitation and replacement costs by 50% to 60% in the transportation, and water and sanitation sectors (Rozenberg & Fay, 2020). However, the maintenance budgets are always under-funded. To attract more investments, building sectoral expertise in line ministries and local governments is vital in low-capacity settings like Sri Lanka.

8. Conclusions and Policy Implications

Realising the United Nations 2030 Agenda for Sustainable Development requires huge investment allocation as limited financing has delayed the execution of SDGs. The economic crisis that loomed with the COVID-19 pandemic has further hindered SDG progress. The achievement of 2030 Agenda therefore, relies on the effectiveness of recovery strategies and fund availability.

Public investment not only supports the development process but also encourages private investment, hence, it plays a significant role in 2030 Agenda. As relevant systemic research is underdeveloped, assessing the investment gap in SDG financing is significant and enhances governments' financial readiness. The additional investment requirement in 2030 to reach key SDGs is 4% of the GDP for emerging market economies and 15% for LICs.

Using an input-outcome based innovative costing methodology, the additional investment requirement for SDGs in 2030 for Sri Lanka is estimated to be around USD 1.4 Tn, which accounts for 12 percentage points of GDP. This is more consistent with the investment requirement of low-income economies. The education and health sector investment requirement is 5.4 percentage points of GDP (or USD 666 Bn), while roads, power & energy, and water & sanitation sectors show an additional investment requirement of 6.3 percentage points of GDP (or USD 777 Bn). As such, the main share (54%) of the additional investment is allocated for physical capital, while only 46% is allocated for human capital development. On average, Sri Lanka's public investment is around 5-7% of GDP over the last decade, hence, the allocation of additional funds for SDGs is challenging.

The Agenda 2030 for sustainable development could be used to encourage sustainable public investment. The SDG framework could act as a foresight planning tool to review and rectify sectoral investments and incorporate SDGs in national goal-setting by extending short- and medium-term targets into long-term targets.

Both traditional and non-traditional means of financing are critical for the meaningful progress of the SDGs. Tax reforms are encouraged to improve domestic revenue collection as domestic resources are crucial in SDG progress. In addition, blended finance for SDG infrastructure, international tax reforms, globally earmarked taxes (like wealth taxation, financial transactions tax and carbon tax), increasing ODA, giving pledge and debt financing are some other financing strategies widely discussed in the literature for SDG financing.

The public sector alone cannot fund the investment gap and private sector participation is a must. Therefore, policymakers have an important role in creating a favourable investment climate. Macroeconomic management, combating corruption, improving governance, and strengthening transparency and accountability are key factors to create an enabling business environment. To ensure high quality in investments, the project pipeline should include new projects considering their readiness for implementation; review existing portfolios and re-prioritise projects that ensure quick recovery; project selection to follow a scientific methodology to avoid implementation of unproductive projects and choose maintenance projects over new projects to reduce waste and increase public finance use efficiency.

The 2030 Agenda for Sustainable Development calls for genuine efforts to ensure an inclusive and sustainable transformation. Hence, a comprehensive fiscal needs assessment for SDGs can improve government's readiness in efforts toward realising SDGs. Complementing these assessments with research on new financing options and realistic country-specific investment plans will enable the envisaged transformation.

References

- ADB. (2010). *Infrastructure for a Seamless Asia*. Tokyo: Asian Development Bank.
- ADB. (2017). *Proposed Multitranchise Financing Facility Democratic Socialist Republic of Sri Lanka: Second Integrated Road Investment Program*. Retrieved from Asian Development Bank: <https://www.adb.org/sites/default/files/project-documents/50301/50301-001-rrp-en.pdf>
- ADB. (2022). *Sri Lanka's GDP Growth Projected to Dip Amid Macroeconomic Challenges and External Headwinds*. Retrieved from Asian Development Bank.
- Asadikia, A., Rajabifard, A., & Kalantari, M. (2022). Region-income-based prioritisation of Sustainable Development Goals by Gradient Boosting Machine. *Asadikia, A., Rajabifard, A. & Kalantari, M. Region-income-based prioritisation of Sustainable Development Goals Sustainability Science, 1939–1957*.
- Asian Development Bank. (2022, April 6). *Sri Lanka's GDP Growth Projected to Dip Amid Macroeconomic Challenges and External Headwinds*. Retrieved from Asian Development Bank: <https://www.adb.org/news/sri-lanka-gdp-growth-projected-dip-amid-macroeconomic-challenges-external-headwinds#:~:text=and%20External%20Headwinds-,Sri%20Lanka's%20GDP%20Growth%20Projected%20to%20Dip%20Amid%20Macroeconomic%20Challenges,marginally%20to%202.5%>
- Bachmann, R., & Sims, E. R. (2012). Confidence and the transmission of government spending shocks. *Journal of Monetary Economics*, 59(3), 235-249.
- Benedek, D., Gemayel, E., Senhadji, A., & Tieman, A. (2021). *A Post-Pandemic Assessment of the Sustainable Development Goals*. International Monetary Fund.
- Benedek, M. D. (2021). *A post-pandemic assessment of the sustainable development goals*. Washington: International Monetary Fund.
- Benon, O. P., Baer, K., & Toro, J. (2002). *Improving large taxpayers' compliance: a review of country experience*. International Monetary Fund.
- Besley, T., Stephen, C., & Glenn, C. (1993). The economics of rotating savings and credit associations. *American Economic Review*, 83(4), 792-810.
- Brookings. (2020). *Foresight Africa: Top priorities for the continent 2020-2030*. Washington, DC: Brookings Institute.
- BSDC. (2017). *Better business better world*. London: Business and Sustainable Development Commission.
- Buffie, E. A. (2012). Public Investment, Growth and Debt Sustainability: Putting Together the Pieces. *IMF Working Paper*, 12(144).
- Central Bank of Sri Lanka. (2021). *Annual Report*. Colombo, Sri Lanka: Central Bank of Sri Lanka.
- Central Bank of Sri Lanka. (2022). *Annual Report*. Colombo, Sri Lanka: Central Bank of Sri Lanka.
- Chaponda, T., Matsumoto, C., & Murara, L. (2020). *Well Spent: How Strong Infrastructure Governance Can End Waste in Public Investment*. Washington: International Monetary Fund.
- Chiou, L., & Tucker, C. (2020). Social Distancing, Internet Access and Inequality. *Working Paper Series, National Bureau of Economic Research*.
- Chodorow-Reich, G. (2019). Geographic Cross-Sectional Fiscal Spending Multipliers: What have We Learned? *American Economic Journal: Economic Policy*, 11(2), 1-34.
- DCS. (2017). *Status of Sustainable Development Goals Indicators in Sri Lanka: 2017*. Colombo: Department of Census and Statistics.
- Deyshappriya, N. P. (2020). *Economic Impacts of COVID-19 Macro and Microeconomics Evidences from Sri Lanka*. Deyshappriya, N.P. Ravindra, Economic Impacts of COVID-19 Macro and Microeconomics Evidences from Sri Lanka. Available at SSRN: <https://ssrn.com/abstract=3597494> or <http://dx.doi.org/10.2139/ssrn.3597494>.

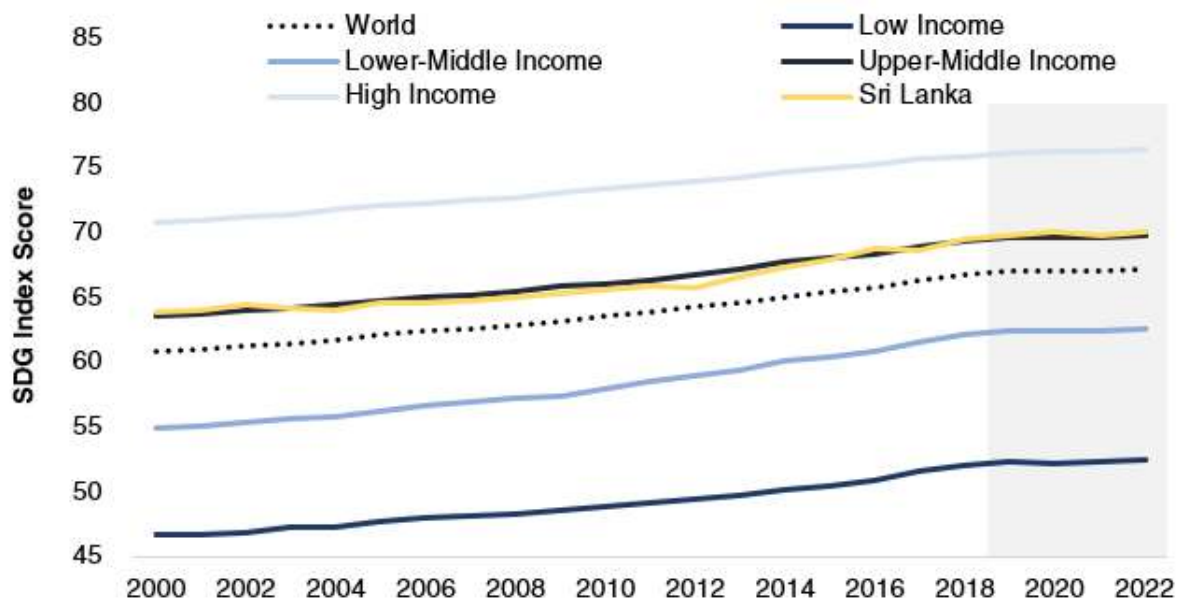
- Doumbia, D., & Lauridsen, M. L. (2019). Closing the SDG financing gap: Trends and data. *Emerging Markets Compass*(73), 1-8.
- Duggal, V. G., Saltzman, C., & Klein, L. R. (2007). Infrastructure and productivity: An extension to private infrastructure and its productivity. *Journal of Econometrics*, 140(2), 485-502.
- Easterly, W., & Rebelo, S. (1993). Fiscal policy and economic growth: An empirical investigation. *Journal of Monetary Economics*, 32(3), 417-458.
- ESCAP. (2017). *Innovative financing for development in Asia and the Pacific: government policies on impact investment and public finance for innovation*. Bangkok: United Nations Publications.
- Esfahani, H. S., & Ramirez, M. T. (2003). Institutions, infrastructure, and economic growth. *Journal of development Economics*, 70(2), 443-477.
- EU. (2013). *Proposal for a Council Directive, Implementing Enhanced Cooperation in the Area of Financial Transaction Tax*. Brussels: European Commission.
- Fabrizio, S., Furceri, D., Garcia-Verdu, R., Li, B. G., Lizarazo, S. V., Tavares, M. M., & Peralta-Alva, F. N. (2017). *Macro-structural Policies and Income Inequality in*. Washington: International Monetary Fund.
- Freireich, J., & Fulton, K. (2009). Investing for social and environmental impact: A design for catalyzing an emerging industry. *Monitor Institute*, 1-86.
- Gaspar, V., Amaglobeli, M. D., Garcia-Escribano, M. M., Prady, D., & Soto, M. (2019). *Fiscal policy and development: Human, social, and physical investments for the SDGs*. Washington, DC: International Monetary Fund.
- Gechert, S., & Rannenberg, A. (2018). *Which Multipliers Are Regime-Dependent? A Meta-regression Analysis*. Washington: World Bank.
- GivingPledge. (2022). *The Giving Pledge*. Retrieved from <https://givingpledge.org/>
- Glass, L. (2019). Governance for achieving the Sustainable Development Goals: How important are participation, policy coherence, reflexivity, adaptation and democratic institutions? *Earth System Governance*.
- Grigoli, F., & Mills, Z. (2014). Institutions and public investment: an empirical analysis. *Economics of Governance*, 15, 131–153.
- Haque, E. a. (2003). *“Public Investment in Transportation and Communication and Growth: A Dynamic Panel Approach*. Manchester: Centre for Growth and Business .
- Henry, J. (2016). Taxing Tax Havens. *Foreign Affairs*.
- Huidrom, R., Kose, M. A., Lim, J. J., & Ohnsorge, F. L. (2019). “Why Do Fiscal Multipliers Depend on Fiscal Positions?” *CAMA Working Paper 28/2019*.
- Hutton, G., & Varughese, M. (2016). *The costs of meeting the 2030 sustainable development goal targets on drinking water, sanitation, and hygiene*. Washington: World Bank.
- Imi, A., Ahmed, F., Anderson, E., Diehl, A., L., M., Peralta-Quiros, T., & Rao, K. (2016). *New Rural Access Index*. World bank.
- IMF. (2017). *Tackling Inequality*. Washington, DC: International Monetary Fund.
- IMF. (2019). *Fiscal Policies for Paris Climate Strategies-From Principle to Practice*. International Monetary Fund.
- IMF. (2020a). *Fiscal Monitor October 2020: Public Investment for the Recovery*. Washington: International Monetary Fund.
- IMF. (2020b). *Fiscal Monitor: Policies for the Recovery*. Washington DC: International Monetary Fund.
- IMF. (2022a). *Fiscal Monitor: Fiscal policy from pandemic to war*. Washington DC: International Monetary Fund.
- IMF. (2023). *Government Finance Statistics*. Retrieved from International Monetary Fund: <https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405>

- International Monetary Fund. (2022b, March 2). *IMF Country Reports*. Washington, DC: International Monetary Fund. Retrieved from International Monetary Fund: <https://www.elibrary.imf.org/view/journals/002/2022/091/002.2022.issue-091-en.xml?Tabs=toc-102773>
- IPS. (2011, June 16). *Talking Economics*. Retrieved from Institute of Policy Studies of Sri Lanka: <https://www.ips.lk/talkingeconomics/2011/06/16/accelerating-economic-growth-in-sri-lanka/>
- Isenman, P. (1980). Basic Needs: The Case of Sri Lanka. *World Development*, 8(3), 237–258.
- Jones, G., & Rothschild, D. M. (2011). No Such Thing as Shovel-Ready: The Supply Side of the Recovery Act. *Mercatus Center Working Paper*, 11–18.
- Kammer, A., Norat, M., Pinon, M., Prasad, A., Towe, C., & Zeidane, Z. (2015). *Islamic Finance: Opportunities, Challenges, and Policy Options*. Washington: International Monetary Fund.
- Kraay, A. C., & Jaume, V. (2000). Current Accounts in Debtor and Creditor Countries. *Quarterly Journal of Economics*, 115(4), 1137–66.
- Langmore, J. (2011). *Innovative sources of development finance*. Retrieved from Development Policy Centre: DEVPOLICYBLOG: <https://devpolicy.org/innovative-sources-of-development-finance20111216/#:~:text=The%20OECD%20defines%20innovative%20sources,billion%20was%20from%20trading%20carbon>
- Managi, S., & Kumar, P. (2018). *Inclusive wealth report 2018*. Taylor & Francis.
- Ministry of Finance. (2022). *Annual Report*. Colombo, Sri Lanka: Ministry of Finance.
- NPD. (2017). *Public Investment Programme 2017-2020*. Colombo, Sri Lanka: Department of National Planning.
- NPD. (2021). *Public Investment Programme 2021-2024*. Colombo, Sri Lanka: Department of National Planning.
- OECD. (2021). *Blended Finance in the Least Developed Countries 2020*. OECD Publishing.
- Omisore, A. G. (2018). Attaining Sustainable Development Goals in sub-Saharan Africa; The need to address environmental challenges. *Environmental development*, 25, 138-145.
- Rabnawaz, A., & Jafar, R. (2015). Impact of public investment on economic growth. *South Asia Journal of Multidisciplinary Studies (SAJMS)*, 1(8), 62-75.
- Rozenberg, J., & Fay, M. (2020). *Beyond the Gap: How Countries Can Afford the Infrastructure They Need While Protecting the Planet*. Washington: Sustainable Development Series-World Bank.
- Sachs, J., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press.
- Sachs, J., McCord, G., Maennling, N., Smith, T., & Fajans-Turner, V. L. (2019). *SDG costing & financing for low-income developing countries*. Sustainable Development Solutions Network.
- Sen, A. K. (1981). Public Action and the Quality of Life in Developing Countries. *Oxford Bulletin of*, 43(4), 287–319.
- Shaxson, N. (2019). ackling Tax Havens: The billions attracted by tax havens do harm to sending and receiving nations alike. *Finance & Development*, 56(003).
- SOE. (2022). Anchoring the 2030 Agenda in National Development Strategies. In IPS, *Sri Lanka State of the Economy 2022*. Colombo: Institute of Policy Studies of Sri Lanka.
- Tilakaratna, G., & Sooriyamudali, C. (2019). *Tilakaratna, G. Interpreting SDGs for South Asia: in search of a regional framework-the case of Sri Lanka*. UN ESCAP.
- UN. (2019). *Roadmap for Financing the 2030 Agenda for Sustainable Development 2019–2021*. New York: United Nations.
- UNCTAD. (2014). *World Investment Report*. New York and Geneva: United Nations publication.
- UNCTAD. (2021). Investing in the Sustainable Development Goals: The Role of The Diplomats.
- UN-IATF, I.-a. T. (2019). *Financing for Sustainable Development Report*. New York: United Nations publication.

- UNICEF. (2021). *Sri Lanka Case Study: Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia*. Bangkok: UNited Nations Children's Fund .
- United Nations. (2023). *Sustainable Development Report*. New York: United Nations.
- VNR. (2018). *Voluntary National Reviews Sri Lanka*. Colombo: Ministry of Sustainable Development.
- Wang, H., Al-Saadi, I., Lu, P., & Jasim, A. (2020). Quantifying Greenhouse Gas Emission of Asphalt Pavement Preservation at Construction and Use Stages Using Life Cycle Assessment. *International Journal of Sustainable Transportation*, 14 (1), 25–34.
- WB. (2013). *Global Development Horizons Capital for the Future: Saving and Investment in an Interdependent World*. Washington: World Bank.
- WDI. (2022). *World Development Indicators*. Retrieved from World Bank: <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>
- Weerakoon, D. (2017). Sri Lanka's Debt Troubles in the New Development Finance Landscape. *Third World Thematics: A TWJ Journal*(Issue 6: Special Issue: Global Debt Dynamics: Crises, Lessons, Governance).
- World Bank. (2019). *Carbon Pricing Dashboard*. Retrieved from The World Bank: <https://carbonpricingdashboard.worldbank.org/>

Annexes

Figure A1: Trends of SDG Index Averages Over Time



Notes: Even after the pandemic, all income groups show continuing positive trend in the SDG Index score.

Sources: Sachs, J., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press.

Table A1: Investments in PIP 2017-2020 and 2021-2024**As a % of total investment**

Sector	A: PIP 2017-2020			B: PIP 2021-2024			Change A to B (%)
			Average			Average	
	2017	2020	2017/ 2020	2021	2024	2021/ 2024	
Social Infrastructure	21.7	14.8	16.7	17.2	17.6	17.7	-18.1
Education	6.7	7.0	6.8	2.3	2.2	2.0	-68.9
Higher Education	2.6	2.7	2.6	1.8	3.1	3.1	6.8
Skills Education	1.4	1.2	1.3	0.8	1.6	1.4	5.0
Labour	0.5	0.4	0.5	0.2	0.1	0.1	-67.1
Health	6.1	6.4	6.2	8.0	8.1	8.5	34.4
Sports	0.6	0.5	0.5	1.2	0.7	0.8	64.2
Culture & Heritage	0.4	0.4	0.4	0.3	0.3	0.3	-12.9
Technology & ICT	3.3	2.1	2.4	2.6	1.4	1.4	-45.9
Agriculture	7.49	4.74	5.6	4.2	4.8	5.2	-3.6
Agriculture	1.6	1.7	1.6	2.2	2.5	2.7	57.4
Livestock	0.9	0.7	1.0	0.3	0.5	0.5	-53.0
Plantation	1.2	1.2	1.2	0.6	0.7	0.8	-36.6
Fisheries	0.9	0.9	0.9	0.6	0.7	0.8	-13.6
Land	0.5	0.5	0.5	0.4	0.6	0.5	-0.4
Industry/Trade/Tourism	3.0	2.4	2.6	2.0	1.9	2.1	-18.7
Commercial Infrastructure	37.9	31.1	32.1	59.8	61.9	60.2	44.0
Roads	16.4	23.2	19.6	35.0	32.7	29.7	58.0
Transport	4.9	5.1	5.0	4.3	5.6	6.5	19.7
Ports & Aviation	0.2	0.3	0.3	0.2	0.0	0.3	-0.6
Power & Energy	0.1	0.2	0.2	0.1	0.1	0.1	-34.7
Irrigation	9.5	8.9	9.4	4.7	5.7	6.0	-39.6
Water Supply & Sewerage	3.8	4.3	4.3	10.3	13.6	12.8	182.9
Housing	1.0	1.1	1.1	1.6	1.5	1.6	54.3
Urban Development	1.9	1.9	1.9	3.6	2.7	3.1	65.9
Governance	10.2	8.9	9.7	7.2	6.1	7.5	-22.9
Environment	1.3	1.3	1.3	1.0	0.6	0.5	-50.1
Social Protection	2.0	0.7	1.2	1.6	1.1	1.3	8.8
Regional Development	9.7	8.3	8.8	7.0	6.0	5.5	-33.4

Notes: Author's calculation based on PIP 2017-2020 and 2021-2024.

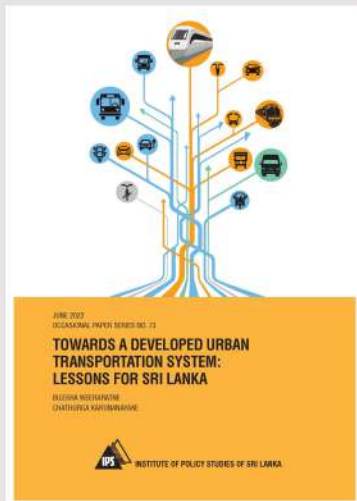
Sources: NPD. (2017). *Public Investment Programme 2017-2020*. Colombo: Department of National Planning and NPD. (2021). *Public Investment Programme 2021-2024*. Colombo: Department of National Planning.

Table A2: Top 10 Countries with the Highest SDG Index Scores in the East and South Asia Region

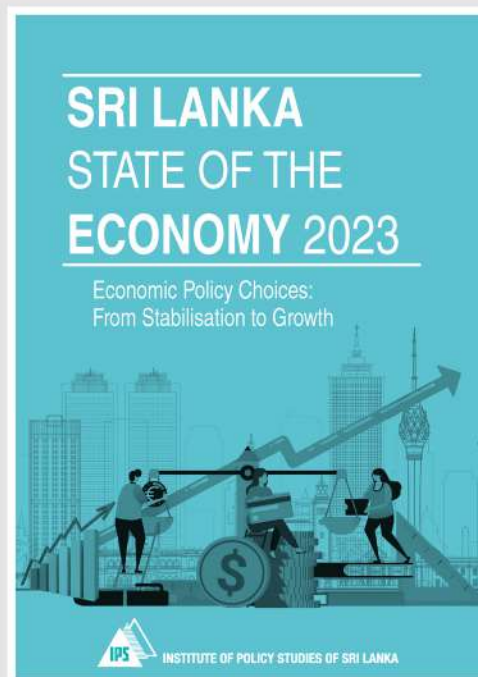
Rank	Country	Score	GDP per capita, PPP (constant 2017)	
			2015	2021
44	Thailand	74.13	16,285	17,486
55	Vietnam	72.76	8,049	10,516
56	China	72.38	12,612	17,603
60	Singapore	71.72	89,161	106,032
67	Maldives	71.03	17,284	16,596
70	Bhutan	70.49	10,086	10,551
72	Malaysia	70.38	24,788	26,959
76	Sri Lanka	70.03	11,891	12,859
82	Indonesia	69.16	10,150	11,746
93	Brunei Darussalam	67.10	63,147	60,641

Source: Sachs, J., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press.

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Website: ips.lk

Blog 'Talking Economics': www.ips.lk/talkingeconomics

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