# Assessment of fiscal policy stance

**Macroeconomic Analysis Course**

**Prepared for Capital Alliance, Sri Lanka**

**Martin Fukac**

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# Macroeconomic assessment roadmap

# Objectives

- Understand why central banks monitor fiscal policy developments
- Understand where the monitoring sits in terms of overall macroeconomic assessment
- Strengthen essential skills for experts monitoring these sectors
- Learn basic tools for monitoring fiscal policy developments

# Outline

1. Setting the scene
2. Key data
3. Key economic concepts
4. Key measurement techniques

# Setting the scene

Why do central banks employ experts to monitor fiscal policy developments?

What information are the sector experts expected to provide to policymakers?

What signals should they look for in the data, and recent data in particular?

# Why do central banks employ experts to monitor fiscal policy developments?

- Government is a major market participant
  - Tax revenues as a share of GDP 14%
  - Expenditures as a share of GDP 19%
  - Contribution to GDP 6-12%
- Fiscal policy affects aggregate demand and aggregate supply (production potential, output gap and inflation)
- Fiscal sustainability affects internal and external macroeconomic balance
- Fiscal and monetary policy are two sides of one coin – economic policies – they need to be coordinated

# What information are the sector experts expected to provide to policymakers?

- tracking actual fiscal developments against expectations
- approved or emerging policies that can affect aggregate demand and prices in the future
- perception of fiscal sustainability (level and investors grading of public debt)
- fiscal financing (in countries with fiscal dominance problems)

# What signals should they look for in the data, and recent data in particular?

- Is current fiscal policy is expansionary, neutral, or contractionary (tightening)?
- Pressures on aggregate demand and prices
  - fiscal stance
  - fiscal impulse (changes in fiscal stance)
- Pressures on risk premium that the country pays to their (foreign) lenders
  - changes in investors' rating of public debt

# Key data

Government revenues, expenditures, overall budget balance

Primary budget balance

Gross/Net public debt

Financing

# A typical set of numbers summarizing the state of public finance

## Table 2b. Sri Lanka: Summary of Central Government Operations, 2016–24

(In percent of GDP)

| | 2016 | 2017 | 2018 | | 2019 | | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CR/18/175 | Est. | CR/18/175 | Proj. | | | Proj. | | |
| Total revenue and grants | 14.1 | 13.7 | 14.6 | 13.4 | 15.9 | 15.1 | 16.0 | 16.2 | 16.2 | 16.2 | 16.2 |
| Total revenue | 14.1 | 13.6 | 14.6 | 13.3 | 15.9 | 15.0 | 15.9 | 16.1 | 16.1 | 16.1 | 16.1 |
| Tax revenue | 12.2 | 12.4 | 13.3 | 11.9 | 14.6 | 13.4 | 14.3 | 14.5 | 14.5 | 14.5 | 14.5 |
| Income taxes | 2.2 | 2.0 | 2.4 | 2.1 | 3.0 | 2.5 | 2.9 | 3.0 | 3.1 | 3.3 | 3.4 |
| VAT | 2.4 | 3.3 | 3.5 | 3.2 | 3.9 | 3.7 | 4.1 | 4.3 | 4.3 | 4.3 | 4.5 |
| Excise taxes | 3.8 | 3.5 | 3.8 | 3.4 | 4.1 | 3.6 | 3.7 | 3.7 | 3.7 | 3.6 | 3.5 |
| Other trade taxes | 1.8 | 1.5 | 1.3 | 1.2 | 1.3 | 1.7 | 1.7 | 1.9 | 1.7 | 1.6 | 1.5 |
| Other | 2.1 | 2.0 | 2.3 | 2.0 | 2.3 | 1.9 | 1.8 | 1.6 | 1.6 | 1.6 | 1.6 |
| Nontax revenue | 1.9 | 1.2 | 1.2 | 1.4 | 1.2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| Grants | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total expenditure and net lending | 19.5 | 19.2 | 19.2 | 18.6 | 19.5 | 19.6 | 19.6 | 19.5 | 19.5 | 19.4 | 19.4 |
| Current expenditure | 14.7 | 14.4 | 14.5 | 14.5 | 14.6 | 14.9 | 14.9 | 14.8 | 14.8 | 14.7 | 14.7 |
| Civil service wages and salaries | 2.8 | 2.6 | 2.4 | 2.6 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| Other civilian goods and services | 0.7 | 0.6 | 0.7 | 0.5 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Security expenditure | 2.6 | 2.3 | 2.4 | 2.2 | 2.4 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| Subsidies and transfers | 3.5 | 3.4 | 3.5 | 3.3 | 3.6 | 3.5 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| Interest payments | 5.1 | 5.5 | 5.6 | 5.9 | 5.6 | 6.0 | 5.9 | 5.8 | 5.8 | 5.7 | 5.7 |
| Capital expenditure and net lending | 4.8 | 4.8 | 4.7 | 4.2 | 4.9 | 4.7 | 4.6 | 4.7 | 4.7 | 4.7 | 4.7 |
| Overall balance | -5.3 | -5.5 | -4.6 | -5.3 | -3.6 | -4.5 | -3.5 | -3.4 | -3.4 | -3.3 | -3.3 |
| Financing | 5.3 | 5.5 | 4.6 | 5.3 | 3.6 | 4.5 | 3.5 | 3.4 | 3.4 | 3.3 | 3.3 |
| Net external financing | 3.3 | 3.3 | 2.5 | 2.2 | 0.7 | 3.7 | 1.5 | 1.1 | 1.2 | 1.4 | 1.1 |
| Net domestic financing | 2.1 | 2.2 | 2.1 | 3.0 | 2.9 | 0.8 | 2.0 | 2.3 | 2.2 | 1.9 | 2.2 |

**Source:** IMF Country report 19/135

# Table 2b. Sri Lanka: Summary of Central Government Operations, 2016–24

(In percent of GDP)

| | 2016 | 2017 | 2018 | | 2019 | | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CR/18/175 | Est. | CR/18/175 | Proj. | | | Proj. | | |
| Memorandum items: | | | | | | | | | | | |
| Central government primary balance | -0.2 | 0.0 | 1.0 | 0.6 | 2.0 | 1.5 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Cyclically adj. primary balance (in percent of potential GDP) | -0.3 | 0.1 | 1.0 | 0.7 | 2.0 | 1.5 | 2.4 | 2.4 | 2.4 | 2.4 | 0.0 |

**Source:** IMF Country report 19/135

## Table 3. Sri Lanka: Central Government Financing Needs, 2019–20

(In billions of rupees)

| | 2019 | | | | | 2020 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Annual | Q1 | Q2 | Q3 | Q4 | Annual |
| | | | Proj. | | | | | Proj. | | |
| **Gross financing needs** | **947** | **608** | **675** | **468** | **2,698** | **539** | **720** | **553** | **597** | **2,409** |
| Debt amortization | 724 | 461 | 458 | 345 | 1,988 | 355 | 610 | 353 | 490 | 1,808 |
| T-bill | 280 | 188 | 144 | 188 | 800 | 257 | 250 | 136 | 87 | 730 |
| T-bond | 81 | 94 | 215 | 56 | 446 | 0 | 134 | 72 | 66 | 271 |
| Sri Lanka Development Bond | 100 | 0 | 0 | 3 | 102 | 48 | 176 | 100 | 105 | 429 |
| International sovereign bond | 164 | 83 | 0 | 0 | 247 | 0 | 0 | 0 | 185 | 185 |
| Other | 99 | 96 | 99 | 98 | 393 | 50 | 50 | 45 | 48 | 193 |
| Fiscal deficit | 223 | 147 | 217 | 123 | 709 | 185 | 110 | 200 | 107 | 602 |
| **Financing** | **947** | **611** | **680** | **459** | **2,698** | **543** | **720** | **549** | **597** | **2,409** |
| Debt disbursement | 947 | 611 | 680 | 459 | 2,698 | 543 | 720 | 549 | 597 | 2,409 |
| Commercialization of public assets | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Balance** | **0** | **3** | **6** | **-9** | **0** | **4** | **0** | **-4** | **0** | **-1** |
| Memorandum item: | | | | | | | | | | |
| Government deposits | 366 | 369 | 375 | 366 | 366 | 370 | 370 | 366 | 366 | 366 |

Sources: IMF staff estimates.

# Key economic concepts

Overall, primary, and cyclically adjusted primary balance

Fiscal stance, fiscal impulse, and fiscal multiplier

Sustainable fiscal balance, Twin deficits

Fiscal multiplier

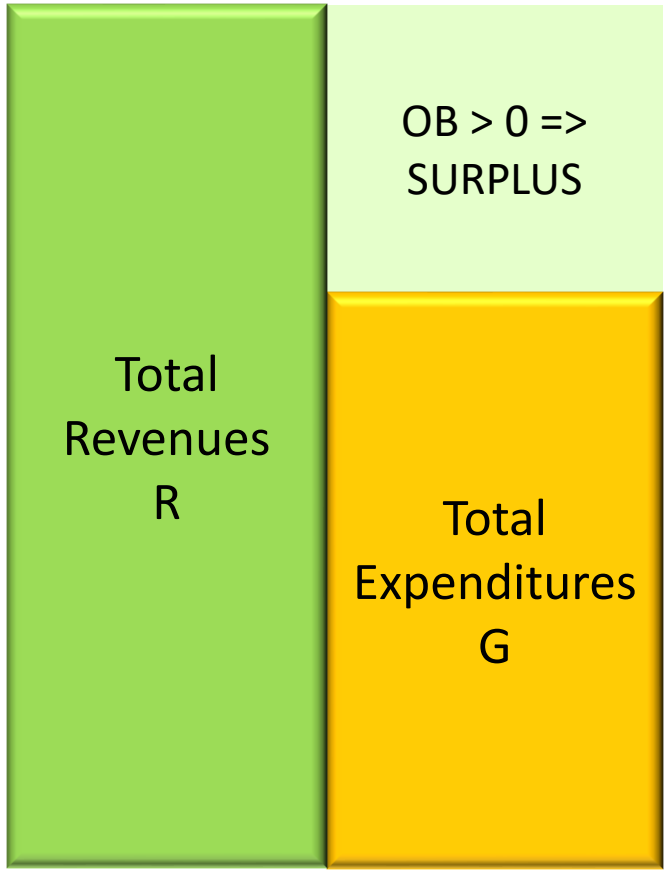
# Headline fiscal measures

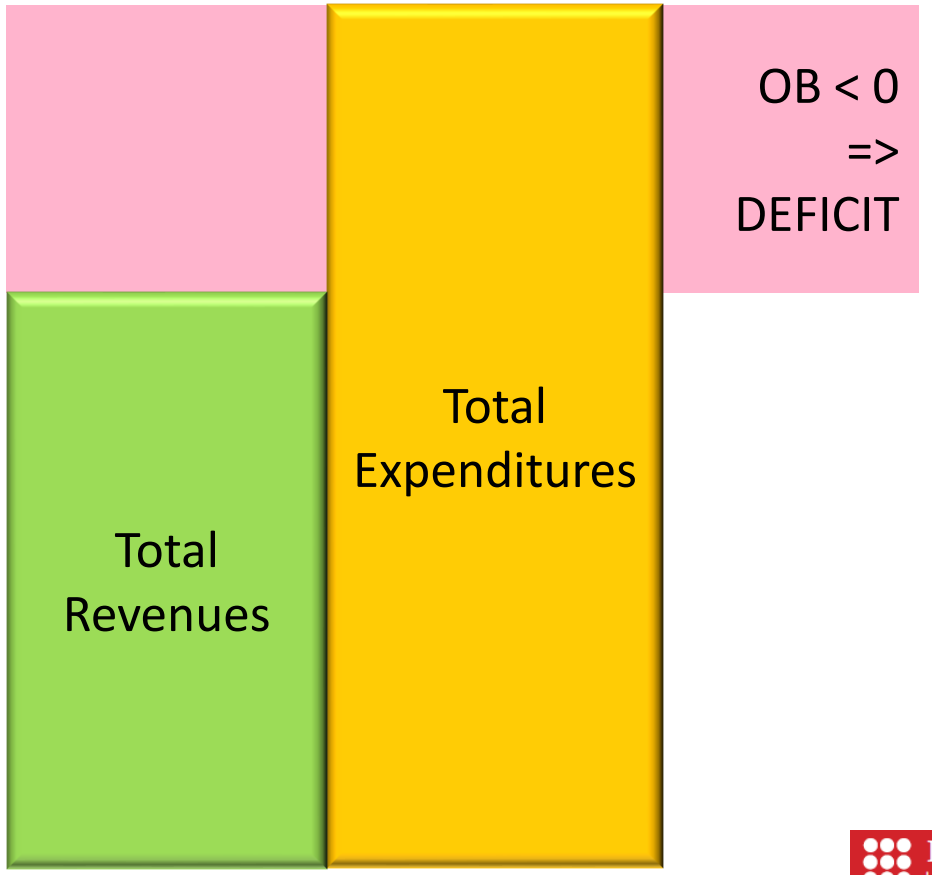
Overall Balance = general government revenues minus expenditures

Primary Balance = overall balance - interest payments

# Overall balance

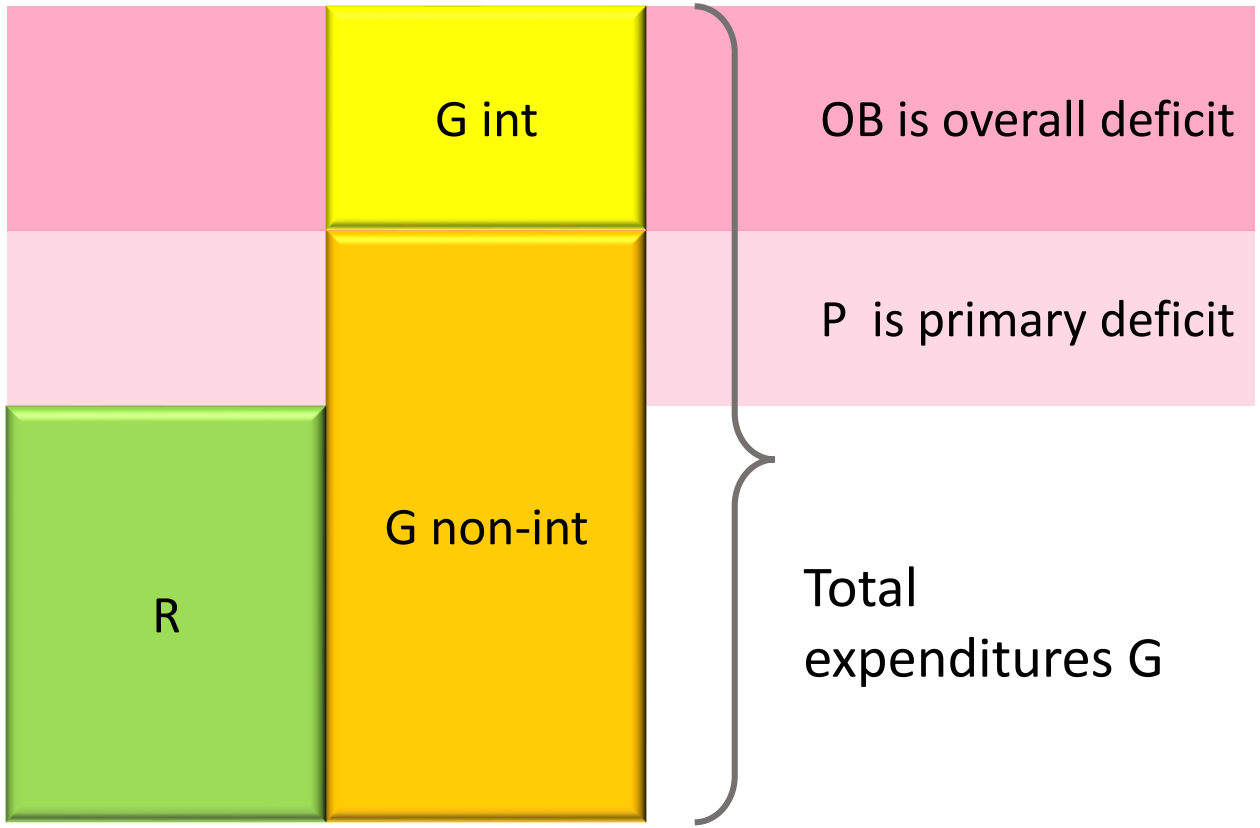
The government's overall balance (OB) is the difference between total revenues (R) and total expenditures (G)



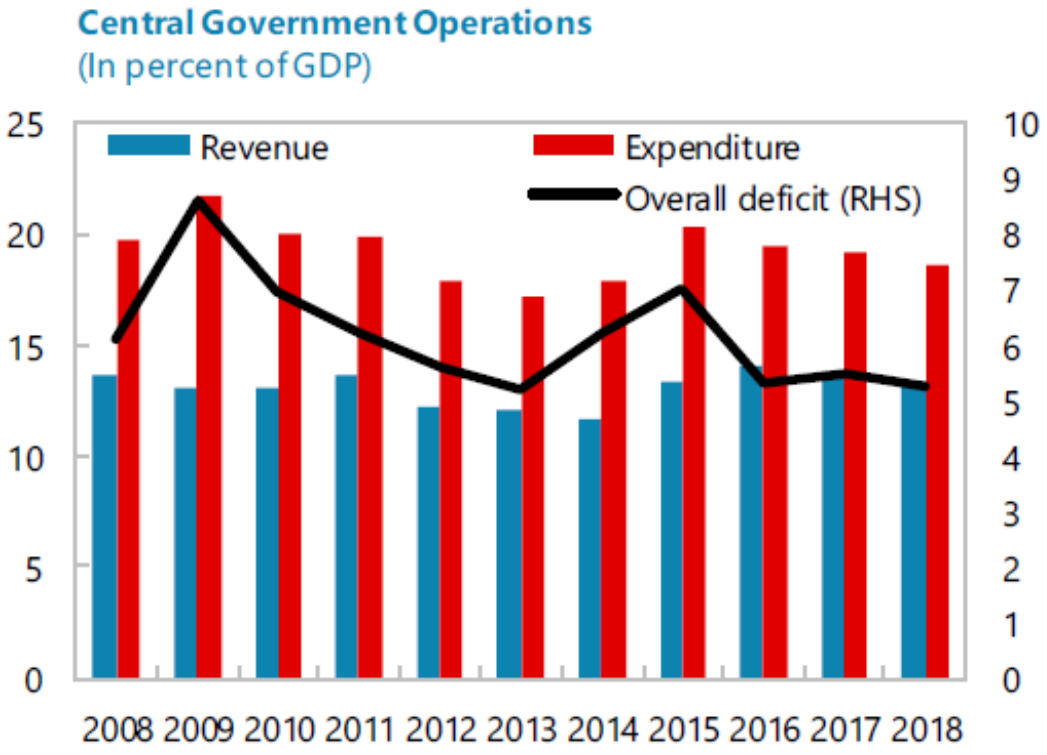



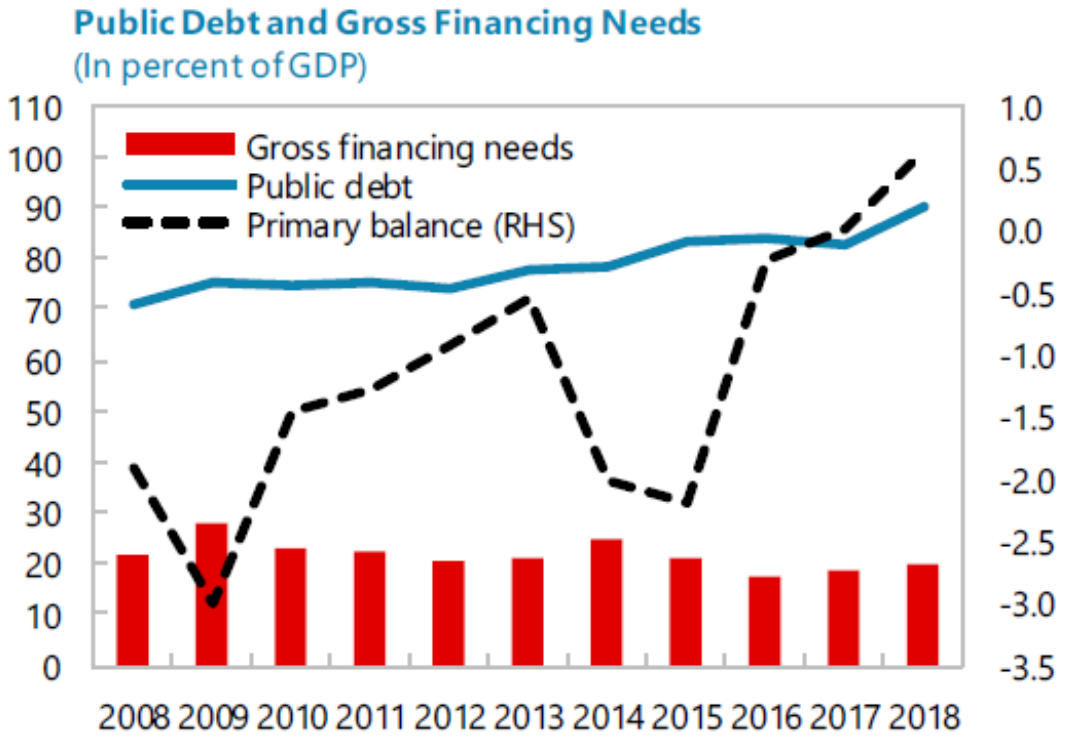
# Primary balance

The primary balance (P) is the difference between total revenues and primary spending (non-int G), which is all expenditures not related to interest payments



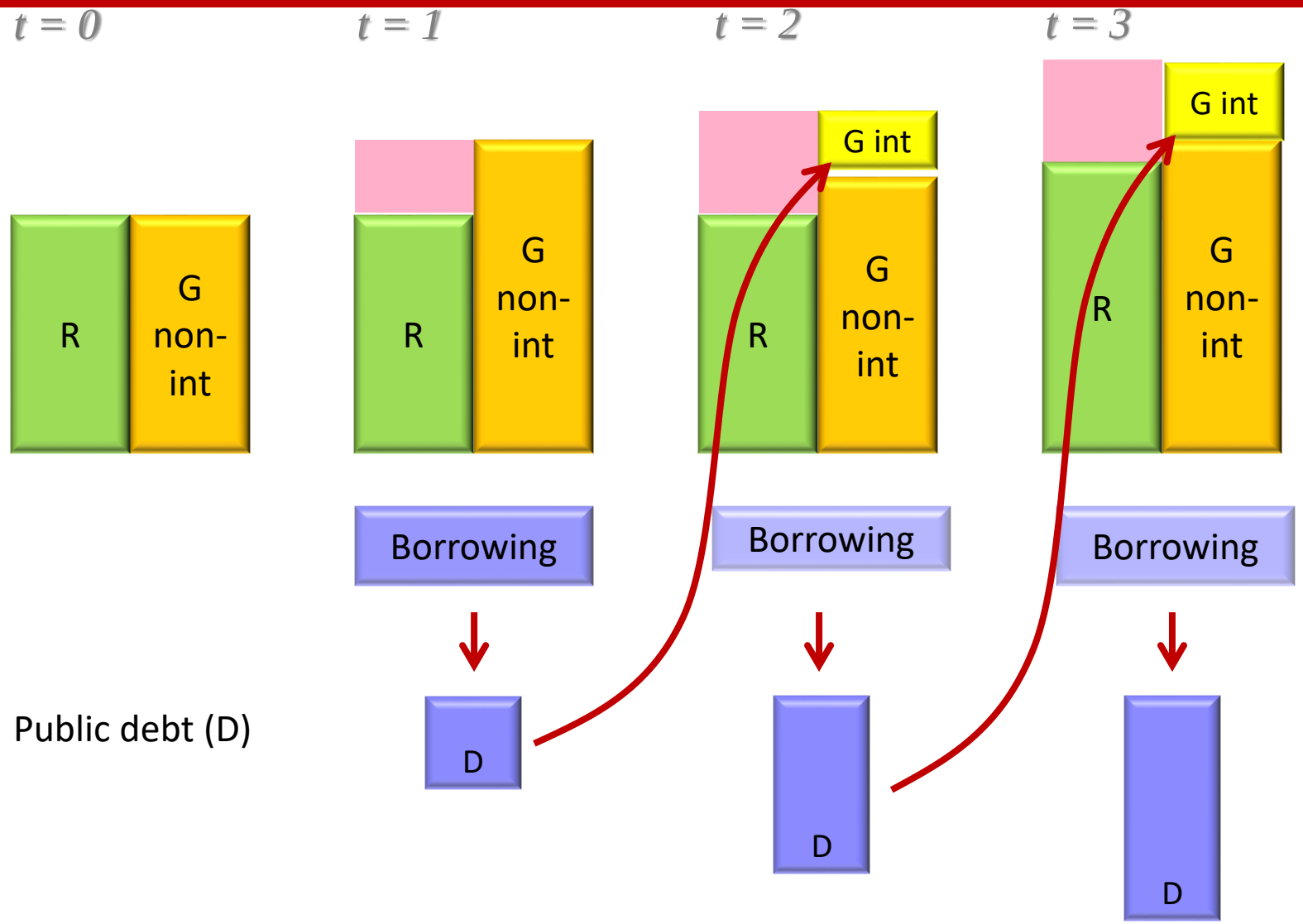
# Overall and primary balance



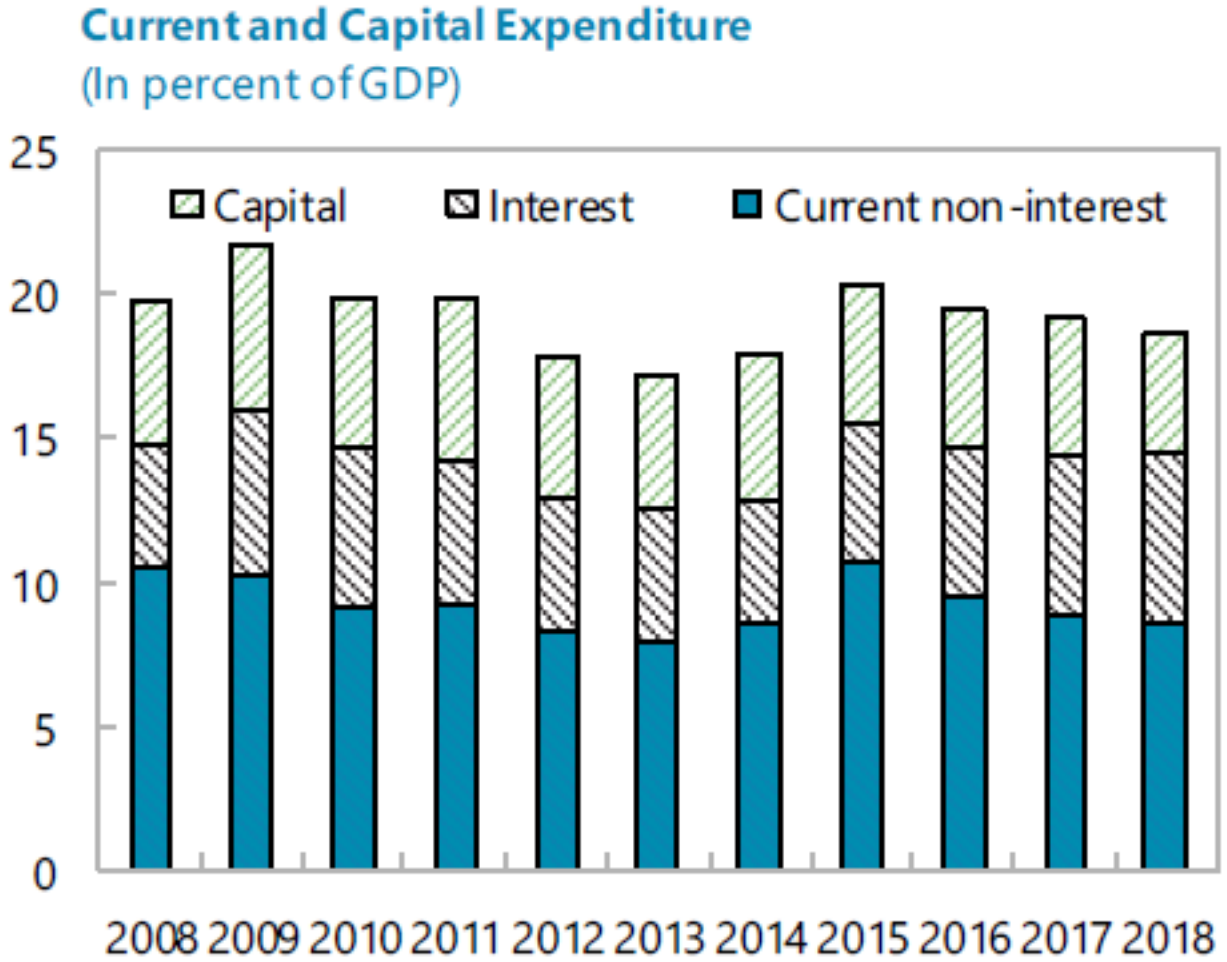




**Source:** Ministry of Finance

# Vicious circle of deficits and debt



# Debt servicing is 6% of GDP




**Source:** Ministry of Finance

# Is fiscal policy and public debt sustainable in the long term?

Debt accumulation:

$$\frac{D_t}{GDP_t} = \frac{D_{t-1}(1+i_t)}{GDP_{t-1}(1+g)(1+\pi)} - \frac{P_t}{GDP_t} + \frac{H_t}{GDP_t}$$

$$d_t = \frac{d_{t-1}(1+r_t)}{(1+g)} - p_t + \eta_t$$

$d$ = debt-to-GDP ratio

$r$= real average interest rate

$g$ = real GDP growth rate

$p$ = primary balance as a share of GDP

$\eta$ = other debt-creating flows as a share of GDP

$i$ = nominal average interest rate

$\pi$ = inflation rate (measured by GDP deflator)

# Is fiscal policy and public debt sustainable in the long term? (cont.)

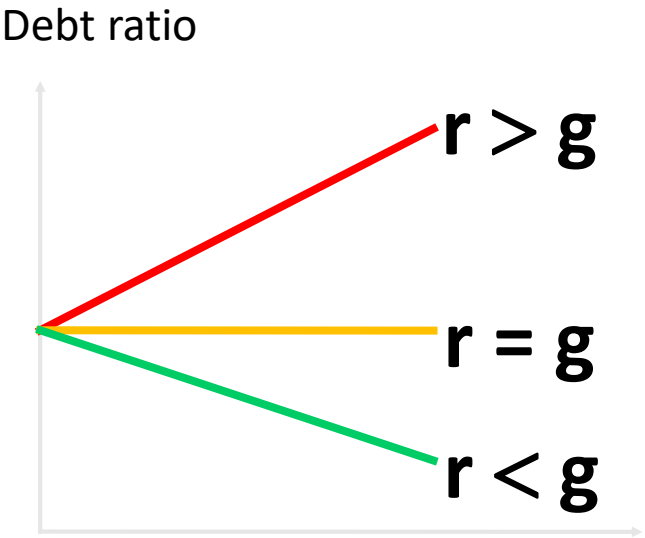
- Assume there is only domestic currency debt and there are no other debt-creating flows:

automatic debt dynamics

$$d_t = \frac{(1+r_t)}{(1+g_t)} d_{t-1} - p_t$$

Assume p = 0:
If r > g, debt is explosive
r < g, debt will shrink

where d = ratio of debt to GDP
g = rate of growth of real GDP
r = real rate of interest



# Debt-stabilizing primary surplus

- How to stabilize or reduce debt?

$$d_t - d_{t-1} = \frac{(r_t - g_t)}{(1+g_t)} d_{t-1} - p_t$$

- There is a unique constant $p^*$ that stabilizes $d$ at a level $d^*$. Set $\Delta d = 0$:

$$p^* = \frac{(r-g)}{(1+g)} d^*$$

$p^*$ is the ***debt-stabilizing primary surplus***

# Debt ratio dynamics

*If r > g:*

If actual $p > p^*$, debt will fall continuously
If actual $p < p^*$, debt explodes

If actual $p = p^*$, debt explodes if d > d* and vice versa

*If r < g:*

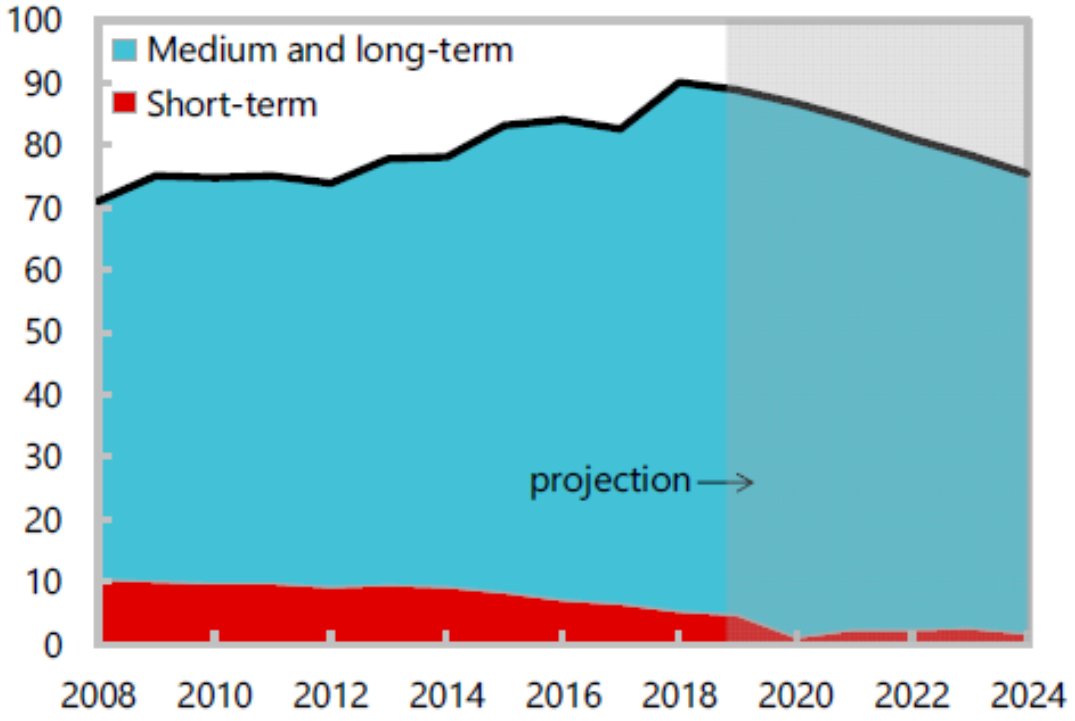
If actual $p > p^*$, debt converges to a lower ratio
If actual $p < p^*$, debt converges to a higher ratio
(depends on the difference between p and p* and r and g)

If actual $p = p^*$, debt converges to d*

# Composition of public debt

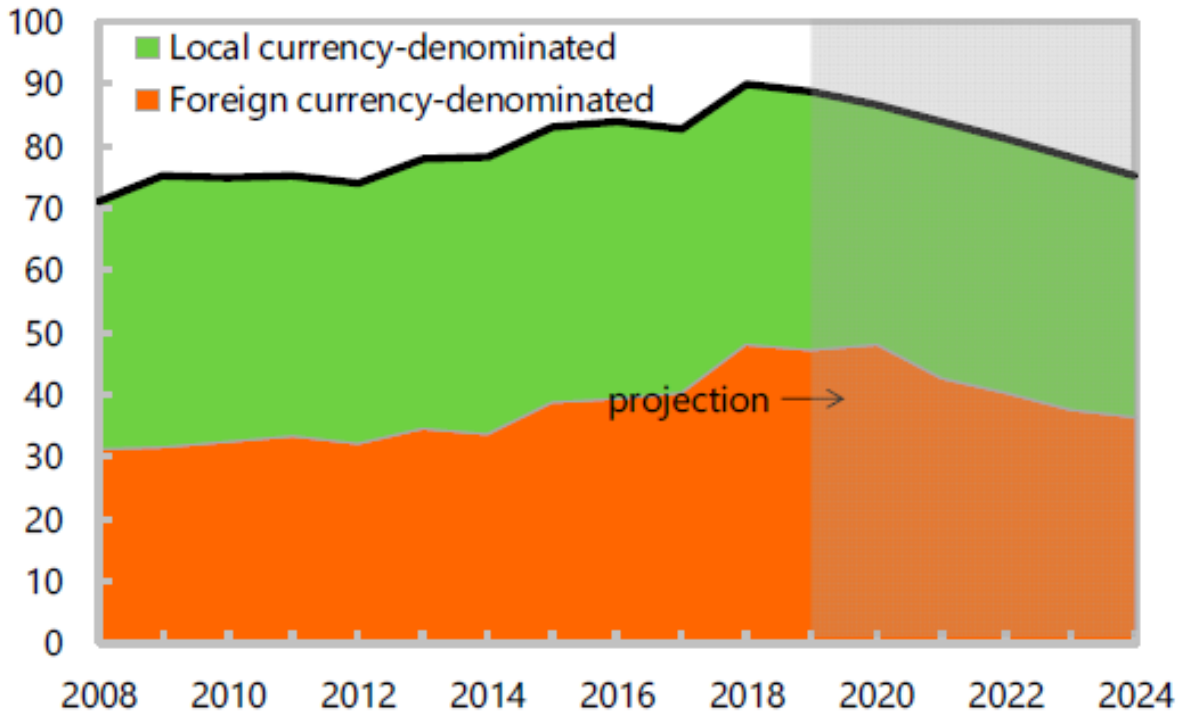
**By Maturity**

(in percent of GDP)




**By Currency**

(in percent of GDP)




**Source:** Ministry of Finance, IMF

# Debt accumulation with debt both in domestic and foreign currency

$$D_t = D_{t-1}^{d}(1+i_t^{d}) + E_{t-1}D_{t-1}^{f}(1+i_t^{f})(1+e_t) - P_t + H_t$$

Domestic Public Debt

External Public Debt

*where:*

$D_t$ = total debt stock at the end of time period *t*

$D^d$ = domestic debt

$D^f$ = foreign-currency debt (expressed in local currency)

$i^d$ = interest rate on domestic debt

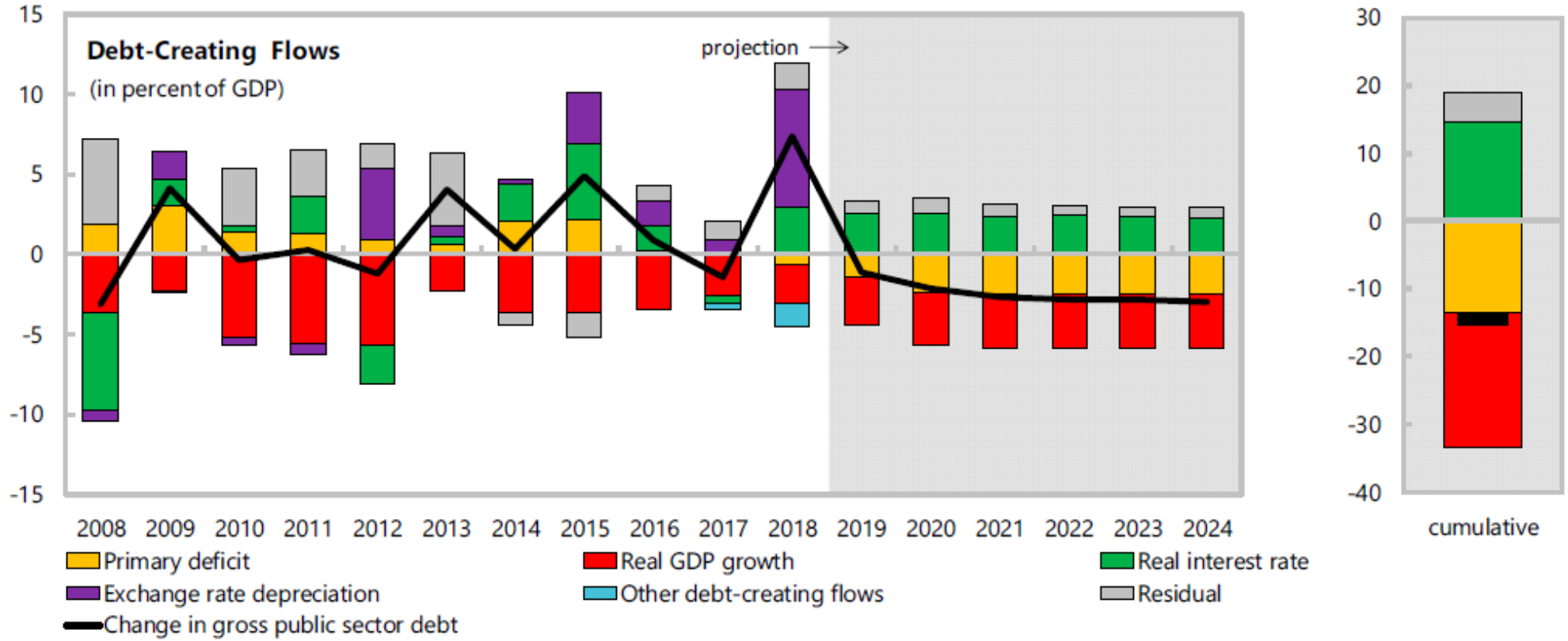
$i^f$ = interest rate on foreign-currency debt

$E, e$ = nominal exchange rate, rate of depreciation

$P$ = primary balance (overall balance excluding interest expense)

$H$ = other debt-creating flows

# Public debt creating flows in Sri Lanka




Source: IMF staff.

1/ Public sector is defined as central government and includes public guarantees, defined as outstanding amount of loans guaranteed by the central government and Fund credit outstanding.

# Debt stabilizing primary balance

- Similarly as before, we get

$$p^* = \frac{[r_t^d d_{t-1}^d + r_t^f d_{t-1}^f] - g_t d_{t-1} + \varepsilon_t (1 + r_t^f) d_{t-1}^f}{(1 + g_t)}$$

# Fiscal sustainability affects external sustainability of the whole economy

$$\mathbf{GDP} = \underbrace{C + I}_{\text{Domestic Demand}} + \underbrace{(X - M)_{g\&s}}_{\text{External Demand}}$$

$$\mathbf{GNDI}\ (\text{Gross National Disposable Income}) = GDP + Y_F + TR_{Fcur}$$

$$= \underbrace{C + I}_{\text{Absorption (A)}} + \underbrace{(X - M)_{g\&s} + Y_F + TR_{Fcur}}_{\text{Current account balance (CA)}}$$

$$\underbrace{GNDI - C}_{\text{Gross National Saving (S)}} - I = CA \quad \text{or} \quad \mathbf{S - I = CA}$$

# Twin deficits (saving-investment balance)

$$\underbrace{\text{GNDI} - \text{C}}_{\text{Gross National Saving (S)}} - \text{I} = \text{CA} \quad \textit{or} \quad \mathbf{S - I = CA}$$

Divide the domestic economy into govt (G) & non-govt (P) :

$$(S_G - I_G) + (S_P - I_P) = CA$$

| | | | | |
|---|---|---|---|---|
| Examples | +3% | -7% | -4% | |
| | -5% | +3% | -2% | Twin deficits |

# Is current fiscal policy expansionary, neutral, or contractionary?

Headline fiscal measures don't characterize actual fiscal stance

- Due to automatic stabilizers, the overall balance may be positive in a boom, but negative in normal times or a recession – with the same policies!
- A fiscal rule based on the overall balance may lead to pro-cyclical fiscal policies

# Cyclically adjusted balance

OVERALL BALANCE

MINUS

AUTOMATIC STABILIZERS (AS)=

CYCLICALLY ADJUSTED BALANCE (CAB)

OVERALL BALANCE –

CAB =

CYCLICAL BALANCE

- The automatic stabilizers are defined on the basis of a measure of cyclical fluctuations, proxied by the output gap
  - Need to adjust both revenues and expenditures (e.g. income and sales tax revenues, unemployment insurance).
- CAB is therefore an estimate of the fiscal balance that would apply under current policies if the output gap were zero

# Fiscal stance

- How much does fiscal policy add (subtract) to (from) domestic demand?

**The fiscal stance is defined as:** $FS_t = -CAPB_t$

$CAPB_t < 0 \Longrightarrow$ Expansionary $(FS_t > 0)$

$CAPB_t = 0 \Longrightarrow$ Neutral $(FS_t = 0)$

$CAPB_t > 0 \Longrightarrow$ Contractionary $(FS_t < 0)$

Also important for fiscal sustainability analysis

# Fiscal impulse

- The fiscal impulse measures the *change* in the fiscal stance:

$$FI = FS_t - FS_{t-1}$$

FI <0 ⟶ Fiscal policy is getting either less expansionary or more contractionary (i.e., fiscal consolidation).

FI >0 ⟶ Fiscal policy is getting either more expansionary or less contractionary

- Key metric for understanding whether fiscal policy is pro-cyclical or counter-cyclical

# Fiscal multiplier

- Effect of increase in government spending ($G_t$) on GDP ($Y_t$):

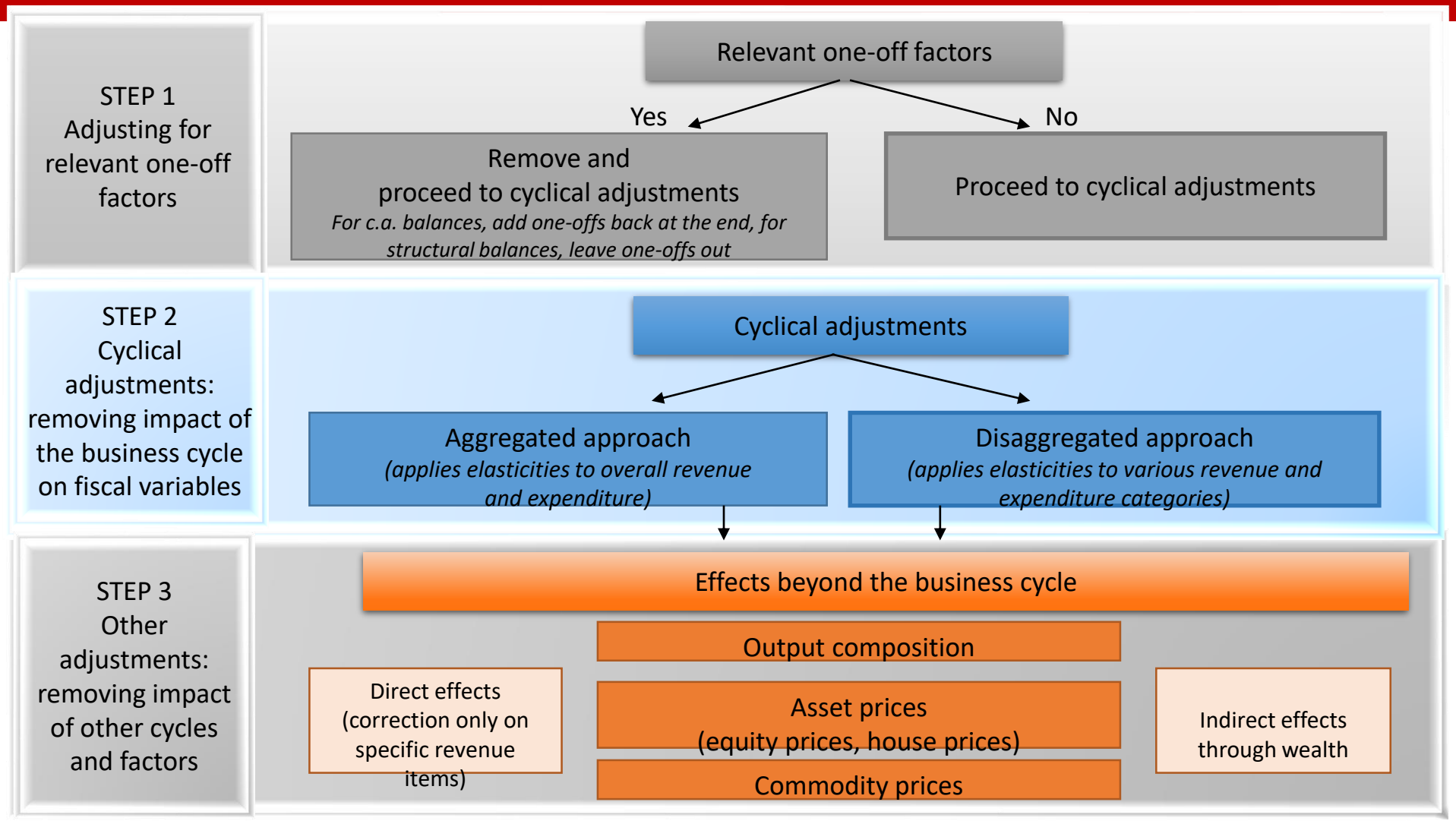
$$\frac{\Delta Y_t}{\Delta G_t} = \frac{1}{[1 - c + m]}$$

- This is the static (one period) fiscal policy multiplier for government spending. It is larger than one as long as $c > m$; $c$ is the marginal propensity to consume, and $m$ is the marginal propensity to import

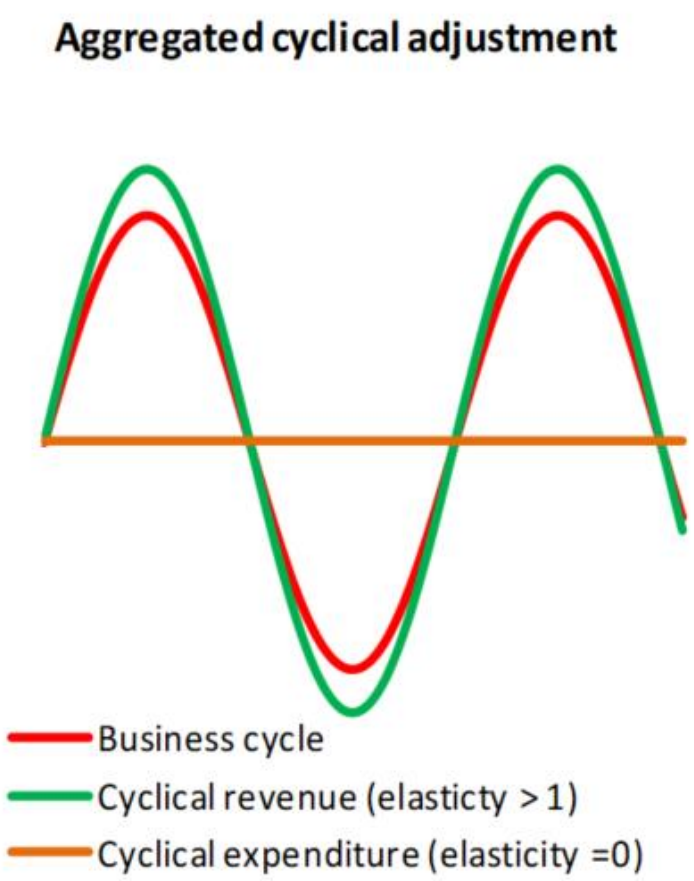
# Key measurement techniques

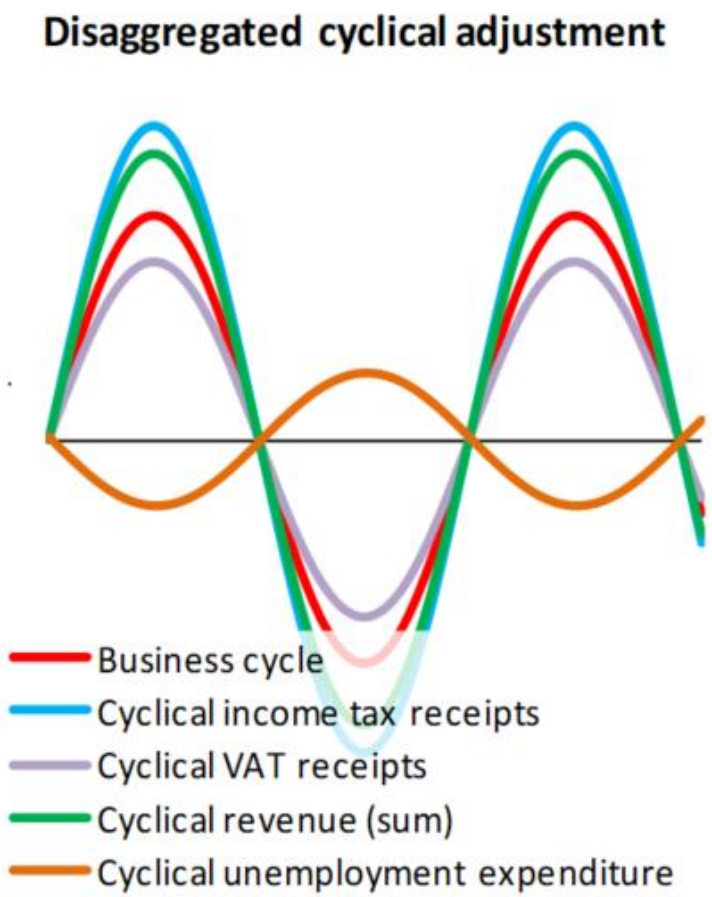
Cyclically adjusted primary fiscal balance

# Steps is adjusting government budget balances

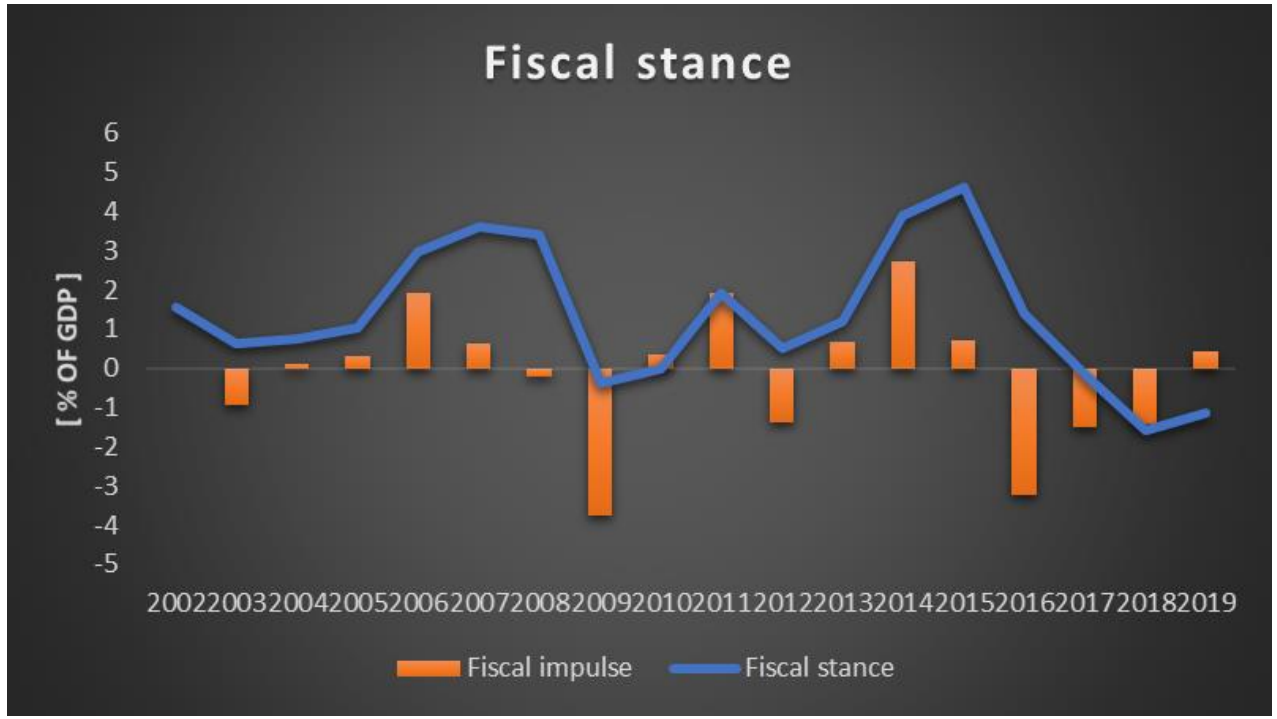


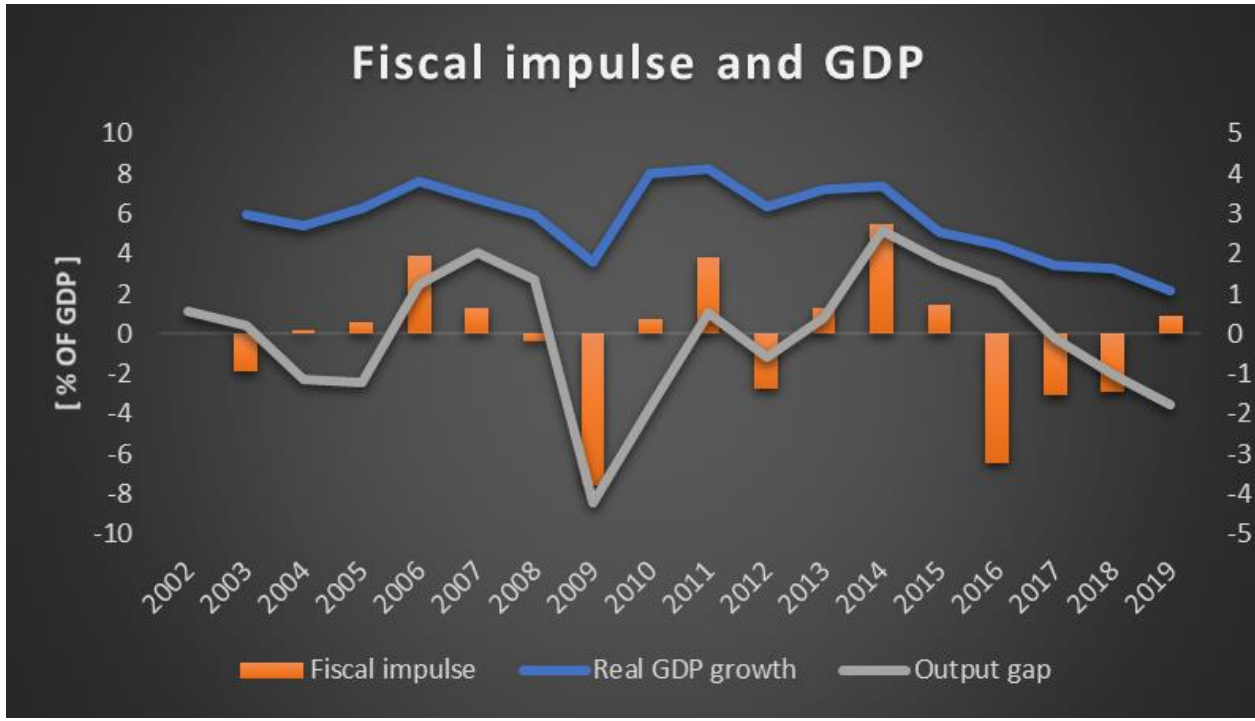
# Aggregate vs disaggregate cyclical adjustments



# Fiscal policy in Sri Lanka




**Source:** IMF data, author's calculations

# Conclusion

# Main takeaways

- The stance of fiscal policy is measured by:
  - cyclically adjusted primary balance
  - fiscal impulse
- The impact of fiscal impulse on the macroeconomy is determined by (impact) fiscal multiplier
- Perceptions of public debt sustainability affect country risk premium