Macro II

Advanced Macroeconomics

Introduction

- Welcome
- Your instructors Anne Epaulard, Juan Pradelli
- Rules (questions in chat, Mentimeter Questions and Quizzes, Case Study)
- Slides available on Capacity4dev - Economics, public finance, domestic revenue mobilisation & budget support Group
- Introduction participants

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Ground Rules – Virtual Class

Our daily sessions are scheduled to last 3.5 hours (30 minutes break included). Be on time!

Please ensure you have your webcam ON during the sessions`; if not possible, switch it on when intervening ☺.

Make sure to have a headphone connected to your computer, the sound will be better.

Please mute yourself when not talking – but do not hesitate to intervene with questions, suggestions and contributions!

Keep next to you a good coffee and a bit of patience, sometimes technology is not perfect. And let colleagues and supervisor know you are on training!

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Getting to Know Each Other!

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Pre-Course Questionnaire (Test-In)

Objectives

- Gain insights into the primary challenges posed by **monetary and fiscal policy**
- Understand these policies influence **overall economic performance**
- Identify determinants crucial for **conducting debt sustainability analysis**, encompassing policy measures and economic performance.
- Analyze the **macroeconomic ramifications** on Low-Income Countries (LICs) arising from recent global occurrences, such as the Ukraine conflict.
- Discuss and decipher the foundational concepts featured in **IMF's monetary, fiscal, and financial tables**.
- Apply acquired economic concepts to assess and comprehend a country's **economic and policy performance** effectively.

Outline

- Recapitulation from Macro I
- Fiscal Policy and Stabilization
- Monetary Policy and Analysis
- Public Debt and Debt Sustainability Analysis (DSA)
- Selected Issues

Recapitulation from Macro I

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Name one macroeconomic policy

Name two economic sectors

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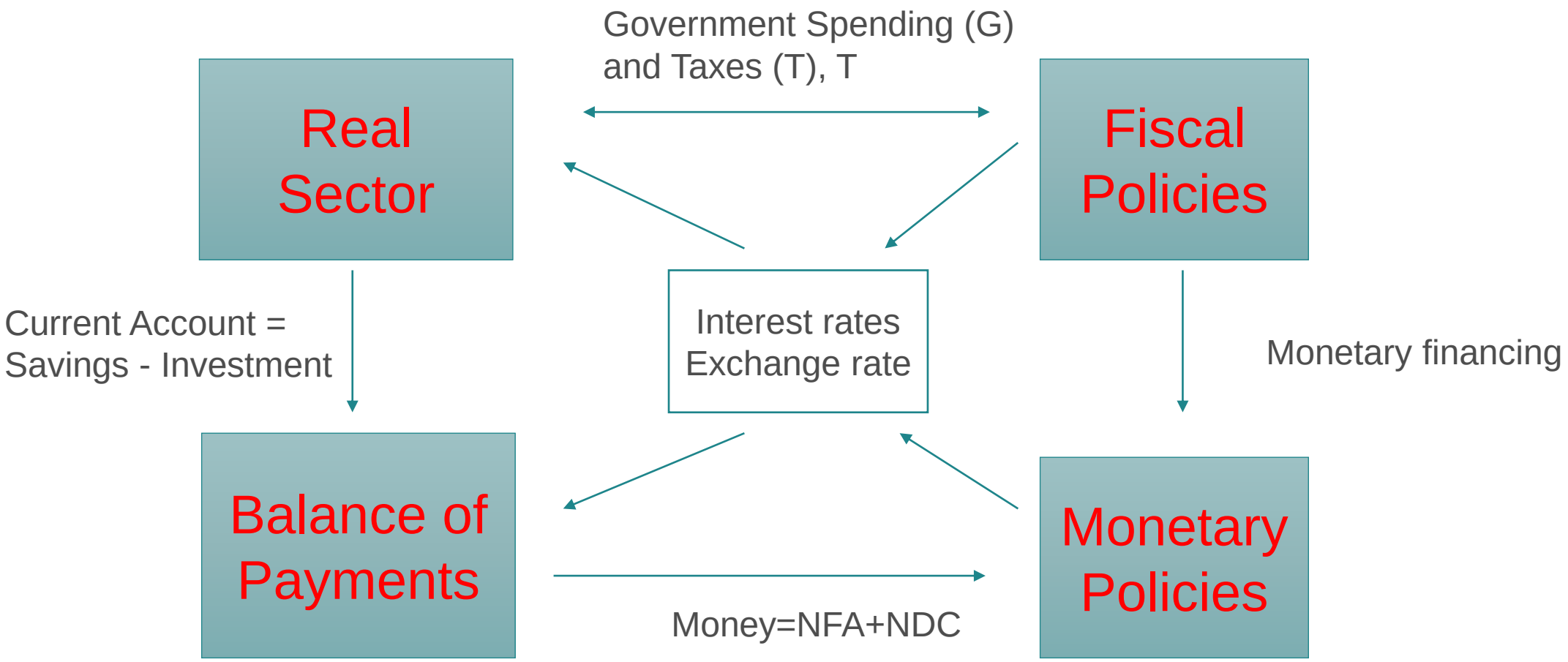
National Accounting Identity: Y = C + I + (X – M)

- What a country **produces (Y)** is the sum of expenditures on consumption, investment, and net exports (exports minus imports).
- Consumption (C) includes private (Cp) and government (Cg) expenditures.
- Investment (I) includes private (Ip) and government (Ig) expenditures
- **Governments** influence directly or indirectly the way **resources are used** in the economy.
- Government expenditure (G = Cg + Ig): determined **directly by policy makers** through budget management, influencing the economy
- **Private consumption** (Cp): increases with disposable income.
- **Private investment** (Ip): decreases with higher interest rates due to increased costs for firms, affecting project profitability
- Interest rates: influenced **indirectly by policy makers through monetary policy.**
- Imports: rise with output (income effect) and decrease with higher relative price of imports
- Net exports (NX): decline # as the REER appreciates

Main Macroeconomic Sectors



Macroeconomic Policies

Fiscal Policy

Use of government revenues and expenditure to influence the economy

Monetary and Exchange Rate Policies

Central bank influences money, credit, interest and exchange rates

Structural Policies

Regulations and institutions that affect the functioning of the economy

Macroeconomic Stability—Internal Balance

- **Internal balance**: achieved when output is at full employment and inflation is low and stable
- **Internal stabilization**: objective is to align demand with supply and prevent economic overheating and mitigate recessions
- **Key issues**: Balancing demand, fiscal sustainability (debt), inflation, credit growth, financial stability, fiscal and monetary policy stance

Macroeconomic Stability—External Balance

- **External balance**: Achieved when a country's current account balance can be financed in an 'orderly' manner, without causing disruptions
- **External stability:** Focus on manageable current account deficits and avoiding currency crisis
- Key issues:Managing current account deficits, Foreign Direct Investment (FDI) inflows, foreign exchange reserves, and exchange rates

When Do Crisis Occur?

Domestic factors:

- Inappropriate **fiscal and monetary policies,** leading to large current account and fiscal deficits and high public debt levels,
- exchange rate fixed an inappropriate level resulting in loss of official foreign exchange reserves,
- weak financial system with boom/bust cycles,
- political instability and weak institutions …..

External factors:

- shocks,
- natural disasters,
- commodity prices swings (especially in LICs),
- change in market sentiment leading to capital flow volatility ……

QUESTIONS?

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Quiz 1

Let’s go to Menti!

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Fiscal Policy and Stabilization

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Name one spending program with macroeconomic effects

Name one example of revenue measures with macroeconomic effects

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Fiscal Policy and Aggregate Demand

- $Y = C + I + (X-M)$
- Where $C = Cp + Cg$ and $I = Ip + Ig$
- Fiscal policy affects Cg and Ig directly, and the other components of the aggregate demand indirectly.

What is Fiscal Policy?

- Fiscal policy is the use of **government spending and taxation** to influence the economy
- In GDP = C + I + G + NX government controls **directly** G through changes in taxes, transfers and spending
- Fiscal policy influences directly aggregate demand through government spending (G) and indirectly because C depends on income after tax
- If increases spending it is called ‘expansionary’ or ‘loose’, if it reduces spending it is called ‘contractionary’ or ‘tight’
- Through demand, fiscal policy affects output, employment, inflation and BoP

Fiscal Policy
Uses and Objectives

- Before Great Depression assumption was that governments needed to balance their budgets from year to year
- Keynes (1936)
  - If private sector fails to consume (C) or invest (I), the government should fill in the gap
  - With unemployed resources, an increase in G would raise Y by an amount greater than the original increase in G
  - Fiscal 'multipliers' are positive but small
- Fiscal policy can be used to several ends:
  - Achieve **internal balance** by (i) adjusting aggregate demand to available supply and (ii) achieving potential output with low inflation
  - Promote **external balance** by (i) ensure sustainable current account balance and (ii) reduce risk of external crisis
  - Promote **economic growth/development** (e.g. education, health care)

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Fiscal Policy
Short Run and Long Run

Short Run

- In the short run, fiscal policy is related to the level and composition of aggregate demand as a stabilization tool
- Fiscal contraction: can slow down inflation, reduce current account deficit
- Fiscal expansion: can reduce unemployment, increase aggregate demand, and help restore output to full capacity
- Automatic stabilizers vs discretionary measures

Long Run

- In the long-run, fiscal policy may foster sustainable growth with actions on supply side such as public infrastructure, health, education
- Structural policies are boost long-term growth, although do not involve budget resources directly
- Emerging issues for long-term fiscal policy
    - Climate change; adaptation and mitigation
    - Aging populations; age-related spending

Fiscal Stabilization

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Fiscal Stabilization

- To **stabilize** in the near term, governments can affect economic activity and jobs by influencing domestic demand for goods and services
- Fiscal policy can reduce growth volatility
- Because it dampens volatility, greater fiscal stabilization is associated with higher medium-term growth
- Can also promote economic development and help meet social needs that could trump cyclical considerations, this would be the case in EMDEs
- Governments can focus on macroeconomic stabilization:
  - Stimulating the economy
  - Combating rising inflation
  - Reduce external vulnerabilities

Fiscal Stabilization
How to Measure it?

- The change in the overall budget balance (difference between revenue collection and spending) provides good approximation of short-term impact of fiscal measures on demand
- A decline in the budget balance reflects a positive fiscal contribution to aggregate demand
- To be stabilizing the fiscal balance needs to increase when output rises and to decrease when it falls
- That way fiscal policy generates additional demand when output is weak and subtracts from demand when economy is booming
- A measure of the stabilizing (or destabilizing) role of fiscal policy is the average change in the overall fiscal balance (% of GDP) associated with a 1 percentage point variation in output

Fiscal Stabilization
Automatic Stabilizers

- Fiscal stabilization involves a response to output fluctuations that can be automatic or not:
- Automatic stabilizers: tax revenues and transfer levels that automatically vary with output to stimulate aggregate demand during downturns and moderates it during upswings without need for policy intervention
- **Stabilization *automatic*** because vary with changes in economic activity: as output falls, tax revenues also fall and unemployment benefits rise

Fiscal Stabilization
Automatic Stabilizers

- Shield disposable income from macro shocks **without explicit policy action**
- Protect against shocks and dampen business cycles
  - As output declines or slows collected taxes decline
  - Unemployment benefits or other social spending rise automatically
  - Linked to the size of the government, larger in AEs, thus less need for stimulus
  - Not subject to political decisions and implementation lags and impacts automatically withdrawn as conditions improve
- Cyclical changes make fiscal policy automatically expansionary during downturns and contractionary during upturns
- **Effective tool** for fiscal stabilization (timeliness and predictability)

Fiscal Stabilization
Discretionary (non-automatic) Measures

- Because automatic stabilizers are limited in scope, countercyclical policy also involves discretionary measures (e.g., boosting public investment, allowing for tax deferrals, establishing ad-hoc transfer programs)
- Discretionary measures often introduced in response to unforeseen economic shocks that can undermine economic activity
- Discretionary fiscal policy involves active changes in polices that affect government expenditures, taxes and transfers
- Fiscal stimulus: new discretionary spending or tax cuts
- Fiscal stimulus more difficult to design and implement effectively

Fiscal Stabilization
Discretionary (non-automatic) Measures

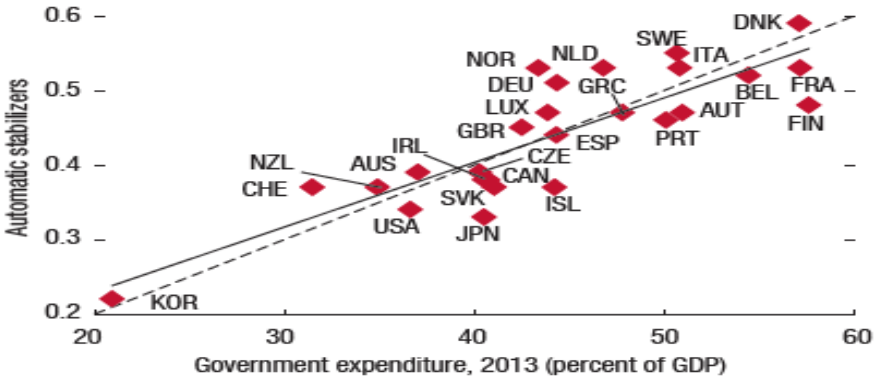
- Discretionary fiscal policy need to be timely, targeted and temporary, rarely the case
- Discretionary fiscal measures typically slower to arrive than monetary policy responses (change in interest rate) and the effects of automatic stabilizers
- Difficult to reverse when conditions improve, becoming permanent implying that public debt will creep upward
- Need to be timely, targeted and temporary

Fiscal Stabilization
Advanced Economies vs Developing Economies

- **Advanced economies** rely on a wide range of instruments (spending, tax, and liquidity assistance) to support people and firms, given their strong tax-benefit system. Automatic stabilizers are often sizable; they account for more than 50% of overall fiscal stabilization in about 60% of advanced economies.
- **Emerging market and developing economies** exhibit institutional limitations and narrow tax bases, so their stabilization instruments are fewer and less effective. Worse, they are more exposed to shocks (e.g., pandemic, demand for exports, terms of trade, capital flight). Automatic stabilizers are often small; they account for only 30% of total fiscal stabilization in the sample of countries.

Figure 2.3. Advanced Economies: Government Size and Automatic Stabilizers

The extent of automatic stabilizers is strongly correlated with the relative size of public expenditures.

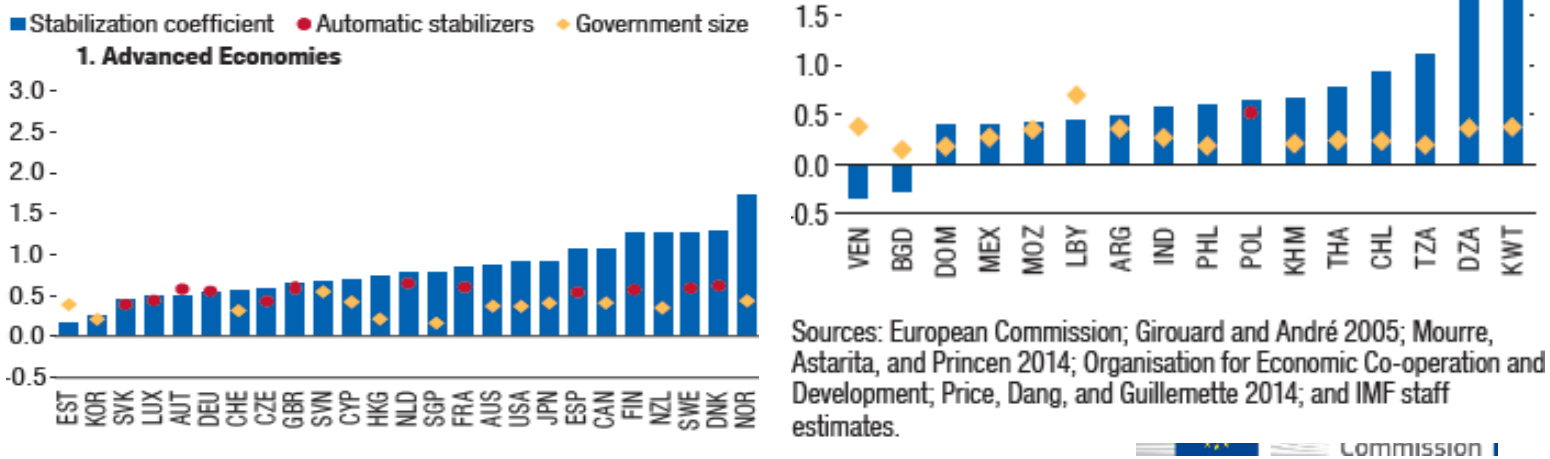


Sources: European Commission; Girouard and André 2005; Mourre, Astarita, and Princen 2014; Organisation for Economic Co-operation and Development; and IMF staff estimates.

Figure 2.4. Selected Countries: Fiscal Stabilization and Automatic Stabilizers

(Percent of GDP)

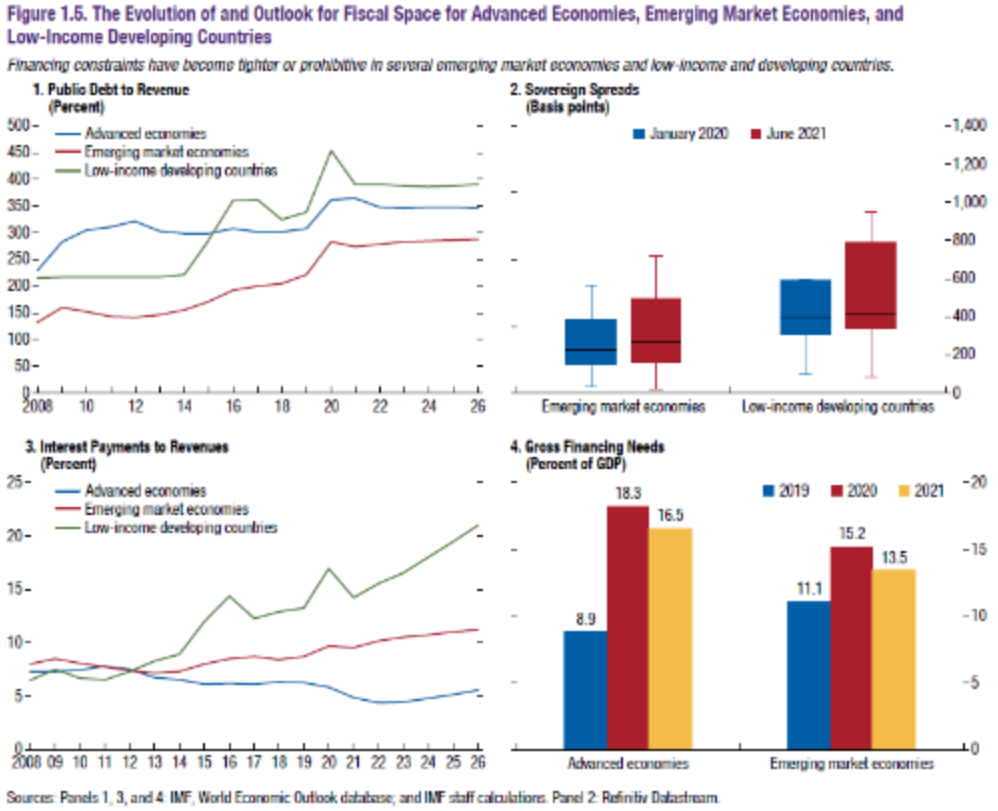
Automatic stabilizers contribute more to overall fiscal stabilization in advanced economies than in emerging market and developing economies.



Sources: European Commission; Girouard and André 2005; Mourre, Astarita, and Princen 2014; Organisation for Economic Co-operation and Development; Price, Dang, and Guillemette 2014; and IMF staff estimates.

Fiscal Stabilization
Fiscal and Borrowing Space

- Active stabilization policies or the spontaneous operation of automatic stabilizers will increase the overall budget deficit
- Response depends on the government's **fiscal space** for new spending initiatives or tax cuts
- Emerging deficit might need to be financed through public borrowing—i.e., borrowing space is required as well.
- Borrowing to finance increased government expenditures raise interest rates, thereby crowding out investment and reducing multiplier
- Unsustainable fiscal policy can trigger crisis if public loses confidence in government's macroeconomic policy (e.g., twin crises; capital outflows and exchange rate instability; bank runs and financial instability).
- Some governments are not able to respond with stimulus, because their potential creditors believe additional spending and borrowing would put too much pressure on inflation, foreign exchange reserves, or the exchange rate—or take too many resources from the local private sector (also known as crowding out), delaying recovery



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Fiscal Stabilization
Exit Strategy and Policy Coordination

Exit Strategy

- Fiscal stimulus packages need to include exit strategy: ensure that solvency is not at risk and should
- Not have permanent effect on budget deficits
- Provide commitment to fiscal correction, once economic conditions improve
- Include structural reforms to enhance growth
- Commit to strategies for health care and pension reforms in countries facing demographic pressures

Policy Coordination

- The impact of fiscal policy on output is greater when monetary policy works in the same direction as the fiscal stance
- A smaller fiscal deficit will cool aggregate demand and inflation so the central bank does not need to raise rates as much
- Conversely, a fiscal stimulus in a high inflation environment (such as now) would force central banks to increase rates even higher to curb inflation
- Fiscal policy effective in managing shocks and supporting economic activity when monetary policy is constrained

QUESTIONS?

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Quiz 2

Let’s go to Menti!

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Monetary Policy and Analysis

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Name one Central Bank serving one country

Name one Central Bank serving many countries

Name one country who does not have Central Bank

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Which of the following are common functions of the central bank?

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Introduction

- Central banks aim to stabilize both output (reduce output gap) and prices of goods and services (low and stable inflation)
- The central bank sets the nominal rate of interest (policy rate); an increase in the output gap due to higher aggregate demand leads to higher inflation, prompting the central bank to raise interest rates
- Real interest rate is crucial for economic decisions; it's calculated by subtracting inflation from the nominal interest rate
- Central banks respond to rising inflation by increasing the nominal interest rate to also raise the real interest rate

Conducting Monetary Policy

- Central banks indirectly influence economic activity by modifying the money supply through adjustments to
  - Interest rates
  - Bank reserve requirements
  - Open-market operations (sale/purchase of government securities)
  - Foreign exchange.
- The Central Bank sets the interest paid on reserves held by commercial banks
- The central bank money is the ultimate settlement means for banks and affects other interest rates in the economy

Transmission Mechanisms

- **Various transmission channels impact the economy through monetary policy changes**
- Interest rate channel: Central Bank tightening raises borrowing costs, causing reduced consumer spending, firm and household investment and economic activity
- Balance sheet channel: Higher interest rates reduce agents' net worth, making loan qualification tougher, curbing spending and price pressures
- Exchange rate channel: Interest rate hikes lead to currency appreciation, reducing exports and increasing imports, thus shrinking GDP
- Inflation expectations: Anticipated interest rate hikes influence wage and price contracts, impacting inflation

Monetary Policy: Stabilizing Output and Prices

- Central banks use interest rates to manage money supply, aiming for stable inflation and small output gap
- Interest rate changes impact borrowing and lending rates, influencing spending and investment
- **In the short term**, money supply shifts can impact actual production due to price and wage lags
- Monetary policy is crucial for controlling inflation and promoting growth in the short run
- In **the long term**, changes in the money supply primarily impact prices, however overall economic activity (and long terme growth) depends on factors like technology, labor, and productivity largely

Countercyclical Policies

- Monetary policy (lowering interest rate) can be a countercyclical tool during recessions
- In a recession, decreased consumer spending, reduced business production, and rising unemployment lead to declining aggregate demand (Y=C+I+(X-M))
- Expanding output (and employment) increases the money supply, potentially leading to inflation
- As the economy approaches full capacity, increased demand raises input costs, including wages

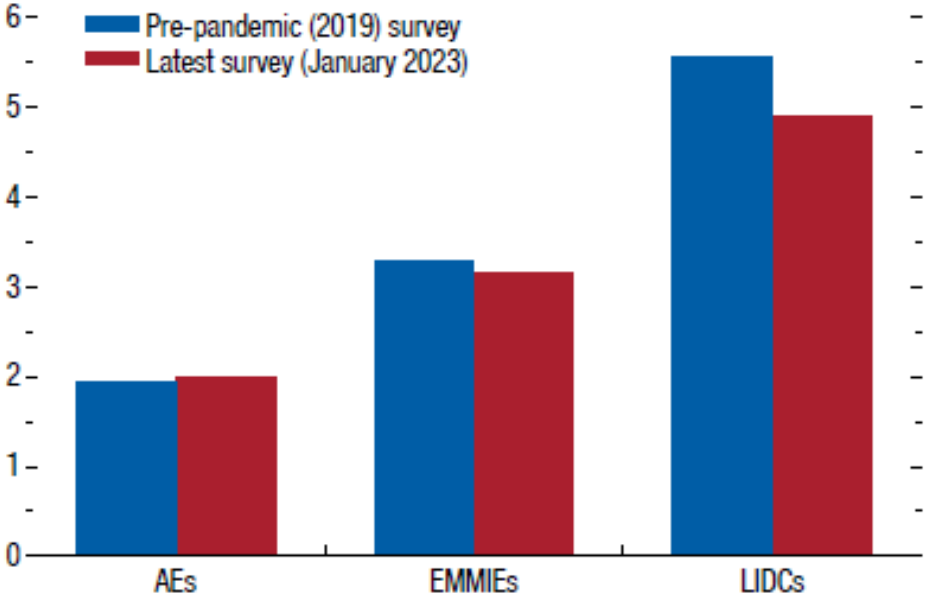
Monetary and Fiscal Policies

- Fiscal policy is another tool for influencing aggregate demand and inflation, but it involves a legislative process and takes time to implement
- Fiscal policy's impact depends on the response of monetary authorities, making monetary policy the preferred first line of defense during economic downturns
- Effective interaction of monetary and fiscal policies enhances their combined impact on economic stability and growth

Conducting Monetary Policy—Inflation Targeting (IT)

- Many central banks **adopt inflation targeting** due to complex money-price correlations
- Inflation Targeting relies on inflation expectations as a nominal anchor
- Central banks target an interest rate level aligned with a pre-announced inflation target to manage inflation
- For instance, the ECB aims for a 2% inflation rate annually over the medium-term

Figure 1.7. Anchored Inflation Expectations
(Percent, average five-year-ahead CPI inflation expectations)



Sources: Consensus Economics; and IMF staff calculations.

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Monetary Analysis

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Monetary Policy Analysis—Money Creation

- The central bank creates the monetary base (base money) consisting of its liabilities towards the rest of the system
- It creates monetary base through purchases of financial assets, controlling the money supply to the economy
- The central bank creates monetary base when purchasing assets such as securities, financing the government's deficit, purchasing foreign exchange, and lending to the domestic banking sector

Central Bank Balance Sheet

Assets

- **Net Foreign Assets (NFA)**
  - Reserves, Gold, SDRs
- **Net Domestic Credit (NDC)**
  - Net Credit to Government (NCG)
  - Others
- Other items net (OIN) (capital, operating profits or losses, valuation effects..)

Liabilities

- **Monetary base (MB)**
  - Currency issued: held by the public (currency in circulation) or held in ODCs
- Liabilities to ODCs (aka cash in vault)
- Liabilities to rest of economy

Monetary Policy Analysis

- To delve deeper into the mechanics of monetary policy, let's examine how it operates at the level of individual banks and the central bank
- Each licensed bank maintains an account at the central bank, where it holds both required reserves and, if available, excess reserves.
- The composition of the monetary base (MB) is significant, encompassing Net Foreign Assets (NFA), Net Domestic Credit (NDC), and Other items net (OIN).

Monetary Policy Analysis—ODCs Functions

- ODCs Role: Essential for transmitting monetary policy
- Functions: Collect deposits, transform short-term to long-term loans, and provide funds for investments
- Impact: ODCs' decisions on deposits and loans influence liquidity and money supply
- Significance: Public deposits in ODCs contribute to broad money, vital for effective policy transmission

Monetary Aggregates

- Central banks monitor monetary aggregates like M1 (narrow money), M2 (broad money) and M3 to manage monetary policy
- M1 includes currency in circulation and demand deposits
- M2 includes M1 + time and savings deposits, money market funds, and foreign currency deposits
- M3 includes M2 + institutional money market funds, short-term repurchase agreements (repo), and larger liquid assets.

The Money Multiplier and Money Creation

- Commercial banks act as intermediaries, collecting funds from depositors and lending them to customers, thereby issuing money
- Banks create new deposits when issuing loans, increasing money supply.
- Banks hold reserves at the central bank, and the linkage between deposits and reserves is the basis of the money multiplier
- Central banks control money supply by regulating bank reserves

Monetary Framework—Monetary Aggregates Targeting

- Central banks use monetary aggregates to manage inflation
- Inflation is managed by limiting growth in Net Domestic Assets (NDA) or Net Foreign Assets (NFA)
- Controlling the growth of the monetary base (MB) also regulates private sector credit growth
- Challenging in complex financial systems due to evolving correlations
- IMF uses monetary aggregates as performance criteria in its programs with countries, guiding policy decisions.

Conventional vs. Unconventional Monetary Policy

- **Conventional monetary policy** adjusts the policy interest rate to influence aggregate demand, employment, and inflation
- **Unconventional monetary policy** involves tools beyond interest rate changes:
  - **Asset purchase (QE, 'quantitative easing'):** when CBs have cut policy rates sharply exhausting potential for cuts (2008). Purchase large quantities of financial instruments from the market. This increases the size of the CB's balance sheet and injects cash into the economy
  - **Forward guidance**: communication on stance of monetary policy
  - **Adjustments to market operations**: range of collateral and eligible counterparties
  - **Negative interest rates**

Monetary Policy Analysis—Sources of BM Creation--Examples

Open Market Operations: purchase of securities issued by the government or the Central Bank itself
Financing of the government's deficit (NCG): extending loans and/or purchasing securities
Purchases of foreign exchange (NFA, GIR)

Open Market purchase of $100 of government bonds

Assets		Liabilities	
NFA	…	**Monetary Base (MB)**	**100**
NDA	**100**	Currency issued	…
NCG	100	Held in banks	…
Claims on ODCs	…	Held outside banks	…
OIN	…	Deposits of ODCs	100

Purchase of 100 of fx from banks

Assets		Liabilities	
NFA	100	**Monetary Base (MB)**	**100**
NDA	**…**	Currency issued	…
NCG	…	Held in banks	…
Claims on ODCs	…	Held outside banks	…
OIN	…	Deposits of ODCs	100

ODCs' Balance Sheet

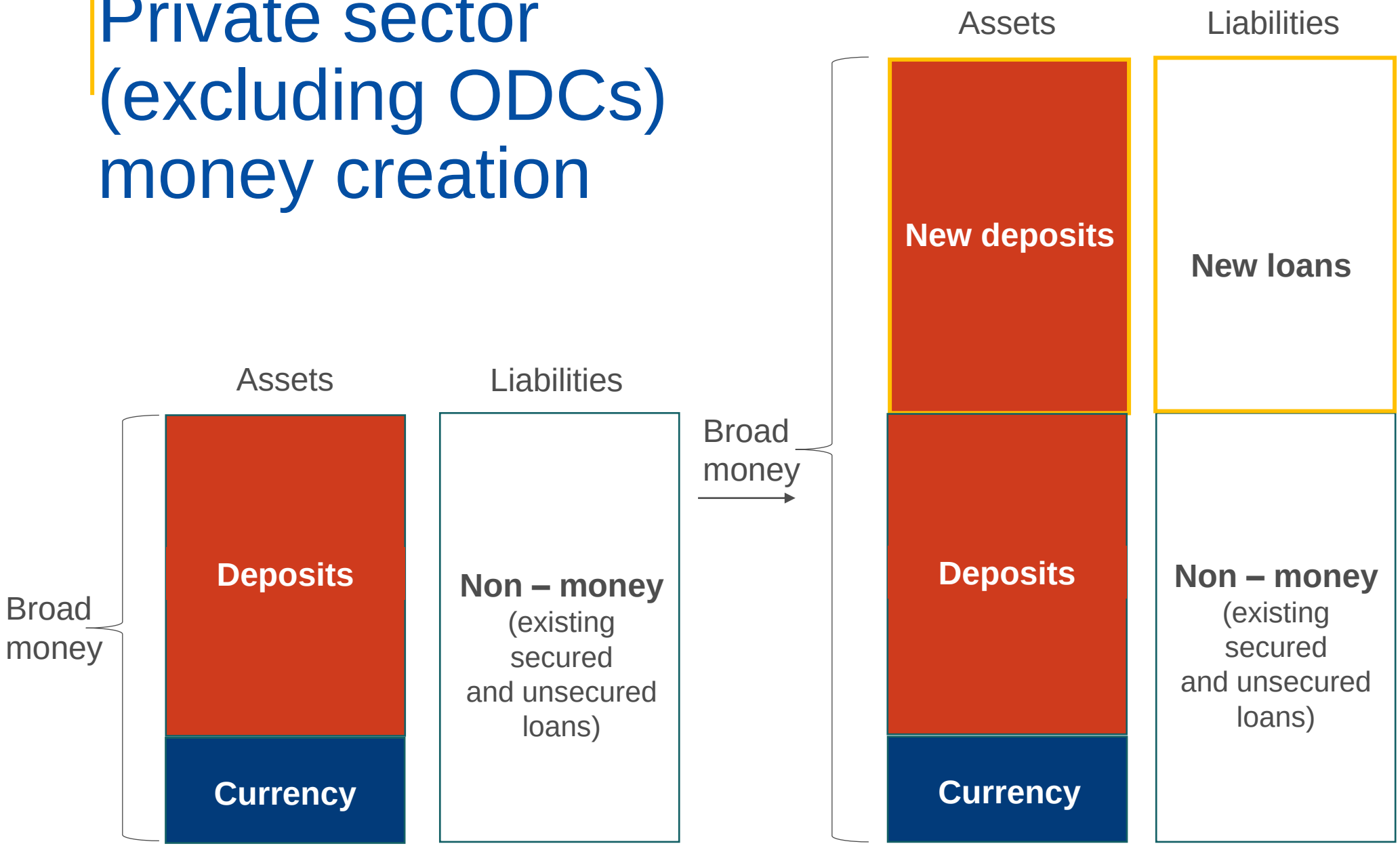
Assets

- **Net Foreign Assets (NFA)**
- **Domestic Credit (NDC)**
  - Net claims on Government (NCG)
  - Claims on other domestic economic sectors
- **Reserves**
  - Required
  - Excess
- **Other items net (OIN)**

Liabilities

- **Deposits**
  - Demand
  - Time and savings
  - Foreign currency
- Liabilities to CB

Private sector (excluding ODCs) money creation



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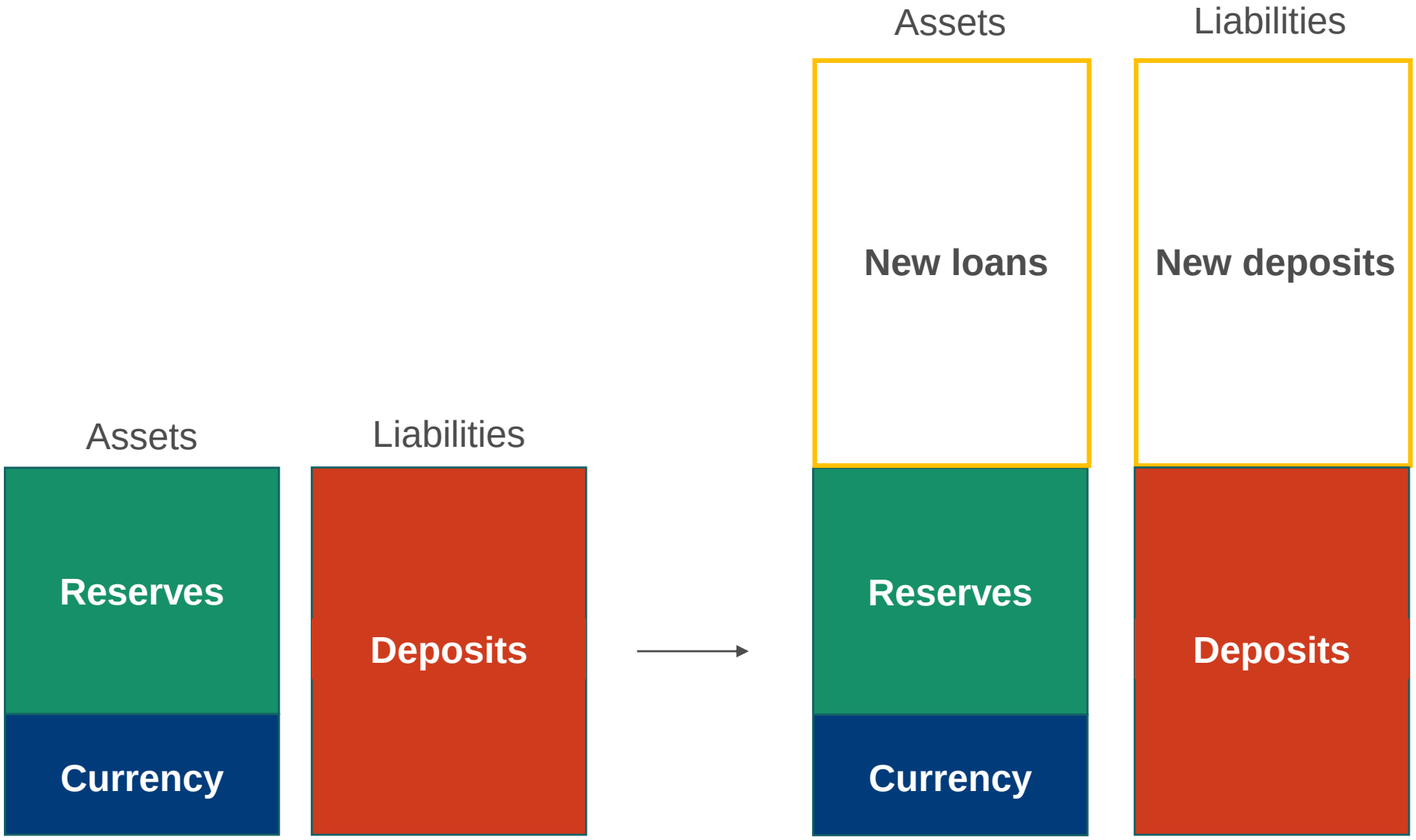
Commercial Banks money creation



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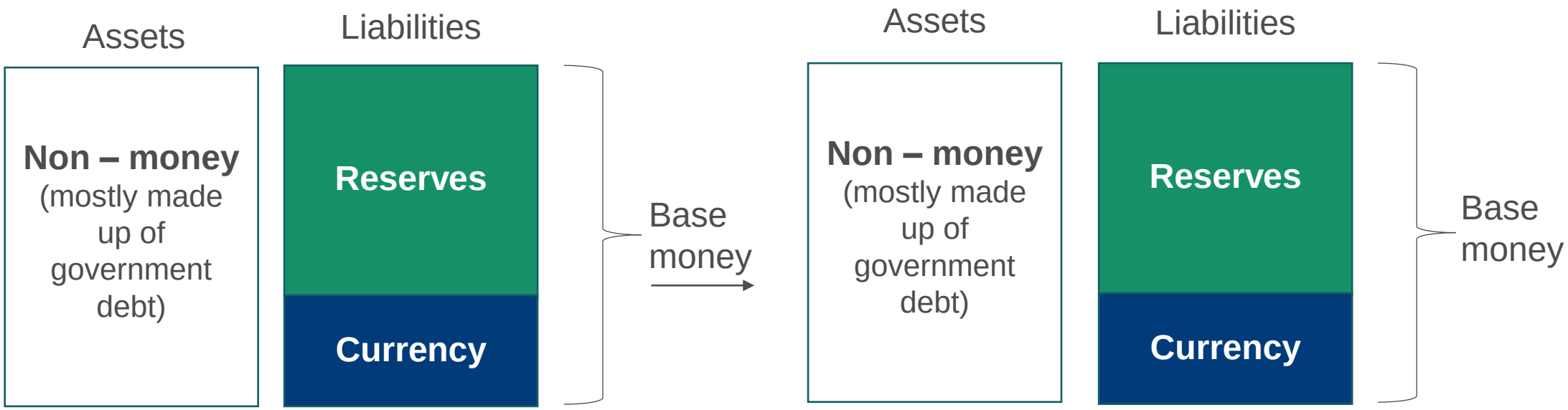
Central Bank money creation



Source for this slide and the two previous ones: « Money creation in the modern economy », Michael McLeay, Amar Radia and Ryland Thomas, Bank of England, Quarterly 2014 n°1.

Table 6. Madagascar: Monetary Accounts, 2019–28[1]

(Billions of Ariary, unless otherwise indicated)

	2019	2020	2021	2022			2023			2024	2025	2026	2027	2028
	Actuals	Actuals	Est.	Program approval	2nd review	Est.	Program approval	2nd review	Proj.	Projections				
Net foreign assets	4,614	4,876	5,018	5,729	5,715	4,875	6,759	5,800	5,634	6,662	8,935	10,677	13,323	16,463
Net foreign assets (BCM)	3,925	3,597	3,691	4,360	4,356	3,438	5,334	4,341	4,117	5,055	7,248	8,921	11,531	14,659
Net foreign assets (deposit money banks)	689	1,279	1,327	1,369	1,360	1,438	1,425	1,459	1,517	1,607	1,687	1,756	1,792	1,804
Net domestic assets	8,045	9,314	10,901	13,361	15,374	16,532	14,408	18,003	19,308	22,471	25,658	28,484	31,540	34,654
Domestic credit	9,125	10,685	12,411	14,653	16,816	18,449	16,387	19,711	20,637	23,800	26,988	29,813	32,870	35,984
Net credit to government	2,074	2,893	3,072	4,972	6,049	5,050	5,777	7,337	5,673	6,434	7,014	7,125	7,532	7,889
BCM[2]	757	1,044	1,271	2,530	2,470	2,400	2,562	3,152	2,453	2,858	2,616	1,907	1,147	356
DMBs	1,256	1,565	1,567	2,012	3,154	2,227	2,772	3,745	2,782	3,123	3,930	4,736	5,891	7,026
Other credits	62	285	234	430	425	423	442	440	438	453	467	481	494	507
Credit to the economy	7,051	7,792	9,339	9,681	10,767	13,399	10,610	12,374	14,964	17,366	19,974	22,689	25,338	28,095
Credit to public enterprises	43	59	54	59	54	39	59	54	39	39	39	39	39	39
Credit to private sector	6,980	7,687	9,263	9,601	10,692	13,286	10,531	12,299	14,851	17,253	19,861	22,576	25,225	27,982
Other credits	28	46	22	20	20	74	20	20	74	74	74	74	74	74
Other items (net)	-1,080	-1,371	-1,510	-1,162	-1,442	-1,917	-1,267	-1,708	-1,329	-1,329	-1,329	-1,329	-1,329	-1,329
BCM	281	183	161	283	310	-168	283	250	420	420	420	420	420	420
Other	-1,361	-1,554	-1,672	-1,445	-1,752	-1,749	-1,550	-1,958	-1,749	-1,749	-1,749	-1,749	-1,749	-1,749
Money and quasi-money (M3)	12,659	14,190	15,919	19,089	21,090	21,407	21,167	23,803	24,942	29,132	34,594	39,161	44,863	51,117
Foreign currency deposits	1,111	1,472	1,519	1,548	1,529	1,640	1,604	1,628	1,719	1,809	1,889	1,958	1,994	2,006
Short term obligations of commercial banks	73	87	82	51	51	97	51	51	97	97	97	97	97	97
Broad money (M2)	11,476	12,632	14,318	17,490	19,510	19,670	19,512	22,124	23,126	27,226	32,607	37,106	42,772	49,014
Currency in circulation	3,315	3,570	4,117	4,151	4,649	4,522	4,398	5,247	5,266	6,147	7,298	8,259	9,460	10,778
Demand deposits in local currency	4,426	4,866	5,509	7,102	7,942	8,101	8,072	8,879	9,584	11,347	13,666	15,604	18,052	20,754
Quasi-money including time deposits	3,735	4,196	4,691	6,236	6,919	7,047	7,042	7,998	8,275	9,732	11,644	13,243	15,260	17,482
Reserve money	4,927	5,459	5,863	6,671	7,365	6,888	6,997	7,953	8,020	9,363	11,114	12,579	14,408	16,416
	(Percentage change relative to broad money at beginning of the year)													
Net foreign assets	-3.0	2.3	1.1	3.4	4.9	-1.0	5.9	0.4	3.9	4.4	8.4	5.3	7.1	7.3
Net foreign assets (BCM)	-2.7	-2.9	0.7	3.1	4.6	-1.8	5.6	-0.1	3.5	4.1	8.1	5.1	7.0	7.3
Net foreign assets (deposit money banks)	-0.3	5.1	0.4	0.3	0.2	0.8	0.3	0.5	0.4	0.4	0.3	0.2	0.1	0.0
Net domestic assets	11.1	11.1	12.6	8.1	31.2	39.3	6.0	13.5	14.1	13.7	11.7	8.7	8.2	7.3
Domestic credit	11.3	13.6	13.7	7.0	30.8	42.2	9.9	14.8	11.1	13.7	11.7	8.7	8.2	7.3
Net credit to government	-0.2	7.1	1.4	2.0	20.8	13.8	4.6	6.6	3.2	3.3	2.1	0.3	1.1	0.8
BCM	-1.8	2.5	1.8	0.1	8.4	7.9	0.2	3.5	0.3	1.8	-0.9	-2.2	-2.0	-1.8
DMBs	1.5	2.7	0.0	1.9	11.1	4.6	4.3	3.0	2.8	1.5	3.0	2.5	3.1	2.7
Other credits	0.1	1.9	-0.4	0.1	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Credit to the economy	11.5	6.5	12.2	5.0	10.0	28.4	5.3	8.2	8.0	10.4	9.6	8.3	7.1	6.4
Credit to public enterprises	0.0	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Credit to private sector	11.5	6.2	12.5	5.0	10.0	28.1	5.3	8.2	8.0	10.4	9.6	8.3	7.1	6.4
Other credits	0.0	0.2	-0.2	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other items (net; asset = +)	-0.2	-2.5	-1.1	0.6	0.5	-2.8	-0.6	-1.4	3.0	0.0	0.0	0.0	0.0	0.0
Broad money (M2)	8.9	10.1	13.3	11.3	36.3	37.4	11.6	13.4	17.6	17.7	19.8	13.8	15.3	14.6
Currency in circulation	-2.2	7.7	15.3	8.5	12.9	9.8	5.9	12.9	16.4	16.7	18.7	13.2	14.5	13.9
Demand deposits in local currency	20.0	9.9	13.2	12.5	44.2	47.0	13.7	11.8	18.3	18.4	20.4	14.2	15.7	15.0
Quasi-money in local currency	8.0	12.3	11.8	11.8	47.5	50.2	12.9	15.6	17.4	17.6	19.6	13.7	15.2	14.6
Credit to the private sector (in nominal terms)	21.1	10.1	20.5	8.9	15.4	43.4	9.7	15.0	11.8	16.2	15.1	13.7	11.7	10.9
Credit to the private sector (in real terms)	17.1	5.6	14.3	2.9	3.4	32.2	3.9	5.3	2.5	7.5	7.2	6.4	5.2	4.9

Madagascar—SR 2022 Art. IV [p.36]

- The Central Bank (BFM) raised interest rates while providing ample liquidity to banks to counter higher inflation
- Private sector credit growth increased by 19.3% YoY, driven by short-term credit
- BFM advised to remain prepared for additional monetary tightening to contain inflationary pressures

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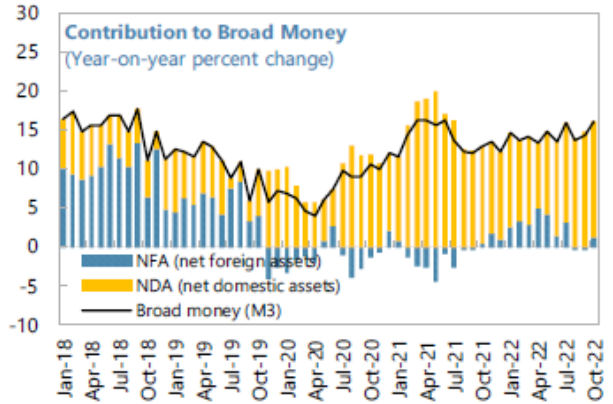
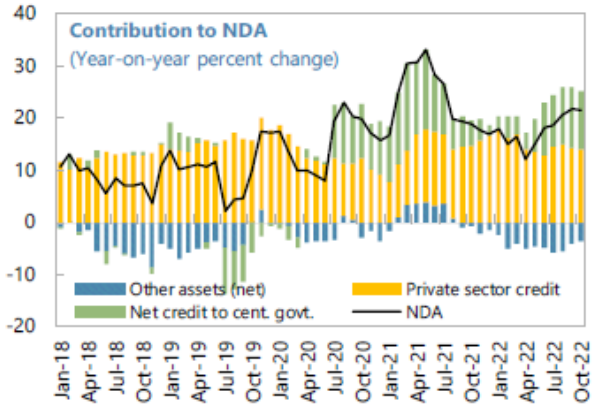
Madagascar—SR 2022 Art. IV [p. 37]

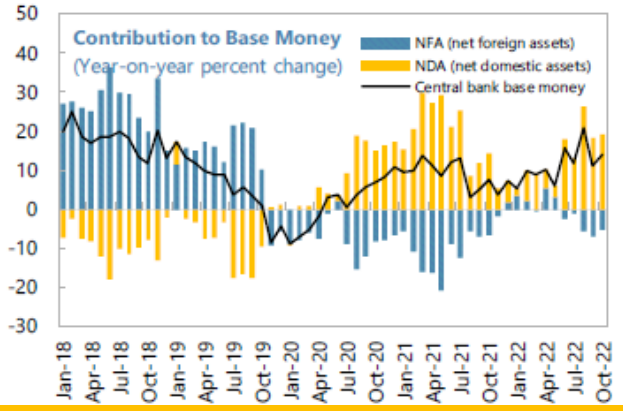
Figure 4. Madagascar: Monetary Developments

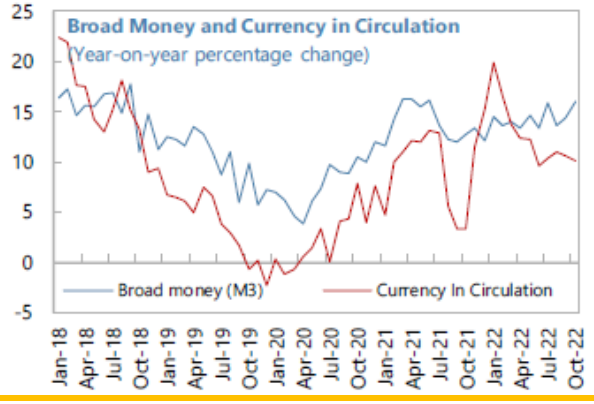
Until the pandemic, broad money growth was driven by the accumulation of net foreign assets and credit to the private sector. Since the Covid-19 crisis, net domestic credit to government has been on the rise.





Base money growth has also been driven by currency in circulation and liquidity injections.





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Links to Other Sectors

- Links between the monetary sector and other macro sectors are crucial for effective monetary policy design
- Net Foreign Assets (NFA) are linked to the Balance of Payments (BoP)
- Net Credit to Government (NCG) is linked to fiscal policies
- Credit to the Private Sector (CPS) is linked to real GDP and growth

QUESTIONS?

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Quiz 3

Let’s go to Menti!

Mentimeter

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Monetary Accounting and Analysis

CASE STUDY

European Commission

Excel Spreadsheet TBC

Syldavia: Survey of Depository Corporations, 2017-23

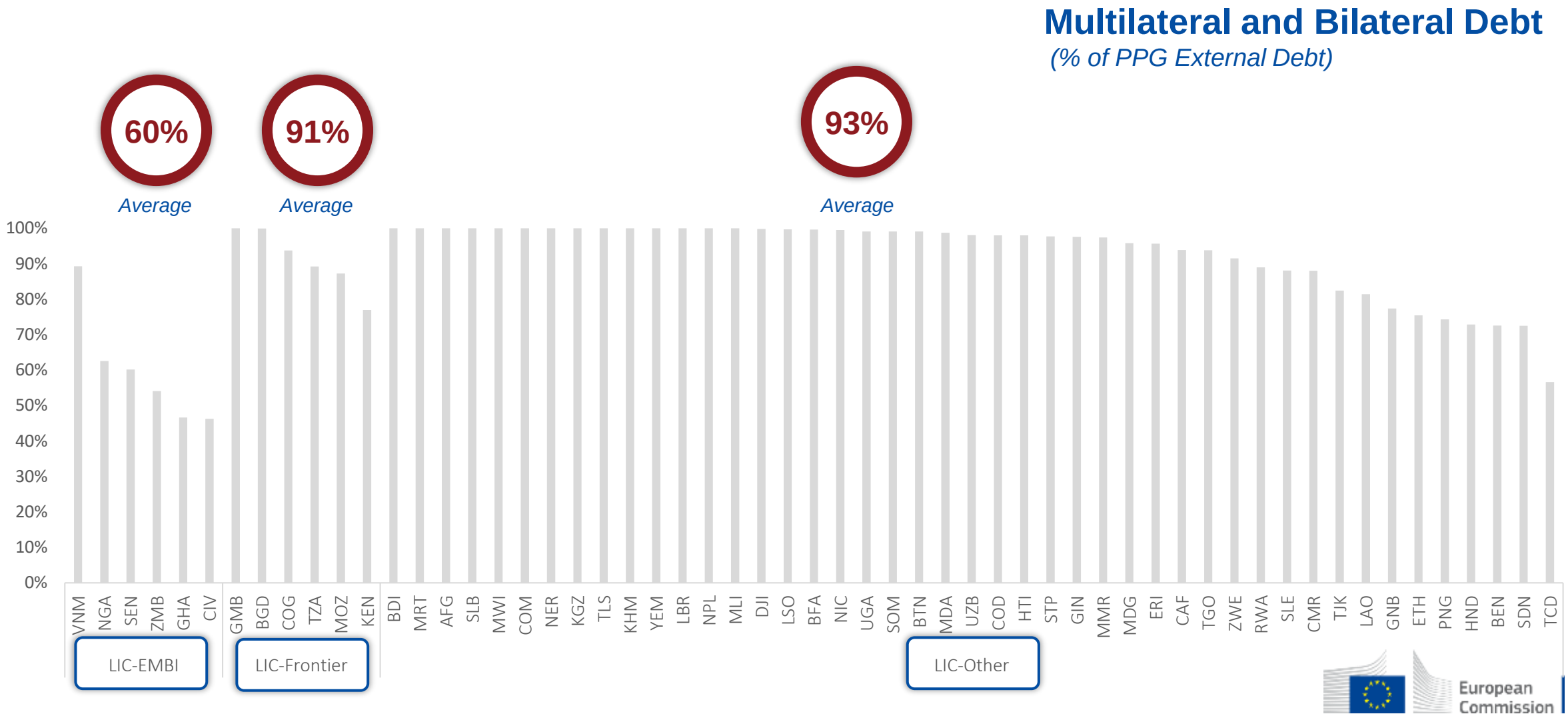
	2017	2018	2019	2020	2021	2022	2023
	(in billions of national currency)						
	Central Bank						
ASSETS							
Net Foreign Assets	1,601	2,118	2,178	2,276	2,363	2,446	3,491
Net Domestic Assets	-416	-709	-502	-330	-331	-228	
Net claims on public sector	-42	-60	-18	-48	-287	-86	
On general government	-47	-64	-21	-49	-288	-86	-562
On the rest of the public sector	5	3	3	2	1	1	1
Claims on other depository corporations	0	0	0	2	1	83	0
Claims on rest of private sector	15	15	3	2	2	1	1
Monetary Stabilization Bonds (-)	-1,535	-1,845	-1,513	-1,414	-1,407	-1,812	-1,850
Other items net	1,146	1,181	1,026	1,127	1,361	1,586	
Shares and other equity	1,138	1,182	1,219	1,266	1,346	1,477	1,673
Others	8	0	-193	-139	15	109	-46
LIABILITIES							
Monetary Base	1,185	1,409	1,676	1,945	2,032	2,218	
Currency in circulation	413	546	575	613	665	743	845
Liabilities to other depository corporations	771	863	1,101	1,332	1,367	1,475	1,863

Questions

1. What was the monetary base at end-2023?
2. How much were the Central Bank's Net Claims on the Public Sector at end-2023?
3. How much were Net Domestic Assets at end-2023?
4. How much were Other Items Net at end-2023?
5. Bonus question: what is a quick check you can conduct to ensure that the calculations above were correct?
6. Bonus question: how much was the increase in monetary base between 2016 and 2023 and what explains it (hint: create a chart to visualize it)

Public Debt and Debt Sustainability Analysis (DSA)

Official lending is a prominent source of external financing for LICs



Source: WBG WDI

External loans feed into the fiscal accounts, the BOP, and the public external debt

PUBLIC EXTERNAL DEBT

- GOVT. FINANCING SOURCE
- CAPITAL EXPENDITURE
- EXTERNAL FINANC. INFLOW
- IMPORTS (CA)

- GOVT. FINANCING NEED
- INTEREST + AMORT. PAYMENT
- EXTERNAL FINANC. OUTFLOW
- INTEREST (CA) & AMORT. (FA)

LOAN WILL BE ADDED TO THE PUBLIC EXTERNAL DEBT FOR A LONG TIME

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LOANS, DEBT MANAGEMENT, AND SUSTAINABILITY

- **Loans incorporated to the portfolio of public debt instrument (loans, securities, etc.)**

Debt Management

- **Loans are to be repaid together with other public debt instrument**
  - Define sustainability
  - How can we assess sustainability?

Debt Sustainability

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THE GOVERNMENT'S FLOW OF FUNDS AND THE PUBLIC DEBT DYNAMICS

- The flow of funds reflects the ***accounting identity***:

$$Revenues_t + Financing\ Sources\ _t + Debt\ Issuances\ _t = Expenditures_t + Financing\ Needs_t + Debt\ Repayments_t$$

Any **receipt** on the left-hand side of the equation… → … must be allocated to a certain **payment** on the right-hand side.

- Just re-arranging terms:

$$Debt\ Issuances\ _t - Debt\ Repayments_t = (Expenditures_t - Revenues_t) + (Financing\ Needs\ _t - Financing\ Sources_t)$$

$Debt_t - Debt_{t-1}$

A *debt manager* sees the annual variation in public debt is driven by debt issuances and repayments.

$Debt_t - Debt_{t-1}$

A *fiscal policy maker* observes the annual variation in public debt is driven by budget imbalances and financing transactions.

THE GOVERNMENT'S FLOW OF FUNDS AND THE NOTIONS OF SOLVENCY AND LIQUIDITY

- Consider other rearrangements of receipts and payments:

$$Debt\ Issuances_{\ t} = (Expenditures_t - Revenues_t) + Debt\ Repayments_t + (Financing\ Needs_{\ t} - Financing\ Sources_t)$$

Why the government borrows? …

… to finance the budget deficit …

… to service maturing debts …

… to finance other needs beyond the budget deficit …

$$Debt\ Repayments_t = Debt\ Issuances_t + (Revenues_t - Expenditures_t) + (Financing\ Sources_t - Financing\ Needs_{\ t})$$

Borrowed funds

Non-borrowed funds
('Own resources')

Debt repayments corresponding to maturing financial liabilities are financed either with
(i) non-borrowed funds (own resources) → **solvency**
(ii) borrowed funds → **liquidity**

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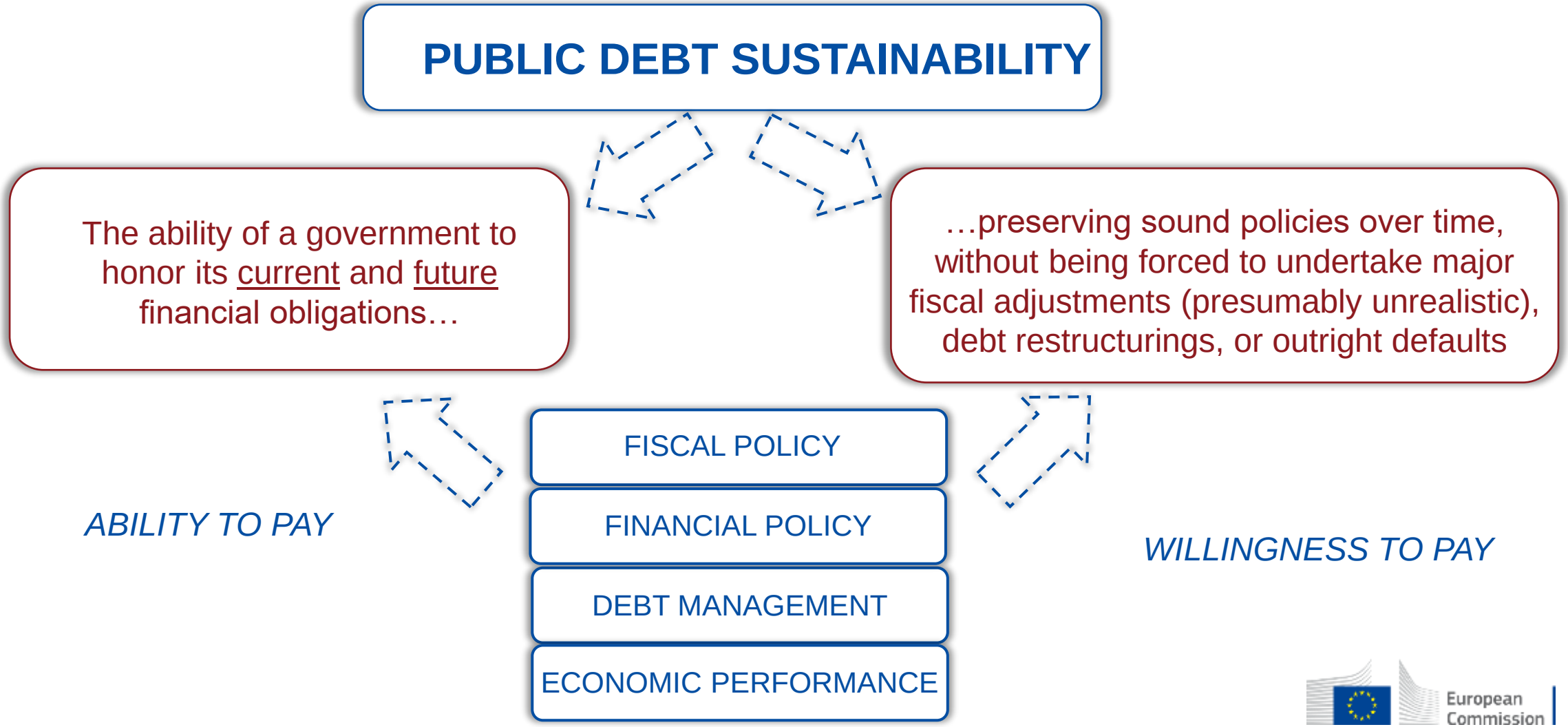
DEBT SUSTAINABILITY: DEFINITION



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DEBT SUSTAINABILITY IMPLIES SOLVENCY

SOLVENCY

A government's capacity to **repay** financial obligations over an **extended period of time**

- **Funding debt repayment with budgetary resources in the long-term**
- **Without systematically borrowing** to fund budget deficits and rollover maturing liabilities
- **No need to incur in unrealistic fiscal policy adjustment** to generate budgetary resources sufficient to repay financial obligations
- **No need to engage with creditors to restructure existing liabilities** in view of insufficient budgetary resources in the long-term to repay them under the original contractual terms

DEBT SUSTAINABILITY IMPLIES LIQUIDITY

LIQUIDITY

A government's capacity to **borrow** funds in the **short- to medium term**, at a reasonable cost to meet gross financing needs (including rollover of maturing financial obligations)

- **Without facing higher-than-normal interest rates or severe disruptions in the financing flows** provided by regular creditors
- In theory, **a solvent debtor would always be liquid**. Creditors recognize the short-term borrowing is consistent with a long-term path where the debtor's financial liabilities and repayment capacity are balanced
- However, liquidity issues may arise due to coordination failures or information asymmetry, e.g., uncertainty about a debtor's budgetary resources or capacity to undertake policy adjustments
- A solvent government who fails to raise enough short-term funds to service maturing debt, may become insolvent due to liquidity problems

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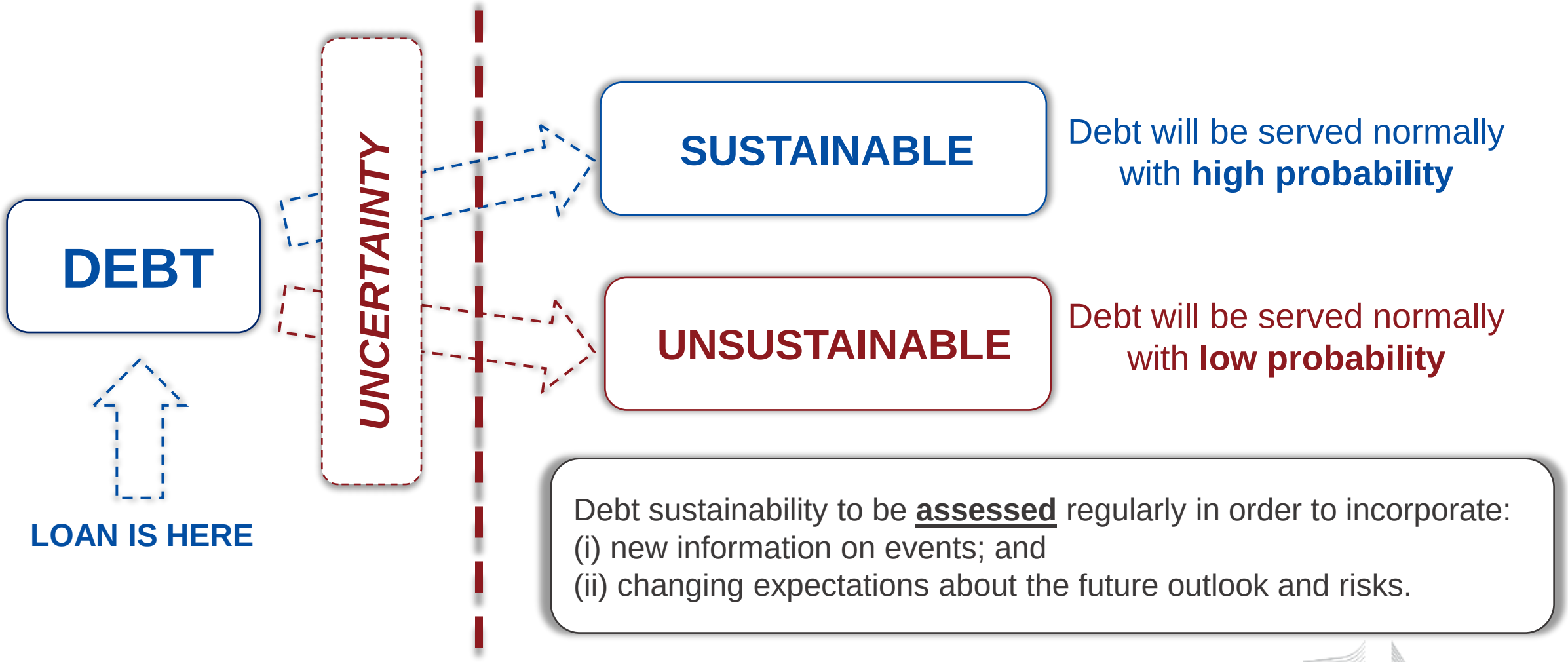
DEBT SUSTAINABILITY ASSESTMENT INVOLVES JUDGMENTS ABOUT UNCERTAIN FUTURE CONDITIONS



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ASSESSING DEBT SUSTAINABILITY INVOLVES MONITORING SOLVENCY AND LIQUIDITY

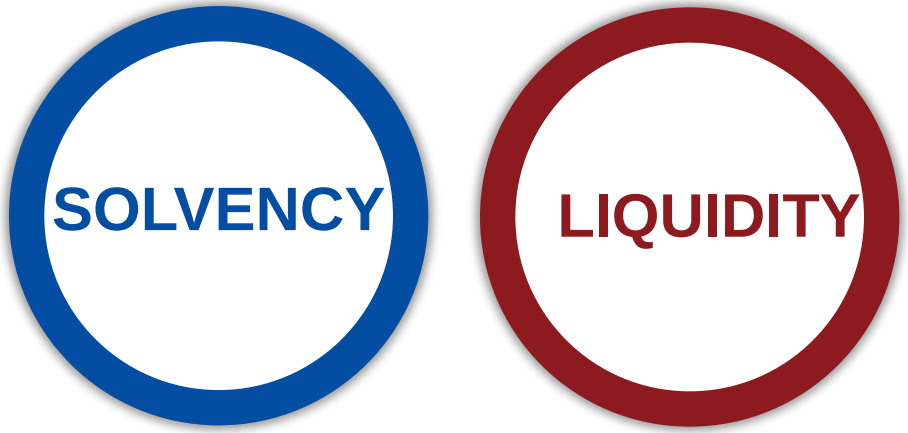
SUSTAINABILITY ASSESSMENT

- **Formulate a judgement** on whether the government will have the ability and willingness to meet its current and future financial obligations
- **Identify the risks** likely to affect the economic and policy performance driving the public debt dynamics over the medium term

Indicators / Ratios

Subjective judgements and interpretations

Collective consensus and conventions



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DEBT RATIOS USED AS SUSTAINABILITY INDICATORS

LIABILITIES TO SERVICE
(in nominal values)

Total financial obligations (debt stock)
Debt service obligations (flow)

REPAYMENT CAPACITY
(in nominal values)

Repayment in the long term
Re-financing in the short- to medium term
Normalization for int'l comparisons

EXAMPLES

Public Debt / GDP

Public Debt / Revenues

External Debt / GDP
External Debt / Exports
External Debt / Reserves

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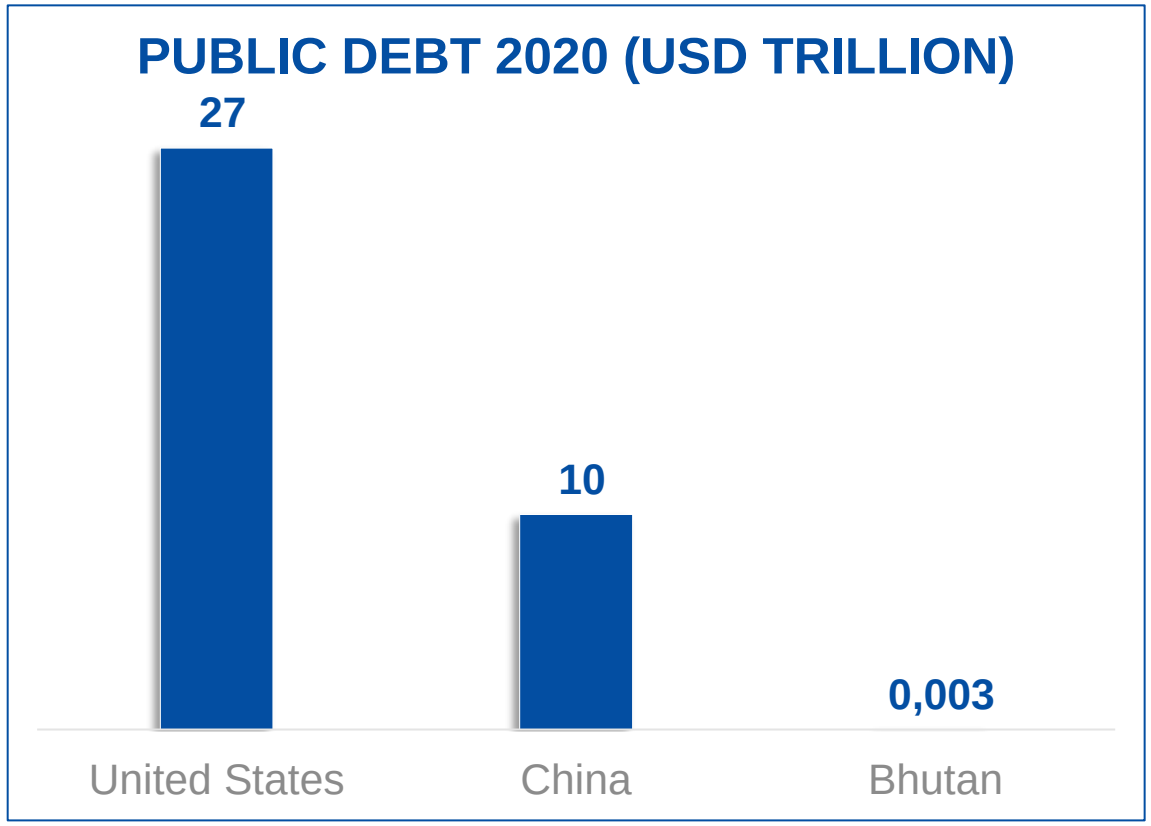
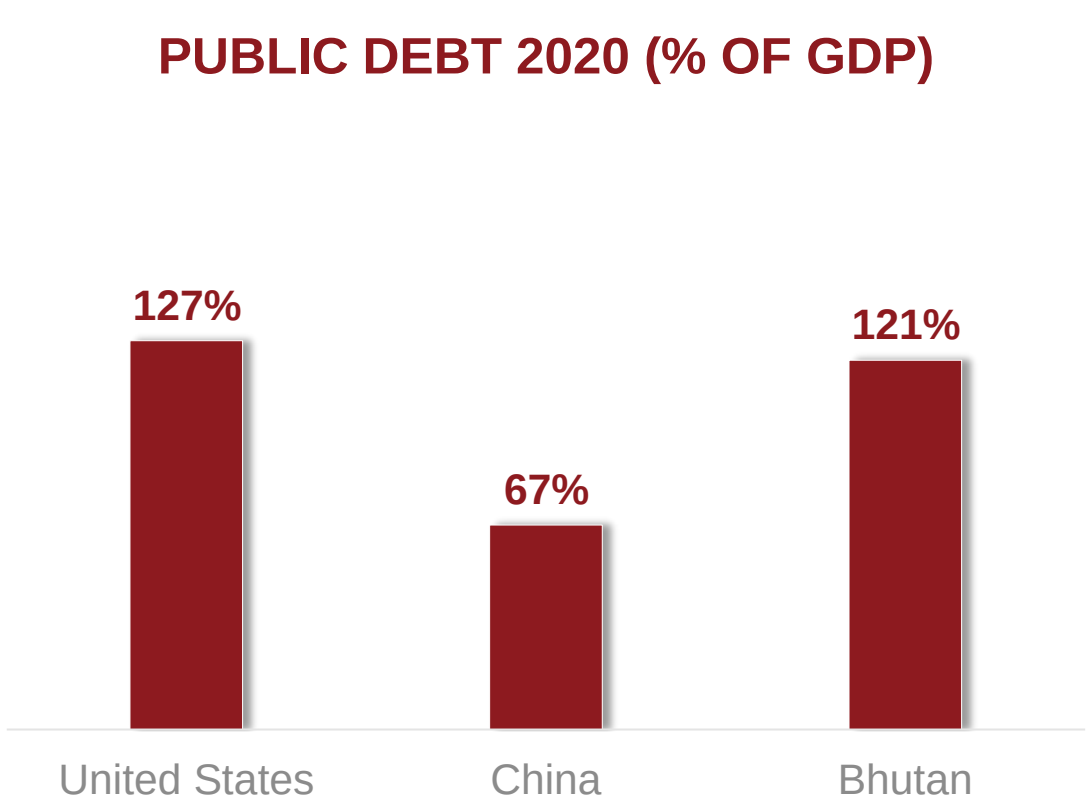
WHICH COUNTRY EXHIBITS A SUSTAINABLE PUBLIC DEBT?





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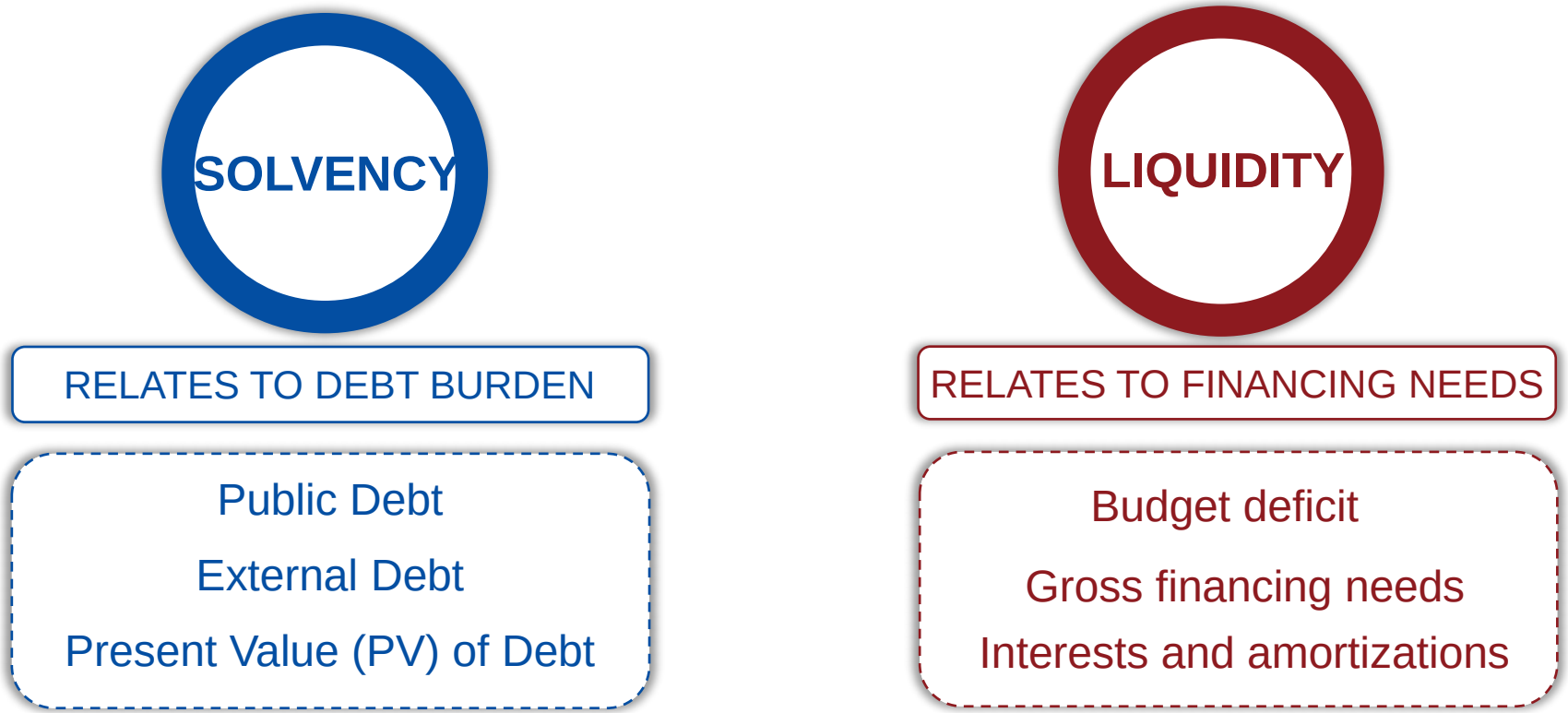
DEBT RATIOS USED AS SUSTAINABILITY INDICATORS RELATE TO SOLVENCY OR LIQUIDITY



ECONOMIC PERFORMANCE, POLICIES, AND PUBLIC DEBT SUSTAINABILITY

Debt/GDP ratio evolves over time as a result of debt dynamics and GDP growth

Debt Dynamics

- Borrowings depend on fiscal deficits and other financing needs → fiscal and financing policies
- Affected by exchange rates, interest rates, and other market conditions → monetary, financial, and exchange rate policies

GDP Growth

- Economic growth and price inflation → economic conditions and public policies

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DEBT DYNAMICS, DEBT STOCKS, AND FLOWS

DEBT DYNAMICS

Change in Public Debt in t = Outstanding Debt in t - Outstanding Debt in t-1

Like demographic dynamics!

STOCKS

Outstanding Debt in t-1

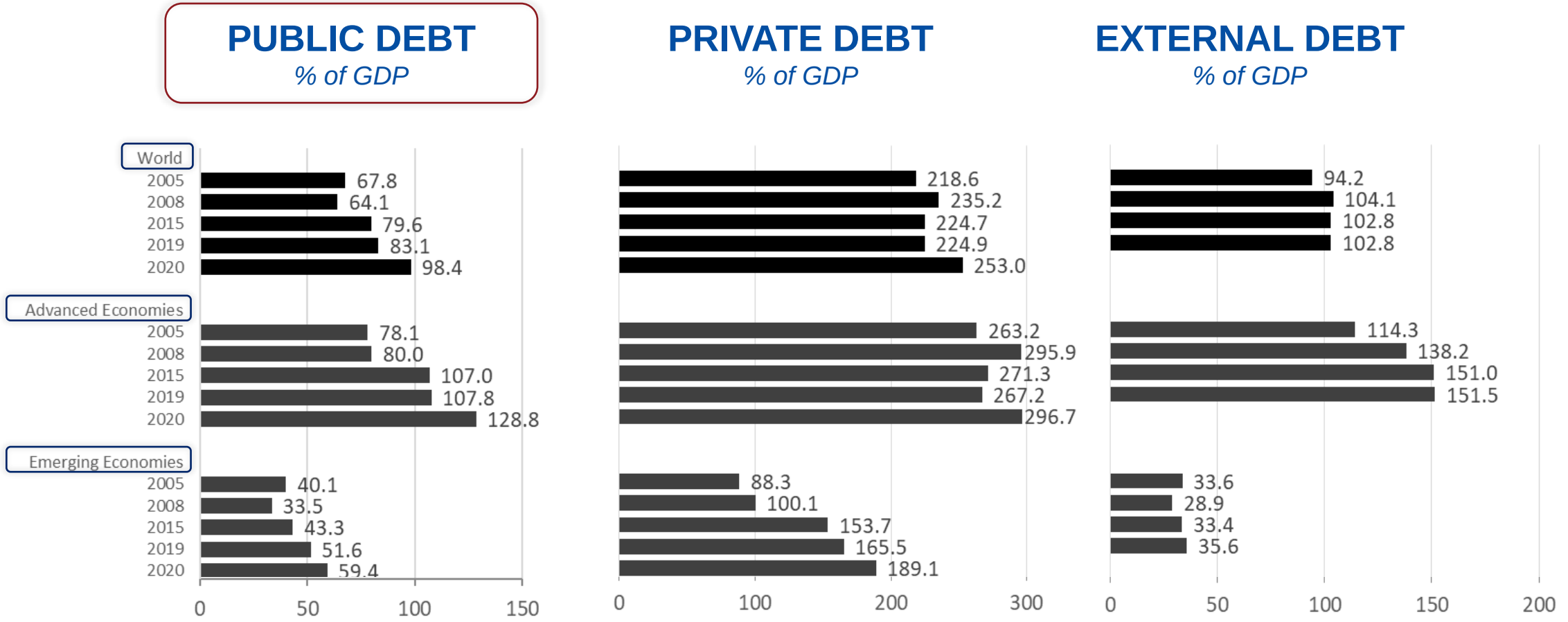
Outstanding Debt in t

FLOWS

Change in Public Debt = Disbursements – Repayments + Valuation Effects

Change in Public Debt = Fiscal Deficit + Other Net Financing Needs + Valuation Effects

GROWING PUBLIC DEBT RATIOS WORLDWIDE (EVEN PRIOR TO THE COVID-19 PANDEMIC)



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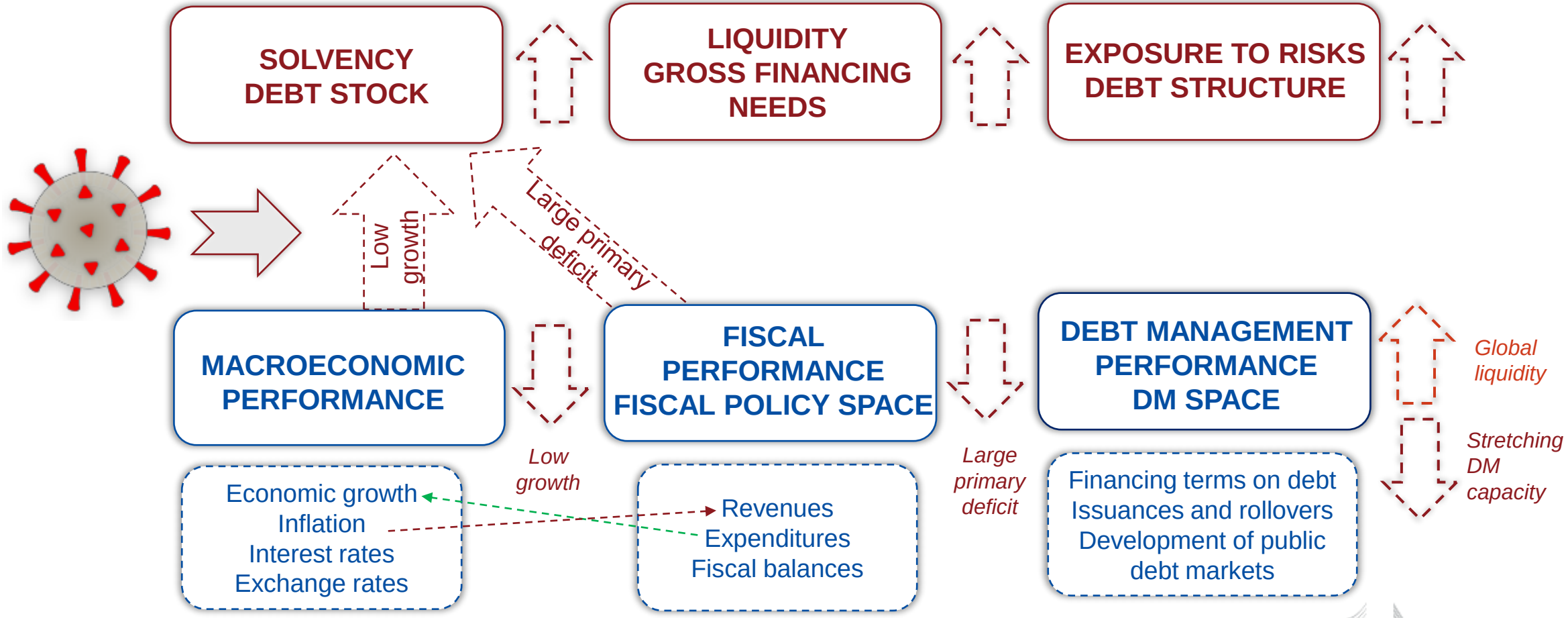
USING DEBT RATIOS TO ASSESS VULNERABILITY

	Debt stock	Gross financing needs	Debt structure
Debt stock / GDP	✓		
Gross financing needs / GDP		✓	
Debt service / Revenues		✓	
Primary balance / GDP	✓	✓	
Interest payments / GDP	✓	✓	
Currency composition of public debt			✓
Interest-rate composition of public debt			✓
Maturity composition of public debt			✓
Investor & creditor composition of public debt			✓
Growth and fiscal-balance forecasts (baseline and shock scenarios)	✓	✓	✓

COVID-19 PANDEMIC IN 2020: IMPACT ON PUBLIC DEBT VULNERABILITIES



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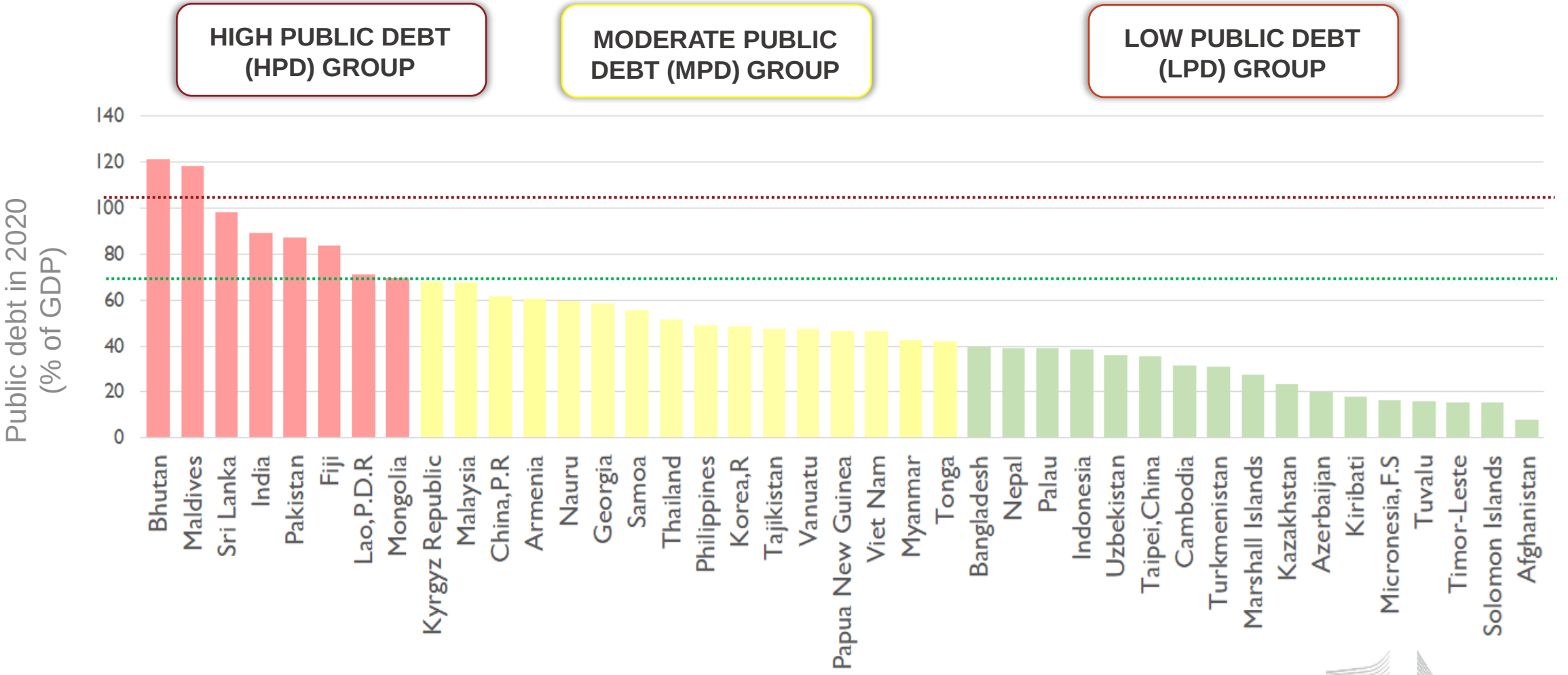
ASSESSING DEBT VULNERABILITIES: THE CASE OF ASIAN DEVELOPING COUNTRIES (ADCs)



Notes: Off-chart: Hong Kong, China; Singapore; Brunei Darussalam; Niue; Cook Islands. Public debt at end-2020 refers to the General Government and is a forecast from the IMF WEO. Thresholds for public debt are 70% of GDP (high) and 40% of GDP (low).
Source: Database based on World Economic Outlook (WEO).

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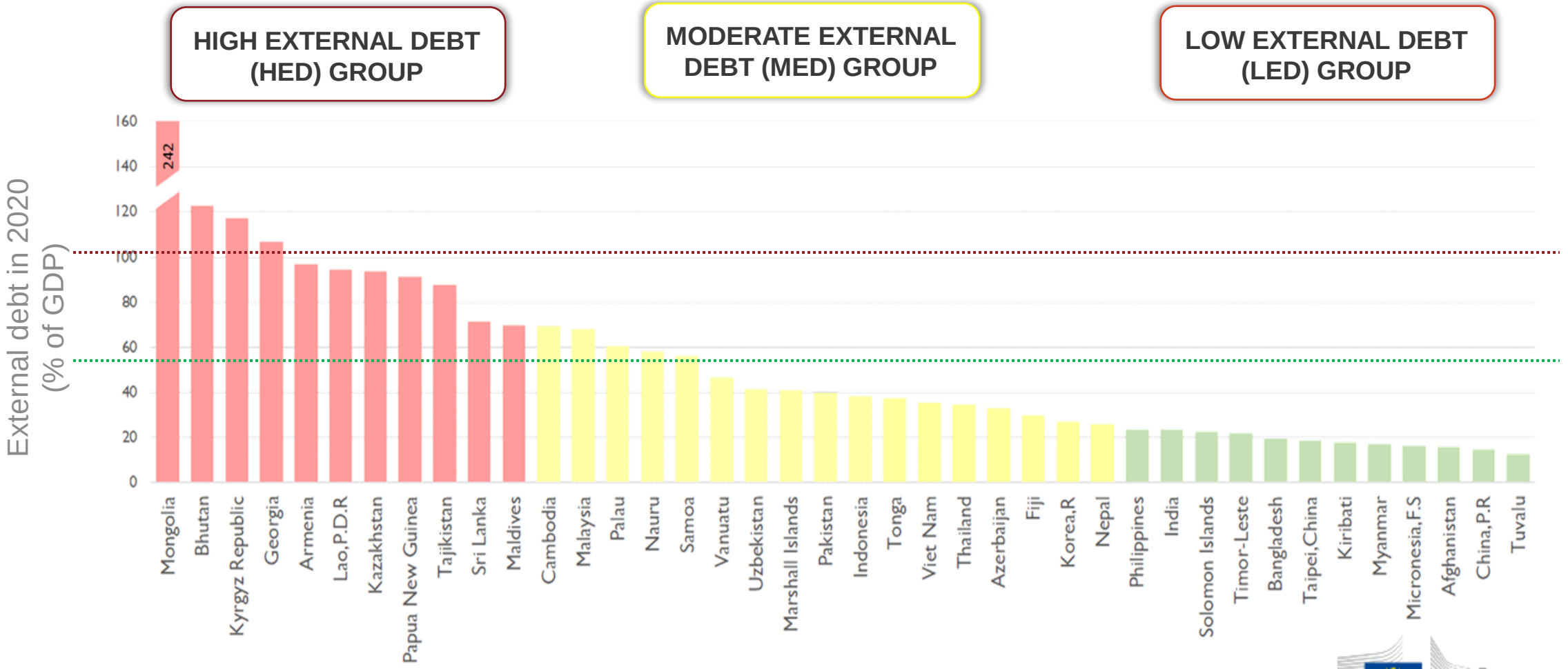
FEW ADCs EXHIBIT HIGH EXTERNAL DEBT RATIOS, SIGNALING SOLVENCY-RELATED VULNERABILITIES



Notes: Off-chart: Hong Kong, China; Singapore; Brunei D.; Niue; Cook Islands; Turkmenistan. External debt at end-2020 is estimated based on WBG WDI data on external debt at end-2019 and IMF WEO forecasts on selected foreign-trade variables. Thresholds for external debt are 70% of GDP (high) and 25% of GDP (low).
Source: Database based on World Economic Outlook (WEO) and World Development Indicators (WDI).

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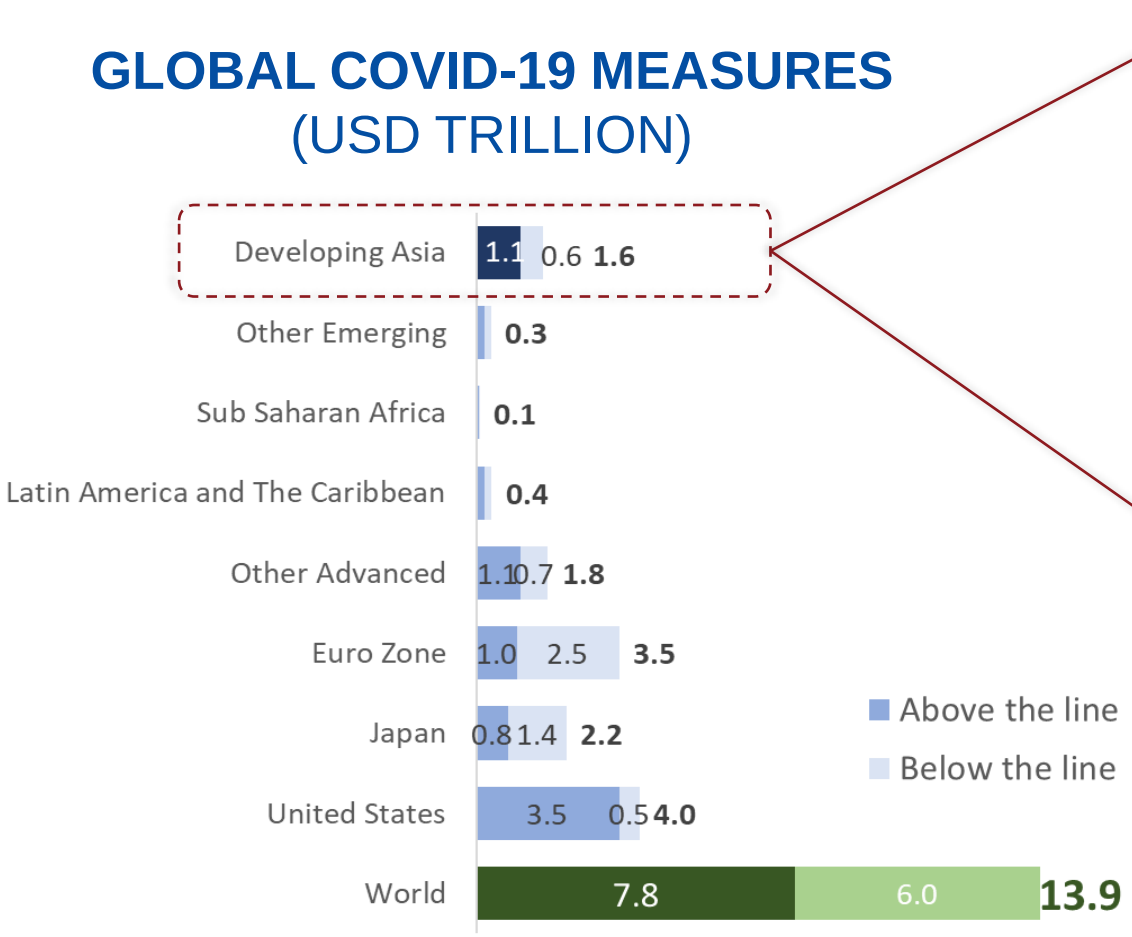
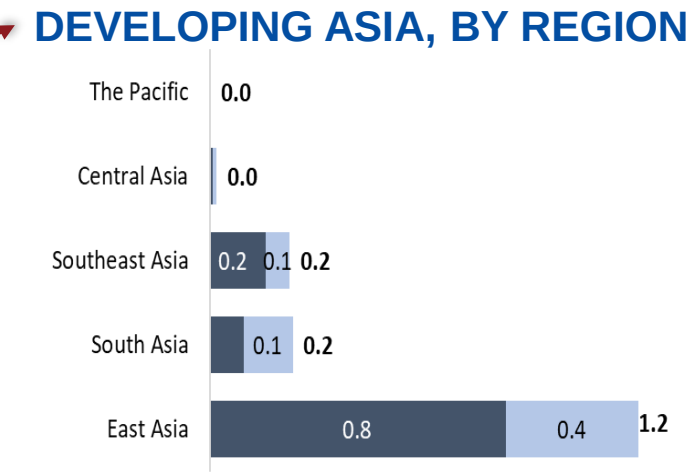
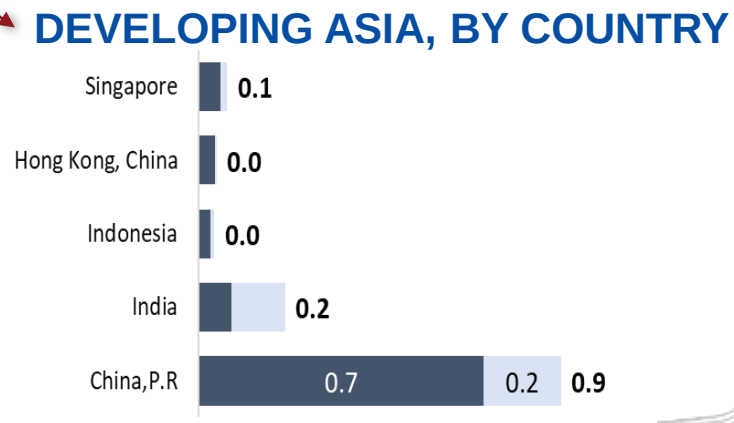
FISCAL MEASURES TO COPE WITH ECONOMIC EFFECTS OF COVID-19 INCREASED DEFICITS AND BORROWINGS







Source: IMF Fiscal Monitor January 2021.

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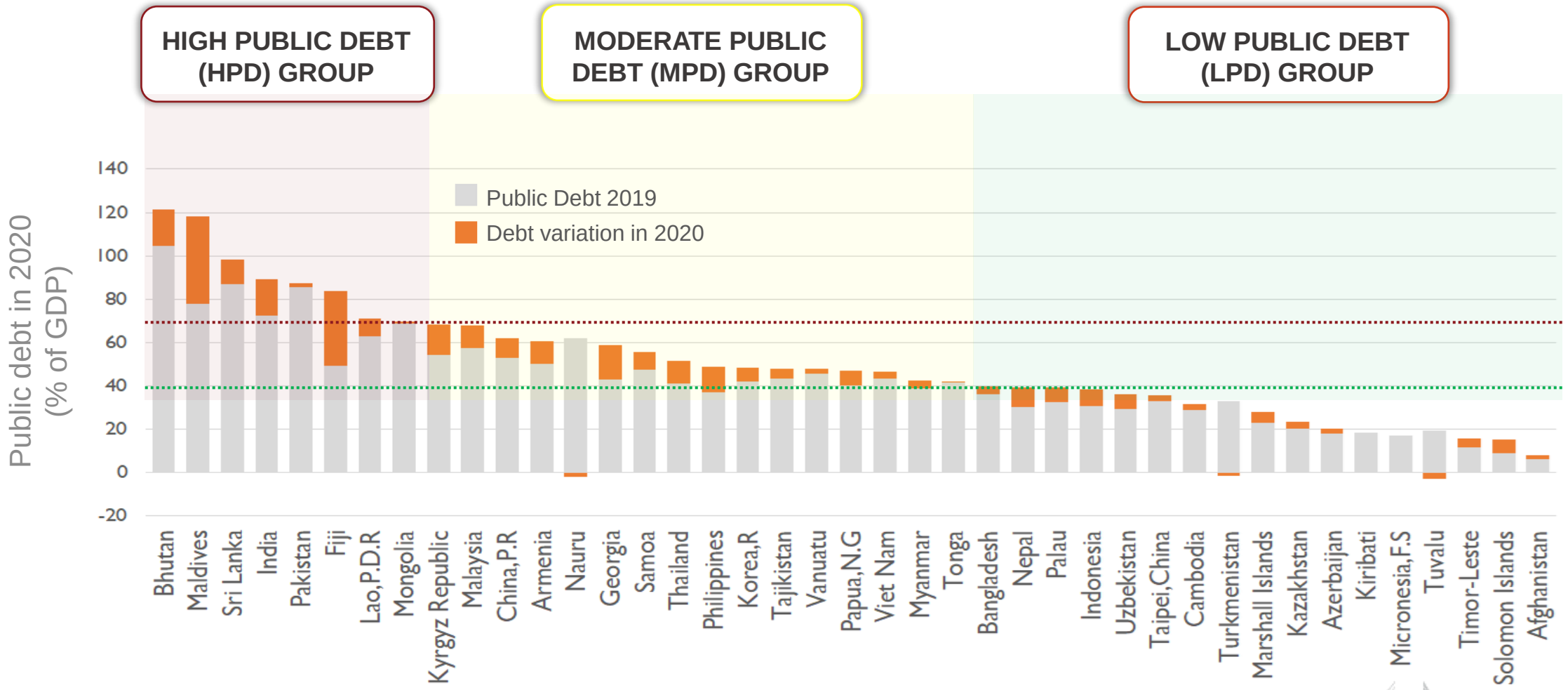
HIGHER PUBLIC DEBT RESULTED FROM ECONOMIC CONTRACTION (OR GROWTH SLOWDOWN) AND DEFICITS



Notes: Off-chart: Hong Kong, China; Singapore; Brunei Darussalam; Niue; Cook Islands. Public debt at end-2020 refers to the General Government and is a forecast from the IMF WEO. Thresholds for public debt are 70% of GDP (high) and 40% of GDP (low). Public debt at end-2020 (full bar) is broken down into the public debt at end-2019 (gray bar) and the variation in the public debt ratio between 2019 and 2020 (orange bar).
Source: Database based on World Economic Outlook (WEO).

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QUESTIONS?

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Quiz 4

Let’s go to Menti!

Mentimeter

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Country case study

Chad

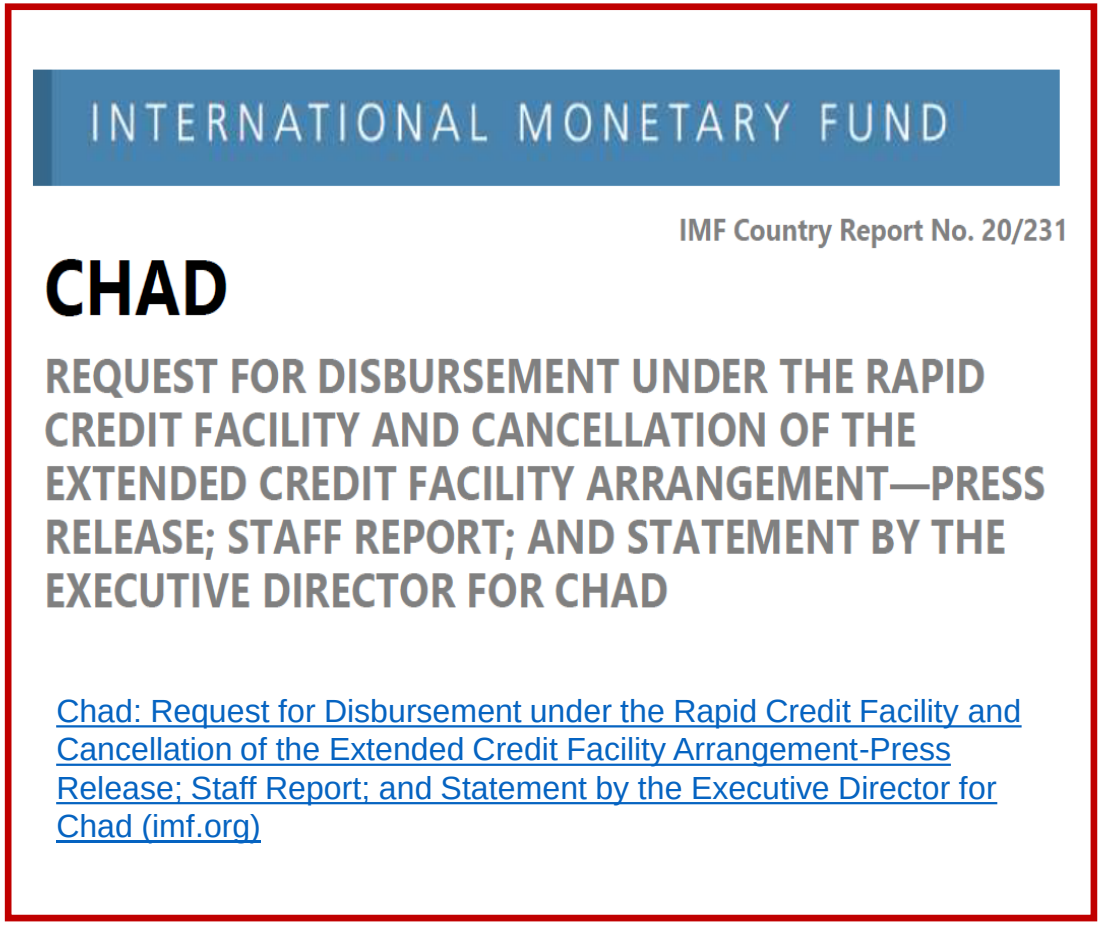
European Commission

Chad — Background

- Fiscal deficits and below-the-line financing needs led to a significant level of debt even prior to COVID-19 pandemic. Expensive financial arrangement (e.g., loan from an oil company).
- Currently, Chad engaged in G20 Common Framework negotiations.

Chad – Government's Flow of Funds and Debt Accumulation in 2019

- For the activity in this case study, please use data from the tables in the next slide (which are included in the IMF Country Report No 20/231).
- **Activity #1**: Relate the annual change in the level of public debt between 2018 and 2019 to:
  - the gross borrowings and amortization payments realized in 2019;
  - the fiscal deficit and other financing sources observed in 2019.



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Chad - Data Sources

Page 13

Table 1. Chad: Selected Economic and Financial Indicators, 2017–24

	2017	2018	2019
	Prel.	Prel.	Est.
Total debt (in percent of GDP)[4]	50.3	49.1	44.3
Of which : domestic debt	24.7	23.2	19.7
Memorandum items:			
Nominal GDP (billions of CFA francs)	5,855	6,127	6,406
Of which: non-oil GDP	4,830	4,961	5,130
Nominal GDP (billions of US$)	10.1	11.0	10.9

Sources: Chadian authorities; and IMF staff estimates and projections.

[1]Net of cash calls and transportation costs linked to the oil public enterprise (SHT) participation in private oil companies.

[2] includes subsidies to the electricity company starting from 2020.

[3]Includes projects financed by the BDEAC, but the corresponding loans (in CFAF) are counted as domestic financing.

[4]Total revenue, less grants and oil revenue, minus total expenditures, less interest payments and foreign financed investment.

[5]Difference between committed and cash expenditure, and errors and omissions.

[5]Recognized arrears, as registered by the Treasury in the "restes à payer"

[7]Other arrears include unrecognized arrears, the total of which will be specified after the audit of arrears, and the clearance in 2018 of CFAF 54 billio
then public company Coton Tchad owed to domestic banks.

[8]Bilateral or multilateral loans in CFAF (e.g. BDEAC, loan from Cameroon in 2016).

[9]All debt to BEAC was consolidated and rescheduled in September 2017 into long term securities.

Page 14

Table 2. Chad: Fiscal Operations of the Central Government, 2019–21

(In billions of CFAF, unless otherwise indicated)

	2019
	Est.
Total revenue and grants	885
Revenue	806
Oil[1]	326
Non-oil	480
Tax	461
Non-tax	19
Grants	79
Budget support	7
Project grants	72
Expenditure	924
Current	639
Wages and salaries	360
Civil Service	248
Military	111
Goods and services	83
Transfers and subsidies[2]	133
Interest	64
Domestic	21
External	43
Of which: Glencore loan (after restructuring)	*31*
Investment	285
Domestically financed	153
Foreign financed[3]	132
Overall balance (incl. grants, commitment)	-39
Non-oil primary balance (excl. grants, commitment)[4]	-249
Float from previous year[5]	-49
Float at end of period[5]	90
Var. of Arrears[6]	-64
Repayment of other arrears[7]	0
Overall balance (incl. grants, cash)	-62
Non-oil primary balance (excl. grants,cash)	-272
Financing	65
Domestic financing	38
Bank financing	179
Central Bank (BEAC)	179
Deposits	105
Advances (net)	0
IMF	74
Commercial banks (deposits)	0
Other financing (net), of which:	-141
Amortization	*-74*
Commercial banks loans	*0*
Non-bank loans (gross) [8]	*2*
Treasury bills (net)	*-70*
Treasury Bonds (gross)	*0*
Bank Recapitalization	*0*
Stabilization Funds	*0*
Privatization and other exceptional receipts	0
Foreign financing	27
Loans (net)	-1
Disbursements	72
Budget borrowings	13
Project loans	59
Amortization	-73
Of which: Glencore loan (after restructuring)	-24
Debt relief/rescheduling (HIPC)	28
Financing Gap	-2
RCF-1	
Prospective RCF	
Prospective financing from World Bank	
Prospective financing other development partners	
CCRT	
DSSI	
Residual financing gap	
Memorandum items:	
Non-oil GDP	5,130
Poverty-reducing social spending	241
Bank deposits (including BEAC)	149
(In months of domestically-financed spending)	2.3
BEAC advances[9]	480

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Chad – Government's Debt Accumulation in 2019

The Public Debt Dynamics states that

Annual Change in Debt = $D_{(t)}$ – $D_{(t-1)}$ = Borrowings – Amortizations → ***'debt manager's approach'***

and also,

Annual Change in Debt = $D_{(t)}$ – $D_{(t-1)}$ = Expenditure – (Revenues + Other Financing Sources) → ***'fiscal analyst's approach'***

When financial liabilities are denominated in local and foreign currencies, we have that total debt $D_{(t)}$ includes local-currency debt $D_{(lc,t)}$ and foreign-currency debt $D_{(fc,t)}$.

For accounting reasons, the value of foreign-currency debt is converted into local-currency using exchange rates (ER), and next added to the local-currency debt → $D_{(t)} = D_{(lc,t)} + D_{(fc,t)} * ER_{(eop,t)}$

Two important effects are observed in practice when exchange rates fluctuate and then increase (or decrease) the local-currency value of the total public debt:

1. Valuation Effect (VE) is the change in the local-currency value of the 'old' foreign-currency debt inherited from last year (t-1), due to the exchange rate depreciation (or appreciation) between last year (t-1) and this year (t) → $VE = D_{(fc,t-1)} * (ER_{(eop,t)} - ER_{(eop,t-1)})$

2. Stock-Flow Adjustment (SF) is the change in the local-currency value of the 'new' foreign-currency debt generated this year (t) (i.e., issuances minus amortizations), due to the exchange rate depreciation (or appreciation) within this year (t) (i.e., from the date of net issuance to the end-of-year date) → $SF = (D_{(fc,t)} - D_{(fc,t-1)}) * (ER_{(eop,t)} - ER_{(avp,t)})$

Annual Change in Debt = $D_{(t)}$ – $D_{(t-1)}$ = Borrowings – Amortizations + VE + SF

Annual Change in Debt = $D_{(t)}$ – $D_{(t-1)}$ = Expenditure – (Revenues + Other Financing Sources) + VE + SF

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Chad – Government's Debt Accumulation in 2019

What caused the public debt accumulation in 2019? Complete the two equations below using data from Table 2 (figures in CFAF billions).

$D_{(2019)} - D_{(2018)}$ = Borrowings – Amortizations (cash) + VE + SF + Residual

$D_{(2019)} - D_{(2018)}$ = Expenditure (cash) – (Revenues + Other Financing Sources) + VE + SF + Residual

Hints:

Revenues = 885

Borrowings = 148 = On-lending from BEAC of IMF loans (net) + Non-bank Loans + Disbursement of Foreign Loans = 74+2+72

Other Financing Sources = 105 = *Withdrawals* of Deposits at BEAC

Expenditure (cash) = 947 = Expenditure (accrual) – Change in Float Stock – Change in Arrears Stock = 924 – (90–49) – (-64)

Amortizations (cash) = 189 = Amortization T-Bonds and Non-bank Loans + Amortization T-Bills (net of issuances) + Amortization of Foreign Loans – HIPC Debt Relief/Rescheduling = 74 + 70 + 73 - 28

$D_{(2018)}$ is 49.1% of GDP and $D_{(2019)}$ is 44.3% of GDP (see Table 1; debt figures include guaranteed debt).

Note that $GDP_{(2018)}$ is 6,127 and $GDP_{(2019)}$ is 6,406.

Therefore, you should find that the annual change in the Chadian public debt is $D_{(2019)} - D_{(2018)} = -170$

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Chad – Government's Debt Accumulation in 2019

Additional Hints:

Let us assume that $D_{(fc, 2018)}$ and $D_{(fc, 2019)}$ are equal to external public debt (which is 25.9% of GDP in 2018 and 24.6% of GDP in 2019).

Let us also assume that $D_{(fc, 2018)}$ and $D_{(fc, 2019)}$ are denominated in USD only.

Note that exchange rates are the following: $ER_{(eop,2018)}$ is 576 CFAF/USD ; $ER_{(eop,2019)}$ is 590 CFAF/USD ; and $ER_{(avp,2019)}$ is 586 CFAF/USD

Therefore, you can compute VE and SF as follows:

$VE = 38 = D_{(fc,2018)} * (ER_{(eop,2019)} - ER_{(eop,2018)}) = (25.9\% * 6{,}127 / 576) * (590 - 576)$

$SF = 0 = (D_{(fc,2019)} - D_{(fc,2018)}) * (ER_{(eop,2019)} - ER_{(avp,2019)}) = [\,(24.6\% * 6{,}406 / 590) - (25.9\% * 6{,}127 / 576)\,] * (590 - 586)$

What factors could explain the Residual?

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Chad – Solutions

The Public Debt Dynamics in 2019 is:

$D_{(2019)} - D_{(2018)} = -170$ = Borrowings (148) – Amortizations (cash) (189) + VE (38) + SF (0) + Residual (-167)

$D_{(2019)} - D_{(2018)} = -170$ = Expenditure (cash) (947) – (Revenues (885) + Other Financing Sources (105)) + VE (38) + SF (0) + Residual (-165)

Note: There is a difference of 2 between the two Residuals in the equations above.

Country case study

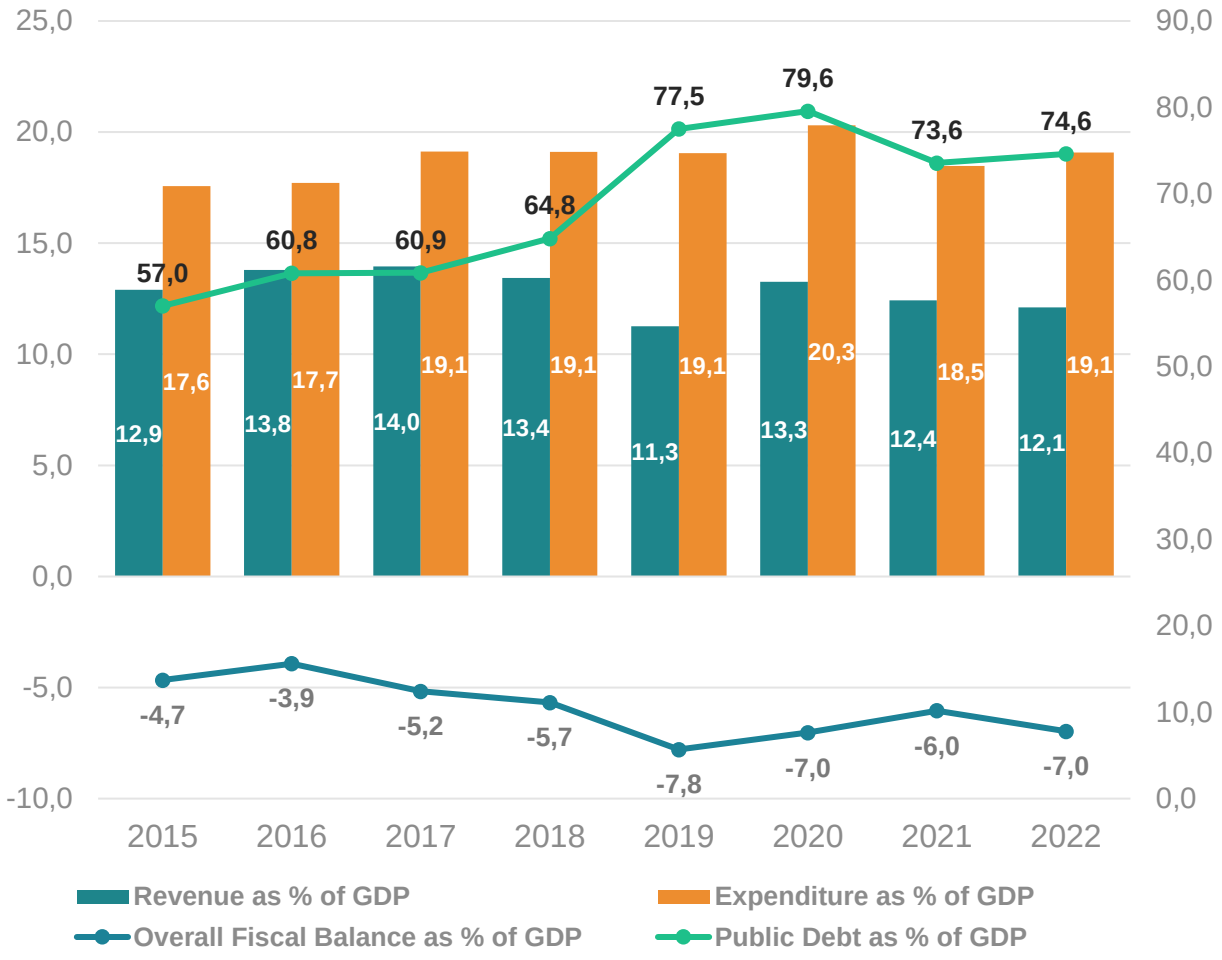
Pakistan

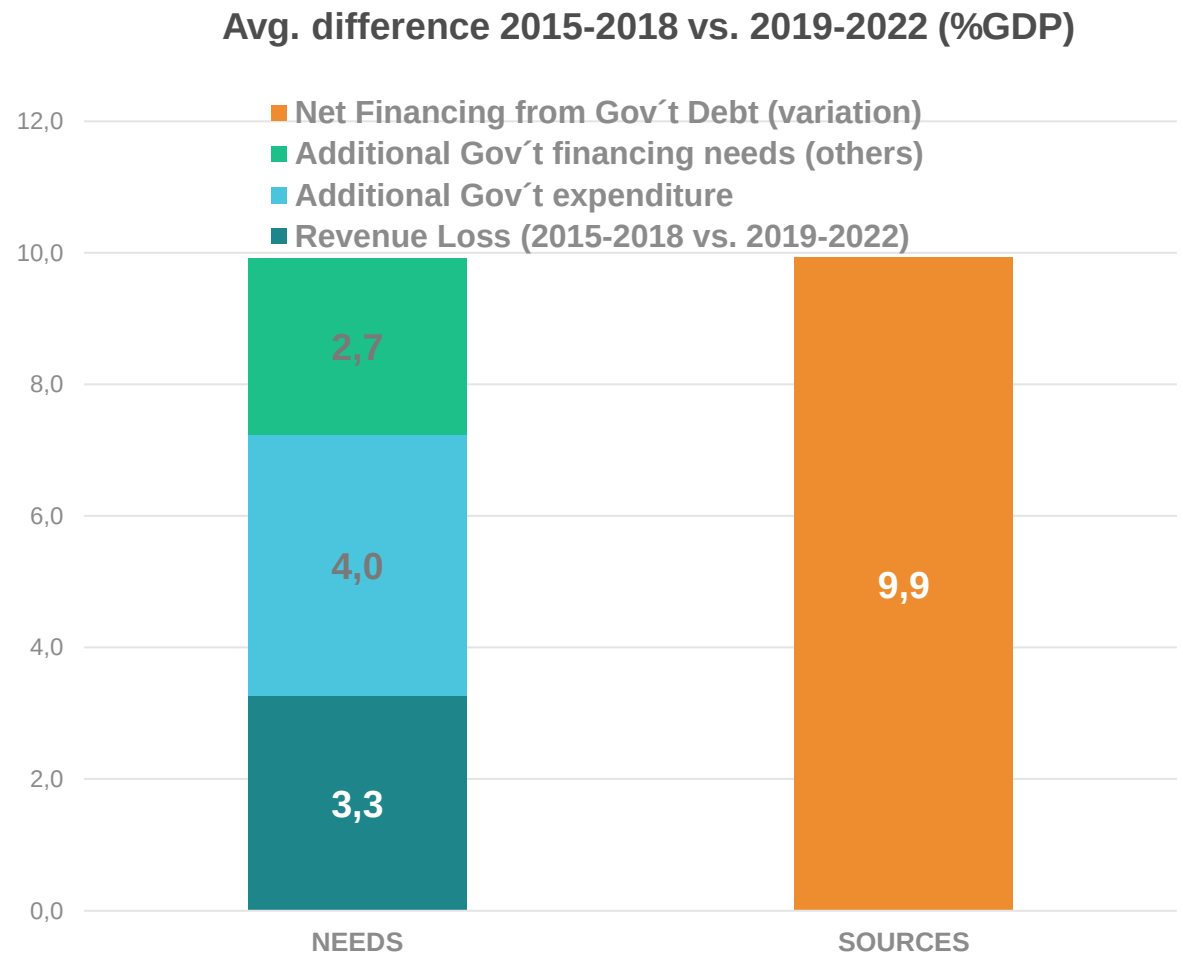
European Commission

Questions

- Discuss Pakistan fiscal performance. How has the public debt evolved over time? What happened in terms of needs and funding sources pre and during/post pandemic.
- How the external situation evolved?. Relate to external debt and international reserves.

Pakistan – Fiscal Imbalances





Source: Own elaboration based on IMF and official data.

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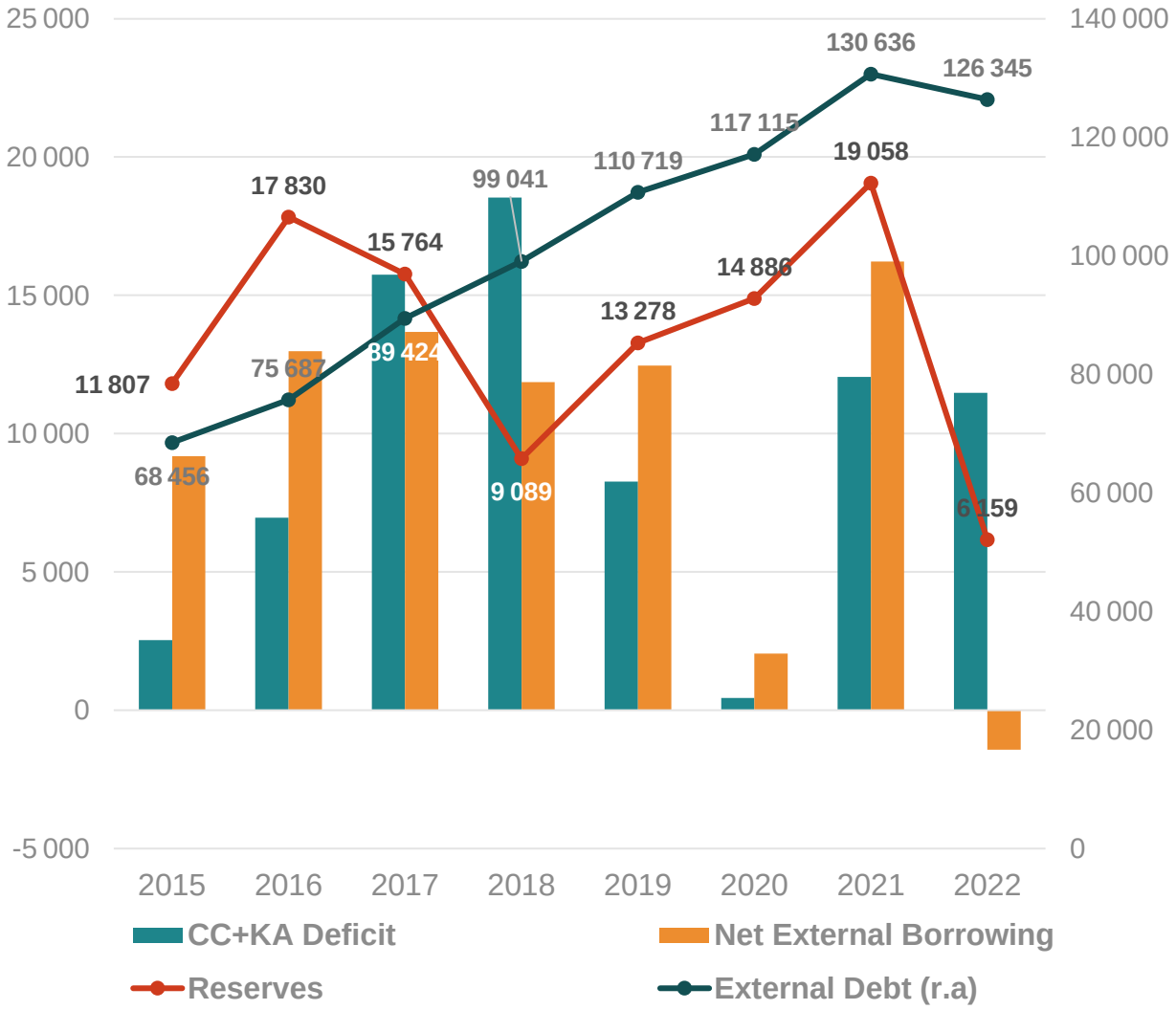
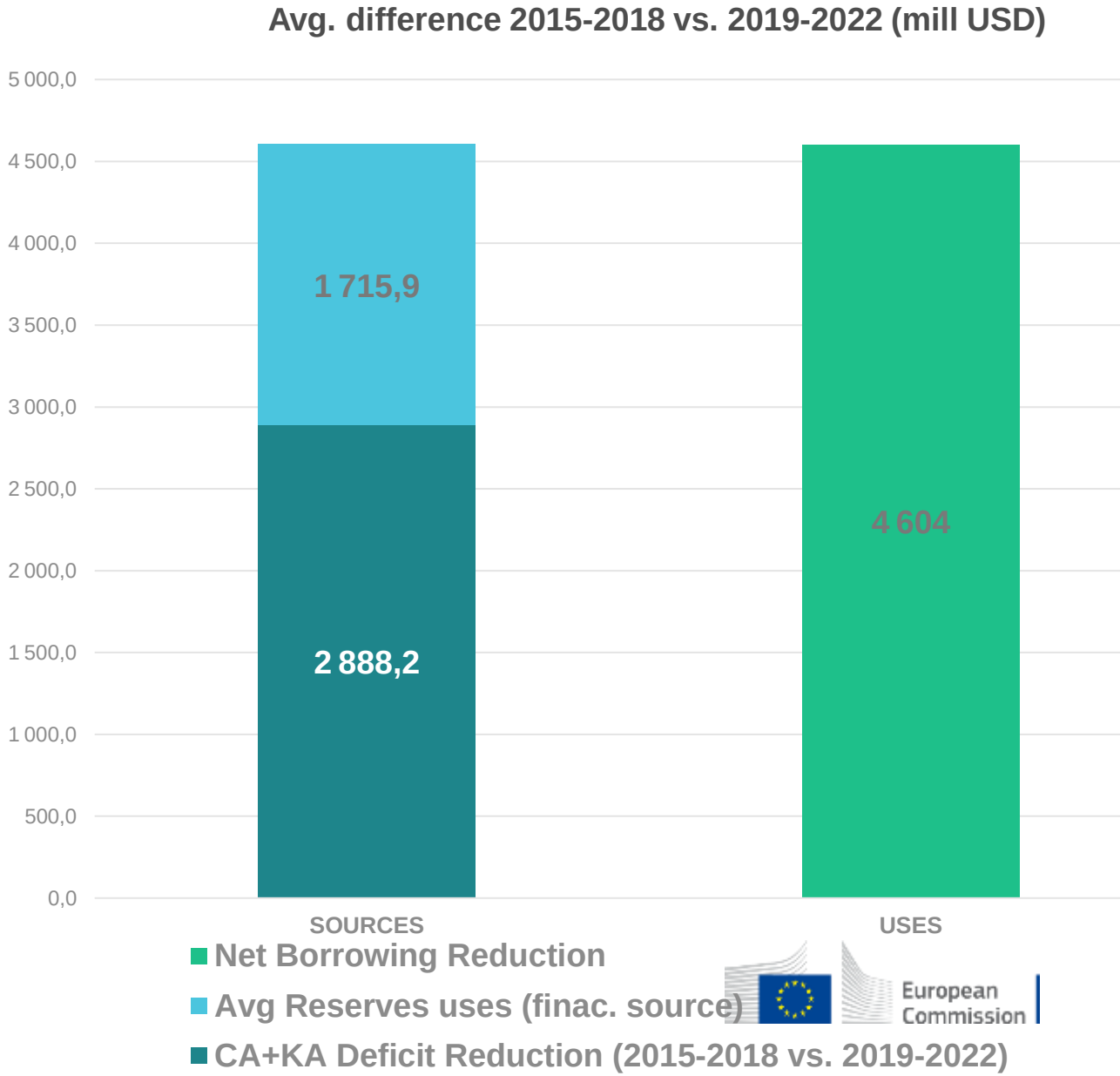
Pakistan – External Imbalances





Source: Own elaboration based on IMF and official data.

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Selected Issues

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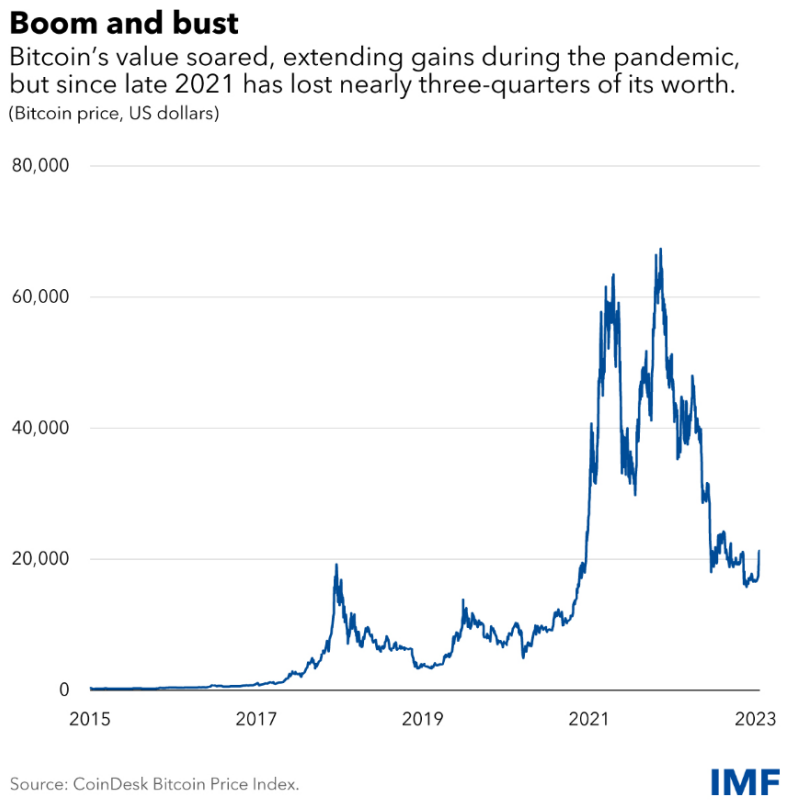
Monetary Policy and Analysis
Selected Issues

European Commission

Selected Issue—Crypto Assets



- Purposed benefits: Enhancing cross-border payments' efficiency, financial inclusion, and portfolio diversification
- Macroeconomic risks: Potential impacts on monetary policy efficacy, capital flow volatility, and fiscal risks
- Concerns: Addressing financial stability, financial integrity, legal considerations, consumer protection, and market integrity.
- Example: Central African Rrpublic adopted crypto assets as a legal tender
- Challenges: Highlighting the decline in crypto asset valuations, exchange failures, and the collapse of specific crypto assets

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Selected Issue—Central Banks Digital Currencies (CBDC)

- Role of CBDC: Dual nature encompassing both a monetary instrument (store of value and means of payment) and vital infrastructure for transaction clearing and settlement
- Monetary instrument aspect: CBDC's role in enhancing safety, mitigating counterparty risks, and providing liquidity in payment systems
- Infrastructure aspect: CBDC's potential to foster interoperability and efficiency across private digital money networks and asset platforms
- Prudent design potential: CBDCs, if designed carefully, may offer improved resilience, safety, accessibility, and cost-efficiency compared to private digital money
- Comparative advantage: Even well-regulated stablecoins might fall short when compared to a stable and well-designed central bank digital currency

Fiscal Policy and Stabilization
Selected Issues

European Commission

Fiscal Frameworks and Fiscal Rules

- Fiscal frameworks important tool to **support fiscal sustainability** and make policies more predictable
- Fiscal frameworks comprise long-term fiscal targets, fiscal rules and fiscal institutions as well as budget procedures
- Countries increasingly adopted fiscal rules and fiscal councils to help strengthen their fiscal frameworks, promote debt sustainability and increase credibility of fiscal policy
- Design of fiscal frameworks **should achieve three goals:**

  (i) sustainability of public finances
  (ii) stabilization of the economy through countercyclical fiscal policy
  (iii) communication and accountability to the public

Fiscal Frameworks and Fiscal Rules

- Well-designed fiscal rules and medium-term frameworks can promote good expenditure control over the cycle and promote a flexible response to variations in output
- Fiscal councils tasked to provide fiscal oversight, including monitoring and assessing of budgets and quality of public policies
- Selecting a long-term fiscal target is important when designing fiscal framework, commonly used anchors are debt or the budget balance
- Fiscal rules are long-lasting constrains on fiscal policy through numerical limits on broad fiscal aggregates (budget balance, government expenditure, debt)
- Most common rules are: debt ceiling; debt anchor (target); deficit ceiling; public expenditure growth ceiling; Golden Rule (borrowing can only be used for financing investment projects)
- Debt-to-GDP easy to monitor and good predictor of crises, and could also be combined with a deficit limit as in the EU SGP
- Key trend greater flexibility with exit clauses to accommodate large, unexpected shocks (e.g., pandemic, financial crisis)

Public Debt and Debt Sustainability Analysis (DSA) Selected Issues

European Commission

Debt Vulnerabilities in LICs

- LICs' public debt has risen steadily during the decade prior to the pandemic.
    - Key contributing factors included higher external borrowing following low interest rates, high investment needs, limited progress in domestic revenue mobilization, and often-constrained public financial management capacity.
    - A closer look at the structure of debt shows that the growth was mostly driven by two components: domestic debt and external non-concessional debt (e.g., new official and semi-official creditors, frontier markets).
- LICs' public debt has further increased in 2020-22 as a consequence of the pandemic and Russia's war in Ukraine. Large output loss also contributed to increase the public debt-to-GDP ratio.
- Over 25 years after the launch of the Heavily Indebted Poor Countries (HIPC) Initiative and the Multilateral Debt Relief Initiative (MDRI), many LICs are again facing high debt vulnerabilities.
- About 60% of LICs are currently facing high debt vulnerabilities.

Debt Vulnerabilities in LICs

- Failure to put public debt in a decisive downward path will intensify existing debt vulnerabilities.
- Debt restructuring or reprofiling can help address those vulnerabilities. However, efforts at implementing coordinated debt treatments face challenges that did not exist in the past, e.g., new official and semi-official creditors, frontier markets. Creditor coordination in debt restructuring processes is more complex. Higher financing needs have recently contributed to harsher terms and the use of riskier debt instruments. Large debt repayments are coming due in the near term. Weak capacity to undertake maturity-managing tools (e.g., debt reprofiling operations, swaps, or other liability management operations)
- Fiscal consolidation can also help. However, if fiscal consolidation is too aggressive and not growth-friendly, it poses significant risks to the debt trajectory through the fiscal multiplier effect, while failure to undertake critical structural reforms could result in lower than projected growth. These negative feedback effects exacerbate debt vulnerabilities.
- Recent initiatives for debt restructuring and reprofiling: G20 Common Framework and Debt Service Suspension Initiative (DSSI).
- The IMF-World Bank Multipronged Approach to Address Debt Vulnerabilities (MPA) provides a reference framework to support this objective, through a comprehensive approach organized around four pillars: (i) strengthening debt transparency; (ii) strengthening countries' capacity to manage debt; (iii) applying accurate debt analysis tools; and (iv) strengthening International Financial Institution (IFI) policies.

Classification System for Debt Restructurings

Term	Purpose of Transaction	Typical Commercial Features	Selected Examples	Illustrative NPV Haircut to Bondholders at a 10% Discount Rate	Debt Relief to Debtor at a 6% Discount Rate
Reprofiling	Risk-burden sharing: Used to lock in funding for a few years and/or to keep creditors at risk to future loss absorption	3–5-year maturity extension No coupon reduction No principal haircut	Uruguay, 2003 Dominican Republic, 2005 Pakistan, 1999	5–15% Allows full recovery of par/market value if no subsequent restructuring	0% Government benefits primarily through avoiding high or uncertain market financing costs that would otherwise apply
Soft Restructuring	Value-burden sharing: Primarily used to relieve funding and budgetary interest pressures	5–10-year maturity extension Coupons reduced 0–30% No principal haircut	Ukraine, 2000	15–30% May allow full recovery of par/ market value after interim loss of income	0–20% Temporary interest expense relief generates small debt/GDP savings on horizon of economic program
Medium Restructuring	Value-burden sharing: Delivers moderate debt relief to debtor and payment deferral	10–20-year maturity extension Large reduction of coupon and/or moderate principal reduction	Brady restructurings for Mexico, Brazil, the Philippines and Uruguay Ecuador, 2000	30–50% Moderate permanent impairment of capital	20–50% Direct debt/GDP savings through principal reduction or below normal financing costs
Hard Restructuring	Value-burden sharing: Delivers deep debt relief to debtor and significant payment deferral	20–30-year maturity extension Large reduction of coupon Large reduction in principal	Argentina, 2005 and 2010 Greece, 2012	50–75% Deep permanent impairment of capital	50–75% Direct debt/GDP savings through principal writeoff and additional savings from reduced coupons

Makoff, G. (2015)

Debt Redemption Profile under 3 Scenarios

Feature	Reprofiling	Restructuring
Maturity Extension		
Principal Haircut		
Coupon Interest Rate Reduction		
NPV Haircut		

Term	Feature	Reprofiling	Restructuring
Soft Restructuring	Maturity Extension	3	5
	Principal Haircut	0%	0%
	Coupon Interest Rate Reduction	0%	15%
	NPV Haircut	**10%**	**20%**
Medium Restructuring	Maturity Extension	4	10
	Principal Haircut	0%	0%
	Coupon Interest Rate Reduction	0%	50%
	NPV Haircut	**13%**	**46%**
Hard Restructuring	Maturity Extension	5	20
	Principal Haircut	0%	25%
	Coupon Interest Rate Reduction	0%	30%
	NPV Haircut	**16%**	**74%**

Note: a discount rate at 10% was used.

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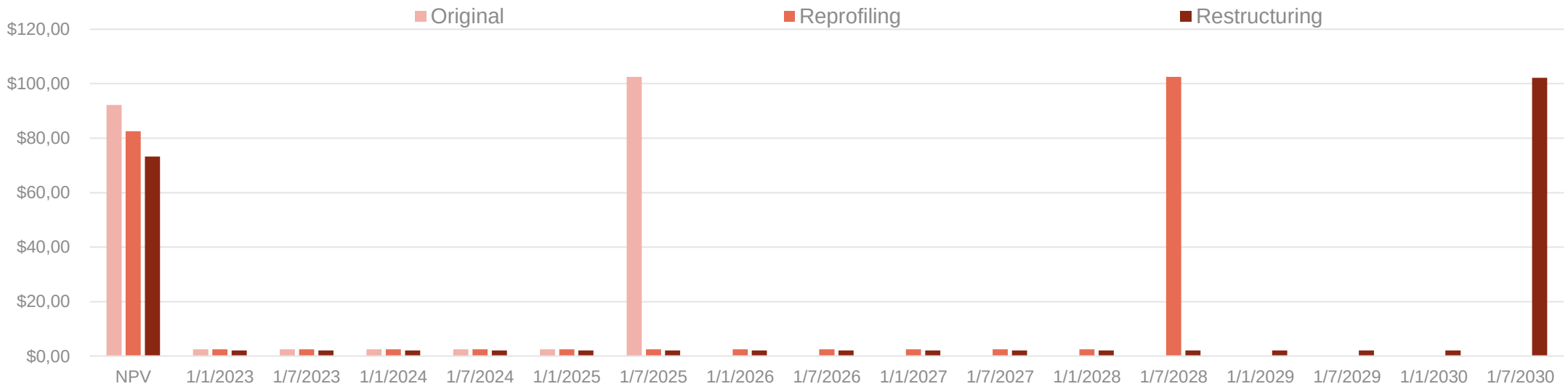
Example 1. Soft Restructuring



	Original	Reprofiling	Restructuring
Settlement date	1/1/2023	1/1/2023	1/1/2023
Capital	100	100	100
Coupon IR	5%	5%	4%
Maturity date	1/7/2025	1/7/2028	1/7/2030
Maturity extension (in years)	-	3	5
Capital haircut (% of face value)	-	0%	0%
Coupon reduction (bps.)	-	0%	15%
NPV haircut		**10%**	**20%**

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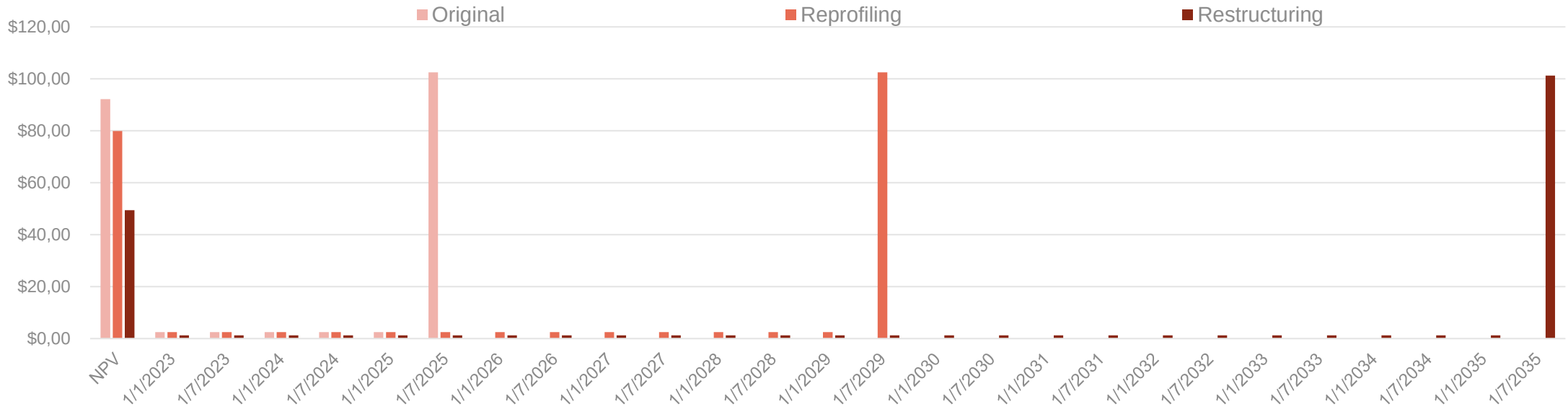
Example 2. Medium Restructuring



	Original	Reprofiling	Restructuring
Settlement date	1/1/2023	1/1/2023	1/1/2023
Capital	100	100	100
Coupon IR	5%	5%	3%
Maturity date	1/7/2025	1/7/2029	1/7/2035
Maturity extension (in years)	-	4	10
Capital haircut (% of face value)	-	0%	0%
Coupon reduction (bps.)	-	0%	50%
NPV haircut		**13%**	**46%**

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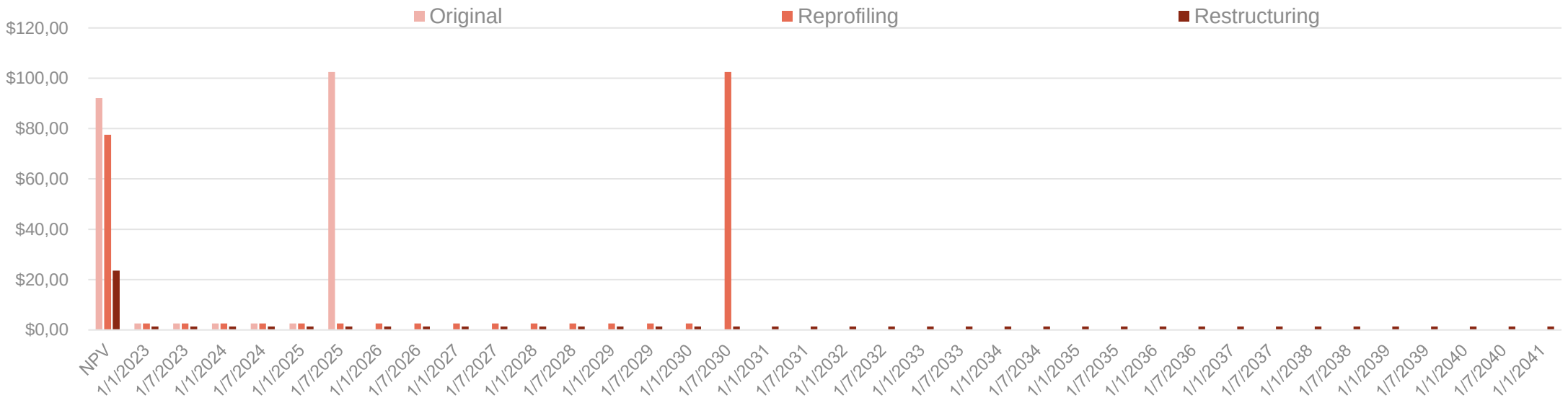
Example 3. Hard Restructuring



	Original	Reprofiling	Restructuring
Settlement date	1/1/2023	1/1/2023	1/1/2023
Capital	100	100	75
Coupon IR	5%	5%	4%
Maturity date	1/7/2025	1/7/2030	1/7/2045
Maturity extension (in years)	-	5	20
Capital haircut (% of face value)	-	0%	25%
Coupon reduction (bps.)	-	0%	30%
NPV haircut		**16%**	**74%**

European Commission

Debt Vulnerabilities in LICs
Russia´s war in Ukraine

- Russia's war in Ukraine and the related fallout threaten to derail the nascent post-Covid global recovery. The shock of Russia's invasion of Ukraine in February 2022 continues to reverberate around the world.
- Food and commodity prices linger at elevated level with worsening food security. Inflation, initially driven by the economic recovery, has accelerated rapidly in 2022, heightening food insecurity and increasing risks of social unrest.
- The recent tightening in global financial conditions is also hampering the recovery. Global financial conditions tighten as major economies are fighting against inflation. This conditions reduces the availability of external financing to LICs.
- Many economies are likely to experience slower growth in incomes in 2023, amid rising joblessness. Moreover, even with central banks having driven up interest rates to reduce inflation, the road back to price stability could be long. Over the medium term, the prospects for growth now seem dimmer than in decades.

Debt Vulnerabilities in LICs
Russia´s war in Ukraine

- Uncertainty from the war in Ukraine could negatively affect the debt trajectory: weakening global demand may hamper growth, whereas higher commodity prices may put pressure on fiscal consolidation efforts as governments provide vital support to vulnerable households.
- The war in Ukraine, compounded with other factors, is severely threatening the recovery of LICs the pandemic. The war is likely to have a protracted impact on commodity prices, while most LICs have little policy space to buffer the new shock.
- The compound shocks from the pandemic and Russia's war in Ukraine have disproportionally affected LICs.
    - Prices for food, which accounts for a significantly higher share of disposable income in LICs compared to emerging market and advanced economies, have surged.
    - Higher oil prices will substantially increase the cost of oil imports for net importers, worsen their trade imbalances, and raise transport and other consumer costs.

Country case study

Brazil

European Commission

Brazil — Background

- Low GDP growth and fiscal deficits due to COVID-19 pandemic has led to an increasing level of debt.
- Revenues stagnation. Need for revenue mobilization to create space for public investment and a stronger social safety net.

Brazil – Fiscal Space

- For the activity in this case study, please use data from the tables in the following slides (which are based on WEO).
- **Activity #1**: Discuss evidence of ‘limited’ fiscal space. Its capacity to borrow, mobilize revenues, or both, constrained? Which is the expenditure situation?. For this, different scenarios are presented:
  - Baseline;
  - Alternative Scenario no. 1; and
  - Alternative Scenario no. 2.
- **Exercise:** If Gov´t must stabilize debt, which is the cap level for primary spending?

Brazil – Fiscal Space

Table 1

Unit	Variable	2017	2018	2019	2020	2021	2022	2023	2024
LCU/USD	ER per U.S. dollar, end of period	3.31	3.87	4.03	5.20	5.58	4.65	4.60	4.56
LCU/USD	ER per U.S. dollar, average	3.19	3.65	3.94	5.16	5.40	4.85	4.61	4.56
%	Real GDP Growth Rate	1.3	1.8	1.2	-3.9	4.6	1.7	1.1	2.1
%	Average Interest Rate	10.3	9.1	8.4	7.0	8.5	10.2	10.0	8.8
$	Nominal GDP current prices	6,585	7,004	7,389	7,468	8,679	9,725	10,271	10,916
$	Revenue	2,006	2,148	2,327	2,206	2,736	2,984	3,086	3,212
$	Net borrowing	596	450	483	786	672	618	741	770
$	Other net financing sources	-80	42	-49	210	-288	105	18	-14
$	Expenditure	2,522	2,641	2,761	3,201	3,120	3,707	3,845	3,968
$	Primary Expenditure	2,016	2,138	2,257	2,744	2,492	2,880	2,982	3,143
$	Interest Expenditure	506	503	504	457	628	826	862	825
$	Public Debt	5,508	5,998	6,493	7,369	8,073	8,620	9,355	10,121
$	Public Debt, foreign currency	239	285	314	430	451	470	505	543
$	Public Debt, domestic currency	5,268	5,714	6,179	6,940	7,623	8,150	8,851	9,578
$	Valuation Effect	4	41	11	91	32	-71	-6	-4
%	Revenue as % of GDP	30.5	30.7	31.5	29.5	31.5	30.7	30.0	29.4
%	Net borrowing as % of GDP	9.1	6.4	6.5	10.5	7.7	6.4	7.2	7.1
%	Other net financing sources as % of GDP	-1.2	0.6	-0.7	2.8	-3.3	1.1	0.2	-0.1
%	Expenditure as % of GDP	38.3	37.7	37.4	42.9	35.9	38.1	37.4	36.3
%	Primary Expenditure as % of GDP	30.6	30.5	30.5	36.7	28.7	29.6	29.0	28.8
%	Interest Expenditure as % of GDP	7.7	7.2	6.8	6.1	7.2	8.5	8.4	7.6
%	Public Debt as % of GDP	83.6	85.6	87.9	98.7	93.0	88.6	91.1	92.7

- Under this ´Baseline Scenario´, which is the level of primary expenditure? What happened with the debt evolution (as % GDP)? What are your views on the room for additional spending?

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Brazil – Fiscal Space

Table 2

Unit	Variable	2017	2018	2019	2020	2021	2022	2023	2024
LCU/USD	ER per U.S. dollar, end of period	3.31	3.87	4.03	5.20	5.58	4.65	4.60	4.56
LCU/USD	ER per U.S. dollar, average	3.19	3.65	3.94	5.16	5.40	4.85	4.61	4.56
%	Real GDP Growth Rate	1.3	1.8	1.2	-3.9	4.6	1.7	1.1	2.1
%	Average Interest Rate	10.3	9.1	8.4	7.0	8.5	10.2	10.0	8.8
$	Nominal GDP current prices	6,585	7,004	7,389	7,468	8,679	9,725	10,271	10,916
$	Revenue	2,006	2,148	2,327	2,206	2,736	2,984	3,086	3,212
$	Net borrowing	596	450	483	786	672	618	490	575
$	Other net financing sources	-80	42	-49	210	-288	105	0	0
$	Expenditure	2,522	2,641	2,761	3,201	3,120	3,707	3,576	3,787
$	Primary Expenditure	2,016	2,138	2,257	2,744	2,492	2,880	2,714	2,984
$	Interest Expenditure	506	503	504	457	628	826	862	803
$	Public Debt	5,508	5,998	6,493	7,369	8,073	8,620	9,105	9,676
$	Public Debt, foreign currency	239	285	314	430	451	470	496	528
$	Public Debt, domestic currency	5,268	5,714	6,179	6,940	7,623	8,150	8,608	9,149
$	Valuation Effect	4	41	11	91	32	-71	-6	-4
%	Revenue as % of GDP	30.5	30.7	31.5	29.5	31.5	30.7	30.0	29.4
%	Net borrowing as % of GDP	9.1	6.4	6.5	10.5	7.7	6.4	4.8	5.3
%	Other net financing sources as % of GDP	-1.2	0.6	-0.7	2.8	-3.3	1.1	0.0	0.0
%	Expenditure as % of GDP	38.3	37.7	37.4	42.9	35.9	38.1	34.8	34.7
%	Primary Expenditure as % of GDP	30.6	30.5	30.5	36.7	28.7	29.6	26.4	27.3
%	Interest Expenditure as % of GDP	7.7	7.2	6.8	6.1	7.2	8.5	8.4	7.4
%	Public Debt as % of GDP	83.6	85.6	87.9	98.7	93.0	88.6	88.6	88.6

- Under this ´Alternative Scenario no.1´, which is the level of primary expenditure? Compare with Baseline. If you want to stabilize the debt ratio, what has to happen to primary spending?

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Brazil – Fiscal Space Exercise

- Under ´Alternative Scenario no.2´, determine the maximum level of primary expenditure under the restriction than Deb-to-GDP ratio remains flat (2023 equal to 2022), and the Revenues return to pre-pandemic level (average 2018-2019)?

Table 3

Unit	Variable	2017	2018	2019	2020	2021	2022	2023
LCU/USD	ER per U.S. dollar, end of period	3.31	3.87	4.03	5.20	5.58	4.65	4.60
LCU/USD	ER per U.S. dollar, average	3.19	3.65	3.94	5.16	5.40	4.85	4.61
%	Real GDP Growth Rate	1.3	1.8	1.2	-3.9	4.6	1.7	1.1
%	Average Interest Rate	10.3	9.1	8.4	7.0	8.5	10.2	10.0
$	Nominal GDP current prices	6,585	7,004	7,389	7,468	8,679	9,725	10,271
$	Revenue	2,006	2,148	2,327	2,206	2,736	2,984	3,193
$	Net borrowing	596	450	483	786	672	618	490
$	Other net financing sources	-80	42	-49	210	-288	105	0
$	Expenditure	2,522	2,641	2,761	3,201	3,120	3,707	
$	Primary Expenditure	2,016	2,138	2,257	2,744	2,492	2,880	
$	Interest Expenditure	506	503	504	457	628	826	862
$	Public Debt	5,508	5,998	6,493	7,369	8,073	8,620	
$	Public Debt, foreign currency	239	285	314	430	451	470	
$	Public Debt, domestic currency	5,268	5,714	6,179	6,940	7,623	8,150	
$	Valuation Effect	4	41	11	91	32	-71	-6
%	Revenue as % of GDP	30.5	30.7	31.5	29.5	31.5	30.7	31.1
%	Net borrowing as % of GDP	9.1	6.4	6.5	10.5	7.7	6.4	4.8
%	Other net financing sources as % of GDP	-1.2	0.6	-0.7	2.8	-3.3	1.1	0.0
%	Expenditure as % of GDP	38.3	37.7	37.4	42.9	35.9	38.1	
%	Primary Expenditure as % of GDP	30.6	30.5	30.5	36.7	28.7	29.6	
%	Interest Expenditure as % of GDP	7.7	7.2	6.8	6.1	7.2	8.5	8.4
%	Public Debt as % of GDP	83.6	85.6	87.9	98.7	93.0	88.6	88.6

Brazil – Expenditures cap in 2023

What is the primary expenditure ceiling in 2023? Remember that the Public Debt Dynamics states:

$D_{(2019)} - D_{(2018)} =$ Expenditure (cash) – (Revenues + Other Financing Sources) + VE + SF + Residual

where, Expenditures (cash) = Primary Expenditure + Interest

Complete the equation below using data from Table 3 (figures in BRL billions).

Primary Expenditure = D(2023) – D(2022) + (Revenues + Other Financing Sources) - Interest – (VE + SF) – Residual

Hints:

Note that $GDP_{(2023)}$ is 10,271 and $GDP_{(2022)}$ is 9,725.

Revenues = 3,193 (Average 2018-2019 is 31.1% of GDP)

Other Financing Sources = 0

Interest = 862 (Table 2)

VE + SF = -6 (Table 2, Valuation Effect line include SF)

Residual = 0

$D_{(2022)}$ is 88.6% of GDP and $D_{(2023)}$ must be 88.6% of GDP.

Therefore, you should find that the annual change in the Brazilian public debt is $D_{(2023)} - D_{(2022)} = 484$

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Brazil – Solutions

The Primary Expenditure in 2023 is:

Primary Expenditure = 2,821 = D(2023) (9,105) – D(2022) (8,620) + Revenues (3,193) + Other Financing Sources (0) – Interest (862) – (VE + SF) (-6) – Residual (0)

Primary Expenditure (2023) / GDP (2023) = 27.5% = 2,821 / 10,271

Post-Course Questionnaire (Test-Out)

Participants’ feedback

Takeaways

- Challenges & Impact: Understand challenges in monetary and fiscal policies and their impact on economies
- Debt Sustainability: Identify determinants for effective debt sustainability analysis
- Global Events Analysis: Analyze how global events affect Low-Income Countries (LICs)
- Conceptual Mastery: Decode foundational concepts in IMF's economic tables
- Applied Assessment: Apply economic concepts to evaluate real-world economic performance
- Policy Synergies: Grasp interactions between monetary and fiscal policies for shaping economies

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