

Financial Markets, Monetary Policy and the Impossible Trinity

94th Foundation Course for AIS and CCS Officers
Dr Marri Channa Reddy HRD Institute, Hyderabad,
Telengana
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Dr Alok Sheel
RBI Chair Professor in Macroeconomics
Indian Council for Research in International Economic Relations
New Delhi

Overview

I Money and Finance

II Central Banking

III Global Spill Overs and the Impossible Trinity

Money, Finance and the Economy

- **Why do we need money?**
 - Unit of **Account**
 - Store of **Value**
 - Medium of (universal) **Exchange**
- **Financial System**
 - The sum total of money and financial instruments/assets
 - Financial assets of two broad types: debt (borrowed funds) and equity (savings)
- **The Economy**
 - Sum total of good and services produced and traded
 - All financial assets are ultimately claims on income streams in the real economy

The Financial System and the Economy

- The financial system is **the grease that lubricates the economy**.
- Since all financial assets are in a sense **claims on the real economy**, in the long run returns from financial assets should match the growth rate of the economy.
- Over the short run however **economic growth and financial cycles** are known to diverge, often quite sharply, resulting in financial bubbles/crises.
- What causes **bubbles**:
 - **Over exuberance** on the part of investors?
 - Excessive liquidity/cheap money provided by **central banks**?
 - Consumer **Price Inflation and Asset Inflation**

Where does Money Come From?

- **Private Entities**
 - **Long phased out** as it led to instability and fraud
 - Depository institutions, such as banks, under **fractional banking**.
- **Sovereigns**
 - Nominal Anchors and **Fiat Currency**
 - **Conflict of interest** between fiscal and monetary policies
 - Monetizing deficits and market borrowing
 - **Central banks**, sovereign entities at **arms length** from the government
 - mint currency on behalf of the sovereign
 - set the price of money (interest rates) in the economy through monetary policy.
 - Manages the government's borrowing programme
- **Exchange Rates**
 - Since central banks are sovereign entities there are **multiple currencies** in the Global Financial System. A number of countries may however enter into a monetary union, where they adopt a common currency, like the Euro.
 - Exchange rates between currencies can either be **determined by the market or set by the central bank/government**.

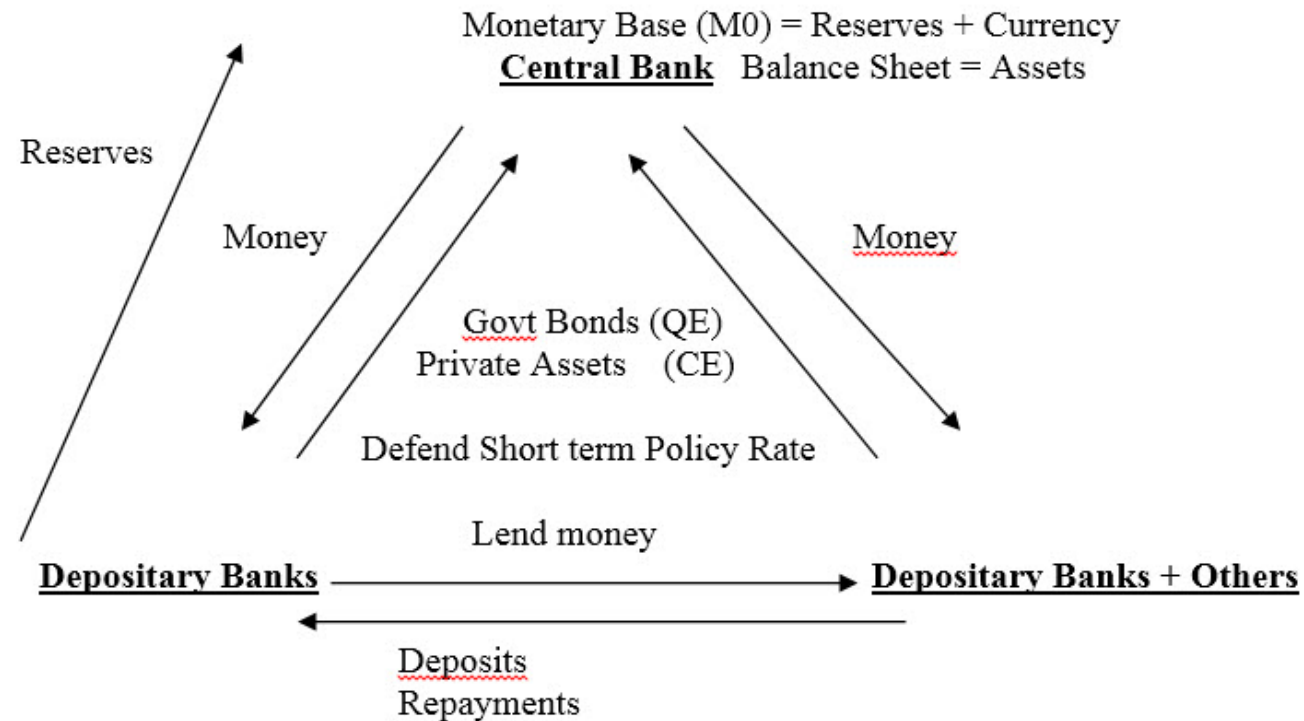
Central Banking Basics

The Rocket Science of Central Banking

Fisher's Equation

$$M * V = P * Q = \text{GDP}$$

Quantity theory of Money



(Monetary) Policy Rate Setting by Central Banks

* Fiscal Policy target

- Targets

- To nudge the economy towards its potential rate of growth * through specifically targeting Inflation (BOE and ECB), Inflation and Growth (US Federal Reserve), Primarily Inflation (RBI), Inflation and 'quantitative and qualitative monetary easing with yield curve control' (BOJ)
- Financial Stability
 - The original objective behind setting up central banks.
 - Monetary policy now considered too blunt an instrument for targeting asset bubbles
 - Macroprudential policy the instrument of choice

- Discretionary or Rule Bound

- Taylor Rule: $0.5(\text{target inflation minus actual inflation}) + 0.5(\text{potential growth} - \text{actual growth}) + 2(\text{constant: the policy rate when both inflation and growth are on target})$

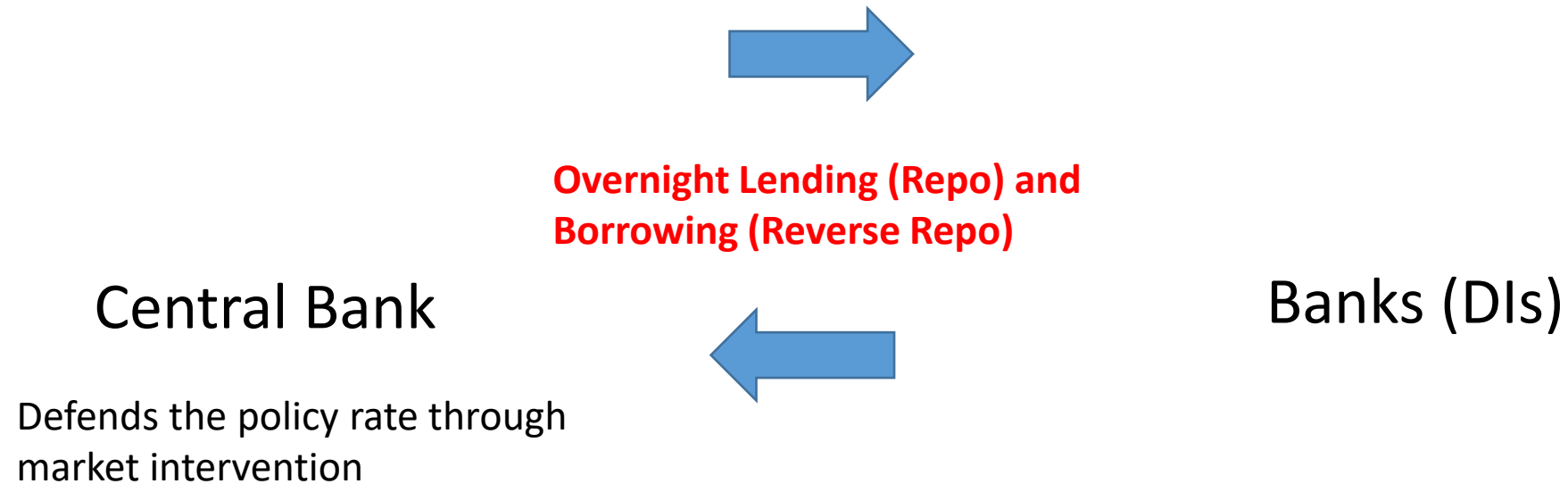
- Instruments

- Overnight lending rate to set the price of money the instrument of choice
- In extraordinary situations other instruments can be used, such as QE, CE, Interest on reserves, etc.

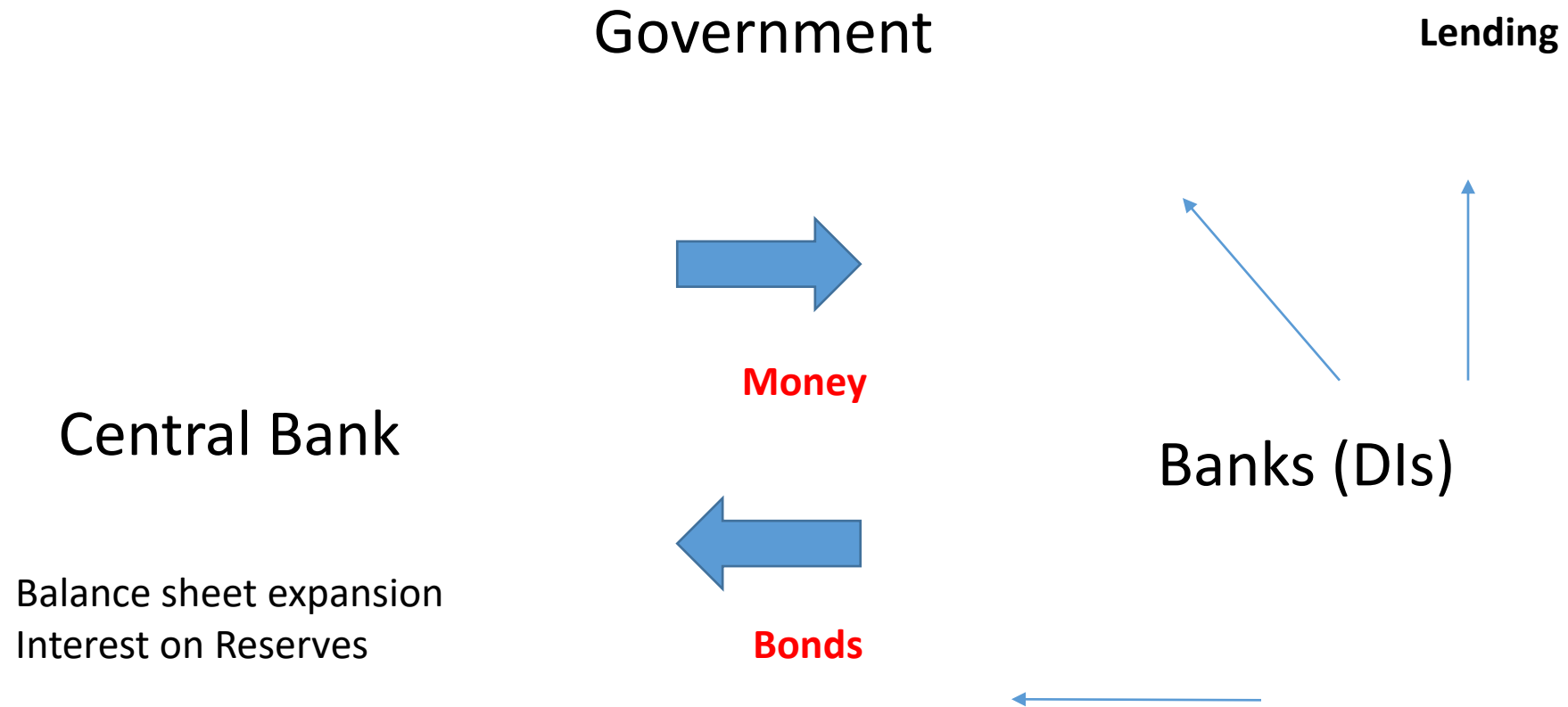
How do Central Banks set the price for money?

- The **overnight lending rate** is the basic rate for setting the price of money. Central banks defend this rate – or band -- through market intervention:
 - by providing unlimited liquidity at this rate
 - By absorbing excess liquidity at a rate slightly below this rate so the price of money remains within the targeted band.
 - Typically central banks enter into overnight repurchase ('repo') agreements for short dated treasury bills.
- This rate is ***transmitted*** along the entire (risk free) 'yield curve' (different maturities)
- Market participants **lend and borrow at a spread above this price.**
 - **Inter-bank market**, such as LIBOR, usually 20-30 BP above corresponding Treasury Bond price.
 - **Non-banks** borrow at a spread above LIBOR, or Treasuries, depending on their credit rating.

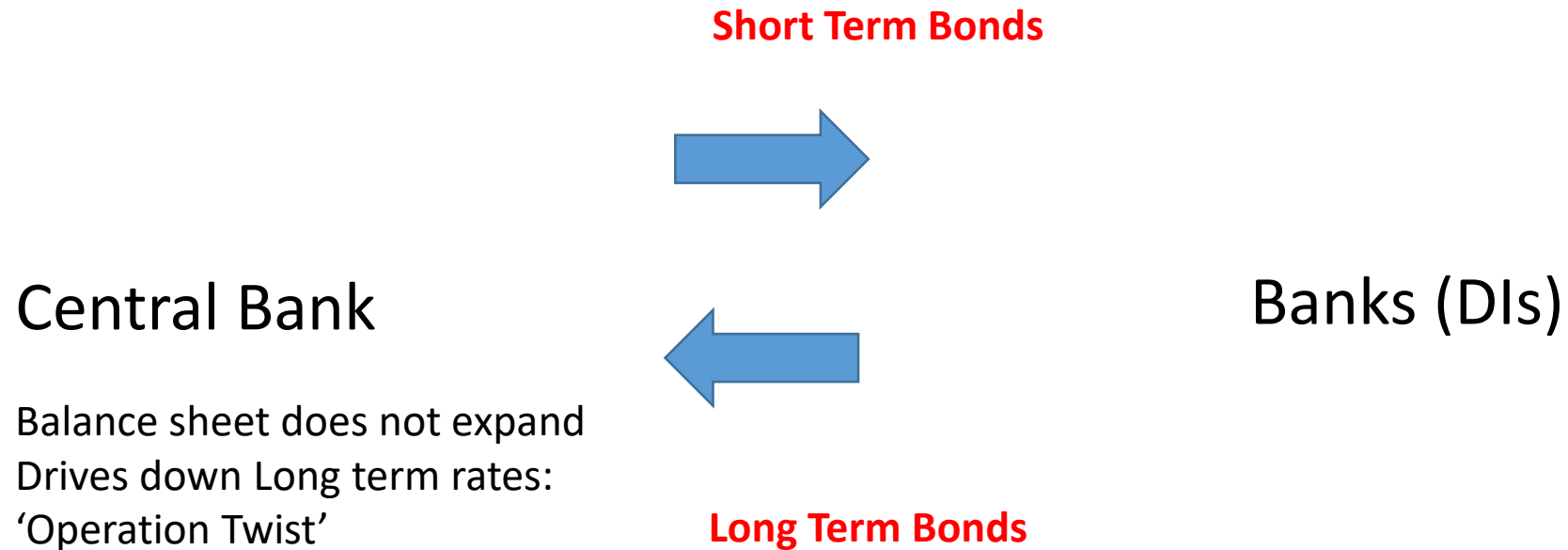
Conventional Monetary Policy (Policy Rates above Zero)



Unconventional Monetary Policy at ZLB (Quantitative Easing)



Unconventional Monetary Policy at ZLB (Credit Easing)



EMDEs and the Global Financial System

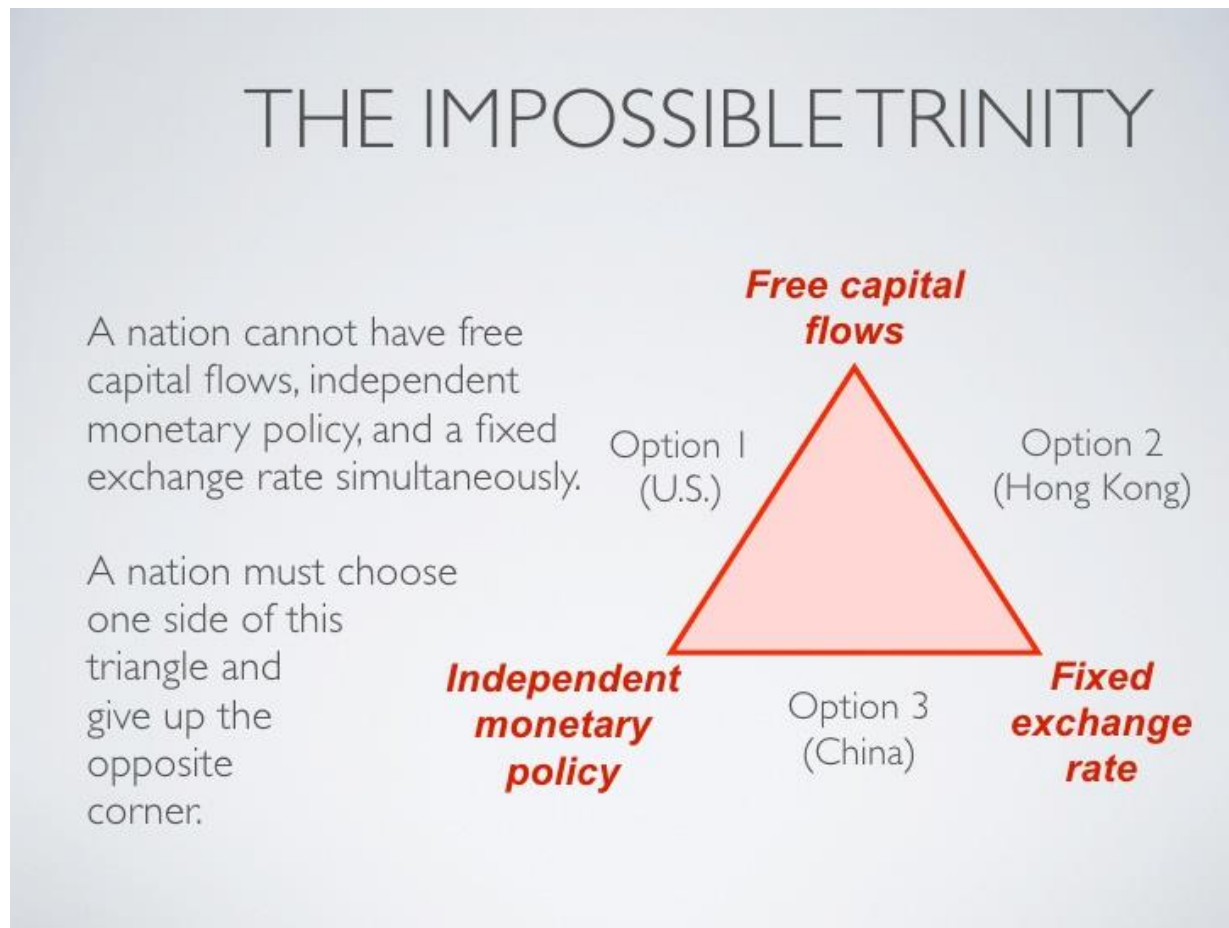
- Most financial transactions are in **domestic currency**.
- With greater global integration through international trade and capital flows, the foreign '**hard**' **currency component** of the assets and liabilities of both private firms and government entities has increased vastly.
- Net **FC liabilities need to be funded**.
- As long as EMDEs constituted a small share of the global economy, their external financial needs were mostly funded through **concessional bilateral and multilateral aid**.
- As the share of EMDEs in the global economy has increased, they have become **increasingly dependent on the global financial system**, the 1000 pound gorilla compared to aid.

Sudden Capital Stops

- **Current account deficits need to be financed** through capital flows or by drawing down the country's foreign currency reserves.
- An economic crisis, financial crisis, external shocks (such as steep rise in oil prices in the case of India) and policy spillovers of major advanced economies (especially the US) can have an adverse impact on a **country's balance of payments** (the sum of current account and capital account flows)
- While private Corporates can go bust, Sovereign countries need not default on domestic debt as they can mint the national currency. **Countries however can go bust** if they are unable to fully meet their International payment obligations.
- The resultant crisis in confidence can lead to **sudden stops, and even reversal, of capital inflows**, accentuating the underlying problem.
- Such event can
 - Lead to an **economic crisis**
 - Push a country to seek **assistance from the IMF**
 - **Destabilize its monetary policy framework : The Impossible Trinity**

The Impossible Trinity/Trilemma of Central Banks

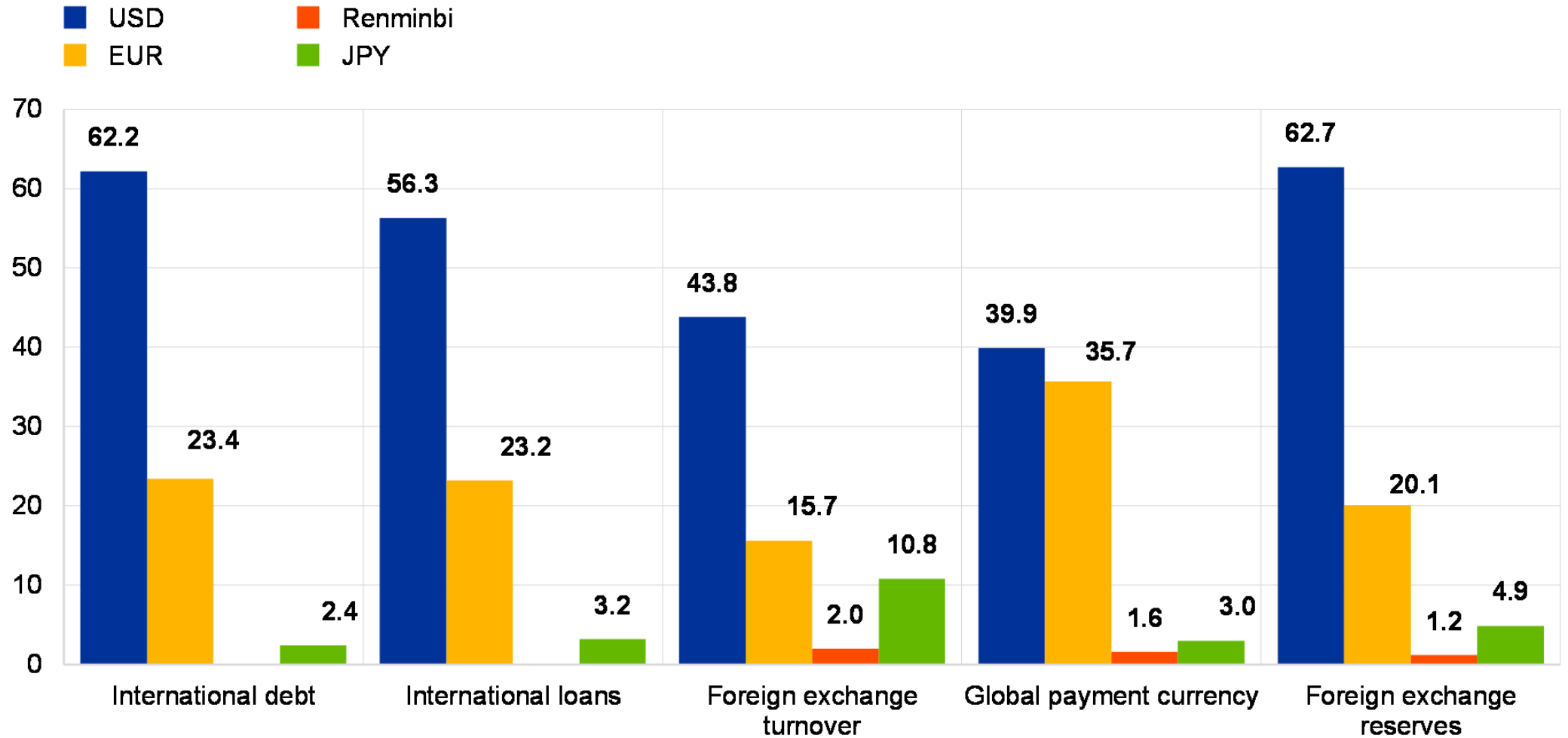
- Monetary Policy targets **domestic imbalances** – a mix of price stability and growth.
- EME central banks face the constant dilemma of redirecting monetary policy from addressing domestic imbalances to addressing **external imbalances** during external shocks, both negative and positive
- **Tinbergen rule**: One target one instrument



Trilemma or Dilemma?

- Global **financial cycles**
- These cycles are **associated with financial crises** through booms/leverage and busts/deleverage
- **US monetary policy the chief determinant** on account of the US Dollar's role as the de facto global reserve currency.
- **Other countries need to respond through policies** to counter the cycle irrespective of their exchange rate regimes and nature of capital flow regulation.

Dominance of the Dollar



ECB Report on the International Role of the Euro, 2018 (Chart 2)

(De facto) Global Reserve Currency

- The **preferred currency for cross border financial transactions** that generates an almost bottomless demand for it.
- Generally the national currency of the global hegemon
 - The British Pound up to WW II and the **US Dollar in the Post War period**
- An international payments crisis ultimately manifests itself through a **shortage of dollars**, leading to sharp depreciation of the currency and capital flight that accentuates the hard currency shortage.
- The **'exorbitant privilege'** of the US\$ (Valery Giscard d'Estaing in the 1960s, then FM of France)
 - The US can print dollars at will and never face a BOP crisis as the global demand for the dollar allows it to run levels of budget and trade deficits that would make other countries bust
 - The **US ability to enforce sanctions** is based on this dollar dominance as US Banks are an essential link in the US dollar payments system.
- **'The Dollar is our currency but your problem'** (John Connally, US Treasury Secretary in the 1970s)
 - **US monetary policy determines the scale and direction of cross border capital flows** that create 'financial spillovers' for other countries in the form of appreciation/depreciation of their currencies.

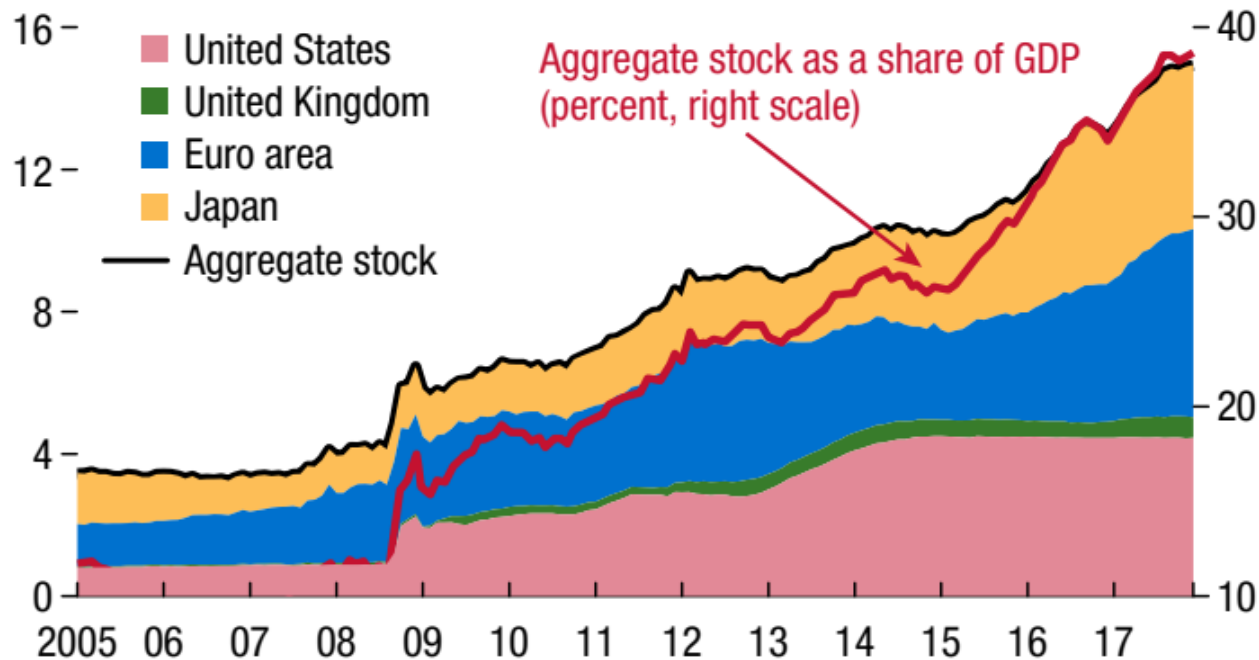
Monetary Policy Spill overs on EMEs

- US monetary policy responds to the ***domestic economic environment***. ***Other central banks however need to respond*** to US FED actions because of its impact on cross-border capital flows by virtue of the de facto global reserve currency status of the US dollar.
- **Largescale liquidity injection** by Advanced Economy central banks through QE to combat the global financial crisis that has still not been withdrawn. Stock market boom despite modest economic growth.
- **EME ambivalence**: critical of both QE ('surplus countries' like China) and QEXIT ('deficit countries' like India)
- **EMEs particularly vulnerable** because of large capital flows in recent years – this could flow out.
- **EMEs with relatively greater structural macro-economic vulnerabilities** (such as high CAD, low reserves, inflationary pressures, growth below potential) likely to be more affected during a systemic crisis: India's experience in May 2013 versus post-Lehman in 2008.

Balance Sheet Expansion of Central Banks

Easy global financial conditions are underpinned by advanced economy central banks' large asset holdings.

1. Change in Central Banks' Balance Sheet Assets (Trillions of US dollars)



RBI Balance Sheet

Rs Trn	FCA	Total	Assets/GDP	FC/Assets
2001	1.1	2.3	10.4%	47.1%
2005	5.8	6.8	21.1%	84.3%
2019	27.9	41.0	21.6%	67.9%

<https://www.imf.org/en/Publications/GFSR/Issues/2018/04/02/Global-Financial-Stability-Report-April-2018>

QE: The EME viewpoint



QE: The EME viewpoint



Change in Reserves of EMDEs

Year	US\$ bn	
2000	61.944	
2001	97.412	
2002	167.815	
2003	235.964	
2004	360.556	
2005	579.411	
2006	743.177	
2007	1196.919	
2008	707.162	
2009	525.373	
2010	837.167	
2011	744.979	
2012	432.007	
2013	590.772	
2014	128.396	7409.054
2015	-515.502	
2016	-482.369	
2017	164.623	-833.248
2018	143.579	
2019	102.58	

IMF database

India's Balance of Payments and Reserves

	FPI \$Bn	FDI \$Bn	CAD \$Bn	ER Rs/\$	REER 2004/05=100	FCR \$Bn	FI/Kflos ws
2001-02	2.0	6.1	7.4	47.7		51.0	142%
2002-03	1.0	5.0	8.3	48.4		71.9	35%
2003-04	11.4	4.3	13.5	46.0		107.4	58%
2004-05	9.3	6.0	3.2	44.9		135.6	35%
2005-06	12.5	8.9	-3.4	44.3	104.45	145.1	97%
2006-07	7.0	22.7	-7.1	45.2	103.82	191.9	50%
2007-08	27.3	34.7	-12.8	40.3	113.4	299.2	42%
2008-09	-13.9	41.7	-26.8	46.0	103.94	241.4	989%
2009-10	18.0	33.1	-29.6	47.4	110.73	254.7	83%
2010-11	11.8	29.0	-48.1	45.6	124.5	274.3	57%
2011-12	22.1	33.0	-78.2	47.9	121.17	260.1	63%
2012-13	26.9	27.0	-88.2	54.5	117.15	259.7	47%
2013-14	4.8	21.6	-32.3	60.5	112.8	276.4	55%
2014-15	42.2	31.3	-26.9	61.1	119.92	295.9	83%
2015-16	-4.1	36.0	-22.2	65.5	122.71	336.1	80%
2016-17	7.6	35.6	-15.3	67.1	125.17	346.3	117%
2017-18	22.1	30.3	-48.7	64.5	129.19	399.4	57%
2018-19	-0.6	30.7	-61.0	69.2	121.7	385.4	56%

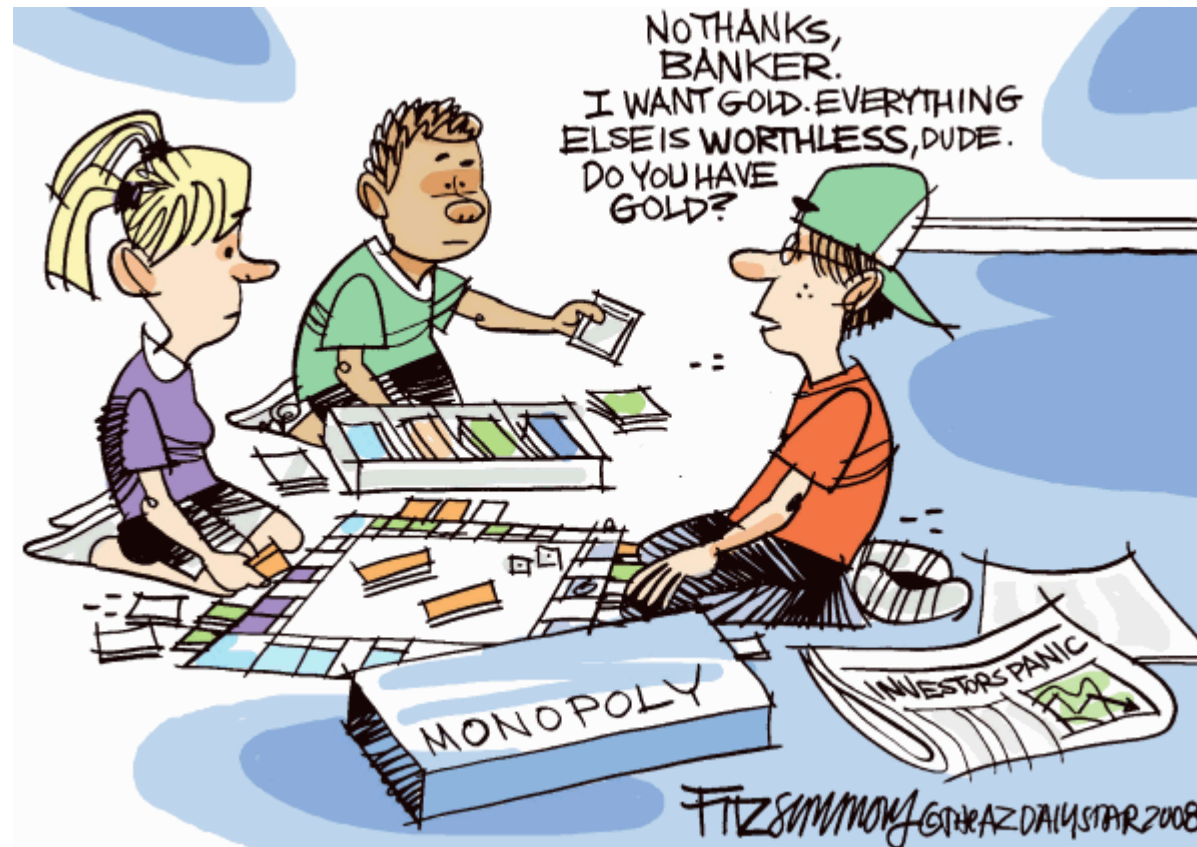
Likely Impact of QE Exit on EMEs

- Would depend on the ***speed of unwinding*** – the more rapid the unwinding the worse for EMEs: because of the ‘QE Trap’ and the tepid economic recovery the unwinding is likely to be measured.
- ***Synchronized QE unlikely***: US FED likely to exit before ECB and BOJ. ECB and BOJ still at ZLB and expanding their balance sheets. Brexit uncertainty hangs over BOE.
- Because of the **weak economic recovery since the GFC** it is possible that central banks may hold on to their bond purchases till maturity.
- Inability to reach targeted inflation rates by advanced economy CBs could mean that **QE becomes a conventional monetary policy tool** on account of ZLB.

Hedging against spill overs

- Developing countries ***cannot have inflation target as the sole objective*** of monetary policy
- **Deficit EMEs may postpone adjustment** because of large inflows, exposing them to higher risk when the cycle turns.
- Need ***instruments to deal with spill overs***, both positive and negative:
 - ***Macro-prudential*** policies – judicious and consistent/transparent use of capital controls
 - ***Market intervention*** – without revealing target to the market, and holding nerve in a crisis.
 - ***Sterilization*** – To mop up excess liquidity injected through central dollar purchases from the market
 - ***Self-insurance*** through reserves
 - ***Swaps, BRICs CRA, IMF*** arrangements

Growing Loss of Confidence in Fiat Currency ?



EME Central Banks accumulating Gold

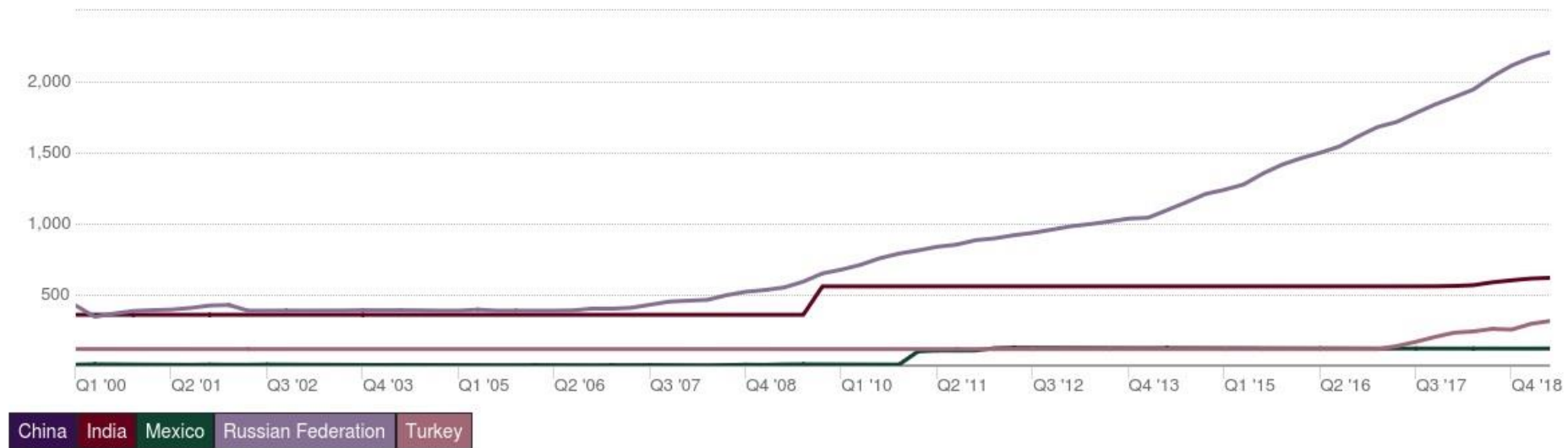
GOLDHUB

Quarterly official gold reserves

1y 3y 10y Max

Tonnage Percent

Tonnes



Data as of 3 September, 2019

Sources: Central Banks, ICE Benchmark Administration, International Monetary Fund, World Gold Council;

See disclaimer on gold.org



Thank you for the patient hearing