Foreign Services Institute

Induction Training Programme for the Indian Foreign Service (IFS) Officer Trainees of 2018 Batch

Interactive Session:

The Global Financial System

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Overview

I Money, Finance, Economy and Central Banks

II The Global Financial Architecture

III The Global Financial System

IV Major Financial Crises

V Financial Markets in the Wake of the GFC

I

Money, Finance, Economy and Central Banks

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?

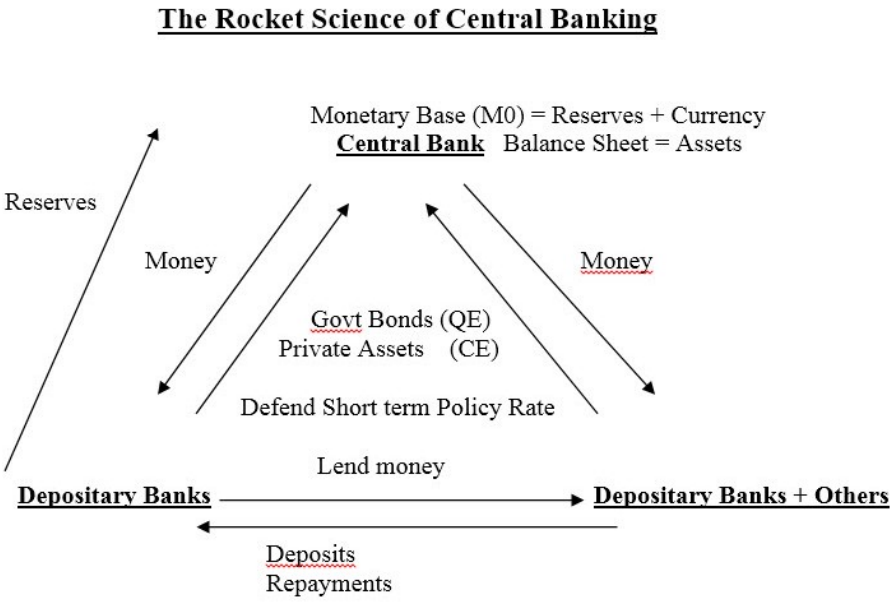
- Private Entities
  - Long phased out as it led to instability and fraud
  - Depositary institutions, such as banks, under fractional banking.
- Sovereigns
  - Conflict of interest between fiscal and monetary policies
    - Monetizing deficits and market borrowing
  - Central banks, sovereign entities 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
- 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

Fisher's Equation

M * V = P * Q = GDP

Quantity theory of Money



US Federal Reserve US $ Trillion

(Velocity of money never below 1.6 as seen from available data back to 1959)

	M2 (Money Supply = M0xMM)	M0 (Monetary Base = currency + reserves)	Money Multiplier (M2/M0)	Reserves	Currency in Circulation	Balance sheet	GDP Nominal	(GDP=MV) Velocity of Money (GDP/M2)
Q1 2006	6.71	0.81	8.33	0.02	0.79	0.84	13.65	2.03
Q1 2007	7.11	0.82	8.66	0.01	0.81	0.87	14.24	2.00
Q1 2008	7.58	0.83	9.12	0.01	0.82	0.89	14.67	1.94
Q1 2009	8.32	1.64	5.07	0.75	0.89	1.97	14.38	1.73
Q1 2010	8.49	2.06	4.11	1.14	0.93	2.27	14.67	1.73
Q1 2011	8.88	2.22	4.00	1.23	0.99	2.51	15.24	1.72
Q1 2012	9.78	2.66	3.67	1.58	1.08	2.91	16.04	1.64
Q1 2013	10.50	2.84	3.70	1.67	1.17	3.07	16.54	1.57
Q1 2014	11.13	3.82	2.92	2.57	1.24	4.13	17.15	1.54

The Money Multiplier

- It is the month of August; a resort town sits next to the shores of a lake. It is raining, and the little town looks totally deserted. It is tough times, everybody is in debt, and everybody lives on credit.
- Suddenly, a rich tourist comes to town. He enters the only hotel, lays a 100 dollar bill on the reception counter, and goes to inspect the rooms upstairs in order to pick one.
- The hotel proprietor takes the 100 dollar bill and runs to pay his debt to the butcher. The Butcher takes the 100 dollar bill and runs to pay his debt to the pig raiser. The pig raiser takes the 100 dollar bill and runs to pay his debt to the supplier of his feed and fuel. The supplier of feed and fuel takes the 100 dollar bill and runs to pay his debt to the town's prostitute that, in these hard times, gave her “services” on credit. The hooker runs to the hotel, and pays off her debt with the 100 dollar bill to the hotel proprietor to pay for the rooms that she rented when she brought her clients there.
- The hotel proprietor then lays the 100 dollar bill back on the counter so that the rich tourist will not suspect anything. At that moment, the rich tourist comes down after inspecting the rooms, and takes his 100 dollar bill, after saying he did not like any of the rooms, and leaves town.
- No one earned anything. However, the whole town is now without debt, and looks to the future with a lot of optimism.

(*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(target inflation minus actual inflation)+0.5(potential growth-actual growth)+ 2(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.

II The Global Financial Architecture

The Bretton Woods System

- Set up after World War II through an international agreement.
- The value of currencies was pegged to the dollar, and of the dollar to gold. The Reserve Currency.
- This system broke down in 1971 when the US abandoned the gold peg.
- Over time most currencies have become free or managed floats (Bretton Woods II) against each other, with technically no reserve currency. An unstable 'non-system' that led to large trade imbalances, as some countries (Japan, East Asia, China) could fix their exchange rates to boost exports. The Plaza Accord of 1985 with Japan, and the ongoing US-China trade negotiations to deal with such imbalances.
- Following the Global Financial Crisis there is a reduction in global imbalances. But the counterpart increase in savings in advanced economies has still to take place. Still an open question whether the global economy will revert to a more stable Bretton Woods II or transit to some sort of Bretton Woods III, with public deficits replacing private deficits, supported by central banks.

(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 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 'exorbitant privilege' of the US Dollar (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 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.

Dominance of the Dollar

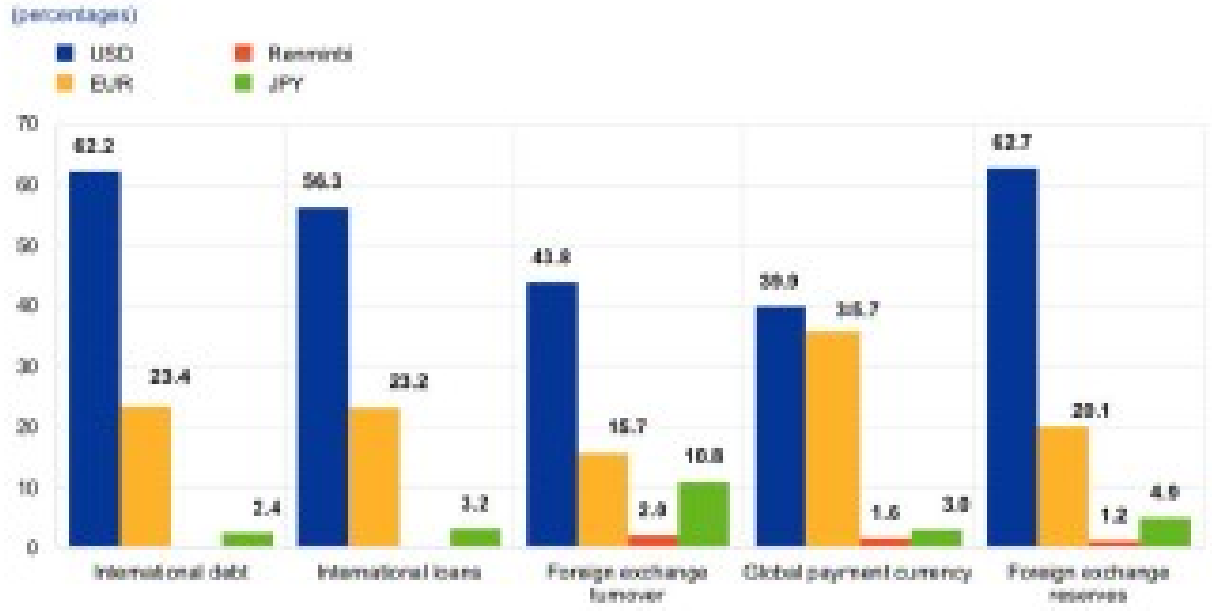


Figure 1: The Dominance of the dollar. *Source:* ECB Report on the international role of the euro, chart 2, ECB (2018).

EMEs and Global Spillovers

- 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.
- Countries with large macroeconomic imbalances (inflation, fiscal deficit, current account deficit and paucity of reserves) are affected the most.
- Such event can
  - Push a country to seek assistance from the IMF
  - Destabilize its monetary policy framework

Financial Safety Nets

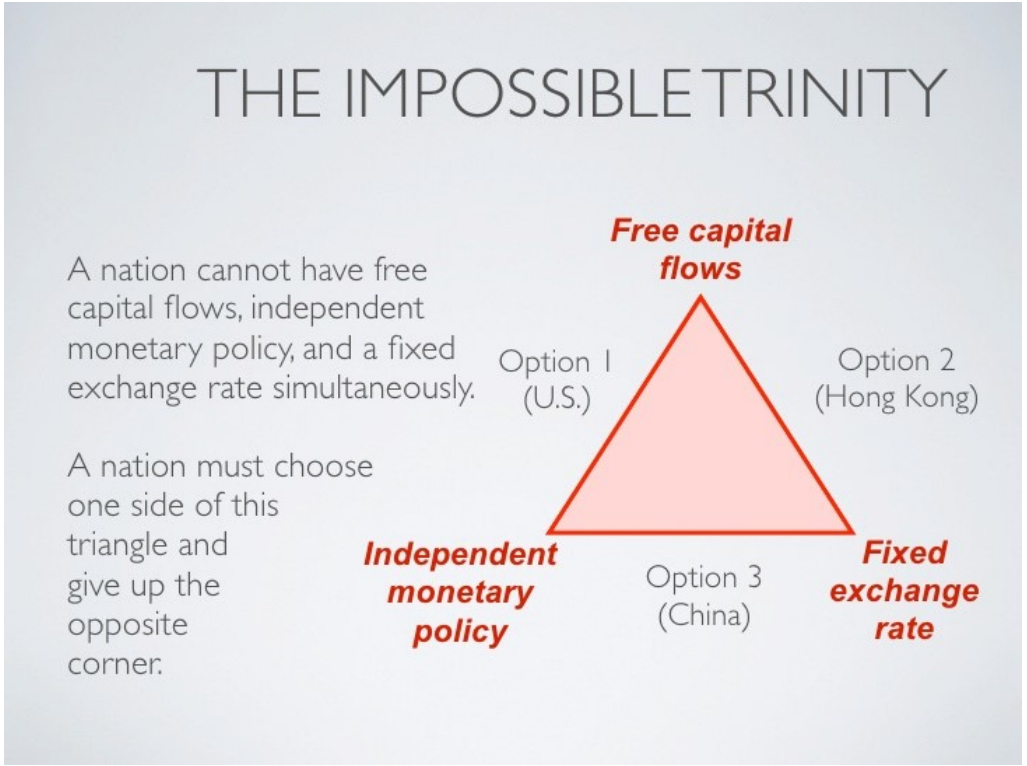
- Global safety net: the IMF (Firepower enhanced to $ 1 Trillion following the GFC)
- Regional safety nets (such as the Multilateralized Chiang Mai Initiative in Asia)
- Bilateral central bank swaps.
- Self insurance through FX Reserves.
- Bilateral aid for small economies

Global Lender of Last Resort

- The International Monetary Fund is the global lender of last resort for countries.
- IMF issues Special Drawing Rights (SDRs) whose value is a based on a Basket of currencies:
  - US Dollar
  - Euro
  - Pound Sterling
  - Japanese Yen
  - Chinese yuan/Renminbi (included in 2016)
- Countries are allocated SDRs according their 'quota share' in the IMF, which can be exchanged for any of the other currencies from designated countries.
- If the quota of SDRs is exhausted, the IMF can also lend directly to countries in the event of a Balance Of Payments crisis, with 'conditionalities'.
- During the 2008-09 Crisis the US Federal Reserve effectively served as lender of last resort.

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



III

The Extant Global Financial System

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 liabilities, ultimately reflected in a country’s balance of payments 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.

The Global Financial System

Banking

- Central banks
- Commercial Banks

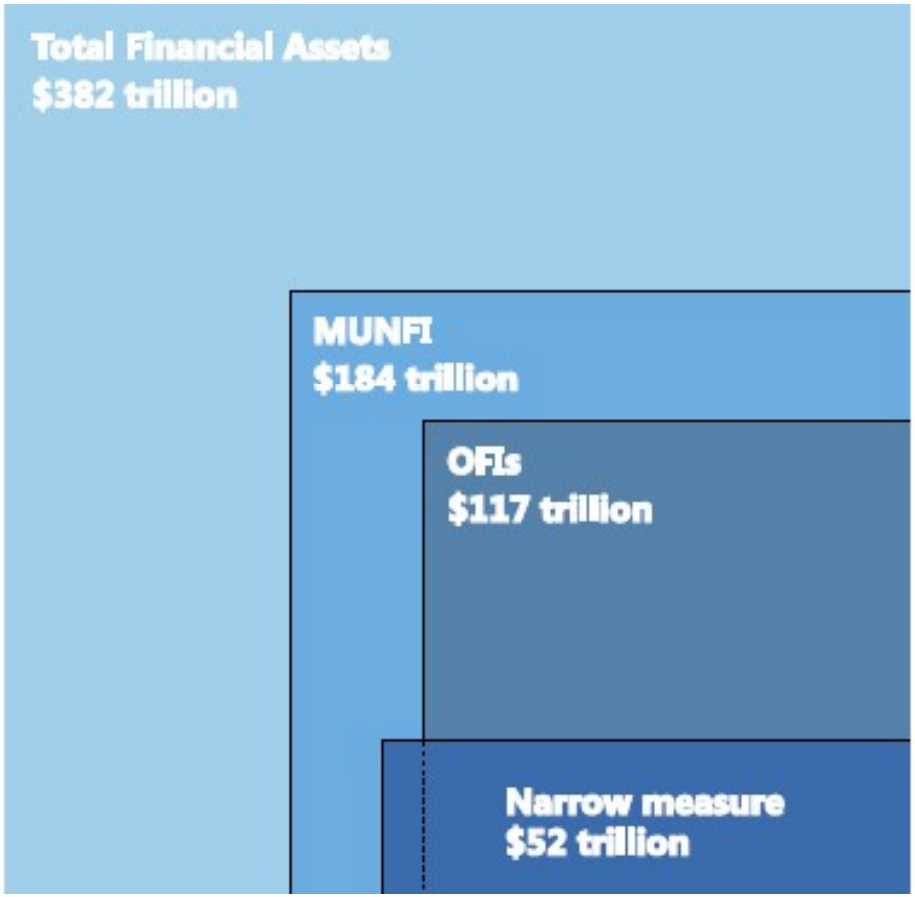
Non Banking

- Public Financial Corporations
- Insurance Corporations
- Pension Funds
- Shadow Banks/Other Financial Institutions
  - Investment Funds, MMFs, Hedge Funds (almost 50%)
  - Captive Financial Institutions and Moneylenders (22%)
  - Real Estate funds and Investment trusts, Trust Companies, Finance Companies, Structured Finance Companies, Broker Dealers, Central Counterparties.

Extant Global Financial System

- **Global Financial Assets** estimated at $ 382 trillion at end 2017, about five times the size of the global economy
  - **Shadow banking, that lay at the root of the Global Financial Crisis of 2008-09,** is about 30% of this by broad measure and 15% by narrow measure
- **Advanced Economies (AEs) are** much **more leveraged (indebted)** than **Emerging Market Economies (EMEs)**.
- **Non-bank credit** much more important in **AE** financial markets than in **EMEs** that are dominated by bank credit. (*Excludes informal sector*)
- In **Europe Bank credit is** as significant as non bank credit.
- **US Financial Markets the biggest** and deepest in the world: When US financial markets sneeze (such as during the GFC) global markets catch a cold.

Global Financial Assets

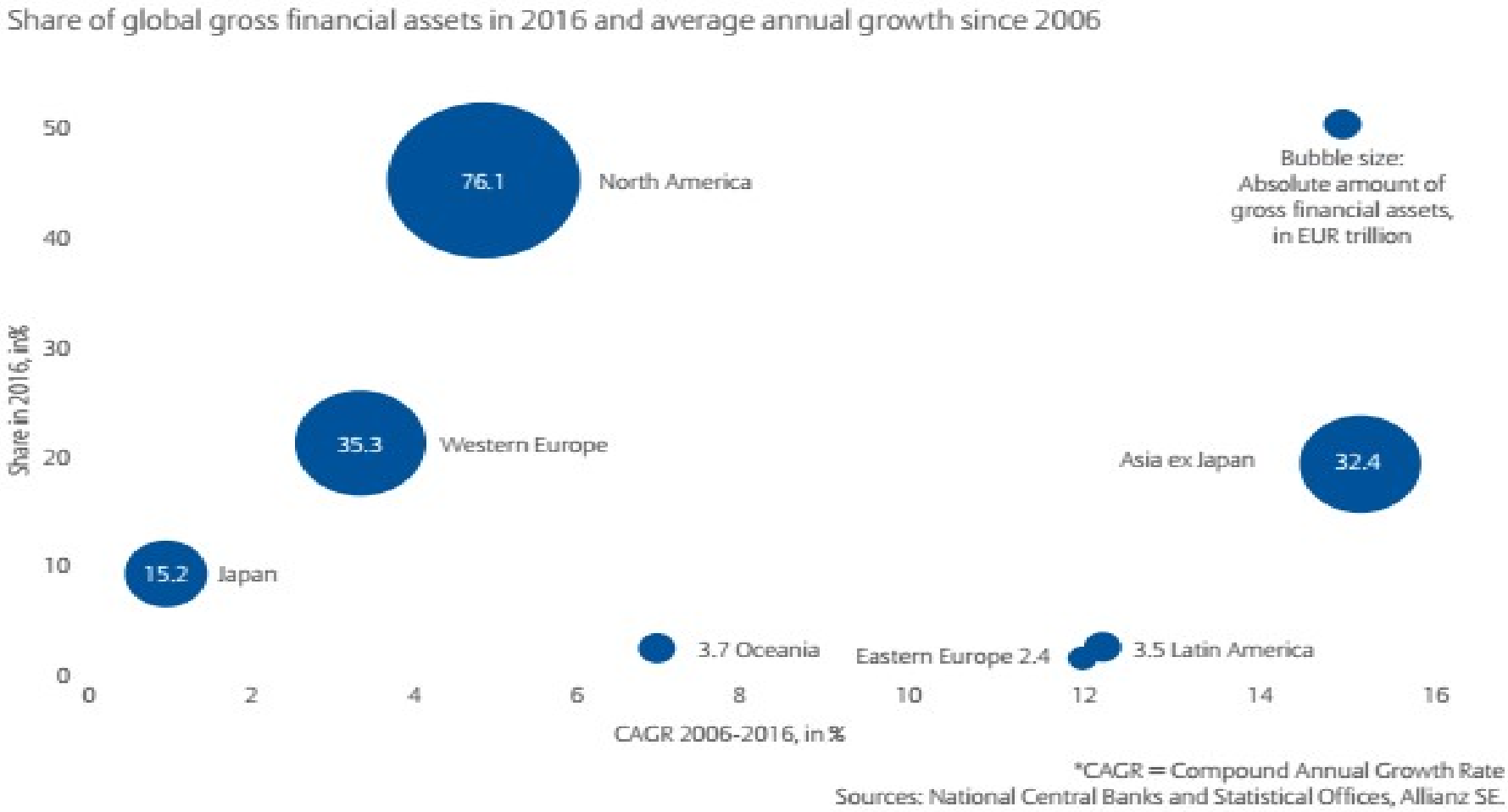


Macro-mapping of the financial system

21+EA-Group

Exhibit 2-1

	Total global financial assets	MUNFI						
		Central banks	Banks	Public financial institutions	Insurance corporations[1]	Pension funds	OFIs	Financial auxiliaries
Size at end-2017 (USD trillion)	382.3	30.1	150.8	17.0	32.8	33.7	116.6	1.2
Share of total global financial assets (%)	100.0	7.9	39.4	4.5	8.6	8.8	30.5	0.3
Growth in 2017 (year-over-year, %)	5.3	8.8	2.8	4.9	4.8	6.8	7.6	22.6
Growth 2011-16 (annualised growth, %)	5.9	8.9	3.6	4.2	6.0	6.1	8.9	7.0

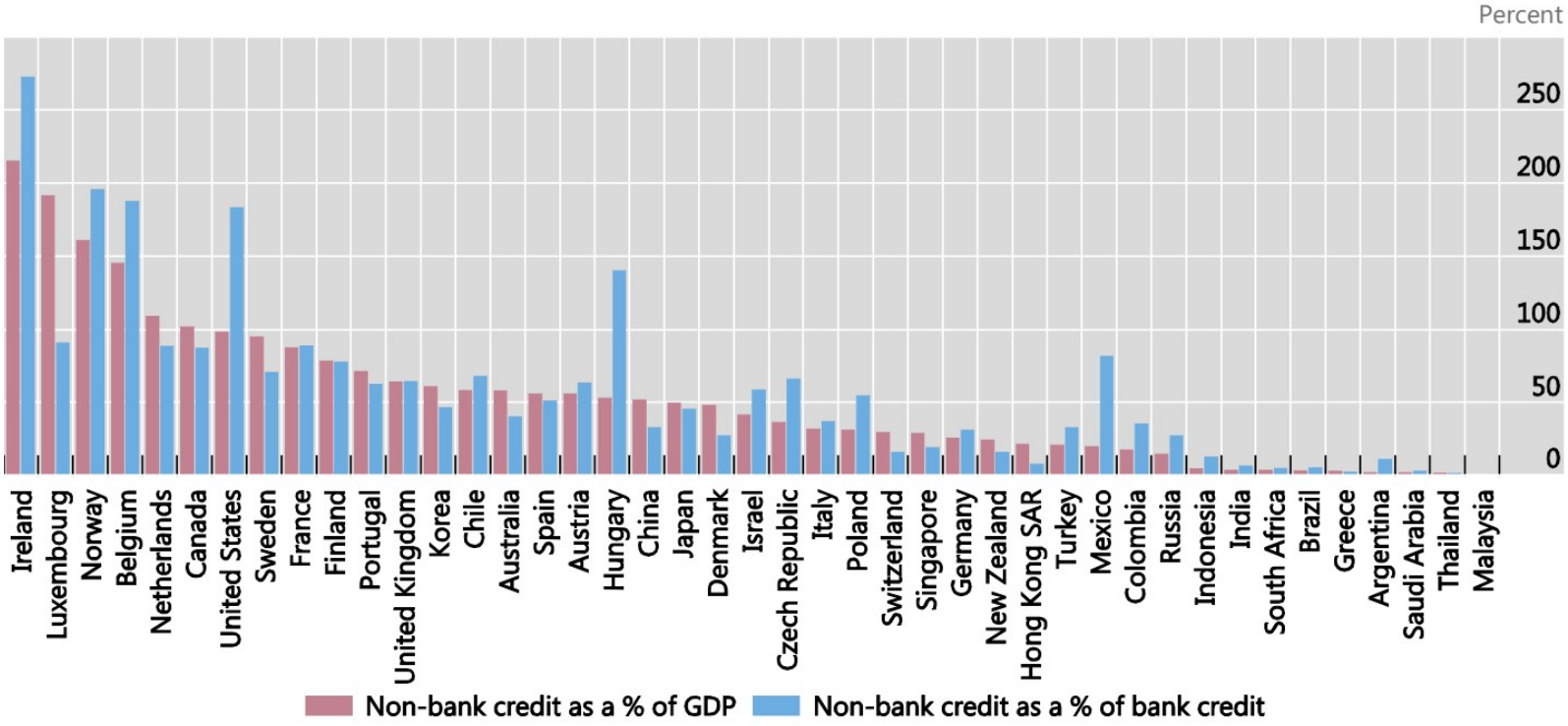


https://www.allianz.com/v_1506497732000/media/press/document/AGWR_17-Report_EN.pdf

The size of non-bank credit as a fraction of GDP, and bank credit

By jurisdiction, as of 2017 Q2.

Exhibit A3-1-2



Source: BIS total credit statistics, available at https://www.bis.org/statistics/totcredit.htm.

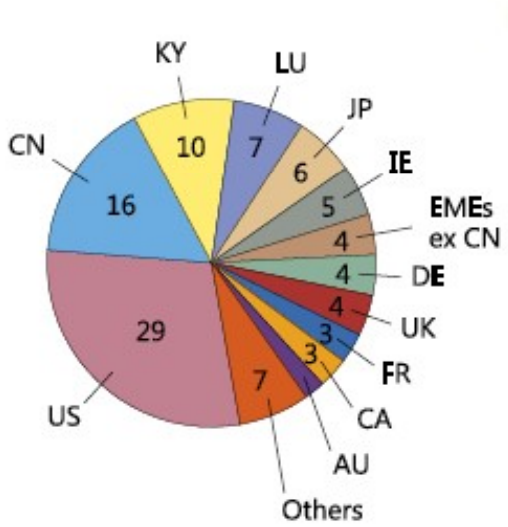
http://www.fsb.org/2018/03/global-shadow-banking-monitoring-report-2017/

Share of the reported narrow measure of shadow banking[1]

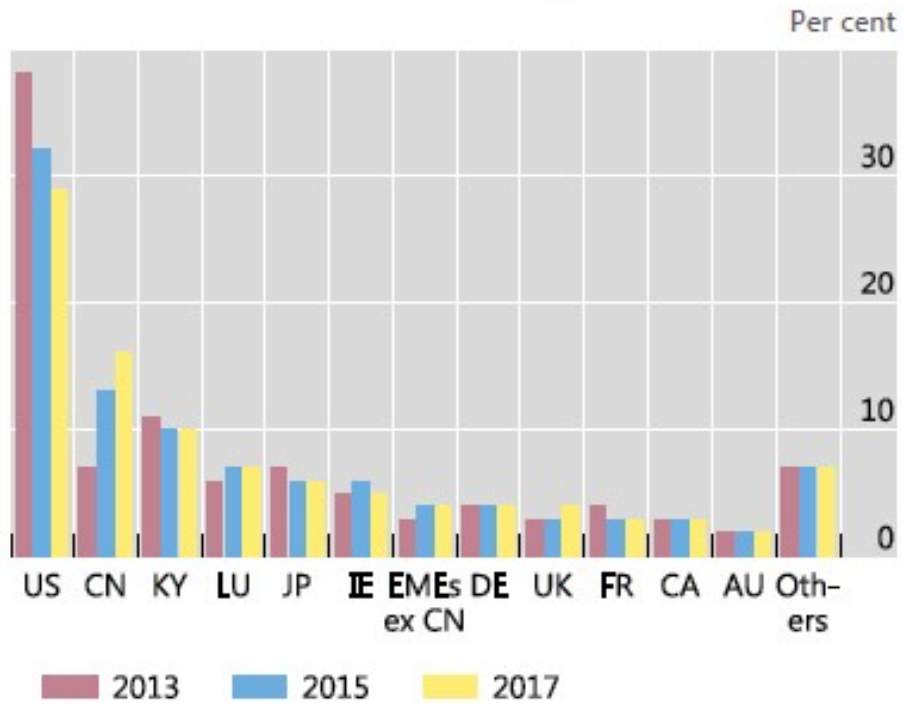
Share of total narrow measure, by jurisdiction

29-Group

At end-2017



Historical evolution of the shares by jurisdiction[1]

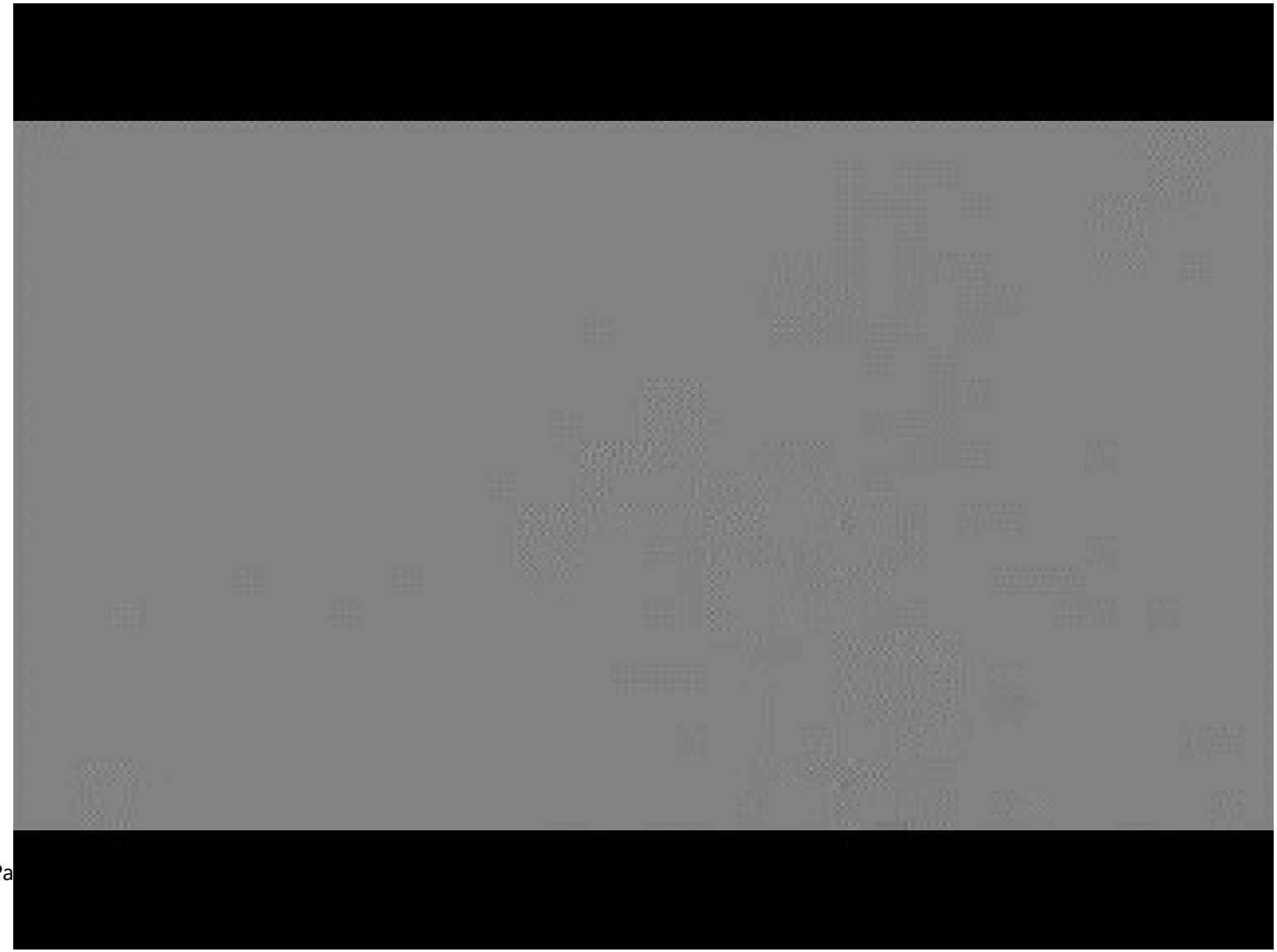


IV

Major Financial Crises

Financial Crises

- **Causes**
  - Bubbles deriving from sectoral overinvestment the proximate cause
  - Underlying systemic weaknesses, such as poor governance and oversight, excessive indebtedness, imbalances
- **Characteristics**
  - Run on the financial system leading to fire sales and sharp drop in asset prices
  - Sharp increase in loan defaults
  - Credit freeze
  - Sharp currency depreciation
- **Consequences**
  - Sharp fall in demand, investment, growth and employment
  - Deflation because of the sharp fall in asset prices and demand.
  - Banking failures necessitating taxpayer bailout of the financial system
  - An unusually long and protracted economic recovery
  - Revamping and tightening of financial regulation



Last Laugh - George Pa

The Great Depression 1929

- Originated in the US with the pricking of the Stock Market Bubble
- Sharp fall in asset prices
- Sharp increase in unemployment, decline in growth
- Deflation
- String of Banking Failures
- Spread to most parts of the world
- Major financial regulation overhaul, including the famous Glass-Steagall Act that built a firewall between banks and the more lightly regulated investment banks
- Recovery only after the onset of WWII

The Japanese Financial Crisis 1991

- Japan was a fast growing economy till the Plaza Accord of 1985 that sharply appreciated the Yen
- This fuelled a speculative asset, including real estate bubble, leading to a stock market crash
- The crash occurred when the Bank of Japan sharply increased its policy rate to rein in the bubble.
- String of Bank failures, bail outs and consolidation.
- Deflation and collapse in growth: Still not fully recovered.

The Asian Financial Crisis 1997

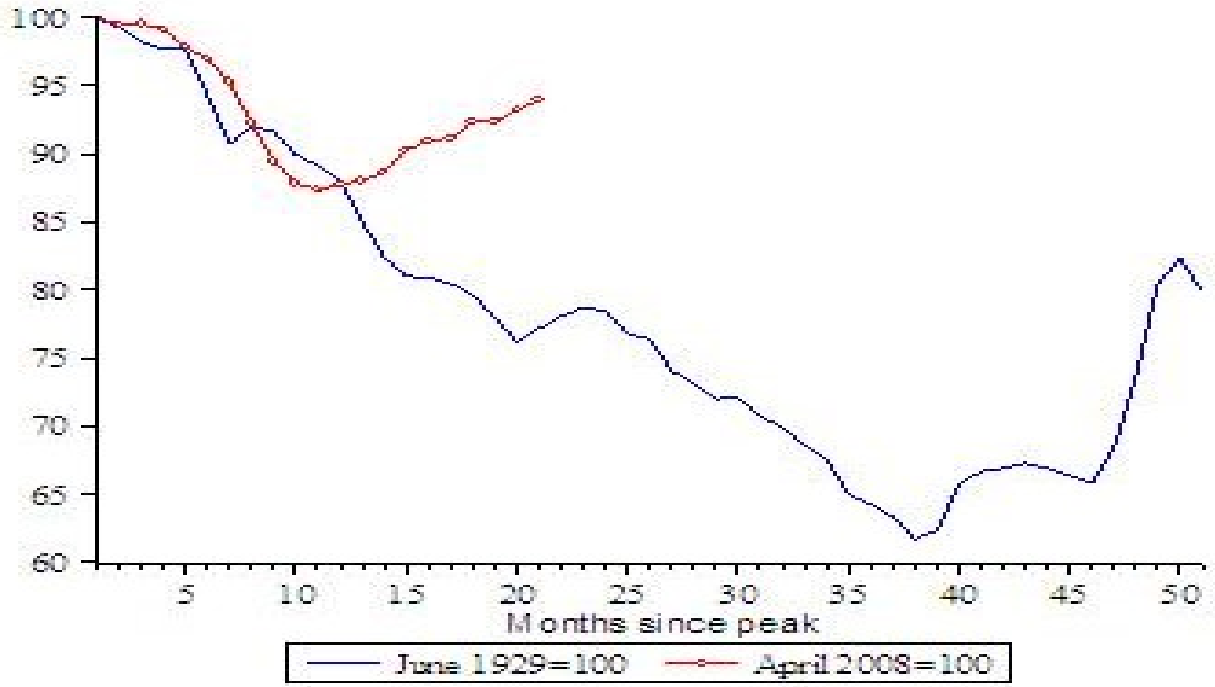
- Affected fast growing 'Tiger' Asian economies such as South Korea, Singapore, Malaysia, Thailand, Indonesia, Philippines etc.
- Over-investment leading to falling returns
- Handover of Hong Kong in 1997, which played an important financial role in the region, may have also added to the uncertaintly
- Succumbed to the impossible trinity: fixed exchange rates, free capital flows and independent monetary policy.
- US Federal Reserve raised rates that led to an external shock and sharp currency depreciation
- IMF bailouts
- Asian economies built up large FX reserves to self-insure against sudden stops and mostly floated their currencies.

The Global Financial Crisis 2008-09

- A bubble in the 'sub-prime' segment of the US Housing Sector the proximate cause.
- Sharp increases in global trade imbalances
- Unusually loose monetary policy leading to search for yield, innovation and excessive risk taking.
- Sharp increase in leverage facilitated by financial regulation that did away with the Depression era regulation – including Glass Steagall – giving rise to universal banking and a change in banking culture.
- The rise of a relatively unregulated shadow banking, and dependence of the banking system on it for funds.
- Rising interest rates and collapse of the bubble led to a run in the shadow banking sector that spilled over into the banking system.
- Like the Great Depression, started in the US but spilled over globally.
- Sharp fall in asset prices, deflation, unemployment and growth. Banking failures and bailouts.
- Initial fall in growth, asset prices and trade steeper than during the Great Depression. Aggressive and coordinated (Monetary and fiscal) policy response by systemically important economies through the G 20 may well have averted a second Great Depression and accelerated the recovery.
- Second stage of the crisis in Europe accentuated by a flawed monetary union.
- A major global financial regulatory reform initiative under the aegis of the G 20.
- Nevertheless economic growth globally has settled into a lower trajectory than before the crisis.

A Tale of Two Depressions*

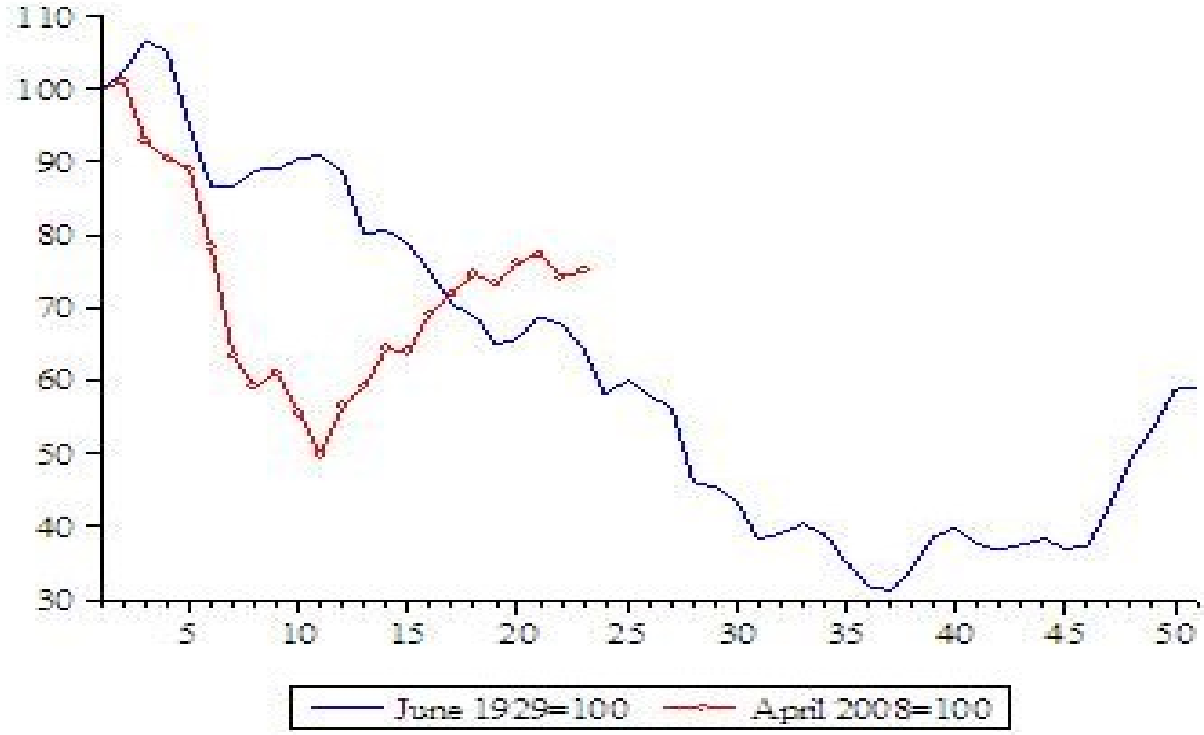
World industrial production



*** Eichengreen and O'Rourke *(February 2010)***

A Tale of Two Depressions*

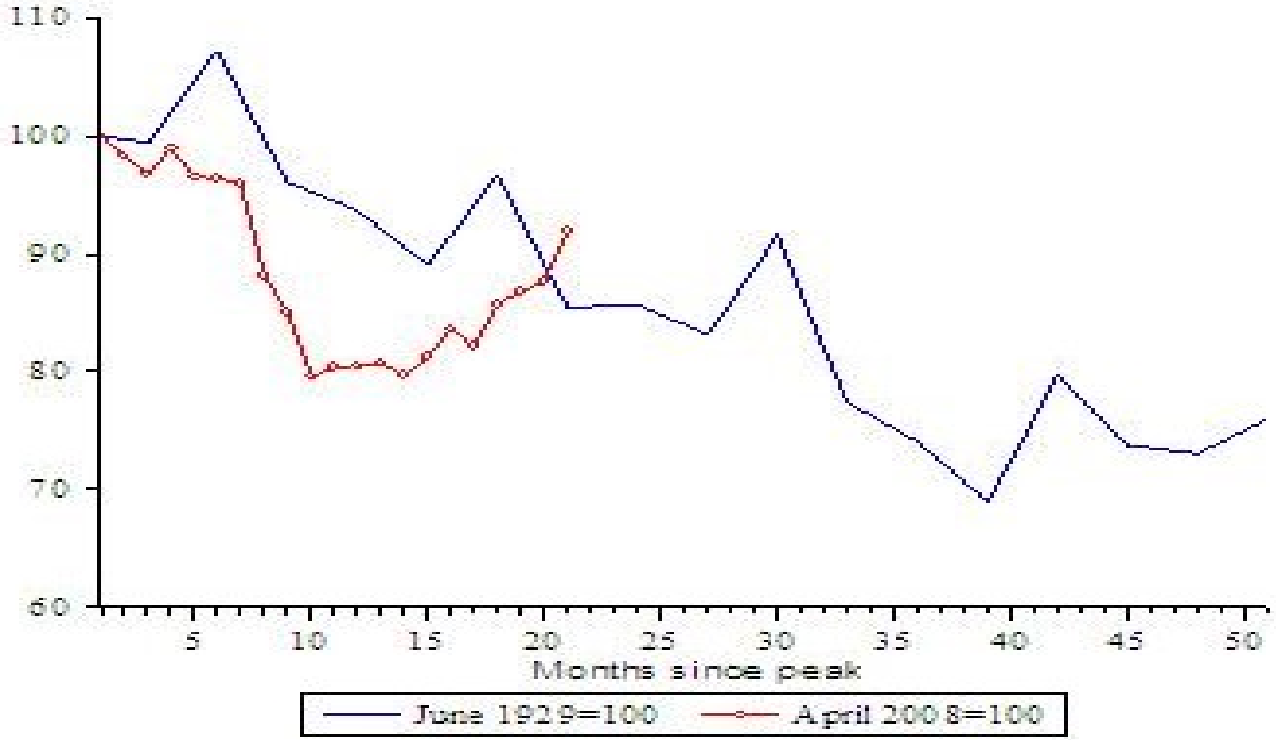
World stock markets



*** Eichengreen and O'Rourke *(February 2010)***

A Tale of Two Depressions

Volume of world trade



*** Eichengreen and O'Rourke *(February 2010)***

Global Growth

	World	AEs	EMDEs
1998-2007	4.1	2.7	5.8
2003-07	4.9	2.7	7.6
1994-03	3.4	2.8	4.4
1980-07	3.5	2.8	4.4
2012-15	3.3	1.5	4.7
2016	3.2	1.7	4.4
2017	3.7	2.3	4.7
2018	3.9	2.3	4.9

V

Financial Markets in the Wake of the Global Financial Crisis

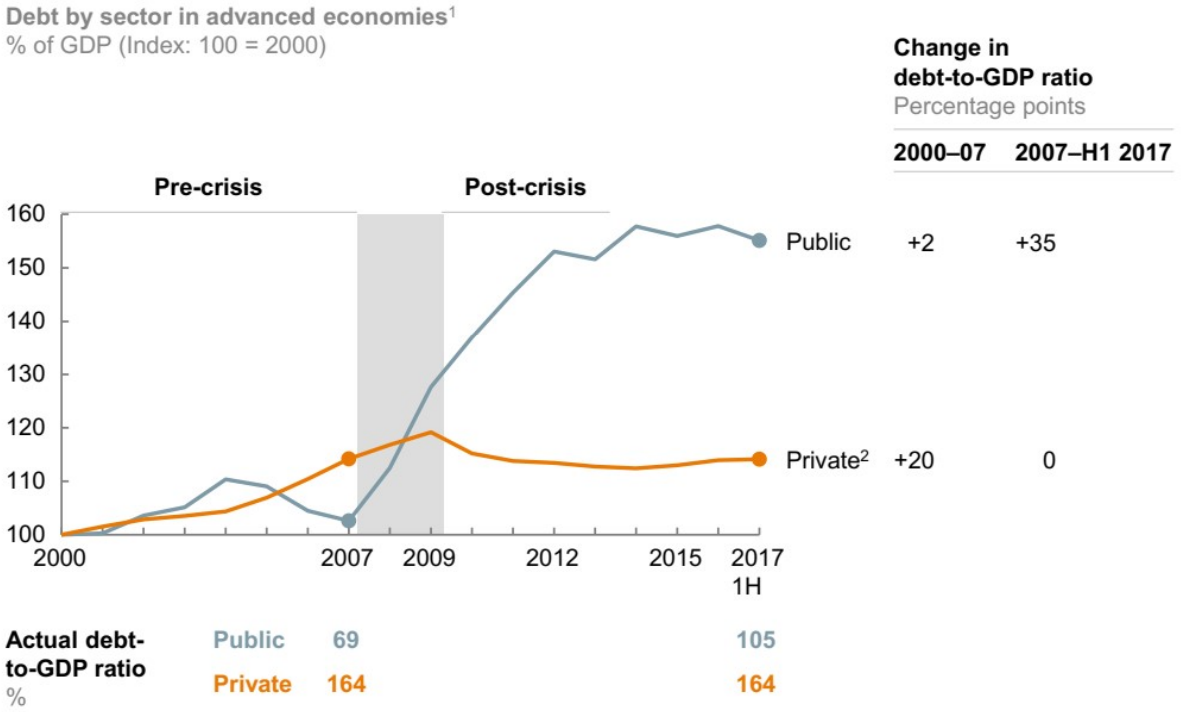
Financial Markets 10 Years after GFC - 1

- **Asset Prices** have rebounded strongly
- Following bailouts and write-downs **American Banks have recovered more strongly** than European banks
  - stock prices and ROE lower than in the heady days preceding the GFC.
- **Australian** and **Canadian** Banking systems hardly **affected**.
- **European Banks** have **shrunk sharply**, perhaps because of weak resolve of governments to bail out banks or enforce write-downs
- **Big banks have become bigger** in the consolidation process.
- **Shadow Banking** has rebounded more strongly than commercial banking
- **The riskiest financial products have shrunk**, but are now buoyant again

Financial Markets 10 Years after GFC - 2

- **Leverage in AEs**, already high pre-crisis, has **continued to grow**:
  - Private leverage as % of GDP has remained the same
  - Public Debt as % of GDP has risen sharply
- **EMEs** have taken advantage of low rates to **borrow more**
  - Corporate debt increased most, followed by households. Public debt increase modest in comparison.
- **Central bank balance sheets** have increased dramatically:
  - US Fed balance sheet has just begun to shrink; ECB and BOJ still expanding
  - QE has underwritten the recovery of the western financial system: still on life support?
  - QE has underwritten fiscal expansion by keeping market interest rates low?
- **Regulatory reform** remains work in progress

Overall leverage in AEs continues to increase



McKinsey Global Institute: A DECADE AFTER THE GLOBAL FINANCIAL CRISIS: WHAT HAS (AND HASN'T) CHANGED? (BRIEFING NOTE SEPTEMBER 2018)

US Gross Federal Public Debt (US$ Bn)

Year	Gross Debt	GDP	Debt/GDP
1985-09-30	1817	4,339	41.9%
1986-09-30	2121	4,580	46.3%
1987-09-30	2346	4,855	48.3%
1988-09-30	2601	5,236	49.7%
1989-09-30	2868	5,642	50.8%
1990-09-30	3206	5,963	53.8%
1991-09-30	3598	6,158	58.4%
1992-09-30	4002	6,520	61.4%
1993-09-30	4351	6,859	63.4%
1994-09-30	4643	7,287	63.7%
1995-09-30	4921	7,640	64.4%
1996-09-30	5182	8,073	64.2%
1997-09-30	5369	8,578	62.6%
1998-09-30	5478	9,063	60.4%
1999-09-30	5606	9,631	58.2%
2000-09-30	5629	10,252	54.9%
2001-09-30	5770	10,582	54.5%
2002-09-30	6198	10,936	56.7%
2003-09-30	6760	11,458	59.0%
2004-09-30	7355	12,214	60.2%
2005-09-30	7905	13,037	60.6%
2006-09-30	8451	13,815	61.2%
2007-09-30	8951	14,452	61.9%
2008-09-30	9986	14,713	67.9%
2009-09-30	11876	14,449	82.2%
2010-09-30	13529	14,992	90.2%
2011-09-30	14764	15,543	95.0%
2012-09-30	16051	16,197	99.1%
2013-09-30	16719	16,785	99.6%
2014-09-30	17795	17,522	101.6%
2015-09-30	18120	18,219	99.5%
2016-09-30	19540	18,707	104.4%
2017-09-30	20206	19,485	**103.7%**

https://fred.stlouisfed.org/series/FYGFD , October 1, 2018

Public Debt/GDP

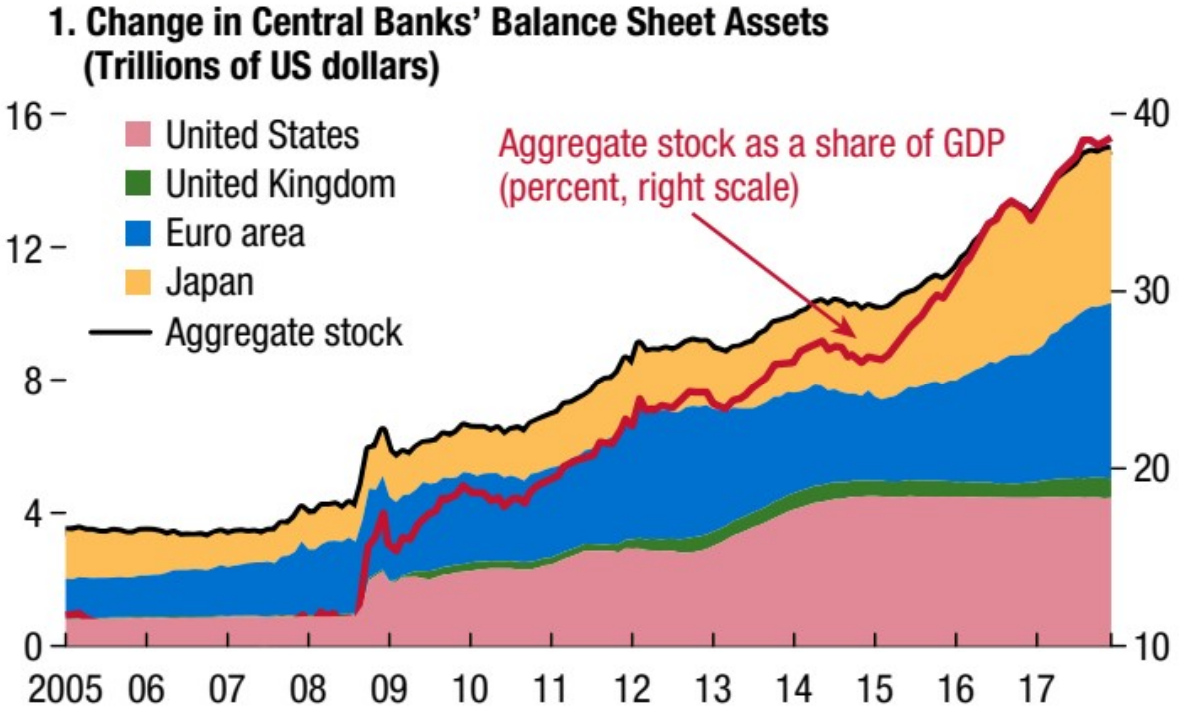
	Av 1999-08	2017
Euro Area	**67.9**	**87.4**
Germany	*62.6*	*65*
France	*63.1*	*96.8*
Italy	*102.9*	*133*
UK	**39.5**	**89.5**
Japan	**165.8**	**240.3**

https://www.imf.org/en/Publications/WEO/Issues/2017/09/19/world-economic-outlook-october-2017#Statistical%20Appendix

EMEs have taken advantage of low rates to borrow

	Global total, USD trn	AEs, % of GDP			EMEs, % of GDP			All, % of GDP		
		General government	Non-financial corporates	Households	General government	Non-financial corporates	Households	General government	Non-financial corporates	Households
end-2007	**109.98**	**70.31**	**83.45**	**79.69**	**37.03**	**57.07**	**19.33**	**55.07**	**71.49**	**52.34**
end-2010	**133.34**	**95.22**	**84.45**	**79.36**	**39.15**	**69.90**	**23.86**	**67.15**	**77.16**	**51.57**
end-2013	**152.74**	**106.54**	**84.53**	**74.79**	**40.43**	**81.76**	**27.93**	**71.24**	**83.05**	**49.77**
end-2017	**173.97**	**108.89**	**86.70**	**73.45**	**47.78**	**93.37**	**34.61**	**74.65**	**90.44**	**51.69**

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



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

Financial Markets 10 Years after GFC - 3

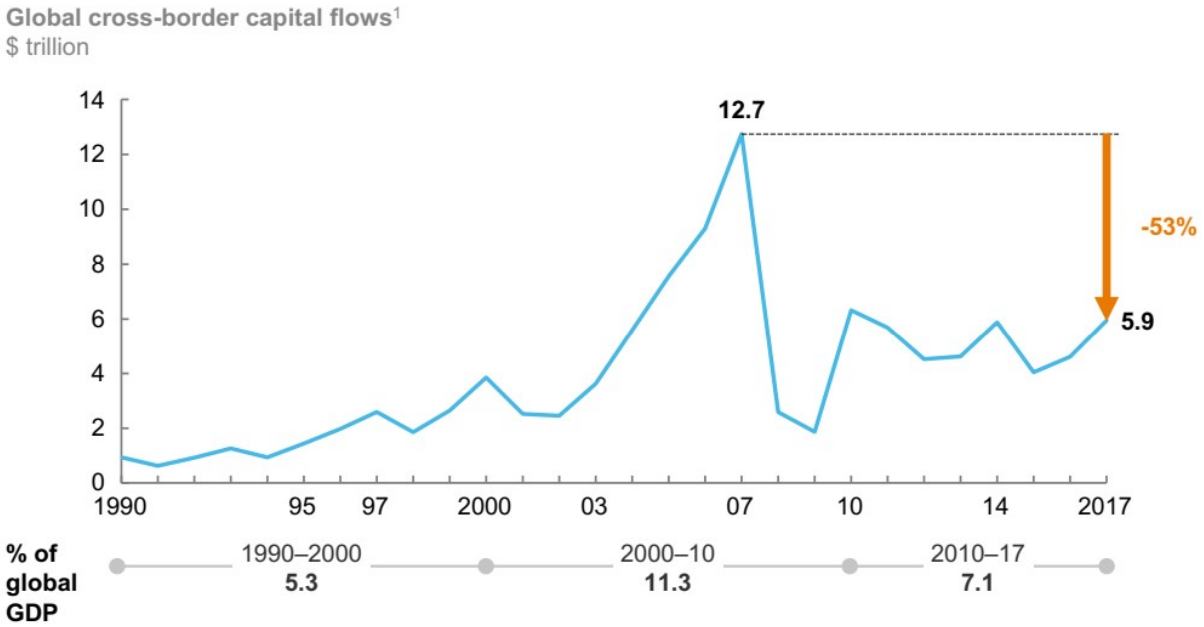
- **Shadow Banking**, which shrank more than the banking system, after the crisis, seems to be rebounding more strongly than the banking system
  - Basel III to blame?
- **Cross border** trade, trade Imbalances and capital flows have declined
- **FC reserves of EMEs** however went up despite decline in global imbalances
  - In search of yield – low rates in AEs
  - In search of security – better growth prospects: decoupling hypothesis
  - Declining trend after 2013 as the hypothesis lose credibility : reduced self insurance can make them more vulnerable to external shocks.

Shadow Banking

- At the 2011 Cannes Summit G 20 leaders resolved to develop policies to deal with shadow banking.
- FSB recommendations on shadow banking published in 2013:
  - **Mitigate the spill-over effect between the regular banking system and the shadow banking system**
  - **Reduce the susceptibility of money market funds (MMFs) to "runs"**
  - **Assess and align the incentives associated with securitization**
  - **Dampen financial stability risks and pro-cyclical incentives associated with securities financing transactions such as repos and securities lending that may exacerbate funding strains in times of market stress**
  - **Assess and mitigate systemic risks posed by other shadow banking entities and activities**
- Recommendations still in the process of being translated into operational guidelines to facilitate consistent national implementation.
- Monitoring done regularly by FSB
- Resolution efforts for non banks, including central counter parties, remains work in progress.
- Reform agenda for insurers has not kept pace with planned guidelines

Cross-border flows of capital have declined

Global cross-border capital flows have declined 53 percent since the 2007 peak.



1 Gross capital inflows, including foreign direct investment (FDI), debt securities, equity, and lending and other investment.

SOURCE: IMF Balance of Payments; McKinsey Global Institute analysis

McKinsey Global Institute: A DECADE AFTER THE GLOBAL FINANCIAL CRISIS: WHAT HAS (AND HASN'T) CHANGED? (BRIEFING NOTE SEPTEMBER 2018)

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

Global Financial Regulatory Reform

- Under the **overall guidance of G 20 Leaders**.
- The restructured Financial Stability Board (**FSB**) the chief agency used by the G 20 for coordinating the reform efforts of national authorities and international standards setting bodies like **BCBS** (Basel Committee for Banking Supervision) for banks, and **IOSCO** (International Organization of Securities Commissions) for shadow banking.
- Reform of the new **Basel III** framework for internationally active **banks** system the centerpiece, under the supervision of BCBS
- Monitoring **Shadow Banking** activity through **FSB** and **IOSCO**.
- The **Basel III** reforms now **finalized** and complete
- The **big issues** now:
  - **Implementation and phasing**
  - **Regulatory framework for non-banks** that were at the epicenter of the GFC, including new financial technologies and cryptocurrencies.
  - Adverse spillovers of reforms on **EMDEs** to be monitored, as advised by FSB to G 20 in 2012
  - Complacency and rollback of reforms as the memory of the crisis recedes.

Basel III phase-in arrangements: key standards[1]

Table III.1

Standard	Adoption year	Requirement	Phase-in from year	Full implementation year
Stage 1: Capital and liquidity				
Capital definition	2010	CET1; deductions	2013	2022
Minimum CET1 ratio	2010	4.5%	2013	2015
Capital conservation buffer	2010	2.5%	2016	2019
Countercyclical buffer	2010	0–2.5%	2016	2019
G-SIB capital surcharge	2010	0–3.5%	2016	2019
Leverage ratio (LR)	2010	3%	2015 (disclosure)	2018
Securitisation framework	*2014*	*Revised framework*		*2018*
Market risk framework	*2016*	*Revised framework*		*2022*
Liquidity Coverage Ratio	2010	100%	2015	2019
Net Stable Funding Ratio	2010	100%		2018
Stage 2: Tackling RWA variability				
Output floor	2017	72.5%	2022	2027
LR revisions/G-SIB surcharge	2017	50% scaling factor		2022
Credit risk framework	2017	Revised framework		2022
Operational risk framework	2017	Revised framework		2022

[1] The Basel framework distinguishes three pillars: (i) minimum capital requirements, (ii) supervisory review and (iii) market discipline, based on standardised disclosures. Complementary reforms, such as enhanced bank resolution regimes, are implemented in parallel.

Sources: BCBS; BIS.

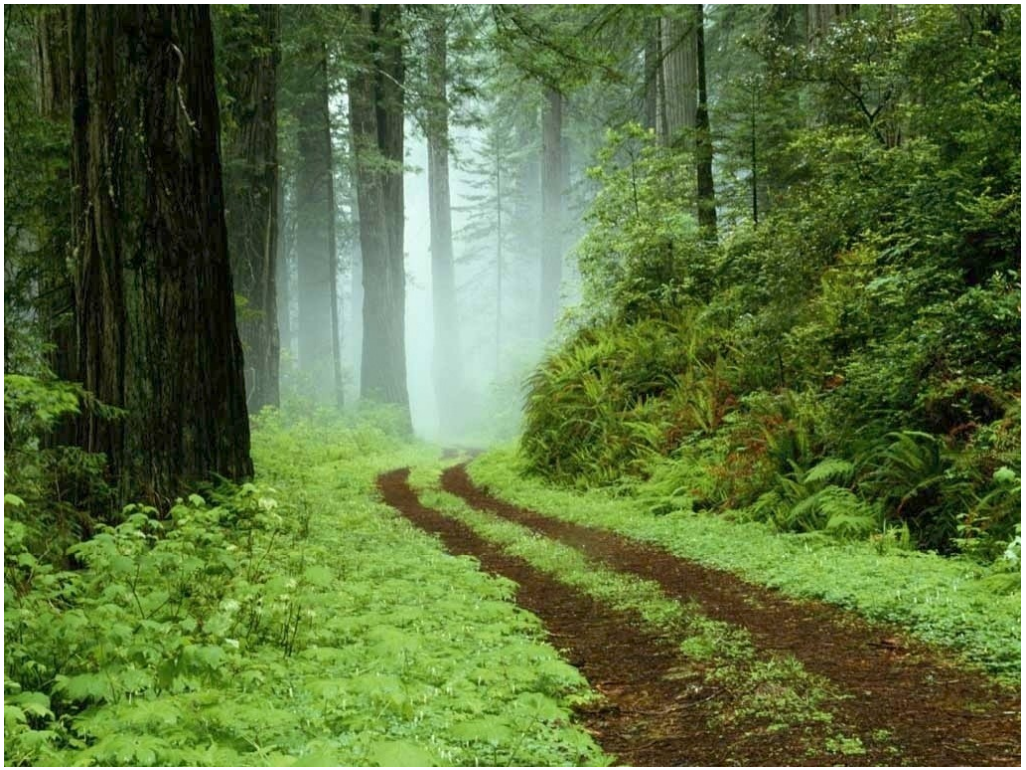
https://www.bis.org/publ/arpdf/ar2018e.htm

G-SIBs as of November 2017[9] allocated to buckets corresponding to required levels of additional capital buffers

Bucket[10]	G-SIBs in alphabetical order within each bucket
5 **(3.5%)**	(Empty)
4 **(2.5%)**	JP Morgan Chase
3 **(2.0%)**	Bank of America Citigroup Deutsche Bank HSBC
2 **(1.5%)**	Bank of China Barclays BNP Paribas China Construction Bank Goldman Sachs Industrial and Commercial Bank of China Limited Mitsubishi UFJ FG Wells Fargo
1 **(1.0%)**	Agricultural Bank of China Bank of New York Mellon Credit Suisse Groupe Crédit Agricole ING Bank Mizuho FG Morgan Stanley Nordea Royal Bank of Canada Royal Bank of Scotland Santander Société Générale Standard Chartered State Street Sumitomo Mitsui FG UBS Unicredit Group

	G-SIB balance sheets reflecting changing business models				
	USD trn				
	Assets			Liabilities and equity	
	2008	2017		2008	2017
Cash and equiv	4.72	8.97	Total equity	2.05	3.67
Trading securities	12.59	5.29	Deposits	17.49	28.06
Other securities	7.57	9.97	Senior debt	8.27	7.34
Loans	15.43	20.54	Subordinated debt	0.85	0.65
Other assets	3.85	4.58	Other liabilities	15.51	9.64

http://www.fsb.org/wp-content/uploads/P211117-1.pdf



Thank you for the patient hearing