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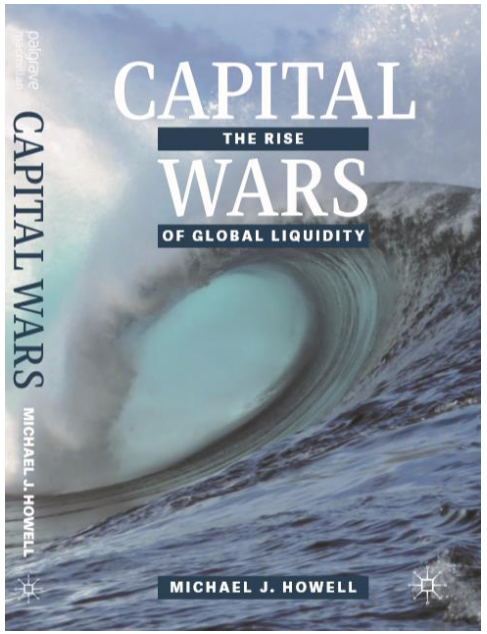
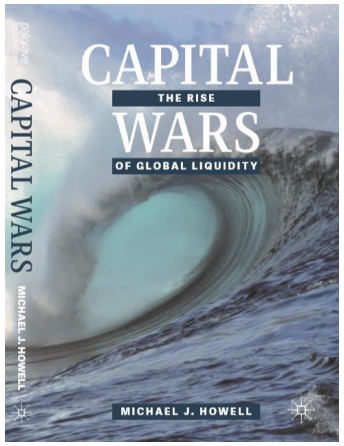
Global Liquidity

- **Origins [Salomon Bros]**
- Methodology [Markets Follow Money]
- Background to Recent Crises
- Investment Outlook
- China & *Capital Wars*





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Capital Wars: *Key Themes*

- **Asset allocation drives 'macro-valuation' shifts (asset prices)**
- Asset allocation itself determined by liability needs vs liquidity
- Liquidity is a hierarchical or quality-focussed definition of money
- Liquidity depends on **Central Banks** and **collateral** ('safe' assets)
- Shortages of **Global Liquidity** feedback negatively on 'safe' assets
- Expressed through 'real' exchange rates, i.e. asset prices
- China leans too heavily on US dollar system & exaggerates shortages
- Result massive QEs, currency rivalry and *Rise of the Yuan*

Transmission Mechanism: Real Exchange Rate

Adjustment forces 'real' Yuan/ US$ to rise

Real economy prices 'sticky' adjustment forced through asset markets and forex markets

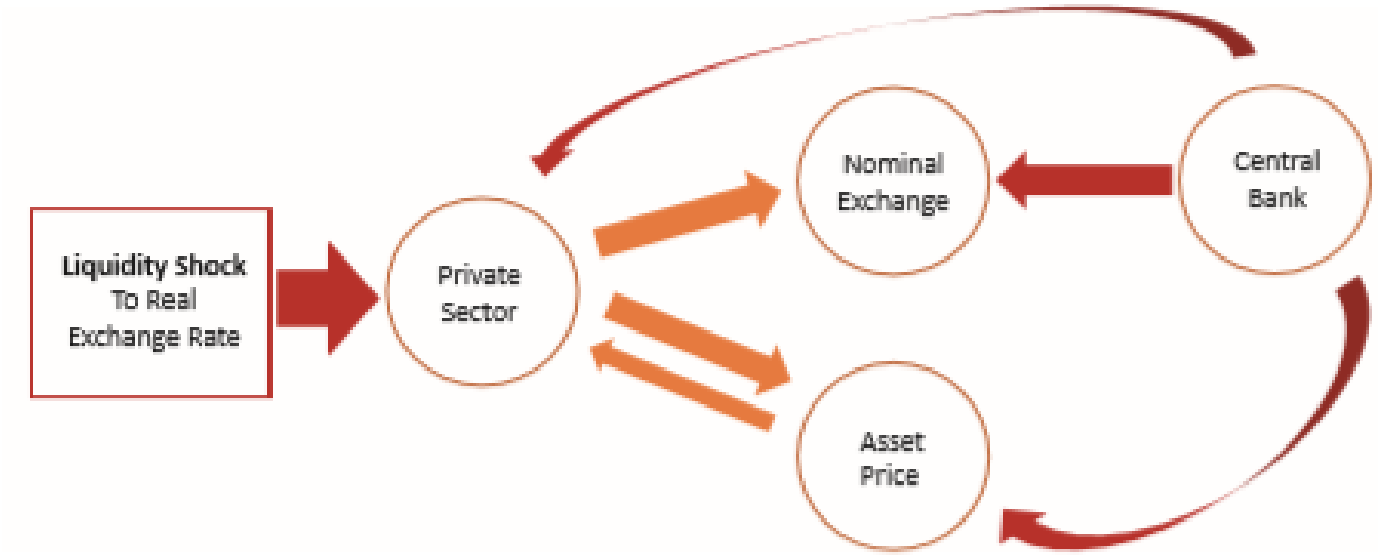


Fig. 3.4 The transmission of Global Liquidity (schematic)

China and EM (manufacturing) want 'stable' exchange rates…
US (finance) wants stable asset markets
…Result: Global Liquidity boom (Fed eases and others follow) and 'adjustment to imbalances' slow and made choppy by China's voracious appetite for US dollars

World Key Currency (*Seigniorage*)?

"… China needs to stop re-exporting US dollars and start exporting Chinese Yuan (RMB)."

	US Dollar	Chinese Yuan	Euro	Yen
Economic Size	√	√	√	?
Fiscal Stability	?	√	?	√
Financial Liquidity	√	x	√	x
Military & Diplomatic Power	√	?	x	x

Chinese Finance Underdeveloped: China's inward FDI and outward 'official' investment in US Treasuries

China needs to stop re-exporting US dollars and start exporting Yuan by opening bond market to foreigners and developing a Yuan-based trade credit market

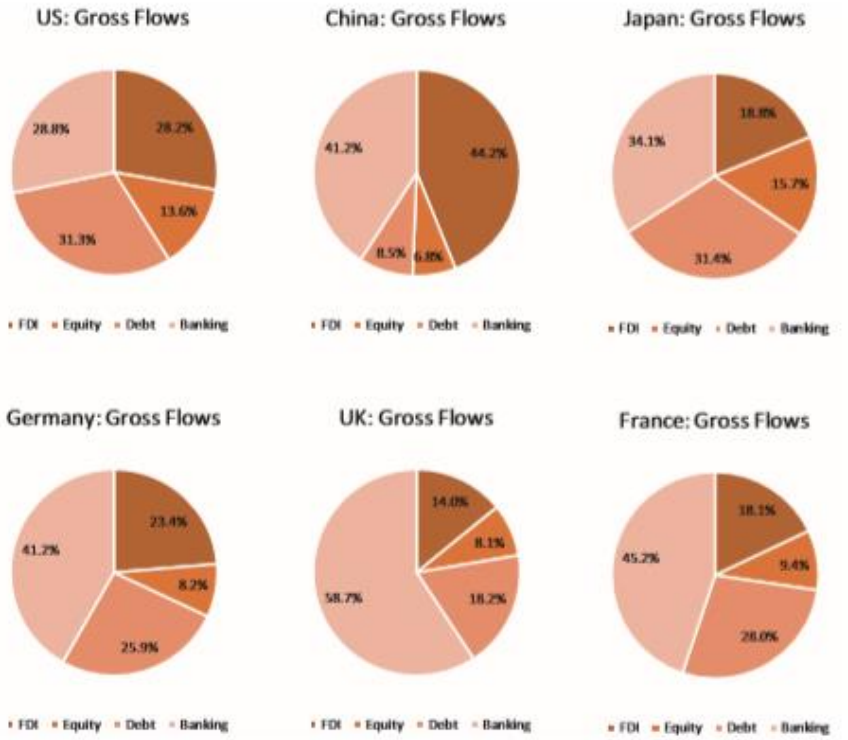


Fig. 8.12 Structure of capital flows—major economies, percentage share by gross flow type, average 2005–2018 (*Source* IMF)

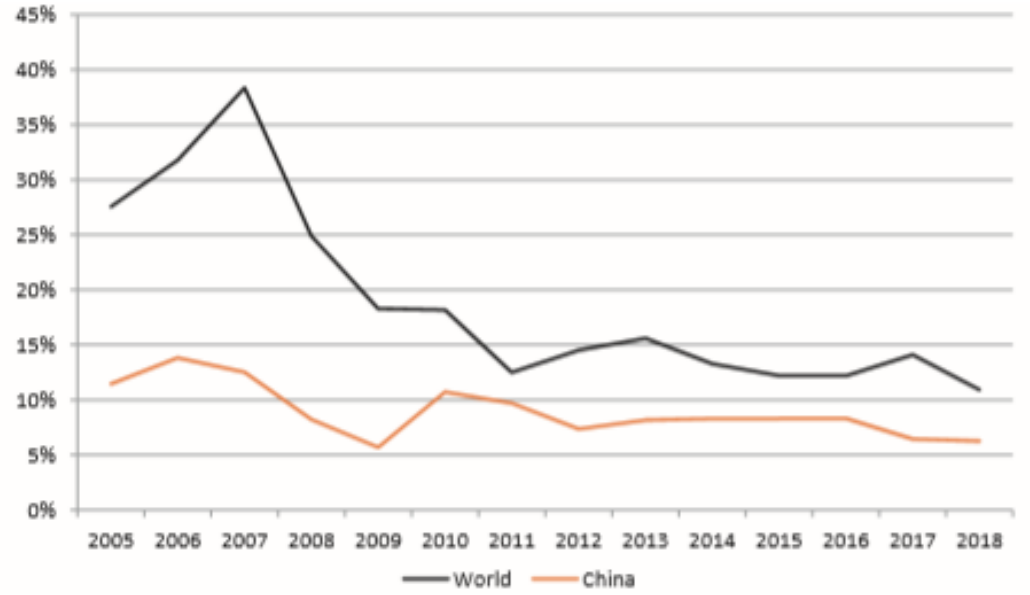


Fig. 9.6 Gross private sector capital flows—China compared to World average, 2005–2018 (% of GDP) (Source *CrossBorder Capital*)

China's Aim: to challenge the supremacy of the US Dollar largely by controlling the international flows of **liquidity** and **capital**

China already dominates World industry. She now needs to build up her financial muscle

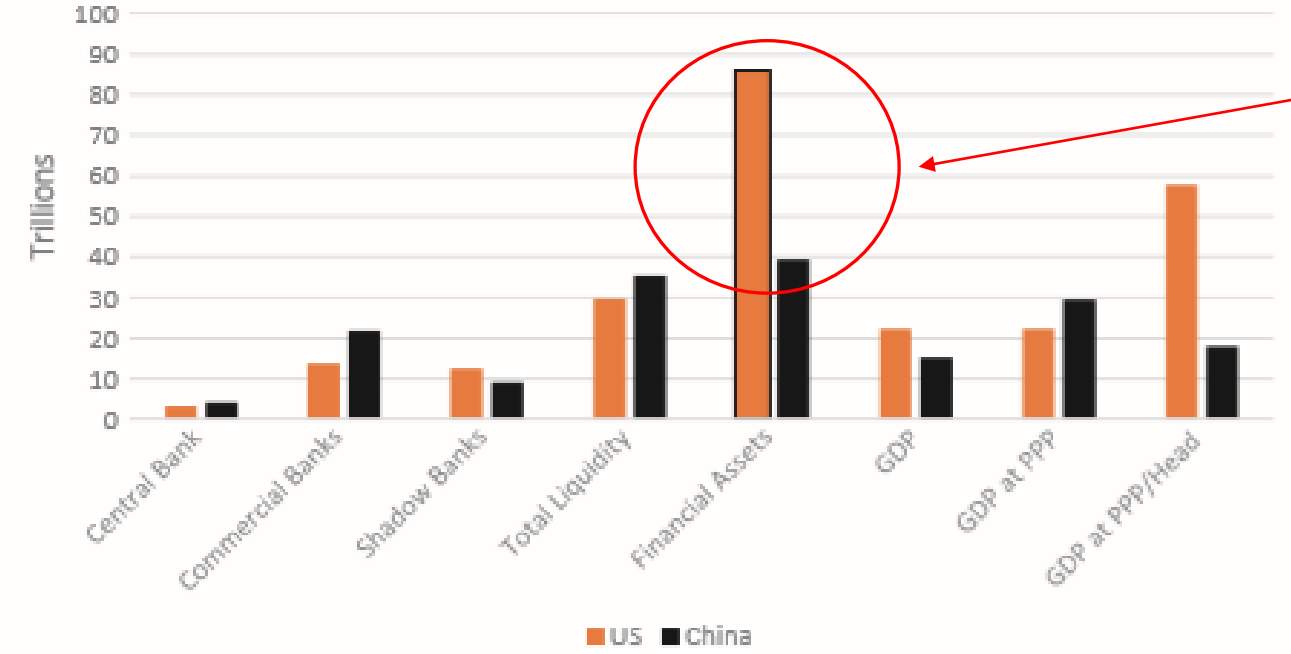
---

*…we should promote the Renminbi to be the **primary currency of Asia**, just as the US dollar first became the currency of North America and then the currency of the World …*

*Every globalisation was initiated by a **rising empire** …As a rising super power, the 'One Belt, One Road' strategy is the beginning of China's own globalization … it is a **counter-measure to the US** strategy of shifting focus to the East.*

Excerpts from a speech by Major-General Qiao Liang, Chinese PLA, April 2015

The Great Rivalry: US vs China



China's financial economy still lags America

Fig. 1.4 China's relative financial power, mid-2019 (US$ in trillions, except PPP/head in US$ '000s) (Source *CrossBorder Capital*)

Capital Already Flowing East: German firms have radically relocated (+15%ppt) from West to East in under 20 years

Eurozone is looking increasingly redundant. It cannot survive without becoming a fiscal union

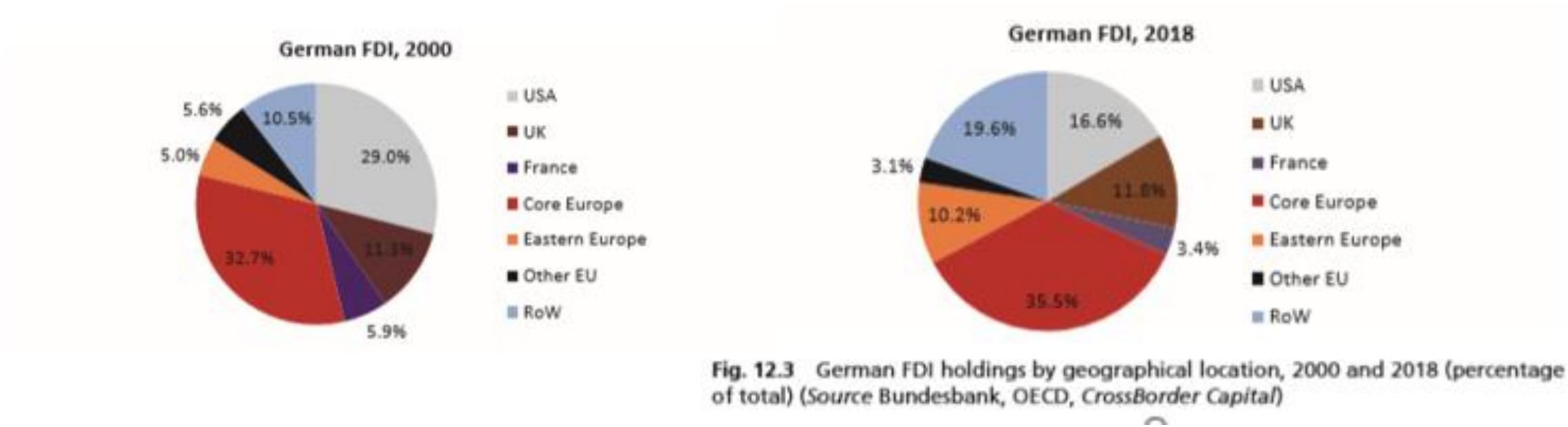


Fig. 12.3 German FDI holdings by geographical location, 2000 and 2018 (percentage of total) (*Source* Bundesbank, OECD, *CrossBorder Capital*)

Austerity & Low Interest Rates: Lead to huge debts that need liquidity and bigger balance sheets for roll-overs

These policies add to 'China-effect' by forcing debt/ liquidity ratio to rise and 'safe' asset supply to fall

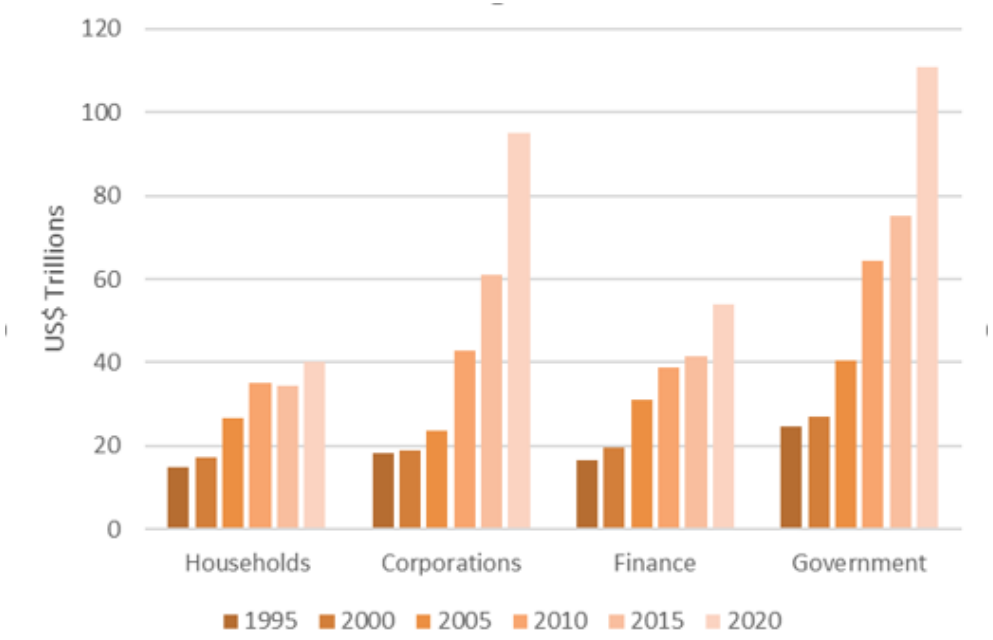


Fig Growth of World Debt by Sector, 1995-2020 (US$ in Trillions)

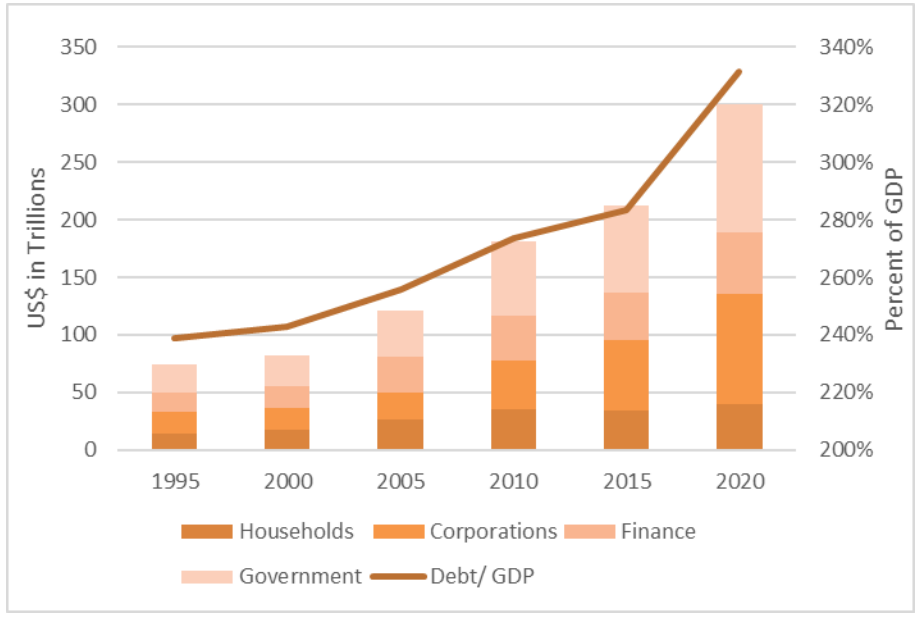


Fig Growth of World Debt & Debt/ GDP, 1995-2020 (US$ in Trillions)

Liquidity Always Features in Crises

The Evening Standard - May 24, 1932

- It's a global problem. 'Leak' in 1930s appears in Middle Europe and then threatens to capsize World Economy.

- 88 years ago policy makers similarly ignored ‘financial stability’ question

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Global Liquidity

… independent and two-thirds bigger than **World GDP**

Global Liquidity is a measure of **balance sheet**, i.e. the CAPACITY of capital

NOT the COST of capital

It matters when debt has to be rolled over

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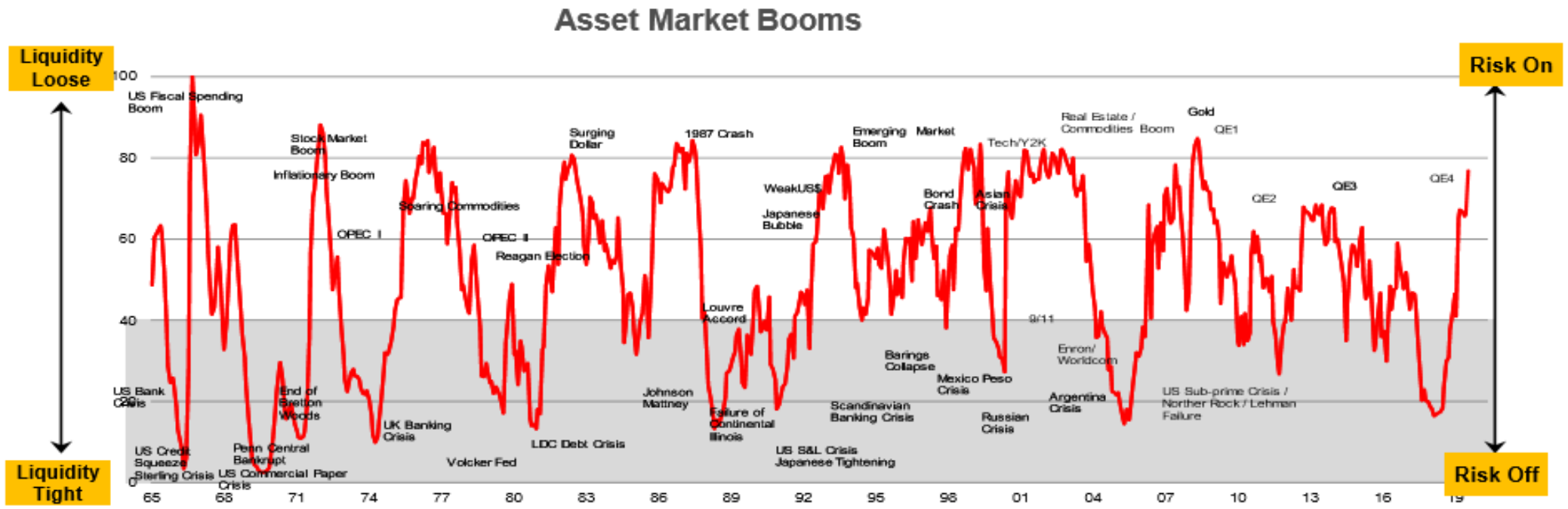
The Global Liquidity Cycle: Risk On Vs Risk Off

- 50-year history of funding liquidity
- Downward inflections are a risk warning of a funding crisis, possible market sell-off and economic recession



Liquidity	Fixed Income	FX	Equities	Real Economies
	+3-6m	+3-6m	+9-15m	+12-24m

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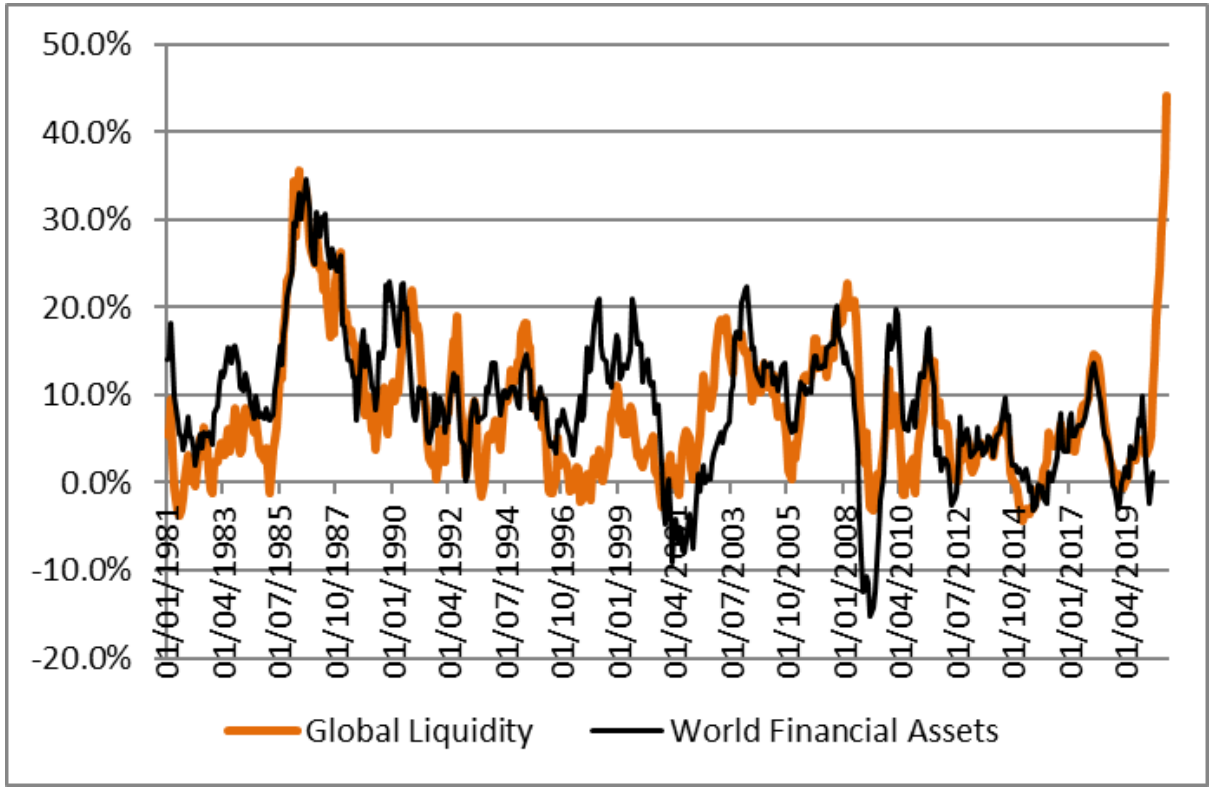
Global Liquidity & World Asset Prices

Annual Growth of Global Liquidity & World Financial Asset Prices



Ratio of Equities Held World-wide and Global Liquidity

The Hierarchy of Liquidity: The Shadow Monetary Base, Collateral and Offshore Wholesale Markets

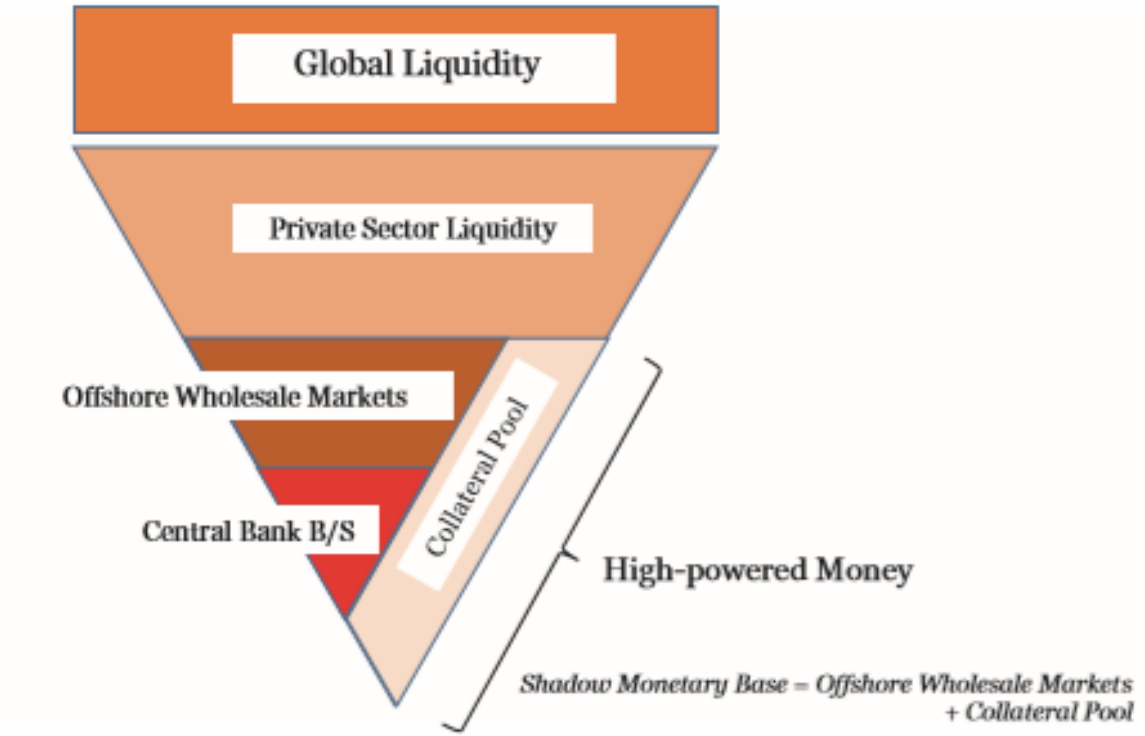


Fig. 6.10 The hierarchy of Global Liquidity (schematic)

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US Federal Reserve 'Whatever It Takes'

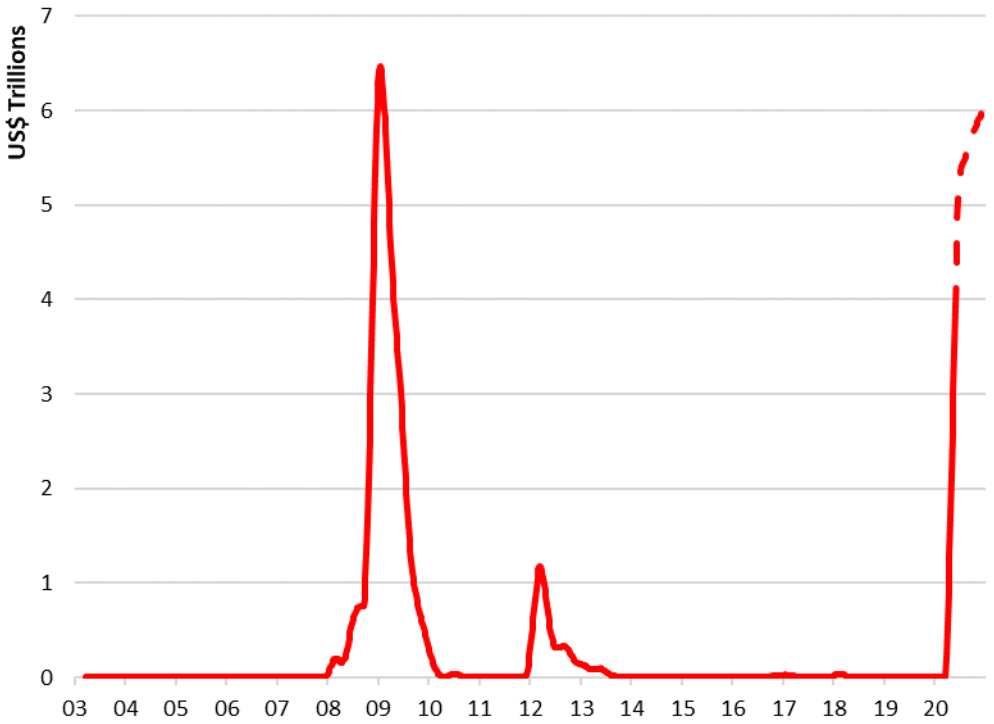
Quantitative Easing (QE) Programmes

Country	Period	Size	% of GDP
United States			
QE1	Nov 2008 – Mar 2010	$2,329bn	15.8
QE2	Nov 2010 – Jun 2011	$561bn	3.7
Operation Twist	Sep 2011 – Jun 2012	$13bn	0.1
QE3	Sep 2012 – Oct 2012	$113bn	0.7
QE4 (QE3 uplift)	Jan 2013 – Oct 2014	$1,570bn	9.4
QE5	Sept 2019-Feb 2020	$399bn	1.8
QE6?	Mar 2020- date	$4,194bn*	18.5
Total		**$9,179bn**	**50.0**

* US$2,050bn announced. Additional US$4,287bn potential. Assume 50%

US Fed Swap lines to Other Central Banks

(US$ Trillions, Rolling 84-day total)



…but in Liquidity terms China has already caught-up and overtaken the US

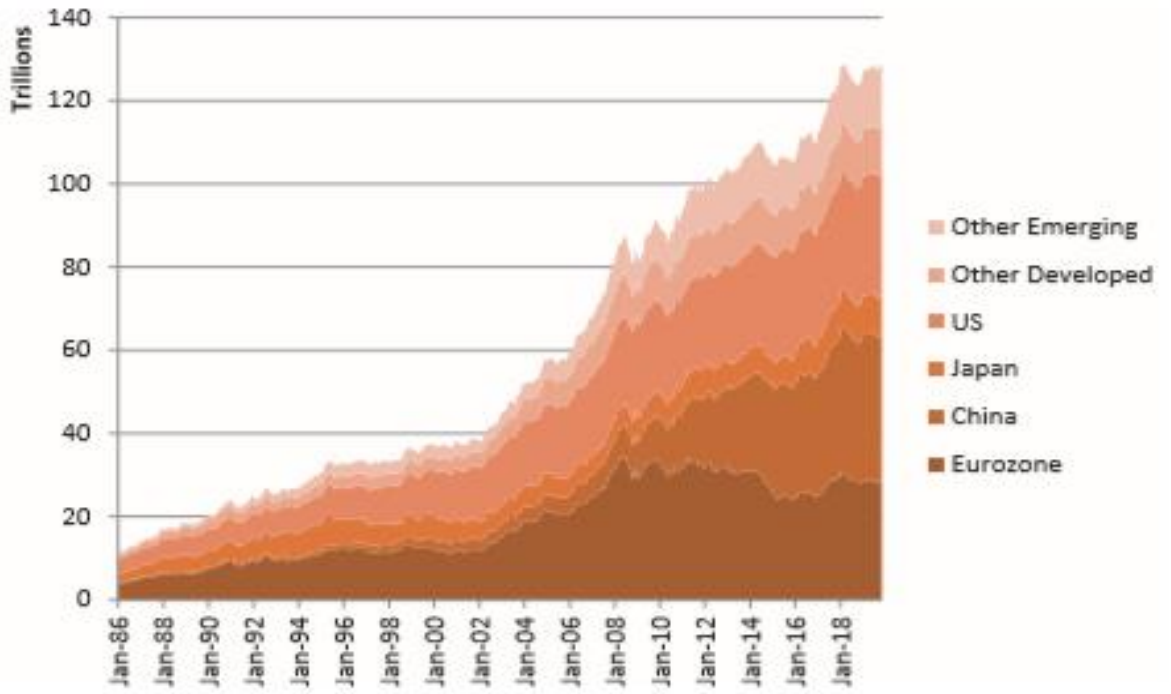


Fig. 2.2 The pool of Global Liquidity, 1986–2019 (US$ in trillions) (Source *CrossBorder Capital*)

Fig. 2.7 The major players—China, US and Eurozone, 1986–2019 (US$ in trillions) (Source *CrossBorder Capital*)

The People's Bank (PBoC): China historically monetizes forex reserves, but now focuses on domestic assets

Conventional money multiplier relationship much more stable in China than elsewhere

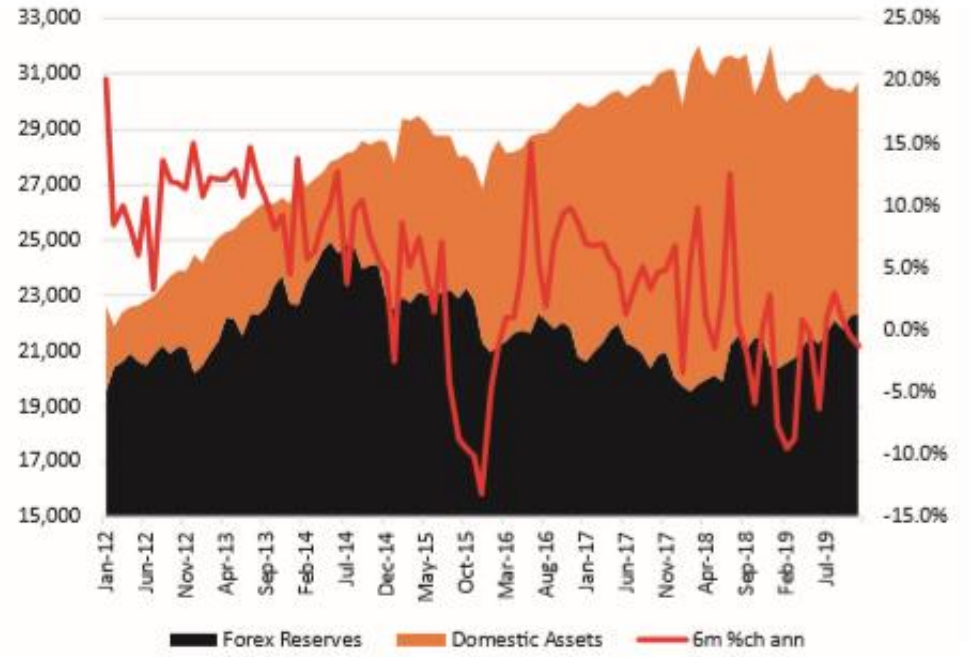


Fig. 7.11 People's Bank of China (PBoC) monetary base—breakdown by foreign and domestic components, 2012–2019 (monthly, RMB in billions) (Source *CrossBorder Capital, People's Bank*)

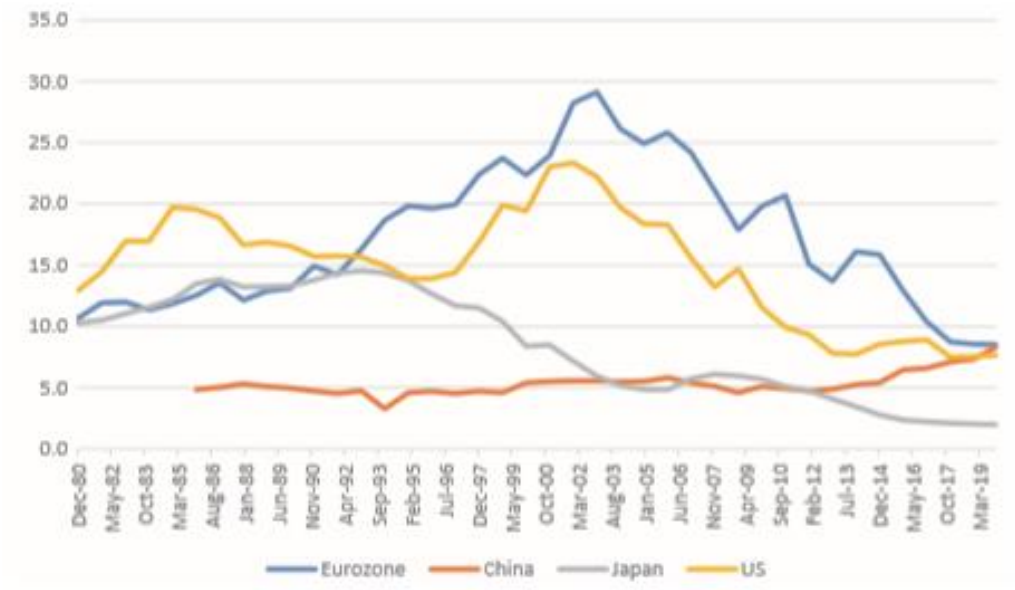


Fig. 7.7 Liquidity multiplier—PBoC, ECB, BoJ and Federal Reserve, 1980–2019 (times) (Source *CrossBorder Capital*)

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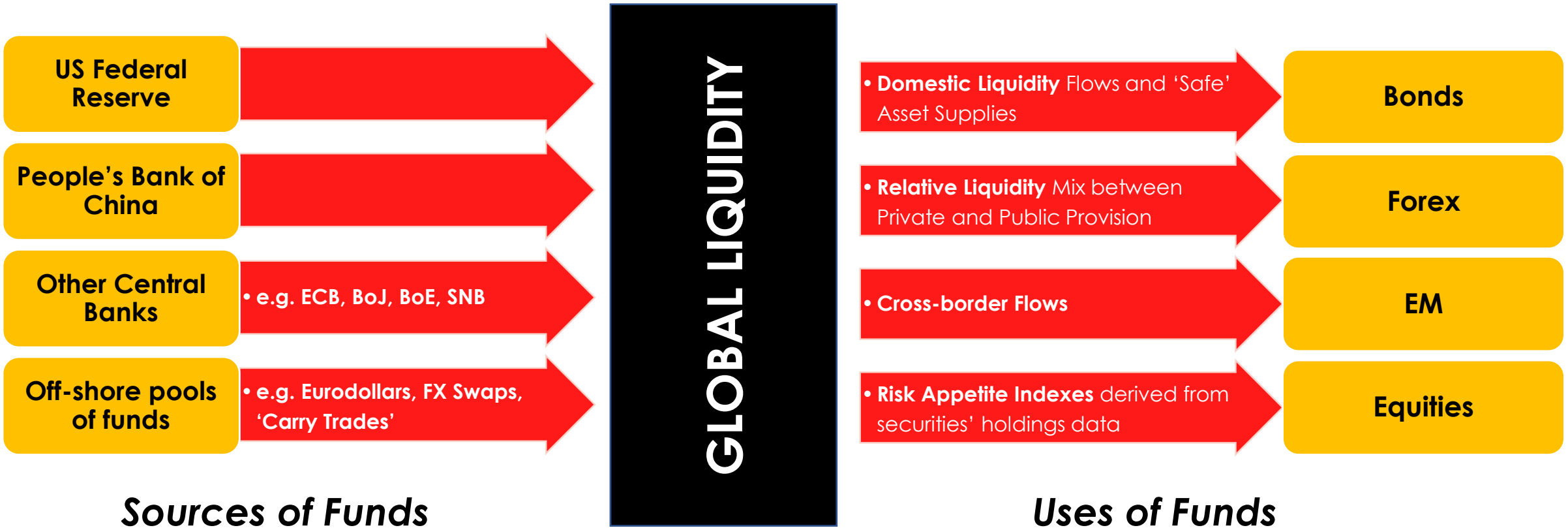
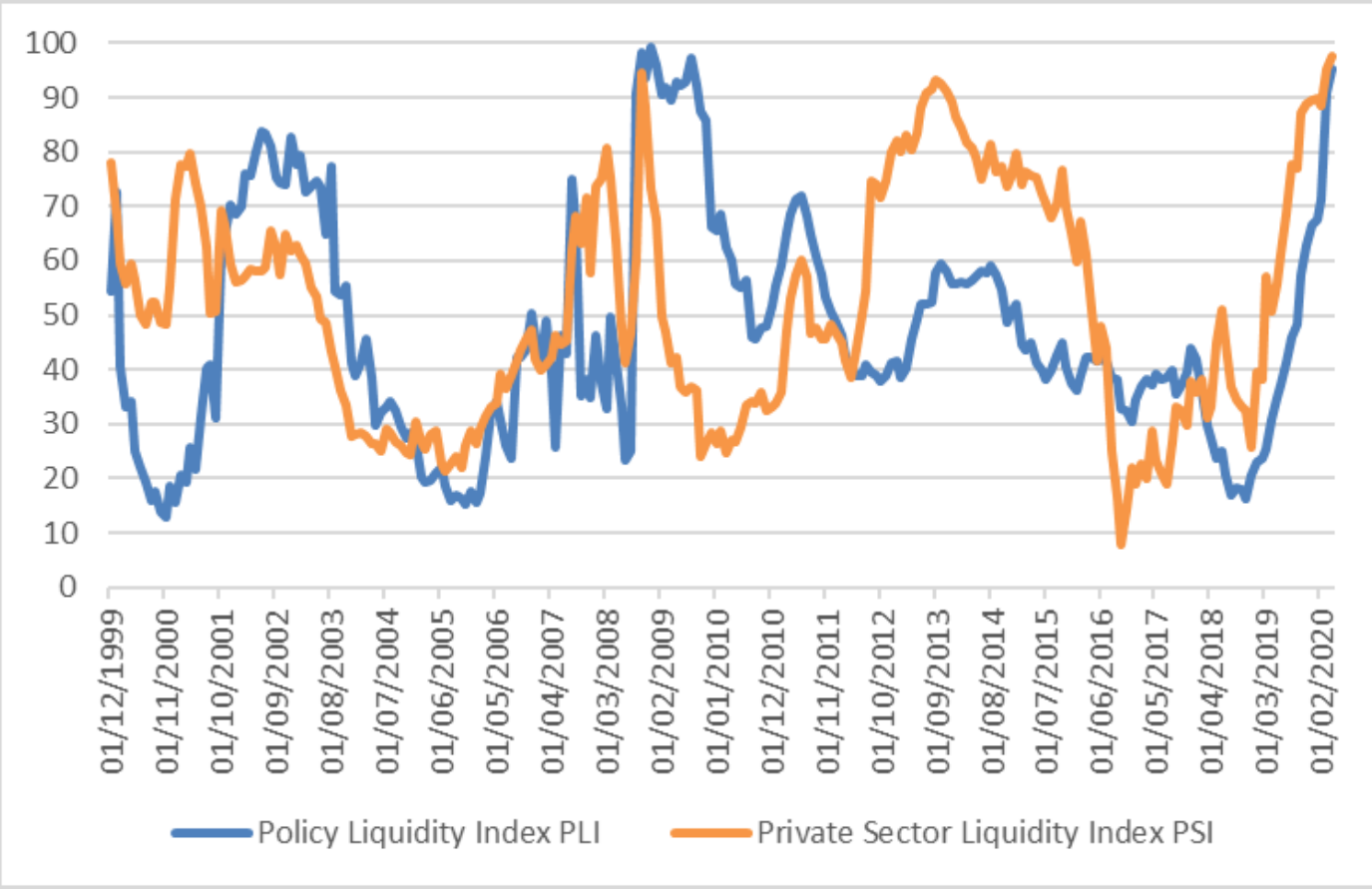
The Global Liquidity Framework



Global Liquidity: The *Quality* Theory of Money – US Private Vs Federal Reserve

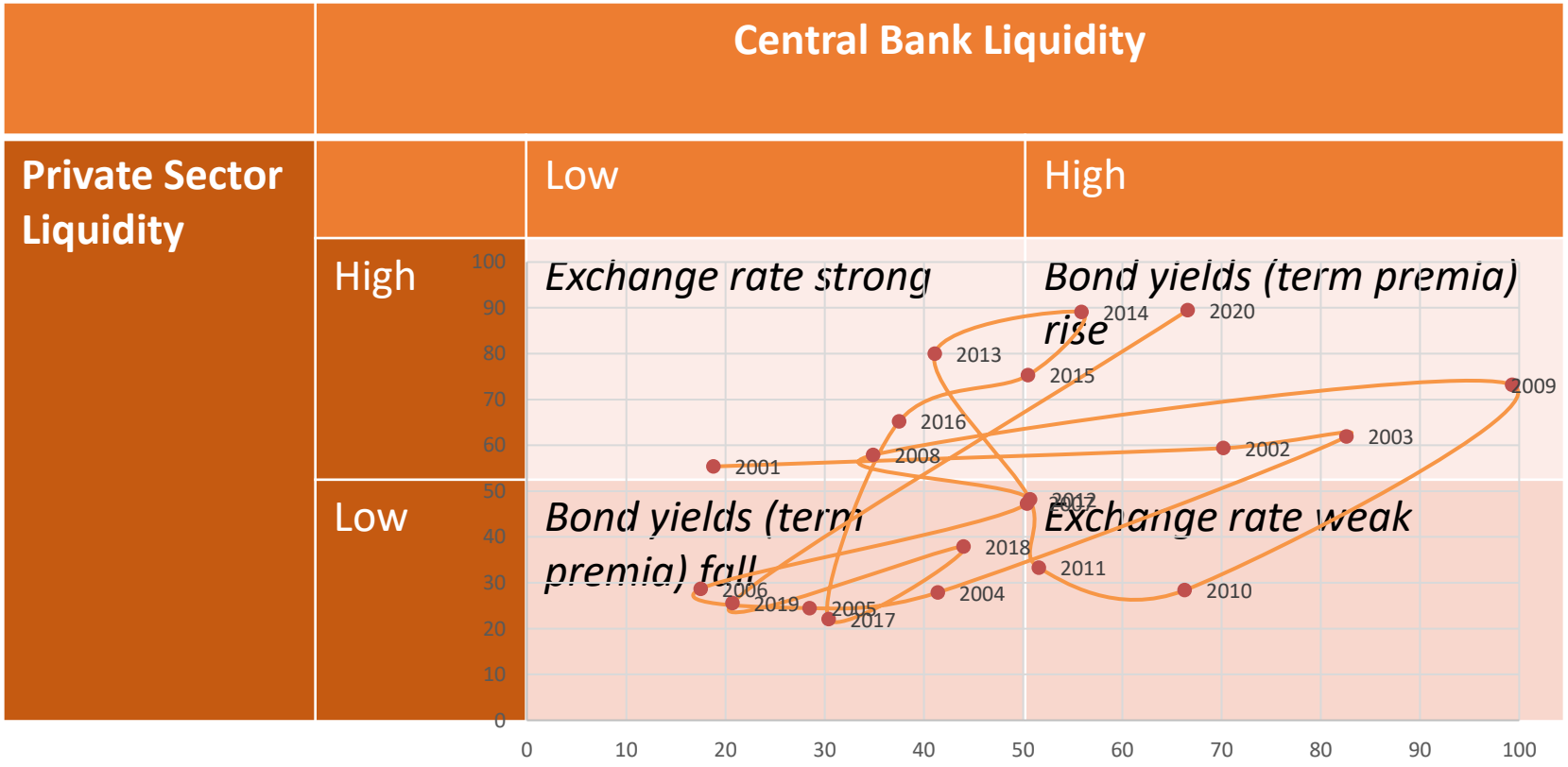


Liquidity reflects the 'hierarchy' of money or what we call
The Quality Theory of Money

Global Liquidity: The *Quality* Theory of Money

	Central Bank Liquidity		
Private Sector Liquidity		Low	High
	High	*Exchange rate strong*	*Bond yields (term premia) rise*
	Low	*Bond yields (term premia) fall*	*Exchange rate weak*

Global Liquidity: The *Quality* Theory of Money



Global Liquidity: The *Quality* Theory of Money

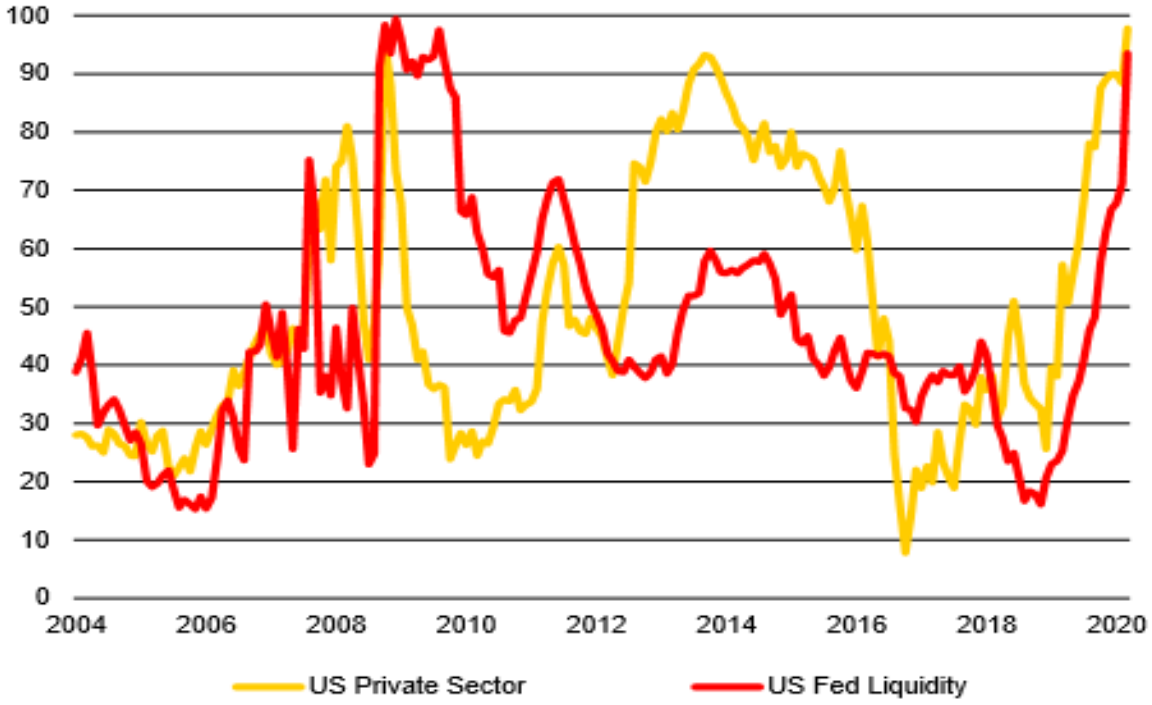
	Central Bank Liquidity	
Private Sector Liquidity	Low	High
High	*Exchange rate strong*	*Bond yields (term premia) rise*
Low	*Bond yields (term premia) fall*	*Exchange rate weak*

Value stocks outperform

Growth stocks outperform

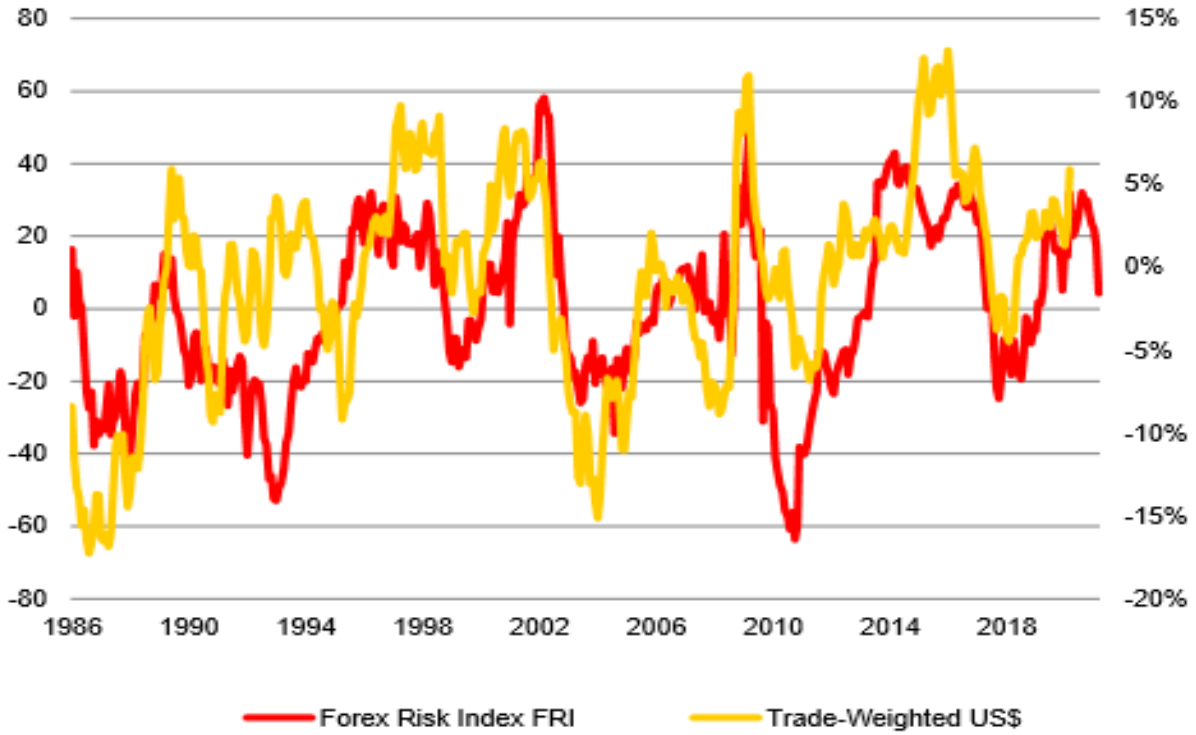
US Liquidity and US Dollar

- Both US Private Sector and Fed liquidity turning higher
- **Forex Risk Index** defined as Private Sector less Central Bank Liquidity. This approximates 'carry' returns i.e. high returns on capital and high short-term policy rates. It also measures excess demand for dollars and net capital inflow into the USD



Trade-weighted US$ and Relative Liquidity

- Relative liquidity drives currencies. More private saving/cash flow and less Fed credit push the trade-weighted US dollar higher 6-9 months ahead
- Ultra-weak US dollar period was 2009/10. Latest data increasingly suggests the US dollar is yet to peak. The pace of Fed liquidity injections has picked up in recent months but will need to expand more. US private sector savings, both corporate and household, have stabilized and are rising



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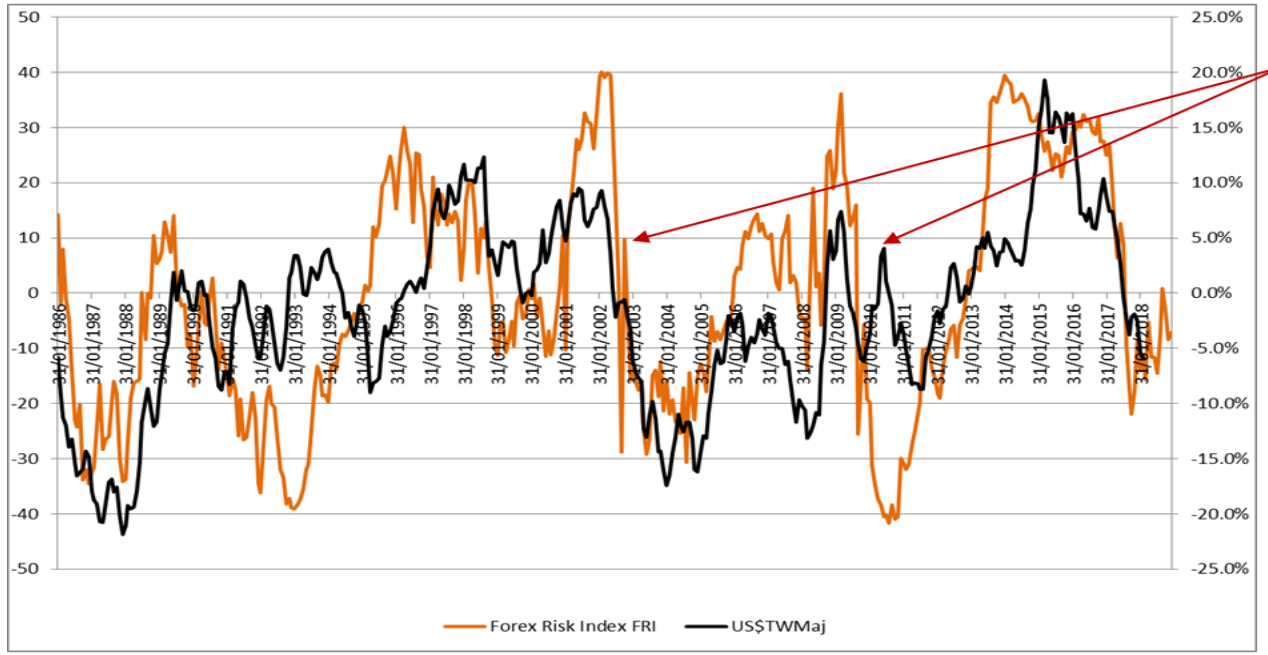
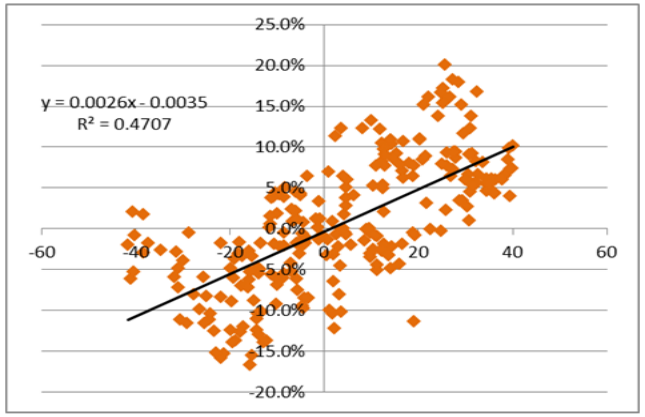
Quality **Liquidity Mix** Leads US Dollar



The quality mix of capital flows is the key driver of forex markets. We show that private sector less Central Bank liquidity parallels excess demand for a currency and leads its subsequent movements by around 12 months.



Pairwise Granger Causality Tests
Date: 05/31/18 Time: 10:55
Sample: 1986M01 2018M12
Lags: 6

Null Hypothesis:	Obs	F-Statistic	Prob.
%dev US DXY does not Granger Cause **US Forex Risk**	385	0.40671	0.8745
US Forex Risk does not Granger Cause **%dev US DXY**		2.91174	0.0087

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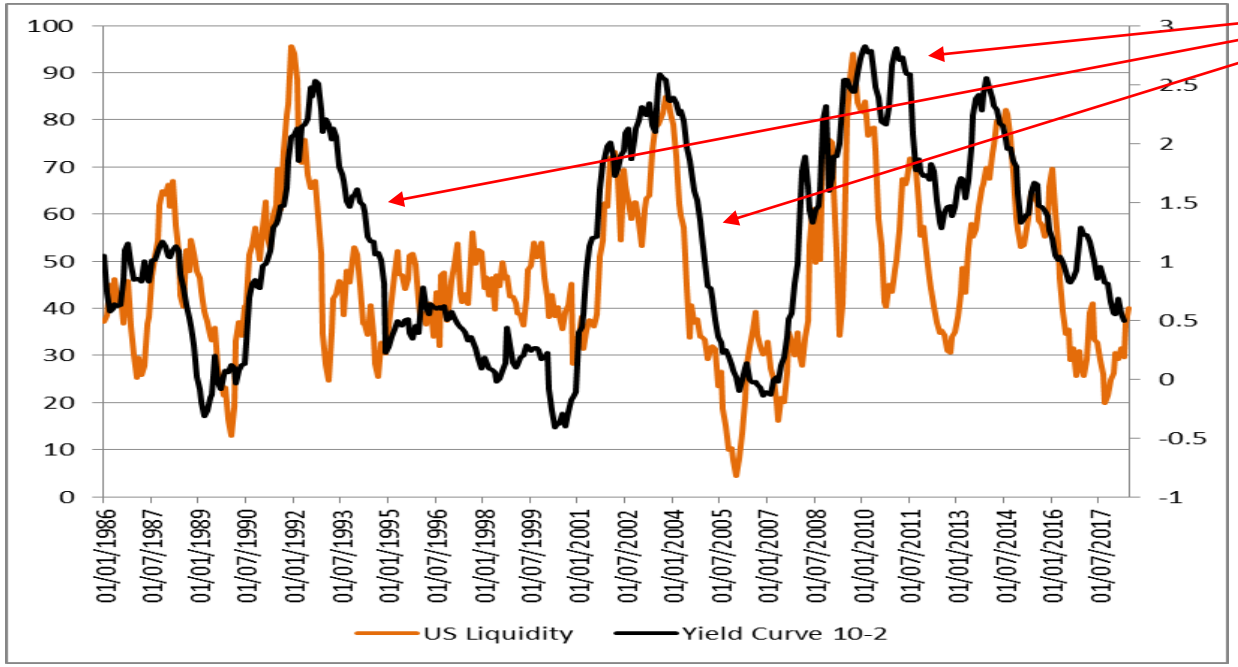
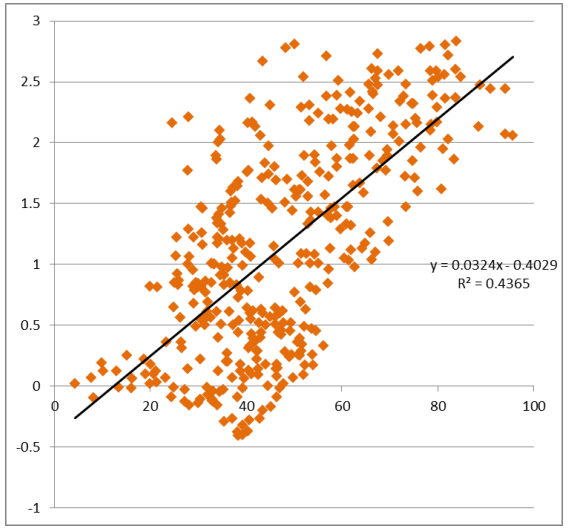
Total Liquidity Flows Lead Bond Markets



The slope of the yield curve moves pro-cyclically with liquidity. The transmission occurs via term premia and the net demand for 'safe' assets



Pairwise Granger Causality Tests			
Date: 05/31/18 Time: 09:50			
Sample: 1986M01 2018M12			
Lags: 6			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
S Liquidity does not Granger Cause **Yield Curve 10-2**	388	2.50553	0.0217
Yield Curve 10-2 does not Granger Cause **US Liquidity**		0.79594	0.5735

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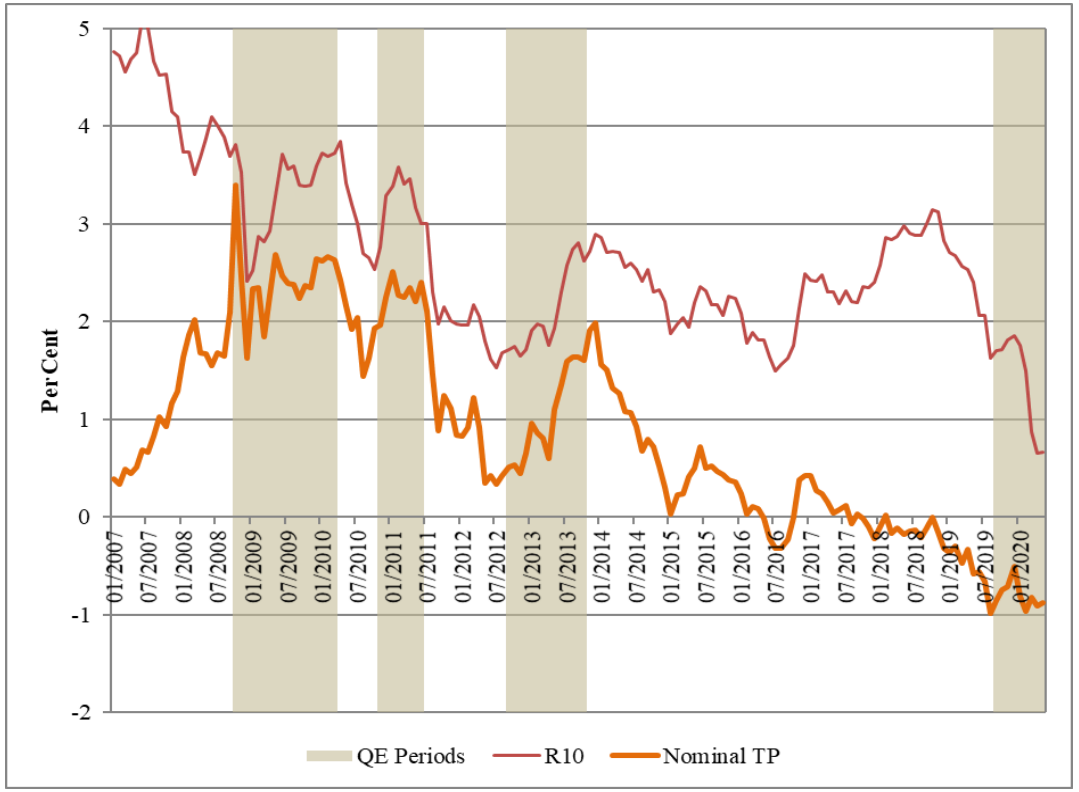
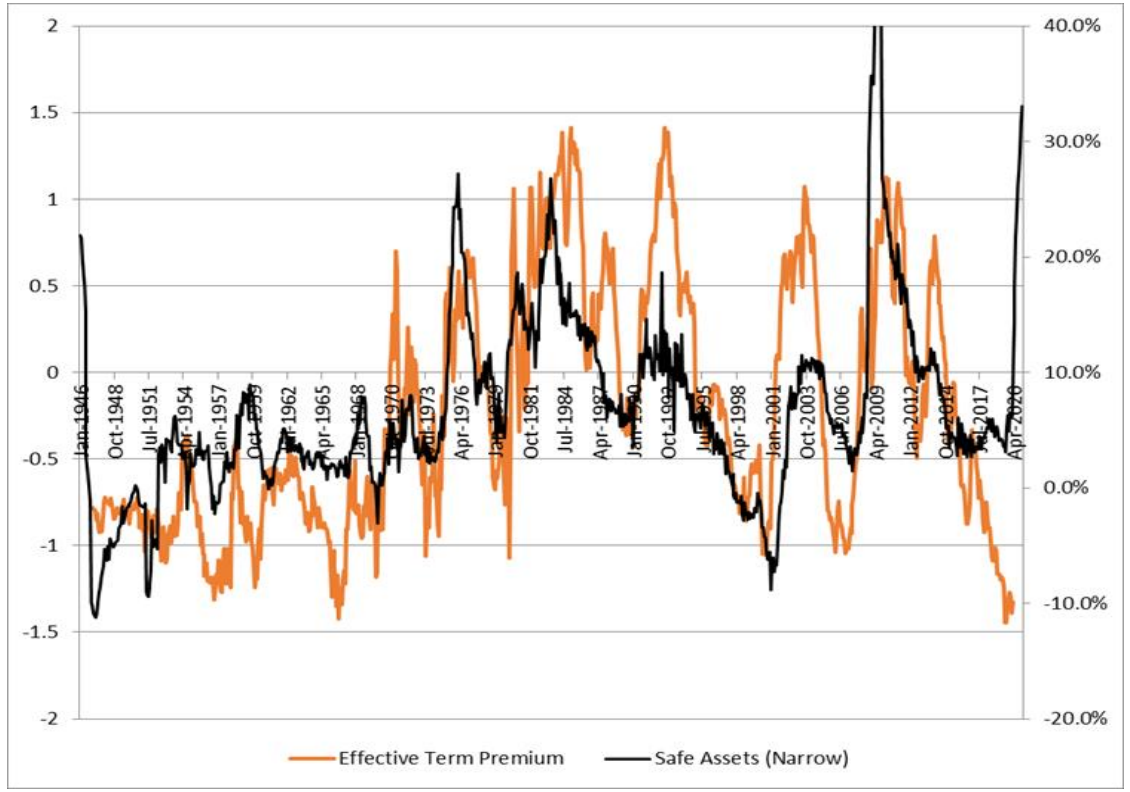
Liquidity & Safe Assets Explain Collapsing Term Premia

- Today is unlike US YCC pre-Treasury/ Fed Accord 1951. Then safe asset supply collapsed
- Excess supply of 'safe' assets (Treasury supply plus Fed B/S) raises yields

US 10-year Treasury Term Premia, 2007-20



Excess Demand for US Safe Assets (% change in US Treasury Issuance and US Fed Balance Sheet)
and Effective Term Premia, 1946-2020



Shortage of 'Safe' Assets: Plunge in US Treasury term premia into negative territory underscores this shortage

80% shortfall in supply of 'safe' assets since 2007-08 GFC. Term premia explain ¾ of recent bond yields

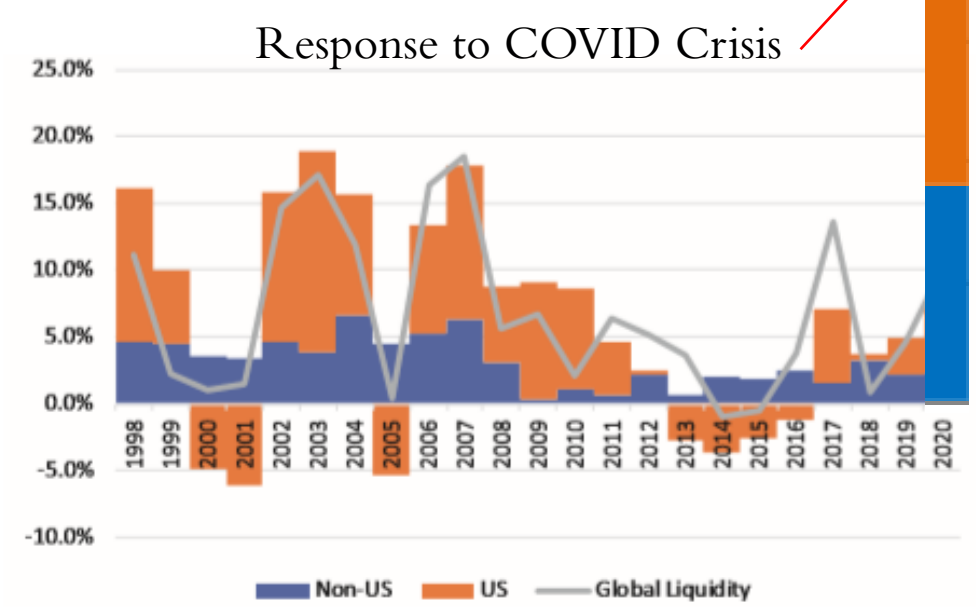


Fig. 11.4 Supply of global 'safe' assets (percent of world GDP) and growth of Global Liquidity (%yoy), 1998–2020 (Source *CrossBorder Capital*)

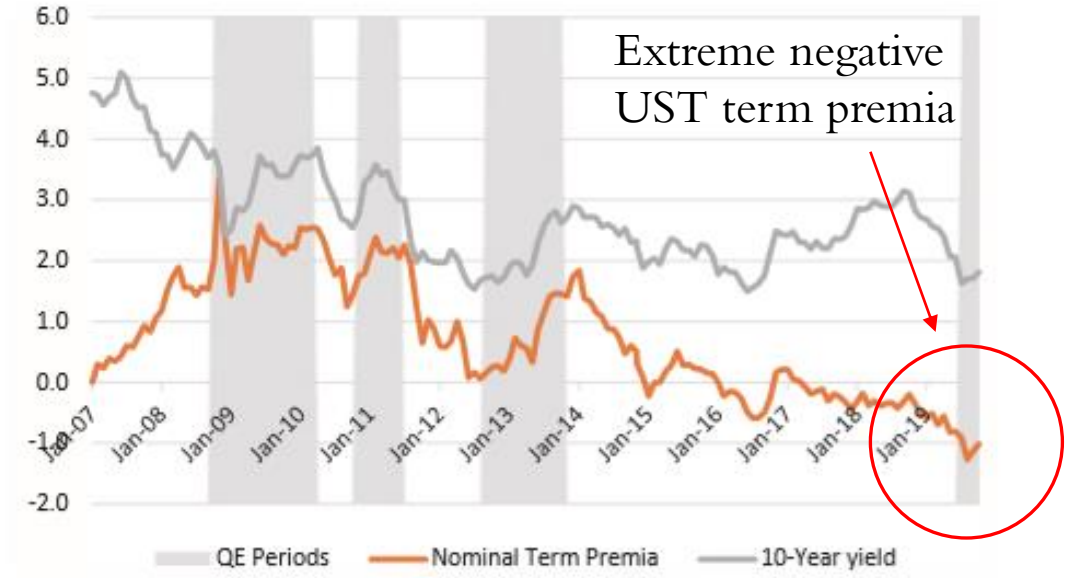


Fig. 10.6 US QE periods, US Treasury 10-year yields and term premia, 2007–2019 (percent) (Source *CrossBorder Capital*)

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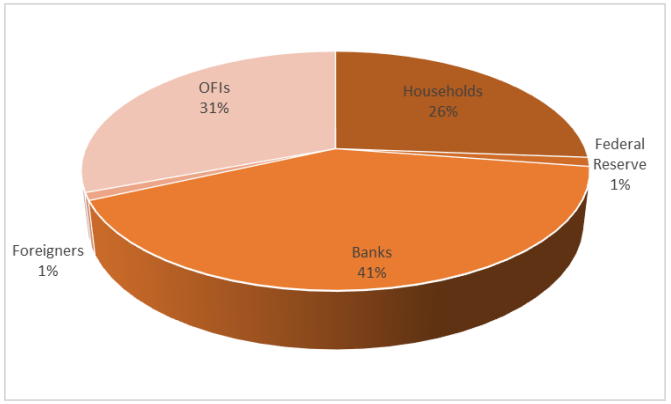
Yield Curve Control?

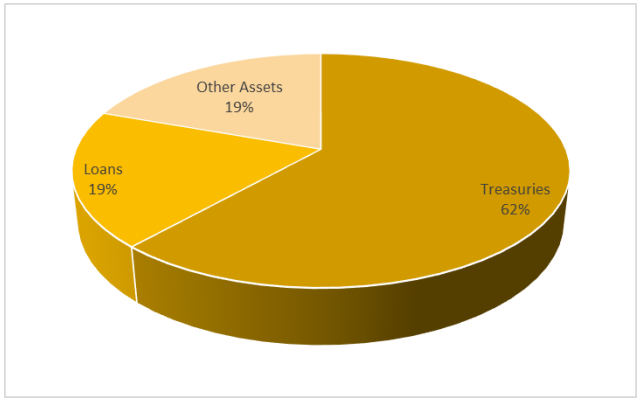
- Today is unlike US YCC pre-Treasury/ Fed Accord 1951. Asset Ownership differs hugely
- Banks (41% to 4%) have been replaced by Foreigners (1% to 40%) as key holders of US Treasuries. Harder to 'financially repress'

US Treasury Ownership 1945 and 2019

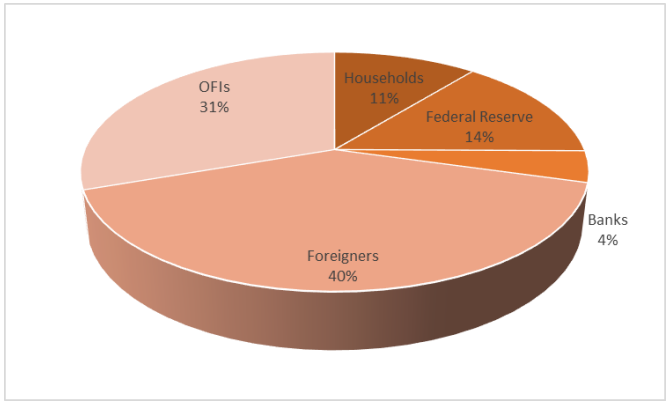
US Bank Balance Sheet (Assets) 1945 and 2019

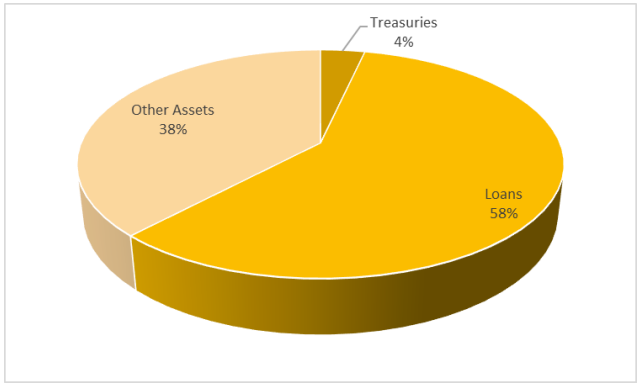
1945





2019





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Global Liquidity Summary

- **Flow** of Liquidity drives fixed income markets
- **Quality mix** of Liquidity determines forex markets
- **Cross-border flows** of Liquidity are key to Emerging Markets
- **Positioning (Holdings)** of Liquidity drive equity markets

Capital flows to Emerging Markets: EM

policy-makers traditionally monetize capital inflows

Chinese liquidity cycle controls the tempo of cross-border capital flows into EM. USD also important

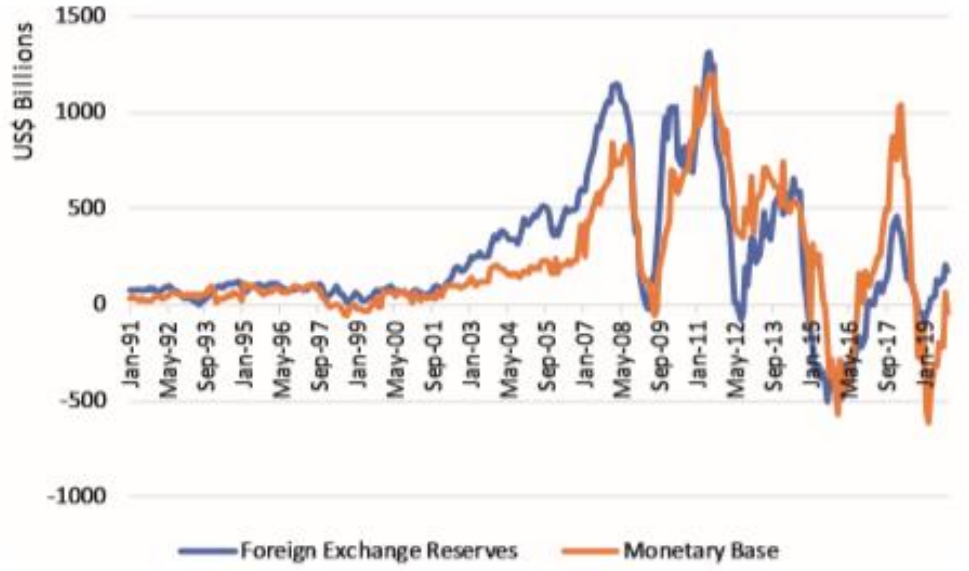

Fig. 9.8 EM foreign exchange reserves and base money, 1991–2019 (US$ in billions, annual change) (Source *CrossBorder Capital*)

Fig. 9.13 Cross-border capital flows to Emerging Markets and Chinese liquidity, 2005–2019 (monthly, indexes 'normal' range 0–100) (Source *CrossBorder Capital*)

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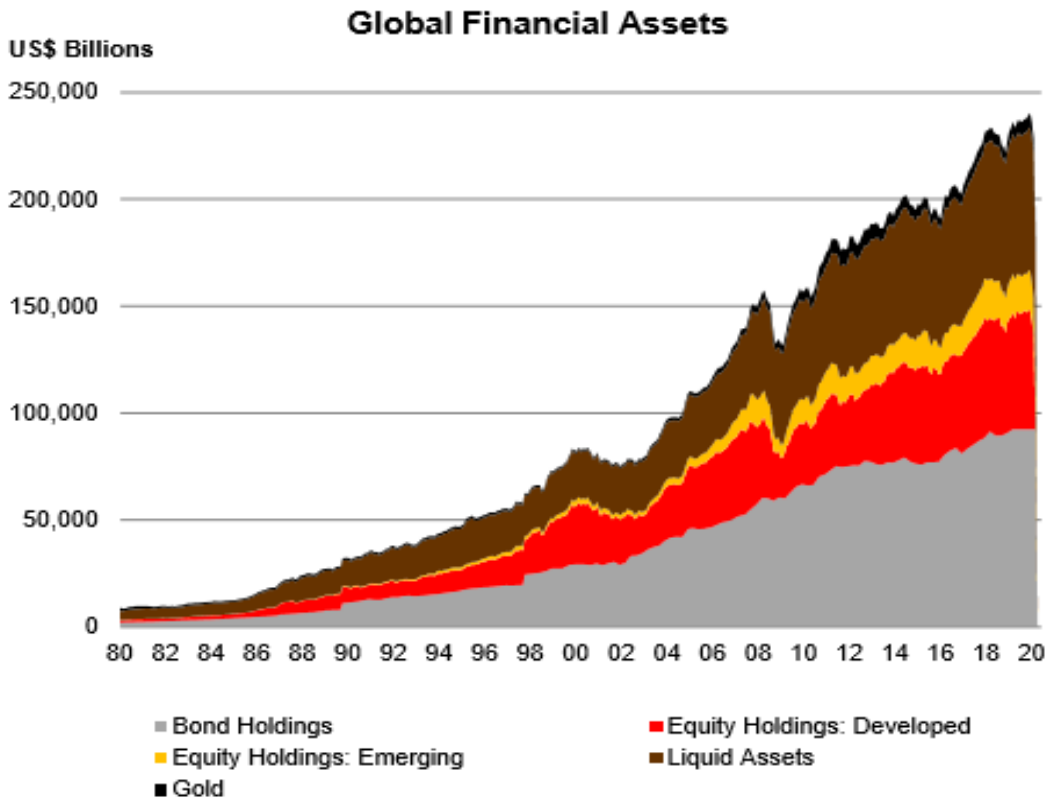
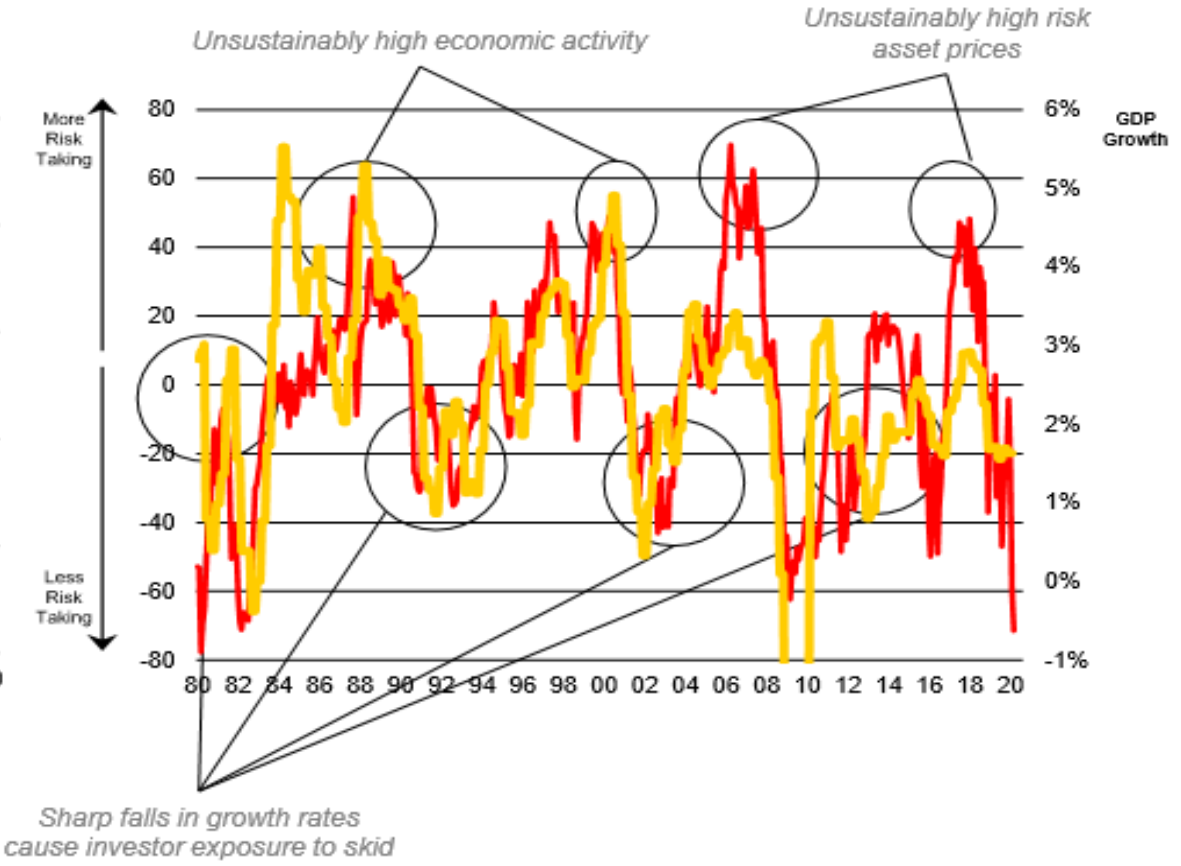
Global Risk Appetite - Investors' Exposure to Risk Assets

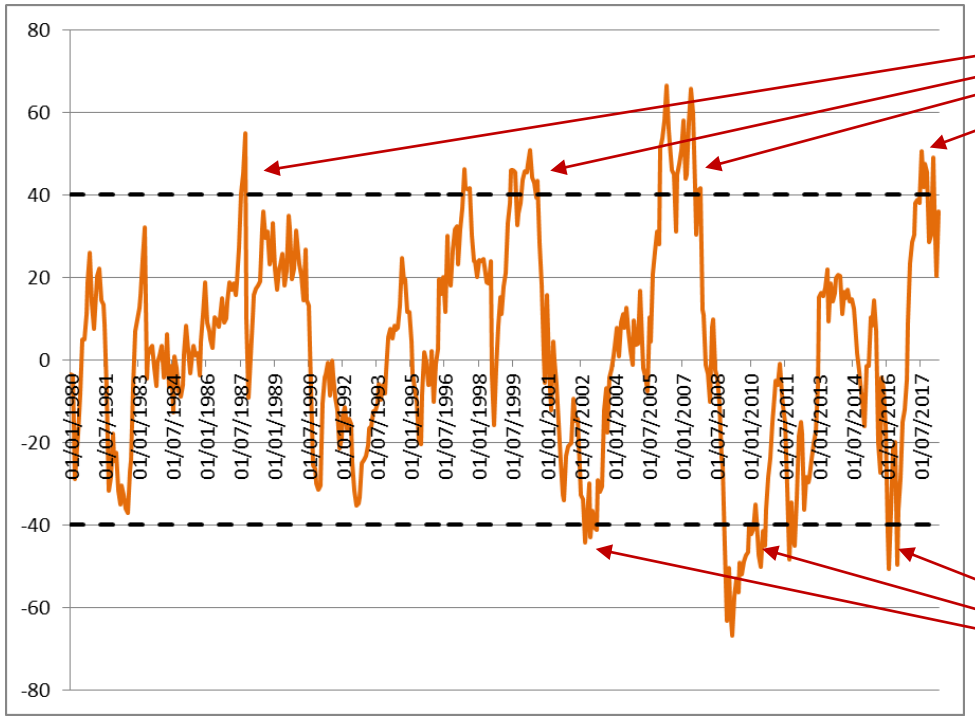
- Levels of risk exposure of World investors now well-below long run averages and close to bottom





Risk Appetite Provides A Contrarian Strategy

Risk Appetite Data – Global Public Markets



Long-term exit points

Average US$ 2-year returns (2000-2019) From World equities 6.7% pa

Average return from 'risk appetite' strategy 25.7% pa and invested only 39% of the time

Long-term entry points

Note: **Risk Appetite** is stock measure derived from Flow of Fund Accounts and based on a US$250 trillion asset pool across 80 countries. It is calculated using securities' holdings data, updated for new issuance, price changes and new liquidity inflows.

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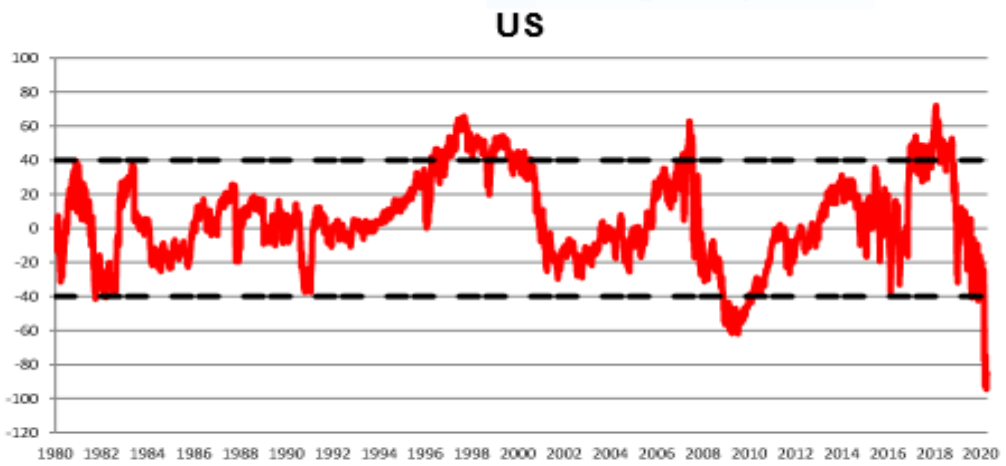
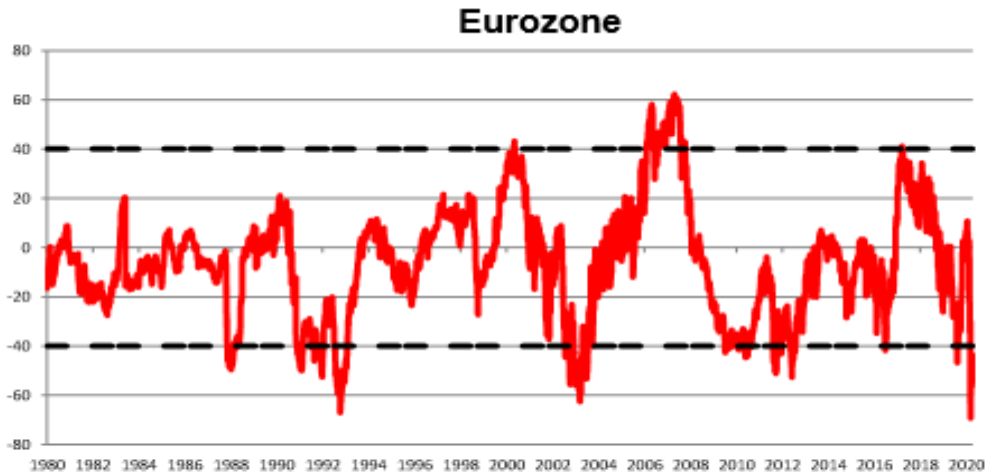
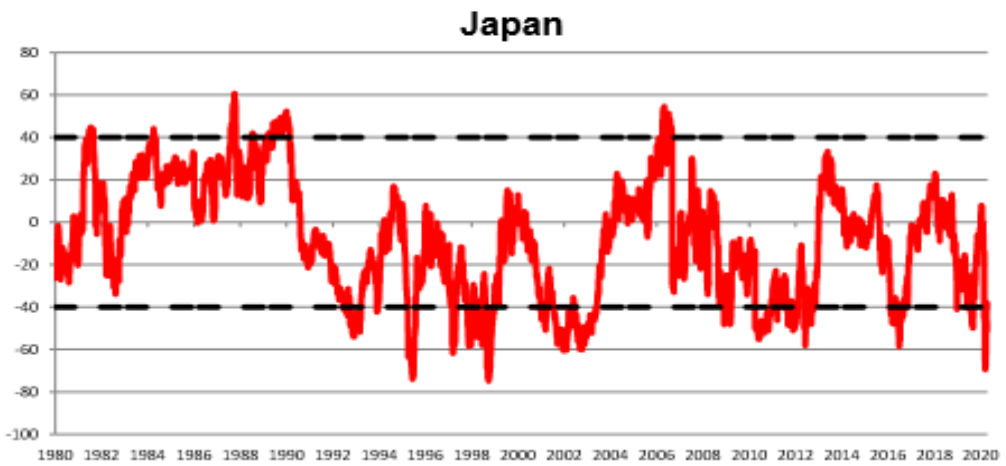
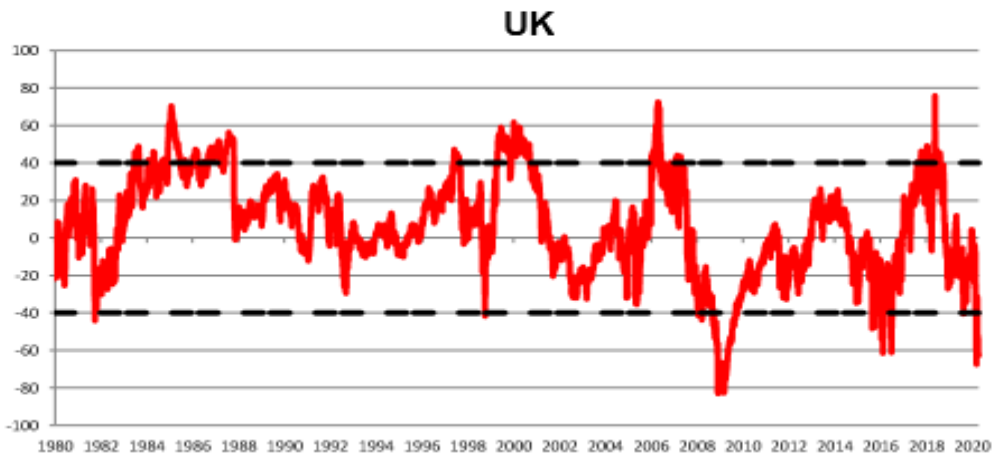
Risk Appetite – Major Markets

- Risk appetite peaked in 2018 and is likely now at a low



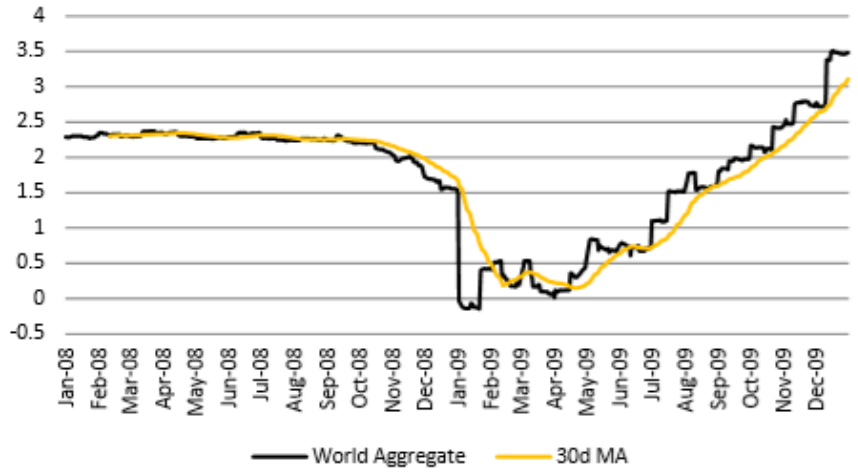




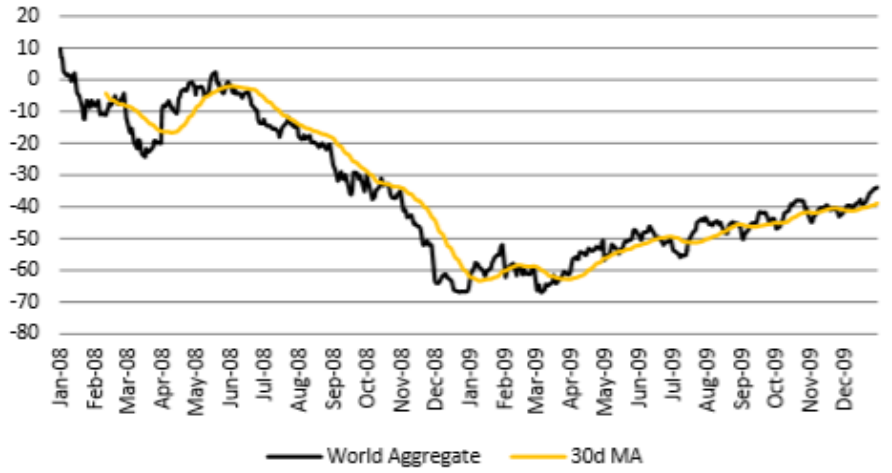


GFC I & II – Then and Now

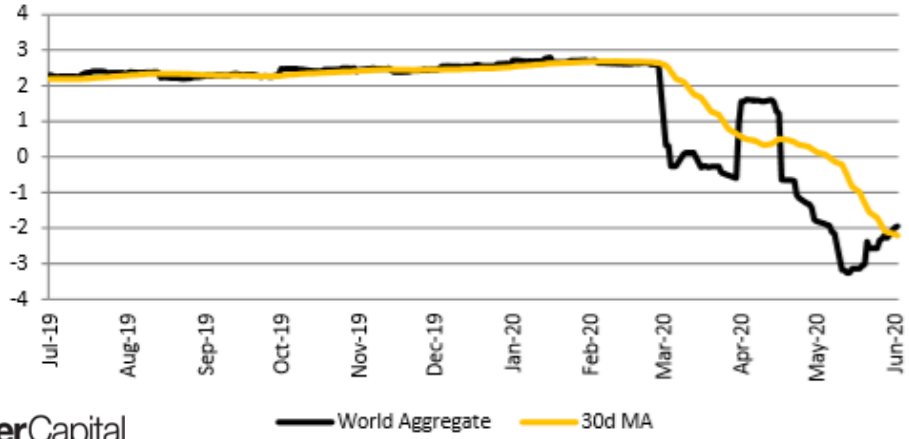
GDP Momentum Indicator (Jan 2008 – Dec 2009)



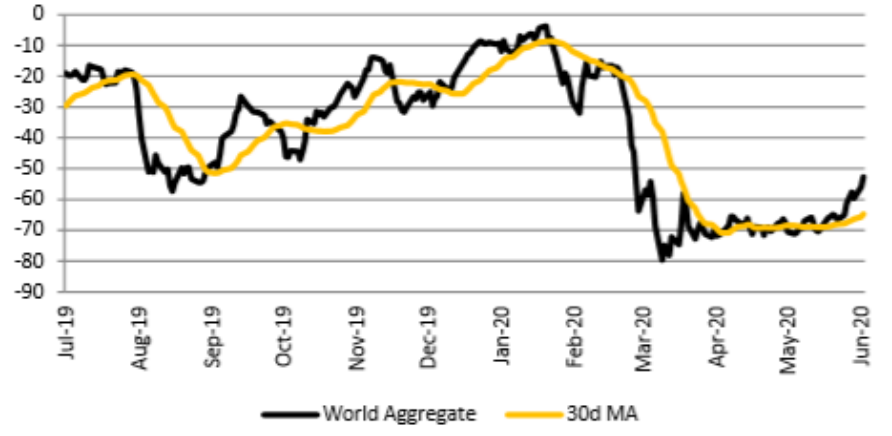
Investor Risk Appetite Indicator (Jan 2008 – Dec 2009)



GDP Momentum Indicator (Jul 2019 – June 2020)



Investor Risk Appetite Indicator (Jul 2019 – June 2020)



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