One World. How Many Systems?
A Reserve Currency Conundrum

CEMLA
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Global Market Strategy
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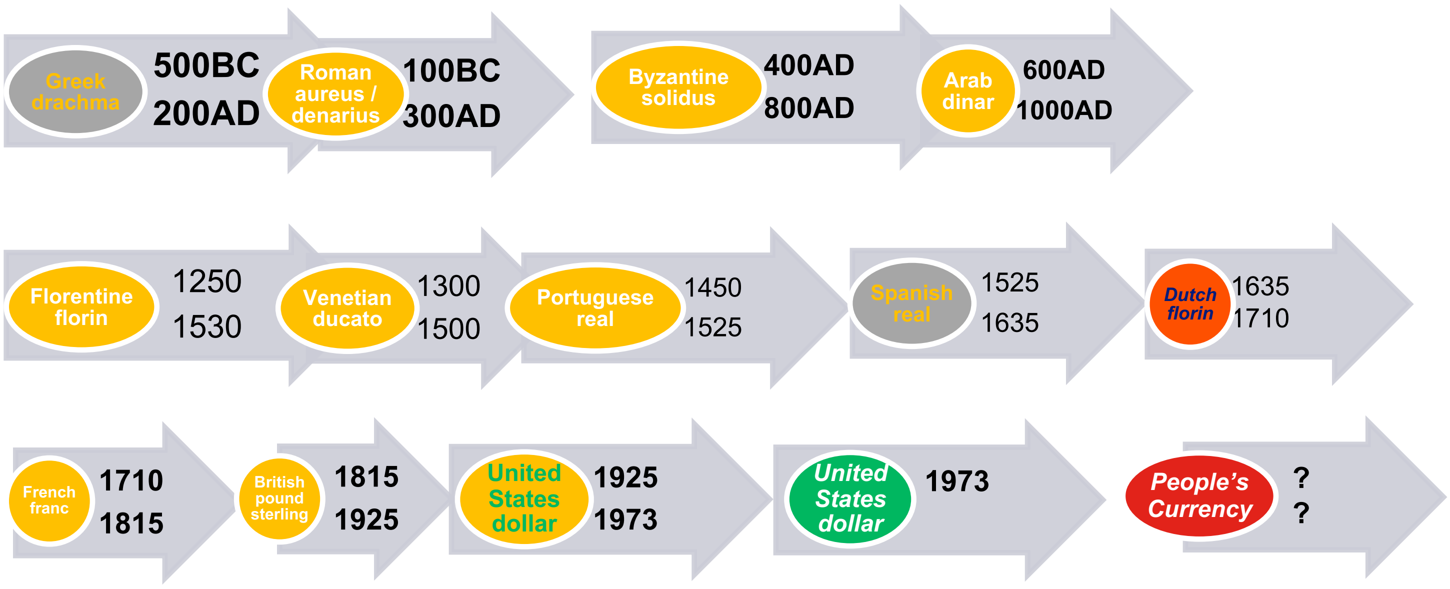
Agenda: One World. How Many Systems?

Invesco

A Potted History of International Currencies: Geopolitical/-economic/-tech financial/military leadership. Overlaps; gaps. Only two fiat currencies…



International currencies were mostly domestic currencies of great powers, military/economic

Italian city-states were hubs of financial / tech progress

Demises of international currencies often followed high inflation or insolvency of the central bank or government often after conflict.

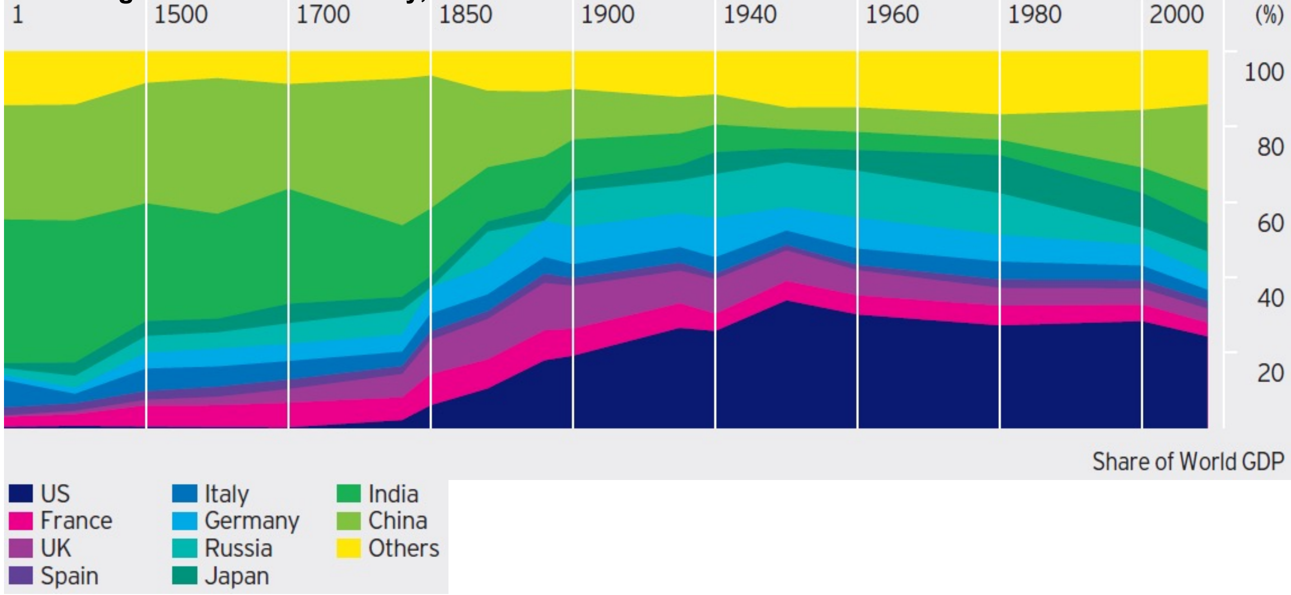
Global currency histories leave out Asia, Africa, LatAm and the USSR due to lack of data.

The Soviet transferable rouble for trade, payments and credit with client states was separate from the domestic rouble.

Note: Grey with gold indicates mainly bi-metallic gold- and silver-backed currency; gold indicates mainly gold-backed currency; italics indicate mainly fiat currency. Currency backing periodically changed, with debasement or devaluation. Some currencies were sometimes bi-metallic, sometimes gold- or silver-backed. The Bretton-Woods gold-dollar exchange standard – the US dollar was fixed to gold at $35/ounce, with most other currencies in fixed but adjustable parities to the dollar – is also shown in gold. Source: Wikimedia commons, Invesco

Back to the Future? Imagine, a Brave New World Order: China at the tech frontier, as productive as the US, EZ, Japan, UK

Share of global economic activity, % of total



India – the largest economy until 1500; China 1700s-1800s following famines, colonization, de-industrialization in India. Productivity growth was similar everywhere; labor force demographics drove differentials in GDP and growth.

Industrial Revolutions shifted the weight of economic activity and the balance of power to the West – in particular, the United States, which has remained the largest economy since 1873. EMs did not adapt or adopt technological progress and fell sharply behind.

China's share of world GDP has risen sharply since it embarked on three Industrial Revolutions, with reform from 1979 – at the expense of Europe and the United States. No country has ever moved so far, so fast.

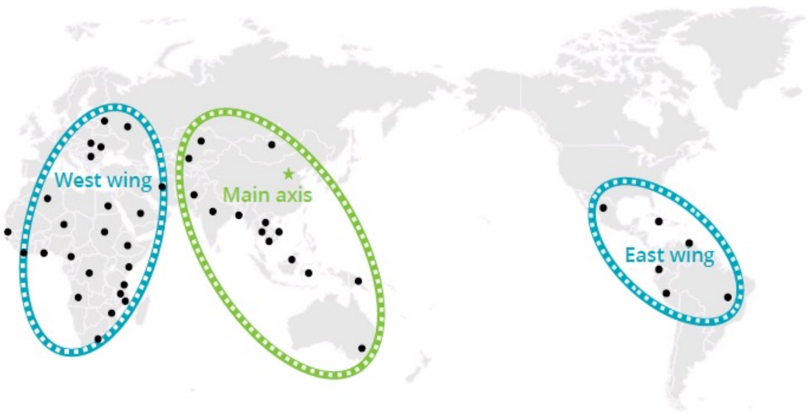
When / if China reaches the cutting edge, its economy would be 4-5x the US, EZ; 10x the UK, India; 15x Russia. If it stayed at the forefront, China's lead could be permanent.

Source: Adapted from The Angus Maddison Project Database, University of Groningen; 2018 release; Invesco

Belt and Road Initiative: Keys to The [Middle] Kingdom, Eurasia or The World? Add in the Arctic BRI, the digital silk route. Is the United States becoming a middle power, hemmed in from sea to shining sea; by the Rio Grande, Great Lakes?

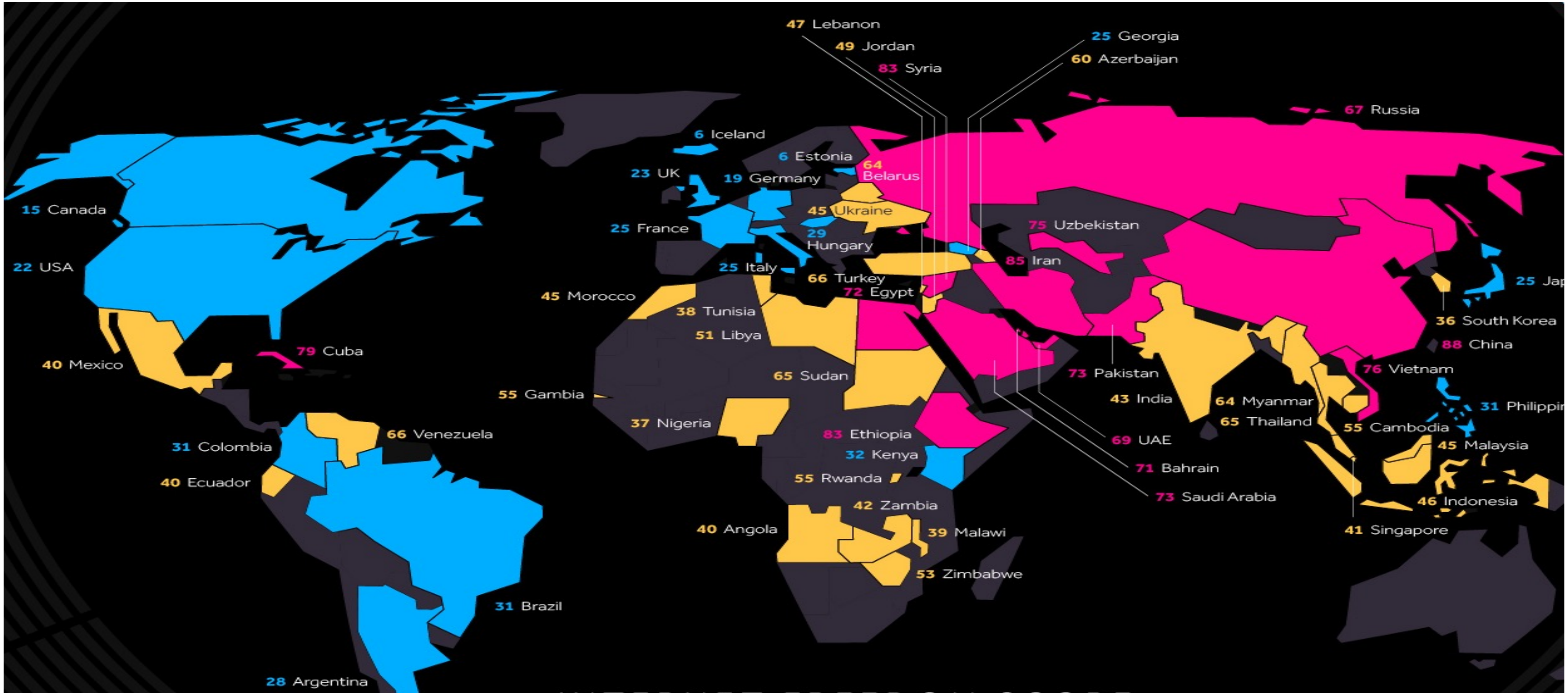
China's Near-Abroad Extending Across Eurasia

BRI "East Wing" Extends to the Americas



Note: In *The Grand Chessboard*, US President Jimmy Carter's National Security Advisor, Zbigniew Brzezinski characterises human history as the struggle for dominion over Eurasia, drawing on Sir Halford Mackinder's "Heartland Theory" – that Eastern Europe and Central Asia represent "The Geographical Pivot of History" – Mackinder is among the originators of geopolitics and geostrategy. Map Source: Deloitte; Invesco, as of May 2018

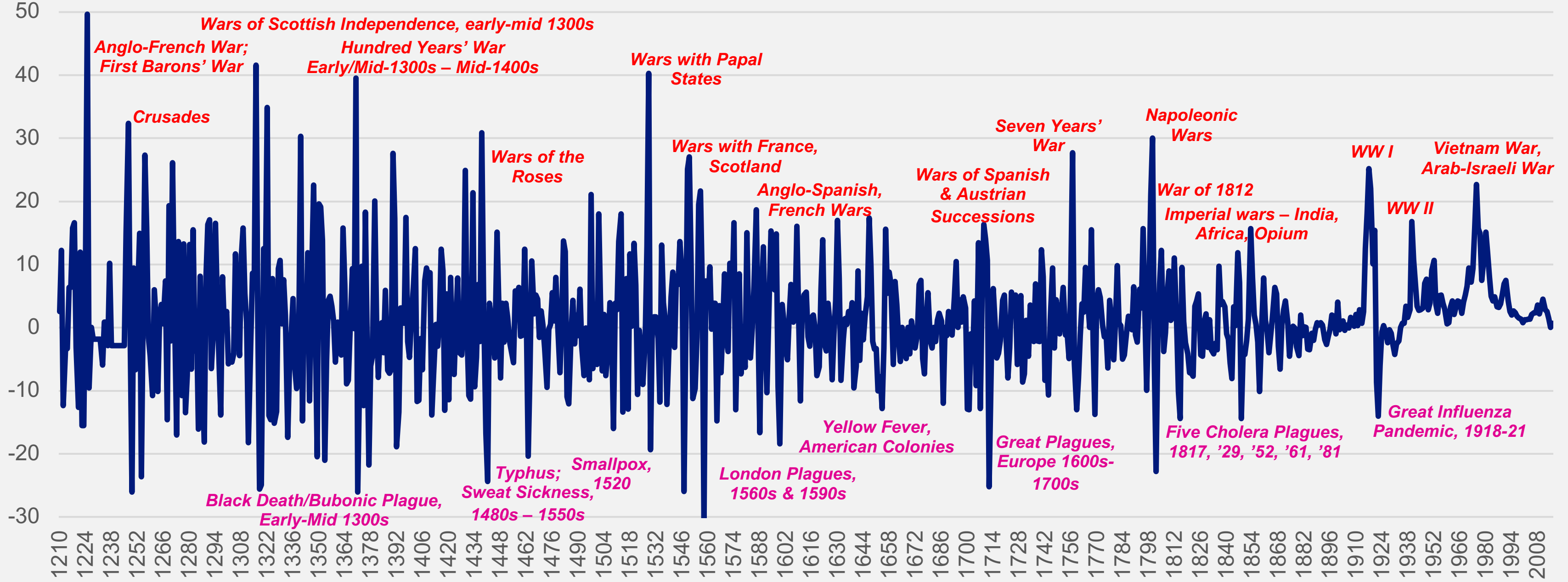
A World Wide Web …
Yet, Multiple Internet / Information / Data Systems and Rules



Note: Derived from scores published in the report "Freedom on the Net" covering 65 countries with an estimated 87% of global internet users; index scores of 0-33 are "Very Free" in blue; 34-66 are "Partly Free" in yellow; 67-100 are "Not Free" in purple; 20% of internet users were classified in the "Free" category; 33%, "Partly Free"; 34% "Not Free"; and 13% not assessed. Source: Freedom House, Visual Capitalist, Invesco. Data through 2018 as published in 2019, downloaded 31 March 2021

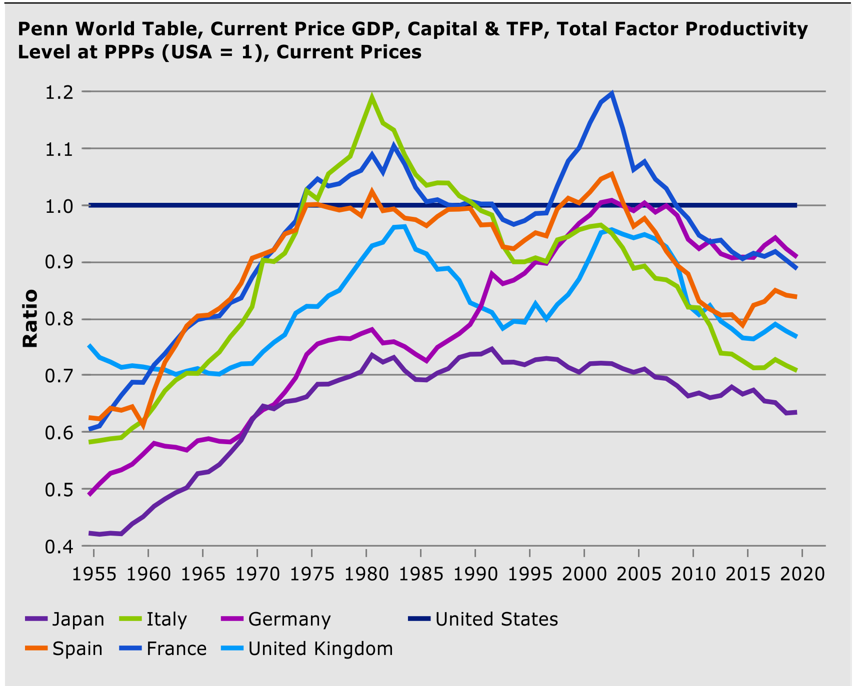
A Millennium of Macro Instability: Pandemics / Deflations; Wars / Inflations
Do US COVID costs and fiscal largesse point to national inflation or insolvency?
Or will this time be different – reflation with monetary/fiscal support (without war)?

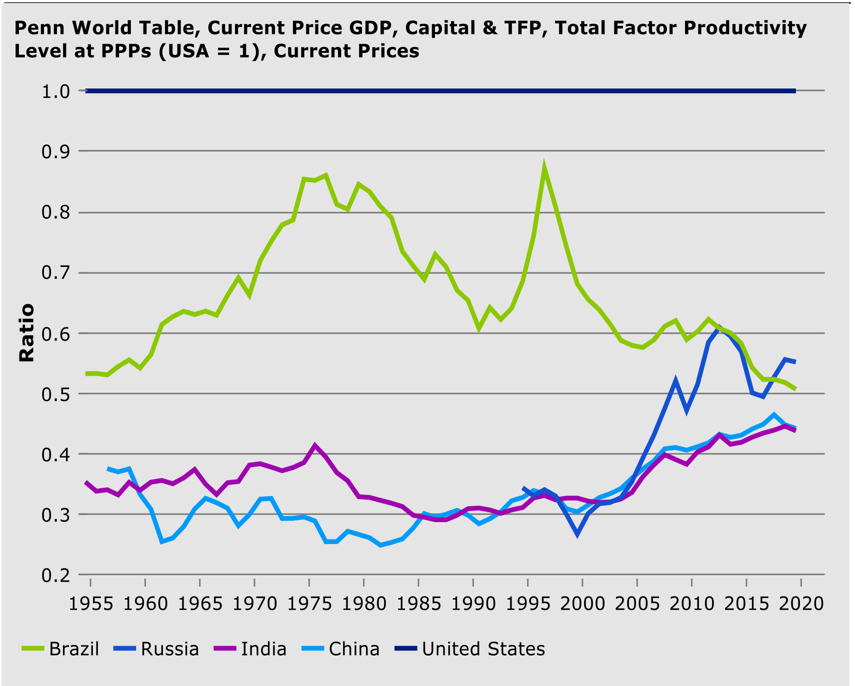
A Millennium of Deflations and Inflations, Pandemics and Wars – Great Britain (annual, % YoY)



Note: Inflation data for Great Britain from the 2018 release of A Millennium of Macroeconomic Data by the Bank of England. Selected pandemics and wars thought to have affected the economy of Great Britain. The 1817 First Cholera Plague appears not to have reached Great Britain from Calcutta where it is thought to have begun, but probably affected global trade and growth; Calcutta was at that time the largest port and trading city in the world. Source: Extended to wars; and adapted on pandemics from Sylvana Tenreyo, Bank of England speech COVID-19 and the Economy, at the London School of Economics, February 2021; A Millennium of Macroeconomic Data – the Bank of England, FRED, Macrobond, Invesco. Data through 2016 downloaded 20 March 2021.

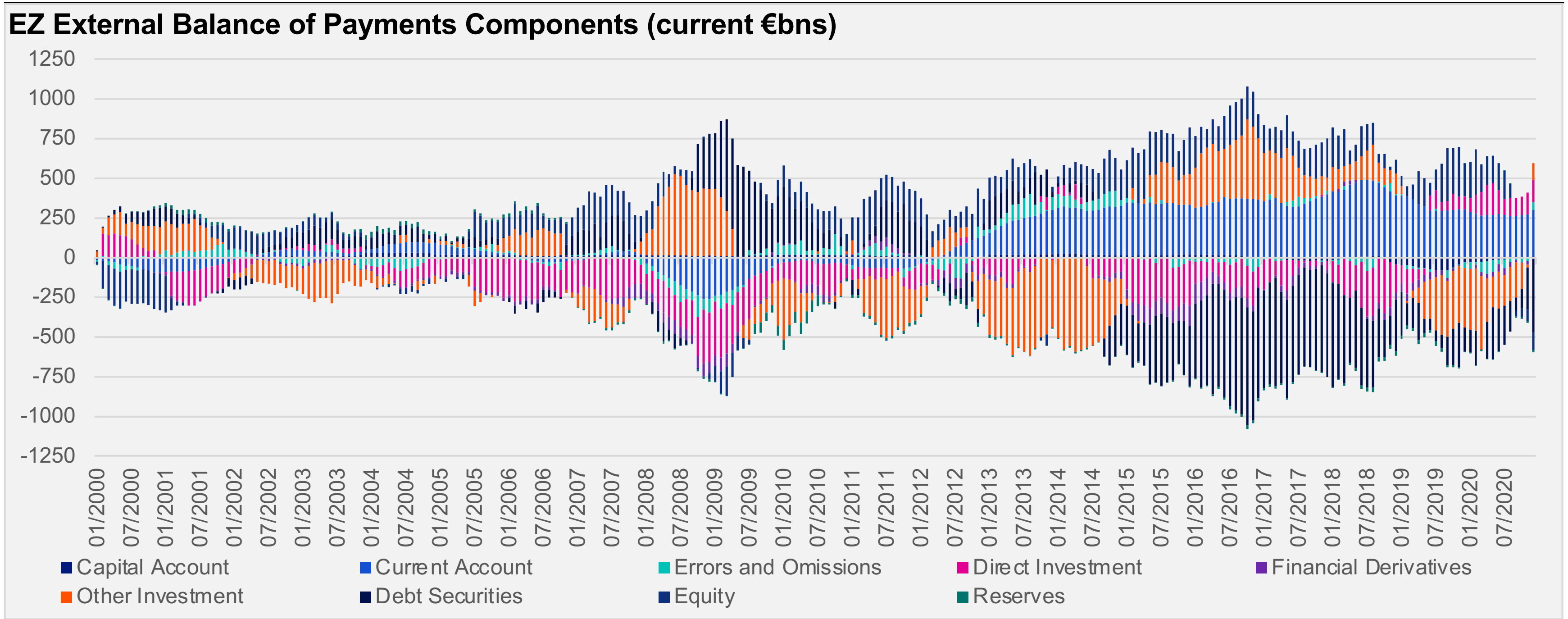
The US lead in "Total Factor Productivity" over both major developed- and emerging-market economies has been stable or even *increasing*





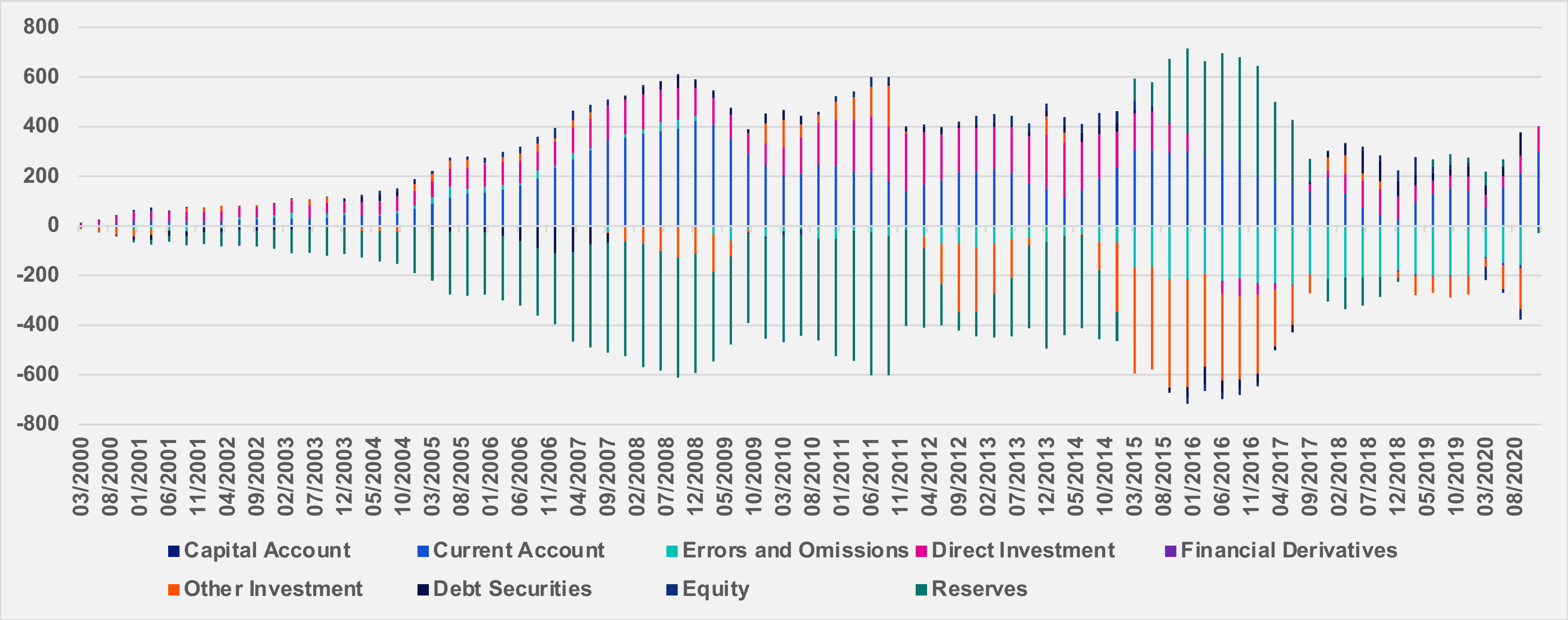
Note: TFP or Total Factor Productivity measures the productivity of the factors of production (land, labour, capital), with US TFP measured as 1; the closer another country's TFP to 1, the closer it is to the US, generally seen as the most productive major economy. Source: Macrobond, Penn World Tables, Invesco. Data through 2020, as at 5 March 2021.

The EUR Challenge: Consistent resident capital outflows buying foreign debt, equity and/or plant/equipment



Note: EZFC – Eurozone Financial Crisis of 2009-2012. Source: Exante, Macrobond, IMF, ECB; Invesco. Data through 31 Dec 2020 as at 18 March 2021.

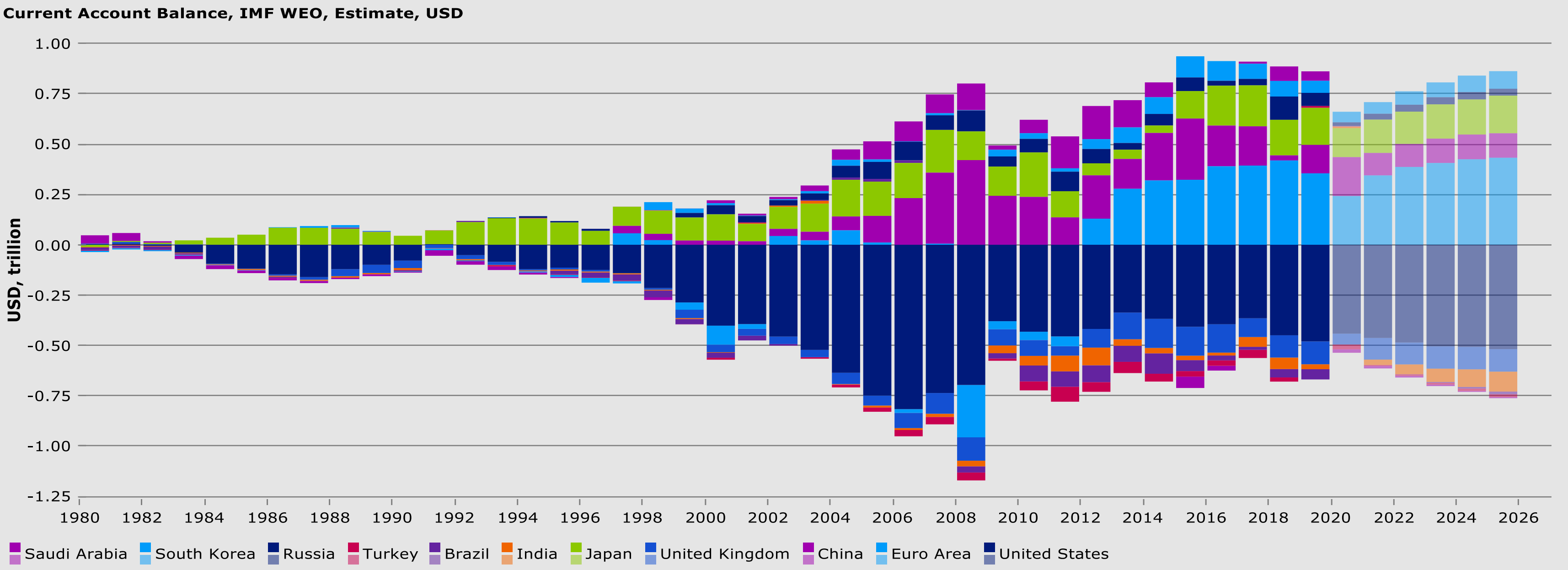
The RMB Challenge: Sizeable, so-called "twin surpluses" on the current *and* capital account, often – and with resident capital controls



Note: China's economists and policymakers sometimes refer to simultaneous external balance-of-payments surpluses on the current and capital account as "twin surpluses" – rather than the conventional reference to the joint fiscal and external current account balance as twin surplus or twin deficit. Source: Exante, Macrobond, IMF, Invesco. Data as at 1 March 2021.

The United States remains the only consistent, major importer of goods and capital among many surplus countries

Current Account Balances of select major economies, trillions of current USD



Source: Macrobond, IMF, Invesco. Data through 2020 (dark colours), IMF WEO forecasts through 2026 (light colours) – data as at 1 March 2021

Suggestions: From One World, One System to One World, Multiple Systems, with the RMB in Pole Position – rather than the Euro

- The United States remains an indispensable country. The dollar will likely remain "primus inter pares" for decades to come if not generations

- The RMB and China are in a stronger position to gain market share in global GDP, reserves and geo-economic, geo-tech and geo-financial influence than the EZ and euro, at the expense of the United States

- The euro's rise is hindered by a lack of EZ/EU institutions sufficiently strong and centralized / federal enough to wield global leadership

- Even so, the EZ and other major economies including Russia, Japan, India, the UK are likely to seek geo-economic, geo-financial, geo-technological or geopolitical influence rather than full alignment in a bipolar world order

Thank You

Appendix

The Greatest Game – the Struggle for Global Dominion: Is the US still the indispensable country? Can the world move on from the Almighty Dollar?

"Money is gold, and nothing else…Everything else is credit." – Misquote dating to 1912*

- JP Morgan, Congressional testimony after the Banking Panic of 1907, towards establishing the Federal Reserve – the third US central bank

"In the beginning, the middle and the end, there was the dollar, only the dollar!" – various talks, 1960s-80s

- Charles P Kindleberger, prominent American financial and economic historian and author of *Manias, Panics and Crashes*

"An exorbitant privilege" – 1965

- Then French Finance Minister Valery Giscard d'Estaing, often attributed to President Charles de Gaulle, on the dollar's role in US imbalances and global inflation pressures prompted by President Johnson's bond-financed Vietnam War and Great Society Program

"It's our currency … but it's your problem" – 1971

- US Treasury Secretary John Connally, on President Nixon's unilateral abrogation of the Bretton Woods Treaty, severing the link between the dollar and gold (the "gold-dollar exchange standard"). "Turncoat" Connally, as Democrat Governor of Texas, was shot in the limo with JFK

"With exorbitant privilege, comes exorbitant duty" – 2017

- Helene Rey, Pierre Olivier Gourinchas, Nicolas Govillot – paper documenting the provision of global financial insurance by the US Treasury as an offset to the large current account deficits and an apparent lack of external financing limitations

Exorbitant Privilege: The Rise and Fall of the Dollar

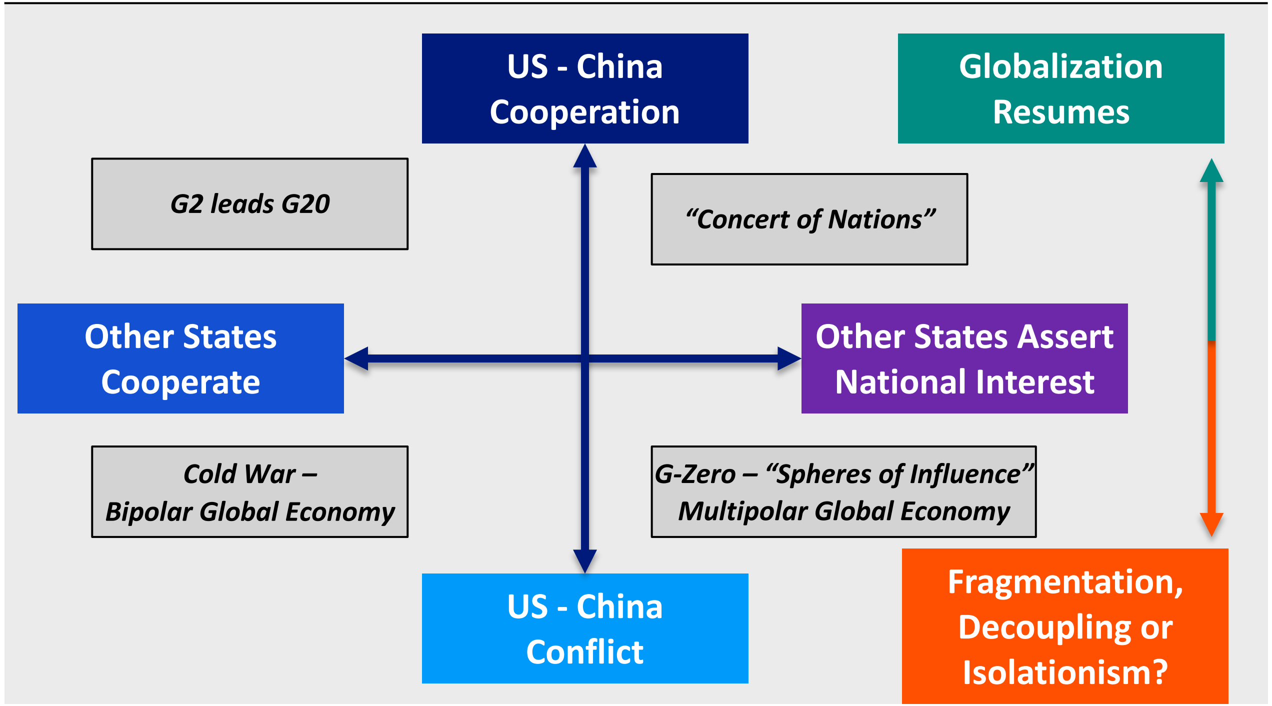
- By Barry Eichengreen and Cathy Zhang, 2011

***Has China Won? The Chinese Challenge to American Primacy* – 2020**

- By Kishore Mahbuhani, Singaporean scholar and diplomat

*Note: Correct quote: "Money is gold, and nothing else. If a man controlled the credit of a country, he would have a control of all its affairs? He might have that, but would not have the money. If he had the credit and I had the money, his customer would be badly off." Source: Testimony of JP Morgan before the Bank and Currency Committee of the House of Representatives – the Pujo Committee, 18-19 December 1912; Invesco

Post-Pandemic Politics, Policies and Geopolitics / Geo-Economics: Cooperation or Conflict in the International System(s)?



Potential Economic/Sector Impact:

- Decreased labour mobility
- Supply-chain realignments
- On-shoring of "strategic" and national-security production
- Greater national, private "self-insurance" – public health, savings, corporate liquidity?

Geo-Economics:

- Less global policy coordination via WTO, IMF, WB, WHO;
- More protectionism through trade / investment restrictions in "dual-use" technologies

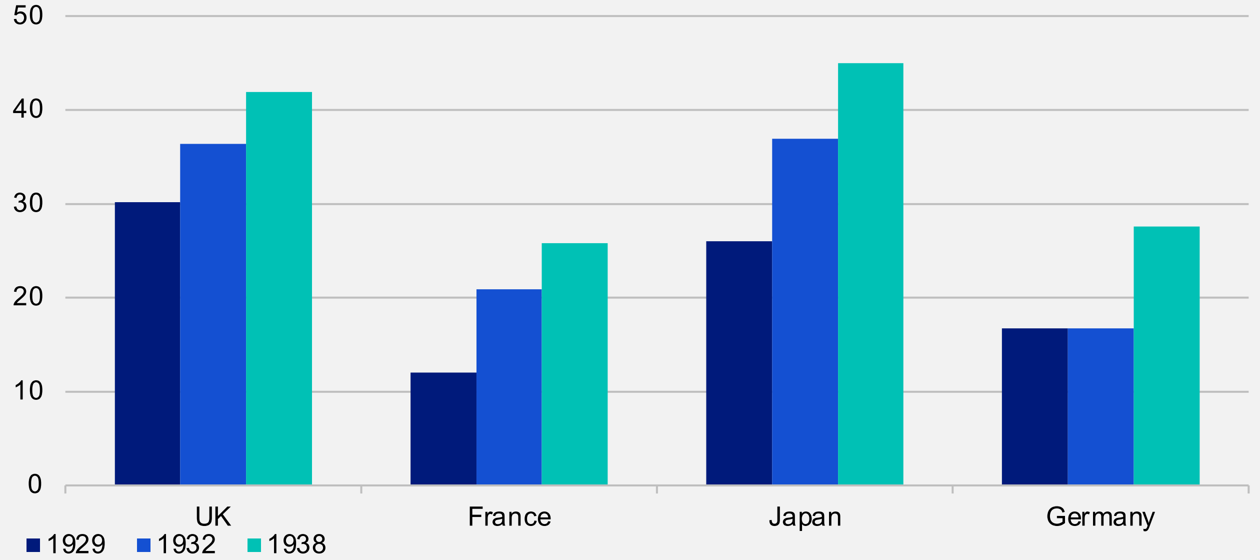
Geopolitics:

- Marginalise UN/Security Council
- Spheres of influence drive geo-strategic/-economic alliances

Source: Invesco adaptation from Every Nation for Itself (The G-Zero World), Ian Bremmer, 2011.

From One World to Multiple Systems: Past great-power rivalries diverted trade/investment to spheres of influence

Share of imports from colonies and spheres of influence, % of total



History suggests that rising barriers to trade, investment and technology / standards can re-align global economic activity with geopolitics:

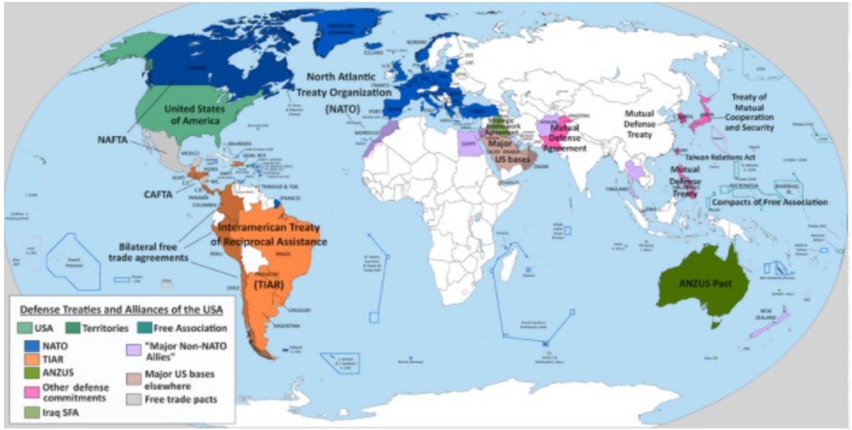
- The pre-World War I and Inter-War eras spanned the first two Industrial Revolutions, the Great Depression, protectionism, competitive devaluations as well as geo-economic rivalry between rising and resident great powers, “imperial preferences” for trade.
- All these factors contributed to increases in trade and investment in empires/spheres of influence, of about 1.5-2x within a decade from the Great Crash to World War II.

If geopolitics changes the shape of the global economic, technological and financial systems, goods / services / capital flows would respond to resulting trade and investment barriers, as well as to differences in economic, financial features and performance.

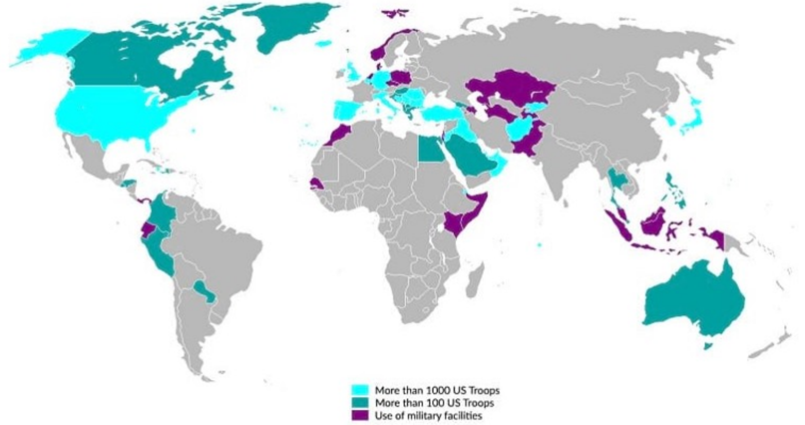
Source: League of Nations; Oxford Economics; Invesco. Historical data as of September 2018.

The Greatest Game seems to be afoot – and is arguably more global than ever before

The United States has some 59 allies. China has one – so far. Yet, China, not the US, is the largest trading partner of many



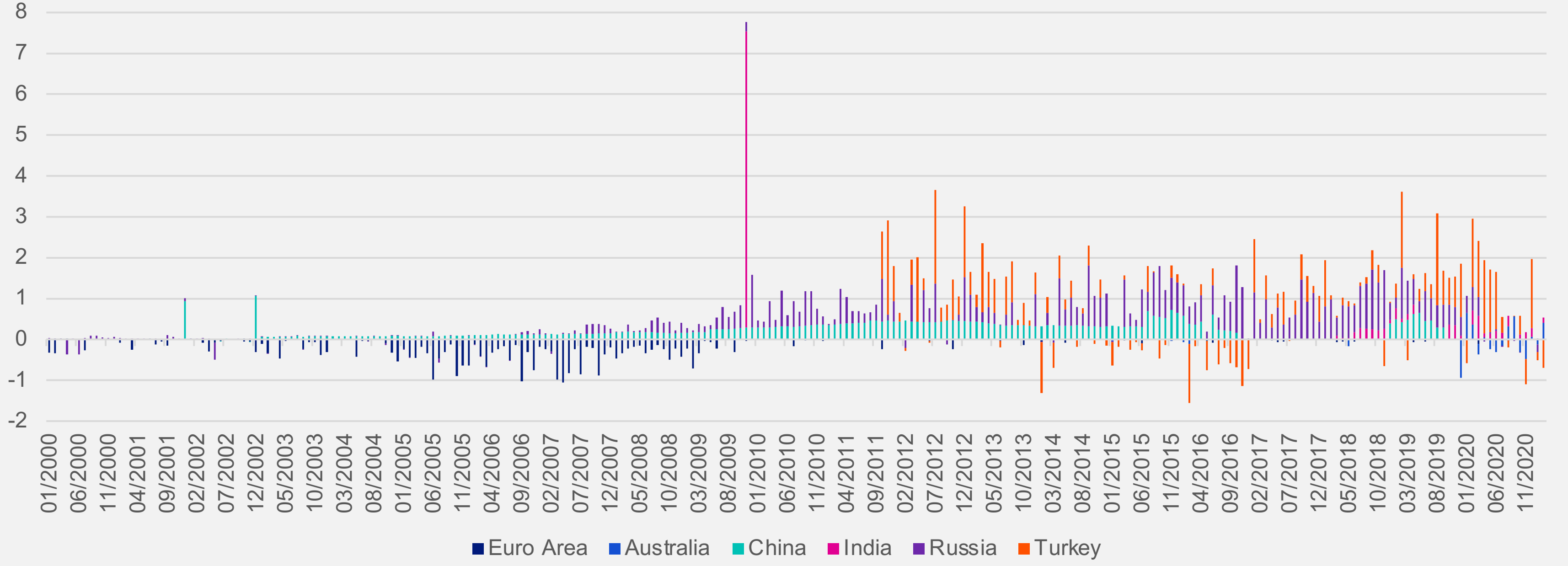
The United States has 60 foreign bases. China has four, but has bases in the South China Sea, plus access to or control of ports in the Indo-Pacific, plus the BRI…



Note: New Zealand's role in ANZUS ceased after 1986. BRI – Belt and Road Initiative, China's Eurasian and global infrastructure investment plan around trade routes. Source: Wikipedia, Wikimedia Commons

Gold – The Comeback Currency or Red Herring in the International System? Attitude to gold shifts after GFC/EZFC: DM CBs stop selling; EM CBs start buying – China steadily; Russia, Turkey in surges; India spike during the Rajan RBI

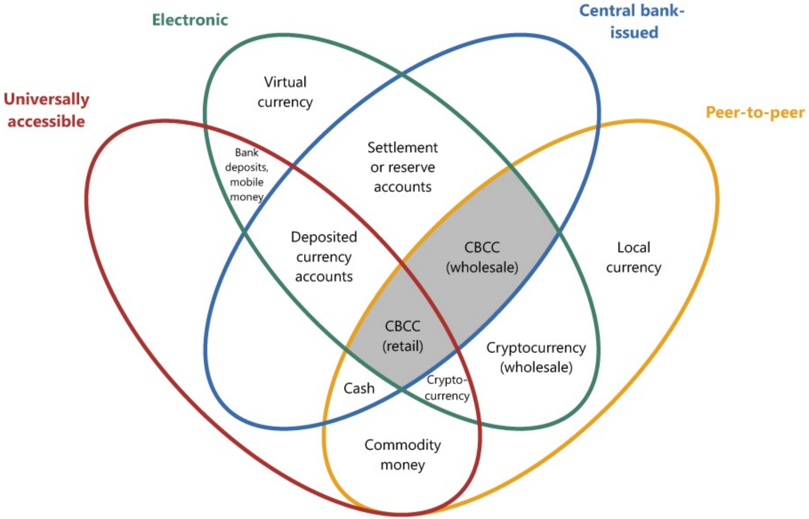
Estimated gold transactions of select central banks, monthly (US$bn)



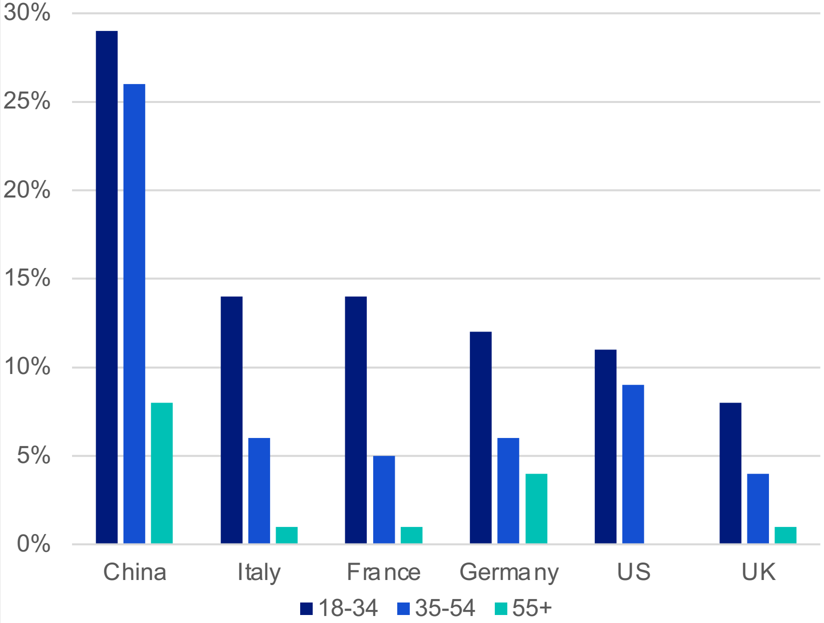
Note: GFC – Global Financial Crisis of 2008-09; EZFC – Eurozone Financial Crisis of 2009-12. Source: Exante, IMF, CBs, Macrobond, Invesco. Data to 28 Feb 2021 as at 18 March 2021.

Central Bank Digital Currencies – a new flowering of money?
PBoC and China out in front. Dollar, sterling, euro left behind in the dust?

"The Money Flower" – A new taxonomy of money (BIS)



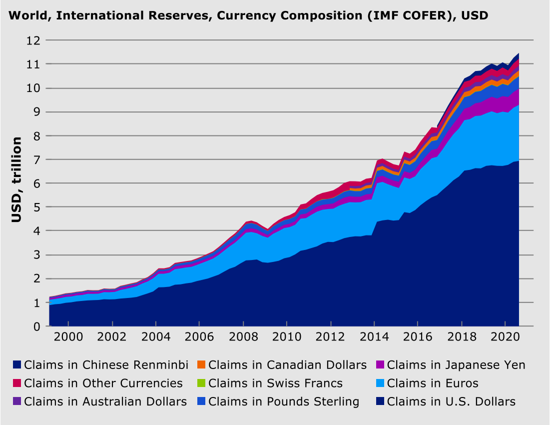
Citizens who have bought/sold cryptocurrencies by age group (%)



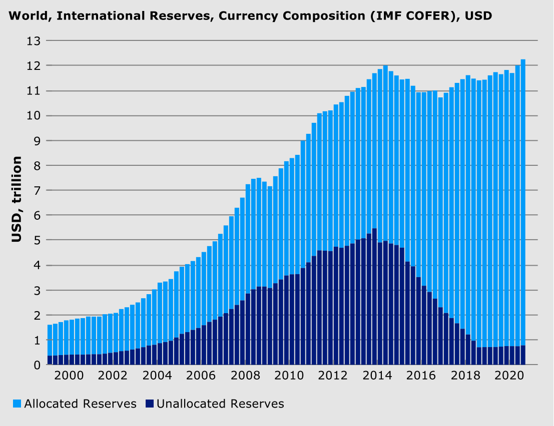
Source: Left-hand side diagram – BIS Quarterly Review, September 2017; Right-hand side Deutsche Bank, February 2021; Invesco.

Nominal USD, EUR, GBP reserve market share roughly stable; RMB and JPY gaining in nominal amounts and market share

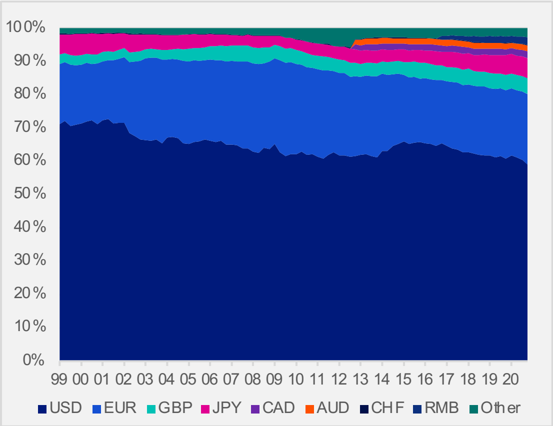
Nominal Reserve Currency Allocations, USD tn



Allocated and Unallocated Reserves, USD tn



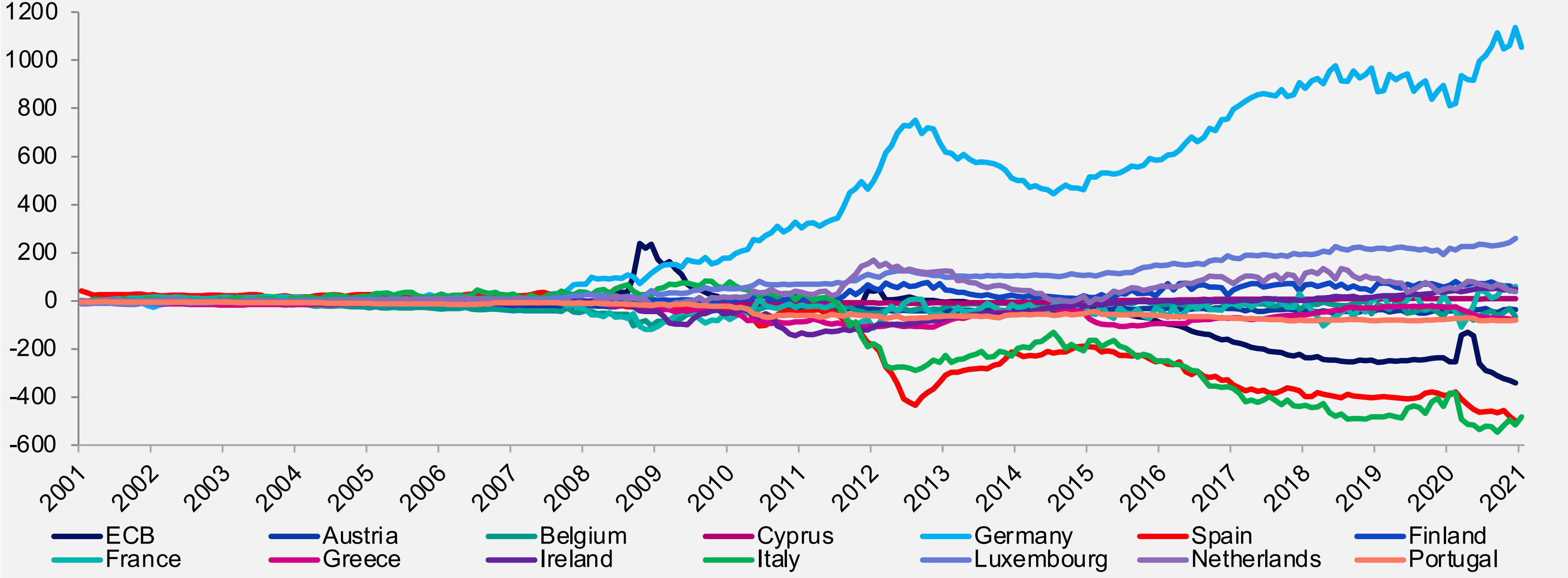
Reserve Currency Market Share, %



Note: Allocated (unallocated) reserves – currency composition (not) reported to the IMF. Not adjusted for currency valuation effects.
Source: Macrobond, IMF, Invesco. Quarterly data through 2020 as at 31 March 2020.

The Euro Challenge: NCBs and the ECB have replaced private flows in financing cross-border payments imbalances *within* the EZ

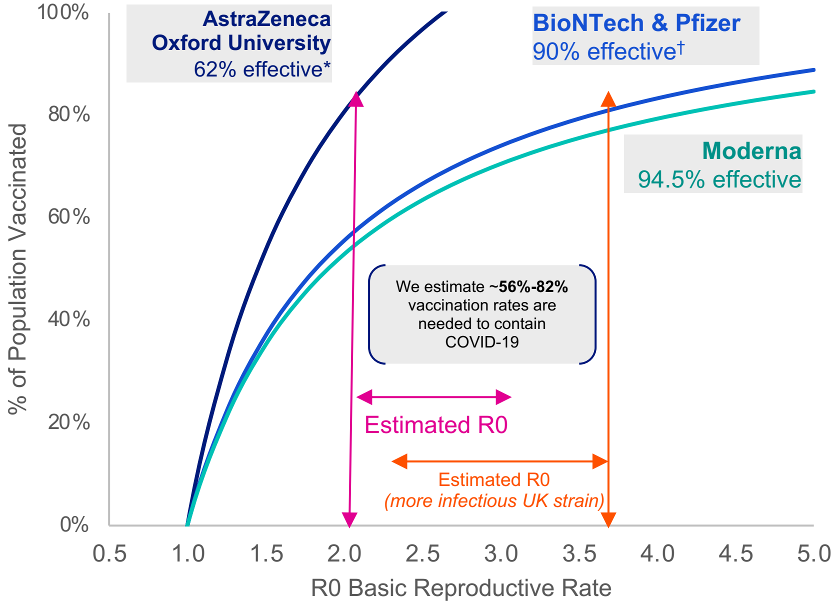
Intra-EZ TARGET2 Balances, select EZ member-states (current €bns)



Note: TARGET2 – the second, Trans-European Automated Real-time Gross settlement Express Transfer system; NCBs – national central banks., which together with the ECB comprise the Eurosystem. Source: Euro Crisis Monitor, Institute of Empirical Economic Research, Osnabrück University; Invesco. Data as at 8 March 2021.

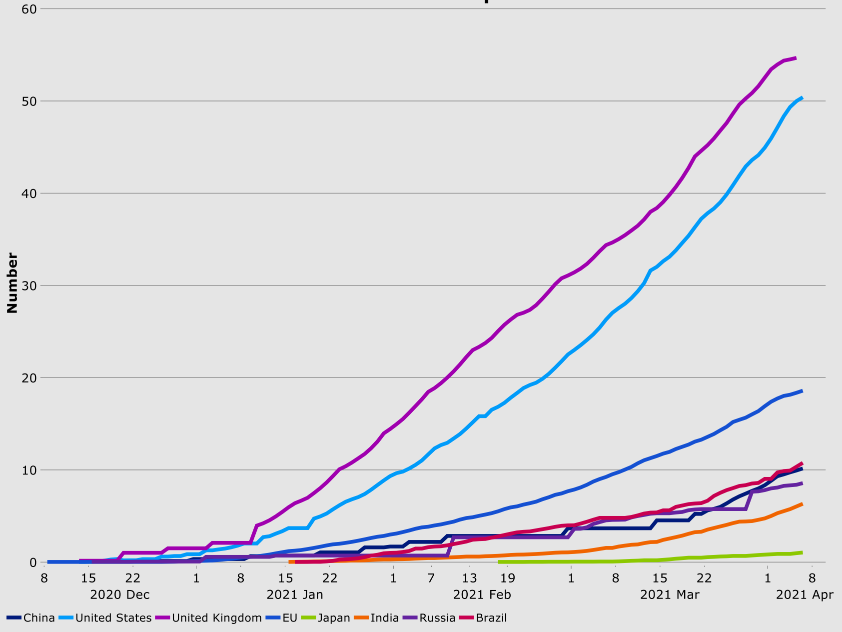
Variations in Vaccination Speed and Technology / Public Health Systems: UK, US rapidly reaching herd immunity; EU lagging; China accelerating US, EU – new mRNA technology; China – traditional techniques

Herd Immunity: Estimated vaccination required vs. infectiousness



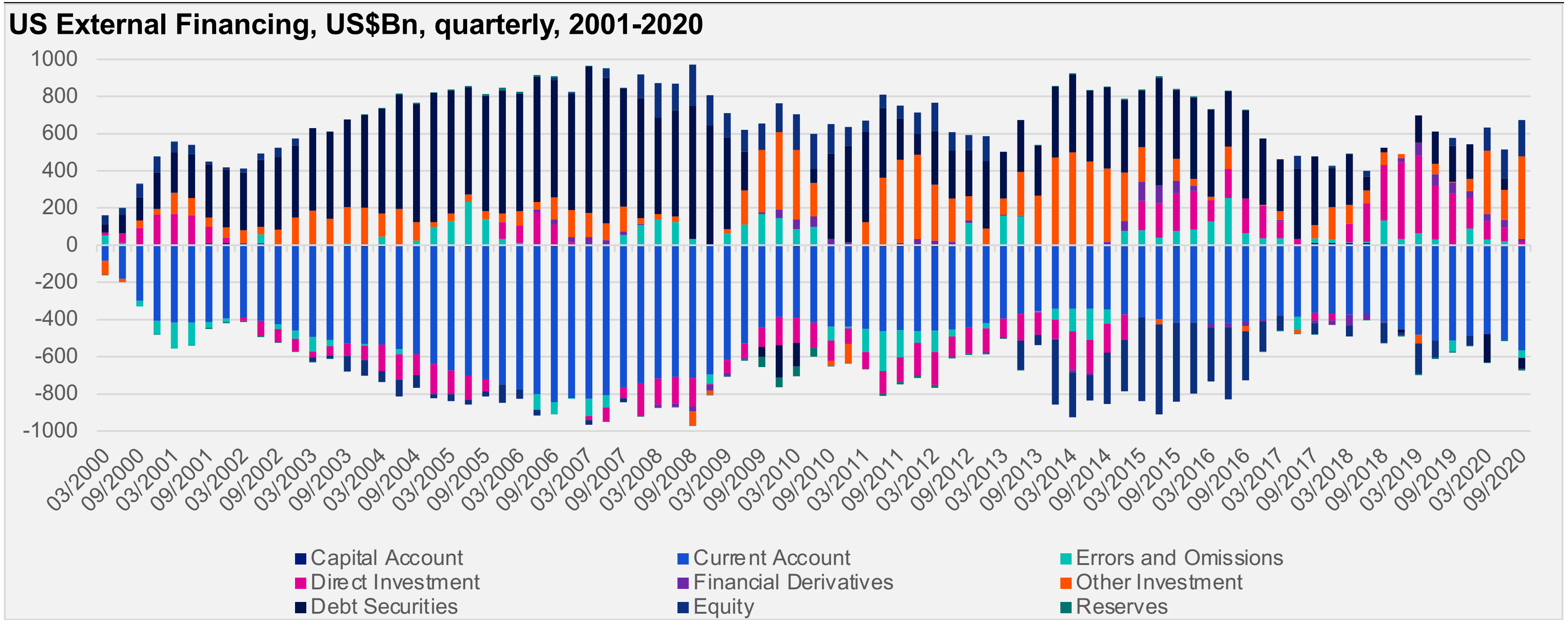
Note: * With one dose; using 1.5 doses increases effectiveness to 90%. † also includes the vaccine from AstraZeneca & Oxford University, using 1.5 doses. Here, "Herd Immunity" is the theoretical level of vaccination that yields an R0 of 1.0. Higher vaccination rates should yield an R0 less than 1.0, which would gradually reduce viral presence. Herd Immunity = $\frac{1-\left(\frac{1}{R0}\right)}{Effectiveness}$. Source: New York Times, The Lancet "*Estimating the COVID-19 R number: a bargain with the devil?*", Imperial College of London "*Transmission of SARS-CoV-2 Lineage B.1.1.7 in England*", Invesco, as of 7 January 2021.

Cumulative vaccination rates – total doses per 100



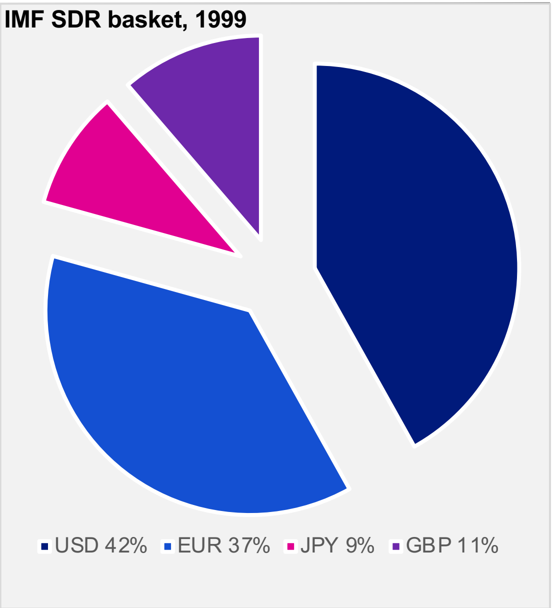
Note: Estimated vaccination rate based on total doses administered (not multiple doses where administered).
Source: Our World In Data; Invesco. Data download 7 April 2021.

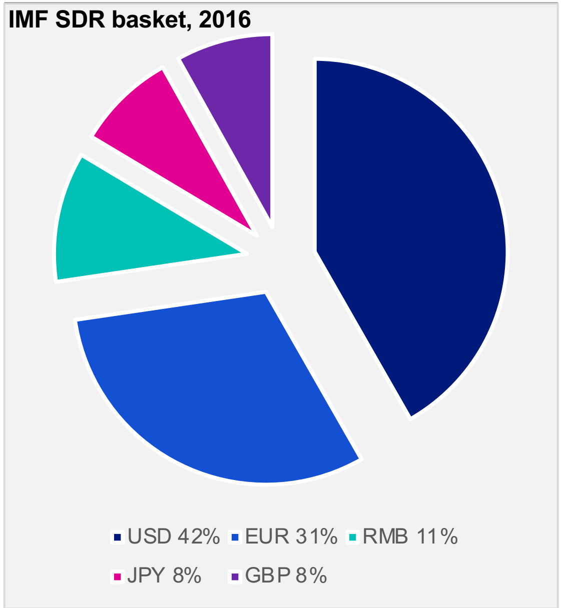
Before COVID-19, US external deficit financing had shifted toward FDI and equity, away from debt and, by extension, from official reserve purchases

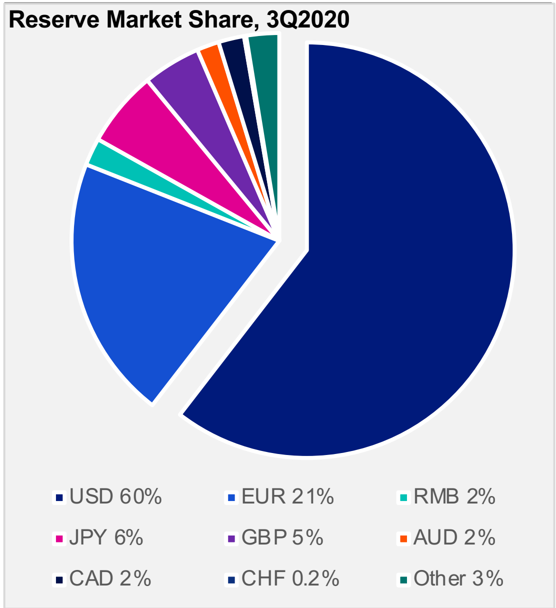


Source: Macrobond, IMF, Invesco. Data through 30 Sep 2020 as at 18 March 2021

USD, GBP, EUR reserve holdings still far exceed SDR weights RMB and JPY reserve holdings remain well below SDR weights





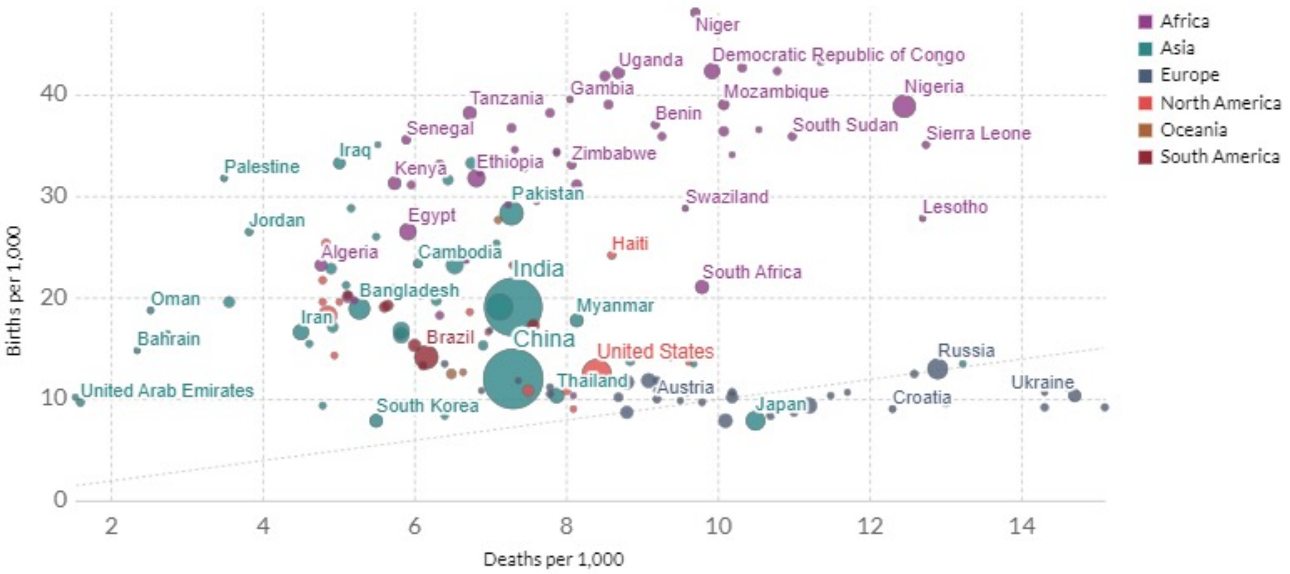


Note: SDR – Special Drawing Rights – represent an IMF international reserve asset comprised of five major currencies, last re-weighted in 2016 to include the RMB. The SDR represents a claim on freely usable currencies, bearing interest as per the SDR-basket weighted average official interest rates of SDR basket currencies.

Source: Macrobond, IMF, Invesco. Rightmost chart, 3Q2020 data as at 1 March 2020.

What if Demographics is Destiny? – The United States has the "best" demographics of any large rich country, and better than China's

Birth Rates vs. Death Rates (per thousand, countries over one million population)



China is set to the be the first large country to grow old before it grows rich – the labour force has peaked already

But it won't be the last one to do so.

The United States is also an ageing society, but its population is set to keep growing due to fertility and immigration

Note: Countries above the 45-degree line have rising populations (birth rates exceed death rates; and vice versa). Real GDP growth reflects changes in productivity (of labor and capital employed in production) and population. Productivity reflects technological progress; many structural economic reforms encourage productivity growth and the use of modern, efficient technologies, which in turn should raise both productivity and overall GDP growth. Favorable demographics are no guarantee of higher growth, but productivity-enhancing policies for any given set of demographic trends tend to add up to higher growth.

Source: World Bank Population Gapminder United Nations, Our World in Data, Invesco; 2016 and 2019 publications

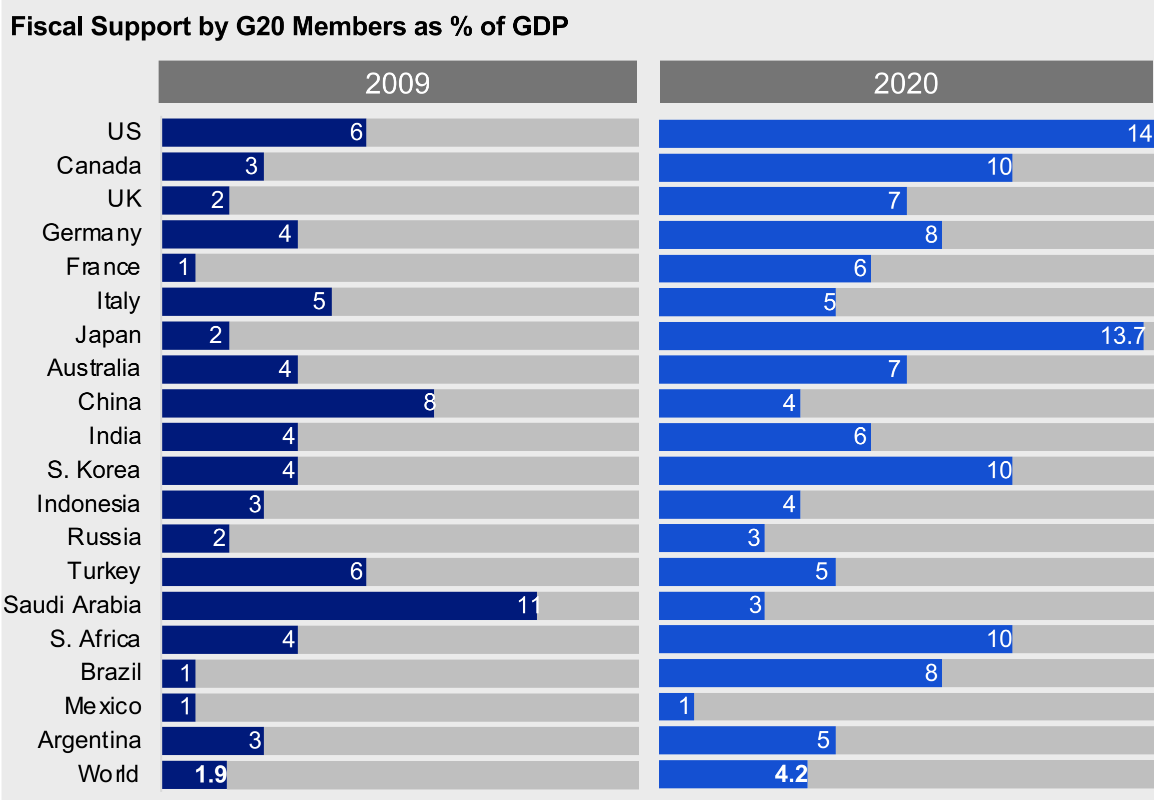
Fiscal support today far exceeds 2009, supporting global recovery, but varies widely, pointing to diverse national recoveries in DM and EM

Most major economies are putting much more fiscal firepower to work in 2020 than in the 2009 Global Financial Crisis, which should support global activity.

However, China is deploying less fiscal stimulus than in 2009, implying less support for EM as a whole – especially commodity exporters, than in other, recent global upswings.

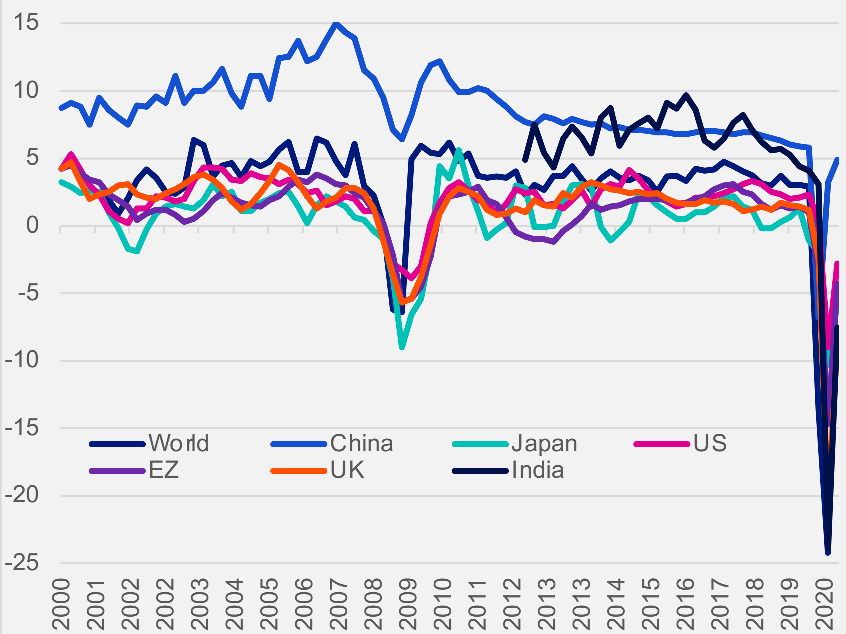
Other major EMs have put more fiscal firepower to work in 2020 than in 2009, but fiscal support varies significantly, pointing to differentiated recoveries – and to a greater role for EM reforms.

Sources: IMF Policy Tracker, IMF GDP Data, Atlantic Council, DE Data Wrapper, Invesco. Calculations based on data at various national release and announcement dates, and Atlantic Council as of 26 July 2020. 2009 based on IMF, Eurostat and G20 data. NB: Calculations exclude deferrals and guarantees; include discretionary fiscal support programs (aside from "automatic stabilizers"); announced and implemented programs -- all scaled against 2008 and 2019 GDP, respectively. "World" is an estimate of total G20 fiscal support relative to global GDP. The G20 comprises 19 major economies plus the EU. Japan estimate has been revised from official statements to be more directly comparable to other G20 members.

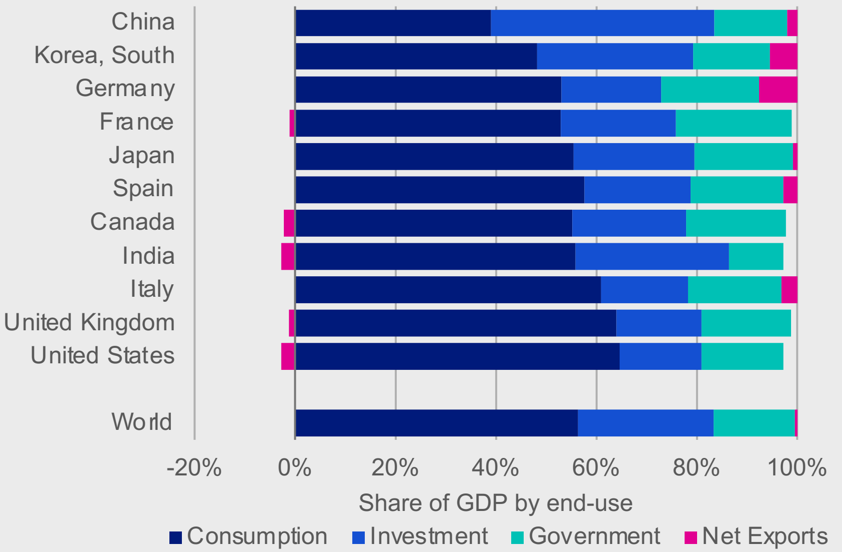


Economic cycles are diverging and becoming more variable; Structural differences point to divergent post-pandemic GDP paths

Real GDP Growth, % yoy



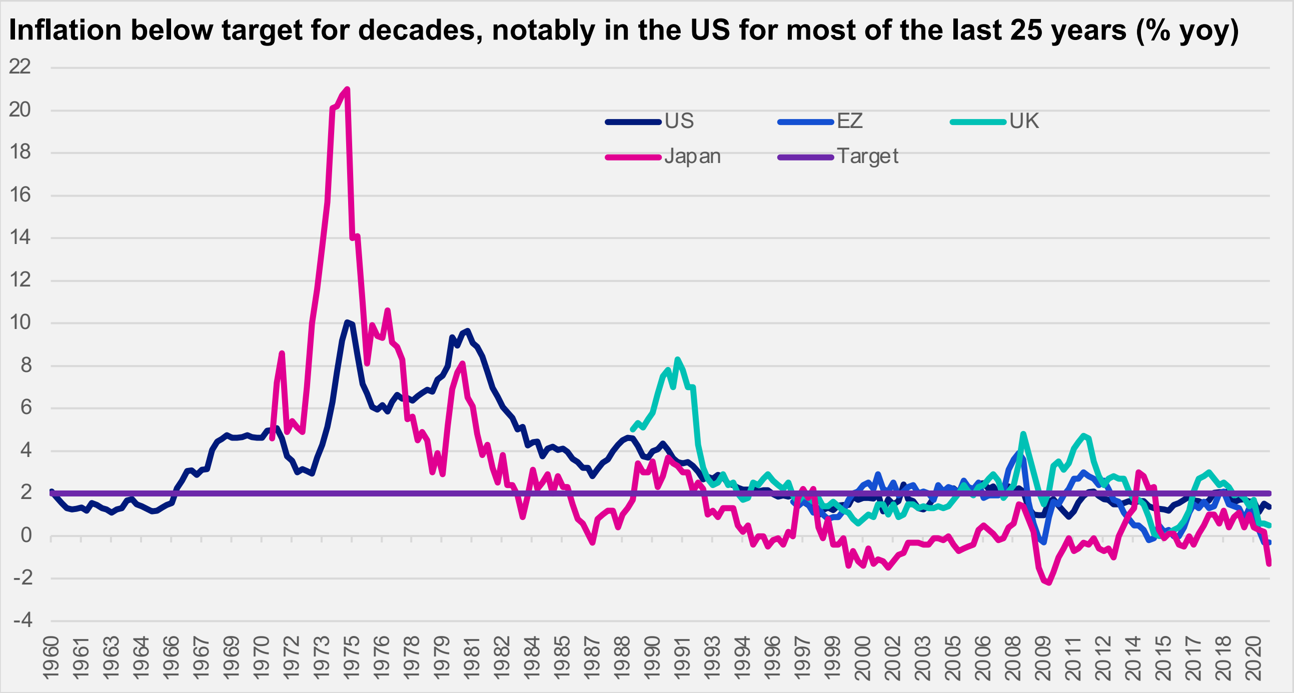
Estimated shares of GDP by end-use



Source: Left-hand side chart – Bloomberg, National Authorities, Invesco. Data through Q3-2020 (Q2 for World); India series begins 2012 with new national accounts statistics. Data download 20 January 2020. Right-hand side chart: Components of GDP by end-use, Index Mundi / CIA World Factbook, 2018 data in 2019 release. Invesco. Charts are shown for illustrative purposes only and are not intended as investment advice.

Monetary policy reform is deepening and becoming more discretionary, crucially via the Fed's shift to "Flexible, Average Inflation Targeting"

Invesco



Flexible Average Inflation Targeting implies that the Fed can prioritize more fully across its triple mandate (price stability, full employment and moderate interest rates).

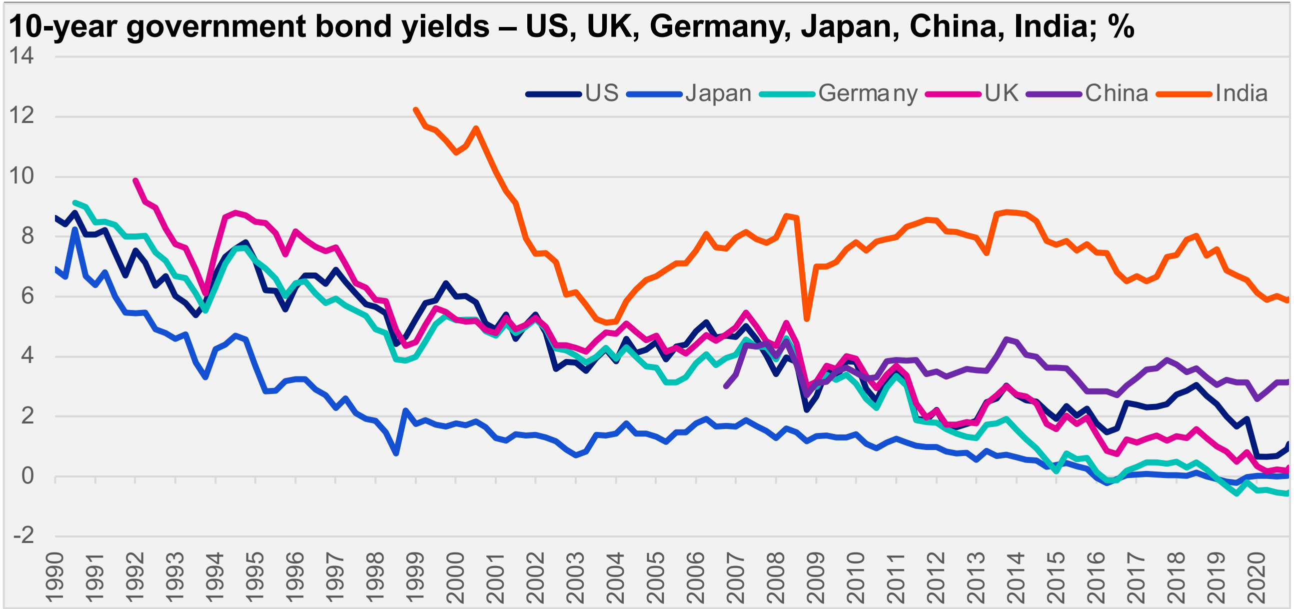
The Fed is better placed to avoid a new "Taper Tantrum" by running the economy "hot", reacting after inflation is above target instead of pre-emptively normalizing policy.

Other major central banks are intensifying monetary policy tools within inflation-targeting single mandates – negative rates; yield curve control, etc.

This difference suggests a weaker dollar and easier US and global financial conditions for longer than otherwise.

Note: The Fed's legislated triple mandate can normally be reduced to two because price stability and moderate interest rates go hand in hand. However, the Fed has successfully emphasized one mandate at the expense of others in the past – the Volcker Fed drove rates up sharply to defeat inflation at the cost of rising unemployment in a double dip recession; the Bernanke and Yellen Feds held rates at zero with an enlarged balance sheet to restore price stability and full employment. Source: Bloomberg, Invesco. Data as at 21 January 2020

Government bond yields have fallen to historic lows, yet have also decoupled after financial crises in Japan, the US, EZ; Brexit; COVID – signalling diverging growth / inflation prospects



DM bond yields have decoupled over time, as growth / inflation diverged, following macro turning points – Japan, 1991; EZ / Bunds 2011; Gilts, 2016

Yields have seen cyclical rebounds, within a long-term downtrend, but not reverted to historical averages

Sustained increases in bond yields would likely require a sustained rise in growth / inflation, which we believe will be slow, not sharp – and probably vary significantly across the major economies

Sources: Bloomberg, Invesco. Data as at 21 January 2021

Investment risks and important information

Investment risks

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations) and investors may not get back the full amount invested.

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