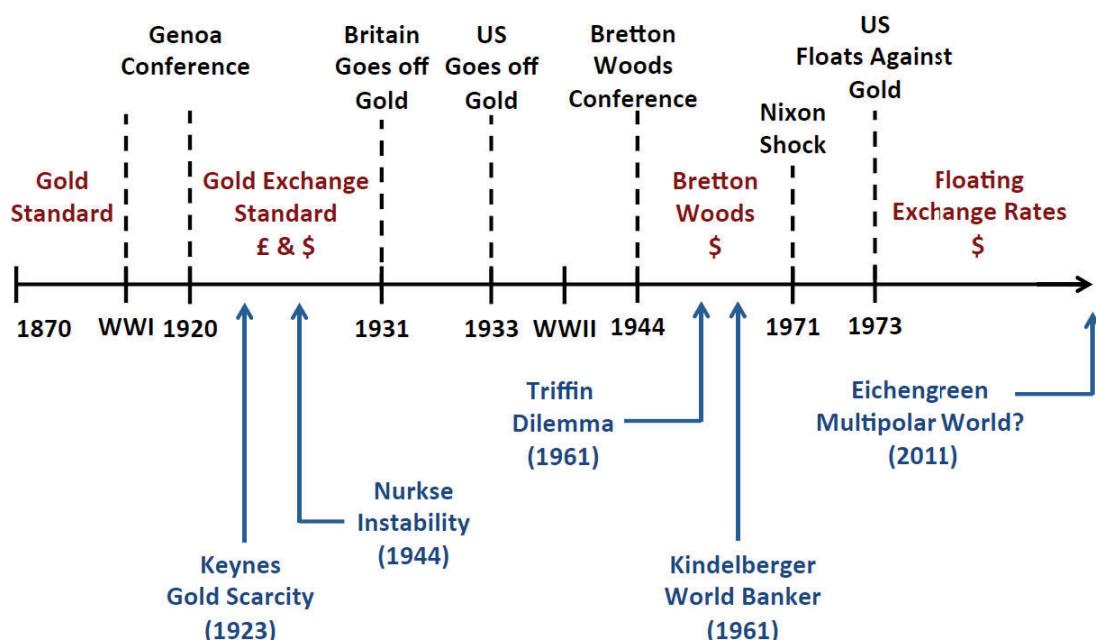


Topic 6:

Dominant Currency Paradigm, Dollar Safety and Renminbi Internationalization

A Short History of the International Monetary System

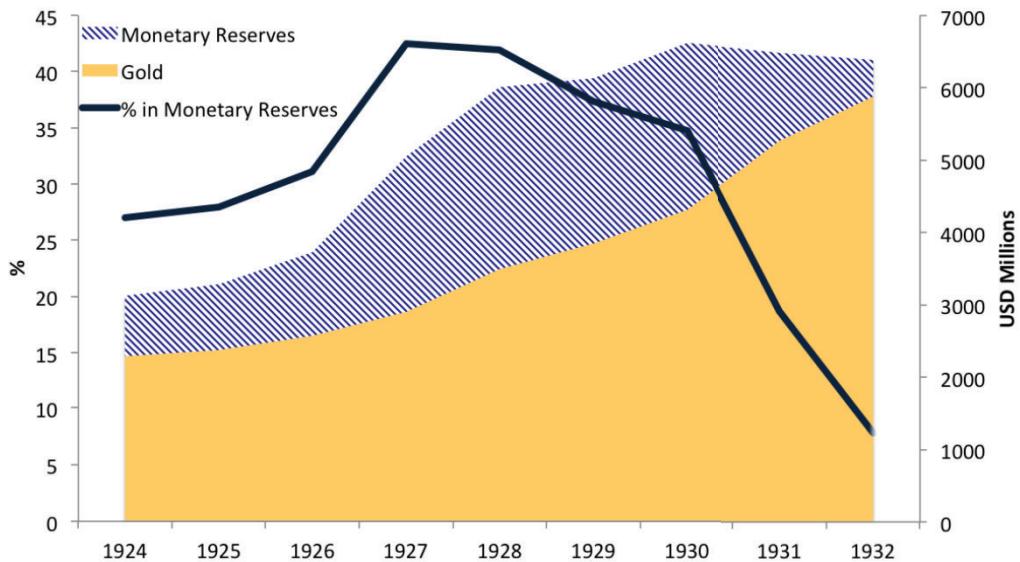


Source: Farhi Maggiori (2018)

Some History and Stylized Facts about the IMS

Fact 1: Emergence of Monetary Assets as Reserves 1920-1935

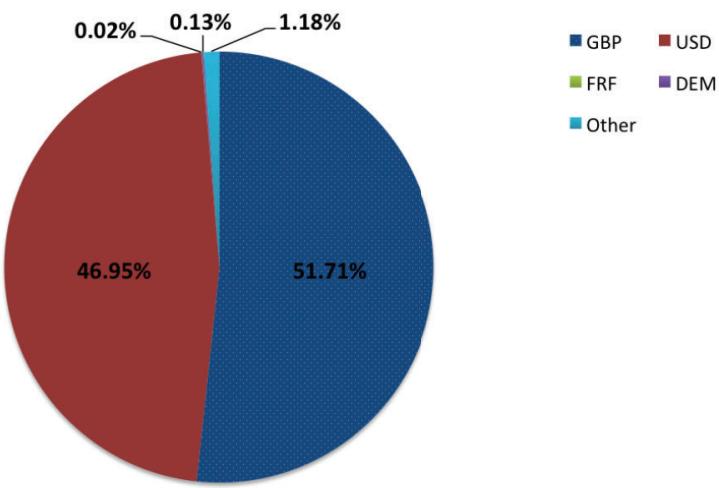
- After WWI countries return to gold pegs (at pre-war parity)
- Gold supply too low to accommodate demand for reserves
- Most central banks change statute to include monetary assets as reserves: the **Gold-Exchange standard**



Some History and Stylized Facts about the IMS

Fact 2: Co-issuance of reserves in 1920-1931

- British pound dominant reserve currency, but US dollar is also used



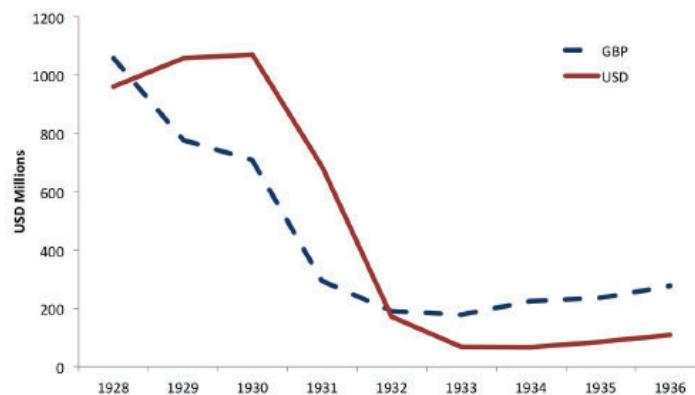
Source: Eichengreen and Flandreau (2009)

- Reserves switch often between pounds and dollars: **Nurkse instability**

Some History and Stylized Facts about the IMS

Fact 3: The Gold-Exchange standard collapse

- Evidence that Great Depression initially made worse by Gold standard
- In 1931 England depreciates the pound unexpectedly
- Major losses around the world...Banque de France goes “bankrupt”
- Global flight to gold, dollar reserves liquidated, US devalues in 1933

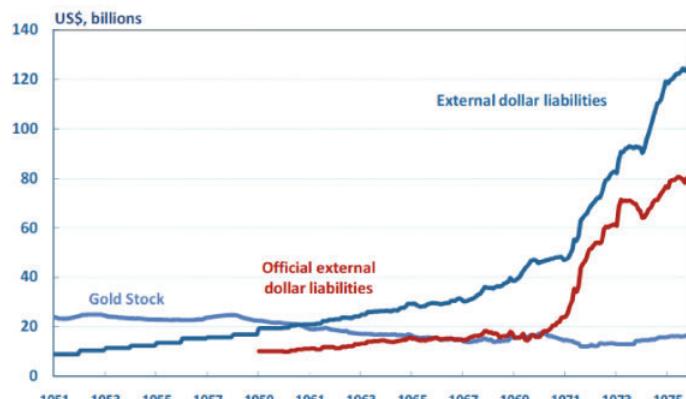


Source: Eichengreen and Flandreau (2009)

Some History and Stylized Facts about the IMS

Fact 4: The Bretton Woods collapse in 1973

- Triffin (1961): predicted that the US would face a dilemma between supplying more dollar debt as a reserve asset and maintaining the credibility of the dollar convertibility to gold. Ultimately, the system would be brought down by a confidence crisis. This prediction is known as the **Triffin Dilemma**
- **Nixon Shock:** Nixon administration first devalued to \$42 an ounce in 1971 and ultimately had to abandon convertibility in 1973

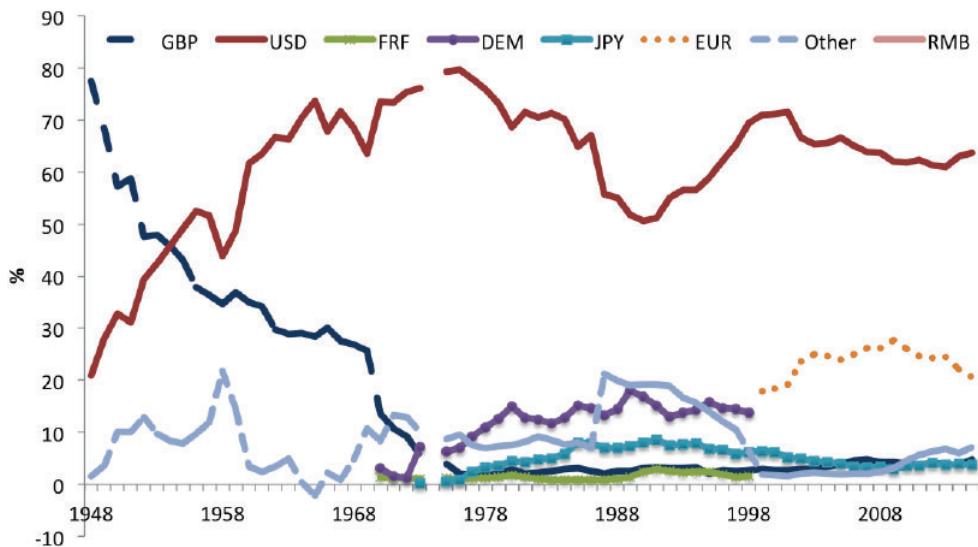


Source: Bordo (2017)

Some History and Stylized Facts about the IMS

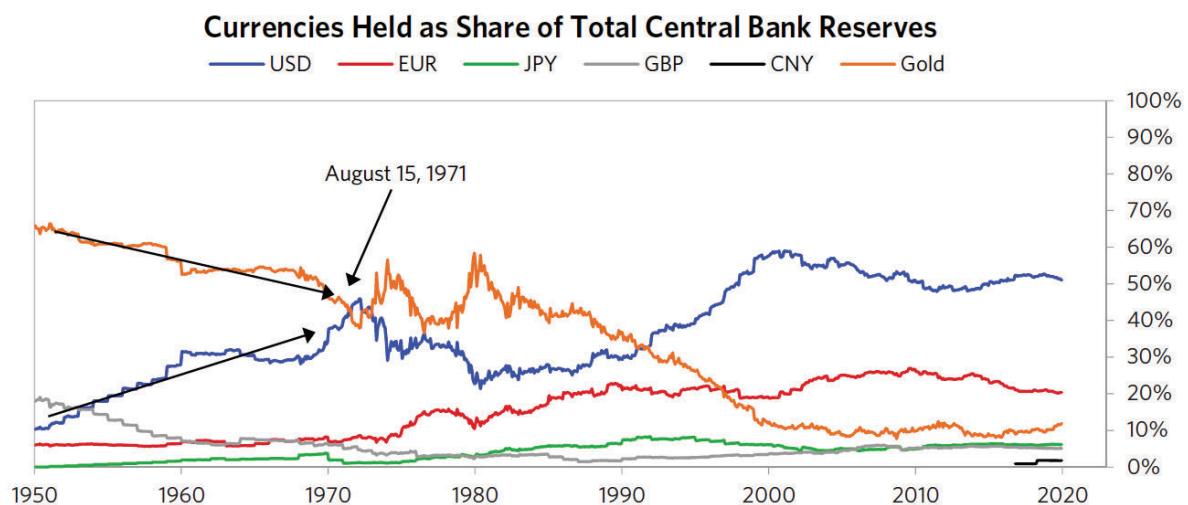
Fact 5: Dollar reserves in a floating exchange rate system (1973-2016)

- USD remains the dominant reserve currency with a share of 60-80%



Source: Eichengreen, Chitu, Mehl (2014)

- Triffin logic remains?



Dollar Hegemon

- Dollar as a unit of account
- Dollar as a means of payment
- Dollar as a store of value

	Roles			
	Medium of exchange	Store of value	Unit of account	
Private sector	Vehicle currency Liquid & safe asset markets	Nominal securities issuance Banking, cash hoarding	Denomination of securities Trade invoicing	
Official sector	Intervention currency Lender of last resort	Reserves	Exchange rate pegs Anchor currency	

Note: Adapted from Kenen (1983).

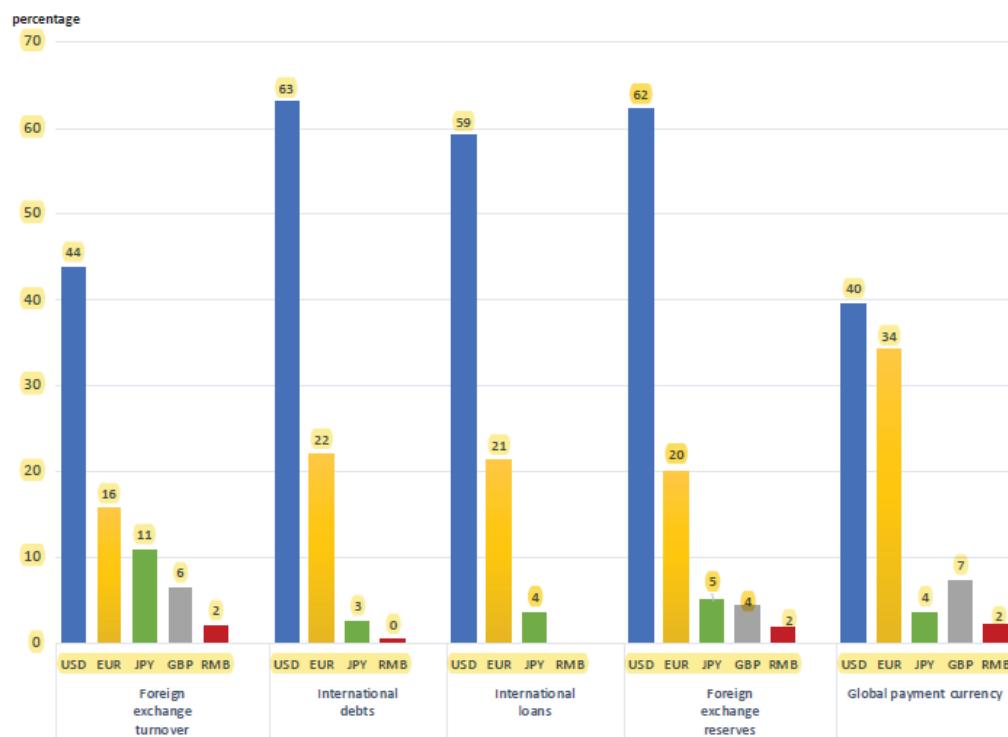


Figure 3: The Dominance of the dollar. Source: Eichengreen and Xia (2019).

Dollar as a unit of account

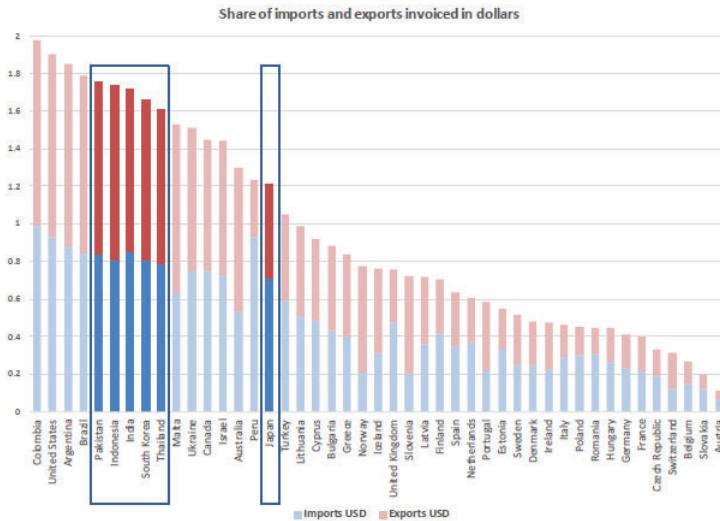
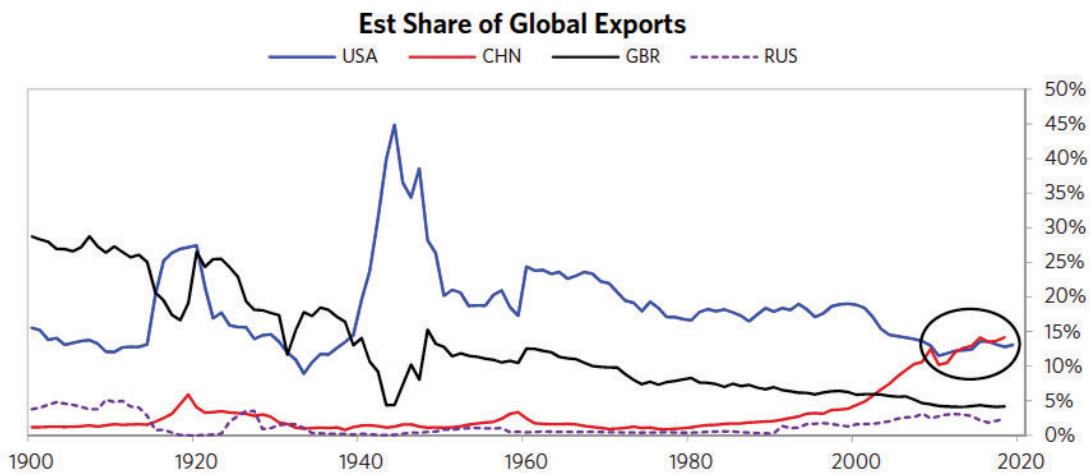


Figure 4: Share of invoice of imports and exports in US dollars. We keep all the countries for which data on exports and imports are both available. Source: [Gopinath \(2016\)](#).

- Gopinath (2016): dollar's share as an invoicing currency is approximately 4.7 times the share of the U.S. in goods in world's imports and 3.1 times its share in world's exports.



It is not unusual that export share happens well before the country's currency becomes a dominant (or even an international) currency.

Dollar as the main nominal anchor

2015

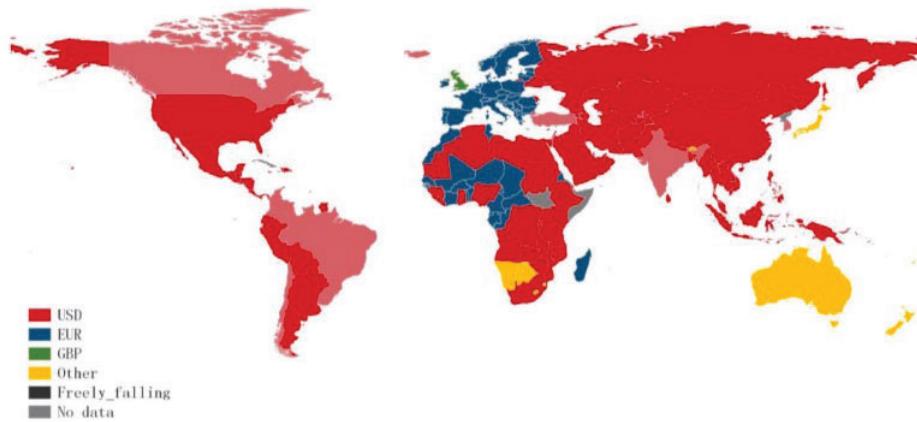


Figure 5: The Geography of Anchor Currencies, 1950 and 2015. Source: Ilzetzki et al. (2019). The figure reports the geographic distribution of anchor currencies.

Dollar as a store of value

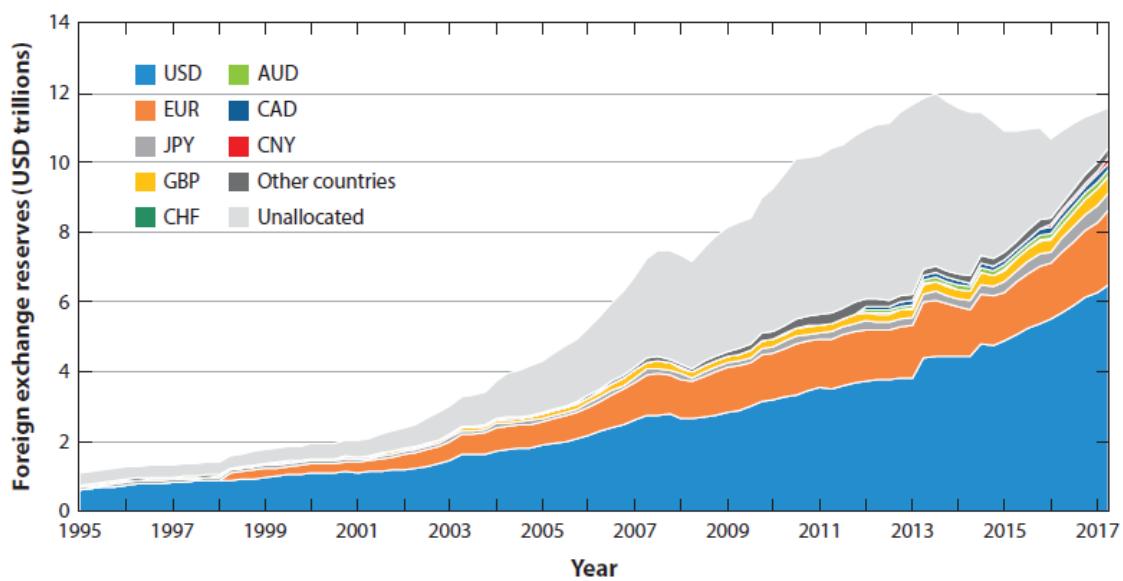


Figure 2

Currency composition of foreign exchange reserves for the world, in trillions of US dollars. The date indicates the last quarter of each year. Figure constructed using data from IMF COFER.

“Private dollar” as a store of value

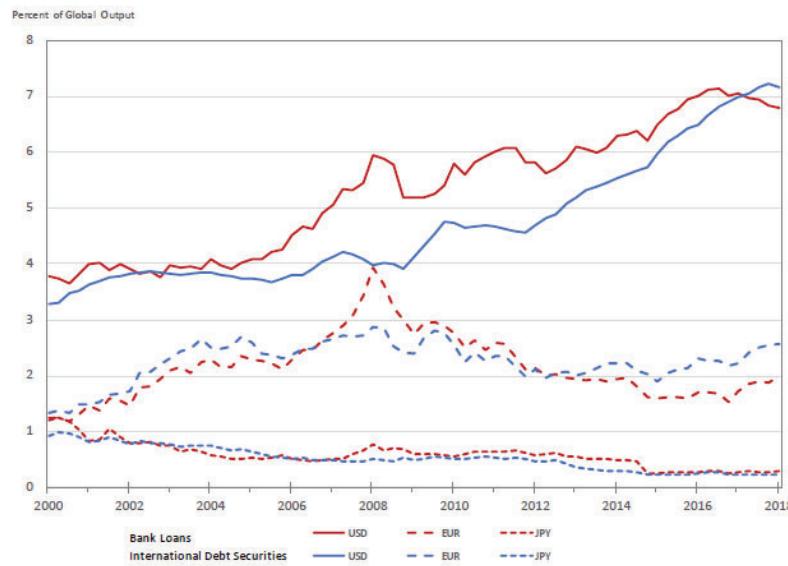


Figure 7: International Credit to Non-Resident by Currency and Instrument, percent of global GDP. Source: BIS Global Liquidity Indicators.

Characteristics of global US dollar funding markets

Table 1

Market	Borrower	Purpose of the borrower	Lender	Purpose of the lender	Typical Maturity	Market size
FX forwards and swaps	Banks outside the United States, corporations, insurance and pension funds, supranationals	Funding, hedging	Banks, hedge funds, supranationals, central banks	Market-making, investment	Mainly <6 months	\$3.8 trillion daily ¹
Repo	US dealers, US and non-US banks, hedge funds	Finance high-quality securities portfolios	Wide participation	Secured short-term return	Mainly overnight	\$1 trillion daily involving a non-US entity; ² \$2 trillion daily involving only US entities ³
Commercial paper	Banks, corporations	Short-term funding ease of issuance	Banks, sovereign wealth funds (SWFs), foreign central banks (FCBs), money market funds (MMFs), pension funds, hedge funds, insurance companies and asset managers	Investment in short-term liquid security	<3 months	\$300 billion issued by non-US financial institutions; \$500 billion issued by US entities. \$200 billion asset-backed commercial paper ⁴
Eurodollars	Banks outside the US	Capacity to attract/offer deposit services to a broader base	MMFs, SWFs, FCBs, corporations, hedge funds and other asset managers	Short-term investment	Overnight	\$110 billion ³
Certificates of deposit	Banks outside the US	Medium-term fixed rate funding	Wide participation	Ability to lock in return over a relatively longer period	<1 year	\$600 billion issued by non-US banks ⁵
Wholesale deposits	Banks	Secure large-scale funding to finance/expand operations; may not be able to attract retail deposits in size	Banks, investment, mutual and pension funds	Higher return (credit and liquidity risks are higher)	<1 year	Total size unknown; cross-border deposits (including wholesale, retail and corporate) from non-US residents are \$8.8 trillion and from US residents \$2.5 trillion
Retail/Corporate deposits	Banks	Secure, low-cost, smaller form of dollar funding	Retail and corporations	Safety and liquidity	On demand	See entry on wholesale deposits

Characteristics of global US dollar funding markets (continued)

Market	Borrower	Purpose	Lender	Purpose	Typical maturity	Market size
Private bonds	Banks, corporations, supranationals	Long-term debt for investment, diversification and reduced reliance on short-term funding, match maturity profile of assets	Banks	Long-term investment return	2–10 years	\$5 trillion issued by non-US entities ⁶ \$9 trillion issued by US entities ⁷
Public bonds	Government entity (foreign and domestic)	Fund fiscal spending, diversify funding	Wide participation	High-quality investment and liquidity, return	>2 years	\$1.2 trillion issued by foreign governments ⁸ \$22 trillion issued by US government ⁴
Cross-border loans	Banks, corporations	Simplified lending structure, maximise borrowing capacity	Banks, corporations	Return	3 months to 5 years	\$7.6 trillion lent to non-US entities, of which: \$4.5 trillion is interbank. \$2.6 trillion lent to US entities ⁸
Of which: Cross-border interbank loans	Banks	Cover regulatory shortfall, manage liquidity	Banks	Excess liquidity, earn higher interest	Generally short-term	\$1.8 trillion (excl. interoffice loans) ⁸
Of which: Syndicated loans	Banks, corporations, pension and insurance funds	Spread risk among several lenders, lower cost relative to a bond, diversify funding source, match maturity profile	Banks	Generate deal, fees, spread risk, return	3 months to 5 years	\$460 billion in new lending (originations) to non-US borrowers yearly; \$540 billion in new lending to US borrowers ⁹
Cross-currency swaps	Banks and other financial institutions	Hedge FX exposure	Banks and other financial institutions	Return	>1 year	\$102 billion daily ¹
Spot FX	Wide participation	To purchase US dollar assets, investments or operations	Wide participation	Market-making, investment	Spot	\$1.7 trillion daily ¹

Market size shows rough estimates; estimates of total market size (non-US plus US borrowers is more precise than those of the two elements). Data are amounts outstanding expected from daily figures, which represent transaction volumes. Data are latest available, ranging from Q1 2019 to Q3 2019. "Corporations" are non-financial corporations.

Sources: ¹ BIS Triennial Survey. ² US Treasury/TIC. ³ Federal Reserve Bank of New York. ⁴ Federal Reserve. ⁵ DTCC. ⁶ BIS international debt securities statistics. ⁷ Bloomberg. ⁸ BIS locational banking statistics. ⁹ Dealogic.

What makes a currency a dominant currency?

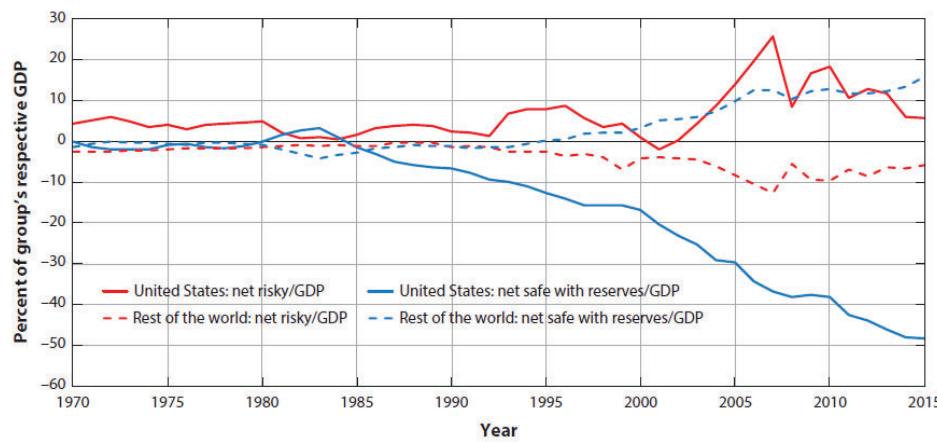


Figure 4

Net positions in risky assets and safe liabilities for the United States and the rest of the world. Data are from Lane & Milesi-Ferretti (2018) and cover 1970–2015 at an annual frequency. Net risky position is equal to portfolio equity assets + FDI assets – (portfolio equity liabilities + FDI liabilities). Net safe position is equal to reserve assets + debt assets – debt liabilities. Debt includes portfolio debt and other investment. Both positions are summed for all countries of each group, i.e., the United States and the rest of the world, and normalized by the GDP of the group in the given year. Abbreviation: FDI, foreign direct investment.

- **Being a world banker** (borrow safe/ invest risky): Gourinchas-Rey (2007), Maggiori 2017
- This makes the return on assets more than cost on liabilities.
- Therefore the US can run deficit with less worries about its debt sustainability.

Complementarity between dollar invoicing and dollar borrowing (Gopinath and Stein 2020)

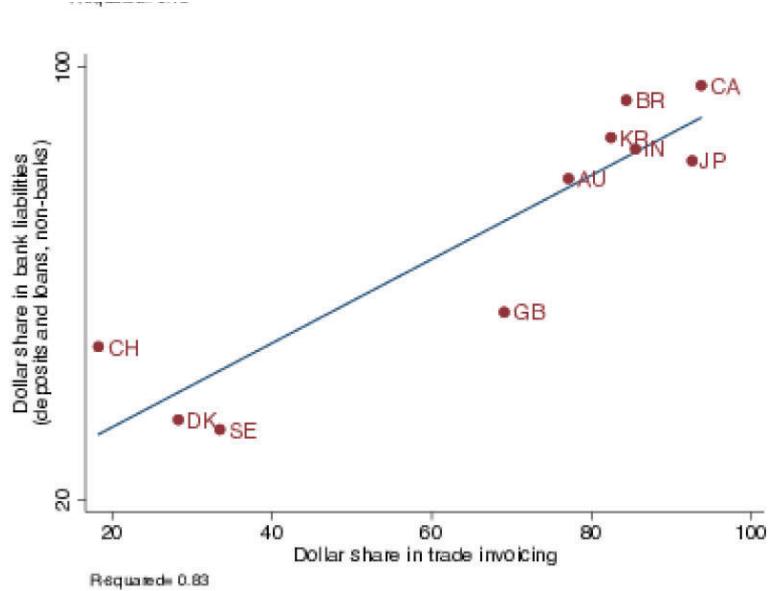
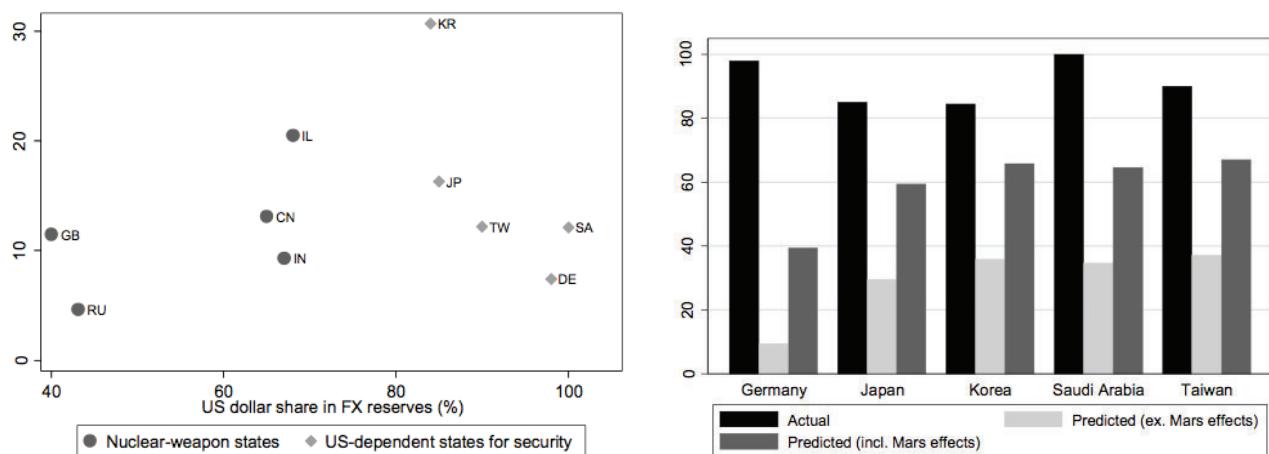


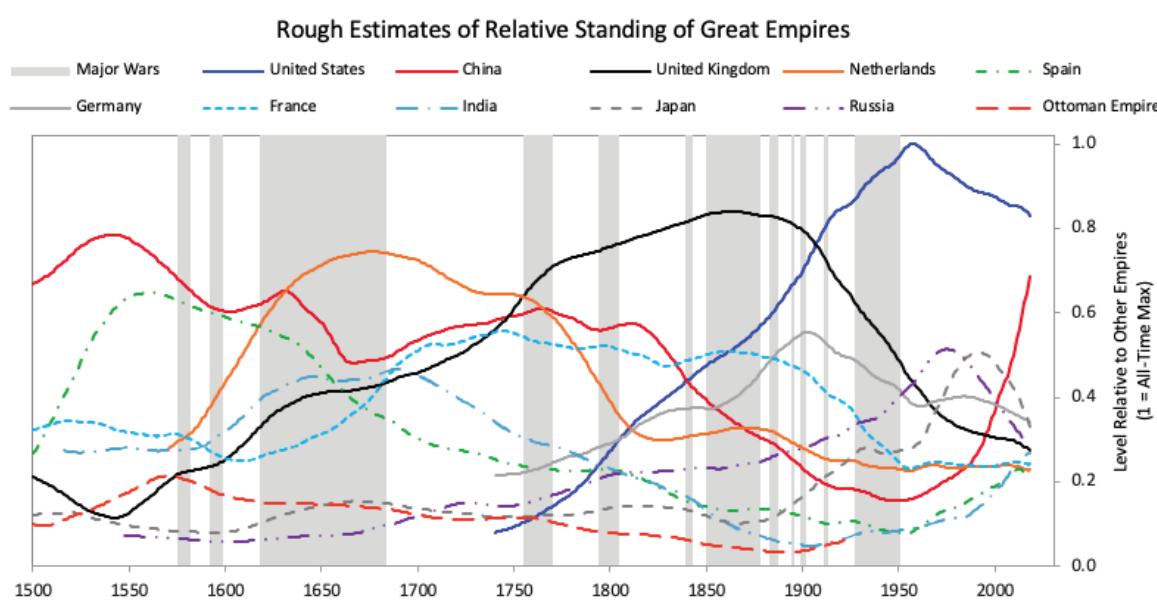
Figure 7: Dollar Share in Trade Invoicing and Banks Local Foreign Currency Liabilities

The geopolitics of international currency choice (Eichengreen, Mehl and Chitu 2018)

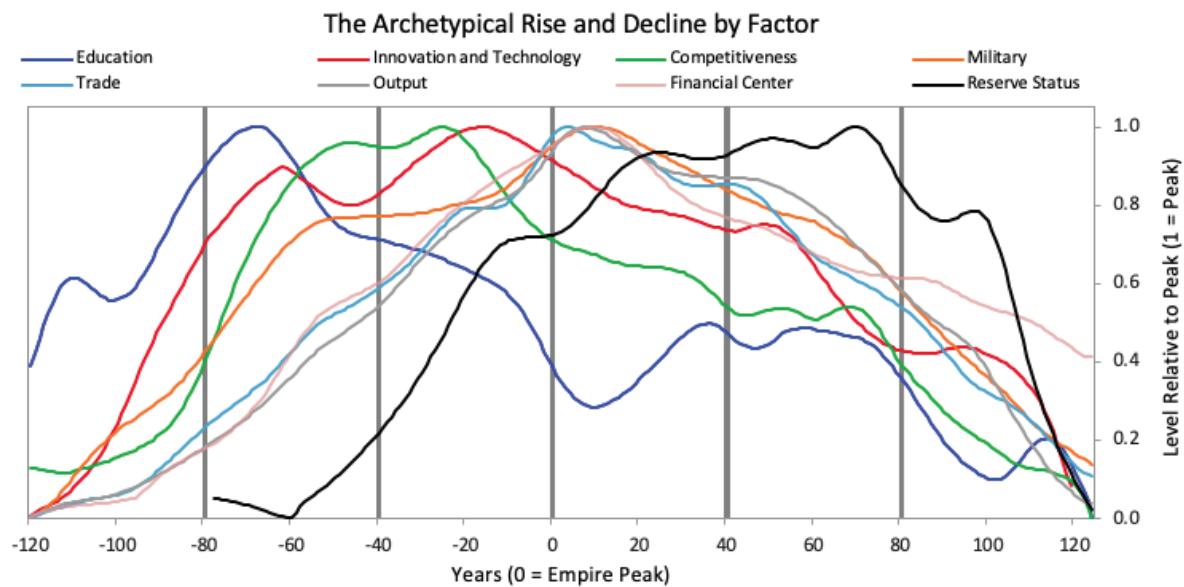


Main implication: US spends on military but saves on borrowing cost.

What are the costs and benefits of being the dominant currency?



From: The Changing world order,R Dalio



Technology and education leads the finance and reserve status.

USD in 1912

- **Start:** World's largest exporter, but USD 0% of trade finance. All in sterling, in London
- **Federal Reserve Act (and Strong at FRBNY)**
 - De-regulate: US banks branches abroad
 - Stable exchange rate and inflation
 - Liquid secondary market and Fed has buyer of last resort of trade acceptances
- By 1925 USD very large, by 1945 dominant
 - Policy?
 - Luck (war) over London?
 - Inevitable as US became world creditor?

RMB in 2009

- **Start:** largest goods exporter, world creditor RMB not used at all given capital controls
- **Policies starting in July 09:**
 - De-regulate: trade settlement pilot scheme
 - Stable exchange rate: dollar peg
 - Market: CNH in HK offshore market
 - Buyer of last resort: PBoC swap lines
- **Outcomes:**
 - 2016, IMF includes it in SDR basket
 - 2019, 2% of official foreign exchange reserves.
 - Coincidence, luck, policies?

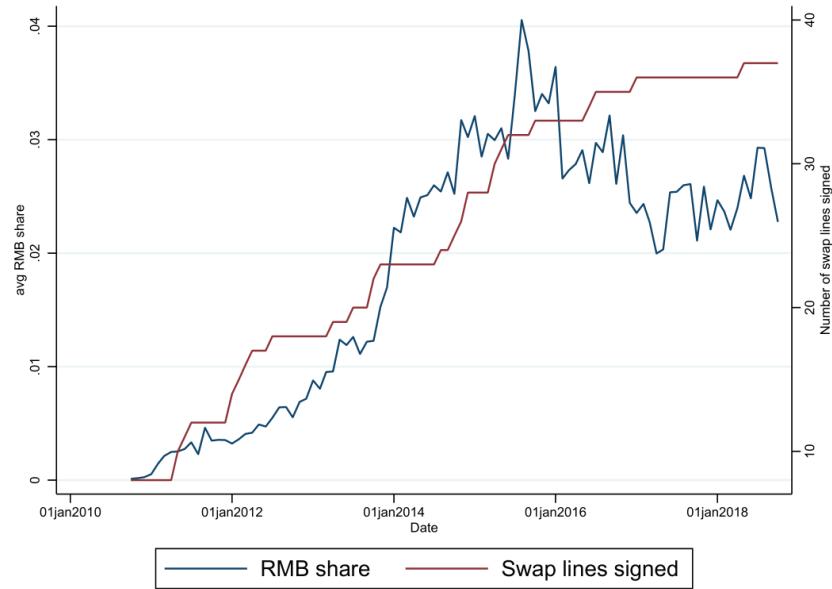
What is a Central Bank Swap Line?

- The Fed gives dollars to another central bank and receives an equivalent amount of their currency at today's spot exchange rate.
- the two central banks agree that, after a certain period of time (typically one week or one month), they will resell to each other their respective currencies, at the same spot exchange rate that the initial exchange took place at.
- The Fed charges an interest rate that is set today as a spread relative to the USD overnight index swap (OIS) rate, paid at the fixed term, and settled in USD.
- All the credit risk is with the recipient bank.

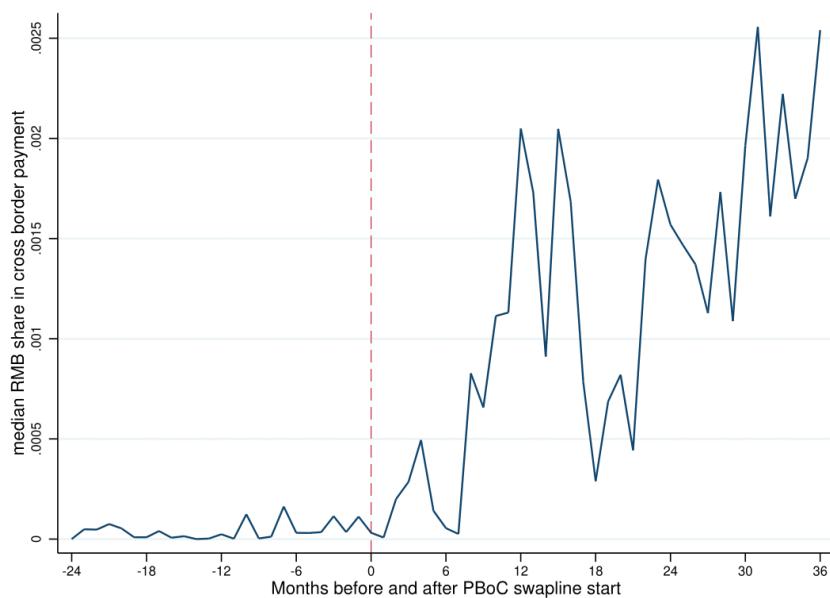
25

- A SOE model where firms choose both currency of invoicing and currency of working capital and trade credit
 - Focus on rising currency where a dominant one prevails.
 - Jump-start if: (i) credit market cheap and liquid enough, (ii) stable bilateral exchange rate, (iii) covariance domestic inputs costs and exchange rate
 - Central bank policies can improve (i), trigger the jump-start
- Empirical results
 - Study of systematic effect of 38 PBoC swap lines 09-18 on RMB settlements
 - Compare countries that signed swap line with those that did not at same time, control for reverse causality, using two exogenous sources of variation
 - PBoC policy raises prob. RMB used by a country by 20%

The rise of PBoC Swap lines and the share of RMB in trades



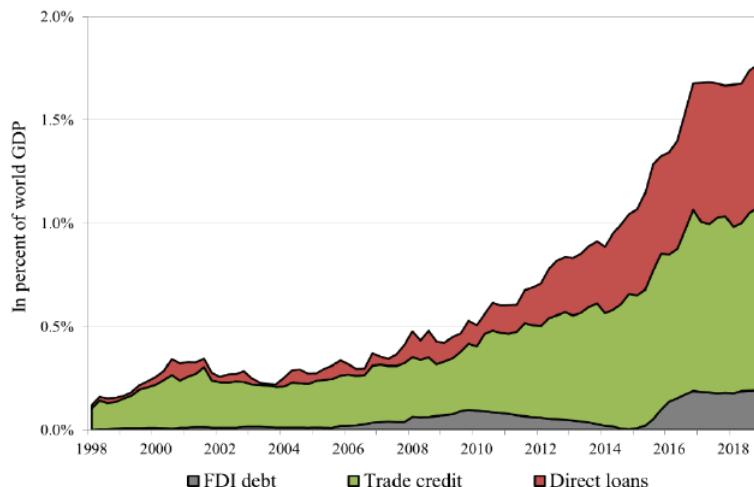
Importance of swap lines in RMB internationalization



China's overseas lending

(Horn, Reinhart and Trebesch 2020)

Figure 1. China's overseas lending boom

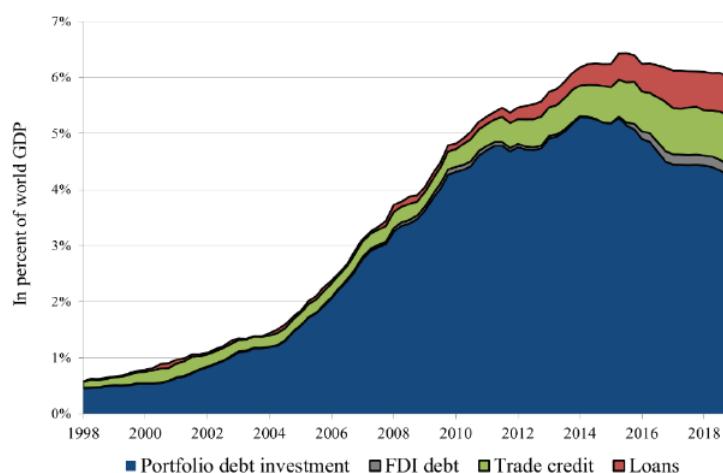


Note: The figure represent a subset of outstanding Chinese overseas debt claims as reported in China's BoP Statistics. Trade credit includes short- and long-term trade credits and advances. Portfolio debt is excluded (see Figure 2). *Sources:* PBoC and IMF.

China's overseas lending

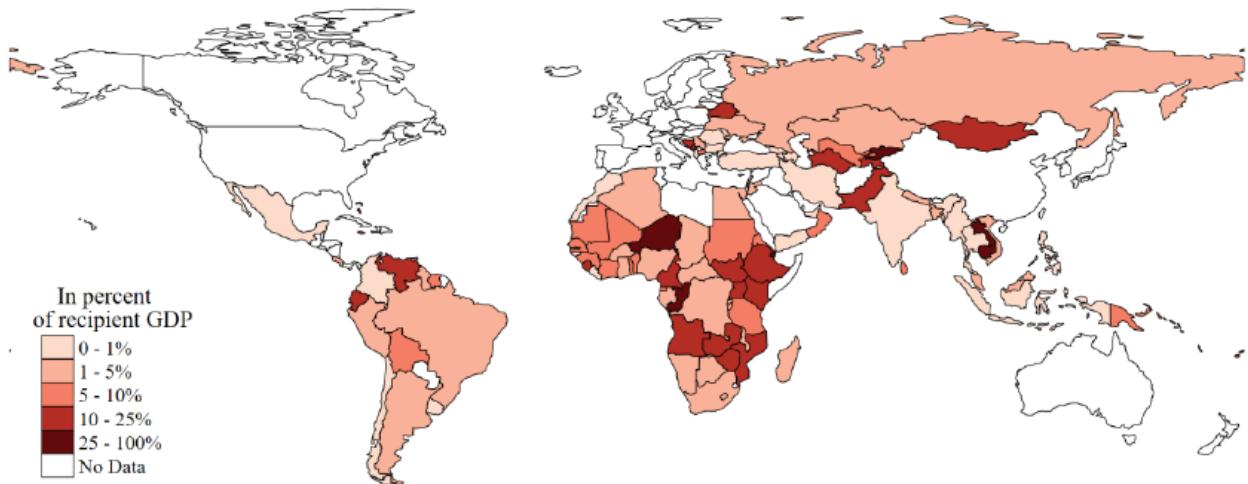
(Horn, Reinhart and Trebesch 2020)

Figure 2. Total Chinese debt claims on the rest of the world



Note: Portfolio debt investment summarizes claims on non-residents from PBoC holdings of debt instruments (reserve assets) and from holdings of non-reserve asset portfolio debt. Trade credits include short- and long-term credits and advances. *Sources:* PBoC and IMF World Economic Outlook.

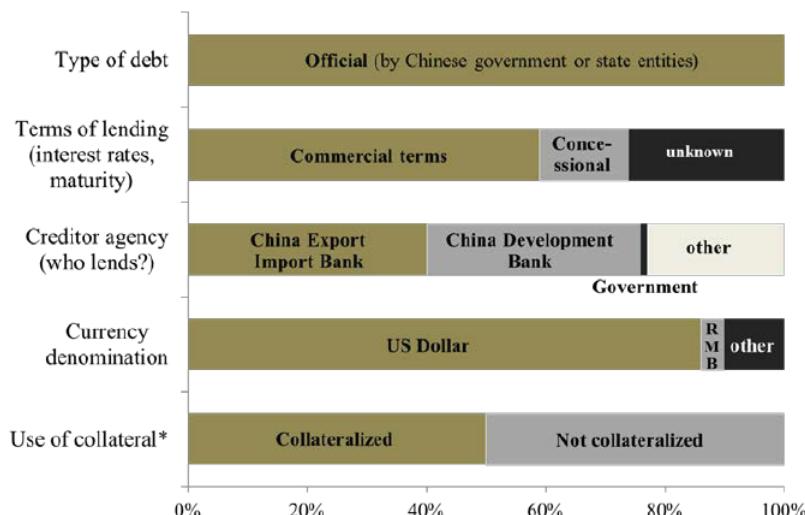
Figure 8. World map of external debt to China (as of 2017, direct loans only)



Note: The debt estimates are based on loan-level data (see text and Appendix I). They exclude Chinese portfolio debt holdings and short-term trade debt. GDP data is from the IMF World Economic Outlook.

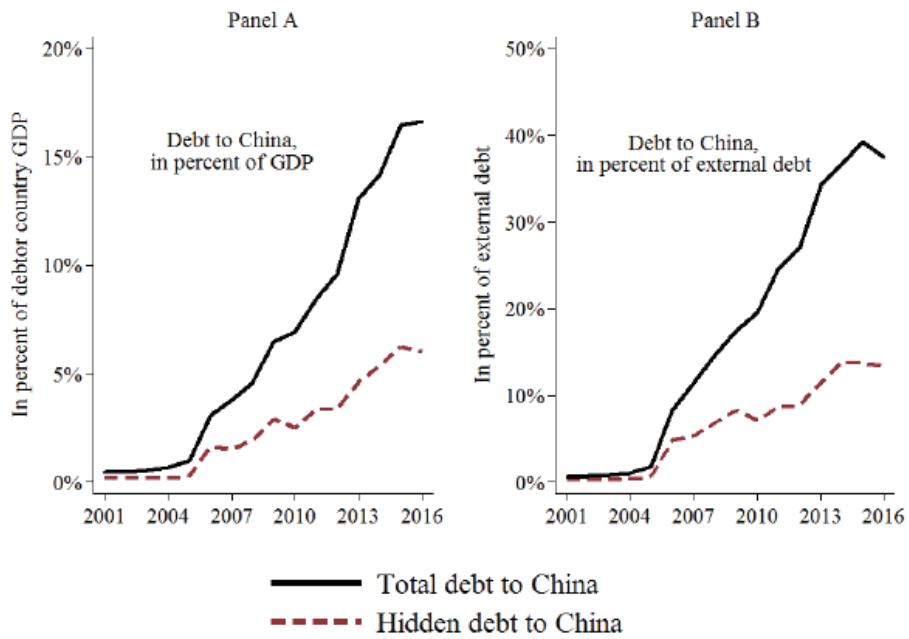
But note that so far most of it is in US Dollar
 Does that mean RMB may rise faster than we may think?
 Does China wants RMB to be an international currency?

Figure 10. Characteristics of Chinese overseas loans



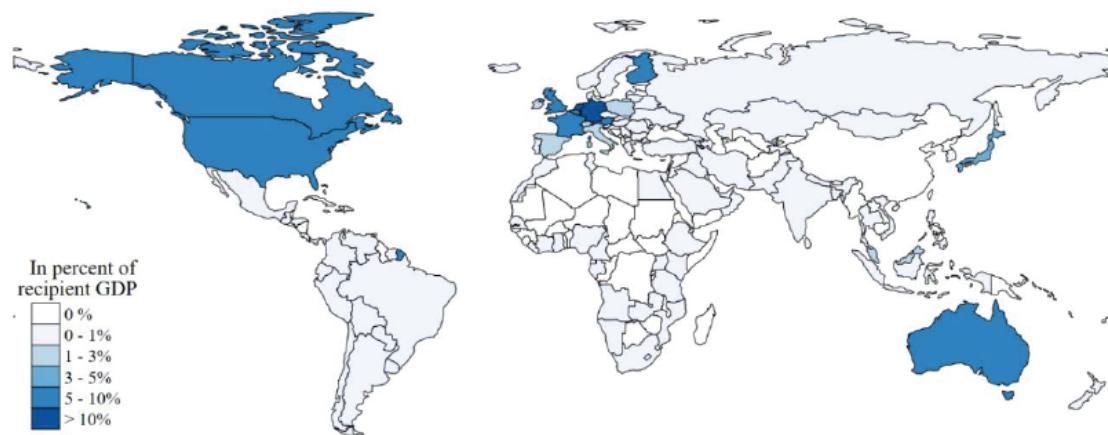
Note: Loans as commitment-weighted shares in our sample of Chinese loan commitments since 2000. The share of collateralized loans (*) is taken from estimates of Bräutigam and Gallagher (2014) based on Chinese loans to South America and Africa.

Figure 12. Debt to China, total and “hidden” parts, 2001-2016, top 50 recipients



And of course China holds a lot of reserves (sovereign bonds)

Figure 19. External debt owed to China through portfolio holdings
(incl. sovereign bond holdings of PBoC)



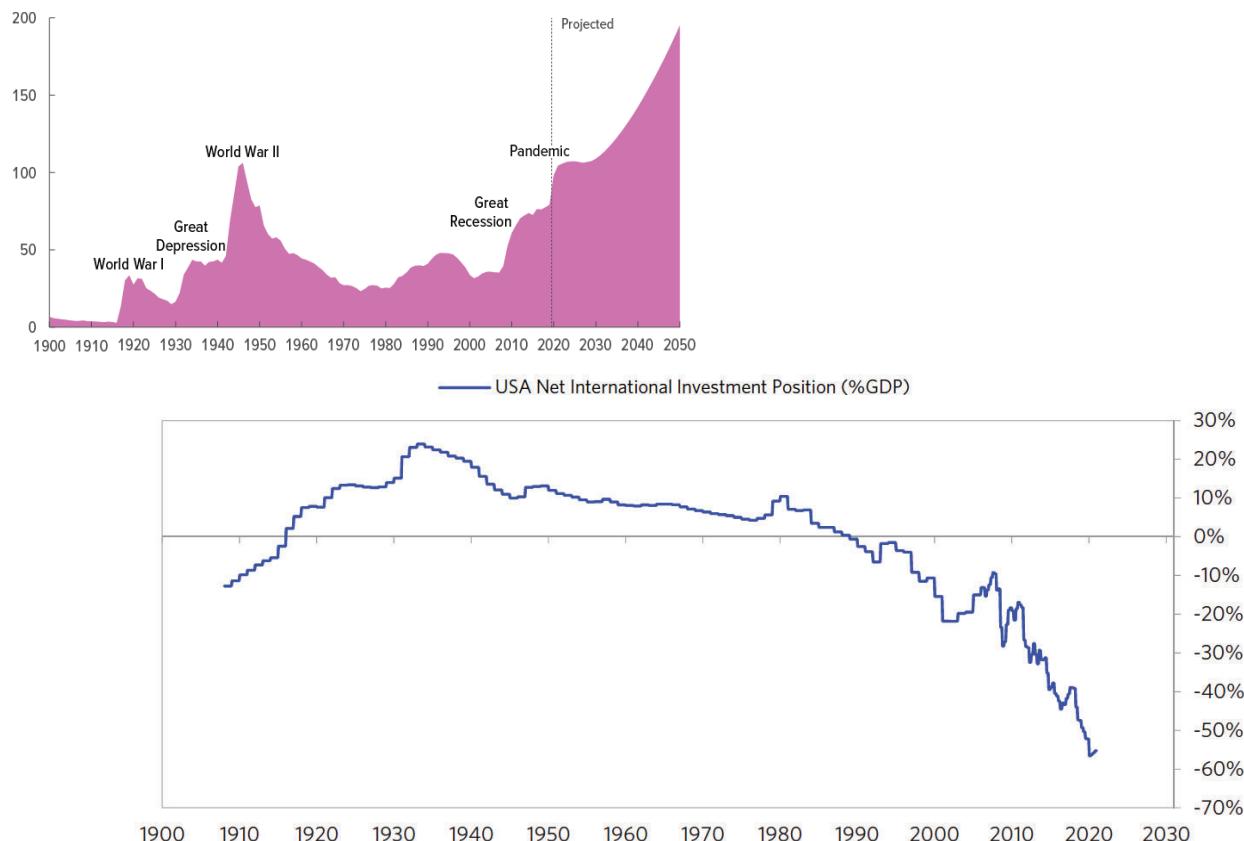
Notes: Chinese holdings of foreign sovereign bonds, in percent of debtor GDP. The approach to estimate the composition of China's portfolio holdings follows Arslanalp and Tsuda (2012) (see Appendix II for details).

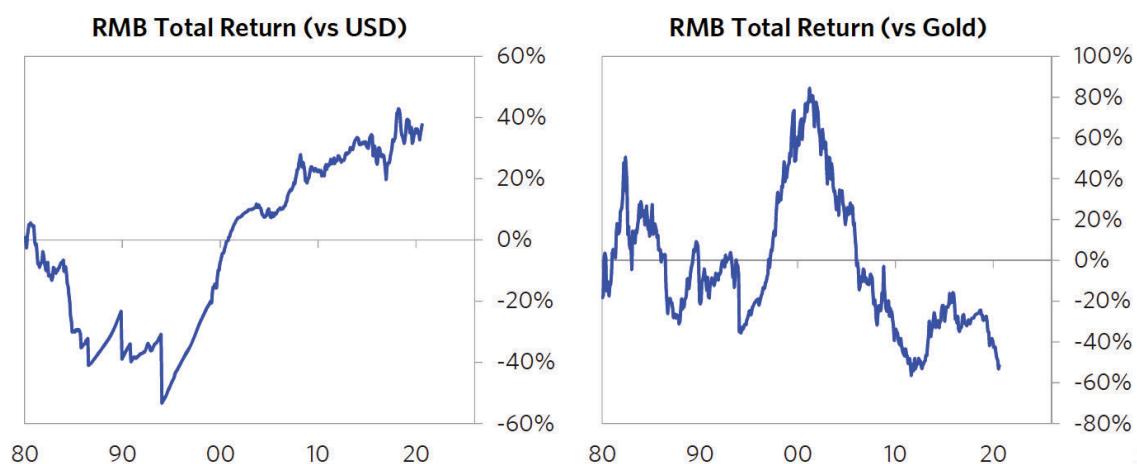
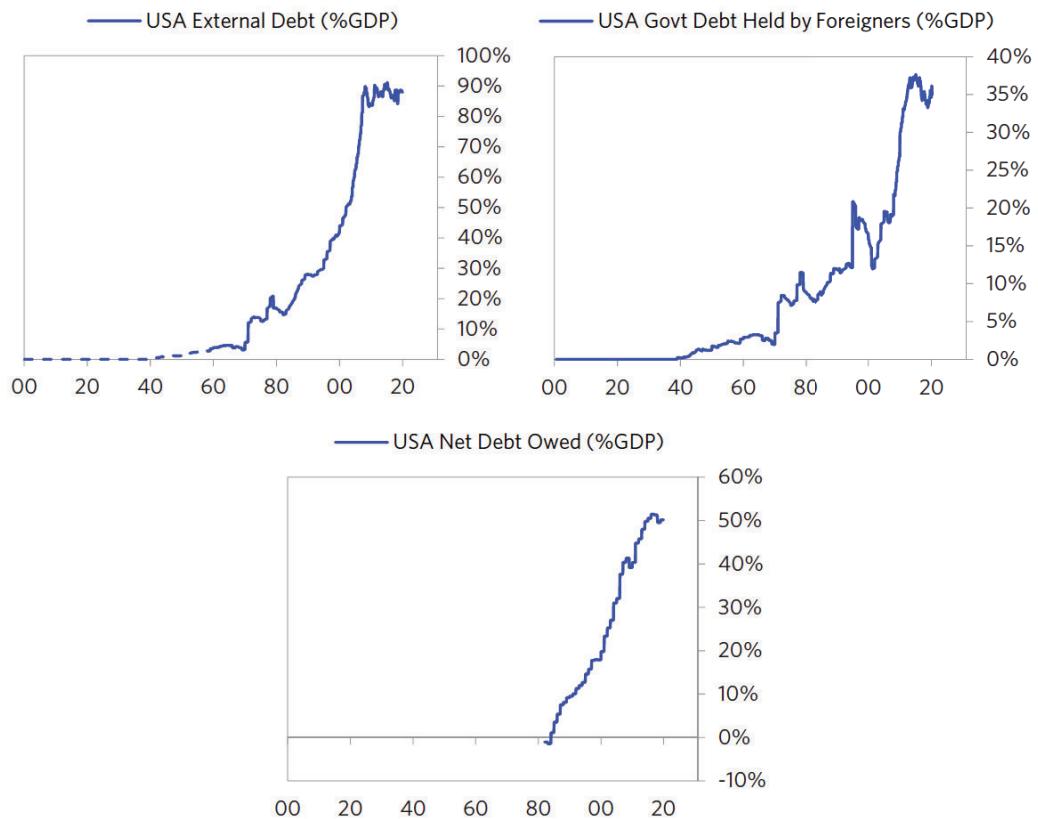
Is Dollar Behavior Different This



CBO latest projection of US Government Debt/GDP

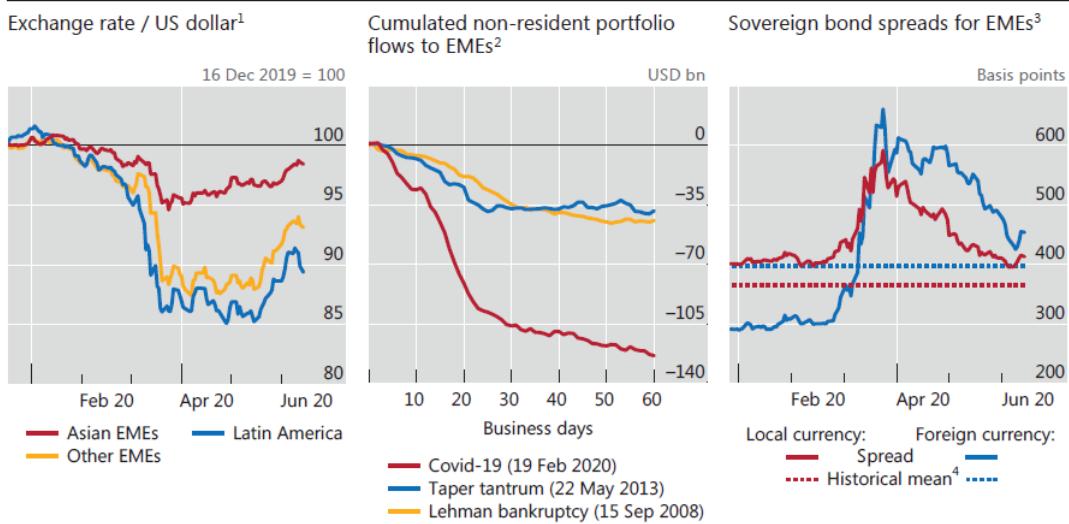
see: <https://www.cbo.gov/publication/56598>





Perfect storm in emerging market economies

Graph II.8



¹ Simple average of the individual local currencies vis-à-vis the US dollar. A decrease indicates an appreciation of the US dollar. Asian EMEs = CN, HK, ID, IN, KR, MY, PH, SG, TH and TW; Latin America = AR, BR, CL, CO, MX and PE; other EMEs = CZ, HU, PL, RU, SA, TR and ZA.

² Cumulated non-resident portfolio flows (debt and equity, when available) over days since the indicated date. Sum across BR, CN, HU, ID, IN, KR, MX, MY, PH, PL, SA, TH, TR, TW and ZA.

³ Spread of JPMorgan GBI-EM (local currency) and EMBI Global (foreign currency) yields over 10-year US Treasury yield.

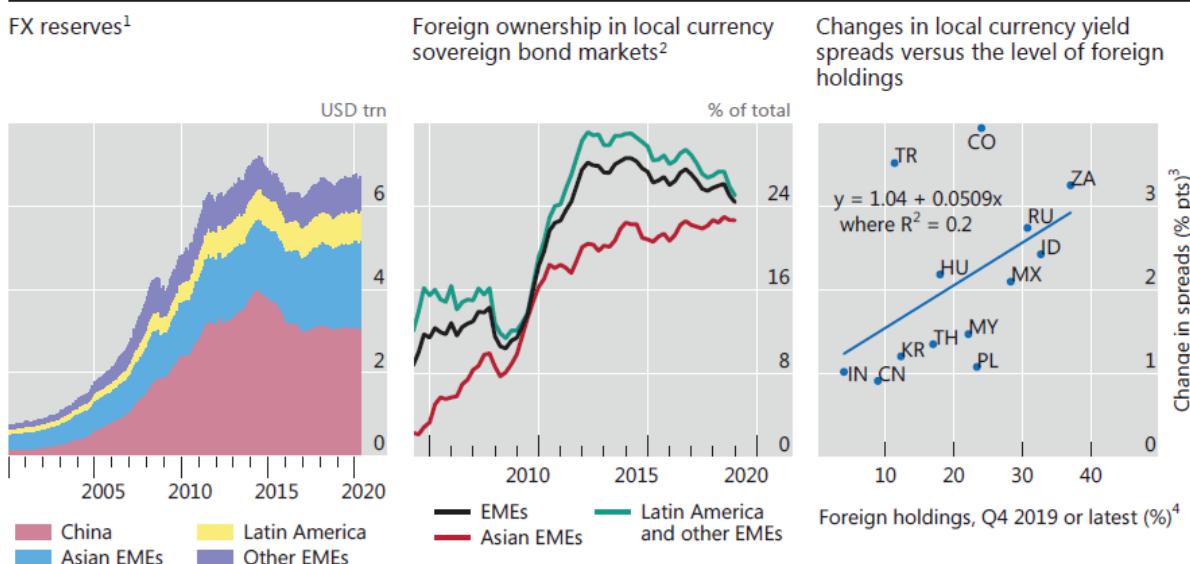
⁴ Since December 2001 (local currency) and January 2000 (foreign currency).

Sources: Bloomberg; Institute of International Finance; JPMorgan Chase; national data; BIS calculations.

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Changing nature of foreign exposure

Graph II.9



¹ Asian EMEs = HK, ID, IN, KR, MY, PH, SG and TH; Latin America = AR, BR, CL, CO, MX and PE; other EMEs = CZ, HU, PL, RU, TR and ZA. Data up to February 2020 for AR, PE and PH.

² Simple averages of regional economies. Asian EMEs = ID, KR and TH; Latin America and other EMEs = BR, CO, HU, MX, PE, PL, TR and ZA; EMEs = Asian EMEs, Latin America and other EMEs.

³ Change in five-year generic local currency sovereign yield spread over the US Treasury of the same tenor. Maximum change relative to 3 January 2020 in the period up to 12 June 2020.

⁴ Foreign holdings relative to total market size. For ID and MY, as of Q1 2020.

Sources: IMF, *International Financial Statistics* and *Sovereign Debt Investor Base for Emerging Markets*; AsianBondsOnline; Bloomberg; Datastream; Institute of International Finance; national data; BIS calculations.

The Rise of Digital Money

(Adiran-Mancini-Griffoli 2020)

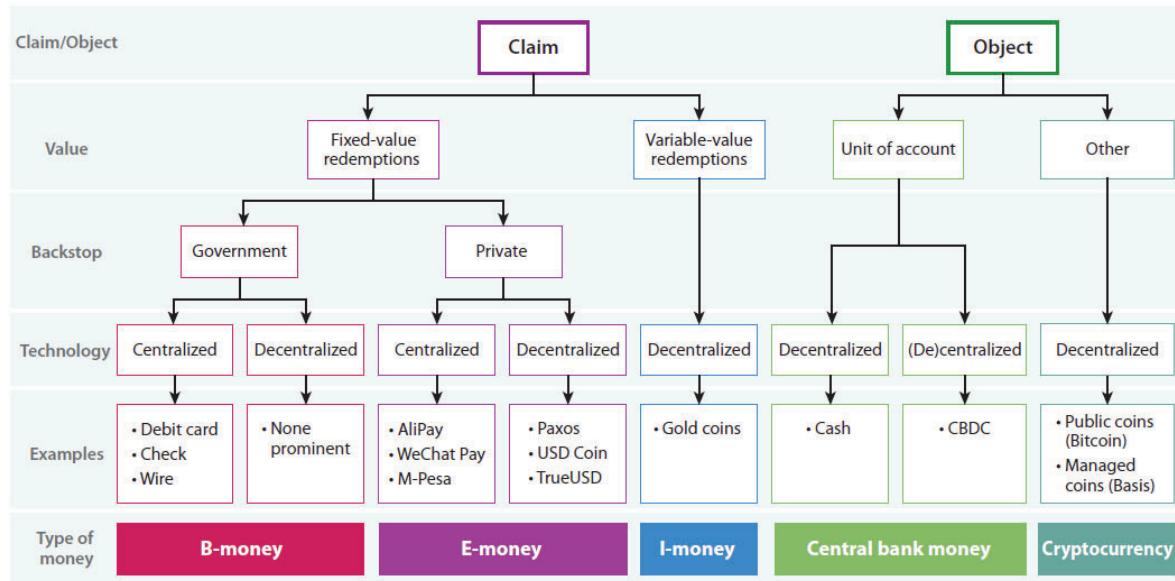


Figure 1

Different types of money are distinguished depending on whether they are a claim on underlying assets or an independent object, can be redeemed into domestic notes and coins at a fixed face value or at a variable rate, benefit from government backstops, or are settled in a centralized or decentralized fashion. Five different types of money are identified and discussed further in the text. Abbreviation: CBDC, central bank digital currency.

Different scenarios for the e-money

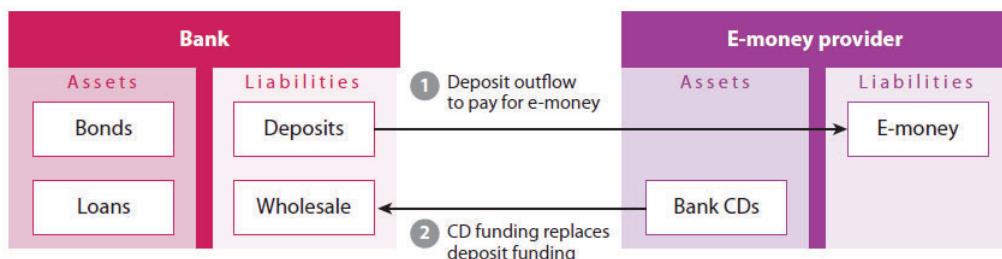


Figure 4

As deposits flow out of bank liabilities to pay for e-money (①), e-money providers purchase bank certificates of deposit (CDs) to back e-money issuance, thus contributing to banks' wholesale funding (②).

- Complementarity between e-money providers and banks

Different scenarios for the e-money

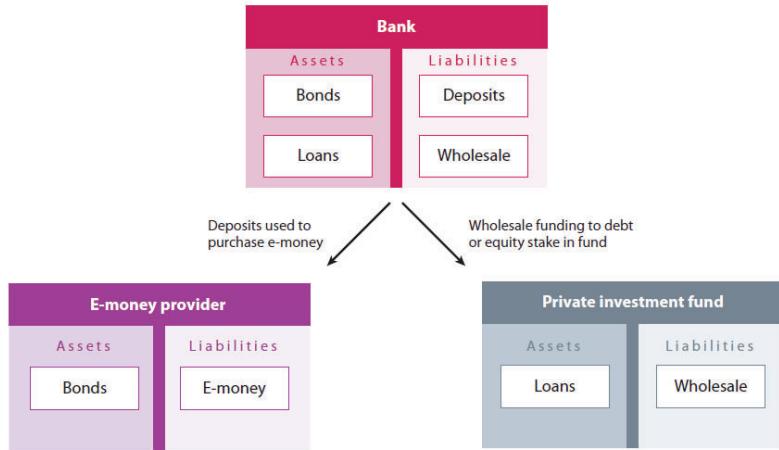
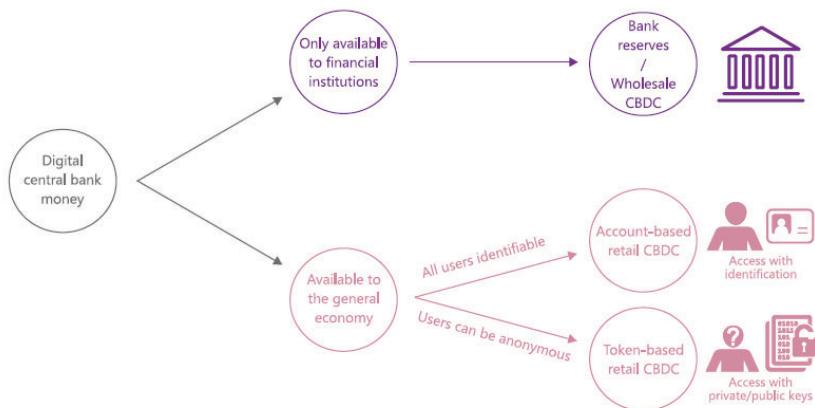


Figure 5

One scenario is that deposits held in banks for payment purposes migrate to e-money providers, which end up holding the banks' bonds (left arrow), while remaining bank funding (wholesale funds in the figure) are channeled to private investment funds (right arrow).

- Competition between e-money providers and banks

Forms of CBDC



In today's financial system, digital fiat money is available only to regulated financial institutions, in the form of reserves accounts held by commercial banks at the central bank. Wholesale CBDCs would similarly be restricted to financial institutions. Retail CBDCs in contrast are available to the general economy. Account-based retail CBDCs would be tied to an identification scheme and all users would need to identify themselves. Token-based retail CBDCs would be accessed via password-like digital signatures and could be accessed anonymously.

Source: BIS elaboration.

- What happens to banks if CBs provide retail CBDC?
- What are the benefits of providing retail CBDC?

Store-of-value properties of cash, CBDCs and bank deposits

Table III.2

	Cash	CBDCs		Commercial bank sight deposits (current accounts)
		Token-based	Account-based	
Claim structure	Claim on central bank	Claim on central bank		Claim on a bank
Risks	Loss, theft & fraud	Loss, theft, fraud & cyber risk	Fraud & cyber risk, illiquidity & insolvency	
Backstop	Full	Full	Full	Deposit insurance (up to a limit and often with a lag for payout)
Are holdings anonymous?	Yes	Yes	No	No
Interest rate remuneration	No	Can be set by central bank ¹		Set by banks, market-based
Interest rate tiering depending on household-specific holdings	No	No	Yes	Set by banks
Caps on holdings per household possible?	No, as holdings are anonymous. However, safety and practical limits lead to de facto limits on holdings	No, as holdings are anonymous	Yes	Generally no caps or limits

¹ Not for offline use tokens.

Source: BIS.