Dataset on the currency composition of FX reserves

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Any data on the currency composition of foreign exchange reserves?

☐   When researchers seek to understand the dollar's predominance, especially that in FX reserves, they quickly encounter severe data limitations that greatly impede empirical analysis

☐   The IMF's Currency Composition of Official Foreign Exchange Reserves (COFER) data disclose only aggregates for the entire world, advanced economies and emerging market economies, not data on individual economies

The use of the data on the currency composition of foreign exchange reserves had been limited

◻ Heller and Knight (1978), Dooley et al (1989), and Eichengreen and Mathieson (2000) have used individual countries' data from the COFER database (undisclosed)

◻ Others have more recently used limited public data (ie from central banks) on the currency shares (McCauley and Chan (2014), Ito et al (2015) and Gopinath and Stein (2018)

Ito-McCauley dataset on the currency composition of FX reserves

☐ Ito and McCauley (2019, JIMF) collect data from central banks' annual reports, financial statements, and other publicly available information on reserves management

☐ and construct a dataset for 58 economies in the 1999-2018 period

☐ Chinn, Ito, and McCauley (2021) update the dataset and expand country coverage. The new dataset contains the shares of USD, EUR, JPY, and GBP for 75 countries in 1999 through 2020

☐ This dataset allows us to observe the development of reserve management over time for individual economies. It also includes the data for the United States and the euro-area countries

Country list (75 economies, 28 AEs)

Asia & Pacific (13):   Australia[AE], Bangladesh[EME], Brunei, China[EME], Hong Kong, China[AE], India[EME], Indonesia[EME], Korea, Rep.[AE], New Zealand[AE], Papua New Guinea, Philippines[EME], Sri Lanka, Taiwan, China[AE]

Western Europe (16):   Belgium[AE], Estonia[AE], Euro Area[AE], Finland[AE], France[AE], Germany[AE], Iceland[AE], Italy[AE], Luxembourg[AE], Netherlands[AE], Norway[AE], Spain[AE], Sweden[AE], Switzerland[AE], United Kingdom[AE]

Eastern Europe and Central Asia (20): Azerbaijan, Bosnia and Herzegovina, Bulgaria[EME], Croatia, Czech Republic[AE], Georgia, Kazakhstan, Kyrgyz Republic, Latvia[AE], Lithuania[AE], Moldova, North Macedonia, Poland[EME], Romania[EME], Russian Federation[EME], Serbia, Slovenia[AE], Tajikistan, Turkey[EME], Ukraine[EME]

West Hemisphere (14):   Argentina[EME], Bolivia, Brazil[EME], Canada[AE], Chile[EME], Colombia[EME], Costa Rica, Ecuador, Mexico[EME], Paraguay, Peru[EME], United States[AE], Uruguay, Venezuela, RB[EME]

Africa and Middle East (12):   Ghana, Israel[AE], Kenya, Malawi, Mozambique, Namibia, Nigeria, South Africa[EME], Tanzania, Tunisia, Uganda, Zambia

Notes: "AE" stands for "advanced economies" whereas "EME" stands for emerging market economies. The definitions are based on the IMF categorisation.

How to compile the dataset?

❑ Read central banks' annual reports, financial statements, and other publicly available information on reserves management

❑ Focus on descriptions on FX reserve management; CB's financial statements; and/or currency composition of the net asset positions in CB's balance sheets

❑ Exclude information on gold holdings and Special Drawing Rights (SDR)

❑ Check whether the constructed data make sense

❑ For LATAM, we collaborate with FLAR (a regional safety nets organization)

Coverage of the Ito-McCauley dataset on currency shares in FX reserves in percent

Country coverage In terms of:	As a share of the world	Excluding the key currency issuers*	Excluding key currency issuers and China
World GDP	82.0	74.4	64.3
World FX reserves	69.4	64.6	51.1

Note: *The key currency issuers refer to the United States, the euro area, and Japan.

Comparison to the Iancu, et al. (2020) dataset

☐ Iancu, et al. (2020) introduced the dataset on the currency composition of FX reserves

☐ Their dataset contains the shares of USD, EUR, JPY, and GBP for 51 countries in 1999 through 2018

Comparison to the Iancu , et al. (2020) dataset

☐ Their currency share data is based on the currency shares in ("gross") assets

➢ Ito-McCauley use the currency composition of net asset positions

☐ Ito-McCauley try to capture the currency composition of FX exposure wherever possible

➢ Ito-McCauley take into account of off-balance sheet FX forward wherever possible:

e.g. Sweden sells $ forward against Norwegian kroner, that in effect turns US Treasury securities into synthetic Norwegian kroner securities

What is Riksbank's FX currency composition?

Iancu et al: $, 53%; €, 35%?

Ito & McCauley: $ 10%; €, 51%?

Chart 13 Composition of the foreign currency reserve at the end of 2017, SEK billion

Chart 14 The Riksbank's foreign currency exposure at the end of 2017, SEK billion
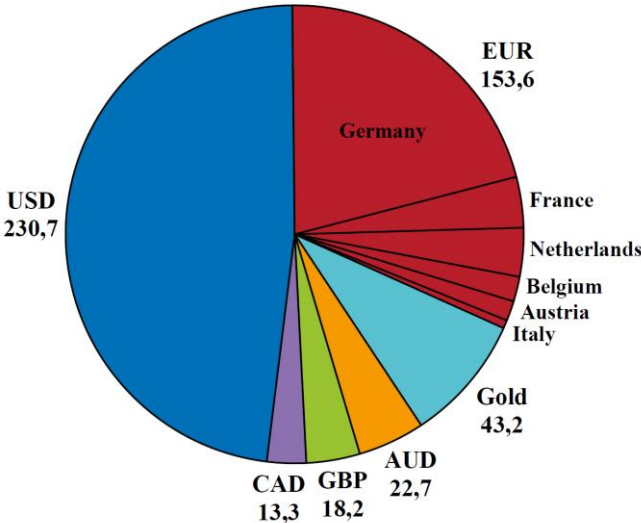
Note: The figures in the chart show the market value of the gold and foreign currency reserve, including accrued interest.
Source: The Riksbank.
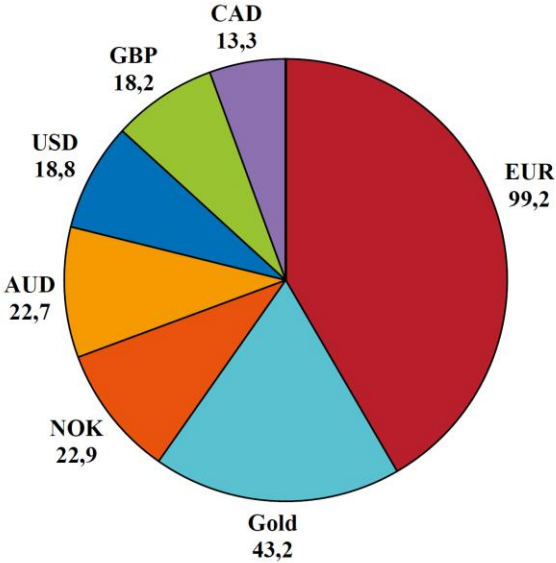
Note: The figures in the chart show the Riksbank's foreign currency exposure including accrued interest. The calculation of foreign currency exposure is based on both assets and liabilities (including currency swaps) and is reported for the Riksbank's net receivables.
Source: The Riksbank.

Aggregate COFER data may not be consistent with individual economies' data

❑ The USD share of FX reserves reported in the COFER dataset may be misleading

  ❖ Having the information on the currency composition of FX reserves that incorporates currency forward may be an ideal

  ❖ e.g., Swedish case

  ❖ e.g., China? (54% USD in 2014)

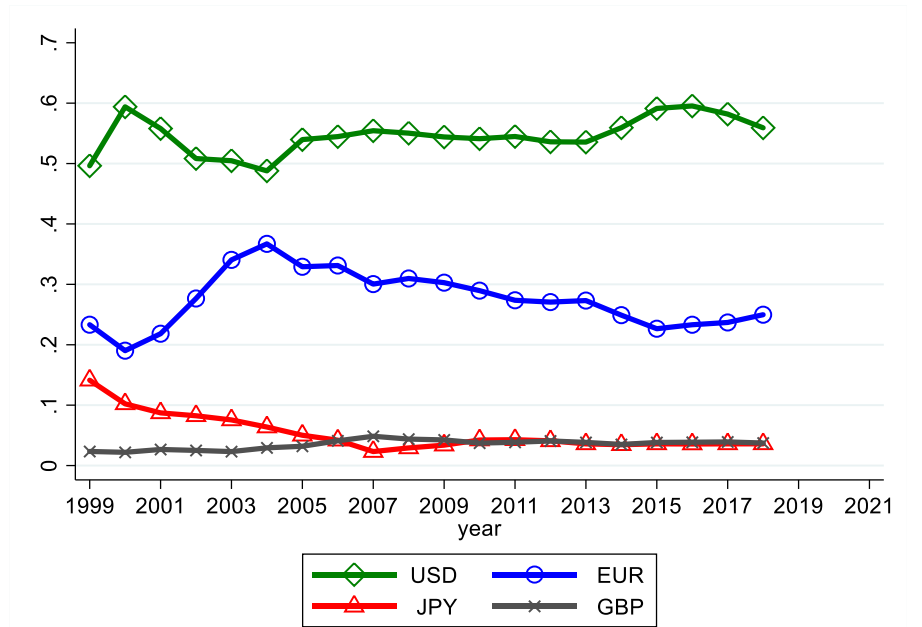❑ Just focusing on the currency composition in the 'gross' assets may not be appropriate
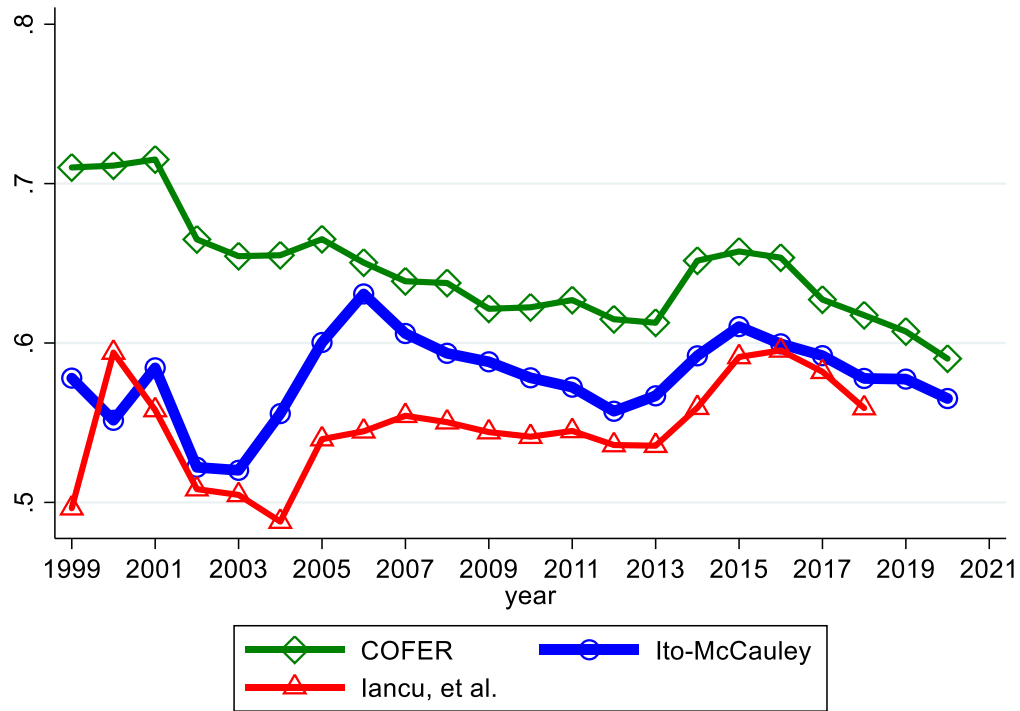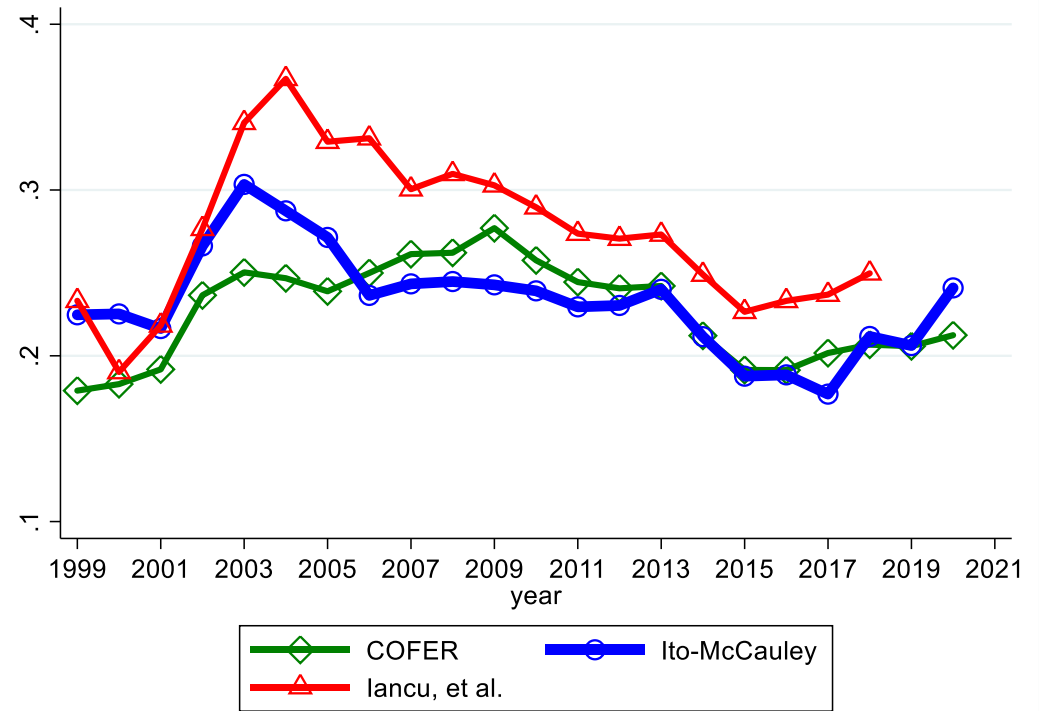
Ito-McCauley
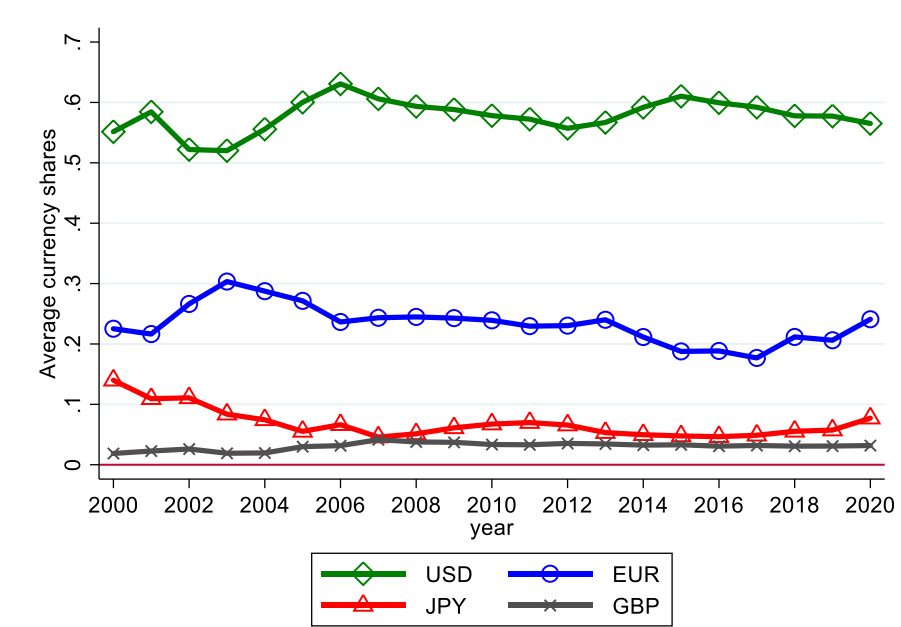
IMF COFER
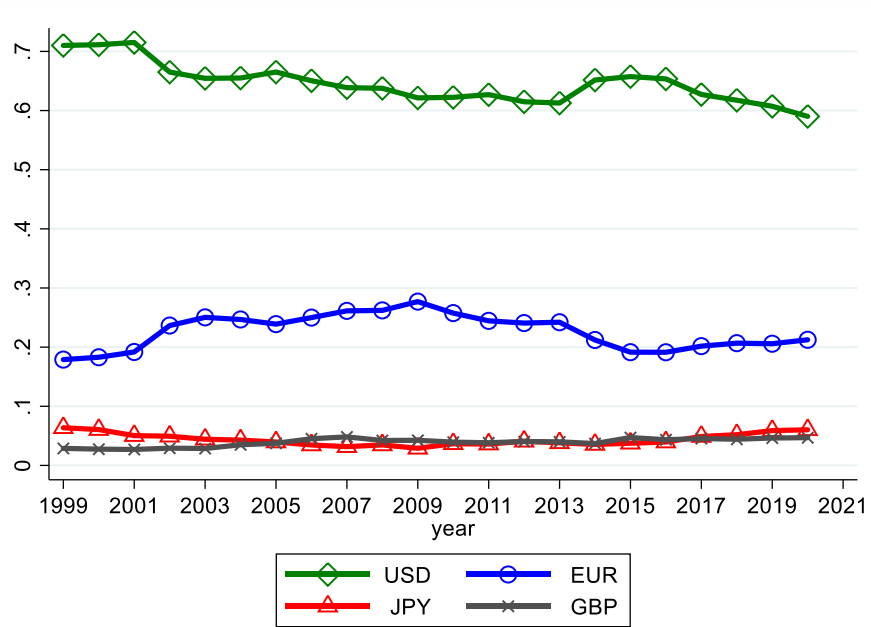
Iancu, et al.

COFER vs. Chinn-Ito-McCauley vs. Iancu, et al.
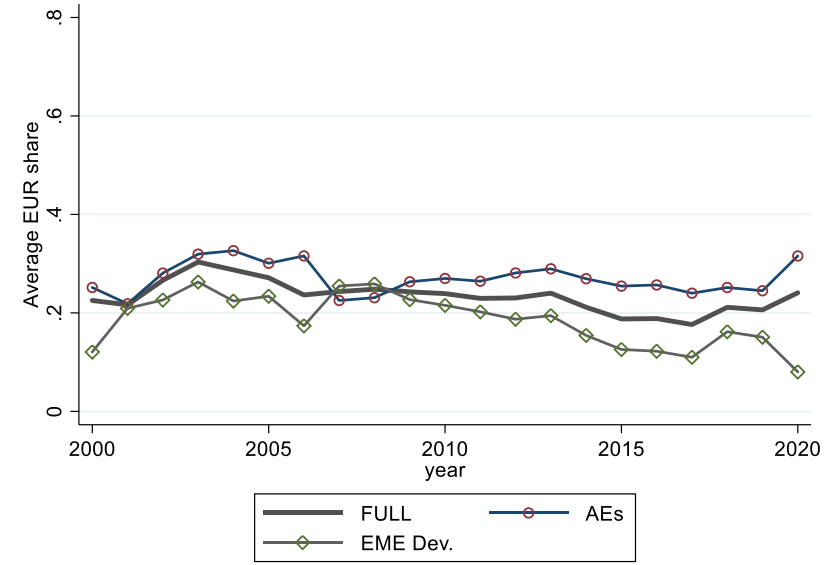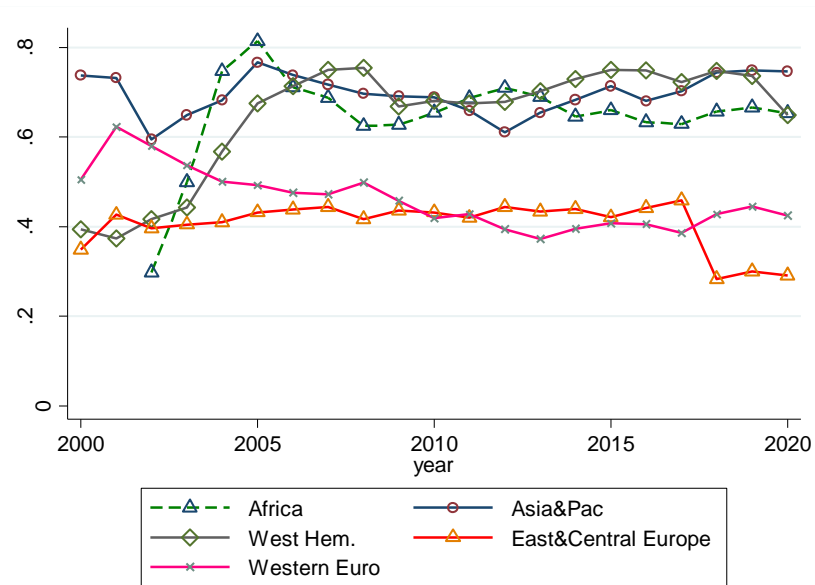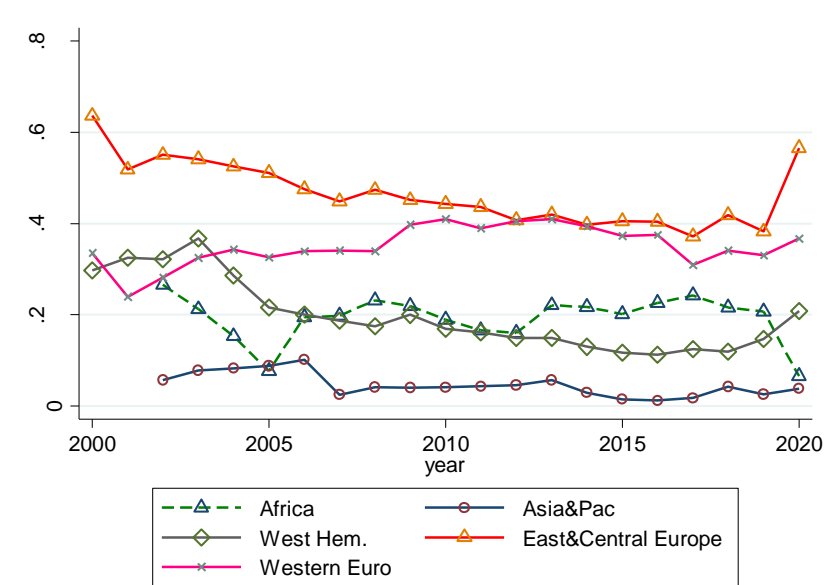

USD share

EUR share

USD share by income groups
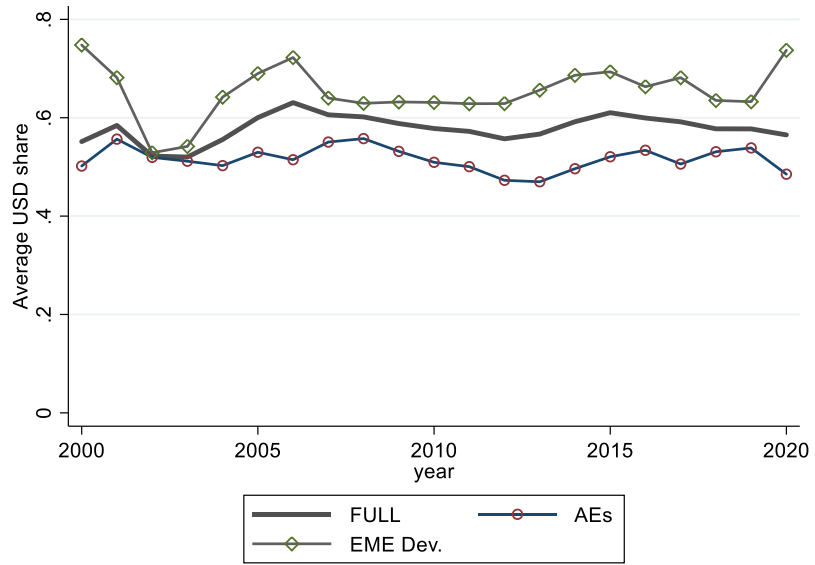
EUR share by income groups

USD share by region

EUR share by region

3 Takeaways for the IM dataset

1. The data on the currency composition of FX reserves disaggregated to individual central banks was rare (COFER = aggregates)
2. The IM-currency composition dataset is the most comprehensive
3. Aggregate data, esp. while focusing on gross assets can be misleading. Focusing on the currency composition of FX *exposure* may make more sense

Thank you!

Any questions?