Why is the Euro Punching Below its Weight?

ETHAN ILZETZKI, LONDON SCHOOL OF ECONOMICS
CARMEN M. REINHART, HARVARD UNIVERSITY
KENNETH S. ROGOFF, HARVARD UNIVERSITY

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Some observations

- The euro is the world's second most important international currency…its creation consolidated the French franc and DM currency areas
- But is **a *far*** second to the dollar by a broad variety of measures
- Furthermore, after a promising start in its early years, it has lost ground in the global economy
- We document these facts and delve into its plausible causes

Roadmap

The international role of the Euro as an anchor currency: Various metrics

- IIR exchange rate regimes
- The geography of exchange rate regimes
- Central bank reserves
- The denomination of EM external debt

Why is the euro punching below its weight

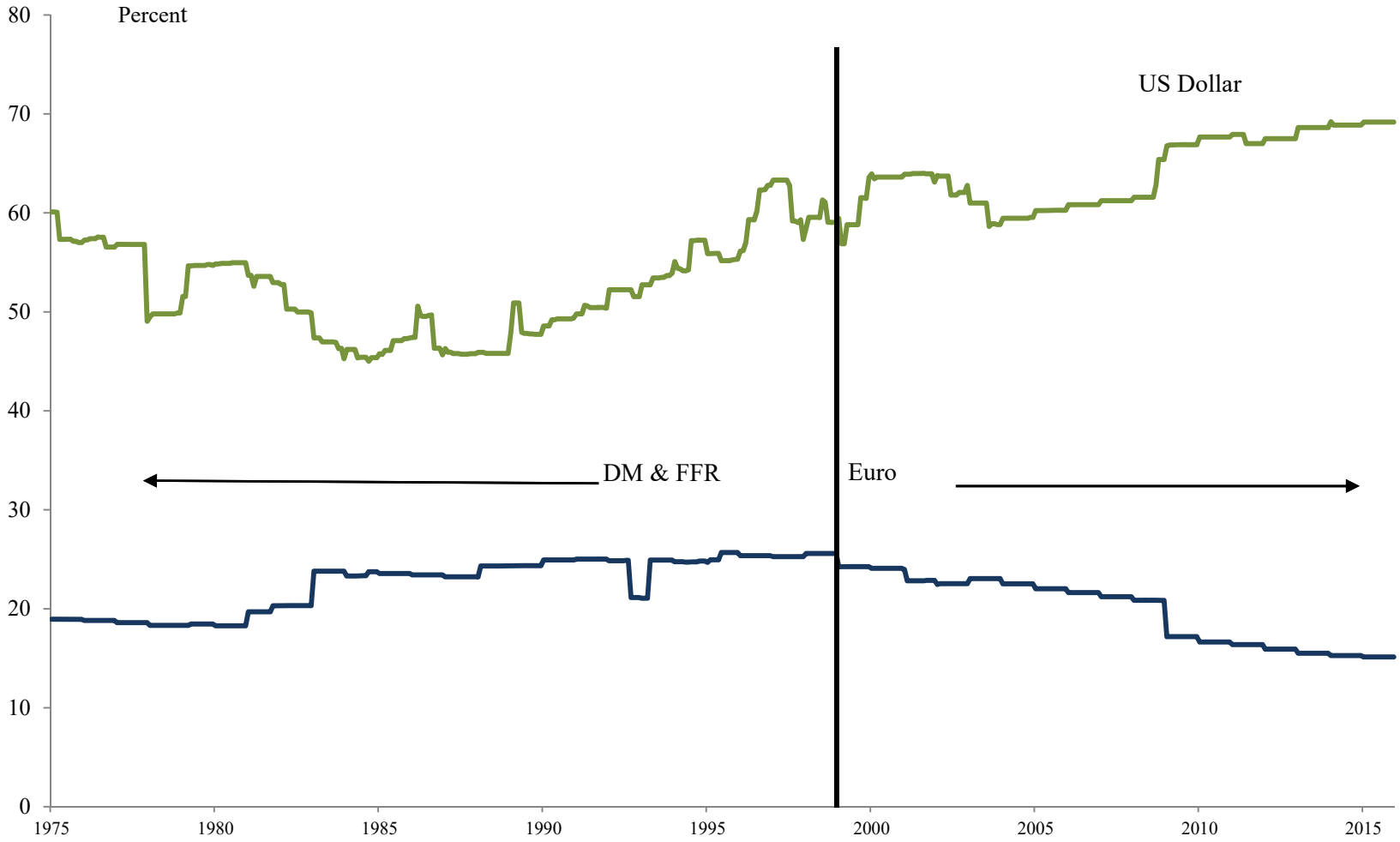
- Illiquid euro debt markets
- The role of official institutions
- Post-crisis financial regulation
- The crisis and the "emergence" of a European periphery (evidence from ECB monetary policy)
- EZ's relative decline

Further research

- Measuring the liquidity of debt markets
- De facto versus dejure capital controls
- China's global footprint and its implications

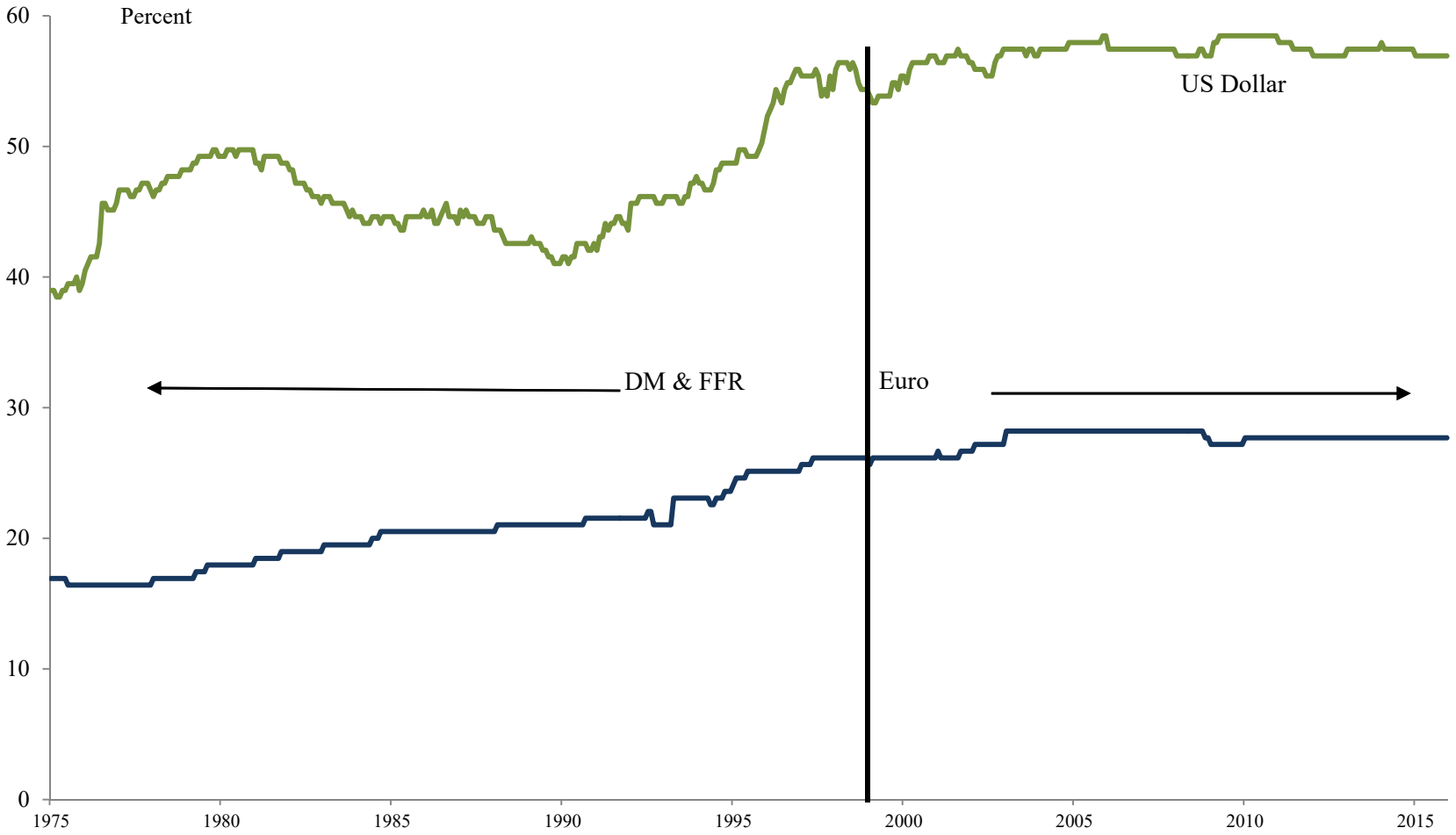
The International Role of the Euro

Dollar and Euro as Anchor Currencies



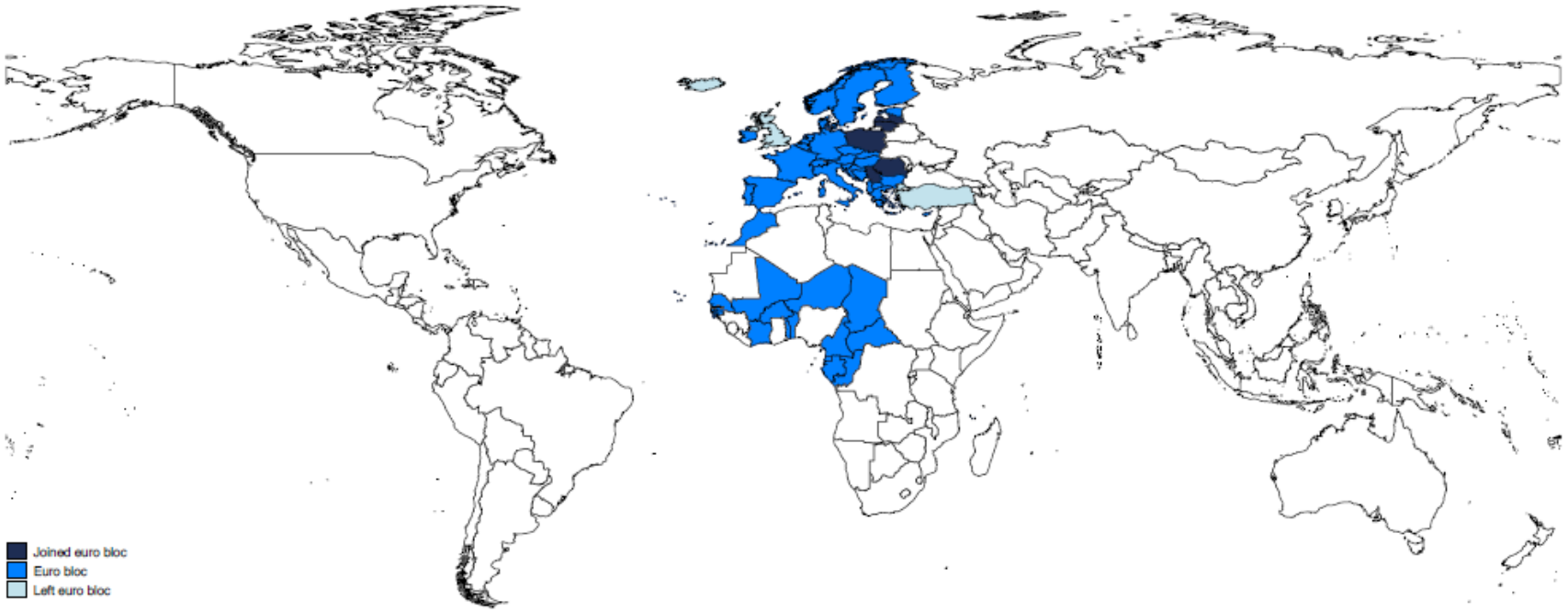
Share of countries anchored to the dollar and euro by their **share in world GDP**, 1975-2015

Dollar and Euro as Anchor Currencies

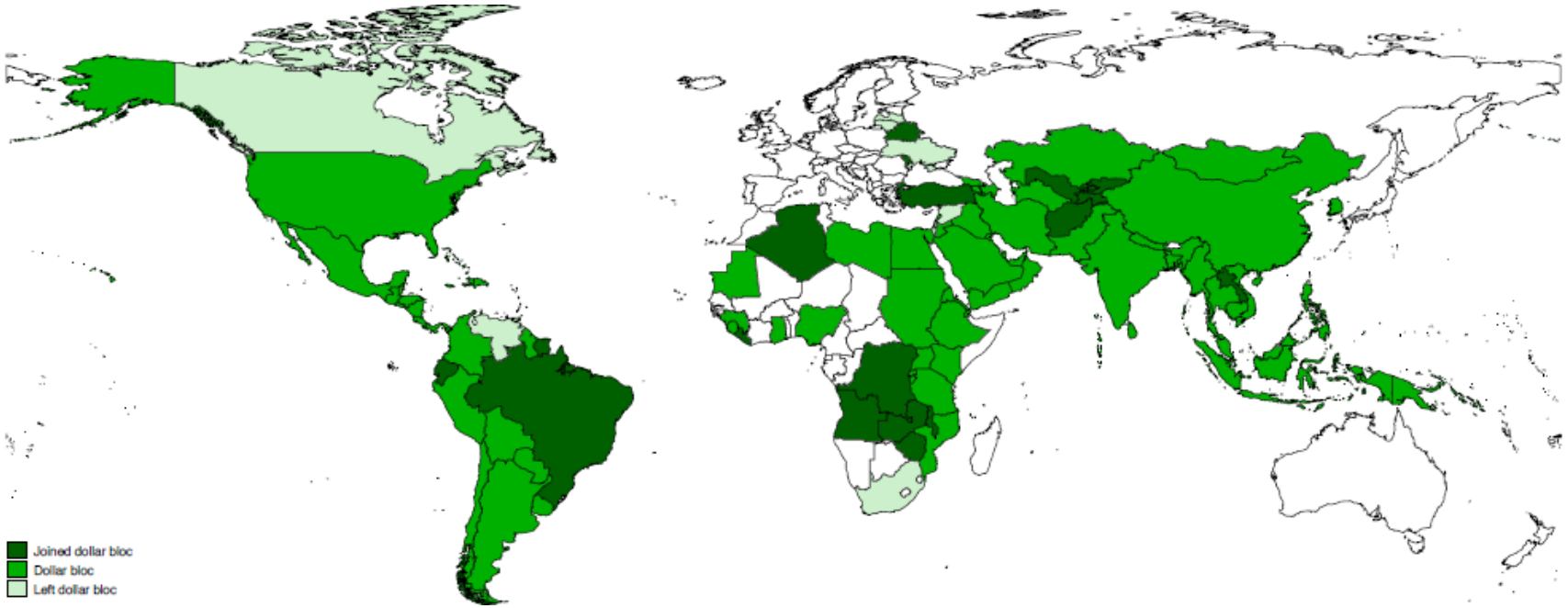


Note: Share of countries anchored to the dollar and euro, 1975-2015

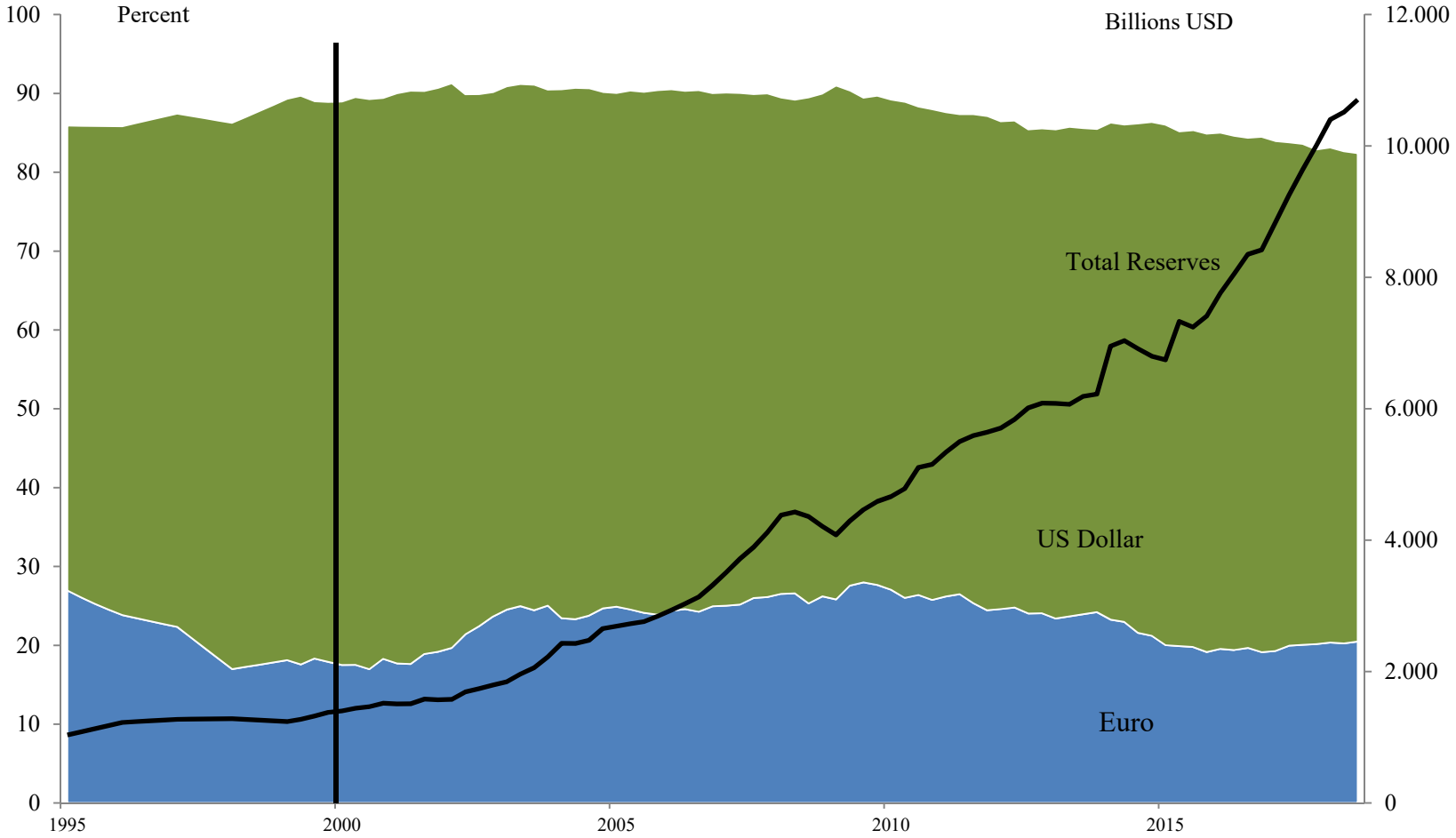
Countries with Euro Anchor



Countries with Dollar Anchor

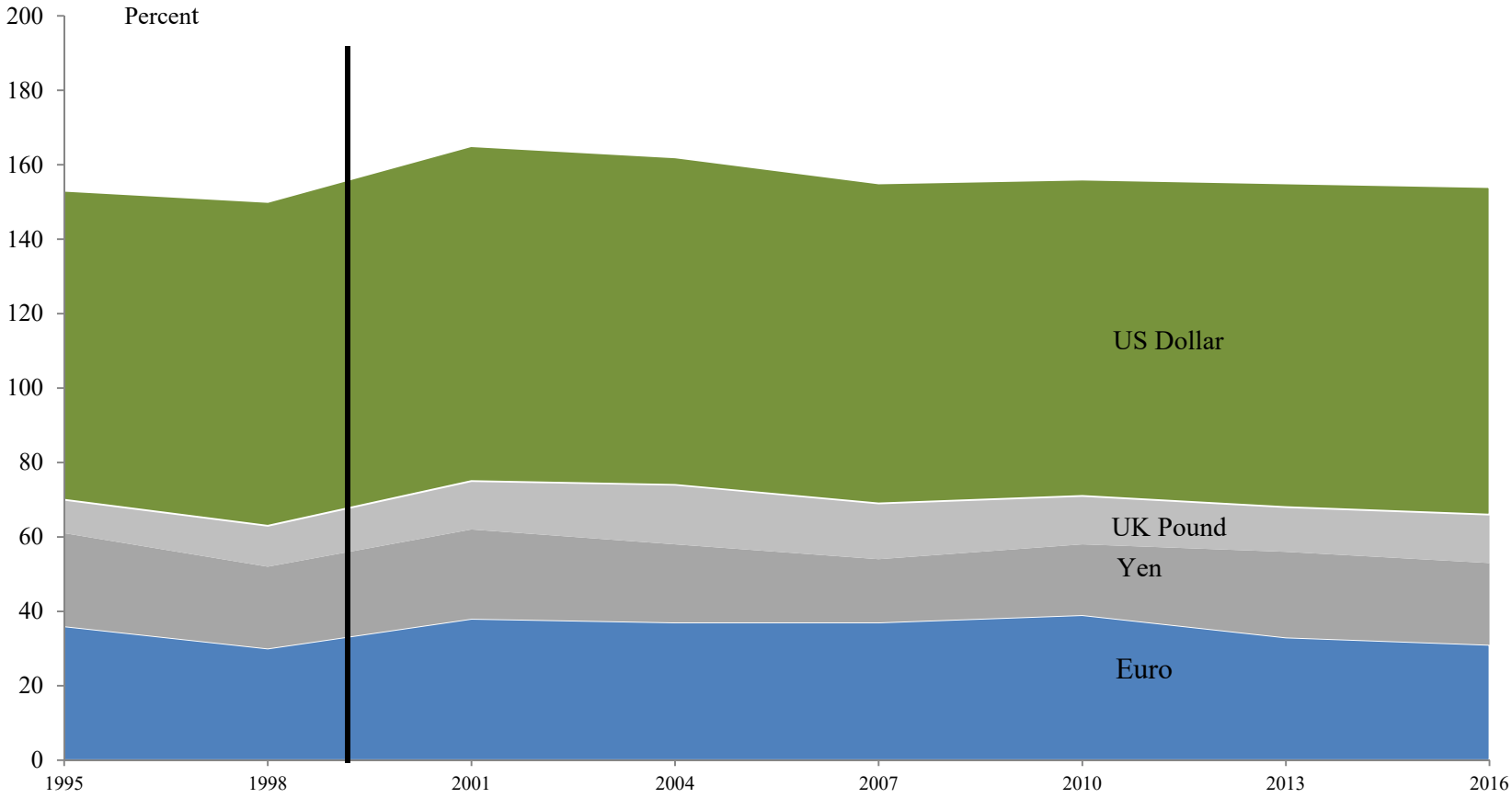


Currency Composition of Central Bank Reserves: Dollar and Euro



Note: Allocated central bank reserves denominated in euro (bottom, blue) and dollar (top, green), 1995-2018.(Both left-hand axis.) The line (right-hand axis) shows total world central bank allocated reserves in billions of US dollars. The vertical line shows the date of euro adoption.

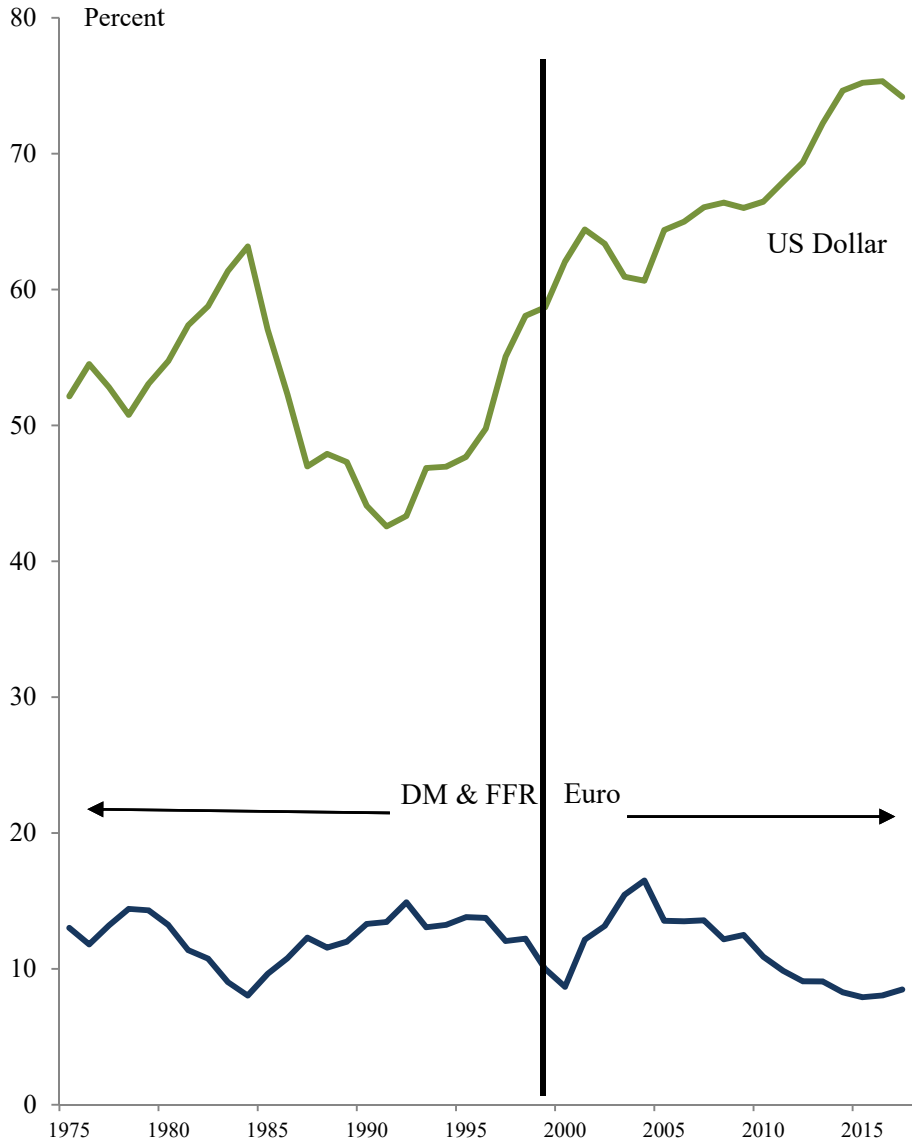
Foreign Exchange Turnover: Shares of Major Currencies



Note: Share of foreign exchange transactions in which each of presented currencies was one side of the transaction, 1995-2016.

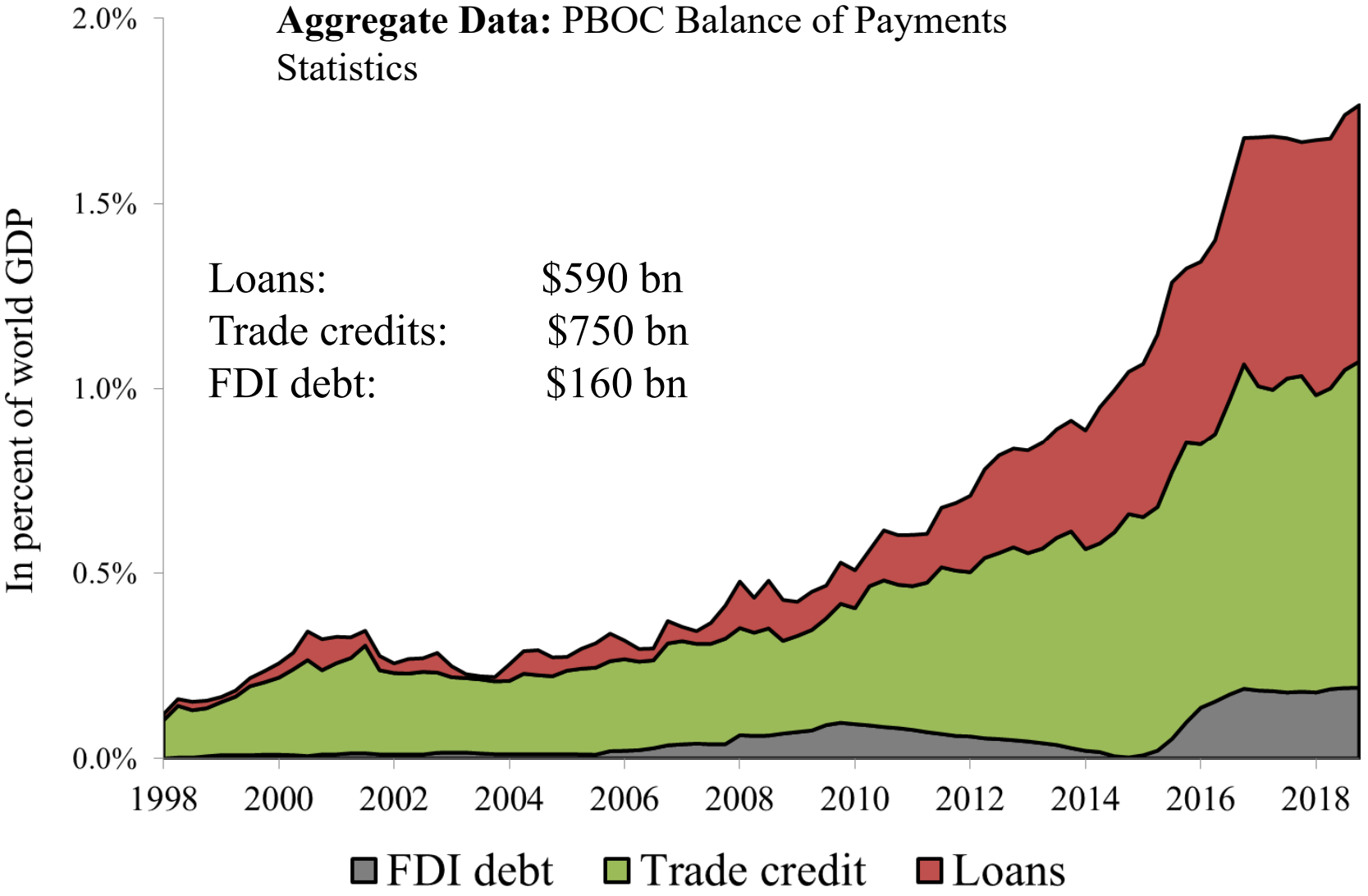
Borrowing in Euros and Dollars: Developing Country External Debt

Not just what you see but what you don't see…



The preceding chart (based on official World Bank data) seriously underestimates developing country exposure to US dollar debt. "Hidden Debts to China" are **almost exclusively dollar-denominated** (see Horn, Reinhart, and Trebesch, 2019). According to their estimates, the World Bank data incorporates about ½ of actual Chinese lending to EMs and developing countries--further widening the existing Euro-dollar gap in the past two decades.

China: Overseas lending boom, 1998-2018

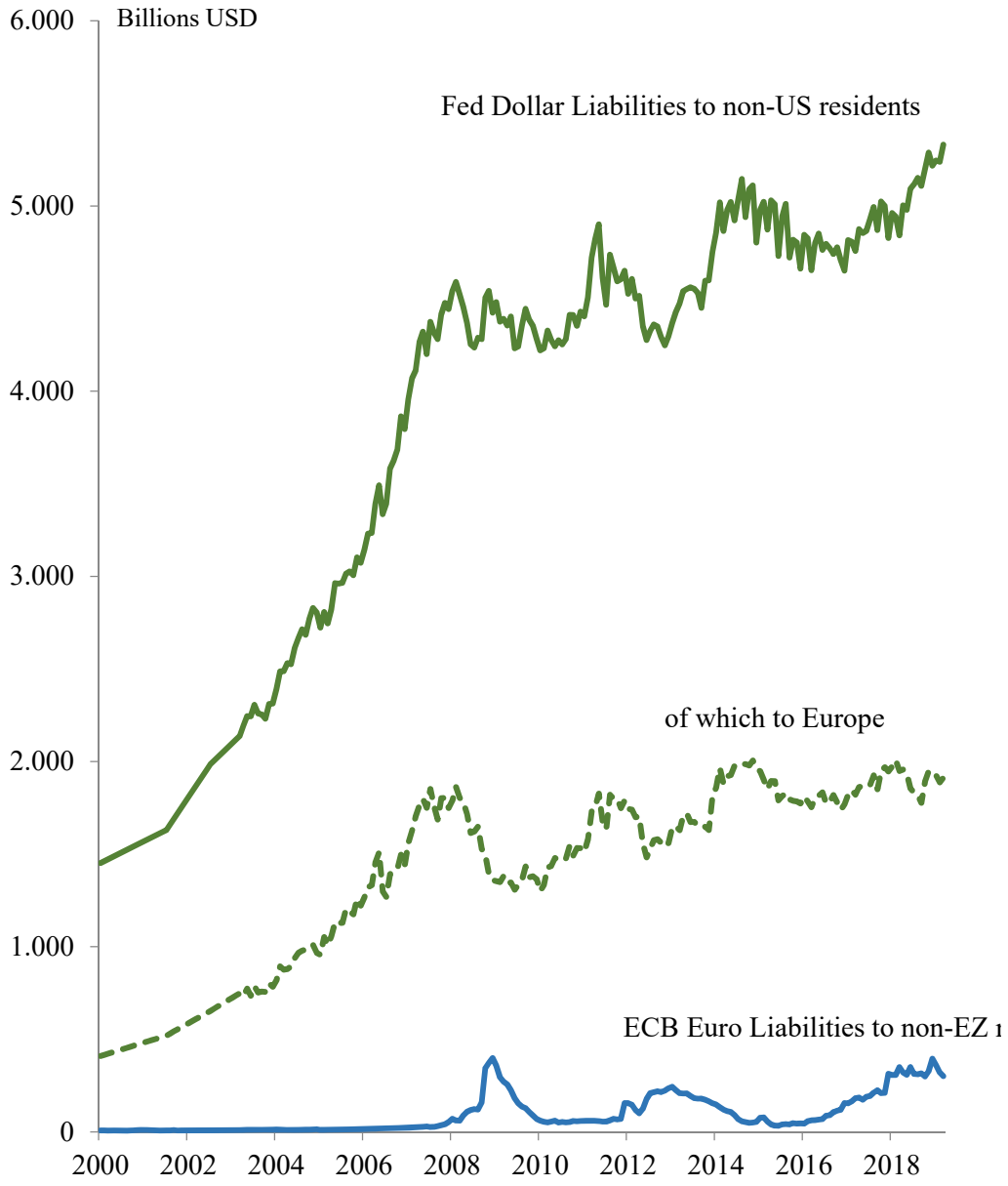


Source: Horn, Reinhart, and Trebesch (2019)

Why is the Euro Punching Below its Weight?

The role of increasingly illiquid debt markets

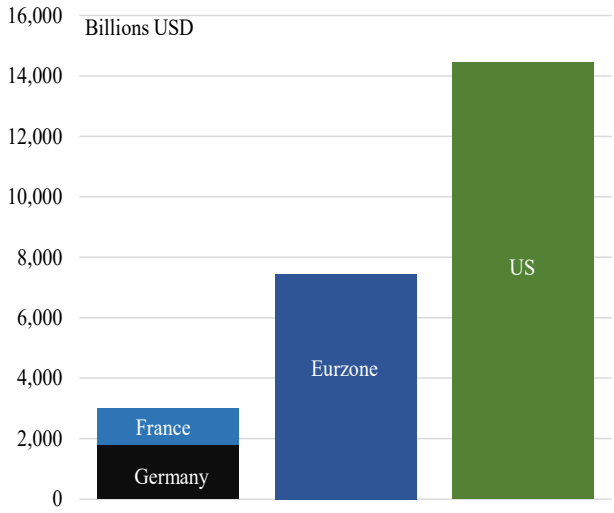
Global Demand for Dollar and Euro Liquidity

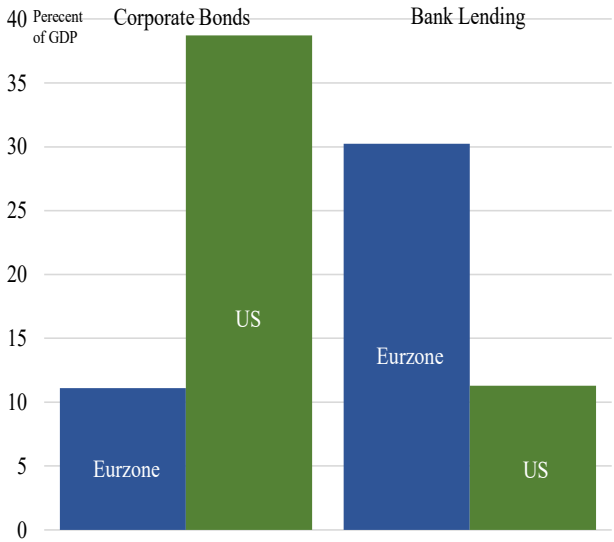


Bank dominance and bond "scarcity": Marketable Debt Outstanding, 2018

The top panel shows the marketable central government outstanding in billions of US dollars in 2018 for France and Germany, all Eurozone countries (including France and Germany) and the US.

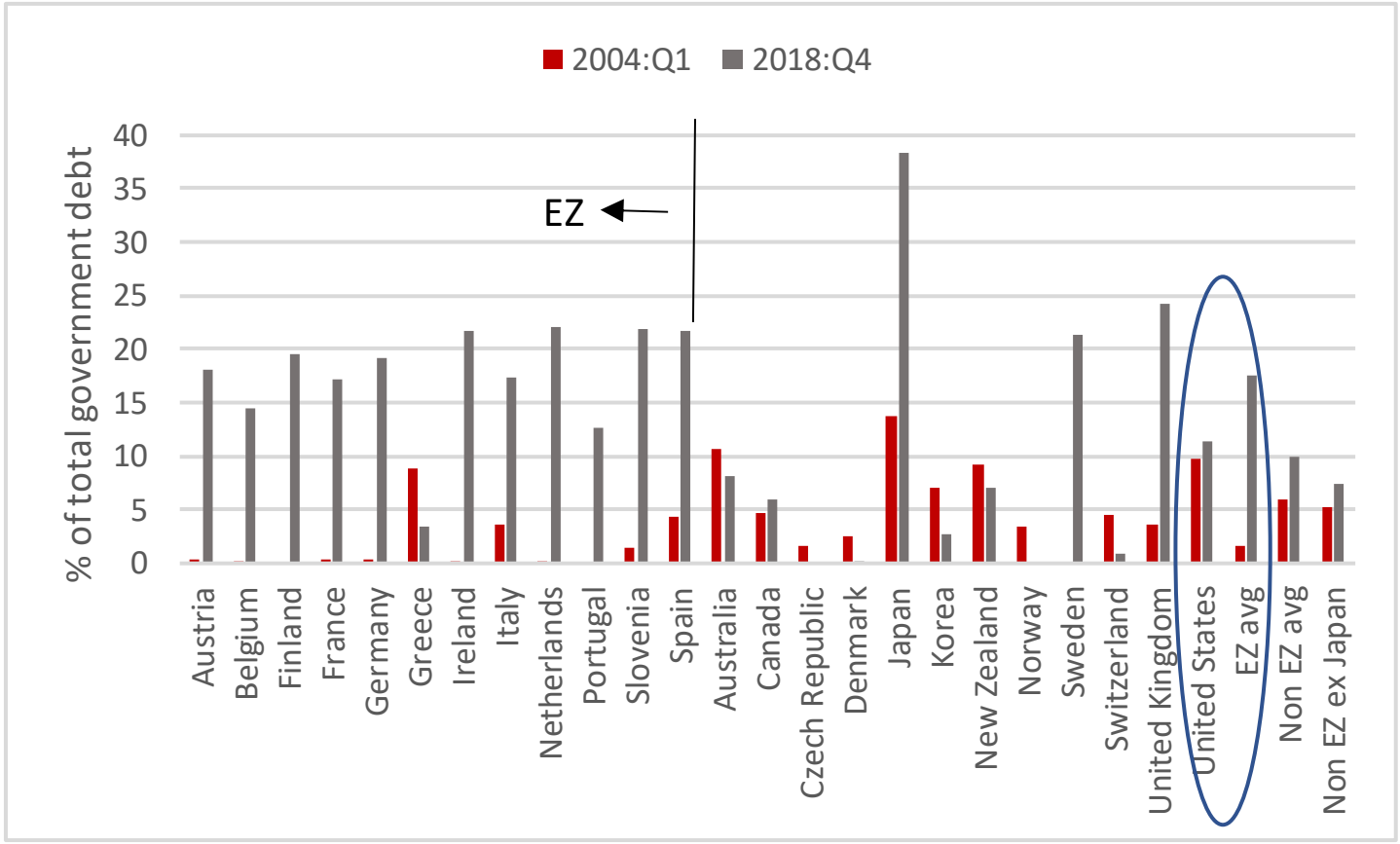
The bottom panel plots corporate bonds outstanding and total corporate bank lending as a percent of GDP in the Eurozone and the US.





The post-crisis shift in EZ monetary policy (more to follow) has also contributed to the illiquidity of local bond markets…

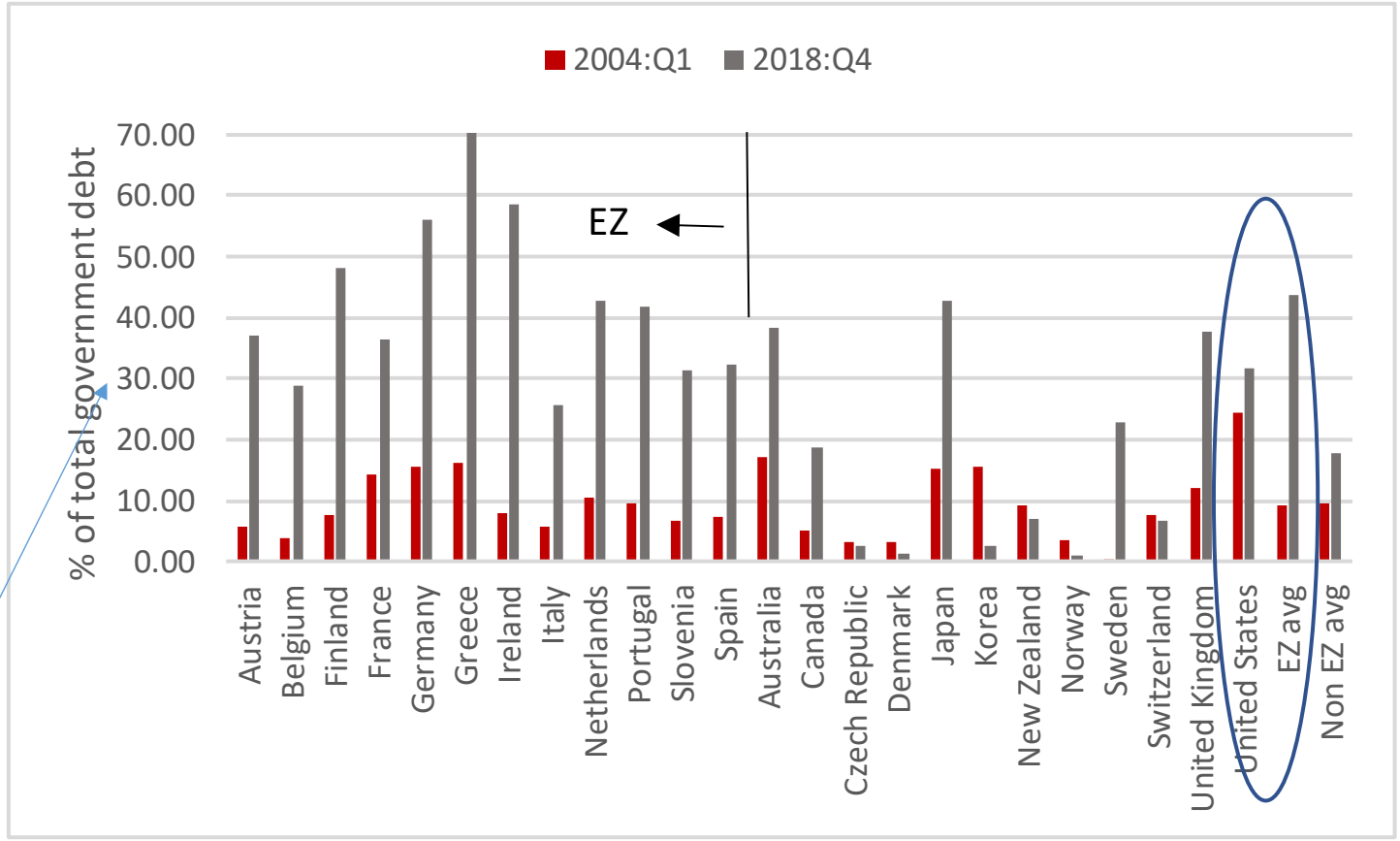
Domestic Central Bank Holdings as a Percent of Total Public Debt
Select Advanced Economies: 2004 versus 2018



Sources: Authors' calculations based on Arsnalalp and Tsuda (2014 and 2019).

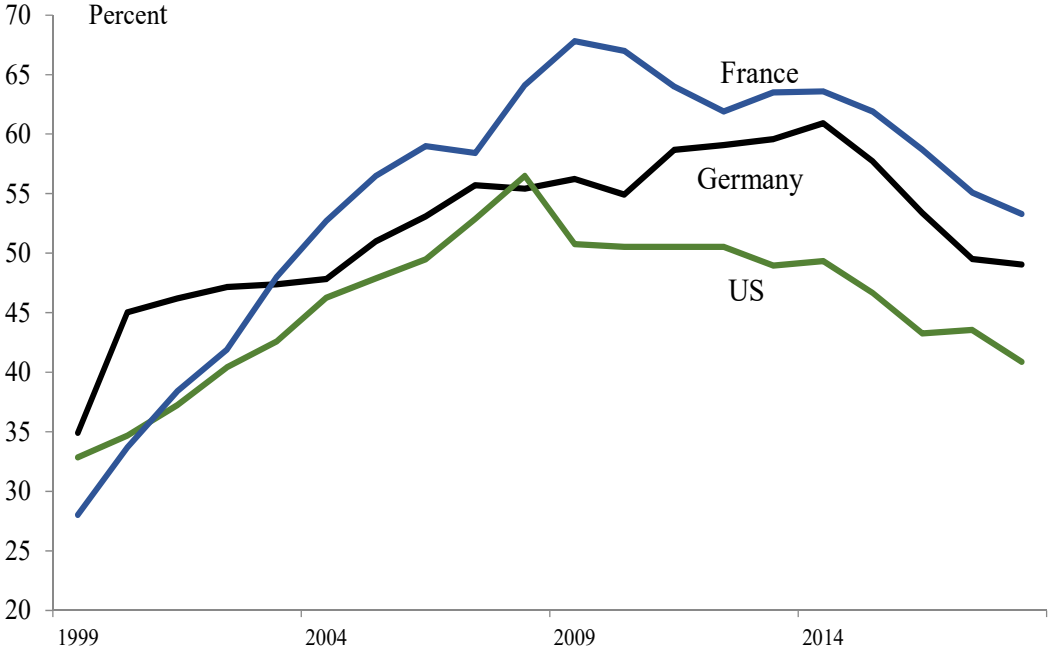
Other official institutions European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM) also purchased Greek, Cypriot, Irish, Spanish, and Portuguese debt—shifting debt holdings into official hands and further reducing bond market liquidity.

Official Holdings as a Percent of Total Public Debt
Select Advanced Economies: 2004 versus 2018



Note scale

Sources: Authors' calculations based on Arsnalalp and Tsuda (2014 and 2019).

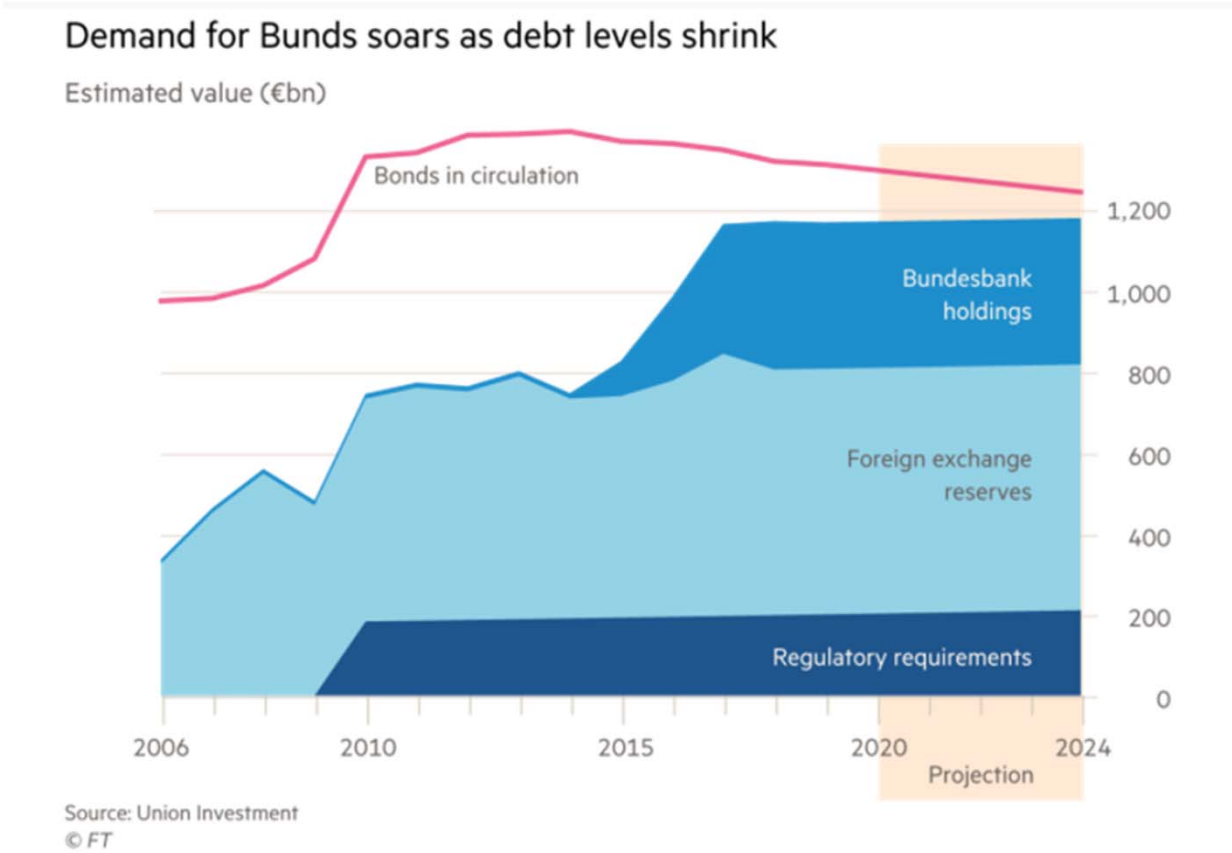


Percent share of marketable government that is held by foreign investors (private and official sectors).

Source: Merler and Pisani-Ferry (2012).

Foreign Holdings as a Share of *Marketable* Government Debt

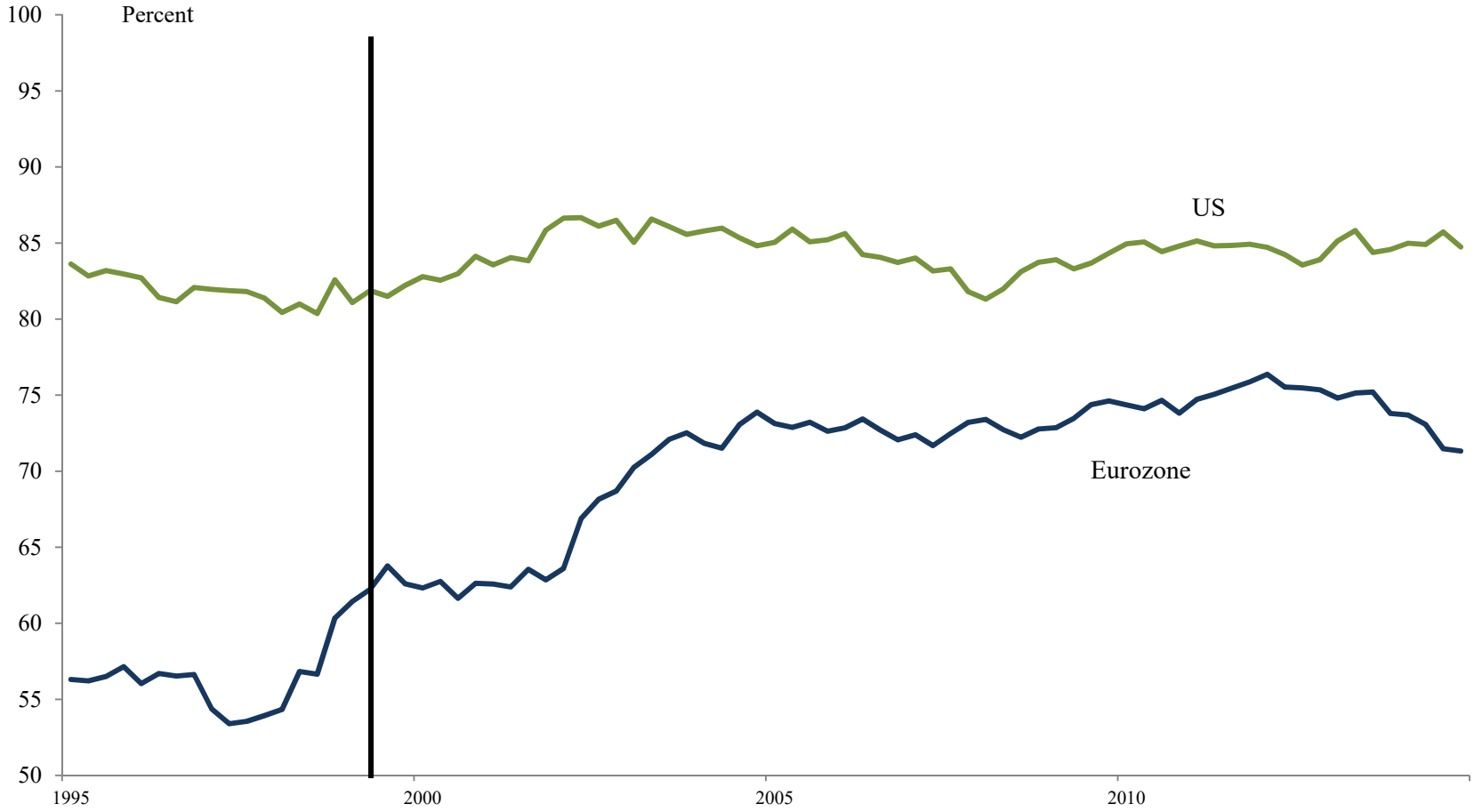
Post-crisis financial regulation (and more broadly financial repression) has meant that institutions are required to hold higher levels of government debt—further impacting market liquidity…



…. the volume of freely tradable Bunds on the market has fallen much more sharply, and is expected to drop below €70bn by 2024 down from more than €600bn a decade earlier. The precipitous drop has been caused by the rise of a class of bondholders typically indifferent to the level of yields. These include foreign reserve managers at central banks, **financial institutions that since the crisis have had to hold ever larger piles of government bonds to meet regulatory requirements, and the German central bank itself. The Bundesbank holds more than €350bn of Bunds as a result of the European Central Bank's quantitative easing programme.**

https://www.ft.com/content/da406fe8-ca8b-11e9-a1f4-3669401ba76f

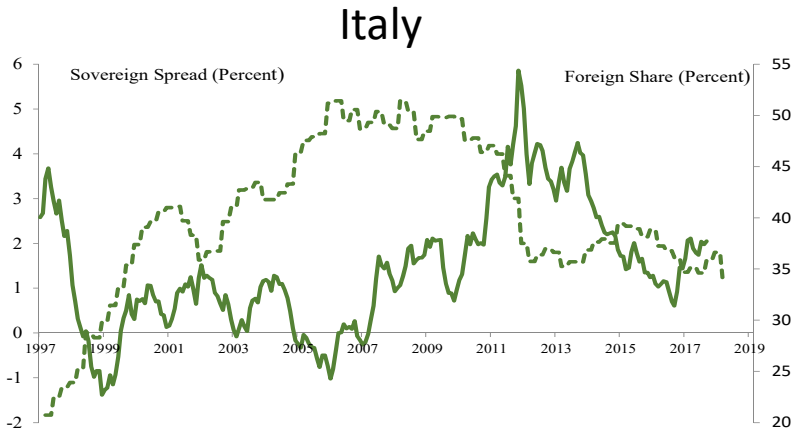
Currency Home Bias in US and Eurozone Bank Holdings

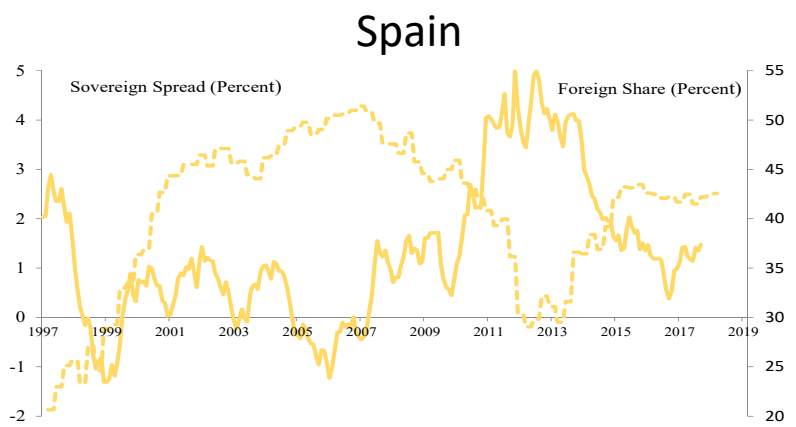


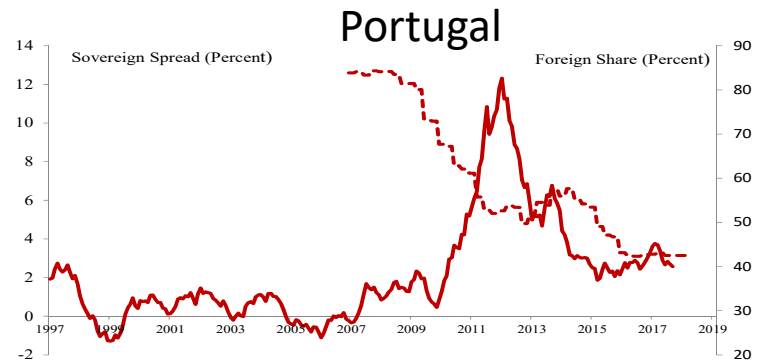
Share US banks' gross foreign assets denominated in dollars (top, green line) and of Eurozone banks gross foreign assets denominated in euro (post 1999) or ECU-lined currencies (pre 1999) (bottom, blue line).

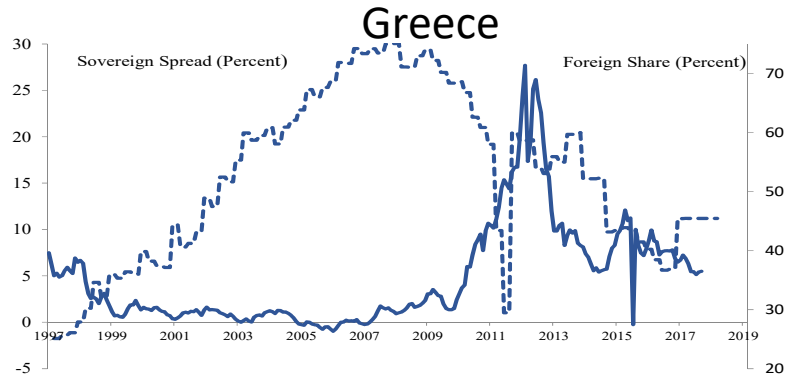
As the next two charts highlight, Eurozone government debt markets became radically fragmented after the crisis.

Sovereign Spreads and Foreign Holdings as a Share of Marketable Government Debt



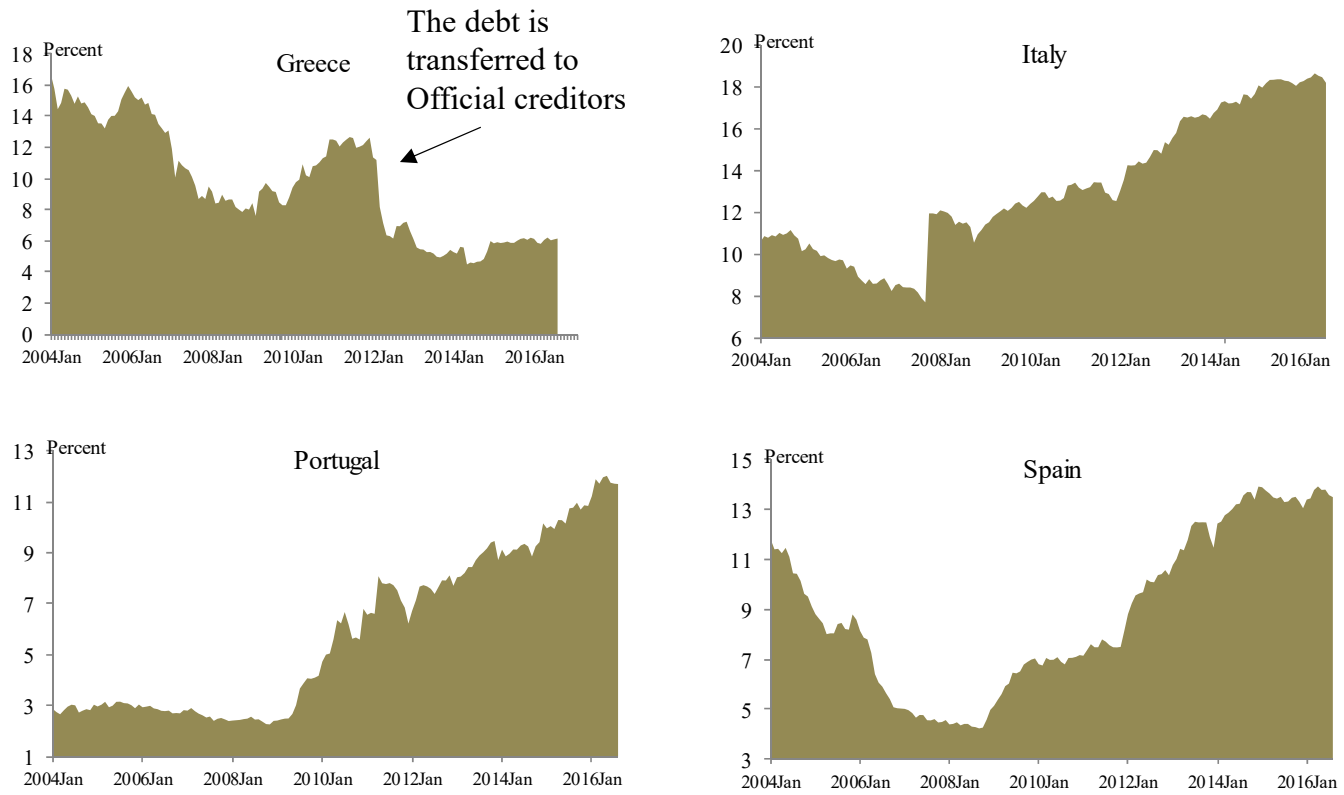






Percent share of marketable government that is held by foreign investors (private and official sectors, dashed lines, right-hand axis) and the spread of the 10-year bond of the country in question over Germany's.

As foreign investors exit post-crisis, the reliance on domestic banks for funding government is greater. Home bias is not exclusively determined by currency denomination; within EZ national borders matter.



Share of domestic government debt in banks' assets.

ECB policy before and after the financial crisis: *I don't think we're in Kansas anymore*

What we do: Estimate Taylor Rules for Eurozone Economies before and after the financial crisis

- ECB's main instrument: policy interest rate(s)
- De jure mandate: target *Eurozone* inflation
- Estimate Taylor rule of the form:

$$i^*_{t,(n)} = \alpha + \beta\pi_{t,n} + \gamma y_{t,n} + \varepsilon_{t,n}$$

- With possible interest rate inertia:

$$i_t = \rho i_{t-1} + (1-\rho) i^*_{t,(n)}$$

- GMM instruments: 6 lags of inflation and output gap
- Recall Taylor principle requires β>1

i: policy interest rate

$\pi_{t,n}$*: inflation in country n in month t*

$y_{t,n}$*: output gap measured as unemployment in country n relative to average unemployment 1992-2007.*

What we do (cont.): Consider a Horse Race Regression

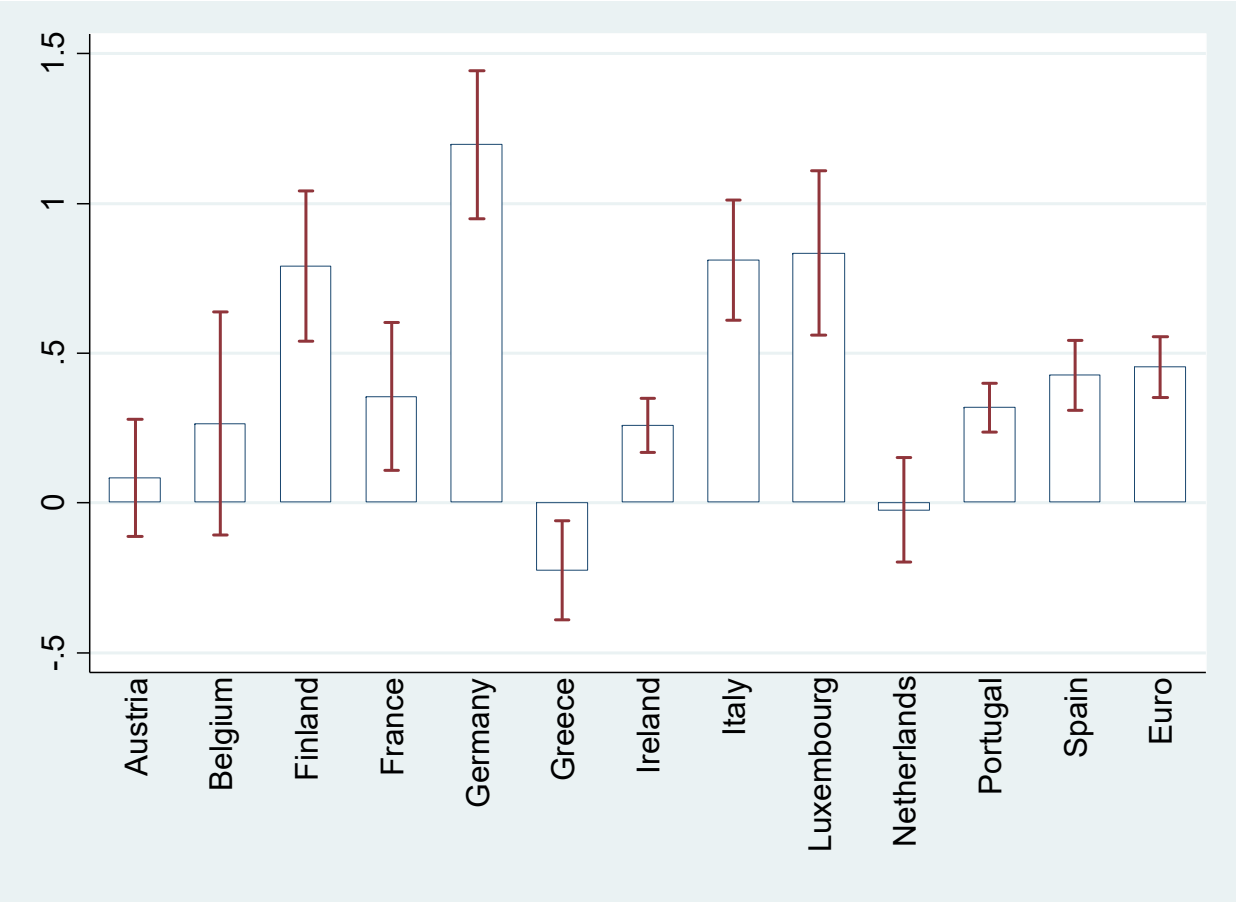
- Test the hypothesis directly: can we reject that ECB is targeting German and not EZ inflation?

$$i_t^* = \alpha + \beta_{DE}\pi_{t,DE} + \gamma_{DE}y_{t,n} + \beta_{EU}\pi_{t,EU} + \gamma_{EU}y_{t,EU} + \varepsilon_{t,n}$$

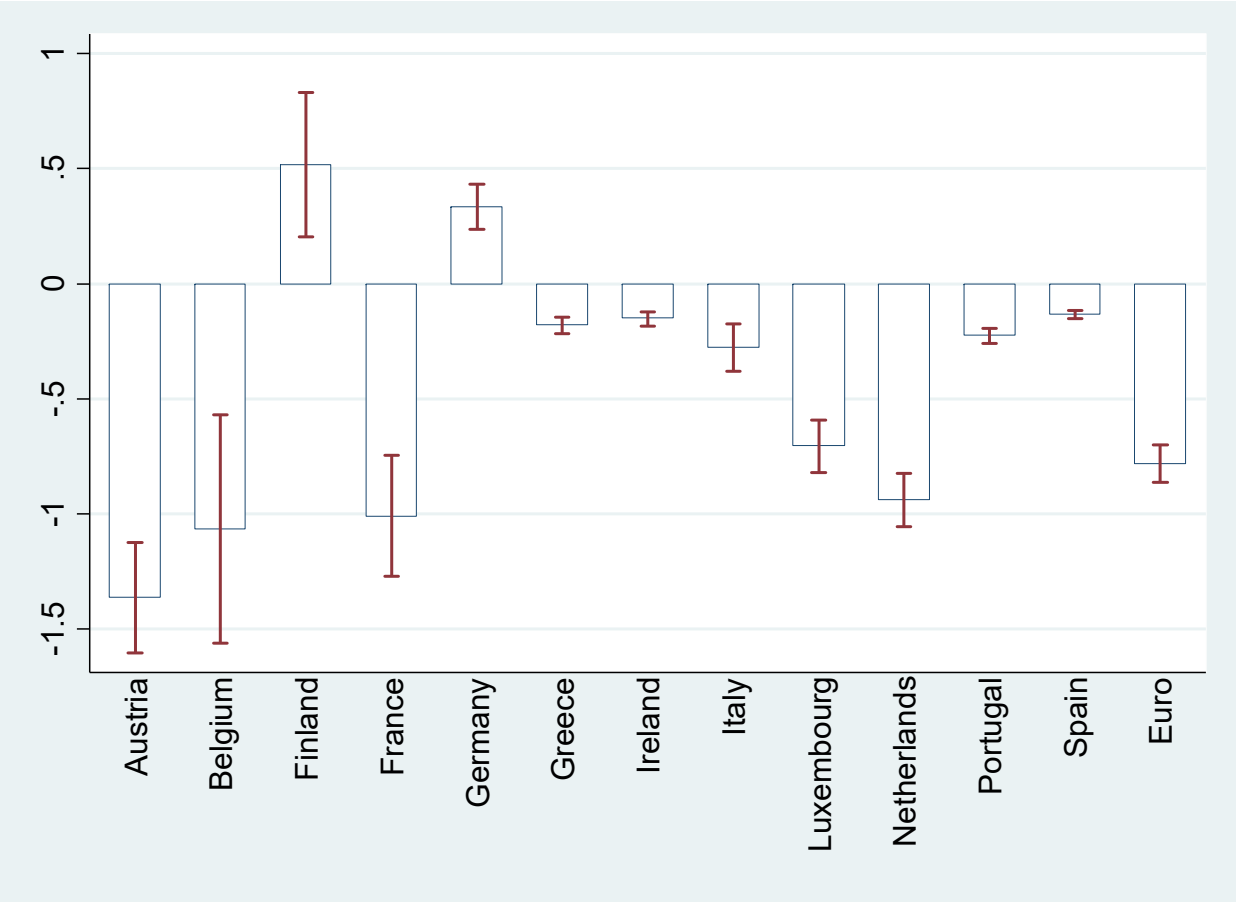
The Euro Anchor: Main takeaways

- We document two phases in ECB policy:
  - "Bundesbank plus": continuity with the EERM.
  - "Whatever it takes": expansive credit policies with potentially new unintended consequences prior discussion).
  - On the ECB's de jure inflation targeting we ask: Whose inflation is targeted?
  - Germany wins the horserace (versus EZ and all others) prior to the crisis.
    - Cannot reject: ECB follows German Taylor principle
    - Reject: ECB follows EZ Taylor principle
    - Reject: ECB puts greater weight on EZ than German inflation
    - Cannot reject: ECB puts *zero* weight on EZ inflation once controlling for German inflation

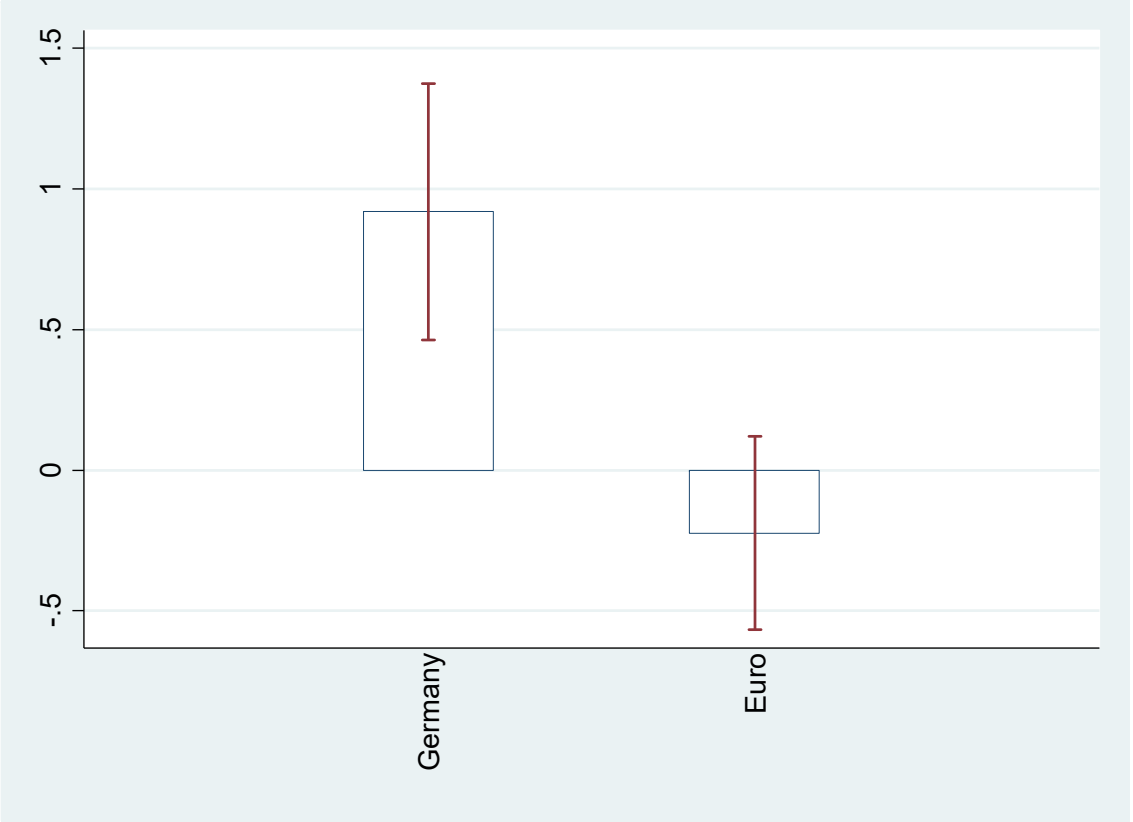
Inflation Coefficients



Output Gap Coefficients



Horse Race Germany and EZ: Inflation Coefficients



We also consider counterfactual Taylor Rules

What would ECB policy look like if it followed a Taylor rule for Germany? Eurozone? Southern Europe?

Calculate the counterfactual Taylor rule for each country, using Taylor's (1993) original values:

- $\beta = 1.5$
- $\gamma = 0.5$

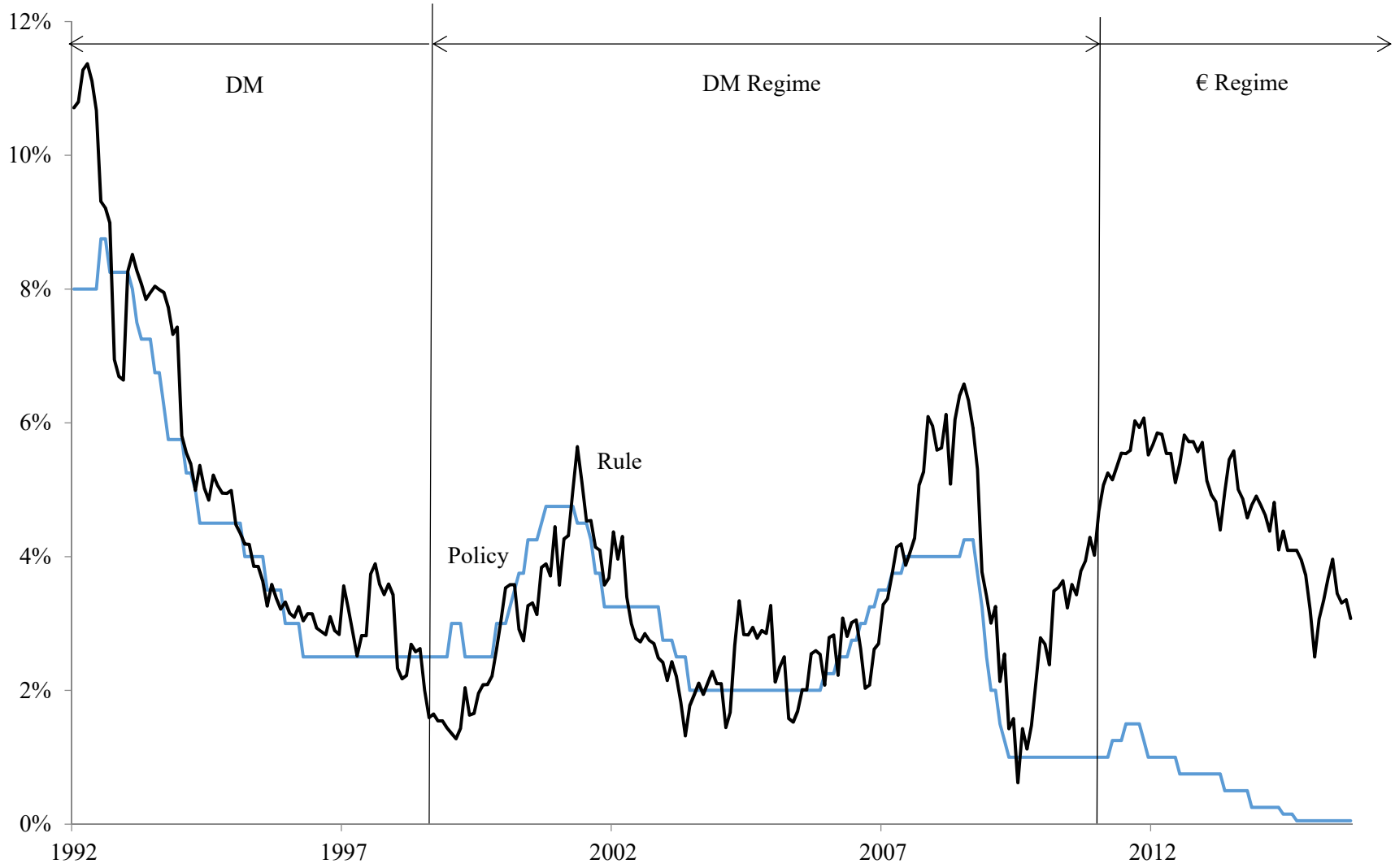
$$i^*_{t,n} = \alpha + \beta\pi_{t,n} + \gamma y_{t,n} + \varepsilon_{t,n}$$

Takeaway: Any resemblance to a Taylor rule for the EZ is of recent vintage

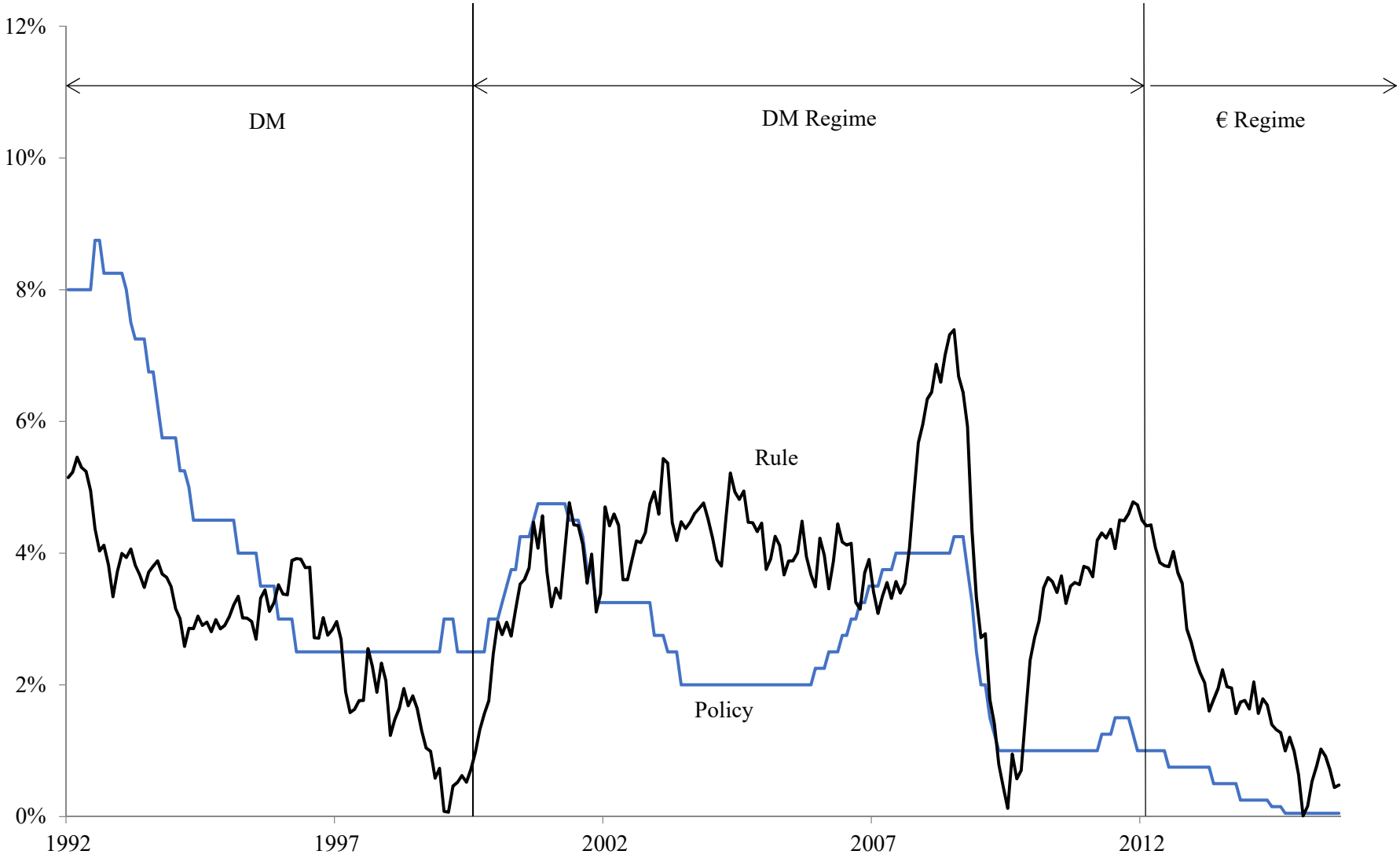
Not surprisingly, in line with the view prior to the crisis in financial markets, ECB policy was not concerned with fragmentation of EZ financial markets or the distinction between core and periphery country debt.

Of more note is that the sustained change in ECB policy did not immediately follow the financial (banking) crisis and that it is only after a debt crisis is underway in much of the south that changes become systematically discernable.

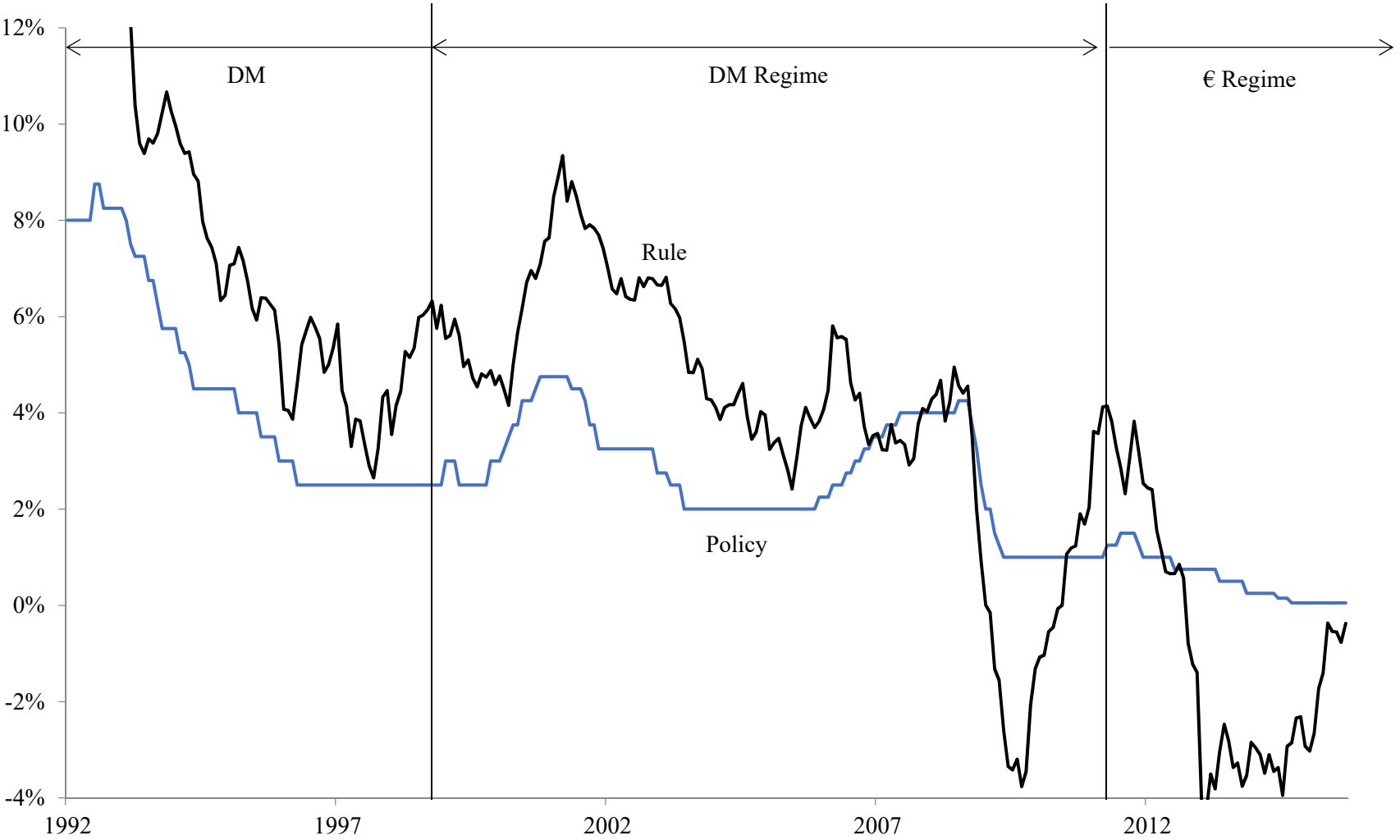
Taylor Rule vs. ECB Policy
Germany



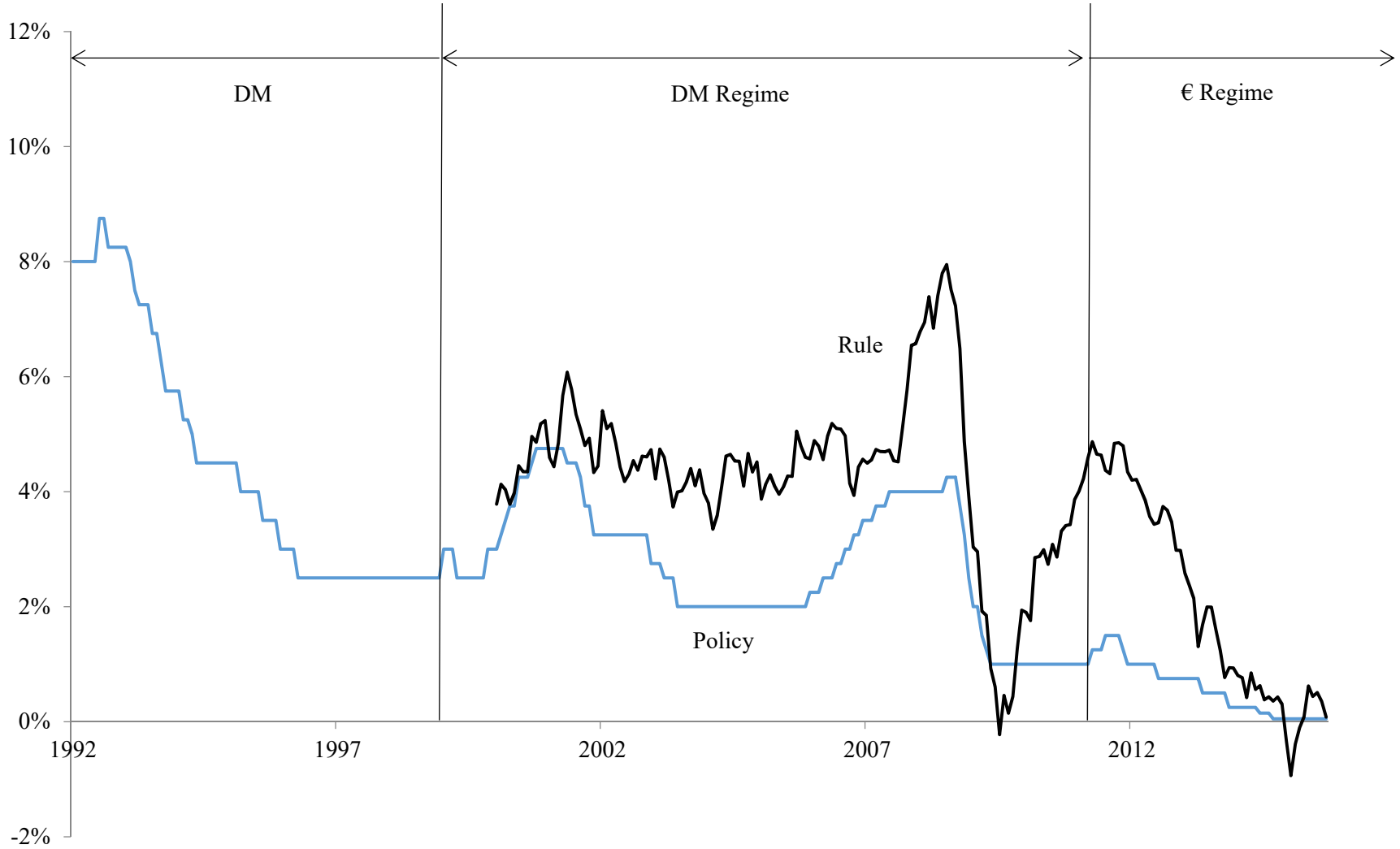
Taylor Rule vs. ECB Policy
France



Taylor Rule vs. ECB Policy
Portugal



Taylor Rule vs. ECB Policy
Eurozone

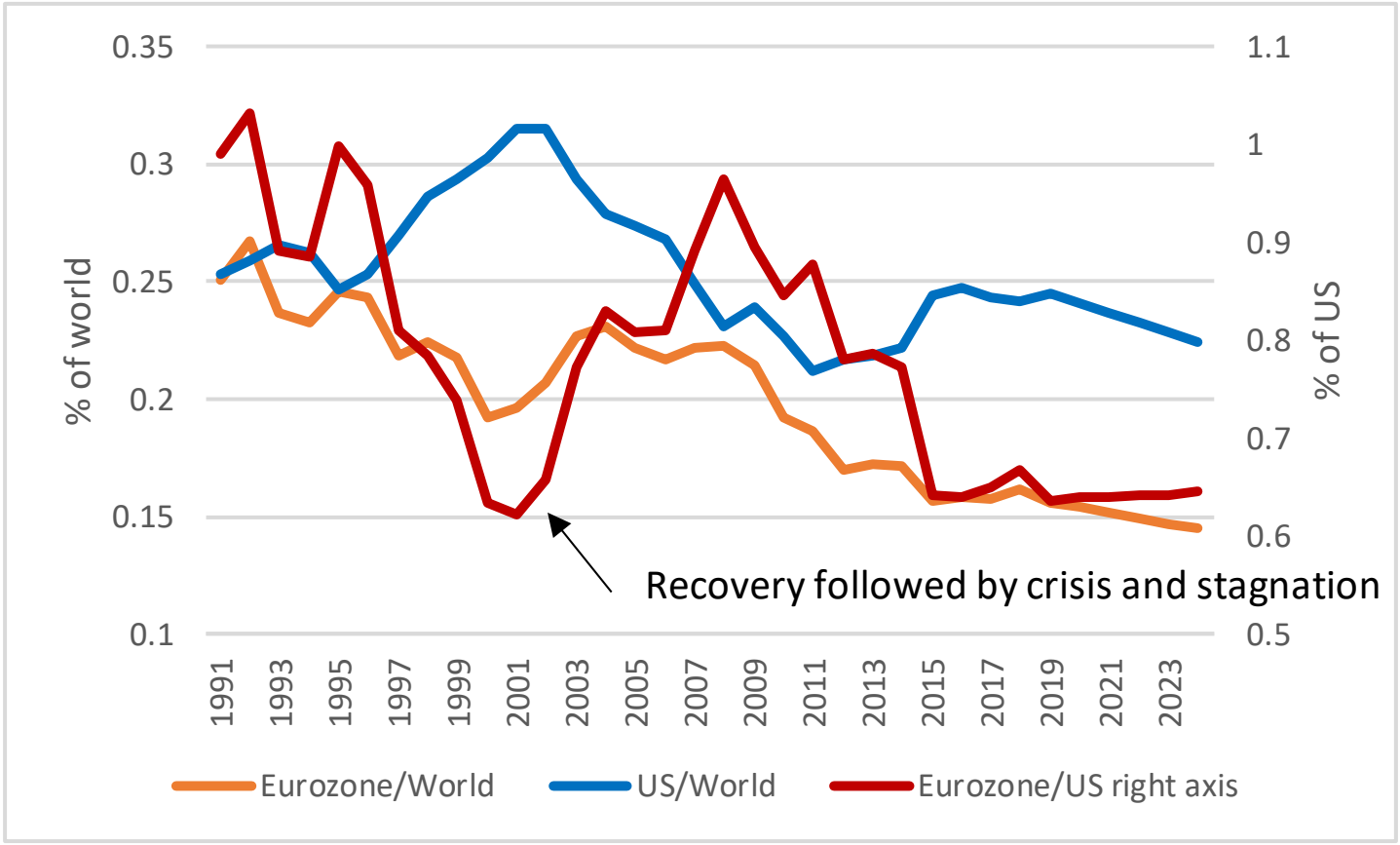


MSE between ECB Policy and Taylor Rules

Country	$\rho = 0$	$\rho = 0.9$
Austria	3.71	3.45
Belgium	6.25	6.03
Finland	7.14	6.71
France	3.45	3.55
Germany	2.30	2.14
Greece	10.91	11.40
Ireland	33.58	33.34
Italy	6.06	6.04
Luxembourg	3.41	3.07
Netherlands	5.32	5.60
Portugal	6.18	6.36
Spain	19.11	19.03
Euro	4.02	4.03

Lastly, the secular decline of the Eurozone economy

Eurozone's GDP in US Dollars, Actual and Projected: 1991-2023
(as a share of world GDP and US GDP)



Sources: Authors' calculations based on World Economic Outlook, International Monetary Fund, April 2019.

Summary and next steps

- Euro is punching below its weight as international currency.
- May be artefact of natural monopoly in international medium of exchange, store of value, unit of account
- Scarcity of euro safe assets may be a key contributor, as debt markets have become both fragmented within the EZ and other factors have impaired debt market liquidity, making Euro assets less globally attractive.
- The nature and extent of market illiquidity merits closer scrutiny, as does the question of hysteresis.
- The extent to which China's role in global finance may be contributing to a mismeasurement of the global usage of the US dollar and the Euro also warrants further study.