

The Rise and Fall of Global Currencies over Two Centuries

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Motivation

- Longstanding debate on sustainability of Dollar dominance going back to Triffin (1960).
- Growing literature on Dollar dominance, DCP, dilemma vs. trilemma.
- Will the Euro / Renminbi gain a more prominent role?
- Is a multipolar IMS possible and/or desirable? Harvard vs. Berkeley views (Eichengreen, 2019)
- Would a multipolar IMS look like the classical Gold Standard or the interwar Gold-Exchange Standard?
- What are the implications of more multipolarity for financial stability and the provision of safe-assets? A nascent theoretical literature started by Farhi and Maggiori (QJE 2018).
- Hard to get an empirical perspectives on these questions without looking at long run historical data...

Current State of the Project / Data

Measuring Two Centuries of Rise and Fall of Global Currencies													
Data availability and collection completed													
	Pre-Gold Standard Period			Classical Gold Standard			Interwar Period		Bretton Woods		Floating Dollar Standard		
	1815	1835	1855	1875	1895	1915	1918	1938	1948	1968	1988	2008	2020
Weekly	✘		✓	✓	✓	✓	✓	✓	?		✓		
Monthly													

Global currencies competition in the interwar period

Relate to existing empirical and theoretical literature
 Timing of the rise of the USD
 Global currencies competition: GBP, USD, FRF collapses
 Large shifts in multipolarity of IMS
 Globalization and deglobalization

Contribution

- IMS measurement project in the spirit of Iltetzki et al. (2018 QJE), Ito and McCauley (JIMF 2019) and Fratzcher and Mehl (EJ 2014), so far with a focus on the interwar gold-exchange standard.
- The Rise and Fall of Global Currencies over ~~Two Centuries~~... Not there **YET!**. Today, focus on 1918-1938 for which dataset is final (some preliminary results on 1846-1915).
 - Measure the relative importance of global currencies at the country and regional level at sub-quarterly frequency using a Frankel-Wei factor model.
 - Provide an estimate of the degree of multi-polarity of the IMS at the regional and global levels at sub-quarterly frequency.
- Interwar IMS competition
 - Provides more granularity on interwar IMS dynamics, complementing various work by Eichengreen and various co-authors.
 - Some suggestive evidence on the relationship between IMS multipolarity and financial stability related to Farhi and Maggiori (QJE 2018).

Summary of Results

1 Interwar global currencies competition

- Looking at the interwar period and some preliminary data on the first globalisation I confirm IMS multipolarity has historically been the norm.
- I confirm the USD overtook GBP globally in the first half of the 1920s.
- I uncover several new episodes of shifts in IMS dominance (e.g. : Retreat of USD after 1928; global rise of the French Franc in 1930s).
- Large shifts occurred more often than assumed in the literature, little evidence of incumbency effect or persistent "winner takes all" character of the IMS.

2 Global currencies competition and financial stability

- Interwar global currency collapses seems to exhibit self-fulfilling characteristics in two out of three instances.
- Some evidence of increase in IMS competition leading interwar global currency collapses.
- Concerns that in a multipolar IMS investors self-fulfillingly "coordinate in and out of a given reserve currency" (Farhi and Maggiori, 2017) seem at least partially justified.

Outline

- 1 Classification Methodology
- 2 Preliminary View of IMS Dynamics During the First Globalization (1846-1914)
- 3 Interwar Global Currency Competition (1918-1938)
- 4 IMS Multipolarity and Financial Stability
- 5 Conclusion

Frankel-Wei Factor Model

- I heavily rely on Frankel-Wei (NBER 1997), borrowing some elements from Ito and McCauley (JIMF 2019) and Fratzcher and Mehl (EJ 2014).

$$\Delta \ln \frac{X_{i,t}}{\text{Numéraire}_t} = \alpha + \sum_h \beta_h \Delta \ln \frac{\text{Reference}_{h,t}}{\text{Numéraire}_t} + \gamma'_t \mathbf{\Pi}_t + \epsilon_t \quad (1)$$

- Clean "horse race" between potential key currencies
- Focus on monetary dominance and fuzzy measurement of monetary blocs rather than foreign-exchange regime as in Ilzetzki et al. (QJE 2018).
- Yields intuitive monetary dominance factors that can be given a "share" interpretation.

Choice of numéraire and regional factor

1 Numéraire

- Typical choice include small "neutral" floating currencies (CHF, NZD...), however this is not particularly intuitive over two centuries
- I follow Ito and McCauley (JIMF 2019) in selecting one of the key currencies as the numéraire anchor k , and in deriving its factor as

$$\widehat{\beta}_{ikt} = 1 - \sum_{h=1}^H \widehat{\beta}_{iht} \quad (2)$$

2 Regional factor

- I introduce, in line with Fratzcher and Mehl (EJ 2014), a country-specific regional factor, obtained as the residual of a regression of the average foreign-exchange movements in a given region - excluding the country of interest - on the non-numéraire anchor factors.
- The regional factor is included in the $\sum_{h=1}^H \widehat{\beta}_{iht}$ term, avoiding the classification of countries experiencing local monetary autonomy to the monetary bloc of the numéraire anchor.

Classification algorithm

1 Frankel-Wei Regressions

- FX movements larger than $\pm 10\%$ are discarded
- Run the model for each country at weekly (monthly) frequency over rolling windows of three years (minimum 30 observations per window).

2 Statistical significance adjustment

- Statistically significant negative estimated weights are set to missing
- Statistically insignificant weights are set to zero.
- Statistically significant weights above 1 are set to 1.
- All weights are therefore censored between 0 and 1 and each bloc is centered around its own core country which is assigned a β of 1.

3 Further adjustment

- To avoid spuriously assigning a country to the anchor numéraire bloc I require a currency with an anchor numéraire factor > 0.5 (> 0.8) to be consistent with the criteria for a narrow band (peg) provided by Ilzetzki et al. (QJE 2018). If not, the anchor numéraire factor is set to zero.

Example: Classical Gold Standard model

- On classical gold standard period dataset I therefore run

$$\Delta e_t^{i/GBP} = \alpha + \beta_t^{DEM} \Delta e_t^{DEM/GBP} + \beta_t^{FRF} \Delta e_t^{FRF/GBP} + \beta_t^{REG} \Delta e_t^{\widehat{REG_i/GBP}} + \gamma_t' \mathbf{\Pi}_t + \epsilon_t$$

- GBP as numéraire anchor, DEM and FRF are the additional global currency candidates. USD is introduced starting in the interwar period only in place of DEM.
- Control for commodity prices, liquidity, volatility as in Fratzcher and Mehl (EJ 2014).

▶ Sample First Globalisation

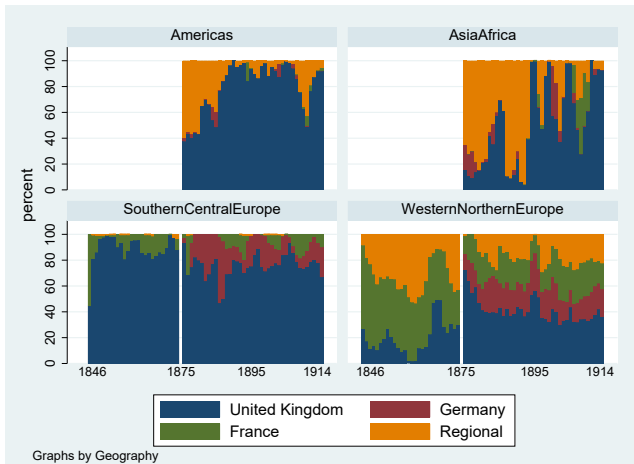
▶ Sample Interwar Period

First Globalisation IMS - Historical Context

- Gold (Britain) vs. Bimetallic (France) vs. Silver (Asia) standards till 1870s, then convergence towards gold.
- 1852-1865: Rise of French capital exports under the Second Empire, establishment of the Latin Monetary Union, international use of the French standard.
- 1870: French defeat against Prussia translates into 22% of GDP of foreign assets transferred to Germany as war indemnity.
- 1873: German monetary unification and adoption of gold standard acts as a catalyst towards the classical international gold standard.
- 1880-1914: Usually characterized in the literature as a period of: IMS multipolarity + international cooperation=stability.

[▶ Maps](#)[▶ 1860](#)[▶ 1869](#)[▶ 1880](#)[▶ 1900](#)

Share of Regional Bloc by Dominance (GDP Weighted)



- Strong French dominance in Europe before 1870, tripartite after German unification.
- GBP dominance increasingly concentrated in (formerly Silver) non-European regions.

Interwar IMS - Historical Context

- Post-WW1 gradual return to gold convertibility, early on (1925) for the UK at pre-war parity, later on (1926-28) and at a lower parity for France
- Fiscal consequences of the War and the broadening of political suffrage made it impossible to go back to the pre-War cooperation that ensured the smoothly functioning of the "classical" Gold Standard
 - Fiscal and financial stability considerations makes policy autonomy attractive
 - Wider use of foreign-assets vs. physical gold as reserves increases fragility
 - Non-cooperative behaviors (sterilization of gold flows by surplus countries, capital controls by deficit countries)
- As internal objectives require policy autonomy, round of successive GS exits of anchor countries, leading to fragmentation in various trade blocs
 - Sept. 1931: banking crisis in Germany, GBP leaves the GS
 - March 1933: banking crisis in the USA, USD leaves GS
 - Sept. 1936: new left-wing government, FRF leaves the GS

Old vs. New View on Inter-War Global Currencies

1 Old View: GBP dominance despite British decline

- Triffin (1960), Chinn and Frankel (NBER 2008): the USD first rivaled the GBP after WW2.
- Lag between economic and financial leadership of the US and rise of USD shows the key role of incumbency and power of network effects in the market for international currencies, "winner takes all".

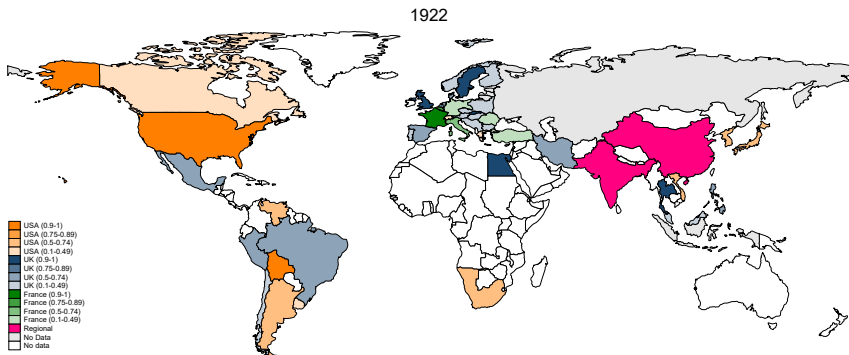
2 New View: USD dominance since mid-1920s

- Eichengreen et al. (2017): looking at composition of reserves and bond markets, the USD became the leading international currency by the mid-1920s.
- USD dominance was short-lived, given the 1933 exit from the GS.
- Historical evidence shows a multi-polar IMS has been the rule since the 19th century, pre-WW1 oligopoly, post-WW1 GBP-USD duopoly.
- No major role for the FFR in the interwar period despite active campaigns by the French government and contemporary discussions on the rise of Paris as a global financial center after the 1928 stabilization.

Dominant Currency Chronology by Country

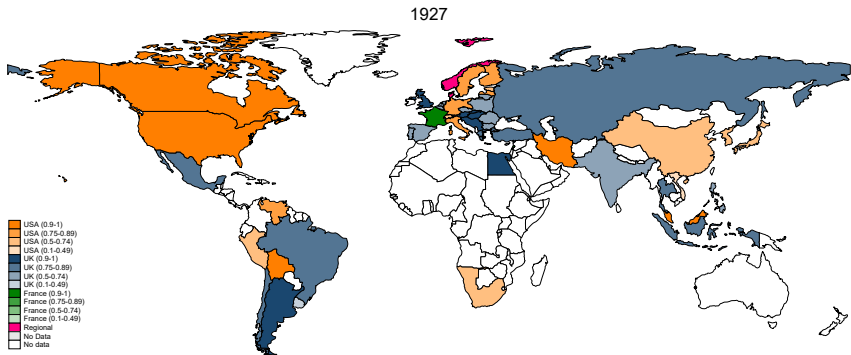
- I now turn to maps depicting the IMS geography over key years 1918-1938 (maps at 1938 borders).
- Focus on the highest dominance experienced by each country.
- Coloring according to the main dominance bloc does not imply the country also experience dominance from another anchor.
- Pink coloring denotes a regional factor higher than 0.5, signaling high local monetary autonomy.

Dominant Currency by Country (1921)



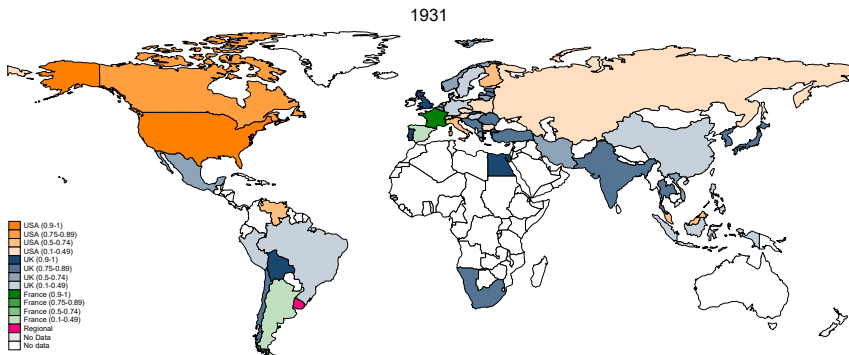
- USD zone in Asia and Latam
- FFR dominance in traditional Latin Union countries, Germany
- GBP remains the dominant bloc

Dominant Currency by Country (1927)



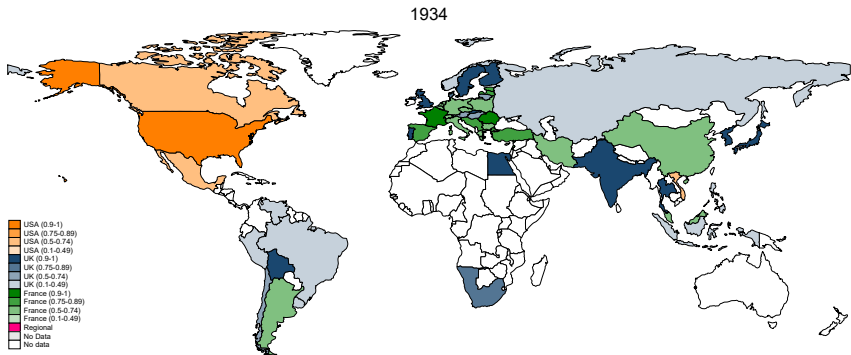
- Peak of USD dominance in the sample, overtakes GBP in 1927. USD zone extends particularly to Asia and Europe excl. the Balkans.
- FFR zone disappears amid run-away inflation in France (stabilization begins in 1926).
- GBP bloc weakens in all geographies.

Dominant Currency by Country (1931)



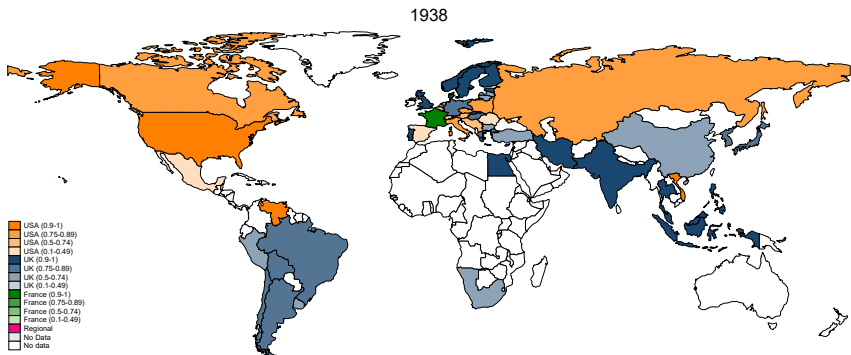
- Weakening of USD dominance starting 1928
- GBP regains dominance but also starts to weaken by 1930
- FFR dominance begins to rise, from a very low base, in 1930

Dominant Currency by Country (1934)



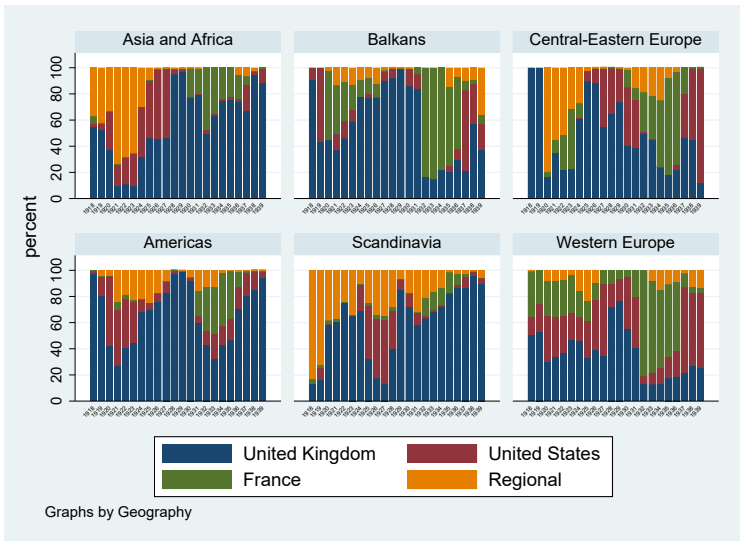
- Global FFR dominance between 1931 and 1936.
- Only Scandinavia, India, Egypt firmly remain in the GBP bloc.
- After 1933 devaluation USD regains dominance.

Dominant Currency by Country (1938)

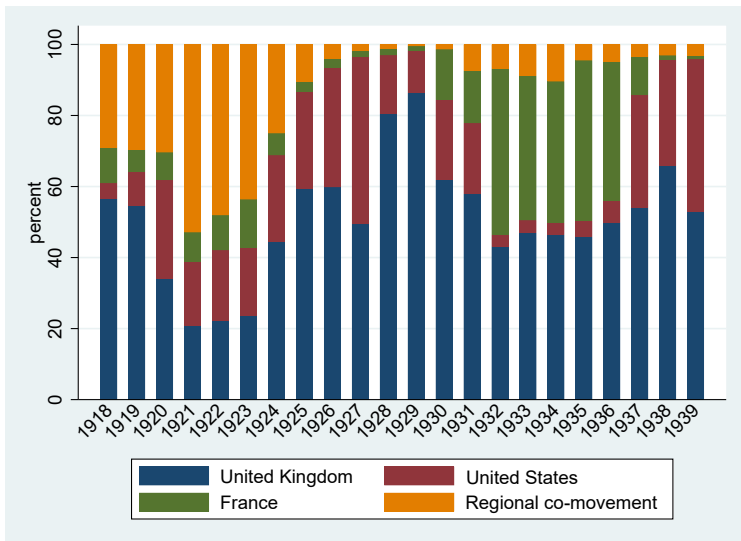


- The collapse of the FFR in 1936 brings an end to France's dominance.
- Strong regain of dominance by the USD in Europe, GBP in Latam.

Share of Regional Dominance (GDP Weighted)



Share of Global Dominance (GDP Weighted)



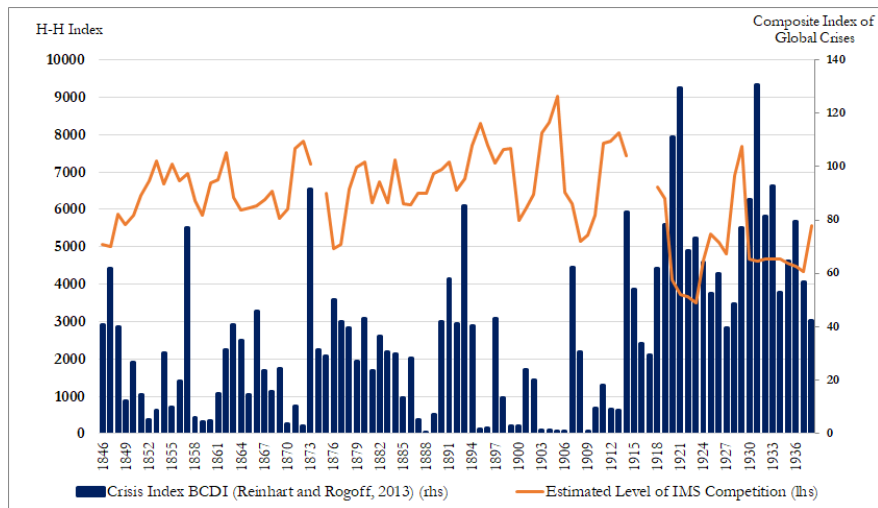
Summary of Key Findings on the Dynamics of Interwar Monetary Blocs

- In line with Eichengreen et al. (2017)
 - USD plays a prominent role as soon as the 1920s
 - No role for incumbency, very large reversals in anchors' dominance experienced throughout the period.
- New findings
 - The rise of the USD is halted in 1927-28 (more on this later).
 - Major episode of FRF dominance between 1931-1936.
 - GBP does not recover its role in Europe (Excl. Scandinavia) after 1931, Europe is largely a USD zone after 1936.
 - No clear USD zone in Latam, no clear homogeneous "Capital Controls" bloc around Germany either in the 1930s.
 - Switches even more frequent than implied by the "New View".

IMS Structure and Financial Stability: A Model of the IMS

- Farhi and Maggiori (QJE 2018) model the IMS as a market for safe assets.
- Triffin dilemma arises depending on size of ROW ω endowment vs. the safe debt capacity of issuer \underline{b} .
- Safe asset issuers may face a trade off between devaluing and inflating away their real debt, and incurring a fixed "default cost", allowing for self-fulfilling crises à la Calvo (AER 1988).
 - *Do switches in dominant currencies exhibit self-fulfilling characteristics?*
- Increases in the number of issuers positively affect the stability of the system (better "coverage" of ROW ω)
- However, multi-polarity is sub-optimal in the presence of a small number of safe asset issuers: inversion of ranking of issuers can be destabilizing.

IMS Competition vs. Stability: Preliminary Long Run View



Herfindahl-Hirschmann Index of monetary blocs "IMS share" vs. R&R Composite Index of Crises.

Evidence on IMS structure and global currencies collapses

Ideal laboratory to learn more about collapses of global currencies.

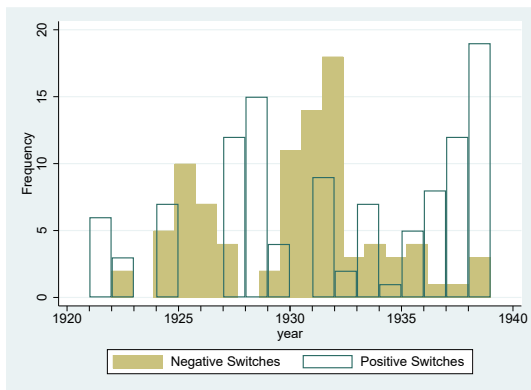
① A closer look at the timing of switches

- Select episodes of large swings in adjusted β factor loading of each global currencies.
- A self-fulfilling "run" on a global anchor currency would be consistent with decreases in co-movement preceding its collapse.

② IMS Structure

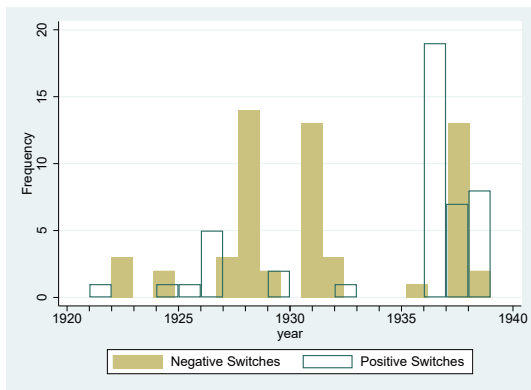
- Compute a measure of IMS competition (Herfindahl-Hirschmann Index), what is the sequencing between increase/decrease in multipolarity and global currency collapses?
- The vulnerability of a multipolar IMS to self-fulfilling crises would translate in competition increasing before currency collapses.

Timing of Switches in Global Dominance - GBP



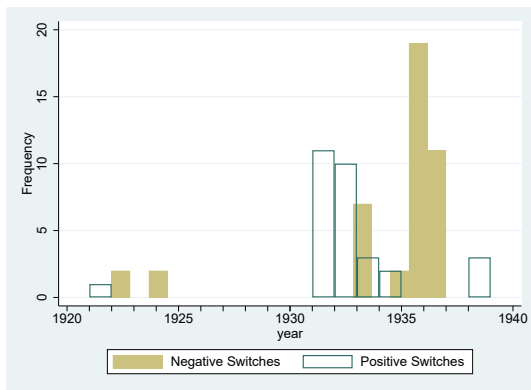
- 1/3 of negative switches observed in 1930-1932 episodes occur in the run-up to the GBP collapse in September 1931
- Two waves, February-March 1930 (Germany, Austria, Poland, Italy) and then August-September 1930 (Russia, Argentina, Uruguay).

Timing of Switches in Global Dominance - USD



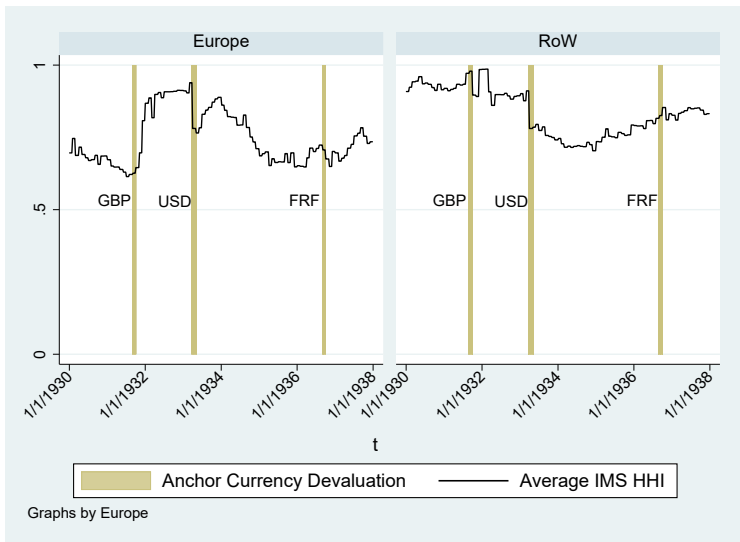
- 1928 reversal: 1) tighter monetary policy choked-off foreign lending (Eichengreen, 1995); 2) Large outflows of gold (Johnson, 1997).
- 1933 collapse: negative switches occur well in advance of the 1933 exit from the GS, they actually coincide with the GBP collapse, signaling contagion from UK crisis.

Timing of Switches in Global Dominance - FFR



- The initial movement towards the Franc starts in the summer of 1931 in the run up to the GBP collapse.
- No clear evidence of anticipation of the political shock of the Spring 1936 and the subsequent of the FFR in October.

IMS Competition and the Collapse of Global Currencies



Herfindahl-Hirschmann Index of global currency weights around interwar currency collapses.

Take-aways on IMS Competition and Financial Stability

- GBP and USD collapses exhibit marked decreases in dominance/co-movement well ahead of their collapses in 1931 and 1933 respectively.
- Less evidence of self-fulfilling coordination out of the French Franc before the 1936 "Front Populaire" devaluation.
- Looking at the global picture, increases in competition in the IMS seems to follow and not to precede collapses.
- However, both the GBP and FFR collapses occur at the peak of measured competition in the European IMS.
 - Does competition in some pockets of the IMS matter more than in others?

Next steps

1 Interwar Global Currency Competition

- Finer dating of rise and fall (ex: when does the USD overtakes GBP...), structural breaks.
- Compare co-movement based classification of monetary blocs with official reserves data (Eichengreen and Flandreau, EREH 2009).
- Some further evidence around interwar global currency collapses putting together my new measure of IMS competition and data on official reserves, business cycle and safe asset prices.

2 Future research agenda

- Finally two centuries of data.
- Measurement from a foreign-exchange regime point of view (Iltzetzki et al., 2018 QJE).
- Empirical work on 1) determinants and 2) effects of global currency status.

Table: First Globalisation Weekly Sample [▶ Back](#)

Polity		Polity	
Argentina	1869-1914	Austria-Hungary	1846-1914
Brazil	1869-1914	Italy	1863-1914
Canada	1869-1914	Two Sicilies	1846-1862
Mexico	1869-1914	Piedmont-Sardinia	1846-1862
United States	1862-1914	Portugal	1846-1914
Cape Colony	1869-1914	Russia	1847-1914
China	1869-1914	Spain	1846-1914
Egypt	1869-1914	Granduchy of Tuscany	1846-1862
India	1869-1914	Belgium	1846-1914
Japan	1869-1914	Berlin	1865-1873
Ottoman Empire	1869-1914	Denmark	1880-1914
Siam	1869-1914	Frankfurt	1846-1873
Straits Settlements	1869-1914	Hamburg	1846-1873
		Netherlands	1869-1914
		Norway	1869-1914
		Sweden	1846-1914
		Switzerland	1892-1914

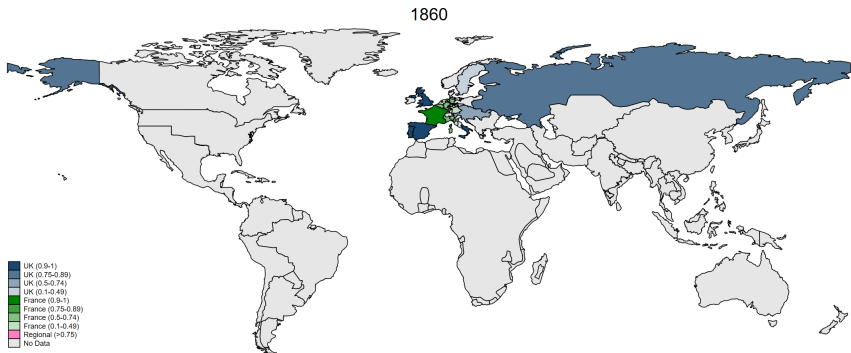
Table: Interwar Weekly Sample [▶ Back](#)

Polity		Polity		Polity	
China	1918-1939	Turkey	1921-1939	Uruguay	1918-1939
Dutch East Indies	1926-1939	Yugoslavia	1918-1939	Venezuela	1918-1939
Egypt	1918-1939	Austria	1918-1939	Denmark	1918-1939
French Indochina	1918-1939	Czechoslovakia	1918-1939	Estonia	1924-1939
Hong Kong	1918-1939	Free City of Danzig	1934-1939	Finland	1918-1939
India	1918-1939	Germany	1918-1939	Latvia	1924-1939
Japan	1918-1939	Hungary	1921-1939	Lithuania	1925-1939
Persia	1918-1939	Poland	1918-1939	Norway	1918-1939
Philippines	1918-1939	USSR	1924-1939	Sweden	1918-1939
Siam	1918-1939	Argentina	1918-1939	Belgium	1918-1939
South Africa	1918-1939	Bolivia	1918-1939	Italy	1918-1939
Straits Settlements	1918-1939	Brazil	1918-1939	Netherlands	1918-1939
French Levant	1918-1939	Canada	1918-1939	Portugal	1918-1939
Bulgaria	1918-1939	Chile	1918-1939	Spain	1918-1939
Greece	1918-1939	Mexico	1918-1939	Switzerland	1918-1939
Romania	1918-1939	Peru	1918-1939		

Dominant Currency Chronology

- I now turn to maps depicting the IMS geography over key years (maps with 1815 or 1914 borders).
- Focus on the highest dominance experienced by each country.
- Coloring according to the main dominance bloc does not imply the country also experience dominance from another anchor.
- Pink coloring denotes a regional factor higher than 0.5, signaling high local monetary autonomy. [▶ Back](#)

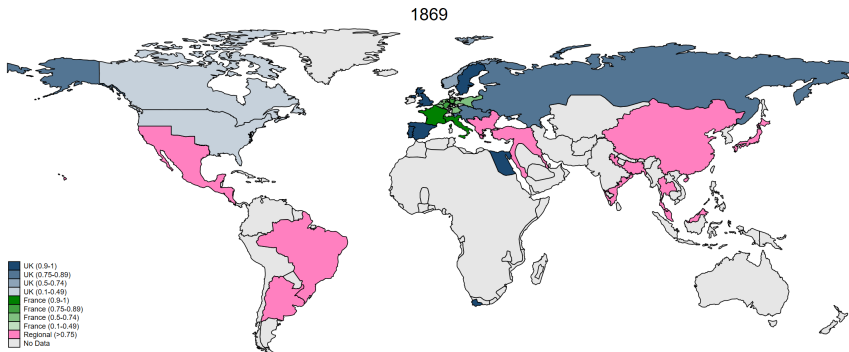
Dominant Currency by Country (1860)



- A strongly bipolar IMS at the eve of the first globalisation.

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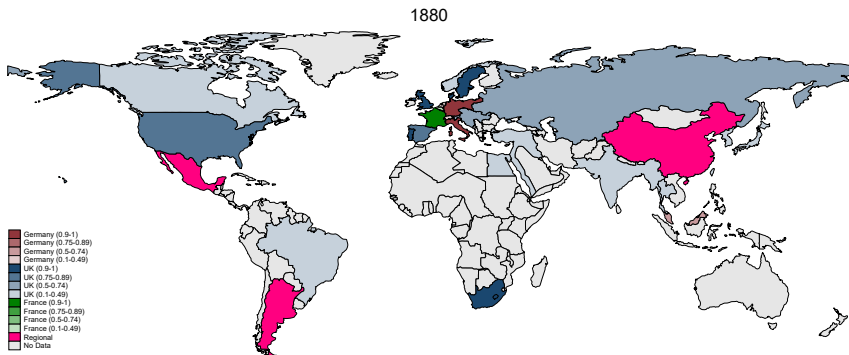
Dominant Currency by Country (1869)



- Peak of FRF dominance in the European core at the eve of the Franco-Prussian war.
- GBP dominance and large area of regional autonomy in the periphery.

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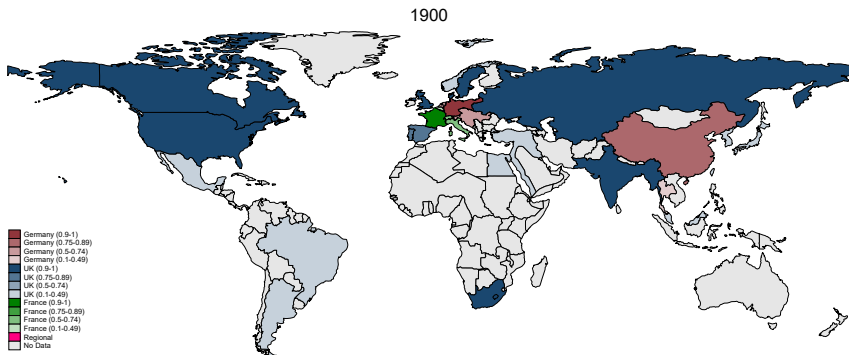
Dominant Currency by Country (1880)



- Rise of DEM, somewhat at the expense of FRF in Europe.
- Transition from regional to GBP dominance outside of Europe.

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Dominant Currency by Country (1900)



- A firmly tripolar IMS by the turn of the century, little role for regional autonomy.
- Latin Union persistence, transitory episodes of FRF or DEM dominance outside of Europe.

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