

The Rise and Fall of Global Currencies over Two Centuries

Roger Vicqu ry*

Banque de France

London School of Economics

This Version: 26 April 2021

PRELIMINARY AND INCOMPLETE

Latest Version

Abstract

This paper measures the dynamics of global currencies and the structure of the international monetary system (IMS) over two centuries, relying on a newly collected weekly dataset of foreign exchange returns from 1846 to 2018. I obtain a continuous measure of the relative global dominance of key currencies, comparable over time, allowing to characterize a chronology of monetary zones and IMS structure. The paper offers three key contributions. First, I provide a classification of monetary blocs over a significantly longer time-span compared to the historical classification of the IMS by Ilzetzki et al. (2018) and Ito and McCauley (2019). Second, I provide a more systematic analysis of historical episodes of competition among international currencies, building on previous detailed work focusing on the inter-war period by Eichengreen et al. (2017). Third, I measure the overall level of multi-polarity of the international monetary system over time. While this paper is primarily concerned with measurement, it is intended as a first step to investigate empirical evidence on the costs and benefits of a multipolar IMS and the outlook for USD hegemony, in light of a nascent theoretical literature (Farhi and Maggiori, 2017).

Keywords: International Monetary System, long run history, safe assets, anchor currencies, monetary blocs.

JEL classification: F3, F4, N2, E5.

*Research Economist (Banque de France) and PhD Candidate (LSE). E-mail: r.h.vicquery@lse.ac.uk. Without implicating, I thank Barry Eichengreen, Albrecht Ritschl, Carlos Van Hombecq and seminar participants at the Economic History Association 2020 Annual Virtual Meeting and the Banque de France for feedback and comments. Part of this research has been carried out while visiting the International Directorate of the Bank of England, to which I am grateful for its hospitality. Financial support from the Royal Economic Society for data collection is gratefully acknowledged. The opinions expressed are my own and do not necessarily reflect those of the Banque de France or the Eurosystem.

THIS VERSION PROVIDES PRELIMINARY RESULTS ON PART OF THE DATA-SET (1846-1939). AN UPDATED VERSION WITH MOST OF THE DATA-SET WILL BE UPLOADED SOON.

1. Introduction

This paper relates to recent empirical, historical and theoretical literatures studying the International Monetary System (IMS).

I substantially extend the time-span of existing classifications (Ilzetzki et al., 2018; Ito and McCauley, 2019) of the IMS, back to the eve of the first globalisation in the 1840s. I rely on new data and a flexible methodology based on foreign-exchange co-movements. I obtain a continuous measure of the relative dominance of global currencies, allowing for a granular analysis of the structure of the IMS over time.

This work relates to the seminal studies on the history and the multi-polar character of the interwar IMS by Eichengreen et al. (2017). It also quantifies overlooked historical episodes of increased competition in the IMS since the mid-19th century.

Finally, the framework and data developed in this paper are ideally suited to engage with the current debate on the sustainability of US dollar dominance, the possible rise of the Euro and the Reminbi as global currencies, and whether increased IMS multi-polarity is in fact possible or desirable.

This draft presents preliminary results on the 1846-1939 period. My findings point to IMS multi-polarity as a historical norm and to present-day dollar hegemony as the historical exception. Among other things, they highlight the previously overlooked role of France as a monetary anchor in the mid-19th century as well as in the interwar period. Furthermore, shifts in relative size of monetary zones occurs more often and more swiftly than what can be implied looking at, among others, reserves and denomination of financial instruments. Additionally, although both the classical gold standard and the inter-war gold exchange standard are typically considered as contrasting example of the costs and benefits of a multipolar IMS, I find the second period to be

characterized by a much higher level of multipolarity, making the parallel somewhat less relevant than is commonly assumed, including in policy discussions.

2. Estimating the Relative Dominance of Global Currencies

2.1. Overview

This section describes my preferred methodology to estimate the relative importance of global currencies over time and geography. The algorithm is largely based on the foreign-exchange factor model first developed by Frankel and Wei (1994) to infer implicit peg-basket weights,

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

where the log of returns of the exchange rate of country i expressed in a numéraire currency at time t is regressed on the log of returns of the exchange rate of one or more reference currencies at time t , again expressed in terms of a common numéraire.

Similar models based on foreign-exchange co-movements have recently been employed to explore the changing dynamics of global currencies. My preferred specification combine the approaches of Ito and McCauley (2019) and Fratzscher and Mehl (2014), in terms of the choice of numéraire and the inclusion of additional factors, as well as some features of the exchange-rate regime classification algorithm developed by Ilzetzki et al. (2018).

Typical choices of numéraires include small "neutral" floating currencies such as the Swiss Franc or the New Zealand Dollar. I deviate from this approach for two reasons. First, many of the historical settings my data span do not make particularly intuitive the choice of such a "neutral" numéraire. Second, Ito and McCauley (2019) widely discuss possible distortions coming from the choice of the numéraire. I therefore rely on the more transparent approach by Ito and McCauley

(2019) in selecting one of the key currencies' factor h as the numéraire anchor k and in deriving its factor as $\widehat{\beta}_{ikt} = 1 - \sum_{h=1}^H \widehat{\beta}_{iht}$. While intuitive¹, the risk of this approach is to overstate the influence of numéraire anchor k . In particular, an hypothetical currency experiencing a high degree of autonomy, with no significant co-movements with the non-numéraire anchors, could still be classified as fully co-moving with the numéraire anchor ($\widehat{\beta}_{ikt} = 1$).

I mitigate this concern in three ways. First, my preferred specification select the *a priori* hegemon of the International Monetary System as the numéraire anchor, limiting the risk that increased local monetary autonomy would lead me to spuriously detect increased competition among global currencies.

Second, I introduce, in line with Fratzscher and Mehl (2014), a "regional" factor. This is to recognize the possibility of monetary autonomy at the regional level. The factor is derived by regressing the average of foreign-exchange movements, share of world trade-weighted, in the region of the currency of interest, excluding the country of interest, on the non-numéraire anchors. The residual, which represents local foreign-exchange movements unrelated to movements in non-numéraire anchors is included in the $\sum_{h=1}^H \widehat{\beta}_{iht}$ term. This avoids the classification of currencies experiencing local co-movements as driven by the numéraire anchor.

Third, I check whether any risk of spuriously high $\widehat{\beta}_{ikt}$ exists, borrowing from the exchange-rate regime classification methodology of Ilzetzi et al. (2018). I verify whether different levels of $\widehat{\beta}_{ikt}$ are justified by actual exchange rate behaviors. As an example, for a $\widehat{\beta}_{ikt}$ between 0.75 and 1 I require the actual exchange rate to be consistent with the stricter definition of a peg used by Ilzetzi et al. (2018). If $\widehat{\beta}_{ikt}$ is found to be inconsistent with the actual behaviour of the exchange rate, its value is set to zero according (See details in Annex XXX).

The anchor numéraire is the British pound until 1939 and the US dollar afterward. The other candidate anchor currencies are the French Franc and the German Goldmark (after the German monetary unification in 1873) for the pre-1914 period. The French Franc and the US dollar in the interwar period. Further robustness checks on the inclusion of additional anchor will be added in future versions of the paper. However, it is important to note that the regional factor provides a

¹For a currency i perfectly pegging to numéraire anchor k , $\sum_{h=1}^H \widehat{\beta}_{iht}$ is equal to zero and therefore $\widehat{\beta}_{ikt} = 1$.

good indicator on whether a potentially relevant anchor is missing from the specification, as in Fratzscher and Mehl (2014).

2.2. Estimation Procedure

I now summarize the procedure to obtain a time-varying indicator of monetary dominance for each global currency. Taking the inter-war period model as an example, I estimate

$$(2) \quad \Delta e_t^{i/GBP} = \alpha + \beta_t^{USD} \Delta e_t^{USD/GBP} + \beta_t^{FFR} \Delta e_t^{FFR/GBP} + \beta_t^{REG} \Delta e_t^{REG_i/GBP} + \gamma_t' \Pi_t + \epsilon_t$$

where the numéraire anchor is the British Pound and the other competing global currencies are the US Dollar and the French Franc. Vector of controls Π includes proxies of commodity prices, global financial liquidity and volatility.

The model is estimated at weekly frequency over rolling windows of three years, allowing for the first window to be 30 weeks long. This means that the estimated $\widehat{\beta}^{USD}$, $\widehat{\beta}^{FFR}$ and $\widehat{\beta}^{REG}$ coefficients vary at the weekly frequency but represent co-movements over between 30 and 156 weeks. Observations of weekly exchange rates movements of more than +/-10% are discarded from the sample.

Second, I deal with statistically insignificant or negative estimated weights in the following way. Negative estimated weights are set to zero. I depart from Ito and McCauley (2019) by setting to zero all non-statistically significant positive weights² and setting to 1 all statistically significant estimated weights greater than one³.

Third, I compute $\widehat{\beta}^{GBP}$ as

$$(3) \quad \widehat{\beta}^{GBP}_{it} = 1 - \widehat{\beta}^{USD}_{it} - \widehat{\beta}^{FFR}_{it} - \widehat{\beta}^{REG}_{it}$$

²As I use weekly frequency, relevant co-movements should come up as statistically significant.

³As positive over-reaction to the anchor's exchange-rate does relate to monetary dominance.

and then proceed to adjusting β^{GBP_t} , if needed, with respect to the actual behavior of the exchange rate, as outlined above and detailed in Annex XXX.

Finally, each monetary bloc is assumed to be centered around its own anchor country which is assigned a β of 1.

2.3. Data

I manually collect a large dataset of weekly foreign-exchange returns from printed sources since 1846, the year The Economist magazine started to report weekly quotes. Data collection is still on-going and the dataset temporal and geographic coverage could be significantly increased by including monthly series. My original data are complemented with series available from data provider Global Financial Data. Details on the polities included in the sample are reported in Table 2 and Table 1.

GDP-weights are retrieved from the Maddison dataset. Trade-based weights are retrieved from the RICardo dataset. The sources of control variables for commodities prices, volatility and risk appetite for each sub-period are detailed in Table XXX.

3. The Rise and Fall of Global Currencies

3.1. The First Globalization

Scholarly accounts of the classical gold standard period between often emphasize the role of multi-polarity and international cooperation in underpinning the stability of the IMS over the period. This experience is contrasted with the instability of the interwar gold-exchange standard. The period preceding the gold standard has received comparatively less attention. The years preceding the French defeat against Prussia in 1870, paving the way to the German unification, were however characterized by a number of French initiatives to harmonize the international monetary standard around the French one. This monetary diplomacy led to the establishment of

the Latin Monetary Union in 1865. The Franco-Prussian war played an important, even though unintended role in facilitating the transition to an international gold-standard. The colossal indemnity paid by France to Germany allowed the new German Empire to act as a catalyst for gold transition and become a major capital exporter.

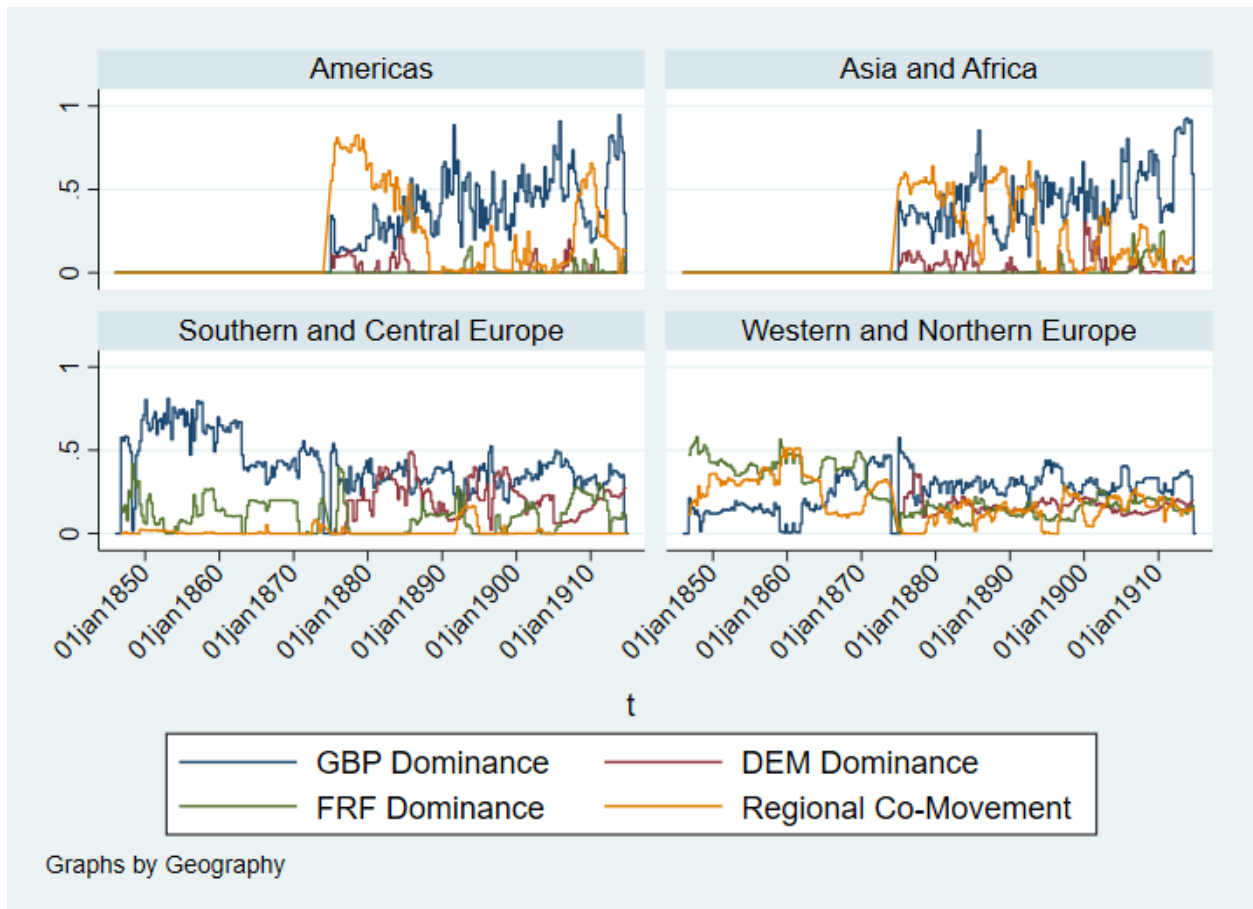
It is important to clarify how the characteristics of the foreign-exchange market in the 19th century relates to the empirical framework. It is helpful to think about FX movements in the context of a metallic standard as a "band" foreign-exchange regime, where the upper and lower bounds are driven by the transaction costs of physically shipping metals. Particularly in the early part of the sample, co-movements with respect to anchors are not driven by intervention in the market by the monetary authority. They are best understood as monetary dominance where local monetary conditions respond to conditions in one or several anchor countries. However, work by Lindert (1969) and Bloomfield (1959) has shown how foreign-exchange assets started to play a role as part of the international gold standard by the end of the 19th century.

3.1.1. Currency Blocs Dynamics

Figure 1 and Figure 2 provide a summary of the currency blocs dynamics in the pre-gold standard period until 1873 and during the classical gold standard. A few considerations can be drawn. First, British dominance is largely confined to the colonies and the more peripheral countries both in Europe and across Asia and America. The European core is characterized by strong French dominance before 1870 and by a very high level of multi-polarity in the latter part of the 19th century. Second, the relative size of French and German influence over the period underline the importance of the Franco-Prussian war as a watershed in international monetary history. Third, it is tempting to link the secular decline of regional co-movement over the period to the decline of the silver bloc, until then largely predominant outside of Europe.

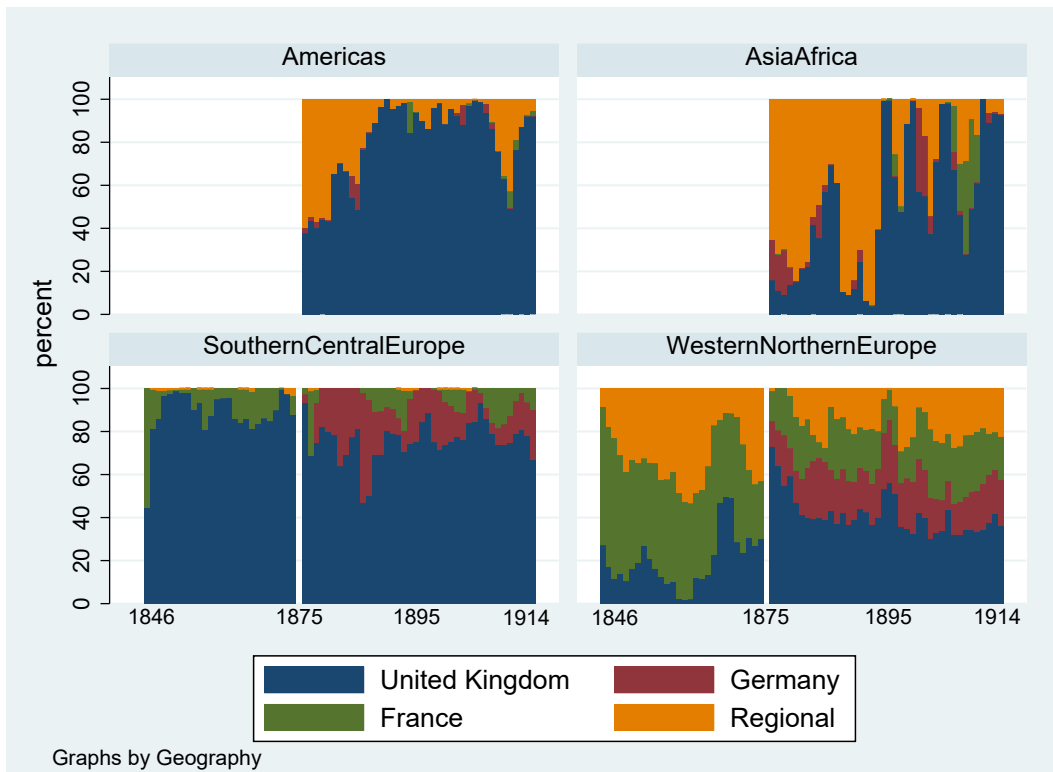
The relative size of the blocs at the end of the period, particularly in Europe, are in line with the depiction of a multipolar IMS at the eve of WW1 made by Lindert (1969), with a few instances of French and German dominance outside of Europe.

Figure 1: Monetary Dominance By Region (1846-1914)



Unweighted quarterly average.

Figure 2: GDP-Weighted Size of Monetary Zones by Region



Graphs by Geography

Continuous sample for sub-samples 1846-1873 and 1875-1914.

GDP-weighted, including the regional co-movement share but excluding the non-assigned share of individual countries.

3.1.2. Country-level Chronology

The individual country chronology depicted in Figures 3, 4 and 5 provide a more granular view of the dynamics outlined above. Maps at 1815 and 1914 borders depicts the highest factor for each country in a given year. This means that the fact that a country takes the coloring of a particular anchor does not imply that that same country does not experience a lesser degree of monetary dominance from another anchor. Pink coloring denotes a regional factor that is higher than any of the global currency factors, signaling some degree of local monetary autonomy.

It is interesting to note how, with the exception of Southern Italy, pre-unitary states in both Italy and Germany are largely part of the French Franc bloc. The future core of the interwar gold bloc formed by France and the Benelux is also apparent throughout the period.

Some individual country trends are consistent with stylized diplomatic and international financial patterns over the period. The formation of the triple entente between Germany, Austria-Hungary and Italy, corresponding to a temporary switch from French to German capital to finance Italian industrial development, can be observed in the 1880s. On the other hand, the lack of French dominance in Russia or of German dominance in the Ottoman Empire, is puzzling with respect to what we know about the geography of international financial flows at the eve of WW1.

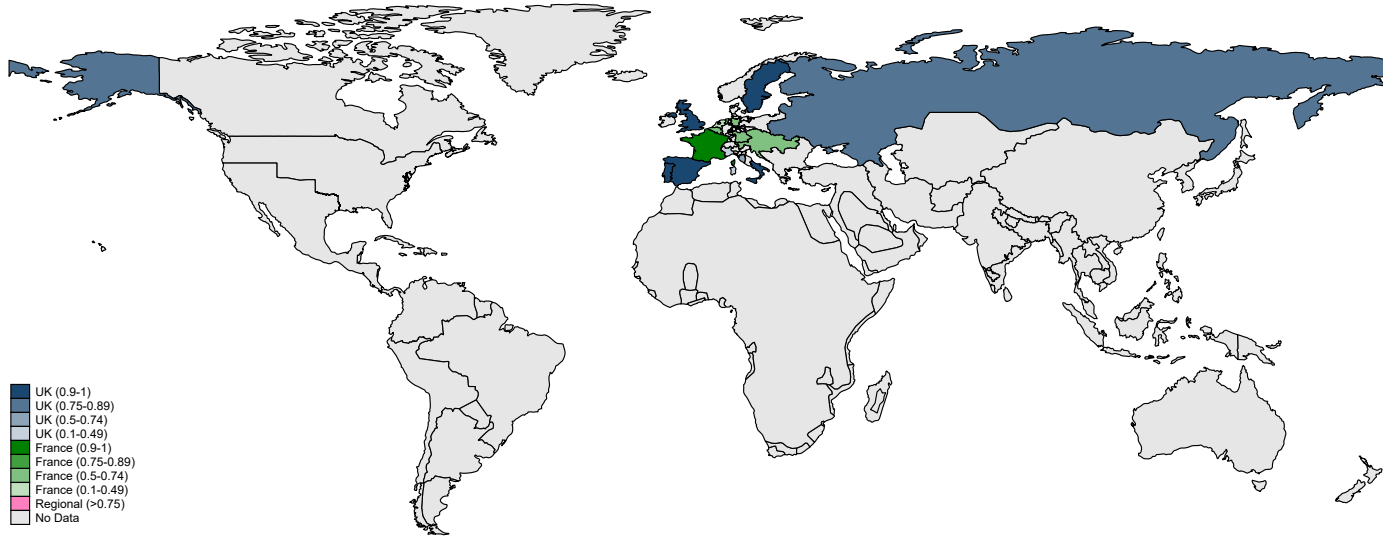
3.2. The Interwar Period

I now turn to a tentative chronology of global currencies' dynamics in the interwar period. This period has been crucial in shaping policy views and theories of the international monetary system since seminal work by Nurkse (1944).

On the one hand, the interwar IMS has served as a powerful reminder that the recent hegemonic character of the IMS represents the exception rather than the rule. A longstanding popular view of IMS dynamics (Triffin, 1960) saw the emergence of global currencies as a slow moving winner-take all process, lagging several decades the economic prevalence of the incoming hegemonic power. Work by Eichengreen and Flandreau (2009), Eichengreen and Flandreau (2012) and Chițu et al.

Figure 3: Dominant Currency By Country - Selected Years (1)

(a) 1850: A largely bipolar IMS at the eve of the first globalisation
1850



(b) 1860: French dominance in most pre-unified Italian and German states
1860

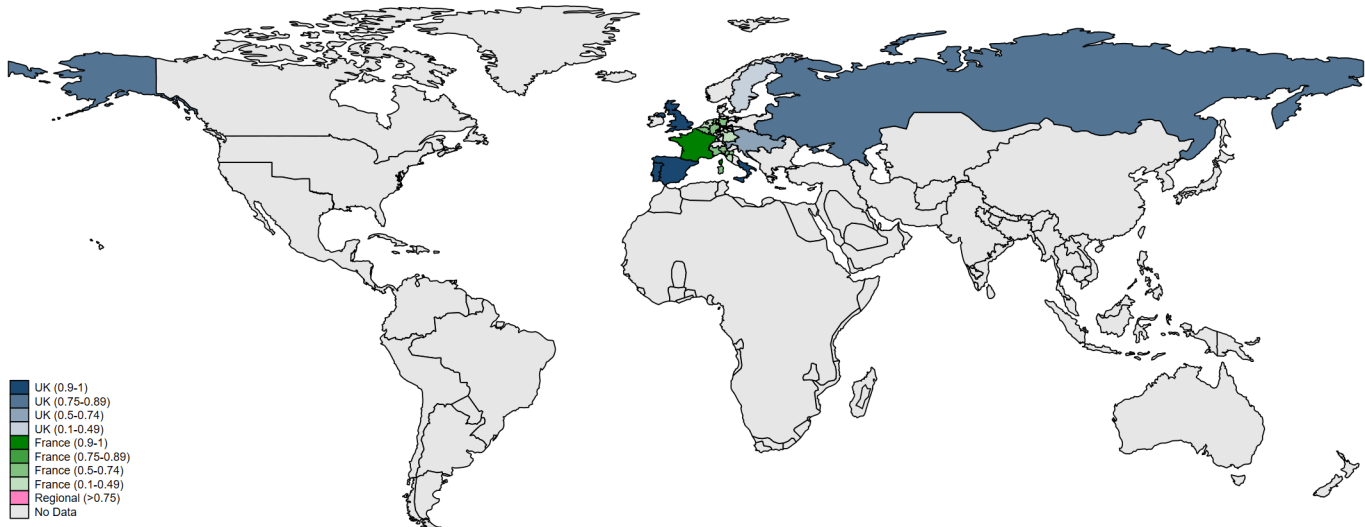
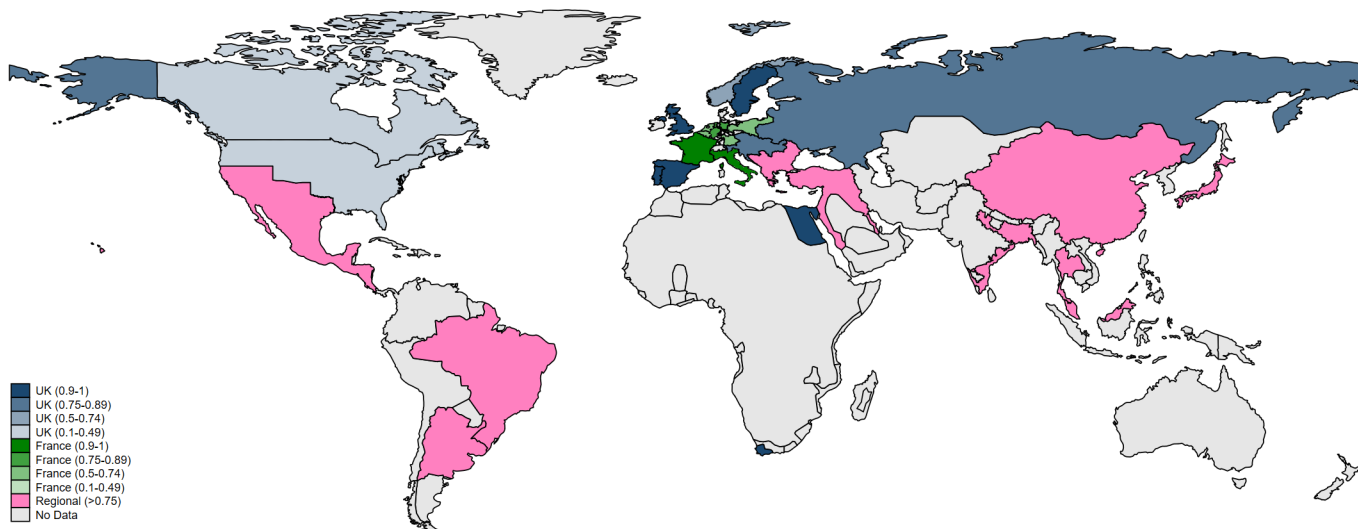


Figure 4: Dominant Currency By Country - Selected Years (2)

(c) 1869: Peak of French dominance before the Franco-Prussian War

1869



(d) 1880: Rise of German dominance after unification

1880

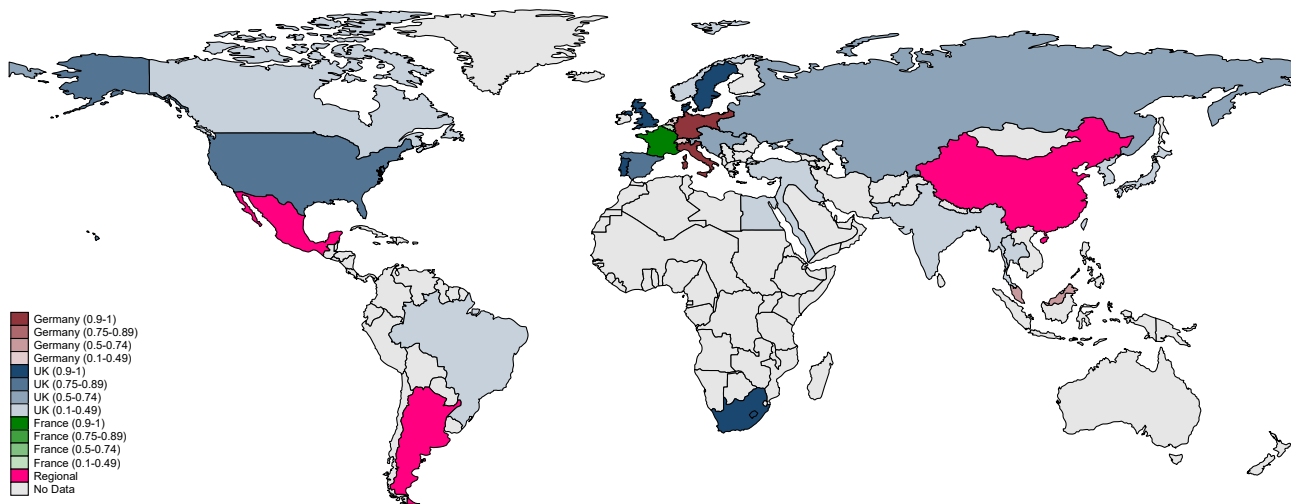
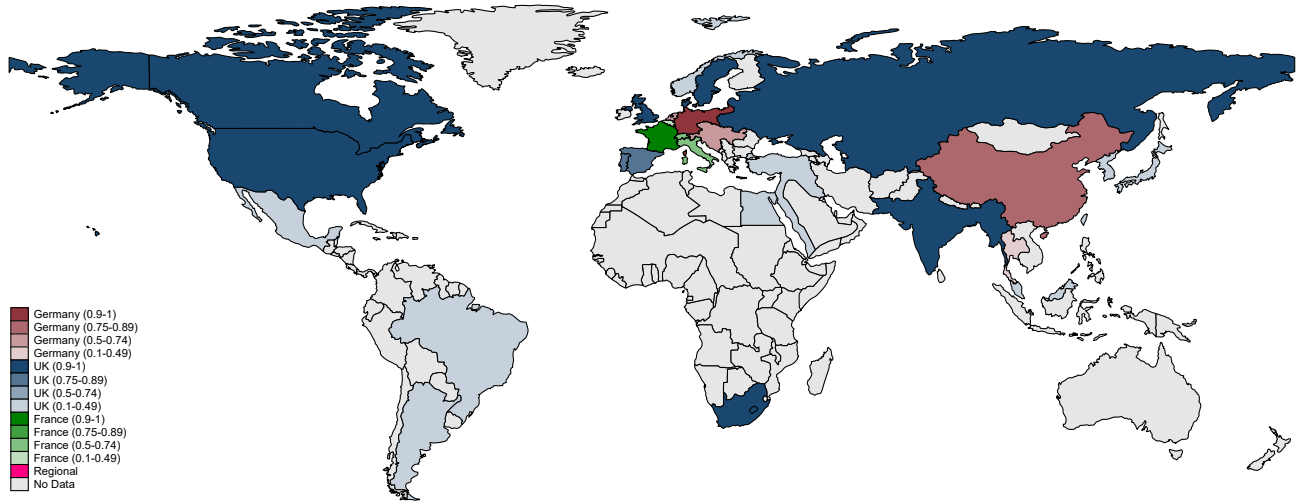


Figure 5: Dominant Currency By Country - Selected Years (3)

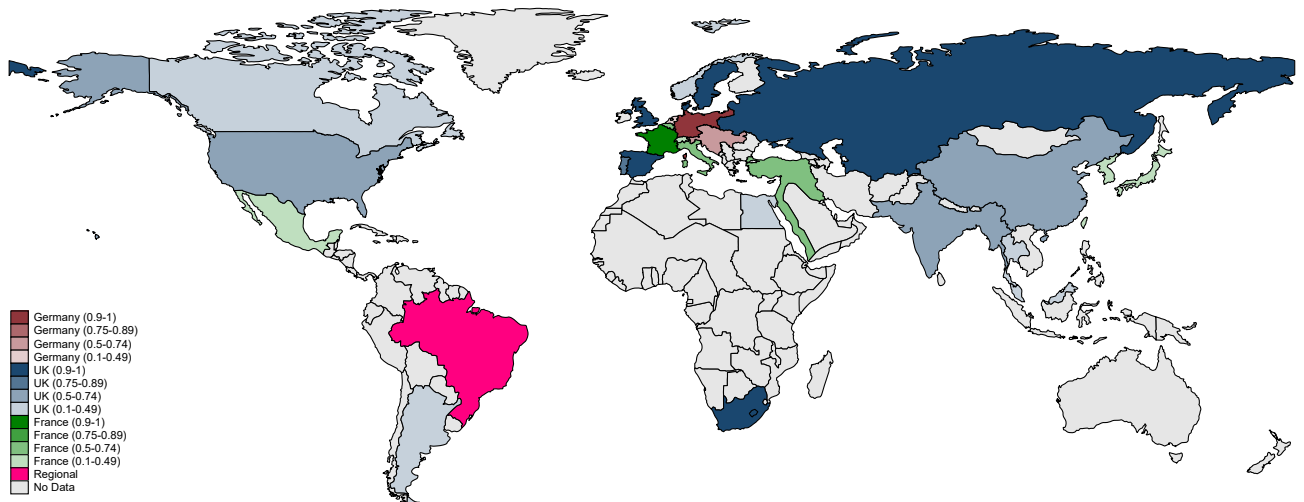
(e) 1900: A pound dominated classical gold standard

1900



(f) 1910: Increased multi-polarity in the first decade of the 20th century

1910



(2014) has convincingly shown how, on the contrary, a protracted period of competition between the British Pound and the US Dollar characterized the interwar period, with the US dollar occupying a prominent role since the end of WW1.

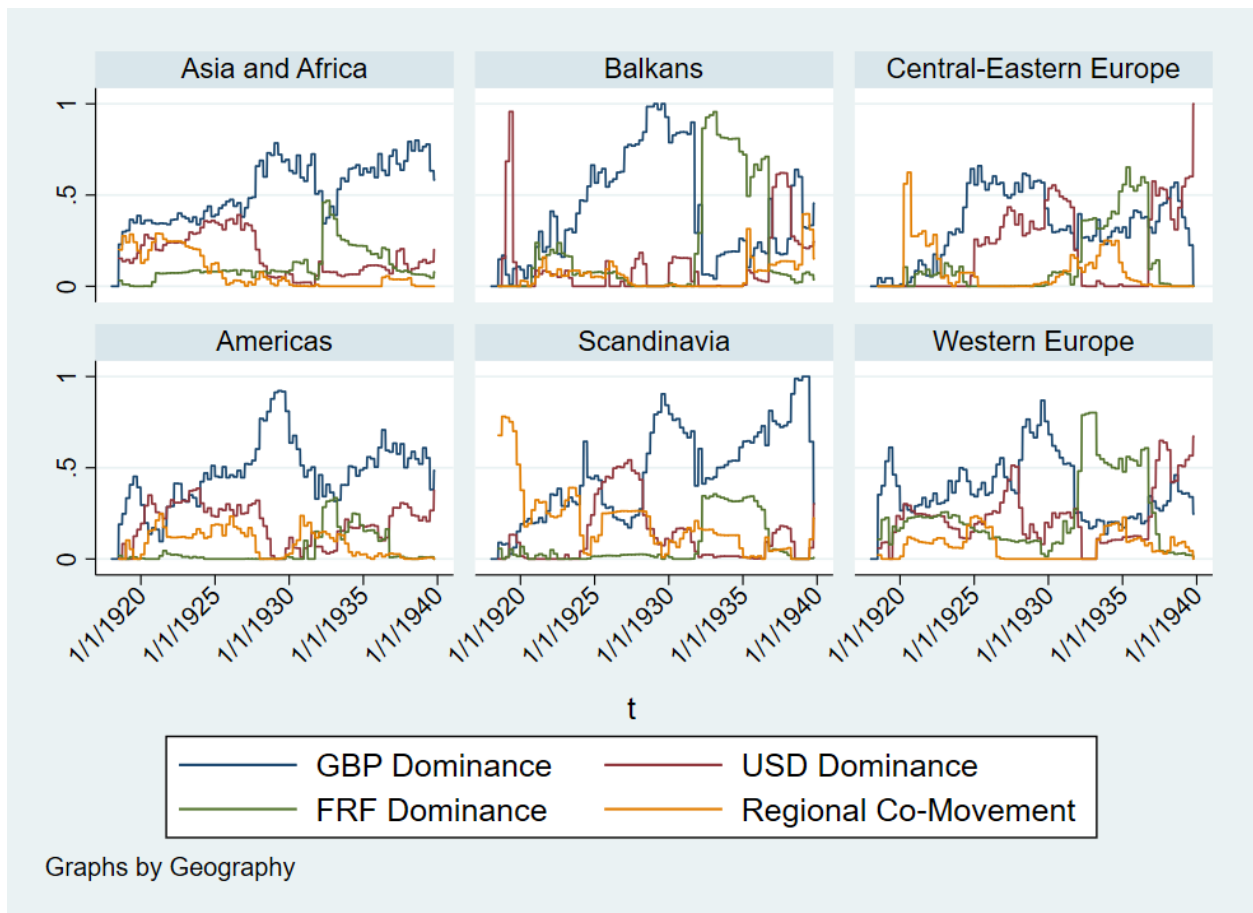
On the other hand, the question of whether Dollar dominance will remain sustainable has sparked renewed interest in the costs and benefits of a hegemonic as opposed to a multipolar IMS. While Eichengreen et al. (2017) see a move towards a more multipolar IMS as a return to a historical norm, likely to better ensure the provision of global safe assets, Farhi and Maggiori (2017) provide a model outlining the risk of instability implied by increased competition in the supply of global safe assets. The latter view is consistent with and motivated by Nurkse (1944) negative assessment of competition among global currencies in the interwar years.

3.2.1. Currency Blocs Dynamics

Figure 6 provides a first snapshot at the nature of competition among global currencies in the interwar period, showing changes in estimated monetary dominance by region. Before I turn to more detailed country-level estimates, three key features of the results should be emphasized. First, high regional heterogeneity is present both in terms of the magnitude of relative dominance and the timing of switches. Second, my results corroborates Eichengreen and co-authors' findings regarding the preeminent role of the Dollar since the early 1920s but with a few qualifications. Third, the data clearly support a major episode of French dominance in the early 1930s. The rise of France as a global monetary power was a recurrent theme of contemporary analyses of international monetary issues Myers (1936) but was recently dismissed by Eichengreen and Flandreau (2009) looking at foreign-exchange reserves data.

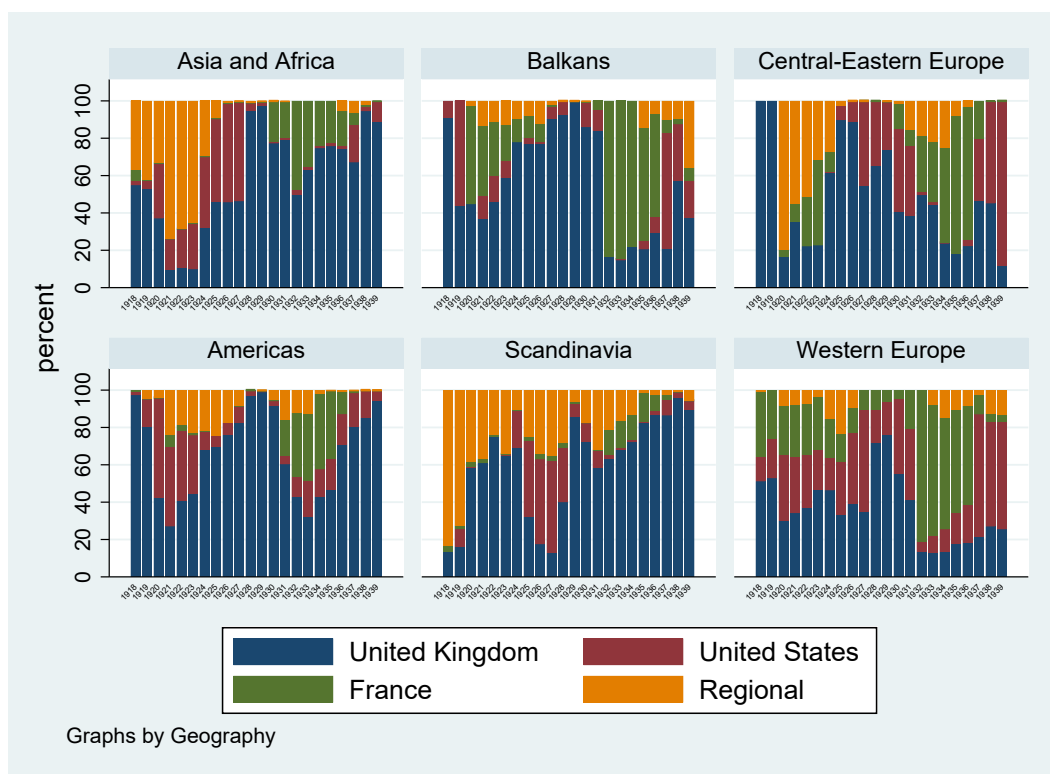
Overall, my results are broadly consistent with the existing literature on interwar global currency dynamics, while offering some new insights related to geographic heterogeneity, timing and the role of the French Franc. Methodological differences mean that my results, which are driven by high-frequency co-movements in the foreign-exchange market, are likely to give more weight to short term developments. Additionally, the choice of the anchor numéraire might well overestimate the extent of the Pound zone over the period. On the other hand, I would argue

Figure 6: Monetary Dominance By Region (1918-1939)



Unweighted quarterly average.

Figure 7: GDP-Weighted Size of Monetary Zones by Region



Continuous sample.

GDP-weighted, including the regional co-movement share but excluding the non-assigned share of individual countries.

that the existing literature's focus on stock measures of foreign-exchange reserves and currency denomination of international debt might miss some more granular developments that I am able to uncover.

3.2.2. Country-level Chronology

I now turn to a more detailed discussion of the rise and fall of the interwar monetary blocs looking at country-level estimates. The snapshot of the IMS in the immediate aftermath of WW1 provided in Figure 8, shows the first signs of increasing US dollar influence, particularly in the countries that were not involved in the war. The Dollar is the dominant anchor in most of the Asian sample (including Hong Kong) and compete on relatively equal footing with the Pound in Argentina, Uruguay and Peru. All the same, the Pound remains by and large the dominant currency. The only exception to this dominance in Europe is represented by the persistence of a Franc zone

composed by Latin Union countries, with the exception of Switzerland, and, more oddly, Germany.

By the mid-1920s, the picture has substantially changed. My estimates indicate that the USD overtook the GBP as the dominant global currency around 1927⁴. Germany, most of Scandinavia and the Baltics as well as Italy and Switzerland are by then firmly in the dollar zone. Dollar influence is also on the rise in Poland, the Iberian peninsula, India, the Straits Settlements and the Philippines. At the same time, no decline of British dominance is detectable in the Balkans and South America, while the Franc's influence has practically disappeared, in a context of domestic monetary instability.

The country-level findings outlined so far are broadly in line with the seminal work summarized in Eichengreen et al. (2017), showing that the Dollar took a dominant role since the early 1920s, overtaking the Pound in many dimensions around 1924-1926. An important qualification however applies. In my results, this shift towards Dollar dominance appears to peak around 1927-28, after which a reversal towards the Pound is clearly apparent in Asia, Scandinavia and Western Europe in 1928-29⁵.

The regain in dominance of the Pound is in any case short lived given credibility concerns and its ultimate collapse as part of the 1931 UK banking crisis. Figure 9 introduces another qualification with respect to the literature, including Eichengreen and Flandreau (2009) and Eichengreen et al. (2017). The retreat of the Pound between 1930 and 1933 is only marginally offset by the Dollar. To a larger extent, the Franc, which undertook a stabilization plan between 1926 and 1928 takes a leading role starting in 1932. Rising French influence can be detected by 1929-1930 in the Netherlands and Switzerland and becomes widespread by 1932, much earlier than the actual Dollar devaluation of 1933. The collapse of the Dollar pushes Canada out of the Dollar zone for the first time in the sample but temporarily brings Mexico in the Dollar zone.

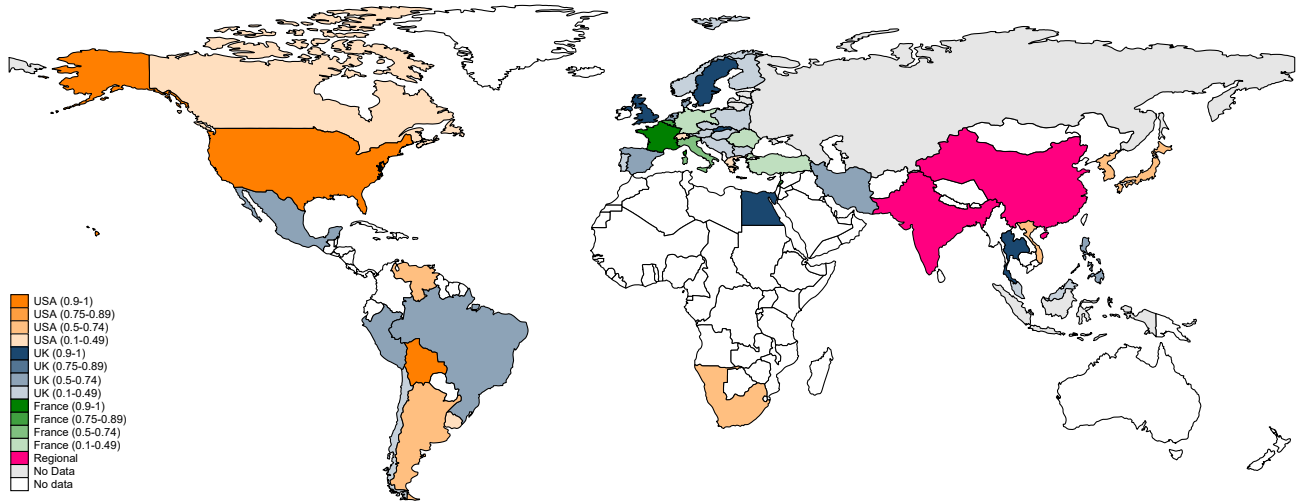
The IMS remains largely dominated by the Franc between 1932 and 1936, with the exception of Scandinavia, Austria, Czechoslovakia and some British dependencies retaining higher Pound dominance. The first signs of a weakening of Franc dominance are to be seen with the speculative

⁴The reader should be reminded that my estimates are based on three-years rolling coefficients.

⁵A future draft of this work should further investigate the sensitivity of this feature of my results to the choice of the numéraire anchor.

Figure 8: Dominant Currency By Country - Selected Years (1)

(a) 1922: Beginning of Dollar Dominance Outside of Europe
1922



(b) 1927: Peak of pre-Great Depression Dollar Dominance
1927

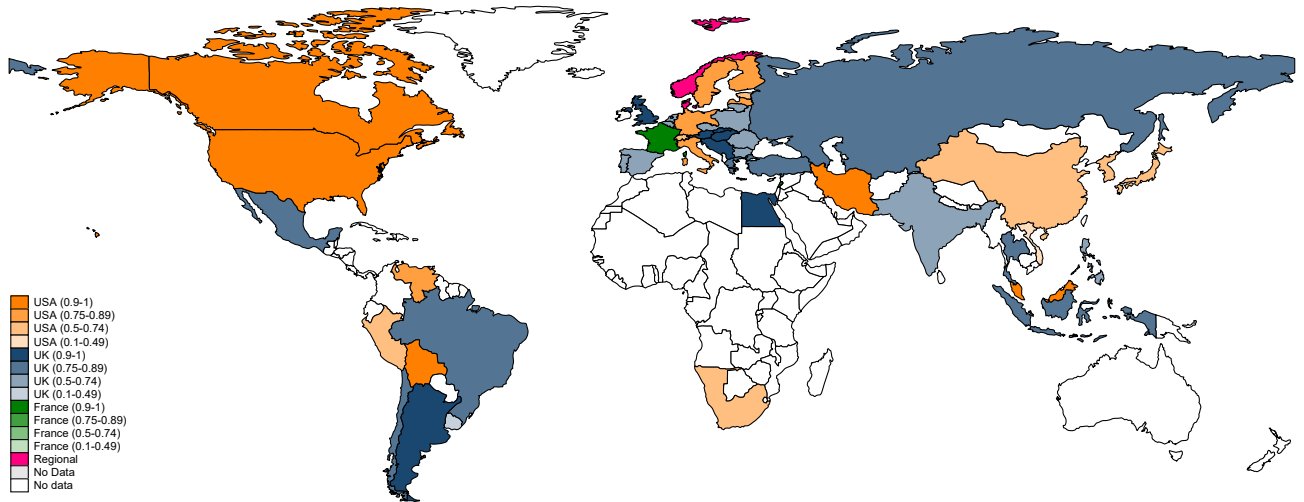
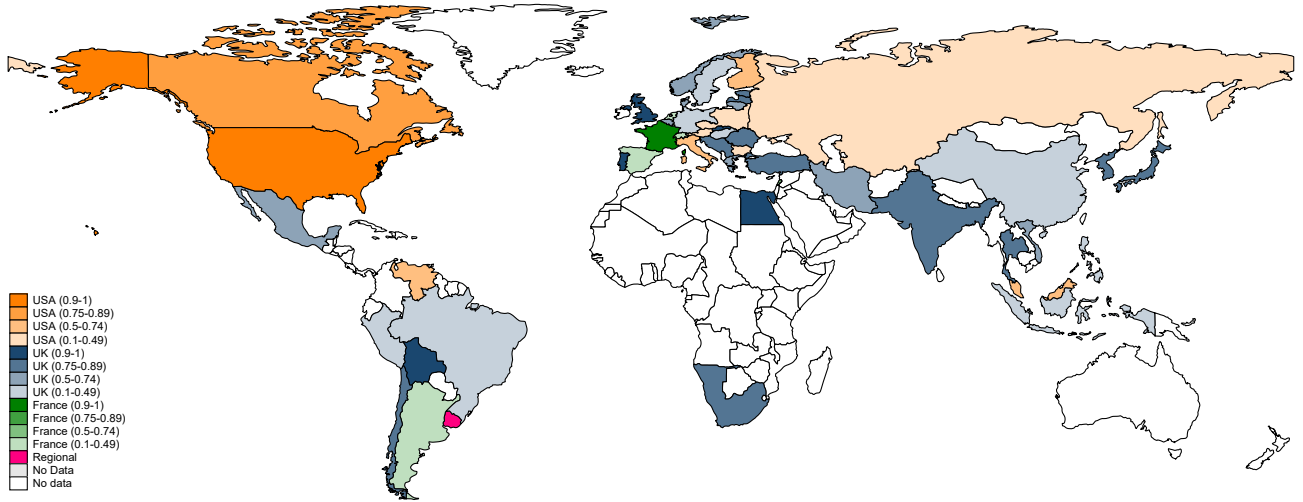
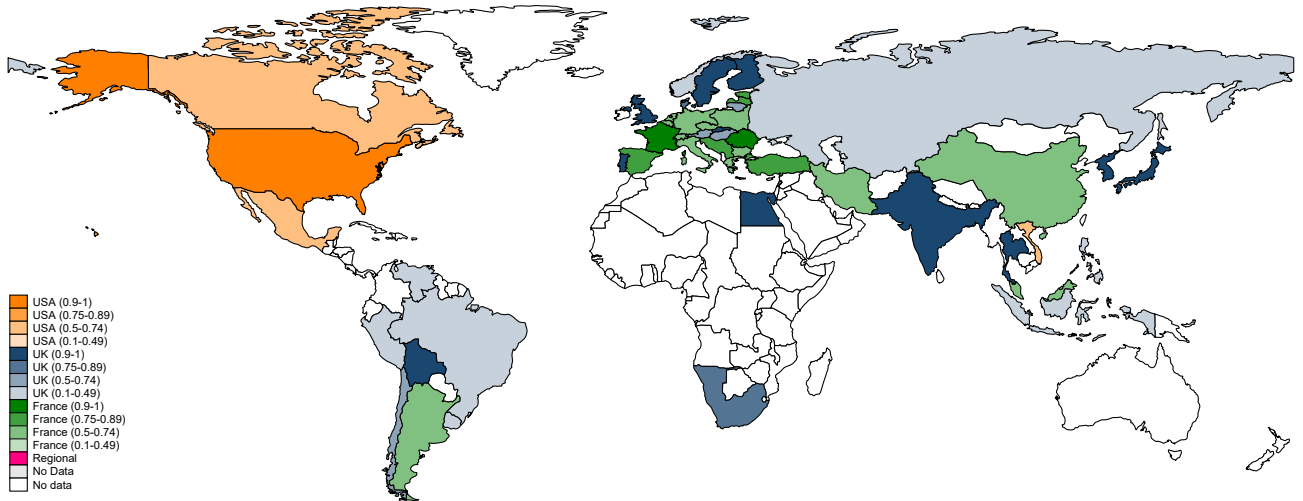


Figure 9: Dominant Currency By Country - Selected Years (2)

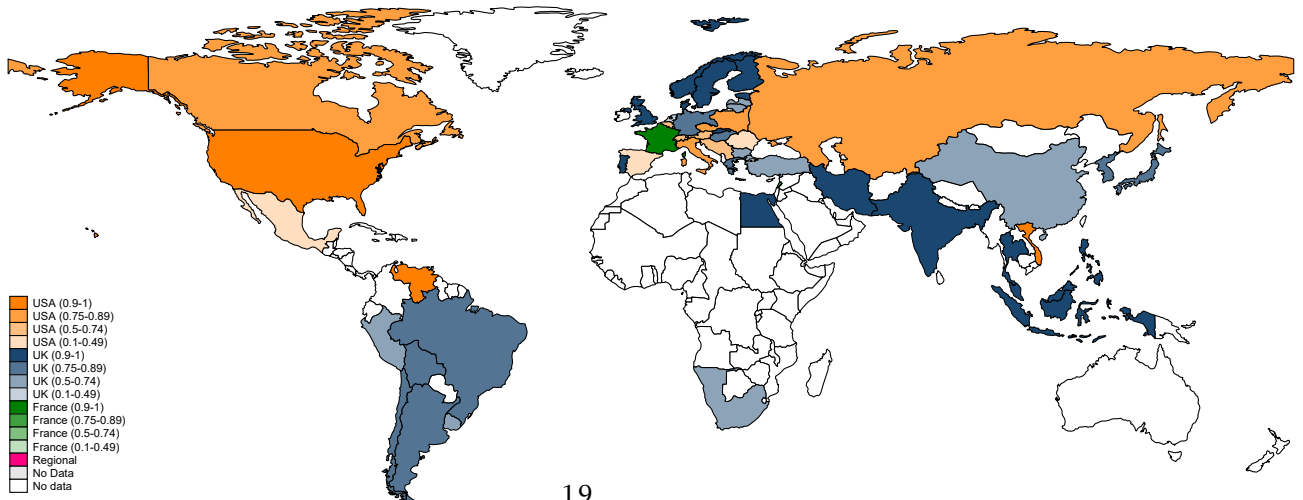
(c) 1931: Weakening of both Dollar and Pound Dominance
1931



(d) 1934: Global French Dominance Between 1932-1936
1934



(e) 1938: Regain of Dollar and Pound Dominance Following Franc Devaluation
1938



attack against the Franc, and Belgium leaving the Gold Bloc in 1934. The Franc is in turn forced to devalue, following the 1936 election, paving the way for yet another shake up of the IMS.

The final snapshot of the IMS before WW2 in Figure 8, shows a re-composition of the IMS along strong Pound dominance in Latin America and Asia, together with a sharp regain of Dollar dominance in large parts of Europe. Despite a regain of the Pound, the Dollar is again a close second global currency by the end of the 1930s and the dominant currency in Europe outside of Scandinavia.

4. The Structure of the International Monetary System in the Long Run

I now provide a summary of the share of the global economy⁶ accounted for each monetary bloc (Figure 10). As in Ito and McCauley (2019) countries are spread across monetary blocs depending on the respective share of the three anchor β s, which means that the same country can contribute at the same time to the size of several monetary blocs.

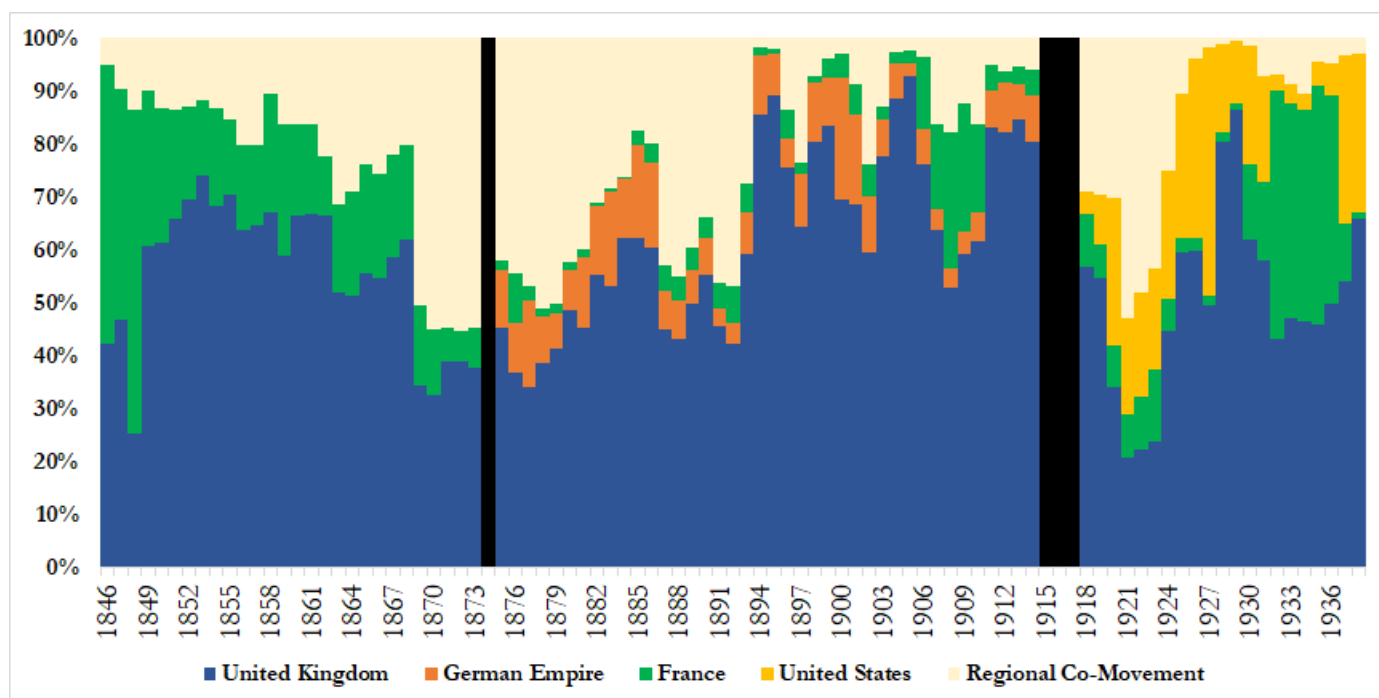
The pre-gold standard period up to 1870 is characterized by a duopolar IMS, with the share of France decreasing over the period from around 50% of the sample to around 15%. It is important to note that, as British dominance is exerted in more peripheral - but large - economies, a trade-weighting of the sample would re-balance the picture in favor of France.

The shock of 1870 sees Imperial Germany replacing France as the second largest anchor. However, British dominance increases markedly during the classical gold standard period, particularly at the expense of regional co-movement in non-European regions. In line with Lindert (1969), more multipolarity can be observed by the beginning of the 20th century.

Over the interwar period, including anchor countries in the calculation suggest that the Dollar bloc was the largest one since the early 1920s, while excluding anchor countries shows the Dollar

⁶The countries in the sample excluding the three anchors represent close to 70% of global GDP on average during the period, including the three anchors gets the share close to 100%.

Figure 10: Global GDP-Weighted Size of Monetary Zones (1846-1914)



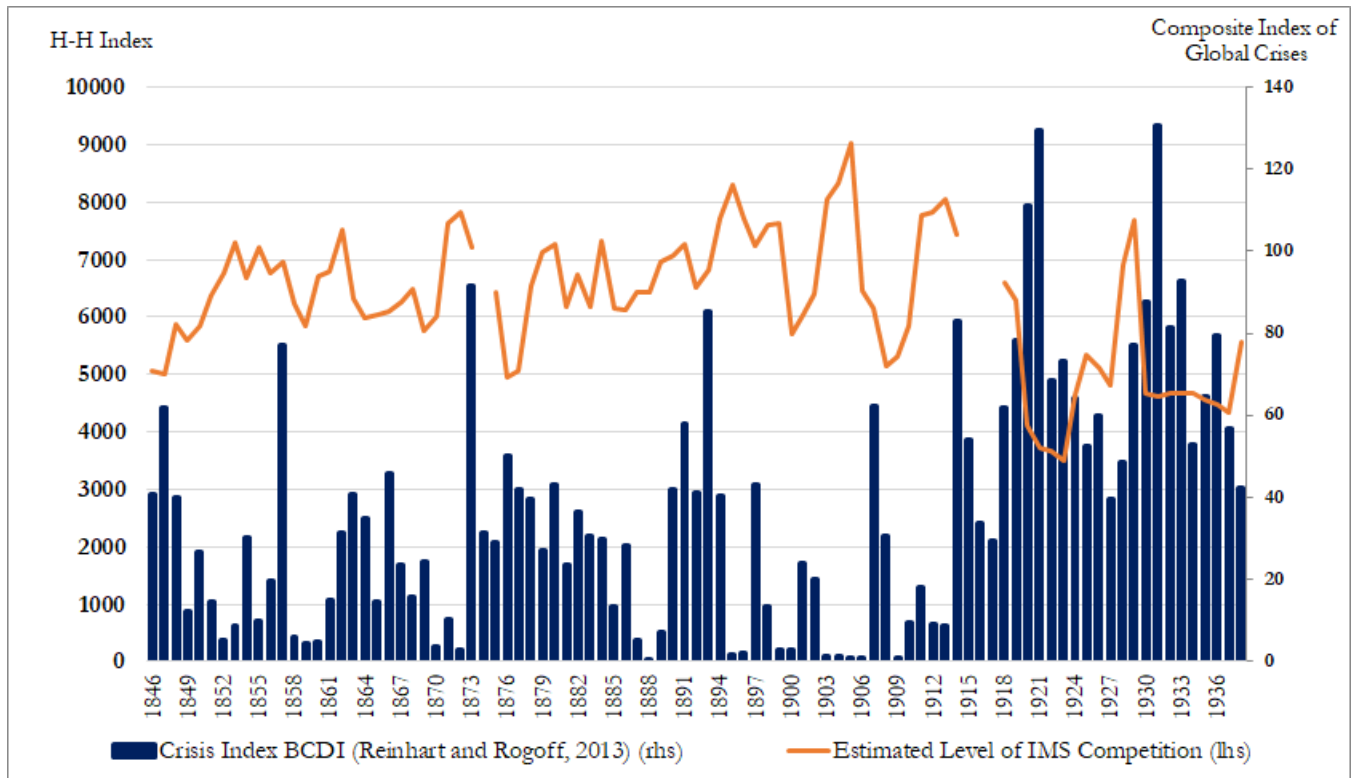
Continuous sample within sub-periods 1846-1873, 1875-1914, 1918-1939.

GDP-weighted, including the regional co-movement share but excluding the non-assigned share of individual countries.

bloc briefly overtaking the size of the Pound one in 1927, only to shrink drastically later on and stabilizing at around 40% of the sample's GDP after 1936. Depending on whether anchor countries are excluded from the sample, the Pound bloc remains on average relatively stable as a share of the sample's GDP, between 40 and 60%. At its peak between 1932 and 1936, the French bloc stably accounted for half the size of the sample's GDP.

The role of the overall structure of the IMS has received particular attention in a recent theoretical literature. Farhi and Maggiori (2017) develop a model of the IMS. Their model features an hegemonic issuer of global safe assets and outlines the trade off between the quantity of safe assets provided and the incentive to default on safe assets, rationalizing analytically the Triffin dilemma. Relaxing the assumption of monopoly in the market for global safe assets they then posit that, while a competitive market can be shown to increase the provision of safe assets and the stability of the IMS, a small oligopoly might be subject to run on one of the safe assets issuers, which will then be tempted to default through devaluation. This is very much in line with Nurkse (1944)'s view on the interwar dynamics of the IMS. On the other hand, an increase in the number

Figure 11: Global IMS Competition and Intensity of Financial Stress



Herfindahl-Hirschmann Index of estimated global currency factors (GDP-weighted). Higher number denotes less competition.

of suppliers of safe assets could have a positive effect on global financial stability Carney (2019).

While a rigorous empirical analysis of the issue is outside of the scope of the paper, I provide some suggestive evidence by quantifying the market structure for global currencies over time and comparing them with indicators of financial stress.

I compute an Herfindahl-Hirschmann Index of anchor currency "market share", proxied by the adjusted β s I estimate. Figure 11 depicts the Global IMS HH-Index by region over the sample alongside the global composite index of banking, currency, default and inflation crises by Reinhart and Rogoff (2015).

A key suggestion emerging from Figure 11 is that, although both the pre-1914 and interwar IMS had prominent multipolar features, competition among global currencies was much higher during the interwar gold-exchange standard. The classical gold standard experience of stability might therefore only partially mitigate the concerns over multipolarity and financial instability

highlighted by Nurkse (1944) and Farhi and Maggiori (2017).

References

- Bloomfield, A. I. (1959). *Monetary policy under the international gold standard: 1880-1914*. Federal Reserve Bank of New York.
- Carney, M. (2019). The growing challenges for monetary policy in the current international monetary and financial system. In *Remarks at the Jackson Hole Symposium*, volume 23.
- Chițu, L., Eichengreen, B., and Mehl, A. (2014). When did the dollar overtake sterling as the leading international currency? evidence from the bond markets. *Journal of Development Economics*, 111:225–245.
- Eichengreen, B. and Flandreau, M. (2009). The rise and fall of the dollar (or when did the dollar replace sterling as the leading reserve currency?). *European Review of Economic History*, 13(3):377–411.
- Eichengreen, B. and Flandreau, M. (2012). The federal reserve, the bank of england, and the rise of the dollar as an international currency, 1914–1939. *Open Economies Review*, 23(1):57–87.
- Eichengreen, B., Mehl, A., and Chitu, L. (2017). *How global currencies work: past, present, and future*. Princeton University Press.
- Farhi, E. and Maggiori, M. (2017). A model of the international monetary system. *The Quarterly Journal of Economics*, 133(1):295–355.
- Frankel, J. A. and Wei, S.-J. (1994). Yen bloc or dollar bloc? exchange rate policies of the east asian economies. In *Macroeconomic Linkage: Savings, Exchange Rates, and Capital Flows, NBER-EASE Volume 3*, pages 295–333. University of Chicago Press.
- Fratzscher, M. and Mehl, A. (2014). China’s dominance hypothesis and the emergence of a tri-polar global currency system. *The Economic Journal*, 124(581):1343–1370.
- Ilzetzki, E., Reinhart, C. M., and Rogoff, K. S. (2018). Exchange arrangements entering the 21st century: which anchor will hold? *Quarterly Journal of Economics*.

- Ito, H. and McCauley, R. N. (2019). A key currency view of global imbalances. *Journal of International Money and Finance*, 94:97–115.
- Lindert, P. H. (1969). *Key currencies and gold, 1900-1913*. Number 24. International Finance Section, Princeton University.
- Myers, M. G. (1936). *Paris as a financial centre*. PS King & Son.
- Nurkse, R. (1944). *International currency experience: lessons of the interwar period*. Number 4. League of Nations.
- Reinhart, C. M. and Rogoff, K. S. (2015). Financial and sovereign debt crises: Some lessons learned and those forgotten. *Journal of Banking and Financial Economics*, (2 (4)):5–17.
- Triffin, R. (1960). Gold and the dollar crisis: The future of convertibility.

Appendices

A. Data

Exchange rates data at weekly frequency between 1846 and 1914 against the British Pound are collected from the The Economist Archives for most European polities and from Global Financial Data for the non-European sample.

Table 1: Pre-1914 Sample

Polity	Region	Data Source	Availability
Argentina	Americas	Global Financial Data	1869-1914
Brazil	Americas	Global Financial Data	1869-1914
Canada	Americas	Global Financial Data	1869-1914
Mexico	Americas	Global Financial Data	1869-1914
United States	Americas	Global Financial Data	1862-1914
Cape Colony	Asia and Africa	Global Financial Data	1869-1914
China	Asia and Africa	Global Financial Data	1869-1914
Egypt	Asia and Africa	Global Financial Data	1869-1914
India	Asia and Africa	Global Financial Data	1869-1914
Japan	Asia and Africa	Global Financial Data	1869-1914
Ottoman Empire	Asia and Africa	Global Financial Data	1869-1914
Siam	Asia and Africa	Global Financial Data	1869-1914
Straits Settlements	Asia and Africa	Global Financial Data	1869-1914
Austria-Hungary	Southern and Central Europe	The Economist Archives	1846-1914
Italy	Southern and Central Europe	The Economist Archives	1863-1914
Two Sicilies (Continent)	Southern and Central Europe	The Economist Archives	1846-1862
Piedmont-Sardinia	Southern and Central Europe	The Economist Archives	1846-1862
Portugal	Southern and Central Europe	The Economist Archives	1846-1914
Russia	Southern and Central Europe	The Economist Archives	1847-1914
Two Sicilies (Island)	Southern and Central Europe	The Economist Archives	1846-1862
Spain	Southern and Central Europe	The Economist Archives	1846-1914
Granduchy of Tuscany	Southern and Central Europe	The Economist Archives	1846-1862
Belgium	WesternNorthernEurope	The Economist Archives	1846-1914
Berlin	WesternNorthernEurope	The Economist Archives	1865-1873
Denmark	WesternNorthernEurope	The Economist Archives	1880-1914
Frankfurt	WesternNorthernEurope	The Economist Archives	1846-1873
Hamburg	WesternNorthernEurope	The Economist Archives	1846-1873
Netherlands	WesternNorthernEurope	The Economist Archives	1869-1914
Norway	WesternNorthernEurope	Global Financial Data	1869-1914
Sweden	WesternNorthernEurope	Global Financial Data	1846-1914
Switzerland	WesternNorthernEurope	The Economist Archives	1892-1914

Exchange rates data at weekly frequency between the 4th of January 1918 and the 14th of October 1939 against the British Pound are collected from the British Bankers' Magazine publication and from Global Financial Data for selected polities. When multiple exchange rates are available because of capital controls, the "free" parallel exchange-rate is employed in the analysis.

Table 2: Interwar Sample (1918-1939)

Polity	Region	Data Source	Availability
China	Asia	Bankers' Almanac	1918-1939
Dutch East Indies	Asia	Bankers' Almanac	1918-1939
Egypt	Asia	Global Financial Data	1918-1939
French Indochina	Asia	Global Financial Data	1918-1939
Hong Kong	Asia	Bankers' Almanac	1918-1939
India	Asia	Bankers' Almanac	1918-1939
Japan	Asia	Bankers' Almanac	1918-1939
Persia	Asia	Global Financial Data	1918-1939
Philippines	Asia	Bankers' Almanac	1918-1939
Siam	Asia	Global Financial Data	1918-1939
South Africa	Asia	Global Financial Data	1918-1939
Straits Settlements	Asia	Bankers' Almanac	1918-1939
Syria and Lebanon Mandate	Asia	Global Financial Data	1918-1939
Bulgaria	Balkans	Bankers' Almanac	1918-1939
Greece	Balkans	Bankers' Almanac	1918-1939
Romania	Balkans	Bankers' Almanac	1918-1939
Turkey	Balkans	Bankers' Almanac	1918-1939
Yugoslavia	Balkans	Bankers' Almanac	1918-1939
Austria	Central-Eastern Europe	Bankers' Almanac	1918-1939
Czechoslovakia	Central-Eastern Europe	Bankers' Almanac	1918-1939
Free City of Danzig	Central-Eastern Europe	Bankers' Almanac	1918-1939
Germany	Central-Eastern Europe	Bankers' Almanac	1918-1939
Hungary	Central-Eastern Europe	Bankers' Almanac	1918-1939
Poland	Central-Eastern Europe	Bankers' Almanac	1918-1939
Russia	Central-Eastern Europe	Bankers' Almanac	1918-1939
Argentina	Americas	Bankers' Almanac	1918-1939
Bolivia	Americas	Global Financial Data	1918-1939
Brazil	Americas	Bankers' Almanac	1918-1939
Canada	Americas	Bankers' Almanac	1918-1939
Chile	Americas	Bankers' Almanac	1918-1939
Mexico	Americas	Bankers' Almanac	1918-1939
Peru	Americas	Bankers' Almanac	1918-1939
Uruguay	Americas	Bankers' Almanac	1918-1939
Venezuela	Americas	Global Financial Data	1918-1939
Denmark	Scandinavia	Bankers' Almanac	1918-1939
Estonia	Scandinavia	Bankers' Almanac	1918-1939
Finland	Scandinavia	Bankers' Almanac	1918-1939
Latvia	Scandinavia	Bankers' Almanac	1918-1939
Lithuania	Scandinavia	Bankers' Almanac	1918-1939
Norway	Scandinavia	Bankers' Almanac	1918-1939
Sweden	Scandinavia	Bankers' Almanac	1918-1939
Belgium	Western Europe	Bankers' Almanac	1918-1939
Italy	Western Europe	Bankers' Almanac	1918-1939
Netherlands	Western Europe	Bankers' Almanac	1918-1939
Portugal	Western Europe	Bankers' Almanac	1918-1939
Spain	Western Europe	Bankers' Almanac	1918-1939
Switzerland	Western Europe	Bankers' Almanac	1918-1939