

The Rise and Fall of Global Currencies Over Two Centuries

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Abstract

This paper quantifies the dynamics of global currencies and the architecture of the international monetary system over two centuries. Relying on a newly collected data on foreign exchange returns, I compute a continuous measure of the relative global dominance of key currencies, comparable over time, since 1825. The paper offers three key contributions. First, I provide a classification of monetary blocs over a significantly longer time-span compared to previous historical classifications of the international monetary system ([Ilzetzki et al., 2019](#)). Second, I offer a more systematic analysis of historical episodes of global currency competition, complementing previous detailed work on the inter-war period ([Eichengreen et al., 2017](#)). Third, I compute a continuous quantification of the competition structure of the international monetary system over two centuries. I find the current dollar hegemony to be, from a two centuries perspective, an anomaly. No currency has ever maintained such a large long-lasting lead over global currency rivals, as the previous pound sterling hegemon was frequently challenged by close competitors. In light of the recent debate on the costs and benefits of a multipolar international monetary system ([Farhi and Maggiori, 2018](#)), I document a positive relationship between increased global currency competition and the prevalence of financial crises.

Keywords: International Monetary System, long run history, dollar hegemony, monetary blocs, global currencies.

JEL classification: F3, F4, N2, E5.

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1. Introduction

This paper measures the rise and fall of global currencies and the competitive structure of the international monetary system since 1825. A key motivation of this work is to assess to what degree the current dollar hegemony is a historical anomaly from a two centuries perspective. Furthermore, I am able to observe and quantify several new historical episodes of global currency competition. This directly speaks to the literature on the costs and benefits of a multi-polar international monetary system and the outlook for dollar hegemony, in light of the ongoing policy debate ([Carney, 2019](#)) and a nascent theoretical literature ([Farhi and Maggiori, 2018](#)).

I offer two main empirical contributions. First, I provide a peace-time continuous measure, over two centuries, of the relative influence of global currencies, comparable over time, for a sample of polities representing at least 80% of world GDP and 90% of global trade. This allows for a systematic analysis of historical episodes of competition among international currencies. Second, I provide a continuous measure of the overall level of multi-polarity of the international monetary system over time.

To do so I rely on a large historical dataset of foreign-exchange returns, mostly at weekly frequency, based on an extensive effort of digitization of original printed sources. My work therefore follows an established practice of classifying countries in currency blocs based on exchange-rate behavior. A prominent contribution in this vein, covering the period 1946 to 2016 at a monthly frequency, is the work of [Ilzetzki et al. \(2019\)](#), updating earlier work by [Reinhart and Rogoff \(2004\)](#). In this paper I depart from their methodology, which is chiefly concerned with accurately describing exchange-rate regimes at the individual country-level, rather than measuring international monetary system discontinuities and global currency competition. They assign each currency, if consistent with its exchange-rate behavior, to a single monetary bloc. They therefore adopt, by construction, a "winner takes-all" approach to global currency blocs. However, monetary dominance might well be a fuzzy concept, with a single country potentially experiencing the influence of several global currencies at the same time¹. In

¹I hope, in future work, to be able to extend their "exchange arrangements" dataset further back in the past, relying on and complementing the data collected for this paper. This would require however an even more extensive data collection effort than the one I present below.

this paper I follow a more flexible approach², relying on foreign-exchange co-movements and the [Frankel and Wei \(1994\)](#) factor model, to estimate the relative weight of global currencies over two centuries of data, allowing for the same polity to experience dominance from more than one global currency.

I find the current dollar hegemony to be, from a two centuries perspective, an anomaly. No currency has ever maintained such a prolonged and large lead over global currency rivals in my sample. I find the international monetary system to have historically been largely multipolar. The previous global currency hegemon, the pound sterling, experienced frequent challenges to its primacy by close competitors, including the French franc in the 1860s, the mark after the German unification in the 1870s, and again the franc in the 1930s. The pound was overtook by the dollar a first time in the early 1920s and a second, final, time at the eve of WWII. I also document a positive correlation between the degree of competition in the international monetary system and the prevalence of financial crises over two centuries. The latter is however dependent on specific sub-periods.

Section 2 surveys the literature on dollar hegemony and the international monetary system in historical perspective. Section 3 briefly presents my original dataset of foreign-exchange returns since the 19th century, which is further detailed in Appendix 8. Section 4 presents the procedure to compute the relative weight of global currencies, based on foreign-exchange co-movements factor models. Section 4 describes the rise and fall of global currencies from a chronological perspective, as well my aggregate measurement of international monetary system competition over two centuries. Further results, including sensitivity analyses and a synthetic map chronology, are contained in Appendices 7.A and 7.B.

²Recent work with a similar approach include [Fratzscher and Mehl \(2014\)](#), [Tovar and Nor \(2018\)](#) and [Ito and McCauley \(2019\)](#).

2. Global Currency Hegemony and the International Monetary System in Historical Perspective

I contribute to an ongoing debate on the past and the future of the international monetary system by taking, for the first time, a continuous long run view over two centuries. The historical experience, and whether it should guide our thinking on the future of dollar hegemony, has long played a crucial role in this debate. The latter is summarized by [Eichengreen \(2019\)](#) by distinguishing two key views. On the one hand, he defines a "Harvard view", emphasising the persistence of dollar hegemony in the last 75 years and the fundamentally hegemonic character of the international monetary system. He describes this view, developed among others by [Gopinath \(2015\)](#) and [Farhi and Maggiori \(2018\)](#), as "fundamentally empirical". On the other hand, a "Berkeley view", based on Eichengreen's work with several co-authors ([Eichengreen et al., 2017](#)) as well as, among others, [Gourinchas and Obstfeld \(2012\)](#). This second view is characterised as "fundamentally historical" and consists in seeing dollar dominance as a "historical anomaly", and a more multipolar international monetary system as both desirable and likely to arise.

2.1. Dollar Hegemony and the International Monetary System

Three key dimensions characterise a global currency. The latter provides first of all a unit of account for both real and financial transactions. It is also the unit of account the official sector targets when managing a fixed-exchange regimes. Second, it is used as a medium of exchange to settle international transactions. Third, it is a store of value for both the official and private sectors. Along all these dimensions, we currently very much live in a "dollar world" ([Gourinchas, 2021](#)).

Looking at the dollar as a unit of account and medium of exchange, many important contributions, including [Goldberg and Tille \(2008\)](#) and [Gopinath \(2015\)](#), have examined its extensive role as an international trade vehicle currency. [Boz et al. \(2020\)](#) provide a new cross-country dataset on trade currency invoicing, confirming previous findings that the dollar share in invoicing is roughly 4 times the US share in global trade. [Ilzetzki](#)

[et al. \(2019\)](#) document a secular increase of the dollar as unit of account by the official sector: while in 1970 around 1/3 of currencies used the dollar as an anchor, this figure is now close to 70%.

Those two dimensions of a global currency's role interact in important ways. The emergence of an international currency from strategic complementarities in international markets was rationalised early on by [Rey \(2001\)](#). [Gopinath and Stein \(2018\)](#) set forward both theoretically and empirically a "Dominant Currency Paradigm" (DCP), where export prices are set and sticky in a dominant currency and firms use imported intermediate inputs. This means the exchange rate pass-through to import prices is mainly driven by the dollar as opposed to the bilateral exchange-rate for non-US countries. Therefore, dollar dominance increases the desirability of stabilising the dollar exchange rate ([Egorov and Mukhin, 2020](#)), as domestic monetary policy is unable to stabilise demand for exports.

The network externality component of international currencies was already present in [Mundell \(1961\)](#). Dollar use is likely to increase endogenously in other currency functions the more it is used to invoice trade. As agents are likely to hold liquid assets in the currency they transact, there are spillovers from DCP to the use of international currency safe assets as stores of value. [Maggiore et al. \(2018\)](#) document, relying on security-level holdings data, how global portfolios have substantial home-bias. The only - major - exception is the dollar, with close to 3/4 of foreign holdings in the US being denominated in dollars. [Gopinath and Stein \(2021\)](#) argue that a two-way feedback loop occurs, where, as dollar invoicing increases, higher demands for dollar safe assets depress dollar borrowing costs, in turn making it attractive to finance and invoice international trade in dollars. In turn, this reinforces the desirability for dollar reserves to the official sector ([Gopinath and Stein, 2018](#)). This is consistent with a multiple equilibria winner-takes all international monetary system, where there pervasive network effects. There might be inertia in the hegemonic currency but any change in the pecking order of international currency is likely to be dramatic in magnitude.

The above characterisation of international currency hegemony has implications for the functioning of the international monetary system as well as domestic financial systems and policies.

Based on the dollar hegemonic experience, the international monetary system architecture revolves around the provision of safe assets by the hegemon (Gourinchas, 2017). As shown in Gourinchas and Rey (2007a) this implies a peculiar balance-sheet for the "world banker" hegemon, long risky foreign denominated assets and short risk-free dollar liabilities. In the case of the US, this nets the hegemon an excess return on its foreign assets position - an "exorbitant privilege" - estimated at about 2% annual real returns. Van Hombeeck (2020) finds a similar pattern looking at the external position of a past hegemon, the United Kingdom in the late 19th century. This balance sheet structure also provides a further advantage to the hegemon: an additional adjustment channel of external deficit through a valuation effect³ (Gourinchas and Rey, 2007b). At the same time, this world banker is also an insurer, as the safe-heaven character of the dollar means it tends to appreciate in bad times, transferring resources to the rest of the world holders of dollar safe assets in a global crisis (Gourinchas et al., 2018).

The implications of dollar hegemony are however not limited to the "exorbitant privilege and duty" of issuing the safe asset at the core of the international monetary system architecture. More contentiously, dollar hegemony has important spill-overs on the transmission of shocks and domestic policies. Rey (2015) first described a "global financial cycle", characterised by strong co-movement of global asset prices and capital flows, transforming the Mundellian "trilemma" into a "dilemma". US monetary policy is a key determinant of the global cycle (Miranda-Agrippino and Rey, 2020). The dilemma therefore implies that, regardless of their exchange-rate regime, countries have a choice of either limiting capital flows or experiencing significant spillovers from Fed policy on monetary and financial conditions via the credit channel (Gerko and Rey, 2017). These considerations are reminiscent of the characterisation of the Bank of England as the "conductor" of the gold standard global monetary "orchestra" by Keynes (1930), making third countries such as the US susceptible to destabilising gold flows. The global financial cycle can therefore magnify boom and bust credit cycles, suggesting that, in a "dilemma" world, macro-prudential policies should play a prominent role (Rey, 2019).

Having described the main features of the current hegemonic international monetary

³As when the dollar depreciates this improves the net external position of the US.

system architecture, I turn to the recurrent theme of whether dollar hegemony is sustainable and whether a more multipolar international monetary system is both possible and desirable. The asymmetric features of the international monetary system have long been a concern for observers outside the US. On the one hand, it has been a source of frustration, at least since French President De Gaulle and his finance minister Giscard d'Estaing denounced the "exorbitant privilege" of the dollar. On the other hand, many have feared that dollar hegemony could prove destabilising. In path-breaking article, [Triffin \(1960\)](#) observed dollar dominance faced a "dilemma", as the need for an increased supply of safe dollar assets - to fill the needs of a growing global economy - was inconsistent with maintaining a constant value of gold in terms of dollars.

As explicit efforts by both the Euro Area and China to foster the international use of their currency are ongoing, the case for a more multipolar international monetary system was put forward, among other policy makers, by [Carney \(2019\)](#). He argued a more multipolar international monetary system would reduce monetary and financial spillovers, allowing countries to alleviate the "dilemma", but would also increase the total supply of safe assets, with important benefits for global financial stability. He particularly underlined the potential of new payment technologies in supporting such a transition.

The scarcity of safe assets, signaled by the decline of equilibrium interest rates globally, supports the view that dollar hegemony might become a more unstable equilibrium. The need for the US to continue supplying safe assets to the world, although the share of the US in the world economy is declining, might well give rise to a "new Triffin dilemma" ([Gourinchas and Rey, 2007a](#); [Farhi et al., 2011](#)), with provision of safe assets becoming inconsistent with the US fiscal capacity. However, whether a decline of the dollar would give rise to a multipolar international monetary system is ambiguous. [Farhi and Maggiori \(2018\)](#) describe a model of the international monetary system where multiple equilibria can arise and competition among global currencies leads to self-fulfilling crises with investors coordinating in and out of global currencies. As such, they argue ([Farhi and Maggiori, 2019](#)), in line with [Gopinath and Stein \(2018\)](#), that an equilibrium might be more likely to be found in the replacement of the current hegemon with a new one. Their view echoes the early assessment of the interwar gold-exchange

standard experience of global currency competition by [Nurkse \(1944\)](#).

2.2. An Historical Perspective on Discontinuity and Multipolarity in the International Monetary System

[Eichengreen \(2019\)](#) notes how the pessimistic view on the sustainability of a multipolar international monetary system is not necessarily justified in light of the history of the international monetary system. Based on a large body of literature he contributed to with several co-authors⁴, he argues that international monetary system hegemony is an historical anomaly and that the stability of a multipolar international monetary system is contingent on the policies and the degree of cooperation pursued by key countries. The latter can be conducive to a functioning multipolarity such as during the classical gold standard, or, consistently with the "Harvard view", destabilising, similar to the interwar experience. The below summarises how the historical experience is at odds with a natural monopoly view of the international monetary system.

There is ample evidence that at least some elements of multipolarity were present as the first globalisation unfolded in the 19th century. Before 1870, three blocs based on different monetary standards coexisted: the Gold one around the British Empire, the bimetallic one around France and the silver one, spanning from Eastern Europe to Asia coexisted ([Eichengreen and Flandreau, 1994](#)). French monetary diplomats attempted to gather momentum towards the harmonisation of the international monetary system around the French Franc in the 1860s. As the 1870 Franco-Prussian war destabilised the French external position and prevented effective cooperation with the newly formed German Empire ([Flandreau, 1996](#)), a global movement towards the gold standard occurred ([Eichengreen and Flandreau, 1994](#)).

This apparent shift towards British hegemony however hid some key features of multi-polarity. Countries wishing to adopt the gold standard found it costly to acquire the gold needed to back internal circulation. Starting with the National Bank of Belgium in 1872, central banks began to accumulate foreign-currency denominated assets ([Ugolini, 2012](#)) that could be used to intervene in bullion and foreign-exchange markets as well as to back domestic circulation in place of gold. This gold-exchange standard

⁴Summarised in [Eichengreen et al. \(2017\)](#).

became attractive for a number of countries, mainly poorer or smaller economies, as a way to reduce the cost of operating a gold standard. Assets denominated in sterling certainly represented the lion share of those early foreign balances. London was the deepest bullion market and the confidence in the safe asset character of the pound was justified by a central bank playing its role of lender of last resort in a credible way (Bignon et al., 2012). However, the classical gold standard was far from consistent with a winner-takes all international monetary system. Flandreau and Jobst (2005) show that several financial centers played a significant role in the global foreign-exchange market. Lindert (1969) estimates of foreign balances holdings show how sterling only accounted for roughly half of global reserves, with the franc and the mark each playing a substantial role.

The second key point documented by Eichengreen's historical view of the international monetary system is that, historically, network-effects of global currencies have not been strong enough to justify a pervasive incumbent advantage in international monetary system competition. This is obviously at odds with the literature grounded in the dollar hegemony experience (Gopinath and Stein, 2018), but also contradicts early views on the slow transfer of leadership between the pound and the dollar. While Triffin (1964) and Chinn and Frankel (2005) posited that the dollar only overtook the sterling after WW2, new estimates of global reserve holdings contradict this stylised fact and put into perspective the role of inertia in global currency status.

Eichengreen and co-authors show that the dollar rapidly competed on par and even surpassed the sterling as soon as WW1. Looking at new foreign reserves data for the interwar period, Eichengreen and Flandreau (2009) show that reserve currency status was evenly shared in the 1920s and that dollar balances overtook sterling ones by 1925. The picture was complicated by the 1931 and 1933 respective devaluations of the sterling and the dollar, which prompted liquidations of foreign balances, but dollar balances again equalled and surpassed sterling ones at the eve of WW2.

A similar picture, at odds with pervasive network externalities, emerges looking at trade credit financing. Eichengreen and Flandreau (2012) highlight how US intermediaries managed to gain significant shares of the market for acceptances by the early 1920s, a market traditionally dominated by the previous international monetary sys-

tem hegemon. Analogous findings were uncovered in [Chițu et al. \(2014\)](#), examining the currency denomination of interwar global bond markets. In this case the dollar overtook sterling by 1929, with financial deepening in the US providing the necessary boost to overcome sterling’s incumbency. The fact that sterling managed to retake back prominence in bond markets denomination in the 1930s highlights the potentially room for rapid reversals in global currency status.

3. Data

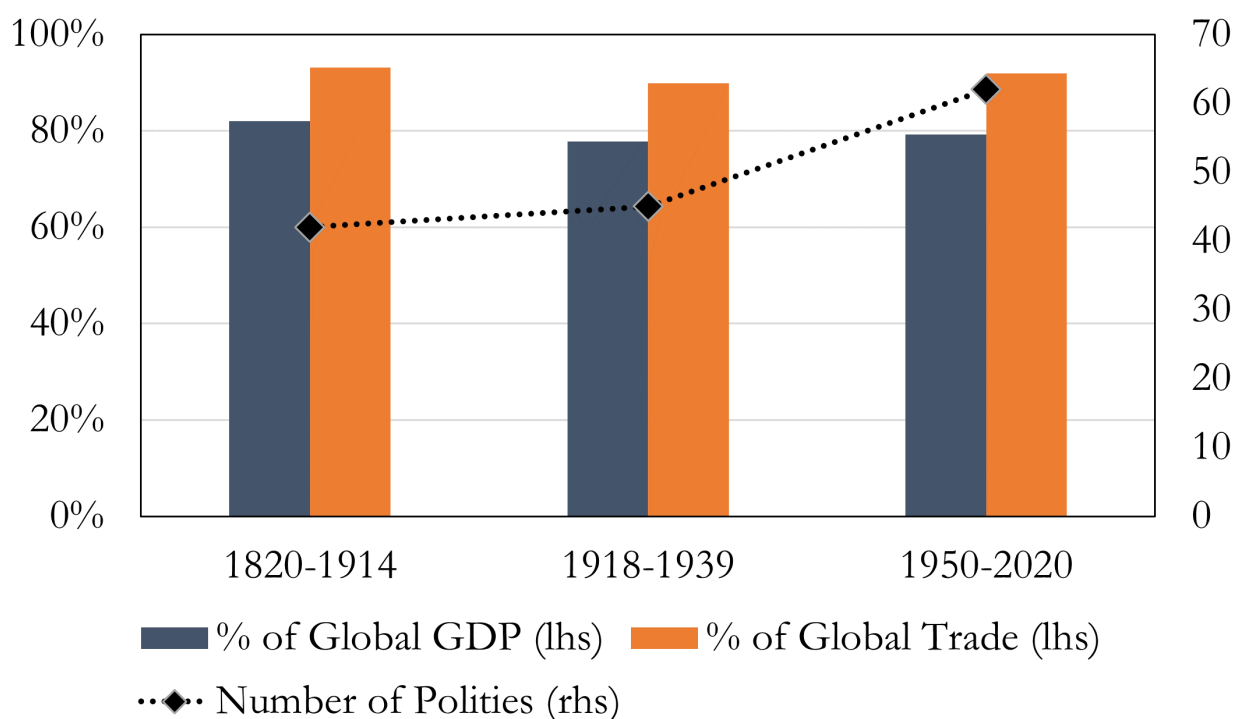
The present paper is the first result of an extensive effort of data collection of exchange-rate prices since the 19th century. Data on foreign-exchange quotes from original printed sources were digitized at weekly frequency from 1846 to 1939 for the entirety of the London currency market. I therefore provide, to my knowledge, the most comprehensive original dataset of historical exchange-rates prices at weekly frequency⁵. Among previous efforts, weekly frequency data for exchange-rates were collected by [Boyer-Xambeu et al. \(1994\)](#) for the three pairs of currencies in three financial centers between 1812 and 1870. [Neal et al. \(2003\)](#) collected weekly exchange-rate for a panel of ten currencies between 1880 and 1914. Looking at the post-WWI period, [Accominotti et al. \(2019\)](#) collected a dataset of nineteen currency returns at daily frequency over a century.

My original data collection yields a weekly panel of up to twenty-one currencies between 1846 and 1914 and forty-five currencies between 1918 and 1939. In this paper, I merge this dataset with other original and commercial sources (See Section 8) to obtain a total coverage of a minimum of twenty-eight currencies since 1820⁶. Monthly frequency data are used for all currencies between 1825 and 1846 and, when weekly frequency data are unavailable, between 1846 and 1914 for a minority of currencies. The way I handle the transition between monthly and weekly data is detailed in Section 8. In terms of geographic coverage, I try as much as possible to include, throughout the 1825-2020 sample period, currencies that are traded at any point during 1846-1939 in

⁵See Section 8 for a comparison with the aggregate dataset of commercial data provider GFD, which I also rely on in this paper.

⁶Over each sub-period and with the exclusion of world wars years.

Figure 1: Global Coverage of the Sample



The figure shows the share of global GDP and trade covered by the maximum number of polities included in each sub-period. GDP refers to years 1914, 1929 and 2010. Global trade refers to the sub-period averages.

the London market, as well as countries that represent more than 1% in global trade on average during each sub-period. Whenever possible, I rely on originally collected data or BIS data after 1945. Global Financial Data is used when the former two are not an option. Periods of, among others, capital controls, political instability or communist rule mean that some countries experience missing reporting for a number of years.

Figure 1 shows the global coverage of my sample, which remains broadly stable over two centuries at about 80% of global GDP and 90% of global trade.

The increase in the number of currencies in the sample over time reflects an upward trend in both political fragmentation and globalisation over the last two centuries. Both factors are relevant in quantifying the changing structure of the international monetary system. Therefore, I favor including in the analysis exchange-rate data as they start to be reported in the sources I digitise⁷ rather than taking a continuous sample approach. Data sources and coverage are detailed in Section 8.

⁷Or become available in GFD for non-European currencies in the 19th century.

4. Foreign-Exchange Co-Movements and Global Currency Competition

4.1. Empirical Set-Up

My quantification of the relative dominance of global currencies over two centuries is based on foreign-exchange co-movements.

The channels relating foreign-exchange co-movements to global currency anchors are both heterogeneous in contemporary data (McCauley and Shu, 2019), and likely to evolve over the time-span covered by the paper. In the early years of the dataset, currencies are either on a commodity standard, and therefore similar to target zones⁸, or in-convertible floats. In both cases, co-movements with key currencies are likely to reflect spillovers of nominal shocks or trading relations, a stylised fact that persists in contemporary data (Fratzscher and Mehl, 2014). Starting from the mid to late 19th century, monetary authorities are more likely to have played a direct role, with co-movements also reflecting monetary policy reaction functions and the accumulation of foreign balances as a policy tool.

To estimate the relative weight of global currencies I rely on the method first introduced by Haldane and Hall (1991) and Frankel and Wei (1994), respectively looking at the empirics of "*Dollar-Deutschemark polarisation*"⁹ and the rise of the Yen as an international currency. It consists in estimating, for each currency of interest, a factor model of the type

$$\Delta \frac{e_t}{\text{Numéraire}_t} = \alpha + \sum_h \beta_h \Delta \frac{\text{GlobalCurrency}_{h,t}}{\text{Numéraire}_t} + \epsilon_t \quad (1)$$

4.1.1. Numéraire

The choice of a particular *numéraire* unit can influence the point estimates of Frankel-Wei factor models. *Numéraires* typically favored by the literature are freely

⁸The upper and lower bounds of the target zone mainly depending on the transaction costs faced by arbitrageurs when physically shipping precious metals.

⁹See Giavazzi and Giovannini (1985).

floating currencies, usually from small countries with an open capital account, such as the New Zealand dollar or the Swiss franc. A common alternative is represented by international units of account such as the SDR or Gold¹⁰ (Frankel and Xie, 2010).

No single currency consistently fulfills the above criteria for the entirety of the sample. As such, I turn to precious metals and use the London price of a Silver Ounce as my preferred *numéraire*¹¹. The choice of a commodity price as *numéraire* has two main advantages. It is consistently available over two centuries and allows to avoid the exclusion of any available country from the analysis.

As a robustness check, I also select for each main sub-period a small open economy currency that, over each sub-period, has close to no missing values, is not strictly pegged at any point to a global currency and does not experience a currency black-market. This leaves me with the Dutch Guilder as the alternative *numéraire* for the pre-WWI estimating sample, the Hong Kong dollar for the inter-war period and the Swiss franc for the post-WWII era.

4.1.2. Global Currency Candidates

I select which global currencies candidates to be included as factors for each sub-period as a prior reflecting the historical literature.

For the 1820-1914 period I include as global currency factors the British sterling, the French franc and the German mark, as identified by Lindert (1967). Those currencies made up more than 90% of official reserves holdings between 1899 and 1913, with about half of those being denominated in British sterling (Lindert, 1969). While the United Kingdom and France had been the main global monetary and financial powers since the beginning of the century, the role of Germany as a capital exporter and safe asset issuer only goes back to the country's unification in 1871. Before then I however include the Hamburg mark banco as the German factor since 1820. First, the Hamburg mark banco had long played a role as an international currency issued in the main silver-

¹⁰Ito and McCauley (2019) also estimate Frankel-Wei factor models relying on one of the anchors as *numéraire*. This approach presents a number of issue in a long-run sample with higher competition and transitions among global currencies.

¹¹The price of Gold is unsuitable for such purposes in a historical setting as its key monetary role in large financial centers allows for very little variability of its price in terms of global currencies before 1971.

based financial center of Europe. Second, estimating a German factor for the whole sub-period makes it easier to evaluate the shift in the international monetary system brought about by the German unification. There would be no historical justification to include the US dollar in the pre-1914 global currency horse-race. The United States were a catching up capital importer for most of the period, with dollar reserves only being held in neighboring Canada, and a lower share of global reserves than Dutch guilders and Scandinavian currencies (Lindert, 1969). This choice of candidate global currencies for the period is also largely confirmed by the international monetary system centrality indices computed by Flandreau and Jobst (2005). I therefore estimate a preferred specification, using the London price of a Silver Ounce (XAG) as *numéraire*, that writes:

$$\Delta e_t^{i/XAG} = \alpha + \beta_{it}^{GBP} \Delta e_t^{GBP/XAG} + \beta_{it}^{FFR} \Delta e_t^{FFR/XAG} + \beta_{it}^{DEM} \Delta e_t^{DEM/XAG} + \epsilon_t \quad (2)$$

In the inter-war period (1918-1939) the British sterling, the US dollar and the French franc are considered as candidate global currency factors. This follows findings by Eichengreen and Flandreau (2009). They describe the interwar international monetary system as a shift from the sterling-franc-mark oligopoly of the pre-WWI period to a sterling-dollar duopoly. They also highlight the case of France as an "aspiring" distant third. The German mark is excluded from the global currency factors in the inter-war sub-period. After WWI, Germany experienced deep political and economic instability, hyperinflation and the "transfer problem" related to war indemnities (Ritschl, 2012) as well as strict capital controls after the 1931 banking crisis. For the inter-war sample, I therefore estimate the following equation:

$$\Delta e_t^{i/XAG} = \alpha + \beta_{it}^{USD} \Delta e_t^{USD/XAG} + \beta_{it}^{GBP} \Delta e_t^{GBP/XAG} + \beta_{it}^{FFR} \Delta e_t^{FFR/XAG} + \epsilon_t \quad (3)$$

In the last sub-period between 1948 and 2020, I consider as global currency factors the US dollar, the German mark - replaced by the euro from 1999 onward, the British

pound sterling and the Japanese Yen. Whether to exclude the pound sterling as a factor from the 1970s onward - when the Sterling Area eventually collapsed (Avaro, 2020), is a matter of debate. I prefer to include a British factor till the end of the sample instead of artificially setting it to zero¹². The inclusion of the French franc as a global currency factor has little merit after WWII, in light of the successive adjustments of the franc’s parity before 1973 and the ”German Dominance” on the European Monetary System afterward (Giavazzi and Giovannini, 1988) and it is therefore excluded. The rise of the Japanese Yen has, on the other hand, been a recurrent topic in international monetary debates over the last decades. I include a Yen factor from 1968 onward, as before then the Yen co-moves almost perfectly with the US dollar. Finally, I choose to exclude the Chinese Renminbi from the global currency factors. The topic of whether a renminbi bloc has started to emerge in the last few years has prompted several empirical contributions with contrasting results, including Fratzscher and Mehl (2014), Kawai and Pontines (2016), Tovar and Nor (2018) and McCauley and Shu (2019). They notably highlighted the econometric issues of including the renminbi - given its high levels of collinearity with the US dollar - in a Frankel-Wei factor model. While I believe the present work and, particularly, its future extensions, will help shed lights on the future outlook for the renminbi as an international currency, I consider the estimation of recent co-movements with respect to the Chinese currency to be outside of the scope of the paper. The preferred Frankel-Wei factor model for the last sub-period is therefore:

$$\Delta e_t^{i/XAG} = \alpha + \beta_{it}^{USD} \Delta e_t^{USD/XAG} + \beta_{it}^{GBP} \Delta e_t^{GBP/XAG} + \beta_{it}^{DEM} \Delta e_t^{DEM/XAG} + \beta_{it}^{JPY} \Delta e_t^{JPY/XAG} + \epsilon_t \quad (4)$$

4.2. Yearly Global Currency Weights

The key empirical contribution of this paper is to divide the world economy into global currency zones for every year since 1825. To do so, I take a bottom-up approach similar to Ito and McCauley (2019), estimating weights for each polity in my sample and aggregating up. The procedure that leads from weekly-exchange rate co-movements

¹²If the British factor is excluded from 1976 onward, its weight tends to be equally redistributed among the dollar and mark/euro factor.

to yearly global currency weights at the world economy level can be summarised by the following three steps:

1. Equations 2, 3 and 4 are estimated at the highest frequency available for each individual polity, over rolling windows of six years¹³, trimming foreign-exchange movements and excluding any weekly absolute change greater than 10%. For every polity i and every candidate global currency h , I obtain a coefficient $\widehat{\beta}_{it}^h$ that varies at the weekly¹⁴ frequency. To be clear, my approach implies that a polity can experience monetary dominance from several global currencies at the same time.
2. I then calculate yearly anchor currency weights for each global currency at the polity level. I first set all the negative estimated coefficients to zero, partially following the adjustments carried by Ito and McCauley (2019). Then, for every polity and every year, I compute an inverse-variance weighted-average of each weekly (monthly) $\widehat{\beta}_{it}^h$, using robust standard errors estimated in the first step, ensuring my synthetic measures gives more weight to more precise higher frequency estimates¹⁵. For polities where $\sum_{h=1}^H \widehat{\beta}_{iht} > 1$, yearly currency weights are normalised so that their sum is equal to 1. This means that, for some polities, a positive "Non-Assigned" weight exists, which is equal to $1 - \sum_{h=1}^H \widehat{\beta}_{iht}$. Also, the polity issuing a global currency is assigned a weight of 1 for that currency and zero for all other global currencies.
3. Yearly currency weights at the polity level for each global currency are then aggregated up at the world level¹⁶. For each global currency, I compute the world-level yearly weight as the average of the available polity-level weights for the year, weighted by the share of each polity in either the sample's total GDP or international trade. For this measure to capture as much as possible relevant changes

¹³With a minimum of 52 observations. The window is set at seven years and a minimum of 36 observations for monthly series.

¹⁴Monthly for some estimates of Equation 2.

¹⁵In the period 1820-1914, for the first five years after weekly data become available I further average the values of the inverse-variance weighted-average of the monthly and weekly weights to compute the yearly average.

¹⁶Defined as the total available sample, which fairly consistently accounts for more than 80% of GDP and 90% of international trade.

in the relative importance of global currencies, I make two choices. First, GDP or trade-weights are held fixed for each sub-period¹⁷ so that my quantification is not overly influenced by GDP and trade movements. Second, the global average include any polity as soon as data availability allows for its annual scores to be estimated, rather than trying to achieve a continuous sample. This is because the fact that foreign-exchange data become available *in itself* is likely to be endogenous to a change in the way a certain polity participates in the international monetary system, and therefore reflects a shift in the structure that is of interest to the analysis.

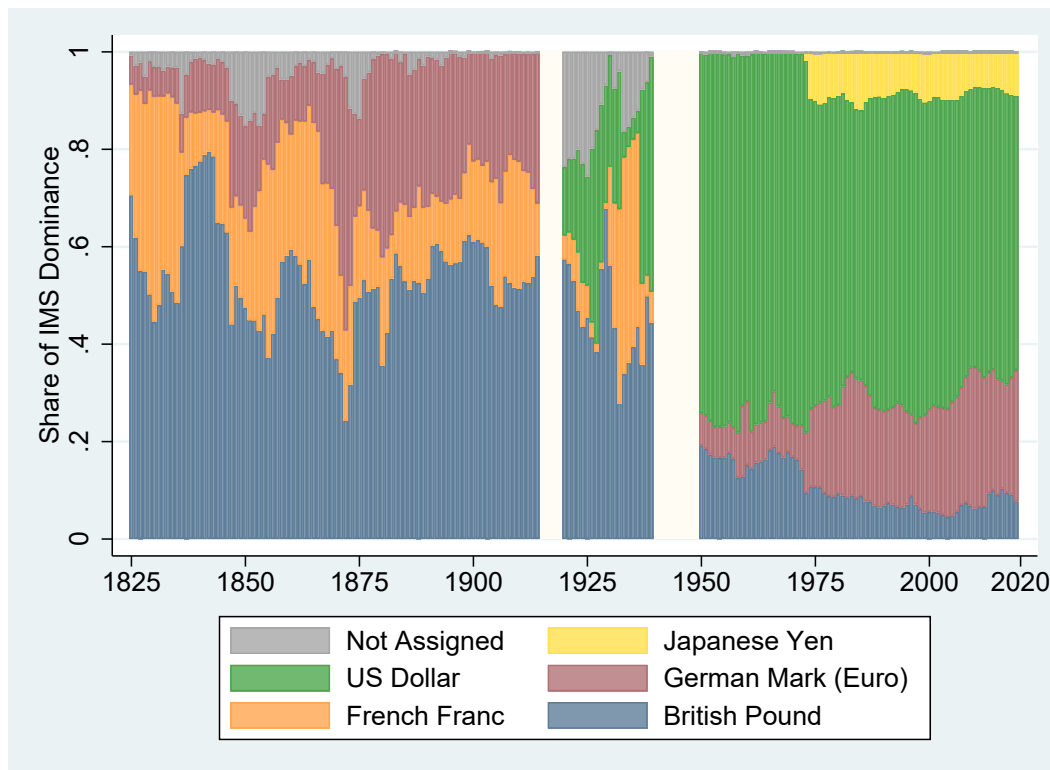
5. The Rise and Fall of Global Currencies Over Two Centuries

I now turn to the results of the bottom-up classification of the international monetary system into global currency areas. The discussion is chronological and attempts to compare my continuous measure of global currency competition over two centuries to the existing literature on the rise and fall of global currencies. I also provide a new measure of the monetary system competitive structure since 1825, as well as some correlational evidence on its relationship to financial stability (Farhi and Maggiori, 2018). A large amount of material is left to the Appendix, including pooled regressions, results of the bottom-up classifications under different specifications for each global currency (Section 7.A), and maps depicting polity-level results over the course of the two centuries sample (Section 7.B).

Figure 2 summarises the paper’s contribution in one chart, showing the relative weights computed for each global currency over two centuries. Looking at the broader picture three findings emerge. First, the post-WWII era of dollar dominance indeed appears as an historical anomaly. Except for a very brief interval of very high sterling influence in the 1840s, never in the last two centuries a global currency has registered levels of dominance comparable to the US during the Bretton Woods period, and, to a lesser extent, in recent decades. A partial qualification to this anomaly is however

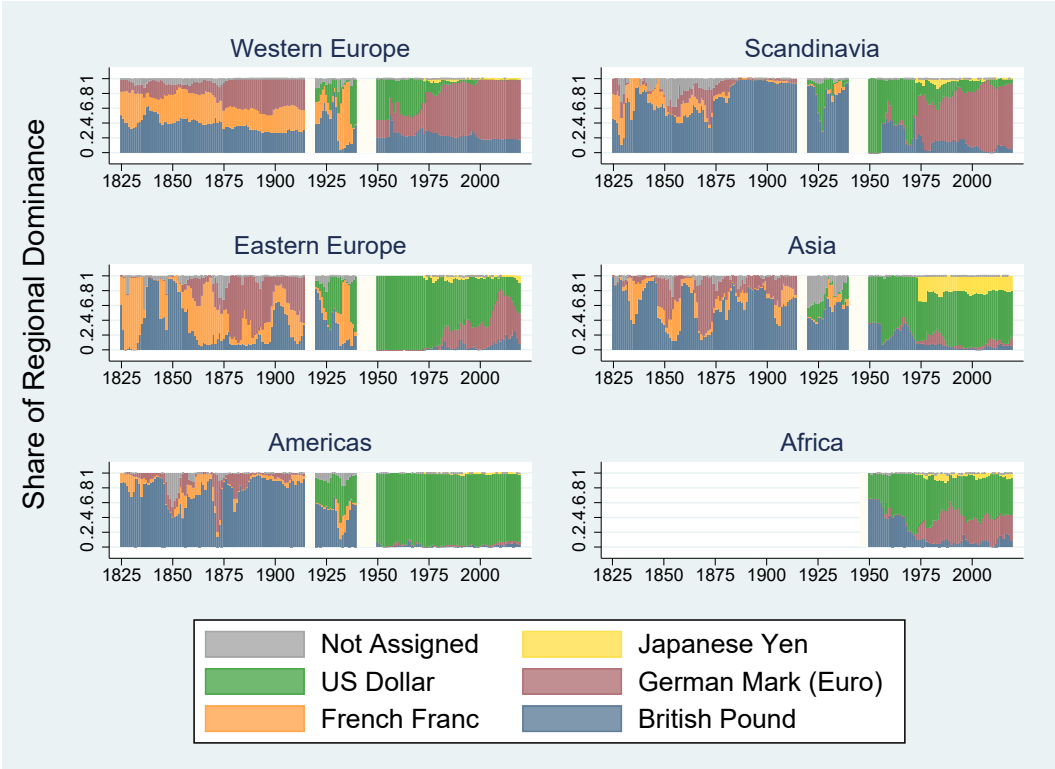
¹⁷See Section 8 for details.

Figure 2: The Rise and Fall of Global Currencies over Two Centuries



The chart depicts, for every global currency, the GDP-weighted average of the currency's weight for all polities in the sample, estimated using Silver as *numéraire*.

Figure 3: Regional Monetary Systems and Global Currency Competition over Two Centuries



The chart depicts, for every global currency, the GDP-weighted average of the currency’s weight for all polities in a particular region, estimated using Silver as *numéraire*.

apparent when looking at regional aggregations of global currency weights in Figure 3. On the one hand, the continental European monetary system has been characterised by significantly higher than average multipolarity, at least until the creation of the euro¹⁸. On the other hand, other regional monetary systems were often fairly unipolar. These include Scandinavian, Asian and the American sterling hegemony throughout the 19th century but also a prolonged period of franc and then mark hegemony in Eastern Europe respectively before and after 1870.

Second, the current international monetary system era seems to be characterised by a higher level of stability and inertia in the global currency dominance weights, compared with the - at times - dramatic shifts observable both in the interwar and pre-WWI period. This can be observed in all regional monetary systems but is particularly

¹⁸And the notable exception of the brief interval of French dominance in the 1930s.

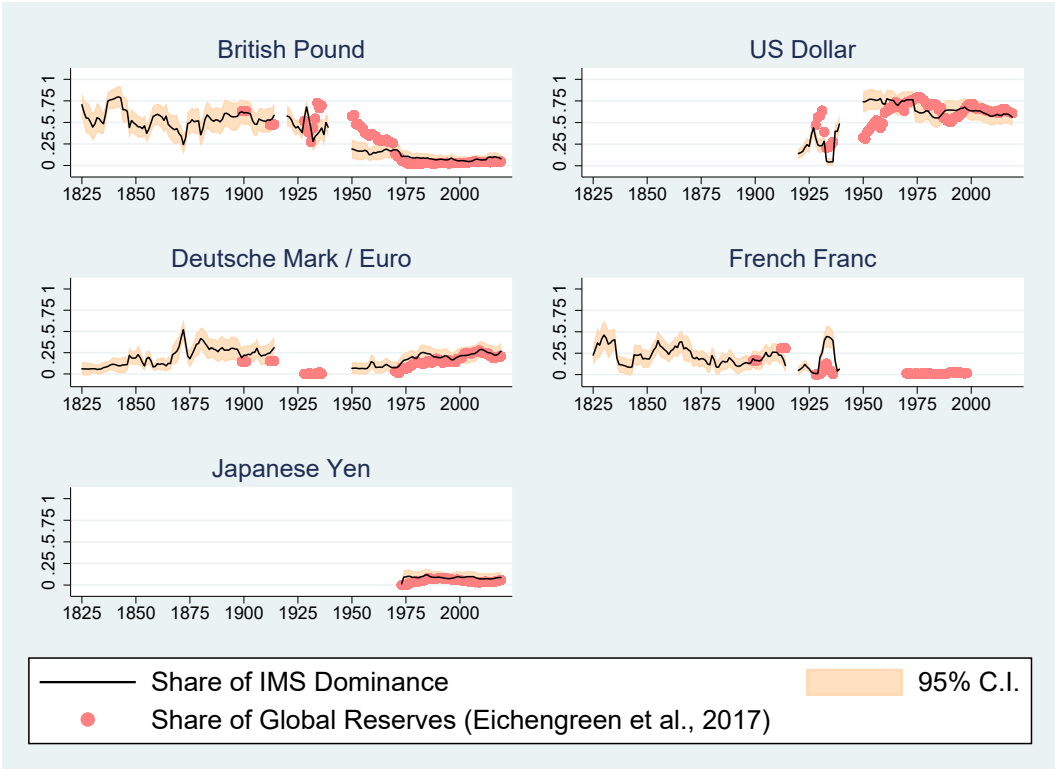
apparent in the extra-European regions. The share of non-assigned weight in the current international monetary system is also stably smaller than in the past. Further evidence on this point is provided in Figure 3, which shows a yearly GDP-weighted aggregation of the coefficient of determination for the whole sample of polity-level baseline models. Only the very peak of the 1st globalisation at the eve of WW1 exhibits similar levels of aggregated explained variance in global foreign-exchange movements.

Third, the patterns I quantify are broadly consistent with existing narratives and partial quantification of international monetary system history (Eichengreen et al., 2017). Sterling was the former hegemon of the international monetary system, but coexisted with other global currencies which represented a large share of international monetary system dominance throughout the 19th century. Its decline started in the interwar period and was completed before the end of Bretton Woods. The rise of the dollar was well under way since the early 1920s, experienced a temporary retreat after 1929, but took hold by the late 1930s.

However, I also uncover new patterns and discontinuities overlooked in the existing literature. One example is the episode of strong French dominance I observe after the sterling devaluation of 1931, which is inconsistent with the characterisation of the interwar French attempt to gain monetary influence as a failed one by Eichengreen and Flandreau (2009). Another example is the slight decline of dollar dominance observable over the last fifty years. This is at odds with the fairly marked increase in the share of the dollar zone documented by Ilzetzki et al. (2019) or the claim by Gourinchas (2021) that the centrality of the dollar has increased in all dimensions since the end of Bretton Woods.

As my coverage extends further than any existing study and spans several decades where no alternative measure of global currency competition exists, it is important to compare my results to existing studies where samples overlap. Figure 4 compares this paper's baseline estimate of the share of global currency dominance and data on each currency share in global reserves since the 19th century as compiled by Eichengreen et al. (2017). The fact that overlapping samples are largely in agreement on the patterns of international monetary system's competition confirms my weights can be interpreted as a broad proxy for global currency dominance. It is also interesting to note that, reserve

Figure 4: Estimated Global Currency Dominance and Actual Share of Global Reserves



The chart depicts, for every global currency, the share of IMS dominance assigned by my baseline algorithm and the share of historical global reserves as compiled by [Eichengreen et al. \(2017\)](#).

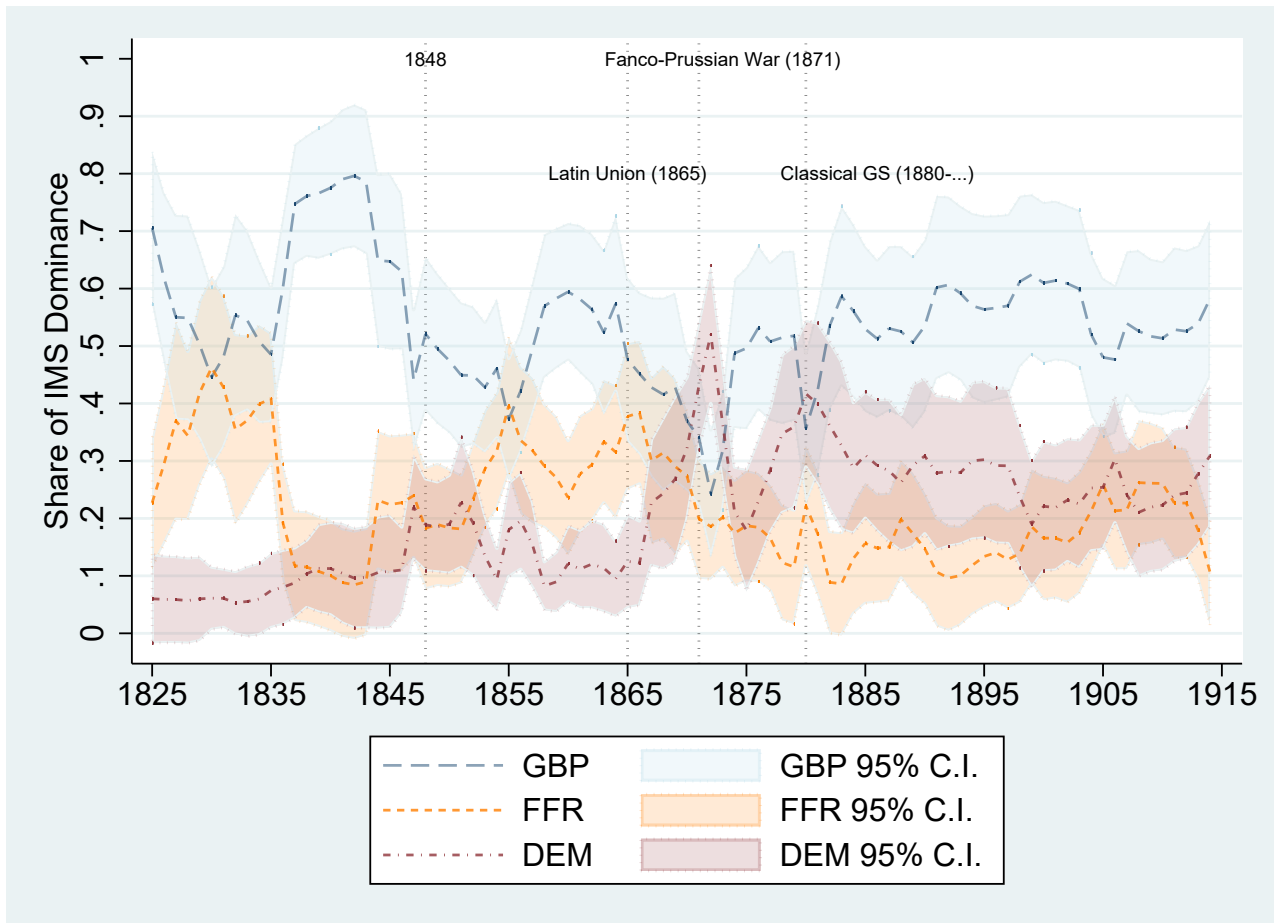
shares seem to lag my estimated currency dominance shares around key discontinuities in the international monetary system. This is true in the interwar period, where the fall in the share of dollar reserves occurs two years after the peak in my measure of dollar dominance, while the share of the franc in global reserves picks up much slower than the increase in the franc weight I estimate. The lag between the two measures is also clear when looking at the displacement of pound reserves by the dollar after 1945.

5.1. 1825-1914: Multipolarity and a Challenged British Hegemony

The architecture of the international monetary system in the first part of the 19th century is, at least quantitatively speaking, to a fair extent uncharted territory. My quantification of global currency competition in the 19th century is summarised in Figure 5. It begins with a duopoly of the sterling and the franc for the first 10 years of the sample. As shown in the maps in Figure 16, at the start of the sample the franc dominates in continental Europe, while the pound is the dominant currency outside of Europe. A sharp correction of monetary dominance in favor of the sterling is observable from 1836. This is likely to correspond to an acute episode of financial instability in Paris. Although, (Reinhart and Rogoff, 2009) only date the crisis linked to the failure of the Bank of Belgium starting in 1838-1839, the analysis of turning points in the bankruptcy rate by Bignon (2011) dates a French crisis episode in 1836-1839, consistent with timing of the decline in franc dominance I observe.

A notable exception to the lack of quantification of the international monetary system structure before the late 19th century is, between 1844 and 1870, Ugolini (2010). His analysis of money and bullion markets integration points to increased multipolarity in the international monetary system before 1870, particularly driven by the rise of Paris. This is supported by my estimates, with some qualifications. I observe a clear increase in the dominance of the franc that coincides with the regime change of 1852. The French Second Empire was characterised from the start by financial deepening, driven by new investment in the railways. This led to a tripling of foreign stocks quoted in Paris (Dupont-Ferrier, 1925) and to France competing on equal footing with Britain as a capital exporter (Lévy-Leboyer, 1977). The franc's weight briefly matches the

Figure 5: Global Currencies Competition in the Long 19th Century



The chart depicts, for every global currency, the GDP-weighted average of the currency's weight for all polities in the sample, estimated using Silver as *numéraire*.

sterling one in 1855, then retreats somewhat coinciding with the global crisis of 1857¹⁹, only to return back to close to 0.4 by 1865. This is the year the Latin Union, formalizing a pan-European franc zone, is established. 1865-1869 is a period of intense French monetary diplomacy to encourage the establishment of a global monetary standard around the franc (Einaudi, 2000). It is often argued (Ugolini, 2010) that if the French emperor had not declared war against Prussia, leading to a military disaster, this effort might have eventually succeeded. While it does not necessarily disprove this argument, I however observe a declining trend for the franc weight that starts before 1870.

Conversely, the rise of the German mark weight²⁰ is apparent as soon as 1866, at the expense of both the sterling and the pound. Both capital flights from London following the Overend Gurney bankruptcy and further German integration following the Austro-Prussian war of 1866 could explain this initial rise of the mark.

1870 is found, unsurprisingly, to be a watershed year in the history of the international monetary system. The mark significantly overtakes the sterling in conjunction with the formation of the Empire and the transition to gold. Part of this movement might be related to the significant transfer of French foreign holdings as part of the war indemnity and the following purchase of gold bullion by the German monetary authorities (Wiegand, 2019). The gains of the mark vs. sterling are interrupted in conjunction with the 1873 central European financial crash but resume again to peak in 1881, when again the mark briefly overtakes sterling²¹.

The picture emerging from my results between 1880 and 1914 is one of an oligopolistic international monetary system with fairly stable "market shares". The system is dominated by the sterling, particularly outside Europe. However, both the franc and the mark play an important role. This is fairly consistent with the existing quantification by Lindert (1969), based on foreign reserves. However, I find the mark to have a slightly higher weight than the franc. This is sometimes true even for countries part of the Latin Union (Italy in the 1880s and part of the 1990s for example), or that received substantial French capital before WWI such as Russia²². The gain in prominence, by

¹⁹When the Bank of England was "the only source of discount" (Reinhart and Rogoff, 2009).

²⁰Which until 1873 is represented by the Hamburg mark.

²¹The 1880s are a period of strong international expansions of German banks (Wiegand, 2019).

²²In the case of Russia, the weight is large and positive for the franc as well but, as shown in Figure 18 still higher for the mark in both 1895 and 1913.

the turn of the century, for franc and mark reserves vs. sterling found in [Lindert \(1969\)](#) is also consistent with my results.

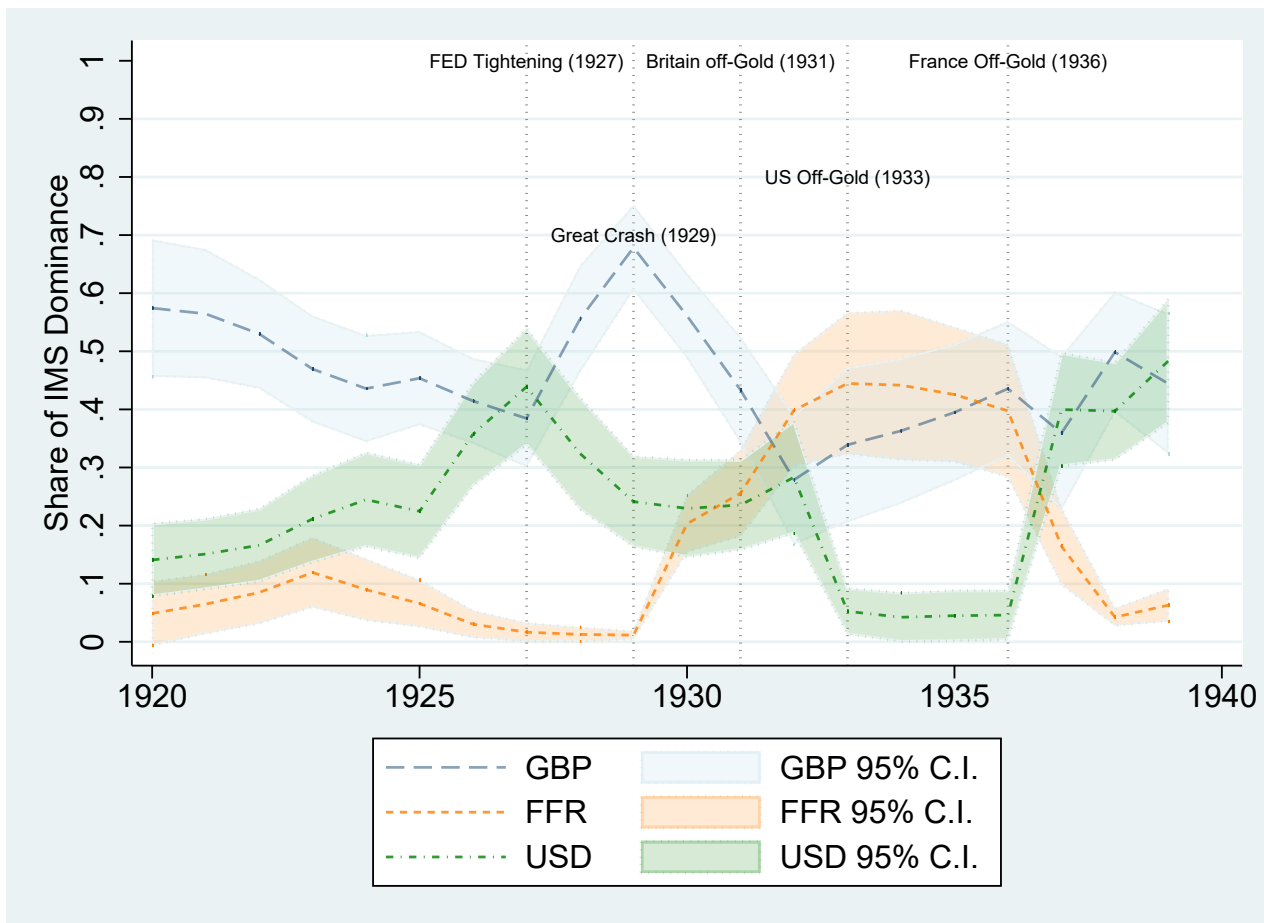
5.2. 1920-1939: Global Currency Collapses and Reversals of Fortune

The interwar period has been at the core of recent efforts to quantify the dynamics of the international monetary system in historical perspective. A longstanding view, going back to [Triffin \(1960\)](#) and [Chinn and Frankel \(2005\)](#) described the transition from sterling to dollar hegemony 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. \(2014\)](#) has convincingly shown how, on the contrary, a protracted period of competition between the British pound and the US dollar occurred as soon as the interwar period, with the US dollar occupying a prominent role since the end of WWI.

My quantification of the rise and fall of global currencies during the interwar period is summarised in [Figure 6](#). My characterisation of the dollar-pound competition is broadly consistent with the quantitative evidence brought forward by [Eichengreen and co-authors](#) on the timing of the dollar gaining prominence. Dollar dominance is fairly strong since the beginning of my interwar sample, particularly outside Europe. The dollar makes substantial gains in the first half of the 1920s, particularly in Italy, Germany, Eastern Europe, Scandinavia and Latin America ([Figure 19](#)): it overtakes the sterling immediately thereafter, in 1927. I also observe a pattern similar to the one described in [Eichengreen et al. \(2017\)](#), with the dollar retreating towards the middle of the sample and making a come back at the eve of WWII. However, some differences need to be highlighted.

First, I find the retreat of the dollar starts earlier than 1929, with a peak of dollar dominance reached in 1927. Several factors could explain this retreat. An abrupt change in US monetary policy stance is underway by the end of 1927. According to [Eichengreen \(1995\)](#), by increasing the opportunity cost of investment abroad, tighter monetary policy “*choked off US foreign lending*” in the middle of 1928, with portfolio lending declining by more than 30% year-on-year and likely turning to a deficit in the summer of that year.

Figure 6: Global Currencies Competition in the Interwar Period



The chart depicts, for every global currency, the GDP-weighted average of the currency's weight for all polities in the sample, estimated using Silver as *numéraire*.

Another, related, potential factor is the stabilisation of the French franc at an undervalued gold parity, spurring substantial outflows of gold from the US in 1927-1928, a development studied by [Irwin \(2010\)](#). [Johnson \(1997\)](#) notes that the redistribution of gold reserves was consistent with policy objectives both in France and the United States, as the New York Fed saw excessive accumulation of gold by the US as undermining monetary policy discretion, while the French were determined to promote Paris as an international financial center. According to my estimates, the sterling regains the lost ground on the dollar by 1929, with the dollar weight remaining higher than the sterling one in Germany, Austria, Finland and Portugal only ([Figure 19](#)). The come-back of the sterling is however short-lived as Britain suspends convertibility in 1931. It is interesting to note that the decline of sterling dominance precedes the devaluation, with decreases in the estimated sterling weight particularly strong in Germany, Italy, Turkey and Argentina in 1930.

Second, I find the claim, by [Eichengreen and Flandreau \(2009\)](#) and [Eichengreen et al. \(2017\)](#), that the franc made little progress, despite an overtly pro-internationalisation policy by the French authorities, to be overly harsh. Co-movement with the franc started to markedly rise across the globe as soon as doubts about the stability of the sterling arose in 1930. By 1931, and between then and 1936, I find the international monetary system to be overwhelmingly franc-hegemonic, with a peak in 1933 spanning Europe, Asia (excluding the Sterling Area and Japan) and even Latin America²³. The difference in assessing the rise of the franc after 1931 between this work and previous quantification by [Eichengreen and co-authors](#) - looking at reserves data - can however be partially reconciled, based on several observations. First, foreign-balance holdings decreased across the board after 1929, giving little opportunity for franc reserves accumulation. Second, looking at the change in reserves holdings in the data compiled by [Eichengreen and Flandreau \(2009\)](#), the franc is shown to gain grounds²⁴ after 1931 in the Gold Bloc, central Europe and in Spain. For the former two, the share of the franc in reserves holding is also high. Third, it is conceivable that, in a context of high

²³I test the robustness of this novel result by including, in the pooled regression in [Table 4](#), a Gold factor in the Frankel-Wei factor model. Although it reduces the franc weight, the franc coefficient remains high and significant, showing that my results do not reflect the fact that some countries remained on gold, but picks up specific co-movements with the franc.

²⁴Albeit from a lower base.

uncertainty following the collapse of two global currencies, the rise of the franc as a unit of account was not immediately matched by gains in the franc role as a store of value. This is an interesting finding in itself that warrants further investigation on the interaction across the different dimensions of global currency status. My results are in line with the attention paid by contemporary observers to the French authorities' efforts to promote the international role of the franc (Myers, 1936).

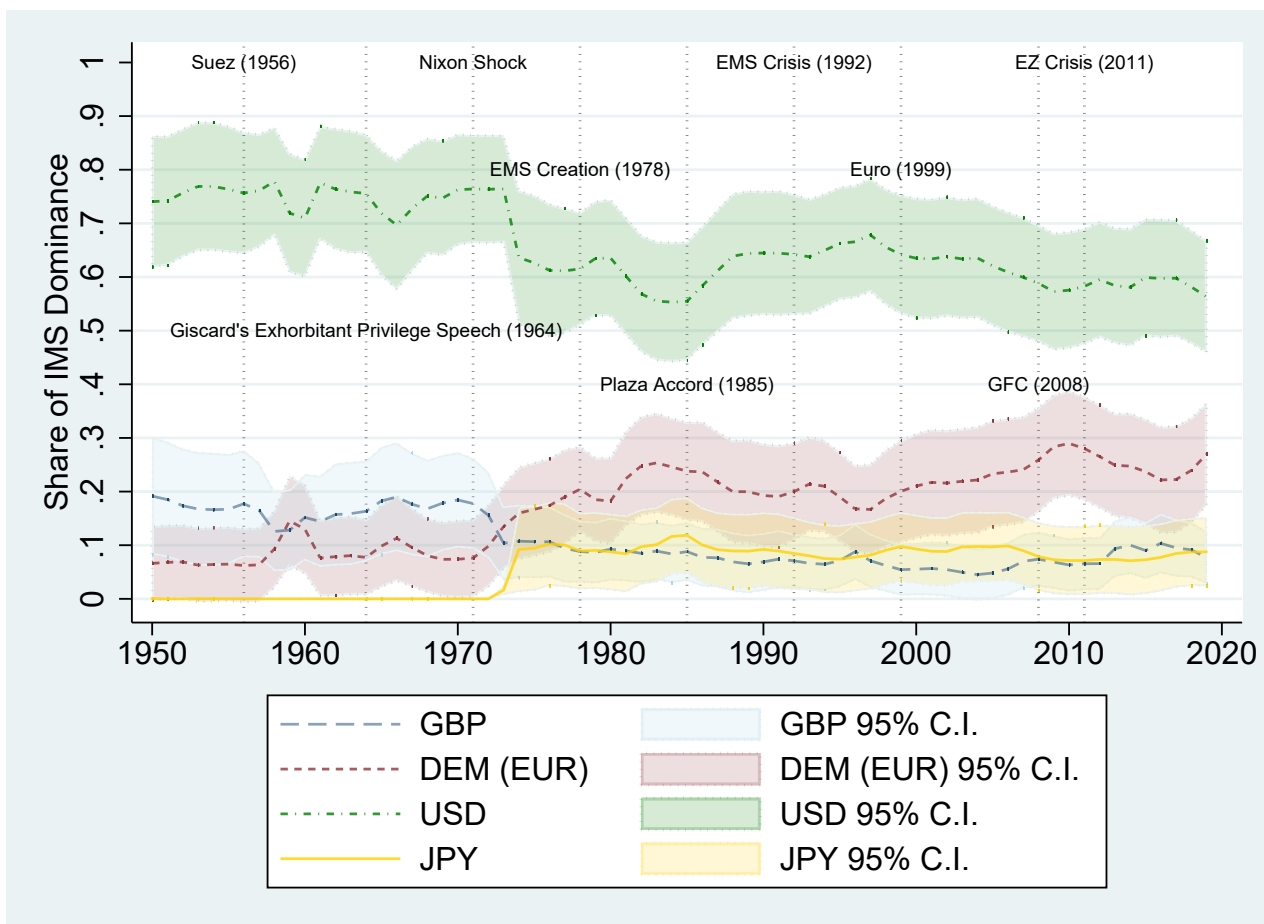
As the franc in turn devalued in 1936, following the electoral victory of the left-wing "*Front Populaire*", this led to a final shake-up of the interwar international monetary system. I observe a re-composition of the international monetary system around roughly equally sized pound and dollar blocs at the eve of WWII, with the British currency retaining strong grounds only in Scandinavia, the Commonwealth, Japan and Latin America.

5.3. 1950-2020: Dollar Dominance as a Two Centuries Anomaly

The years following WWII witnessed to the last vestiges of sterling dominance. A large amount of sterling balances existed in the 1950s, owing to the role played by Sterling Area countries during the war. Eichengreen et al. (2017) document how reserves steadily re-balanced towards the dollar. Schenk (2010) underlines the success of British authorities in delaying the demise of the pound as a reserve currency, with the experience of Sterling Area between 1950 and the 1970s being described as the one of a "zombie" international currency by Avaro (2020). My estimate of the sterling weight identifies two legs in the decline of the sterling. A first one occurs after 1956, as the Suez crisis ignites speculations on the British currency. The second and final leg of the decline of the pound sterling is observed following the 1967 devaluation, with an acceleration in conjunction with the Nixon shock.

My quantification of the weight of the yen in the international monetary system since the currency started to move away from a strict dollar parity at the end of the 1960s is largely consistent with the view that the yen never managed to take a prominent role as an international anchor (Eichengreen et al., 2017). I observe a global peak in the weight of the yen at the end of the 1970s, with no major evolution throughout the post-WWII period. This reflects an initial spike of the yen weight in Asia in the early

Figure 7: Global Currencies Competition since 1950



The chart depicts, for every global currency, the GDP-weighted average of the currency's weight for all polities in the sample, estimated using Silver as *numéraire*.

1970s, gradually receding over the course of the decade.

The key story of international currency competition in the post-WWII period is the one between the dollar hegemon on one side and the German mark, and then the euro, on the other side. The estimated weight for the two currencies remains stable for the whole Bretton Woods period, with the dollar stably approaching a 80% share of international monetary system dominance and the mark remaining broadly below a 10% threshold. The situation starts to change in 1970. Over the 1970s, [Eichengreen et al. \(2017\)](#) notes how several measures are enacted by German authorities to potentially encourage the international use of the mark, including a (limited) liberalisation of the capital account, the 1969 revaluation, the final decision to float the currency in 1973 and the creation of the EMS in 1979. Over the 1970s the mark roughly doubled its

international monetary system weight. A further increase of about 5 percentage points can be observed after the successive re-evaluations of the mark in the first half of the 1980s, but this is soon reversed in the second half of the decade, coinciding with the Plaza and Louvre monetary accords in 1985 and 1987. Interestingly, the "talking down" of the dollar by Treasury Secretary Baker ahead of the Plaza meeting corresponds to, and does not precede, the trough of dollar dominance over the period, with the global weight of the dollar stabilizing since above or close to 60%. The establishment of the euro marked a slight gain in dominance for the European currency, compared to the German mark. However, this was reversed with the European debt crisis of 2010-2011. This finding is consistent with the recent ECB assessment of the role of the euro along multiple dimensions (ECB, 2021).

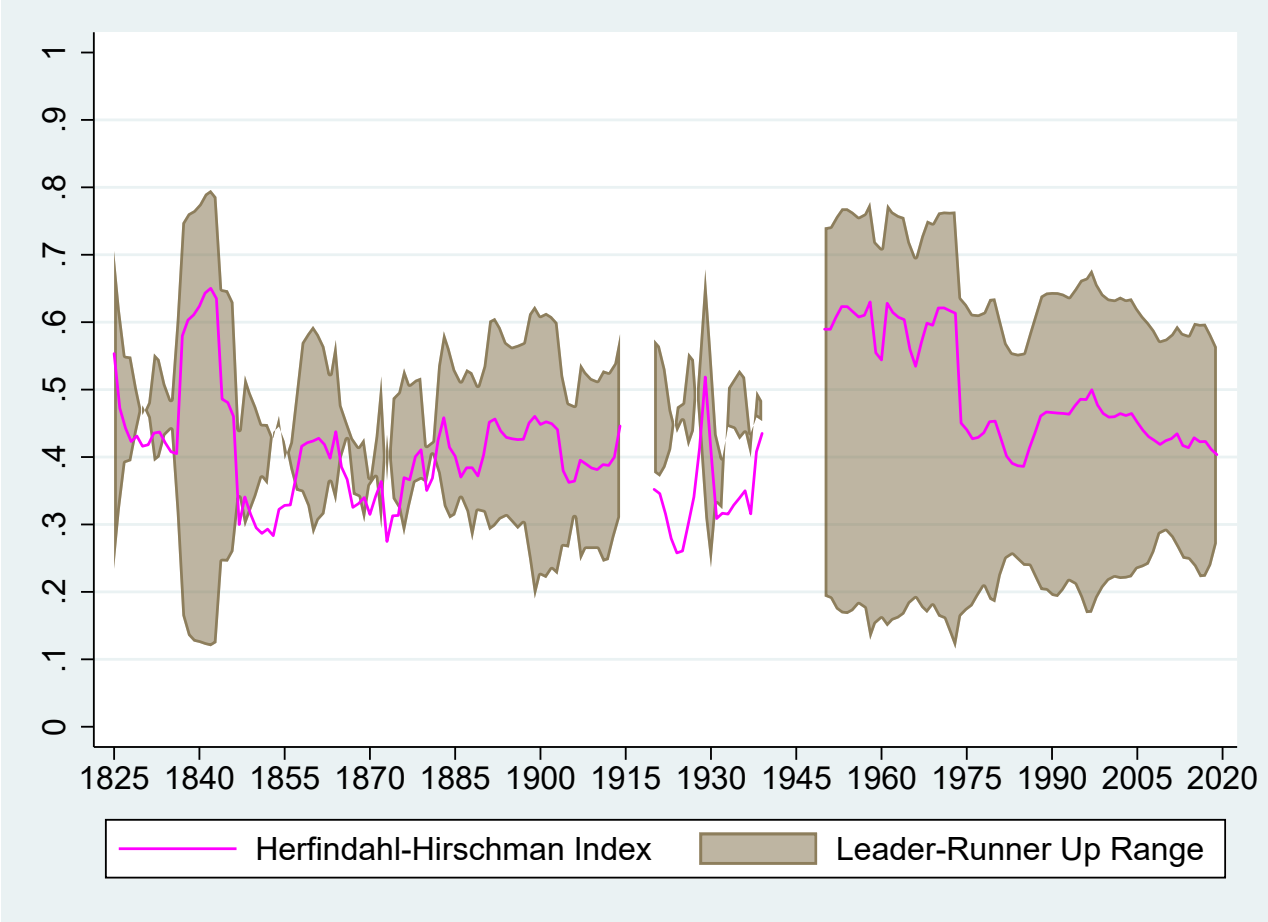
Looking at individual polity results since the end of Bretton Woods (Figures 22) it is clear that the "*German dominance hypothesis*" (Giavazzi and Giovannini, 1988) seemed particularly reasonable by the end of 1980s. However, it is interesting to note how both the dollar and sterling weights increase at the expense of the mark in the European periphery, and particularly Italy, around the 1992 EMS crisis. More recently (Figure 23), the international monetary system appears as strongly regionalised, with the euro being hegemonic in Europe. However, it is to be noted, consistent with results by Ito and McCauley (2019), that euro influence is felt in a number of commodity currency countries.

5.4. The Structure of the International Monetary System over Two Centuries

Figure 8 provides an adjusted Herfindahl-Hirschman Index for the baseline global currency weights I estimate, while the shaded area represents the difference between the highest and the second highest global currency weight.

Several considerations can be made. First, the period between 1950 and 1973 is a clear anomaly, with an unprecedented degree of uni-polarity, only previously matched in a brief interval of British hegemony around 1835-1840. Second, the whole of the post-WWII period could be characterised as an historical anomaly looking at the prominence of the international monetary system leader vs. the "runner up". Such a large distance

Figure 8: The Structure of Global Currency Competition over Two Centuries



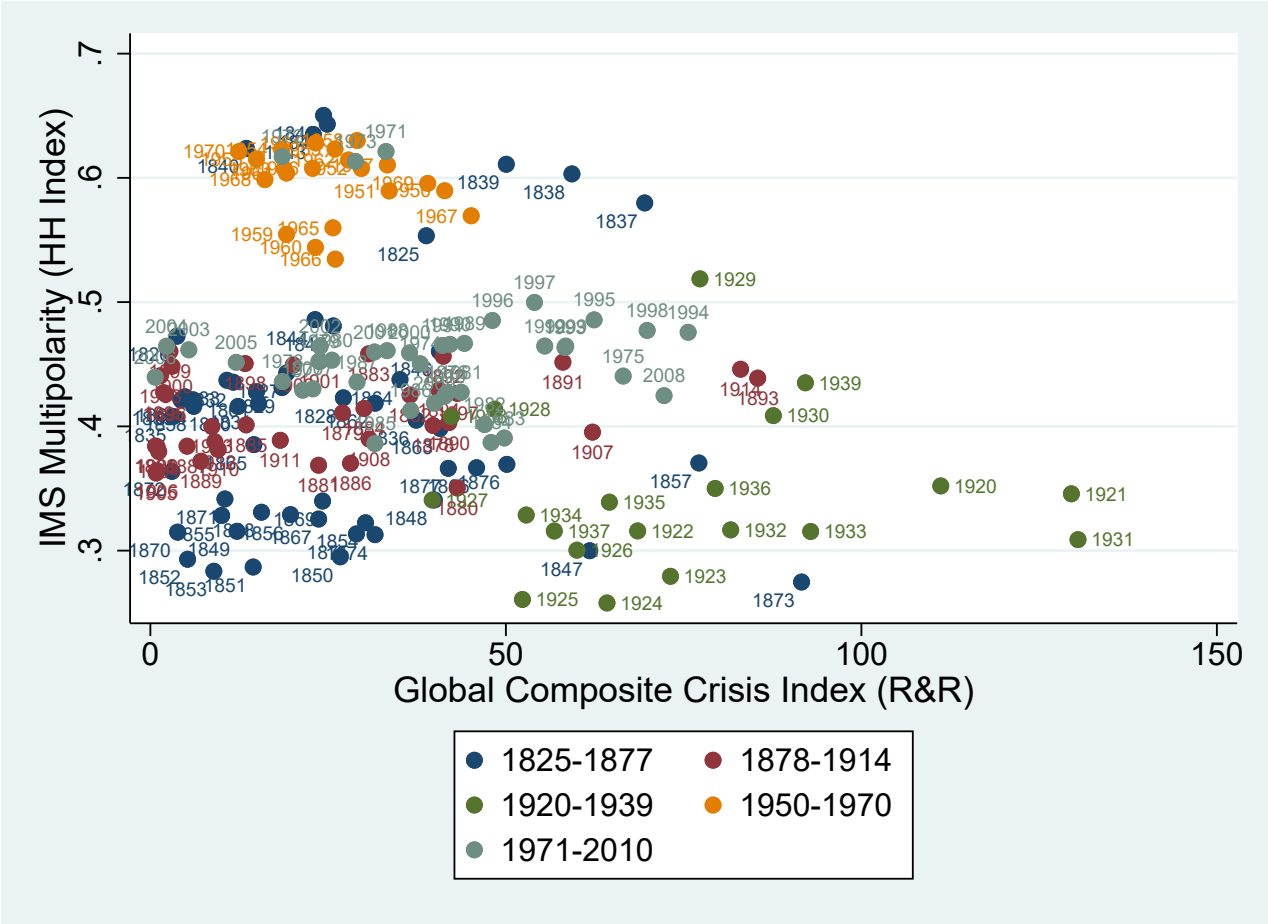
The line depicts the Herfindahl-Hirschman Index of competition intensity computed from the yearly world GDP-weighted average weight for each global currency (*Silver numéraire*). The shaded area marks the range between the currency with the highest weight and the "runner up".

in influence between the first and the second global currencies has never been sustained for such a prolonged period of time over the last two centuries. Third, it is true that the interwar period is notable for its multi-polarity. However the average levels of international monetary system competition experienced before WW1 are fairly comparable. This comforts the parallel between the two periods that is often made by proponents of a more multi-polar international monetary system, highlighting that instability is not necessarily associated with multi-polarity. Nevertheless, the interwar periods stands out for a record low distance between the international monetary system leader and the "runner up", with levels only observed before at major turning points in international monetary system competition such as the early 1850s and 1870.

Figure 9 relates my index of international monetary system competition to the global composite index of crises compiled by [Reinhart and Rogoff \(2008\)](#), providing some descriptive evidence regarding the relationship between international monetary system structure and financial stability studied by [Farhi and Maggiori \(2018\)](#). The correlation over the entire period is clearly negative, with higher competition being associated with higher prevalence of financial instability. However, the relationship is driven by the high international monetary system competition, crisis prone, interwar period and the low international monetary system competition, very stable, Bretton Woods period. Taking a closer look at the correlations, 1837-1839, 1893, 1913 and, to a lesser extent the 1990s can be singled out as years with fairly low levels of international monetary system multi-polarity and high levels of global financial instability. The opposite is true for the high international monetary system competition period between 1850 and 1870, which was associated with few crises at the global level.

Overall, these preliminary, highly descriptive, evidence support the contingency of the relationship between the structure of international monetary system competition and global financial stability as argued by [Eichengreen \(2019\)](#).

Figure 9: International Monetary System Competition and Financial Stability



The vertical axis represents the Herfindahl-Hirschman Index of competition intensity computed from the yearly world GDP-weighted average weight for each global currency (*Silver numéraire*). The horizontal axis is the Banking, Currency, Debt and Inflation Composite Crisis Index computed by [Reinhart and Rogoff \(2008\)](#).

6. Conclusion

This paper has presented a quantification of the rise and fall of global currencies over two centuries, providing a continuous measure of their relative influence and of the overall competition structure of the international monetary system at annual frequency since 1825.

I document that, while the sterling has been the dominant global currency for the period spanning 1825 to 1914, this leadership has been challenged and was not as extreme as current dollar dominance. Local dominance as well as regional monetary integration are recurrent features of challengers to the international monetary system hegemon. It was the case with the rise of the franc amid active French monetary diplomacy after 1852. It was again the case with the rise of the mark after 1866, coincident with the process of German unification. It was the case a second time for the mark starting in the 1970s, as European integration was underway.

My analysis also complements the studies of the interwar international monetary system carried out by Eichengreen and co-authors. I find the dollar to be a key player in the international monetary system as soon as the early 1920s, briefly overtaking the sterling in 1927 and then again at the eve of WWII. I also uncover a new, so far overlooked, important discontinuity in the international monetary system, with an episode of French franc international monetary system leadership between 1931 and 1936. Further study of this - admittedly brief - episode of successful challenge to the international monetary system leader should be of interest to policymakers intending to promote the international role of their currency.

Current levels of one-currency leadership are found to be a historical anomaly. This is particularly true for the distance in the relative importance between the current dollar hegemon and the "runner up", the euro, which is largely unprecedented in the last two centuries. An interpretation of this fact consistent with [Gopinath and Stein \(2018\)](#) and the "Harvard view" is that changes in financial and monetary technologies have brought about a structural shift in the way the international monetary system work. Looking at the model of [Farhi and Maggiori \(2018\)](#) one could also see this as evidence of a stable outlook for dollar hegemony, as a closer "gap" between the hegemon

and any competitor is more likely to spur multiple equilibria. An alternative, more pessimistic, interpretation is that, given the unprecedented hegemony of the dollar, when the constraint on its fiscal capacity to issue safe assets will start to bind, the adverse consequences might also be larger in magnitude than in previous international monetary system discontinuities (Farhi et al., 2011).

The correlation between the degree of competition in the international monetary system and the level of global financial stress is found to be largely positive over the last two centuries. One has however to recognise that this could well be endogenous and that the correlation is highly dependent on observations drawn from the interwar and Bretton Woods periods. Several episodes of high international monetary system competition can be observed without any rise in the prevalence of financial crises.

All in all, the paper provides a new framework to look at the international monetary system over a period of time long enough to observe several episodes of discontinuities. Building on this measurement framework, future research will hopefully shed new lights on the determinants of global currency status, the characteristics and consequences of episodes of international monetary system discontinuity as well as the relationship between international monetary system competition and financial stability.

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7 Results Appendix

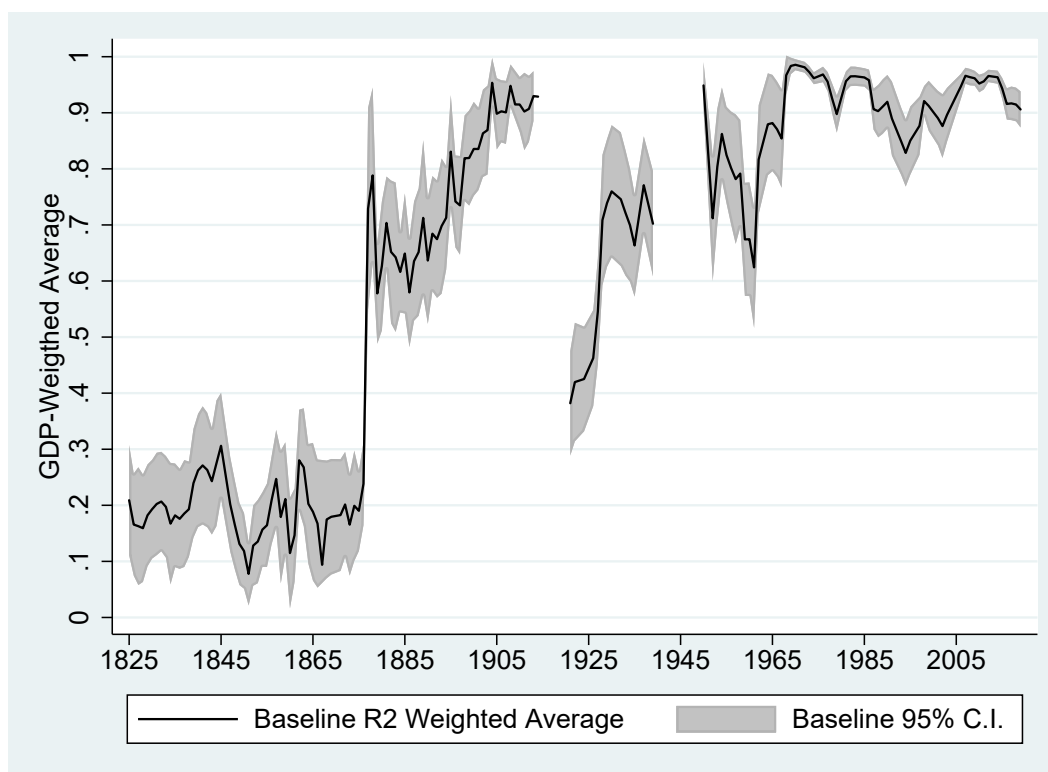
Appendix 7.A Robustness Checks

Table 1: Pooled Regressions - 1820-1914

	(1)	(2)	(3)	(4)	(5)	(6)
GBP	0.608*** (0.0623)	0.589*** (0.0609)	0.738*** (0.0815)	0.678*** (0.0382)	0.673*** (0.0384)	0.477*** (0.0570)
FFR	0.271*** (0.0620)	0.304*** (0.0631)	0.331*** (0.0884)	0.0573** (0.0257)	0.0604** (0.0269)	0.0208 (0.0341)
DEM	-0.0197 (0.0326)	-0.0325 (0.0331)	-0.0199 (0.0661)	0.213*** (0.0365)	0.214*** (0.0364)	0.278*** (0.0576)
Controls	NO	YES	NO	NO	YES	NO
Numéraire	XAG	XAG	NLG	XAG	XAG	NLG
Period	1820-1870	1820-1870	1820-1870	1871-1914	1871-1914	1871-1914
Observations	13,646	13,646	14,678	36,887	36,887	39,862
R-squared	0.058	0.058	0.018	0.73	0.73	0.017

Robust standard errors reported in parenthesis. ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.1 levels respectively. Controls include first-differences of proxies for liquidity and risk-premium, as well as weekly log-changes of commodity prices, see Section 8 for details. Pooled regression using Silver as *numéraire* exclude the Netherlands for comparability.

Figure 10: GDP-Weighted Coefficient of Determination



The chart depicts the yearly GDP-weighted average of the coefficient of determination for the whole sample of polity-level baseline models used to compute the yearly global monetary dominance scores.

Table 2: Pooled Regressions - 1918-1939

	(1)	(2)	(3)	(4)	(5)	(6)
GBP	0.685*** (0.0275)	0.685*** (0.0276)	0.637*** (0.0293)	0.499*** (0.0226)	0.498*** (0.0226)	0.479*** (0.0232)
FFR	0.0467*** (0.00752)	0.0471*** (0.00757)	0.0492*** (0.00745)	0.269*** (0.0163)	0.266*** (0.0164)	0.320*** (0.0179)
USD	0.139*** (0.0263)	0.142*** (0.0265)	0.144*** (0.0281)	0.161*** (0.0171)	0.168*** (0.0173)	0.114*** (0.0139)
Controls	NO	YES	NO	NO	YES	NO
Numéraire	XAG	XAG	HKD	XAG	XAG	HKD
Period	1918-1930	1918-1930	1918-1930	1931-1939	1931-1939	1931-1939
Observations	19,712	19,712	20,695	15,624	15,624	15,390
R-squared	0.404	0.404	0.367	0.708	0.708	0.672

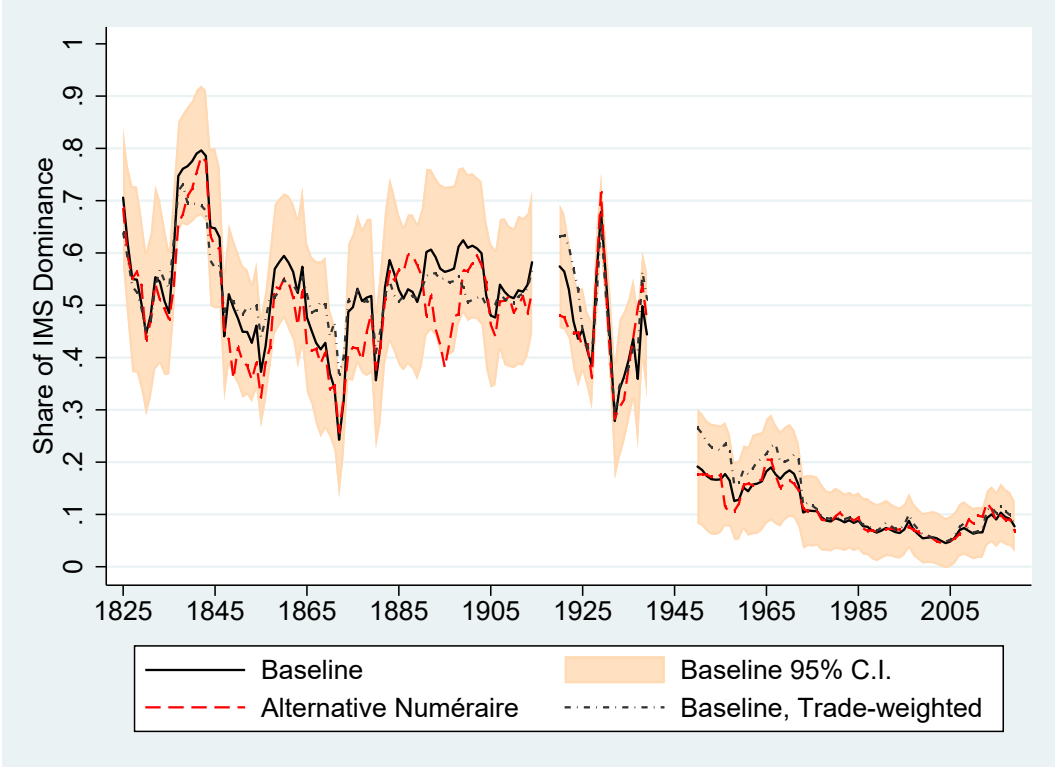
Robust standard errors reported in parenthesis. ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.1 levels respectively. Controls include first-differences of proxies for liquidity and risk-premium, as well as weekly log-changes of commodity prices, see Section 8 for details. Pooled regressions using Silver as *numéraire* exclude Hong Kong for comparability.

Table 3: Pooled Regressions - 1948-2020

	(1)	(2)	(3)	(4)	(5)	(6)
GBP	0.327*** (0.0150)	0.329*** (0.0150)	0.333*** (0.0160)	0.0556*** (0.00423)	0.0517*** (0.00424)	0.0684*** (0.00418)
DEM	-0.00276 (0.00690)	-0.00304 (0.00695)	-0.000934 (0.00834)	0.404*** (0.00445)	0.401*** (0.00444)	0.411*** (0.00728)
USD	0.669*** (0.0165)	0.668*** (0.0165)	0.626*** (0.0212)	0.553*** (0.00486)	0.551*** (0.00485)	0.497*** (0.00414)
JPY	-	-	-	-0.00647** (0.00324)	-0.0100*** (0.00343)	-0.00580* (0.00341)
Controls	NO	YES	NO	NO	YES	NO
Numéraire	XAG	XAG	CHF	XAG	XAG	CHF
Period	1948-1973	1948-1973	1948-1973	1974-2020	1974-2020	1974-2020
Observations	57,799	57,799	56,241	110,326	110,152	101,182
R-squared	0.833	0.833	0.04	0.859	0.859	0.341

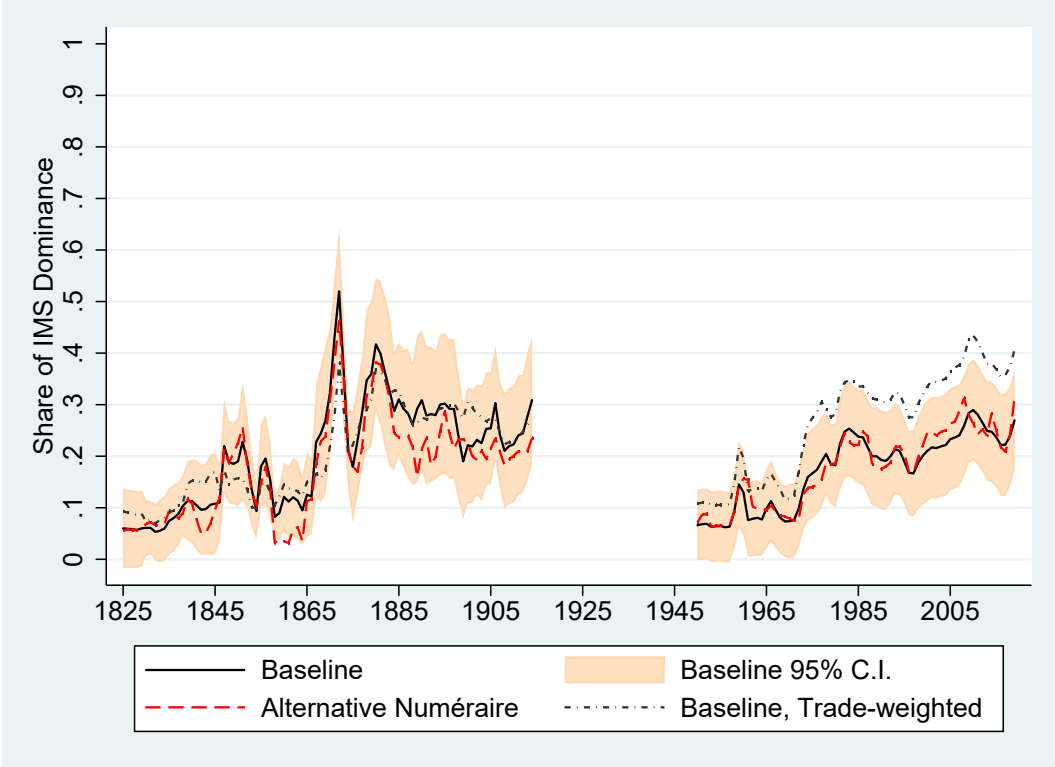
Robust standard errors reported in parenthesis. ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.1 levels respectively. Controls include first-differences of proxies for liquidity and risk-premium, as well as weekly log-changes of commodity prices, see Section 8 for details. Pooled regressions using Silver as *numéraire* exclude Switzerland for comparability.

Figure 11: British pound sterling - Baseline and Alternative International Monetary System Dominance Weights



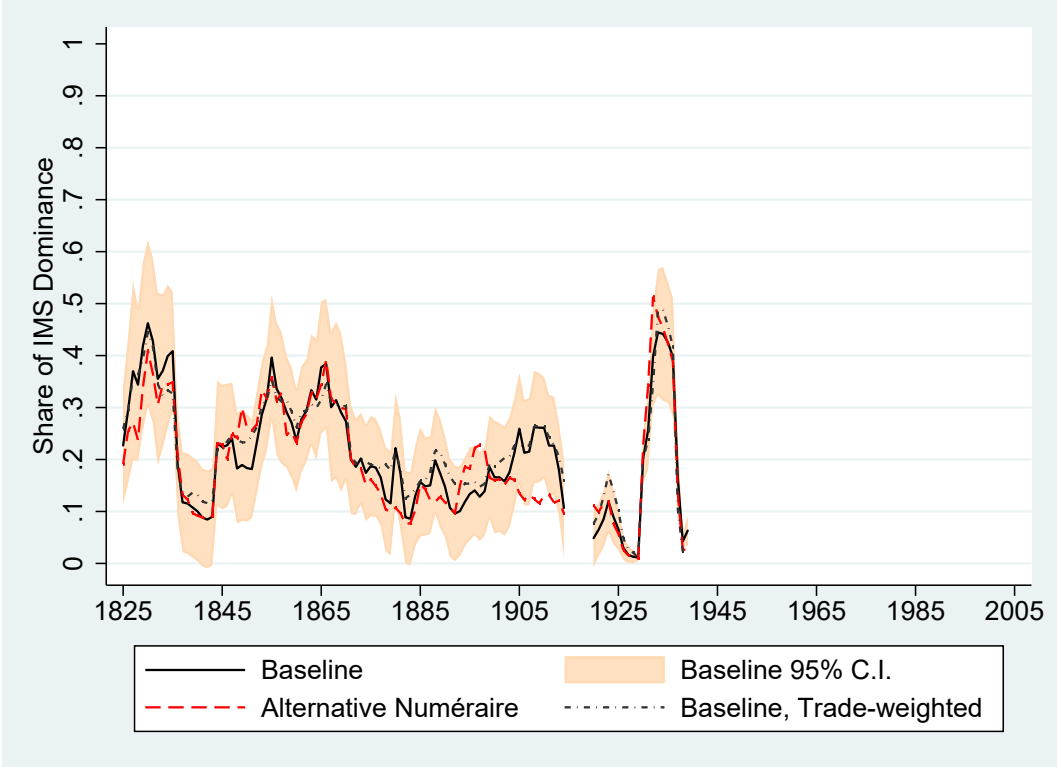
Baseline indicates the global international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated with silver as the *numéraire*. Alternative *numéraire* indicates the international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated, depending on the sub-period, with NLG, HKD or CHF as *numéraire*. The baseline international monetary system dominance weight computed using a trade-weighted global average is also reported.

Figure 12: German Mark/Euro - Baseline and Alternative International Monetary System Dominance Weights



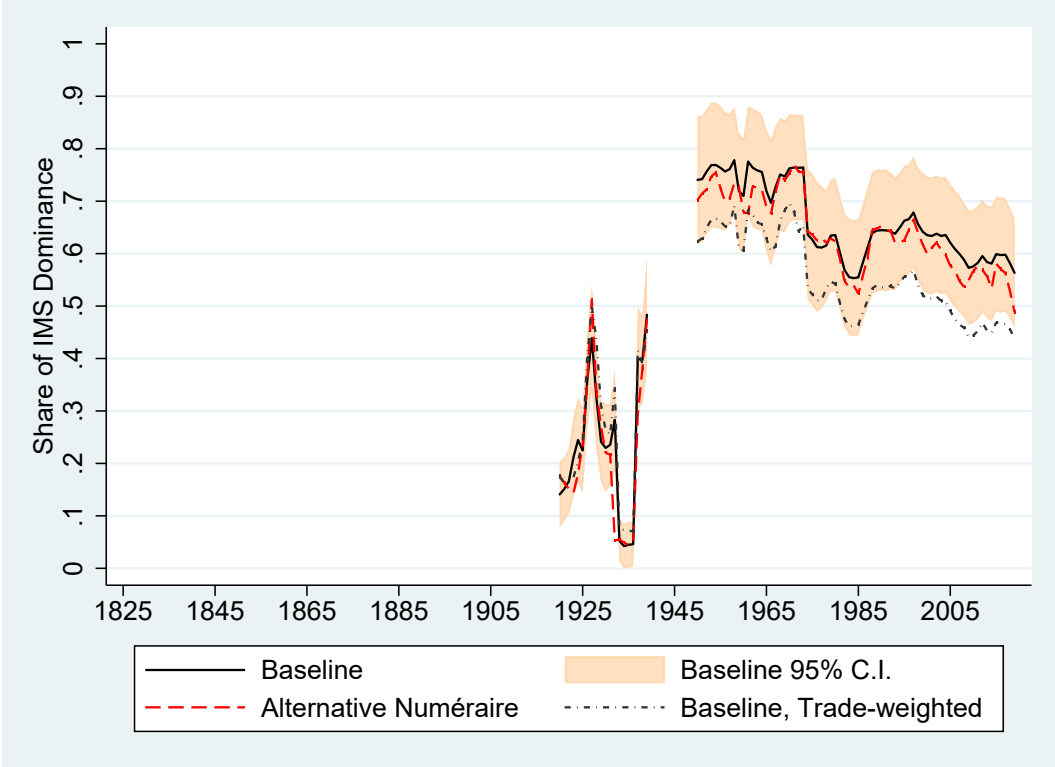
Baseline indicates the global international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated with silver as the *numéraire*. Alternative *numéraire* indicates the international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated, depending on the sub-period, with NLG, HKD or CHF as *numéraire*. The baseline international monetary system dominance weight computed using a trade-weighted global average is also reported.

Figure 13: French franc - Baseline and Alternative International Monetary System Dominance Weights



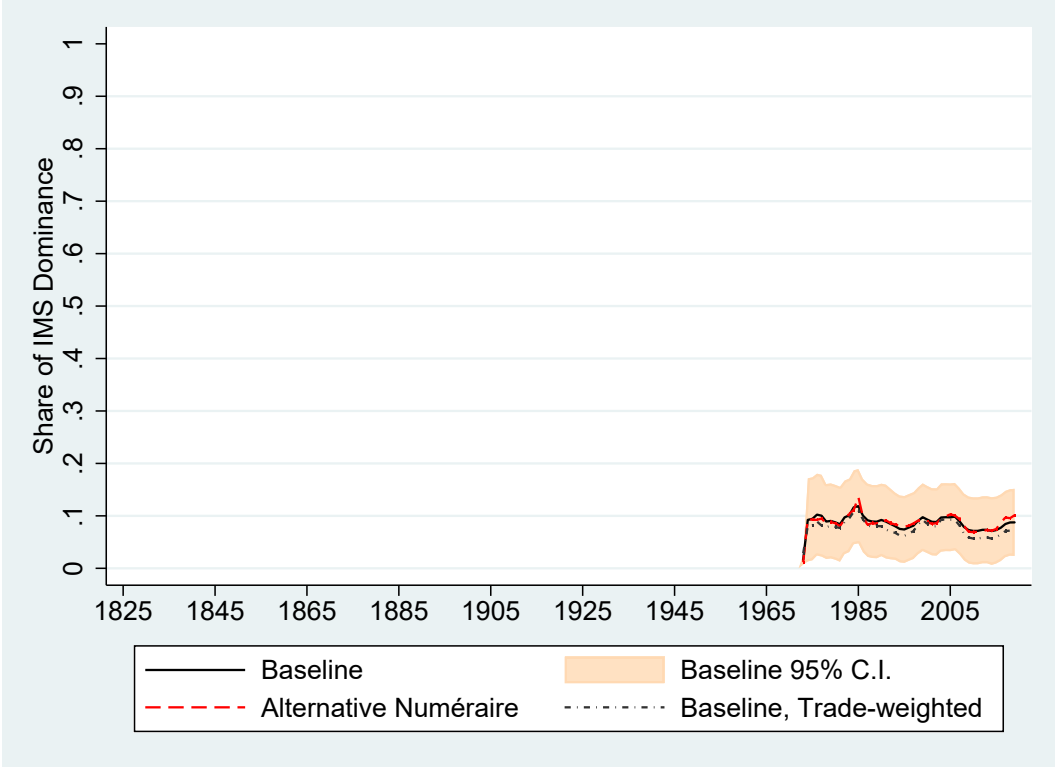
Baseline indicates the global international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated with silver as the *numéraire*. Alternative *numéraire* indicates the international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated, depending on the sub-period, with NLG, HKD or CHF as *numéraire*. The baseline international monetary system dominance weight computed using a trade-weighted global average is also reported.

Figure 14: US dollar - Baseline and Alternative International Monetary System Dominance Weights



Baseline indicates the global international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated with silver as the *numéraire*. Alternative *numéraire* indicates the international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated, depending on the sub-period, with NLG, HKD or CHF as *numéraire*. The baseline international monetary system dominance weight computed using a trade-weighted global average is also reported.

Figure 15: Japanese Yen - Baseline and Alternative International Monetary System Dominance Weights



Baseline indicates the global international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated with silver as the *numéraire*. Alternative *numéraire* the international monetary system dominance weight computed as the GDP-weighted average of individual weights estimated, depending on the sub-period, with NLG, HKD or CHF as *numéraire*. The baseline international monetary system dominance weight computed using a trade-weighted global average is also reported.

Table 4: Controlling for a Gold Factor During the Interwar Episode of French franc Dominance

	(1)	(2)	(3)	(4)
GBP	0.452*** (0.0199)	0.436*** (0.0201)	0.473*** (0.0200)	0.455*** (0.0204)
FFR	0.409*** (0.0186)	0.214*** (0.0282)	0.417*** (0.0197)	0.245*** (0.0288)
USD	0.0640*** (0.0142)	0.0648*** (0.0141)	0.0542*** (0.0132)	0.0549*** (0.0132)
XAU		0.211*** (0.0271)		0.193*** (0.0273)
Numéraire	XAG	XAG	HKD	HKD
Controls	NO	NO	NO	NO
Period	1931-1936	1931-1936	1931-1936	1931-1936
Observations	9,198	9,198	9,061	8,984
R-squared	0.669	0.672	0.666	0.664

Robust standard errors reported in parenthesis. ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.1 levels respectively.

Appendix 7.B Individual Global Currency Weights

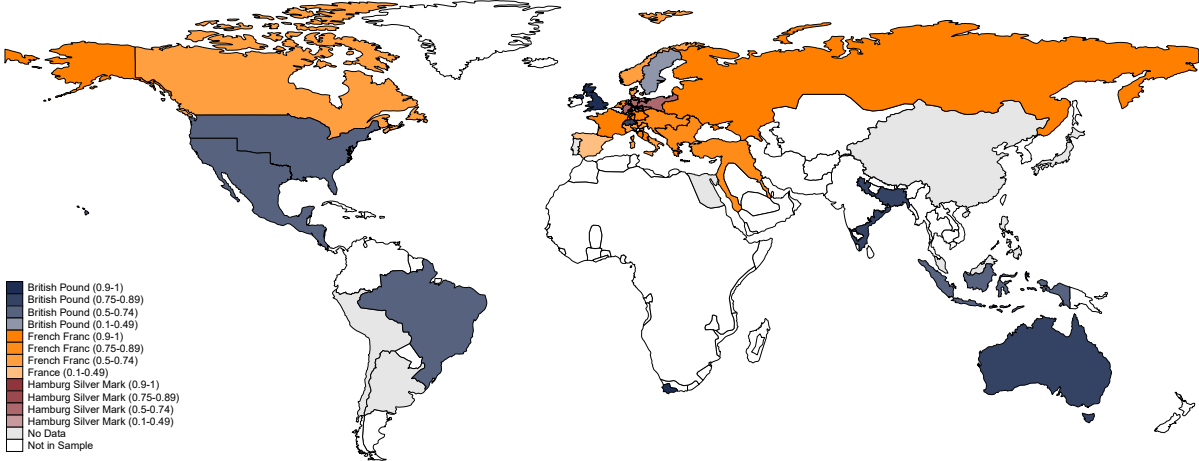
The maps below depicts the weight level for the highest global currency weight for each polity in the sample. This reflects the currency that is estimated to exert more dominance on a particular polity but does not imply other global currencies do not have a positive weight.

A white coloring denotes a polity that is not included in the sample at any point for the sub-period. A grey coloring denotes that the polity has no available data for that particular year but is included in the sub-period's sample.

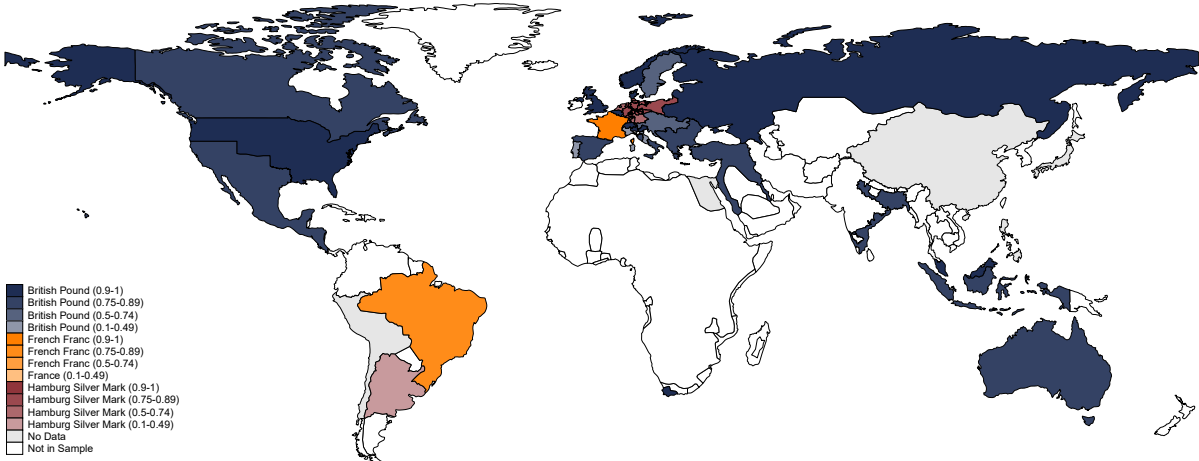
Maps are at 1812 borders until 1870, 1914 borders between 1870 and 1914, 1938 borders between 1918 and 1939, 1945 borders between 1950 and 1988 and 1994 borders thereafter.

Figure 16: The Rise of the Sterling in the Early 19th Century - Dominant Currency By Country, Selected Years 1830-1849

(b) 1830: A Bipolar System post-Vienna Congress
1830



(b) 1840: Large GBP Gains in Dominance in the 1830s
1840



(c) 1848: GBP Dominance Unscathed by the People's Spring
1848

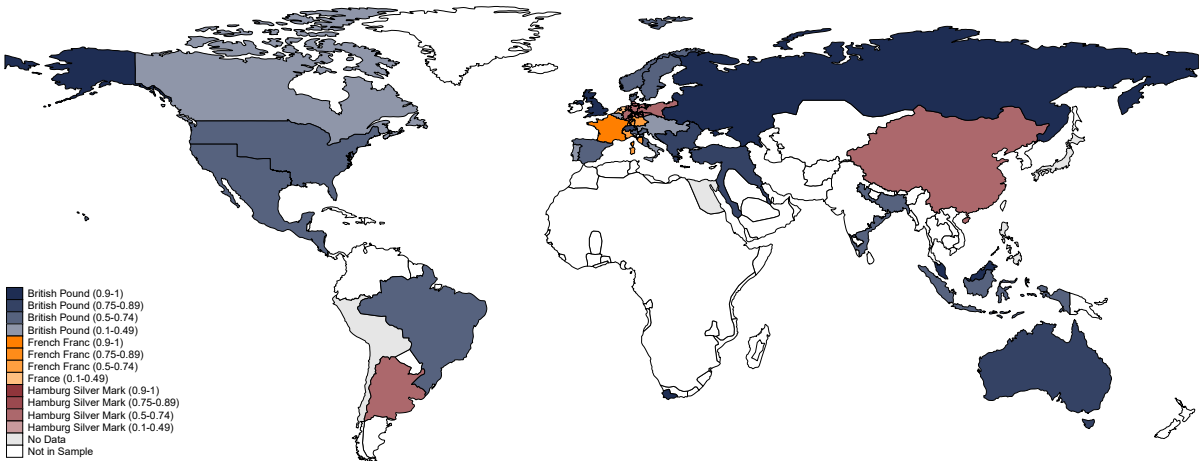
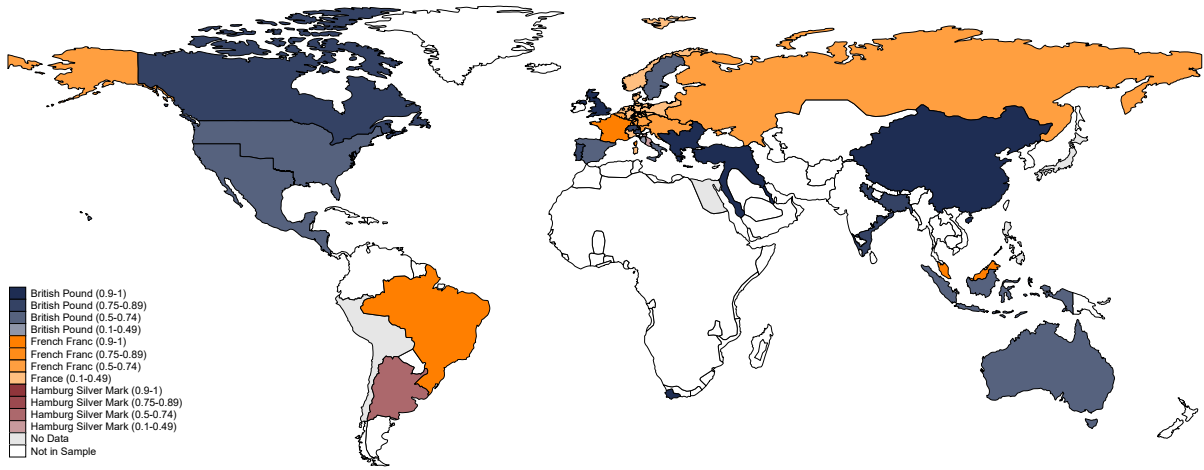
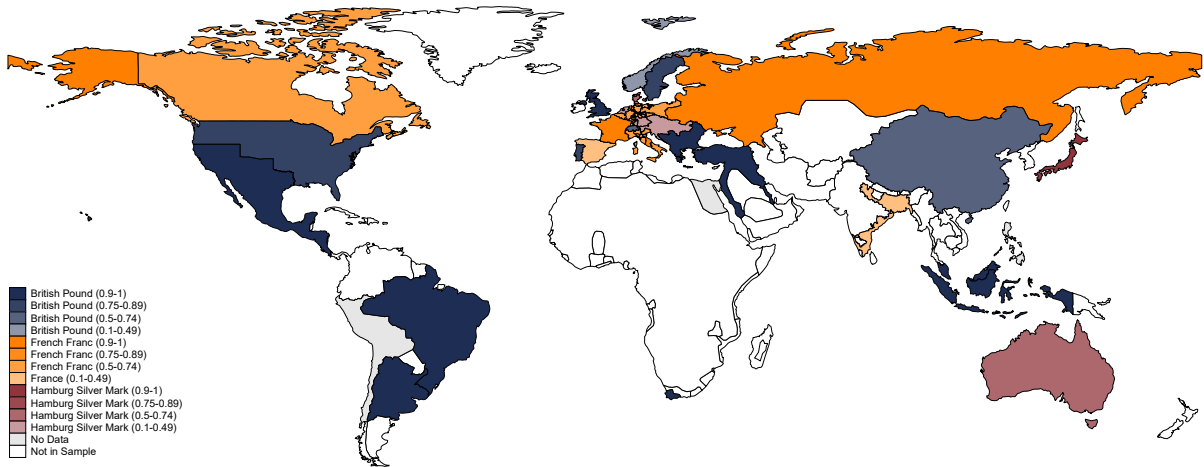


Figure 17: The Rise and Fall of French Monetary Diplomacy - Dominant Currency By Country, Selected Years 1850-1879

(a) 1858: Rise in FFR Dominance with the Second Empire
1858



(b) 1866: Peak of FFR Dominance as Paris Hosts the 1st International Monetary Conference
1866



(c) 1873: Major International Monetary System Discontinuity with the German Unification
1873

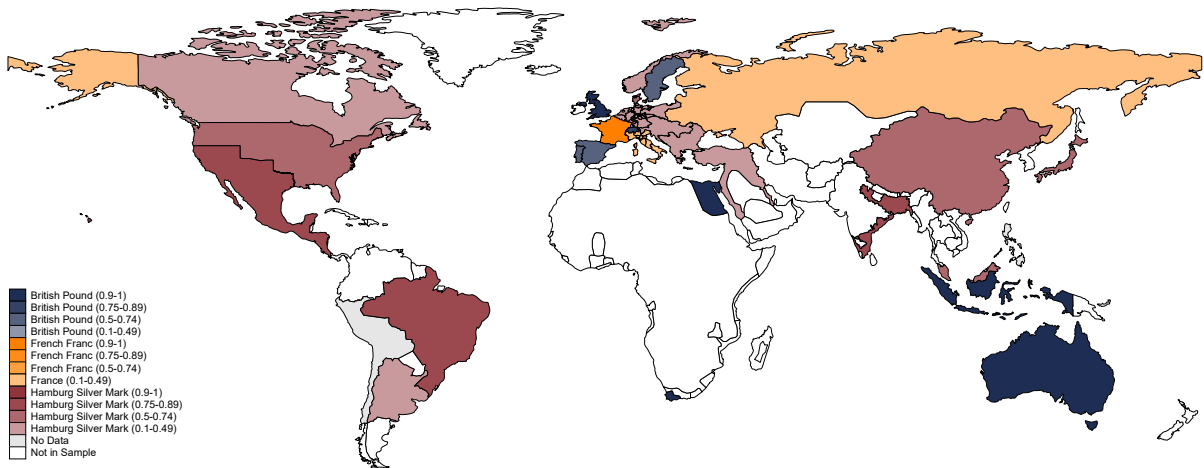
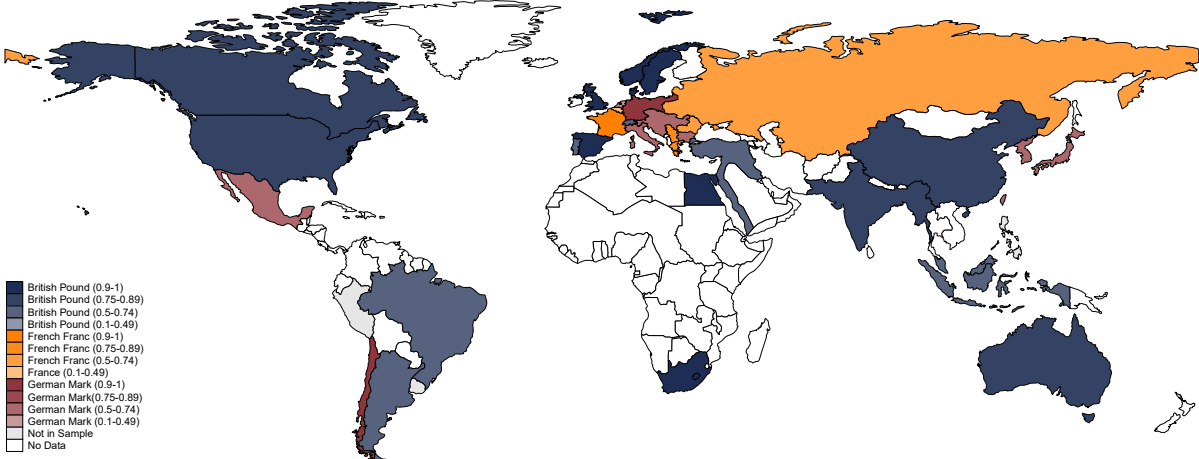
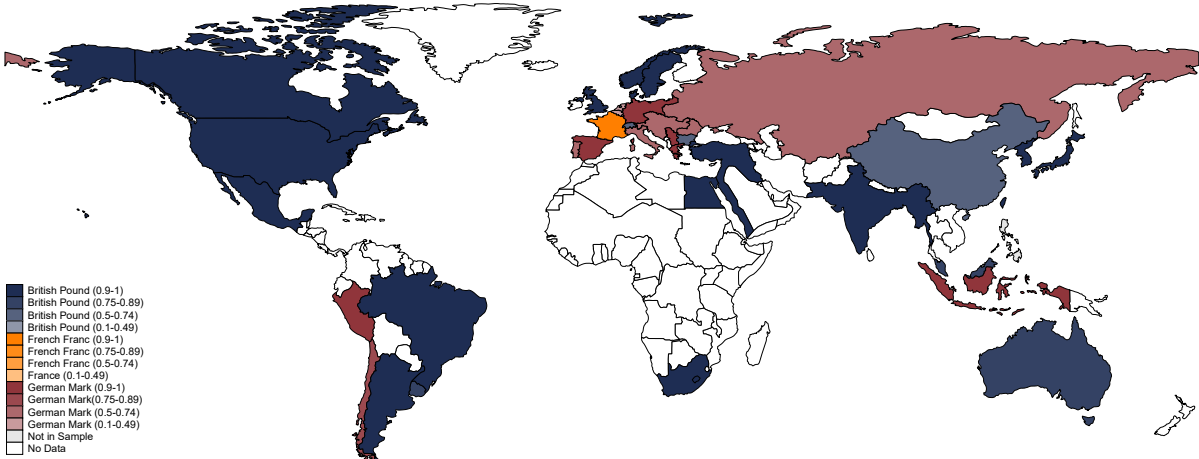


Figure 18: A Tripolar Classical Gold Standard - Dominant Currency By Country, Selected Years 1880-1910

(a) 1885: A Tripolar Classical Gold Standard (I)
1885



(b) 1895: A Tripolar Classical Gold Standard (II)
1895



(c) 1913: A Tripolar Classical Gold Standard (III)
1913

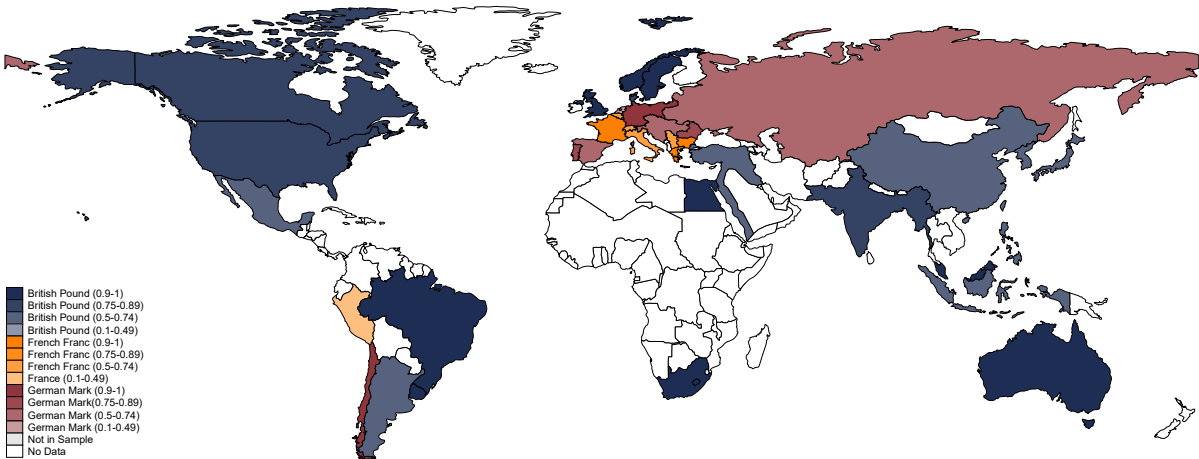
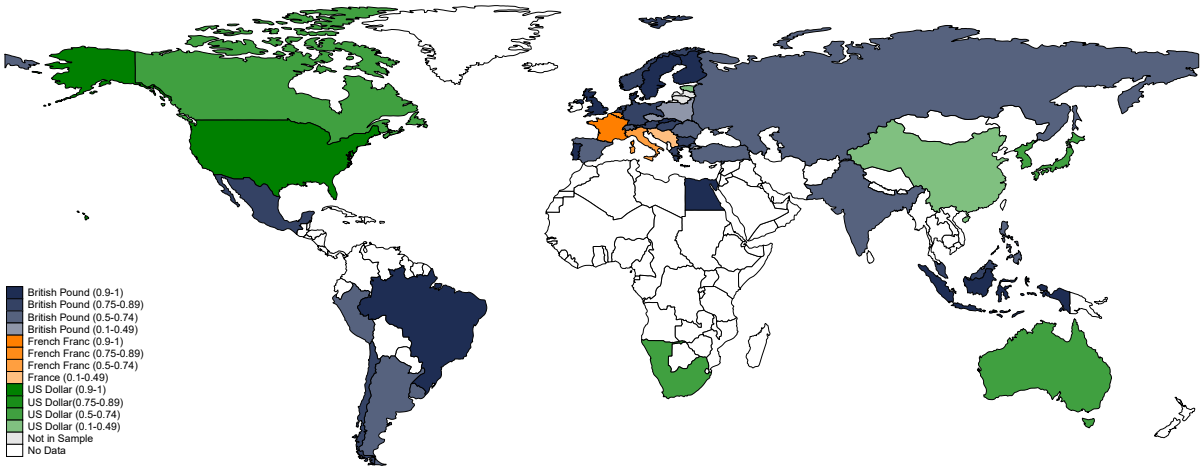
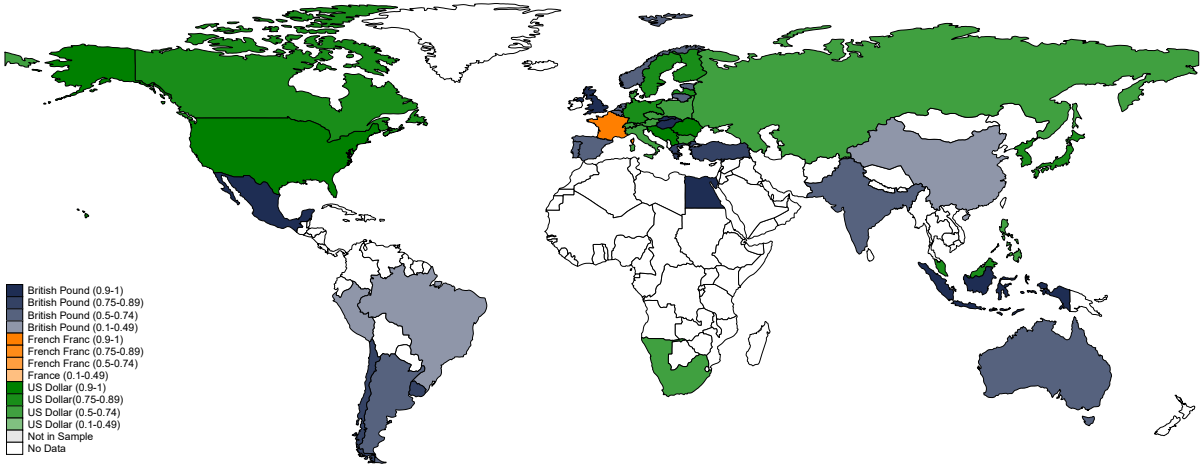


Figure 19: The Rise and Fall of the Interwar USD - Dominant Currency By Country, Selected Years 1918-1930

(a) 1922: Rise of the USD after WW1
1922



(b) 1927: Peak of USD Dominance in the Interwar
1927



(c) 1929: A Shortlived Comeback of the GBP in 1929
1929

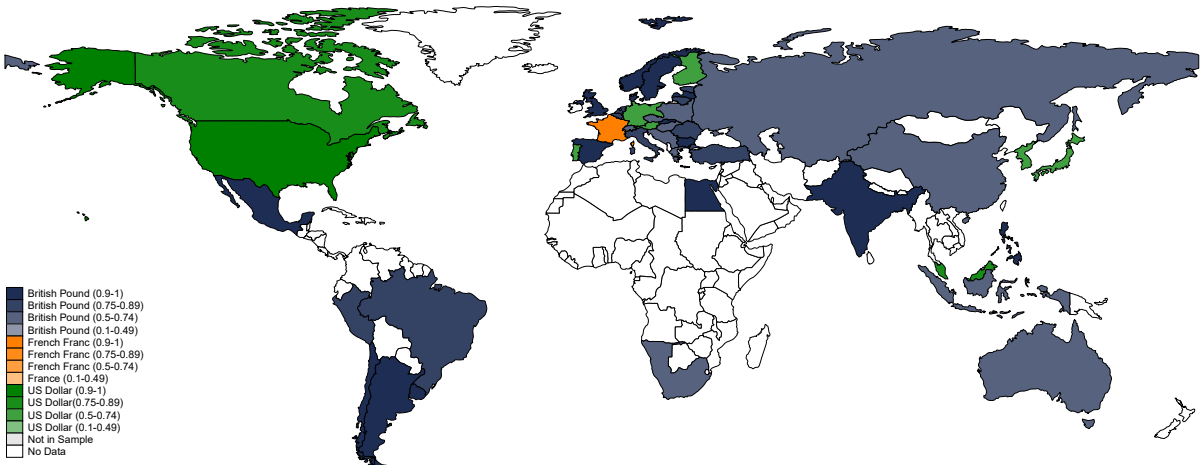
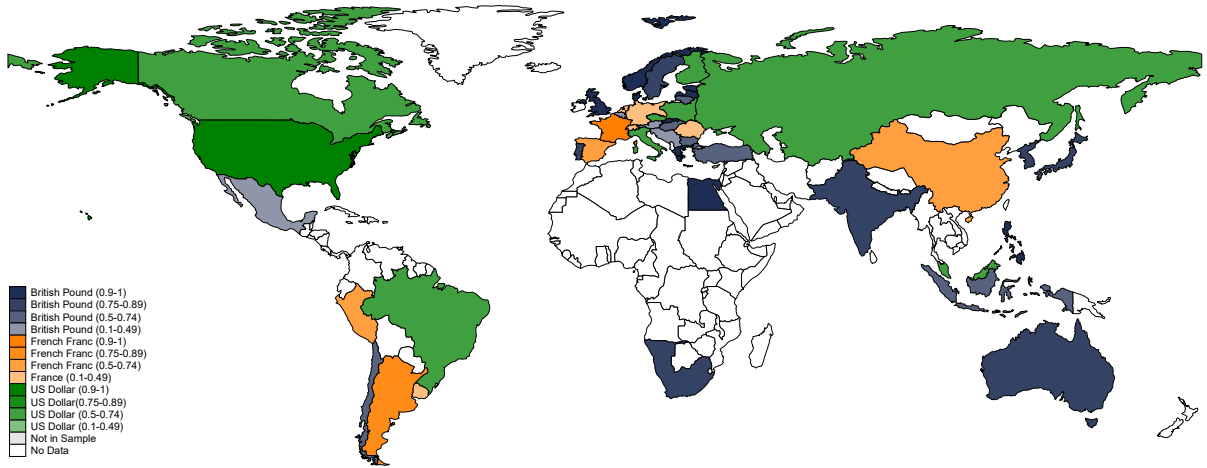
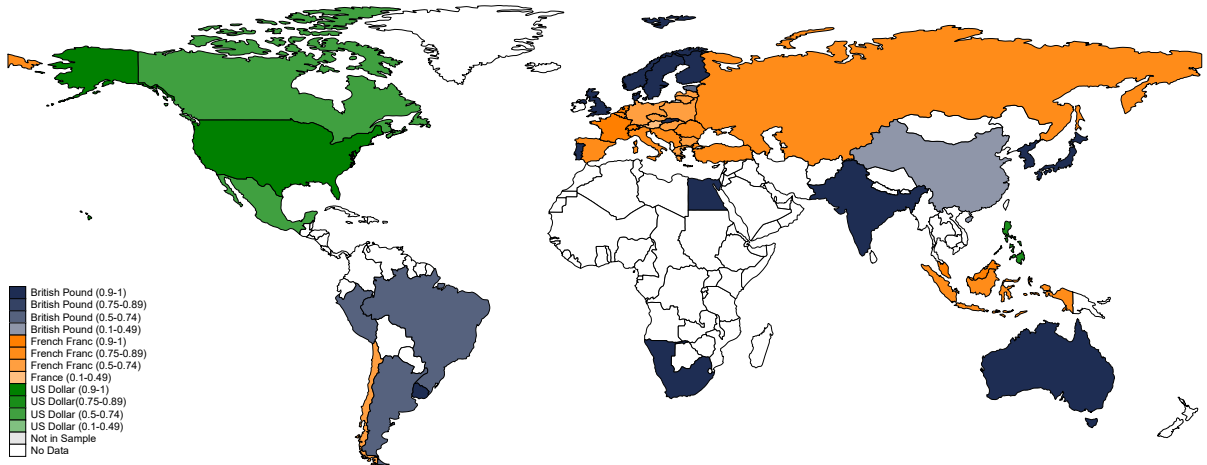


Figure 20: The Rise and Fall of the Interwar FFR - Dominant Currency By Country, Selected Years 1931-1939

(a) 1931: The FFR Steps into the Instability of the GBP and the USD
1931



(b) 1936: FFR Dominance Before the 1936 French Election
1936



(c) 1939: GBP and USD Bipolarity at the Eve of WWII
1939

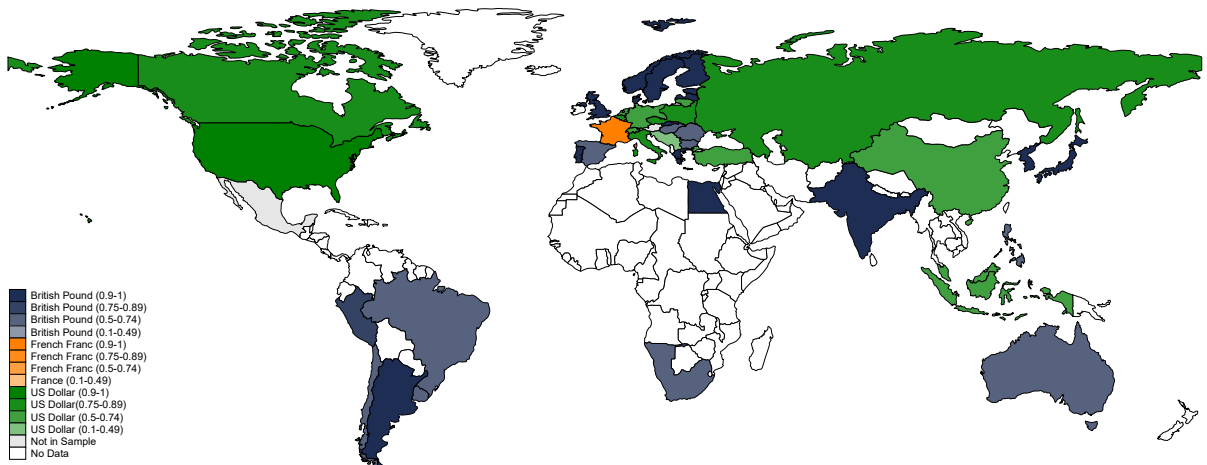
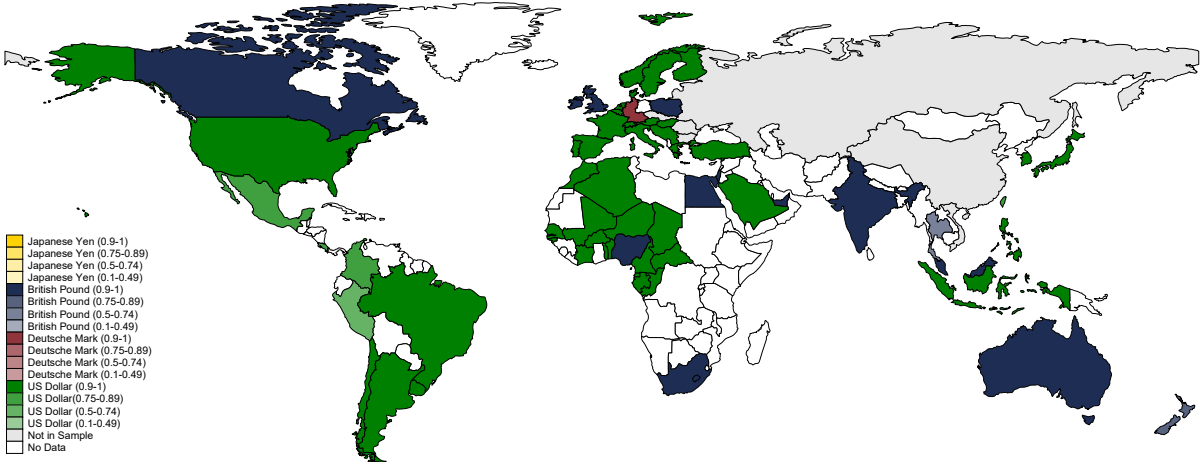


Figure 21: A USD Dominated Bretton Woods System - Dominant Currency By Country, Selected Years 1950-1973

(a) 1950: USD Dominance after WWII
1950



(b) 1964: "Privilège Exhorbitant"
1964

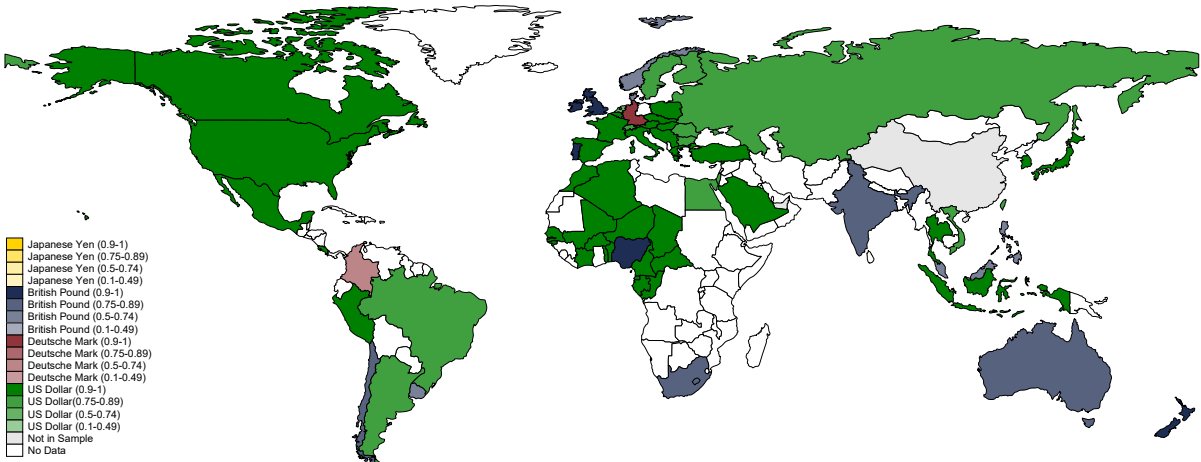
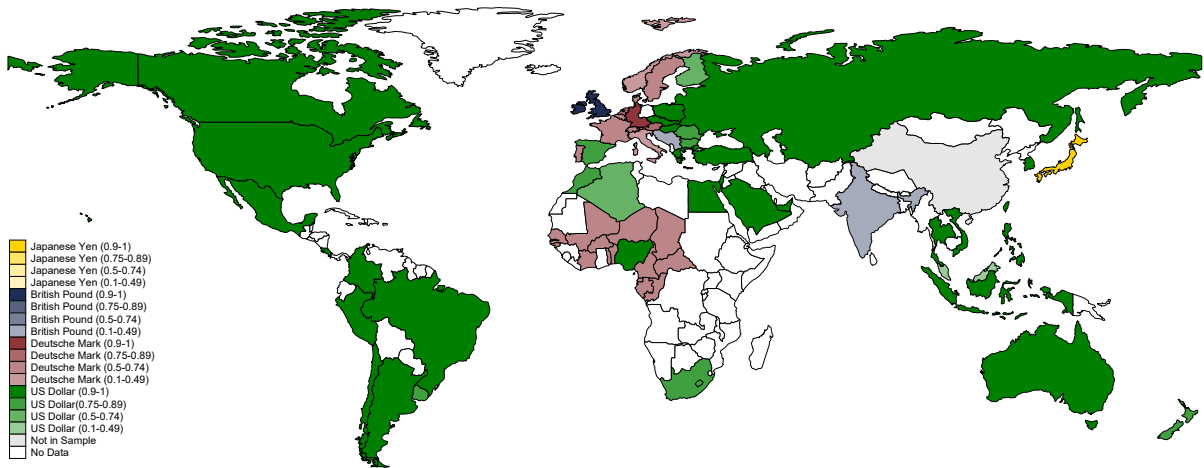
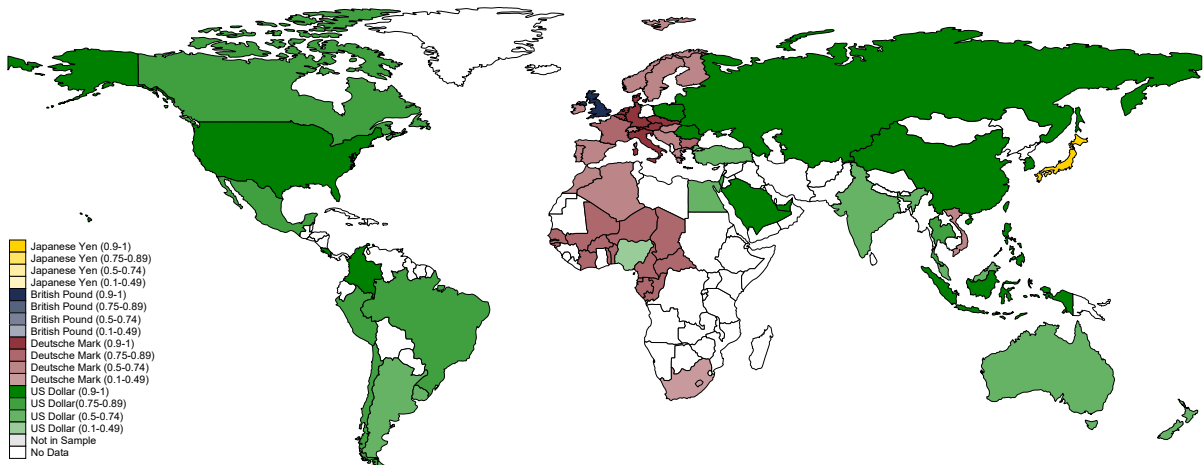


Figure 22: The Rise of the DEM - Dominant Currency By Country, Selected Years 1931-1939

(a) 1974: The Beginnings of a DEM Zone
1974



(b) 1988: "German Dominance Hypothesis"
1988



(c) 1996: Limited Fall of DEM Influence after the EMS Crisis
1996

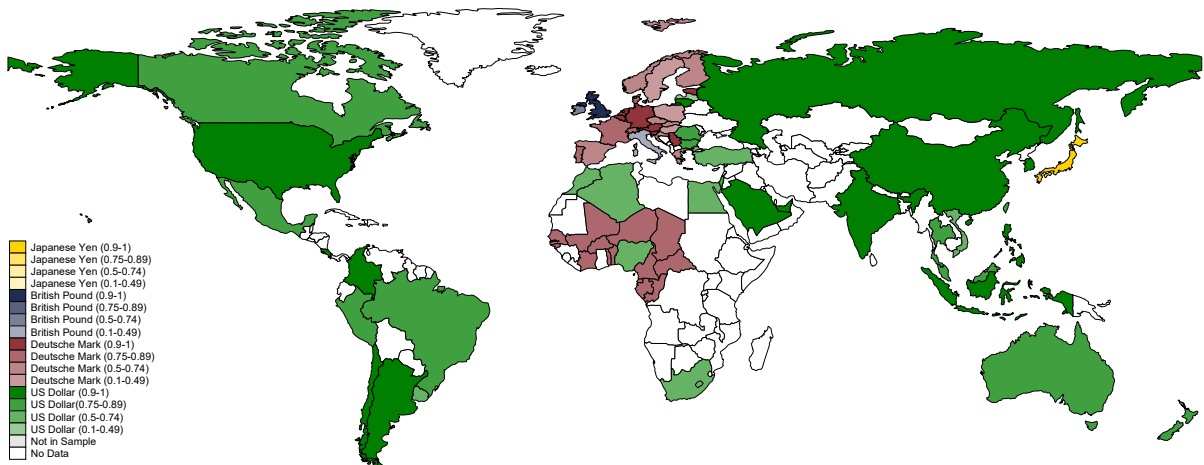
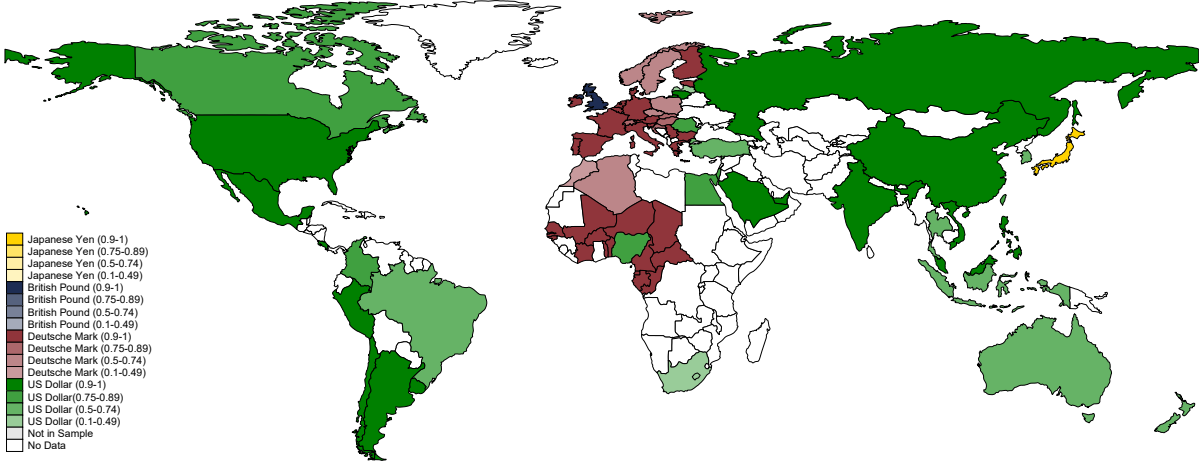
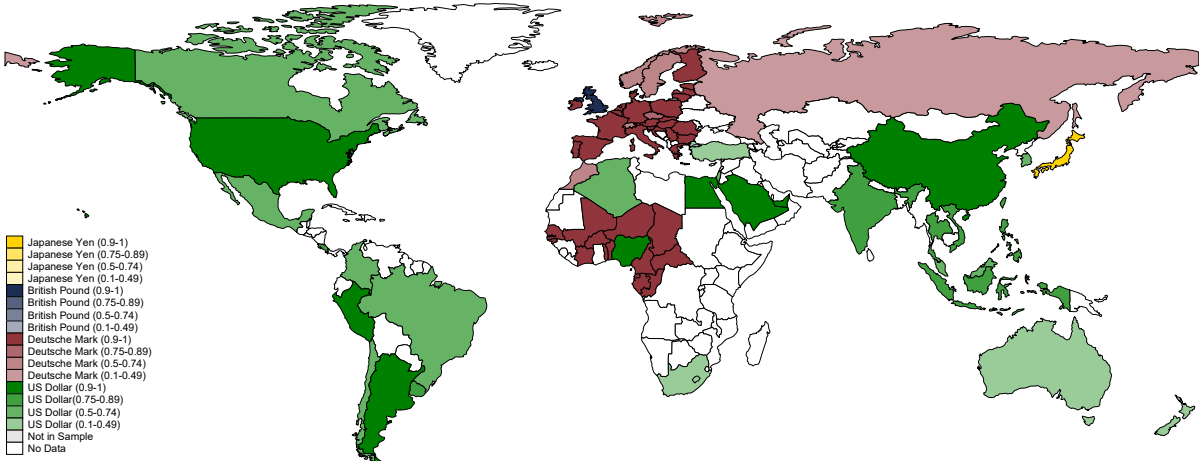


Figure 23: USD Dominance, EUR Stability - Dominant Currency By Country, Selected Years 1931-1939

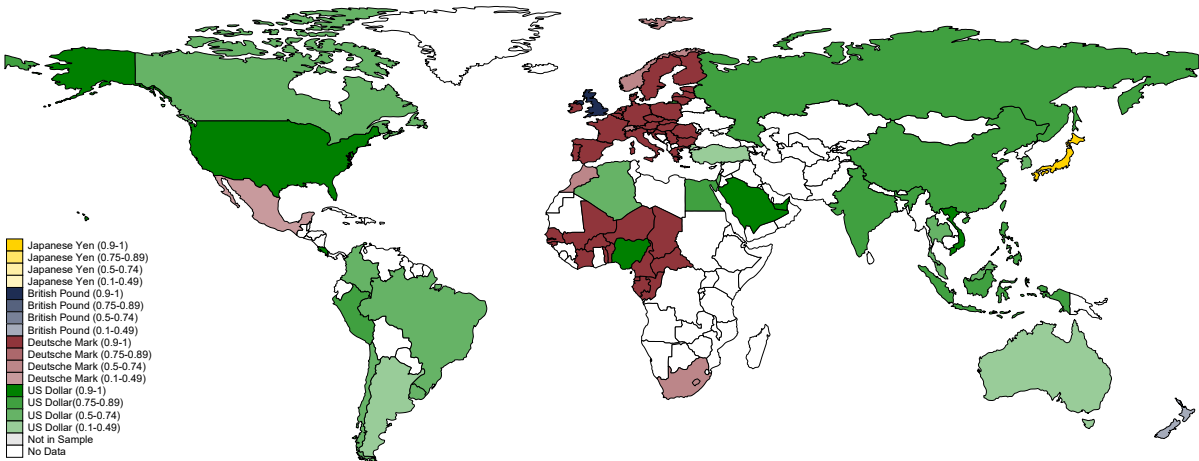
(a) 2002: The EUR Builds on the DEM Legacy
2002



(b) 2012: EUR Influence Resists Despite the Crisis
2012



(c) 2019: USD Dominance Persists
2019



8 Data Appendix

Foreign-exchange data for the pre-1948 period employed in this paper are largely the result of an extensive original data collection effort. For the early 19th century and for some currencies I however rely on Global Financial Data (GFD), a commercial financial data provider. GFD reunited in their portal a large collection of historical financial data from various third party academic and printed sources. GFD typically provides foreign-exchange monthly frequencies since the early 19th century and daily frequencies for some countries since the late 19th century or early 20th century. However, they do not always provide transparency on the sources employed and the consistency of their data. Furthermore, I provide exchange-rate for a number of currencies absent in their coverage or that they only cover with large gaps. The dataset is organised in three main sub-periods, reflecting large discontinuities in the international monetary system - and consequently the reporting of foreign-exchange data - after each world war.

The extent of country coverage is related to data availability, quality and economic intuition. First, I try as much as possible to cover countries that are reported at any point between 1846 and 1939 in either *The Economist* magazine or *The Bankers' Almanac* for the whole sample, so as to have continuous coverage. This is not always possible as new countries arise from annexations or separatism. Second, when I am unable to originally collect a continuous series for the whole period I rely on GFD. I however only include GFD data if there is evidence the series is not merely imputed from an official parity. Third, I include, in all sub-periods, all countries that represent more than 1% of global trade on average during each sub-period.

Appendix 8.A 1820-1914: Foreign-Exchange Data

8.A.1 Monthly Frequency

In order to extend coverage to the beginning of the 19th century and to non-European countries in the 19th century, I selectively employ monthly foreign-exchange series from GFD expressed in terms of sterling or US dollars depending on availability. For some

polities unavailable from GFD, I manually digitise monthly series from [Schneider et al. \(1992\)](#). I plan to continue this digitisation effort in the future in order to further expand coverage for the 19th century and overcome the limitations of GFD. Detailed breakdown and starting date of coverage is detailed in [Table 5](#).

8.A.2 Weekly Frequency

I hand-collect and digitise weekly exchange-rates data from 1846, the first year The Economist magazine in London started to consistently publish a weekly table of the London "*Course of Exchange*". Prices employed in this analysis are for bills of exchange with 3 months maturity²⁵. Bills of exchange were short-term negotiable trade finance instrument that constituted the most common form of foreign-exchange market between the early-modern period and WW1. I collect the "high" and "low" quotes of the Tuesday and Thursday prices reported in the "*Course of Exchange*" table for each currency of interest²⁶ and average them over each week. In terms of geographic coverage, the "Course of Exchange" table included only the main European financial centers. A separate table of "*Foreign Rates of Exchange on London*" reported non-European bills of exchange prices. However, its format and coverage were inconsistent over time, making any data collection extremely complex, particularly for early years. In particular, quotes from different financial centers were published with different and varying lags. This is why, for now, I complement my weekly data for the 19th century with series from GFD for countries that were not reported in the "*Course of Exchange*". The exception to this is the exchange-rate for the US dollar, which I digitise from the Bank of England's Daily Accounts of Books. Detailed sources are described in [Table 5](#).

Appendix 8.B 1918-1939: Foreign-Exchange Data

Foreign-exchange data from 1918 onward are at weekly frequency only. Between 1918 and 1920, I continue to rely on The Economist magazine. The tables used for those years are the "Neutral Rates of Exchange" Amsterdam price for the exchange-rate of the Germanmark and either the "London Course of Exchange" or the "Foreign

²⁵Only the French franc and the Dutch Guilders are quoted both at 3 months and "at sight" in the 19th century.

²⁶With the exception of Italian and German financial centers, I only collect one price per country.

Table 5: Foreign-Exchange Data Coverage and Sources 1820-1914

Polity	Region	Monthly		Weekly	
		Coverage starts	Source	Coverage starts	Source
Argentina	Americas	1827	GFD	1862	GFD
Australia	Asia and Africa	1822	GFD	-	-
Austria-Hungary	Eastern Europe	1820	GFD	1846	CoE
Belgium	Western Europe	1830	GFD	1846	CoE
Brazil	Americas	1820	GFD	1862	GFD
Bulgaria	Eastern Europe	1879	GFD	-	-
Canada	Americas	1820	GFD	1869	GFD
Cape Colony	Asia and Africa	1820	GFD	1869	GFD
Chile	Americas	1850	GFD	-	-
China	Asia and Africa	1844	GFD	1869	GFD
Denmark	Scandinavia	1820	GFD	1879	GFD
Dutch East Indies	Asia and Africa	1820	GFD	-	-
Egypt	Asia and Africa	1869	GFD	1869	GFD
France	Western Europe	1820	GFD	1846	CoE
Greece	Western Europe	1877	GFD	-	-
India	Asia and Africa	1822	GFD	1869	GFD
Italy (Piedmont-Sardinia)	Western Europe	1820	WdW	1846	CoE
Japan	Asia and Africa	1862	GFD	1869	GFD
Lombardy-Venetia	Western Europe	1820	WdW	-	-
Mexico	Americas	1820	GFD	1862	GFD
Netherlands	Western Europe	1820	GFD	1846	CoE
Germany (Hamburg)	Western Europe	1820	GFD	1865	CoE
Norway	Scandinavia	1820	GFD	1862	GFD
Ottoman Empire	Eastern Europe	1826	GFD	1869	GFD
Papal States	Western Europe	1820	WdW	-	-
Peru	Americas	1883	GFD	-	-
Philippines	Asia and Africa	1894	GFD	-	-
Portugal	Western Europe	1820	GFD	1846	CoE
Romania	Eastern Europe	1867	GFD	-	-
Russia	Eastern Europe	1820	GFD	1848	CoE
Serbia	Eastern Europe	1863	GFD	-	-
Two Sicilies (Sicily)	Western Europe	1820	WdW	1846	CoE
Southern Germany	Western Europe	1820	GFD	1846	CoE
Spain	Western Europe	1820	GFD	1846	CoE
Straits Settlements	Asia and Africa	1834	GFD	1862	GFD
Sweden	Scandinavia	1820	GFD	1846	GFD
Switzerland	Western Europe	1820	WdW	1893	CoE
Tuscany	Western Europe	1820	WdW	1846	CoE
Two Sicilies (Naples)	Western Europe	1820	WdW	1846	CoE
United Kingdom	Western Europe	1820	GFD	1846	CoE
United States	Americas	1820	GFD	1855	BoE
Uruguay	Americas	1885	GFD	-	-

CoE: The Economist Magazine's Course of Exchange. BoE: Bank of England's Daily Accounts. GFD: Global Financial Data. WdW: [Schneider et al. \(1992\)](#).

Rates of Exchange on London” cable or sight (spot) quotes for other currencies.

Between 1921 and 1939 I hand collect and digitise the weekly averages of ”telegraphic” (spot) exchange-rate prices from The Bankers’ Almanac publication. Capital controls are enforced at various points in Germany, Hungary, Argentina, Brazil, Uruguay, Chile. In these cases, I collect both official and unofficial prices and use the latter in the present paper analysis. GFD series are used for South Africa and Australia only.

Detailed coverage is presented in Table 6.

Appendix 8.C 1948-2020: Foreign-Exchange Data

For the contemporary period, weekly foreign-exchange data in US dollars are retrieved from GFD for the whole sample period or until data from the Banks for International Settlements become available for each currency. As Global Financial Data rarely reports missing data²⁷, foreign-exchange prices for the communist block countries start to be included in the dataset only when there is evidence of foreign-exchange price variation in line with the rest of the dataset.

Appendix 8.D Bullion Prices and Other Data

Silver and gold prices are taken from [Boyer-Xambeu et al. \(1994\)](#) between 1820 and 1870 and from GFD between 1948 and 2020. I hand collect and digitise gold and silver prices in London from the Bank of England’s Daily Accounts of Books between 1870 and 1914 and from The Bankers’ Almanac between 1918 and 1939.

To control for commodity prices in some specification I employ weekly wheat prices from [Brunt and Cannon \(2013\)](#) between 1820 and 1914, the US Bureau of Labor Statistics Commodity Index between 1918 and 1939 and the Bloomberg Commodity Index after 1948.

Controls for overall risk and volatility are either original data from The Economist magazine or taken from GFD.

- 1846-1914: average term spread between 3-months and sight bills on Amsterdam

²⁷Preferring to impute with a ”par” price.

Table 6: Foreign-Exchange Data Coverage and Sources 1918-1939

Polity	Region	Coverage starts	Source
Argentina	Americas	1918	BA
Australia	Asia and Africa	1918	GFD
Austria	Eastern Europe	1920	BA
Belgium	Western Europe	1919	BA
Brazil	Americas	1918	BA
Bulgaria	Eastern Europe	1920	BA
Canada	Americas	1918	BA
Chile	Americas	1918	BA
China	Asia and Africa	1918	BA
Czechoslovakia	Eastern Europe	1919	BA
Free City of Danzig	Eastern Europe	1923	BA
Denmark	Scandinavia	1918	BA
Dutch East Indies	Asia and Africa	1918	BA
Egypt	Asia and Africa	1918	BA
Estonia	Scandinavia	1921	BA
Finland	Scandinavia	1918	BA
France	Western Europe	1918	BA
Germany	Western Europe	1918	BA
Greece	Eastern Europe	1918	BA
Hong Kong	Asia and Africa	1918	BA
Hungary	Eastern Europe	1921	BA
India	Asia and Africa	1918	BA
Italy	Western Europe	1918	BA
Japan	Asia and Africa	1918	BA
Latvia	Scandinavia	1921	BA
Lithuania	Scandinavia	1924	BA
Mexico	Americas	1919	BA
Netherlands	Western Europe	1918	BA
Norway	Scandinavia	1918	BA
Peru	Americas	1918	BA
Philippines	Asia and Africa	1919	BA
Poland	Eastern Europe	1918	BA
Portugal	Western Europe	1918	BA
Romania	Eastern Europe	1920	BA
Russia	Eastern Europe	1919	BA
South Africa	Asia and Africa	1918	GFD
Spain	Western Europe	1918	BA
Straits Settlements	Asia and Africa	1918	BA
Sweden	Scandinavia	1918	BA
Switzerland	Western Europe	1918	BA
Turkey	Eastern Europe	1919	BA
United Kingdom	Western Europe	1918	BA
United States	Americas	1918	BA
Uruguay	Americas	1918	BA
Yugoslavia	Eastern Europe	1920	BA

BA: The Bankers' Almanac. Data between 1918 and 1920 are from The Economist magazine for all currencies. GFD: Global Financial Data.

Table 7: Foreign-Exchange Data Coverage and Sources 1948-2020

Polity	Region	Coverage starts	Polity	Region	Coverage starts
Algeria	Africa	1948	Lithuania	Scandinavia	1992
Argentina	Americas	1948	Malaysia	Asia	1948
Australia	Asia	1948	Mexico	Americas	1948
Austria	Western Europe	1948	Morocco	Africa	1948
Belgium	Western Europe	1948	Netherlands	Western Europe	1948
Brazil	Americas	1948	New Zealand	Asia	1948
Bulgaria	Eastern Europe	1990	Nigeria	Africa	1948
Canada	Americas	1948	Norway	Scandinavia	1948
CFA Zone	Africa	1948	Peru	Americas	1948
Chile	Americas	1948	Philippines	Asia	1948
China	Asia	1978	Poland	Eastern Europe	1986
Colombia	Americas	1948	Portugal	Western Europe	1948
Costa Rica	Americas	1948	Romania	Eastern Europe	1972
Croatia	Eastern Europe	1993	Russia	Eastern Europe	1992
Czech Republic	Eastern Europe	1990	Saudi Arabia	Asia	1948
Denmark	Scandinavia	1948	Singapore	Asia	1948
Egypt	Africa	1948	Slovakia	Eastern Europe	1993
Estonia	Scandinavia	1993	Slovenia	Eastern Europe	1993
Finland	Scandinavia	1948	South Africa	Africa	1948
France	Western Europe	1948	Spain	Western Europe	1948
Greece	Western Europe	1948	Sweden	Scandinavia	1948
Hong Kong	Asia	1948	Switzerland	Western Europe	1948
Hungary	Eastern Europe	1982	Taiwan	Asia	1948
India	Asia	1948	Thailand	Asia	1948
Indonesia	Asia	1948	Turkey	Eastern Europe	1948
Ireland	Western Europe	1948	UAE	Asia	1948
Israel	Asia	1948	United Kingdom	Western Europe	1980
Italy	Western Europe	1948	United States	Americas	1948
Japan	Asia	1948	Uruguay	Americas	1948
Korea	Asia	1948	Vietnam	Asia	1976
Latvia	Scandinavia	1992	Yugoslavia (Serbia)	Eastern Europe	1948

Data are taken for each polity from Global Financial Data until they become available from the Bank for International Settlements.

and Paris; average bid-ask spread on bills of exchange on Paris and Amsterdam.

- 1918-2020: term spread between high-quality corporate bonds and overnight inter-bank rate; average daily volume of the NYSE.

GDP-weights are calculated from [Bolt and van Zanden \(2020\)](#), while trade-weights are taken from [Dedinger and Girard \(2017\)](#) before 1948 and the IMF-DOTS database afterward.