

# The World's First Global Safe Asset: British Public Debt, 1718-1913

Patricia Gomez-Gonzalez\* and Gabriel Mathy†

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## Abstract

This paper assesses whether the British public debt featured a convenience yield during the Classical Gold Standard before World War I, as the US does in modern times. Our empirical results support this thesis. Increases in the British debt-to-GDP ratio decrease British public debt's convenience yield between 8 and 20 basis points, qualitatively similar to the behavior of US public debt yields post-1926. Interestingly, the relationship between US yields and US public debt during the Classical Gold Standard counters previous findings for modern US times. International public debt yield spreads between other Gold Standard core countries and Britain were consistently positive and averaged 55 basis points, even though currency and sovereign risk were negligible at that time for the countries chosen.

**Keywords:** Convenience yield, Safe asset, Liquidity, Gold Standard

**JEL Codes:** E42, G15, H63, N23

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\*Fordham University and Rimini Centre for Economic Analysis (RCEA), pgomezgonzalez@fordham.edu

†American University, mathy@american.edu, Corresponding Author

# 1 Introduction

Before New York, London was the financial capital of the world, tying together a rapidly globalizing world from the 18th century through World War 1. At the center of the system was the British system of public debt, which was considered safe, even when it soared to levels that had never been seen before. In modern times, investors value US public debt for its safety and liquidity, referred to as convenience. They are willing to accept a lower yield to hold it vis-à-vis private assets (Krishnamurthy and Vissing-Jorgensen 2012), and the US convenience yield is larger than other countries' (Du et al. 2018). This paper empirically assesses whether the British public debt featured a convenience yield during the Classical Gold Standard, similar to the one the US has nowadays.

A voluminous literature examines crowding out after the large expansion of British public debt in the context of the French and Napoleonic wars in the 18th and 19th centuries. Crowding out refers to a reduction in investment due to higher interest rates stemming from a diversion of loanable funds from the private sector to the public sector when public debt is issued. Some authors simply assumed crowding out was *a priori* operative (Williamson, 1984), others found empirical support for crowding out Black and Gilmore (1990); Temin and Voth (2005), while other did not find empirical evidence for crowding out in this period (Barro, 1987; Heim and Mirowski, 1987; Clark, 2001).

We focus instead on the effects of changes in the supply of British public debt on its yield, following Krishnamurthy and Vissing-Jorgensen (2012) (henceforth, KV). If public debt features a convenience yield, we expect that decreasing the level of debt will make it more valuable, increasing its price and depressing the yield investors are willing to accept. On the contrary, at high debt levels, the price of debt would be low, and yields would increase. One reason for this is the liquidity services public debt offers. A large increase in the supply of safe debt instruments makes financial markets thicker and more liquid, providing additional value to investors beyond the direct pecuniary return. While this hypothesis has the opposite predicted sign as the crowding out hypothesis, they address different aspects of the relationship between the quantity of debt and interest rates.

Following Du et al. (2018) (henceforth, DIS), we also calculate international spreads by subtracting the British consol yield from the public debt yields of other major economies in this period. Under some conditions, which we will discuss, positive spreads imply that the convenience yield of British public debt in this period was larger than that of other core countries. Previous work studying international spreads during this period has focused mainly on the differences in the Gold Standard's credibility in the core and periphery countries and during

the Classical Gold Standard and the interwar period ([Bordo and Rockoff 1996](#), [Obstfeld and Taylor 2003](#), [Mitchener and Weidenmier 2015](#)).

Our empirical results are as follows. During the Classical Gold Standard, increases in Britain's public debt decreased its convenience yield, as KV finds for the post-1926 US. The magnitudes, though, are somewhat smaller. An increase in the British debt-to-GDP ratio comparable to what KV considers for modern US times decreased Britain's public debt convenience yield between 8 and 20 basis points (bp), depending on the private yield used.<sup>1</sup>

Interestingly, repeating the KV analysis for the US during the Classical Gold Standard (1879-1914) delivers the opposite sign to what KV finds for 1926 onwards. During the Classical Gold Standard, increases in the US debt-to-GDP ratio *increased* the convenience yield. An increase in the debt-to-GDP ratio of the same magnitude as KV considers *increases* the convenience yield by 9 bp.

Our international spread calculations show that the spread between the core countries' public debt yields and the British consol yield averages 55 bp for the period for which each country was in the Gold Standard, somewhat higher than what DIS found for the US between 2000 and 2009.<sup>2</sup> Like them, we also find variability across countries, with spreads ranging from 42 to 65 bp. Contrary to them, spreads are positive for all countries throughout the period studied.

**Literature** This paper is related to several strands of literature. First, it is related to public debt's special attributes of safety and liquidity and their effect on public debt yields ([Krishnamurthy and Vissing-Jorgensen 2012, 2015](#), [Greenwood et al. 2015](#), [Nagel 2016](#), [Du et al. 2018](#), [Del Negro et al. 2019](#)). This literature has almost exclusively focused on modern US times. Instead, we study Britain between 1718 and 1913, extending the geographical range, the historical period, and the asset type for which a convenience yield can be found. We also find that the US's public debt did not feature a convenience yield during the Classical Gold Standard.

Second, it contributes to the literature on safe assets ([Gorton 2017](#), for a review, and [Gourinchas and Jeanne 2012](#), [Farhi and Maggiori 2017](#), [Caballero and Farhi 2017](#), [He et al. 2019](#), [Gorton and Ordoñez 2022](#), [Choi et al. 2023](#) among others). Contrary to them, we concentrate on the world's first safe asset, British public debt between 1718 and 1913, and empirically

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<sup>1</sup>KV finds a decrease in the AAA spread of 44 bp for the same magnitude increase in the US debt-to-GDP ratio.

<sup>2</sup>DIS finds an average premium of 21 bp before the global financial crisis, which increases to 90 bp during the crisis, and declines to -8 bp after the crisis.

test for a convenience yield using historical data.

Third, it relates to the literature on the US's exorbitant privilege of borrowing in US dollars for cheap due to the convenience yield investors attach to US public debt ([Gourinchas and Rey 2007a,b](#), [Eichengreen 2011](#)). As before, most of this literature examines the US in modern times, with [Choi et al. \(2023\)](#) and [Chen et al. \(2022\)](#) being prominent exceptions. The former studies the secular decline in the demand for UK public debt between 1933 and 2017. The latter analyzes the fiscal implications for the UK of losing its exorbitant privilege. Some of the methods used in [Choi et al. \(2023\)](#) are similar to ours, but our period of interest is before theirs. The period of interest in [Chen et al. \(2022\)](#) is between 1729 and 2020, extending back almost as much as our data. However, their question of interest is different: how much of the UK's public debt issuance between 1729 and 2020 was backed by its macroeconomic fundamentals, and how much was permitted due to being the world's supplier of safe assets? Finally, [van Hombeeck \(2020\)](#) also studies Britain's exorbitant privilege by constructing a dataset on individual financial assets for the UK between 1871 and 1914.

The rest of the paper is structured as follows. Section 2 discusses the historical background and the data choices. Section 3 reviews the data sources. Section 4 contains the empirical analysis. Finally, Section 5 concludes the paper.

## 2 Historical Background

After the English Civil War between the forces of the monarchy and Parliament, the Restoration of 1660 brought Stuart monarchs back to the English throne. The ascension of the Catholic James II to the English throne in 1685 leads quickly to conflict with many English Protestants, in particular Protestant-dominated Parliament. Conflicts over religious toleration and the balance of powers between king and Parliament led to the Glorious Revolution of 1688, where William of Orange invaded from the Netherlands and deposed James II with broad-based popular support in England. Parliament would now make the rules, and the executive's powers and prerogatives were sharply curtailed. Of particular relevance is the power of the purse, which was unambiguously in Parliament's hands. William also brought Dutch financial institutions across the Channel, sparking rapid financial development and the development of securities markets, especially for sovereign debt ([North and Weingast, 1989](#)).

By the 18th century, British interest rates on public debt had fallen rapidly from what had prevailed under the Stuarts. While [North and Weingast \(1989\)](#) argue that the constraints on the English executive's ability to expropriate property was essential for the revolution in

British public finances, interest rates were still high under William III. Initially, the Tories, representatives of landed interests, were dominant in Parliament. However, the Whigs, representatives of the urban bourgeoisie, regained the upper hand a few years later, coinciding with the decline in interest rates. A political party like the Tories, representing those who based their wealth in land, might consider a debt default in a dire fiscal situation. The bourgeoisie, who owned most of the debt, would not default on themselves however, and so it was clear that the self-interest of the Whigs would essential any risk regarding full repayment. Unsurprisingly, interest rates fell, and the ability of the British state to issue debt became essentially unlimited (Stasavage, 2007).

The period in British history from 1688 to 1819 has been referred to as the “Second Hundred Years War”, as it featured frequent warfare with France over a century, as the first Hundred Years War had (Scott, 1992). With any check on the legislature by the monarchy ended by the Glorious Revolution, Parliament could engage in a century of warfare without limit. Public finance at the time was dominated by expenses related to warfare, and successful public finance was essential for successful warfare (O’Brien, 1988; Dincecco and Prado, 2012). With low borrowing costs, debt was cheap, and Britain borrowed heavily, amassing a debt exceeding two times their national income, a feat that would have been impossible before the events of 1688 (Brewer, 1990). This financial revolution cemented Britain’s place as the most powerful empire on the globe by the 19th century (Dickson, 1967; O’Brien, 2011; Sissoko et al., 2019). A similar phenomenon occurred in William of Orange’s homeland, as interest rates fell as the bourgeois state developed in the Netherlands, with an accompanying financial revolution (C’t Hart, 1993; Neal, 2000; Fritschy, 2003). The Industrial Revolution in Britain was accelerating at the time, bringing broader economic growth and development alongside the growth and development of the financial sector. During the French Wars, Britain was locked in an existential struggle with Republican France and Napoleonic France and their allies.

While Britain had joined the gold standard earlier in the 18th century, the Bank of England suspended convertibility into gold given the potential strains from financing these wars (Duffy, 1982). This period saw a paper pound, which Britain’s modern monetary and financial structures were able to manage successfully (O’Brien and Palma, 2020). A promise to redeem paper money for gold after the end of hostilities was enough to keep the value of the pound stable, and the British government was able to issue record amounts of debt with little difficulty. After the end of this period of wars in 1815, the 19th century marched on. The Industrial Revolution spread, and financial development increased across the globe, increasing controlled by European empires. This first age of globalization had London as its

financial capital, with British debt as the global safe asset (Neal et al., 2003).

### 3 Data

Our data is primarily drawn from two sources. The first is the Bank of England’s ”A Millennium of Macroeconomic Data” (MMD) database (Thomas and Dimsdale, 2017). This is an expanded dataset, with a description of an earlier version to be found in Thomas et al. (2010). These data are based on primary sources from the British Treasury and the Bank of England, among others, explained in these sources. The debt to GDP ratio is from MMD. The centerpiece of British public finance in this period was the perpetual consol bond, which can also be found in MMD. The Bank of England’s short-term lending rate is the main short-term interest rate, also from MMD. We also use a corporate bond rate, the prime paper yield, and the UK mortgage yield from MMD. The second source is Global Financial Data (GFD), which has many useful historical series. Stock volatility is computed by taking the standard deviation of a stock index representing the London Stock Exchange, with the underlying data coming from GFD. The private discount rate series is also derived from GFD. The data for the interest rates for the other core nations is also drawn from GFD, as is the data for the USA.

### 4 Empirics

#### 4.1 Effect of British Public Debt Supply on British Spreads

Given data limitations, we have tried our best to match types of interest rates for the historical British case to those of KV’s study of the modern United States. However, public finance functioned very differently in this period. The center of British public finance in this period was the British consol. This was a perpetual bond, which was callable at a set price by the British government, but which paid interest indefinitely until that decision was made (Odlyzko, 2016). This corresponds to the long-term bond in the US case. The United States issued consol bonds in the 18th and 19th centuries, but no longer issues these debt instruments (Payne et al., 2022).

Shorter maturity debt is harder to find. In general, bills were issued in wartime when funding needs were acute and long-term prospects for debt repayment were uncertain. These bills were then refinanced into longer-term debt instruments, like consols, after the cessation of hostilities. This makes finding consistent series for shorter maturity debt difficult or impossible. Instead, we use bank interest rates or other short-term instruments.

Following KV, we estimate the following regression equation using yearly data for the British Gold Standard period (1718-1913):

$$Spread_t = a + \beta \log(debt/GDP)_t + \gamma X_t + \epsilon_t \quad (1)$$

where  $Spread_t$  is the corporate spread calculated as a corporate yield minus the yield on the British consol, the debt-to-GDP ratio is the market value of outstanding British public debt over Britain's GDP, and  $X_t$  is a vector of controls, namely, a measure of the stock market volatility and a measure of the state of the business cycle.

Our stock volatility measure is the annual standard deviation of the monthly log stock return. The measure of stock market volatility controls for default risk. KV uses Moody's Analytics expected default frequency (EDF) for the period for which it's available for the US and stock market volatility for the period for which EDF is unavailable. Since Moody's EDF measure uses the price of options, which are unavailable for this period in Britain, we follow KV's second route and use stock market volatility, based on a London equity index.<sup>3</sup>

To capture the state of the business cycle, we use import growth and real GDP per capita growth as proxies with data available, as can be seen in [Equation 1](#). KV uses the yield curve. However, Britain did not issue short-term debt instruments outside of wartime, making the construction of a consistent yield curve series impossible for the entire sample. Furthermore, long-term inflation expectations were near zero due to the credibility of Britain's commitment to the gold standard, meaning that the yield curve was flat and even inverted, even when a recession was not expected imminently ([Wood et al., 1983](#)). This would make a yield curve uninformative for the state of the business cycle in this historical period, even if it were available.

We estimate [Equation 1](#) using ordinary least squares (OLS). Unlike KV, we do not use instrumental variables (IV). This is because, during the period studied, increases in public debt were due to exogenous reasons, namely, foreign wars involving the British empire. These debt increases were not primarily related to domestic economic conditions, as they would be in modern times.

Standard errors are corrected for heteroskedasticity and first-order autocorrelation because the Durbin-Watson tests for autocorrelation in the OLS regressions, reported under the F statistics in [Table 1](#), showed signs of autocorrelation since they are all outside the [1.5-2.5] range.

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<sup>3</sup>We calculate the stock return as the log difference of the London Stock Exchange Index, which is available monthly. Annual stock volatility is calculated as the standard deviation of the monthly returns.

As corporate yield to calculate the dependent variable in [Equation 1](#), we use four alternative measures: the Bank rate, the prime paper yield, the UK mortgage yield, and the private discount yield. To calculate the spread, we subtract the public consol yield from all the aforementioned private yields.

As argued in KV and later by [Del Negro et al. \(2019\)](#) and others, the difference between the corporate spread and the public yield is a measure of public debt's convenience due to its safety and liquidity. Indeed, public debt's safety and liquidity increase investors' demand for this asset, increasing its price, driving its yield down, and increasing the corporate spread.

A negative  $\beta$  coefficient on [Equation 1](#) supports the hypothesis that public debt exhibits a convenience yield because it implies that an increase in the supply of public debt decreases the value investors place on public debt's convenience. In other words, the lower the supply of public debt, the scarcer this asset is, making investors eager to pay more for its key attributes (safety and liquidity) and pushing yields down.

[Table 1](#) reports the results of estimating [Equation 1](#). For each measure of the spread used, we report the coefficients for two specifications depending on whether we use import growth or real GDP per capita growth as the measure of the state of the business cycle. An Online Appendix contains the results for additional specifications where different explanatory variables are omitted. The coefficient of interest  $\beta$  is relatively stable across specifications, so our explanation below focuses on the specification with all explanatory variables and given in [Table 1](#).

The key takeaway from the results in [Table 1](#) is that  $\beta$  is negative and statistically significant for all measures of the convenience yield studied, supporting the hypothesis that, during the Gold Standard, Britain's public debt was valued for its special attributes vis-à-vis its corporate counterparts. Britain's public debt had a liquidity effect, like money has.

The magnitude of the effect depends on the corporate yield measure considered. An 11% increase in the logarithm of the debt-to-GDP ratio from its mean value between 1718 and 1913 of 4.44 to 4.94, equivalent to a one standard deviation increase, decreases the convenience yield between 5 basis points (bp) and 2 bp, depending on the measure of the corporate spread used. The mortgage spread exhibits the largest effect, while the prime paper spread corresponds to the smallest drop.



Table 1: Effect of the debt-to-GDP ratio on different private spreads in Britain (1718-1913)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Bank rate	Bank rate	Prime paper	Prime paper	Mortgage rate	Mortgage rate	Private Discount	Private Discount
Log(debt/GDP)	-0.762*** (0.150)	-0.764*** (0.149)	-0.514*** (0.163)	-0.507*** (0.163)	-1.143*** (0.118)	-1.127*** (0.117)	-0.585*** (0.178)	-0.586*** (0.178)
Stock market volatility	-0.309* (0.163)	-0.307* (0.171)	0.00587 (0.113)	0.0140 (0.113)	-0.299* (0.158)	-0.309** (0.144)	0.147 (0.0896)	0.150* (0.0894)
Real import growth	-0.214 (0.423)		0.866* (0.516)		0.153 (0.354)		-0.152 (0.423)	
GDP per capita growth		-1.777 (2.151)		1.241 (2.179)		2.964** (1.269)		-1.702 (2.096)
Intercept	4.552*** (0.694)	4.579*** (0.688)	2.549*** (0.734)	2.518*** (0.732)	5.968*** (0.488)	5.864*** (0.484)	2.758*** (0.793)	2.783*** (0.793)
F statistic	9.207	9.977	4.434	3.298	35.21	36.50	5.560	5.582
Durbin-Watson statistic	1.23	1.24	1.17	1.16	0.48	0.47	0.95	0.95
Observations	196	196	196	196	158	158	196	196

Notes: This table shows a series of OLS regressions where the dependent variable is a measure of the private minus public spread. The corresponding private yield used is given under the numbers labeling the columns. We subtract the public consol yield to each private yield to get the spread. The controls are the logarithm of the ratio of debt to GDP, Britain's stock market volatility, growth in real import volumes, and real GDP per capita growth. Standard errors in parentheses are robust to first-order autocorrelation and heteroskedasticity. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

For US modern times, KV finds that a one-standard-deviation increase in the US debt-to-GDP increases the convenience yield by 44 bp, a larger effect than what we find for Britain during the Gold Standard. This difference is due, in part, to the fact that increases in the British debt-to-GDP ratio in this period were smaller than nowadays for the US. Assuming an increase in the debt-to-GDP ratio of the same magnitude as KV considers (a 44% change) quadruples the effects on the convenience premia, bringing our estimates closer to what KV finds for post-1926 US, albeit still somewhat smaller. [Choi et al. \(2023\)](#) runs [Equation 1](#) using the UK prime paper spread as dependent variable between 1933 and 2017 and finds effects of similar magnitudes to KV's.

## 4.2 Effect of US Public Debt Supply on US Spreads

So far, the negative relationship between the British debt-to-GDP and private-public spreads in [Table 1](#) supports the hypothesis that British public debt was a special asset during the Classical Gold Standard, qualitatively similar to the US behavior in modern times. A natural follow-up question is whether the findings in KV about the US extend to the Classical Gold Standard. We answer this question next.

To do this, we run [Equation 1](#) using US data between 1879 and 1913, the period for which the US was under the Classical Gold Standard. We focus on the AAA spread as our dependent variable, as it is the main variable of analysis in KV. As before, we run our regression using OLS and correct the standard errors for heteroskedasticity and first-order autocorrelation since the Durbin-Watson tests show signs of autocorrelation. The results are in [Table 2](#).

Interestingly, we find that for the US in this period, the coefficient on the logarithm of the debt-to-GDP ratio is positive, the opposite to the results in KV for the modern US. A positive sign on  $\beta$  in [Equation 1](#) suggests that US public debt during this period lacked the moneyness that investors associate with US public debt nowadays, consistent with our thesis. Across specifications, the magnitude of  $\beta$  implies that a one standard deviation increase in the US debt-to-GDP ratio increases the AAA spread by approximately seven bp. Unlike today, the United States financial system was highly underdeveloped and chaotic in this period. Even compared to a similar peripheral economy in Canada, the US stands out for its crisis-prone and fragile financial system ([Bordo et al., 2015](#)). Unlike today, restrictions on branch banking and banking across state lines meant the New York financial center remained a backwater until World War I, and didn't assume the hegemonic position it holds today until after World War II.

Further evidence of the special features of British public debt compared to US public debt

during this period is the consistently positive international spread. The international US spread is calculated by subtracting the British consol yield from the long-term US public debt yield. [Figure 1](#) shows that the US spread was positive throughout the period of analysis, with an average spread of 50 bp (see [Table 3](#)). Under some assumptions discussed in the next section, a positive international spread implies that the British convenience yield was larger than the US convenience yield during this period. The next section extends the study of the international spreads to all core countries.

Table 2: Effect of the US debt-to-GDP ratio on the AAA spread in the US (1879-1913)

	(1)	(2)	(3)	(4)
	AAA spread	AAA spread	AAA spread	AAA spread
Log(Debt/GDP)	0.576*** (0.0811)	0.576*** (0.0815)	0.553*** (0.0744)	0.589*** (0.0708)
Stock market volatility		-0.290 (0.404)	-0.665* (0.339)	-0.376 (0.337)
Import growth			-0.748* (0.421)	
GDP per capita growth				-1.294** (0.617)
Intercept	0.0966 (0.142)	0.201 (0.146)	0.400** (0.147)	0.232* (0.133)
F statistic	50.51	27.32	21.48	33.91
Durbin-Watson statistic	0.59	0.76	0.71	0.78
Observations	34	34	34	34

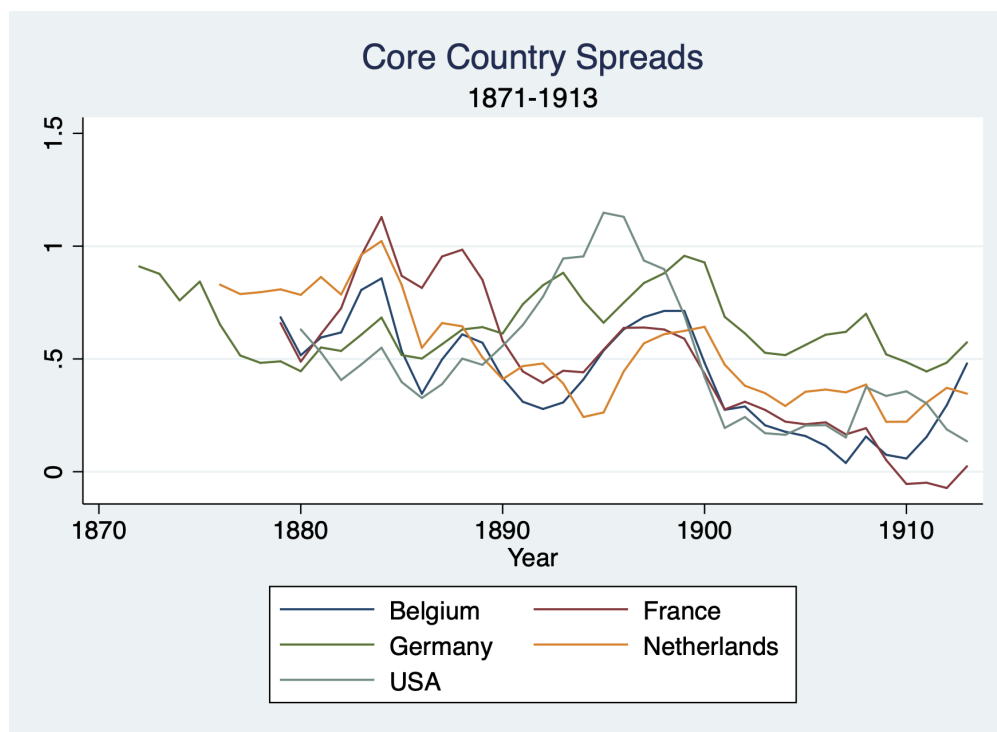
Notes: This table shows a series of OLS regressions where the dependent variable is the yield of AAA-rated US corporate bonds minus the yield on 10-year US government bonds. The controls are the logarithm of the US debt-to-GDP ratio, US stock market volatility, growth in US real import volume growth, and US real GDP per capita growth. Standard errors in parentheses are robust to first-order autocorrelation and heteroskedasticity. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

### 4.3 International Core Spreads

This section extends the calculation of international spreads to the remaining four core countries: Belgium, France, Germany, and the Netherlands.<sup>4</sup> The rationale for focusing on core countries only is twofold. First, the credibility of the Gold Standard is solid for

<sup>4</sup>To classify a country as a core country, we follow [Obstfeld and Taylor \(2003\)](#) and [Mitchener and Weidenmier \(2015\)](#).

Figure 1: Core countries' spreads for five core countries during the Classical Gold Standard.



Note: Each country's spread, in %, is calculated as its public debt yield minus the British consol yield. The period considered depends on when countries formally joined the gold standard: Belgium and France (1878), Germany (1871), Netherlands (1875), and USA (1879).

core countries (Mitchener and Weidenmier 2015, Eichengreen 2019), implying that currency risk is negligible. Second, core countries exhibited low sovereign risk, especially during the classical Gold Standard (Obstfeld and Taylor 2003).

Each country's spread is calculated by subtracting the British consol yield from the corresponding country's public debt yield. The series are shown in Figure 1 and start in the late 19th century because the countries considered joined the Gold Standard much later than Britain.

One stark pattern emerges from Figure 1: spreads are consistently positive throughout the sample for all countries, the only exception being France starting in 1910.<sup>5</sup> The average spread for all countries equals 55 bp. There are some differences across countries, with Belgium exhibiting an average spread of 42 bp and Germany an average spread of 65 bp. See Table 3 for averages, standard deviations, and number of years included for each country. All means are statistically different from zero.

<sup>5</sup>Kindleberger argues that the Bank of France was almost as important as the UK as a financial center before World War 1, consistent with this finding (Kindleberger et al., 2005, p. 252-4).

Table 3: Spread (in %) for five core countries.

Statistic	USA	Belgium	France	Germany	Netherlands
Mean	0.50	0.42	0.47	0.65	0.54
Standard deviation	0.29	0.23	0.32	0.15	0.22
Number of years	34	35	35	42	38

Note: Average and standard deviation for core countries' spreads (in %). Each country's spread is calculated as its public debt yield minus the British consol yield. The last line gives, for each country, how many years are in the sample between their respective Gold Standard adhesion dates and the end of the Classical Gold Standard (1913).

How should these spreads be interpreted? DIS argues that two assumptions must hold for the raw spreads to give us information about convenience yields in modern times. First, the countries analyzed should be regarded by investors as default-free. The work by [Obstfeld and Taylor \(2003\)](#) suggests this is the case for core countries during the classical Gold Standard. Second, financial markets should be frictionless, particularly regarding FX swap contracts. DIS discusses FX swap contracts because the bonds they study are in local currency. However, the Classical Gold Standard was a fixed exchange rate regime, and the countries we focus on were strongly committed to it, making currency risk negligible ([Mitchener and Weidenmier 2015](#)). Thus, these consistently positive spreads between British public debt and the public debt of countries equally committed to the Gold Standard and with virtually no default risk can be interpreted as British public debt's convenience yield being larger than that of the remaining core countries.

## 5 Conclusions

This paper establishes that British public debt, like US Treasuries in modern times, featured a convenience yield during the Classical Gold Standard (1718-1913).

Two exercises allow us to reach the aforementioned conclusion. First, the data clearly shows a negative and significant relationship between the British public debt-to-GDP ratio and several corporate spreads. Increases in public debt decrease its price, increasing the return investors require to hold public debt and, consequently, decreasing corporate spreads. Second, spreads between British public debt yields and other core countries' public debt yields are consistently positive throughout the Classical Gold Standard. The period and countries considered make both currency and sovereign risk negligible, pointing at a larger convenience of British public debt as the likely explanation.

Contrary to previous findings on modern US times, US public debt did *not* feature a con-

venience yield during the Classical Gold Standard in the US (1879-1913). Increases in the US public debt-to-GDP ratio increased corporate spreads instead of decreasing them. This is consistent with the US being somewhat peripheral in this period, with an underdeveloped financial market, and the UK playing the role of the central issuer of safe, liquid debt, a role the US would later assume.

Finding a convenience yield on British public debt during the Classical Gold Standard underscores the importance of the public debt issuer vis-à-vis the public debt's characteristics. Indeed, in modern US times, it is short-term debt that is the most money-like ([Greenwood et al. 2015](#)), and it is nominal, and not real or inflation-protected, debt that investors value for its safety and liquidity ([Fleckenstein et al. 2014](#), [Andreasen et al. 2021](#)). However, during the Gold Standard, public debt was perpetual and essentially real in the long term as the gold standard provided a long-term anchor for the price level.<sup>6</sup>

Our results support the idea that the moneyness of public debt depends not only on the intrinsic characteristics of the asset (nominal vs. real or long-term vs. short-term) but also on the financial architecture in place when the debt was issued. Particularly, perpetual real debt can be valued for its safety and liquidity at a time when that was the primary debt issued by the world's financial center or *hegemon* in [Farhi and Maggiori \(2017\)](#)'s terminology. Even in a historical period with a significantly different financial architecture, the importance of a liquid safe asset market can be observed in the data. While there were many different institutional features in this period, we find that the major safe asset in this period looked a lot like the major safe asset in the present.

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<sup>6</sup>That said, the price level could vary significantly in the short-run, seeing inflations and deflations of about 50% four times in the century from 1814-1913 ([Triffin 2005](#)).

## References

- Andreasen, M. M., J. H. E. Christensen, and S. Riddell (2021, 10). The TIPS Liquidity Premium\*. *Review of Finance* 25(6), 1639–1675.
- Barro, R. J. (1987). Government spending, interest rates, prices, and budget deficits in the united kingdom, 1701–1918. *Journal of monetary economics* 20(2), 221–247.
- Black, R. A. and C. G. Gilmore (1990). Crowding out during britain’s industrial revolution. *The Journal of Economic History* 50(1), 109–131.
- Bordo, M. D., A. Redish, and H. Rockoff (2015). Why didn’t canada have a banking crisis in 2008 (or in 1930, or 1907, or...)? *The Economic History Review* 68(1), 218–243.
- Bordo, M. D. and H. Rockoff (1996). The gold standard as a ”good housekeeping seal of approval”. *The Journal of Economic History* 56(2), 389–428.
- Brewer, J. (1990). *The sinews of power: War, money, and the English state, 1688-1783*. Harvard University Press.
- Caballero, R. J. and E. Farhi (2017). The safety trap. *Review of Economic Studies* 85(1), 223–274.
- Chen, Z., Z. Jiang, H. Lustig, S. Van Nieuwerburgh, and M. Z. Xiaolan (2022, May). Exorbitant privilege gained and lost: Fiscal implications. Working Paper 30059, National Bureau of Economic Research.
- Choi, J., D. Dang, R. Kirpalani, and D. J. Perez (2023). The secular decrease in uk safe asset market power. *AEA Papers and Proceedings* 113, 120–24.
- Choi, J., R. Kirpalani, and D. Perez (2023). Us public debt and safe asset market power. *Mimeo*.
- Clark, G. (2001). Debt, deficits, and crowding out: England, 1727–1840. *European Review of Economic History* 5(3), 403–436.
- C’t Hart, M. (1993). *The making of a bourgeois state: war, politics and finance during the Dutch revolt*. Manchester University Press.
- Del Negro, M., D. Giannone, M. P. Giannoni, and A. Tambalotti (2019). Global trends in interest rates. *Journal of International Economics* 118, 248–262.
- Dickson, P. G. M. (1967). *The financial revolution in england: A study in the development of public credit, 1688-1756*. new york: St.
- Dincecco, M. and M. Prado (2012). Warfare, fiscal capacity, and performance. *Journal of Economic Growth* 17, 171–203.
- Du, W., J. Im, and J. Schreger (2018). The u.s. treasury premium. *Journal of International Economics* 112, 167–181.
- Duffy, I. P. (1982). The discount policy of the bank of england during the suspension of cash payments, 1797-1821. *Economic History Review*, 67–82.
- Eichengreen, B. (2011). *Exorbitant Privilege. The Rise and Fall of the Dollar and the Future of the International Monetary System*. Oxford University Press.
- Eichengreen, B. (2019). *Globalizing capital: a history of the international monetary system*. Princeton University Press.
- Farhi, E. and M. Maggiori (2017, 08). A Model of the International Monetary System\*. *The Quarterly Journal of Economics* 133(1), 295–355.
- Fleckenstein, M., F. A. Longstaff, and H. Lustig (2014). The tips-treasury bond puzzle. *Journal of Finance* 69(5), 2151–2197.

- Fritschy, W. (2003). A 'financial revolution' reconsidered: public finance in holland during the dutch revolt, 1568-1648. *Economic history review*, 57–89.
- Gorton, G. (2017). The history and economics of safe assets. *Annual Review of Economics* 9(1), 547–586.
- Gorton, G. and G. Ordoñez (2022). The supply and demand for safe assets. *Journal of Monetary Economics* 125, 132–147.
- Gourinchas, P.-O. and O. Jeanne (2012). Global safe assets. BIS Working Papers 399, Bank for International Settlements.
- Gourinchas, P.-O. and H. Rey (2007a). From world banker to world venture capitalist: Us external adjustment and the exorbitant privilege. In *G7 Current Account Imbalances: Sustainability and Adjustment*, pp. 11–66. University of Chicago Press.
- Gourinchas, P.-O. and H. Rey (2007b). International financial adjustment. *Journal of Political Economy* 115(4).
- Greenwood, R., S. G. Hanson, and J. C. Stein (2015, August). A comparative-advantage approach to government debt maturity. *Journal of Finance* LXX(4), 1683–1722.
- He, Z., A. Krishnamurthy, and K. Milbradt (2019, April). A model of safe asset determination. *American Economic Review* 109(4), 1230–62.
- Heim, C. E. and P. Mirowski (1987). Interest rates and crowding-out during britain's industrial revolution. *The Journal of Economic History* 47(1), 117–139.
- Kindleberger, C. P., R. Z. Aliber, and R. M. Solow (2005). *Manias, panics, and crashes: A history of financial crises*, Volume 7. Palgrave Macmillan London.
- Krishnamurthy, A. and A. Vissing-Jorgensen (2012). The Aggregate Demand for Treasury Debt. *Journal of Political Economy* 120(2), 233–267.
- Krishnamurthy, A. and A. Vissing-Jorgensen (2015). The impact of treasury supply on financial sector lending and stability. *Journal of Financial Economics* 118(3), 571–600.
- Mitchener, K. J. and M. D. Weidenmier (2015). Was the classical gold standard credible on the periphery? evidence from currency risk. *The Journal of Economic History* 75(2), 479–511.
- Nagel, S. (2016). The Liquidity Premium of Near-Money Assets. *The Quarterly Journal of Economics* 131(4), 1927–1971.
- Neal, L. (2000). How it all began: the monetary and financial architecture of europe during the first global capital markets, 1648–1815. *Financial history review* 7(2), 117–140.
- Neal, L., S. Quinn, and S. L. Engerman (2003). Markets and institutions in the rise of london as a financial center in the seventeenth century. *Finance, intermediaries, and economic development*, 11–33.
- North, D. C. and B. R. Weingast (1989). Constitutions and commitment: the evolution of institutions governing public choice in seventeenth-century england. *The journal of economic history* 49(4), 803–832.
- O'Brien, P. (2011). The nature and historical evolution of an exceptional fiscal state and its possible significance for the precocious commercialization and industrialization of the british economy from cromwell to nelson. *The Economic History Review* 64(2), 408–446.
- O'Brien, P. K. (1988). The political economy of british taxation, 1660-1815. *Economic history review*, 1–32.
- O'Brien, P. K. and N. Palma (2020). Danger to the old lady of threadneedle street? the bank restriction act and the regime shift to paper money, 1797–1821. *European Review of*



- Economic History* 24(2), 390–426.
- Obstfeld, M. and A. M. Taylor (2003). Sovereign risk, credibility and the gold standard: 1870-1913 versus 1925-31. *The Economic Journal* 113(487), 241–275.
- Odlyzko, A. (2016). Economically irrational pricing of nineteenth-century british government bonds. *Financial History Review* 23(3), 277–302.
- Payne, J., B. Szöke, G. Hall, and T. J. Sargent (2022). Costs of financing us federal debt: 1791-1933. Technical report, Working Paper, Brandeis University.
- Scott, H. M. (1992). The second ‘hundred years war’, 1689–1815. *The Historical Journal* 35(2), 443–469.
- Sissoko, C. et al. (2019). The monetary foundations of britain’s early 19th century ascendancy. *Economics Working Paper*.
- Stasavage, D. (2007). Partisan politics and public debt: The importance of the ‘whig supremacy’ for britain’s financial revolution. *European Review of Economic History* 11(1), 123–153.
- Temin, P. and H.-J. Voth (2005). Credit rationing and crowding out during the industrial revolution: evidence from hoare’s bank, 1702–1862. *Explorations in Economic History* 42(3), 325–348.
- Thomas, R. and N. Dimsdale (2017). A millennium of macroeconomic data for the uk. *The Bank of England’s Historical Macroeconomic and Financial Statistics: Version 3*, 1.
- Thomas, R., S. Hills, and N. Dimsdale (2010). The uk recession in context—what do three centuries of data tell us? *Bank of England quarterly bulletin*, Q4.
- Triffin, R. (2005). The myth and realities of the so-called gold standard. In *Gold Standard In Theory & History*, pp. 108–122. Routledge.
- van Hombecq, C. E. (2020). An exorbitant privilege in the first age of international financial integration? *Journal of International Money and Finance* 101, 102092.
- Williamson, J. G. (1984). Why was british growth so slow during the industrial revolution? *The Journal of Economic History* 44(3), 687–712.
- Wood, J. H. et al. (1983). Do yield curves normally slope up? the term structure of interest rates, 1862–1982. *Economic Perspectives* 7(Jul), 17–23.