

Financial innovation, dollar dominance and their UK monetary policy implications

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I. Introduction

It is a great opportunity to discuss the paper by Liao, Prasad and Zhang (2026), henceforth referred to as LPZ, about the implications of stablecoins and financial innovation for the US dollar's role as global dominant currency. The authors build a model of liquidity demand and debt denomination that considers the implications of financial innovation in the international payment system for capital flows and the choice of reserve currencies. The paper contains a thorough discussion on how to measure dollar dominance and the fragmentation of the 'second tier' of global currencies (predominantly the euro and renminbi). The paper addresses an important topic – the currency denomination of international capital flows – especially from the perspective of a small open economy like the UK.

¹ Bank of England. The views expressed in this paper are solely those of the authors and do not necessarily represent the views of the Bank of England or its Committees. We would like to thank Ambrogio Cesa-Bianchi, Vania Esady, Simon Hong and Roger Vicqu  ry for helpful comments and suggestions. All errors are our own.

The model weighs the network effects that reinforce the dominant currency against the reduction in financial frictions brought about by financial innovation. Through the lens of the model and the calibration to current data, financial innovation (as exemplified by a dollar-backed stablecoin) is unlikely to weaken dollar dominance. The focus on financial innovation in payments systems as a driver of currency dominance is an important contribution to understanding domestic welfare effects and international financial stability implications.

However, there are many other important determinants of a dominant currency that have been the driving forces of reserve currencies throughout history, which are not accounted for in LPZ's model. These include the role of institutions, political and macroeconomic stability, openness, and trust. This paper will elaborate further on these determinants of a dominant currency.

LPZ's paper also places less emphasis on potential monetary policy implications, which will be the focus of this discussion paper. We develop a new empirical model that can quantify spillovers of global financial shocks to the UK domestic economy at a daily frequency, and capture the effects of a dominant currency. Lastly, we discuss how a global shock that reduces financial frictions may affect real economic variables and monetary policy transmission using a macroeconomic model developed for the UK.

II. What makes a global reserve currency?

LPZ discuss financial innovation as a driver of dominant currency status – particularly its role in maintaining and reinforcing the US dollar's existing position as the dominant global

reserve currency. What other factors contribute to a reserve currency's global dominance?

First, it is important to discuss the different uses of a currency in international transactions, which may support its potential for reserve currency status. These uses include the currency's role in invoicing, cross-border payments, and international reserve holdings, all of which can be used to measure currency dominance. The first dimension of currency dominance is its role as a reserve currency, measured by its share of official foreign exchange reserves. The second is its prominence in cross-border capital flows, particularly the currency denomination of corporate and government bonds, bank loans, and other financial instruments. The third is the currency's use in goods and services trade, especially in import and export invoicing. These three aspects of reserve currency dominance are interlinked and build on each other. The LPZ paper underscores the continued dominance of the dollar with a thorough discussion on how to measure international currency status along these dimensions, while also pointing to the fragmentation of the 'second tier' of global currencies (predominantly the euro and renminbi).

How do these three uses contribute to reserve currency dominance? We can consider them through the lens of three concepts: a region's economic and financial size, its policy and institutions, and financial innovation. Economic and financial size refers to the extent to which the country issuing the dominant currency has a large and interconnected economy, as well as deep, liquid, stable, and internationally open financial markets. This category highlights the benefits of network effects that LPZ identify as a key driver of the

results in their model. Policy and institutions refer to the existence of credible policy frameworks in the issuing economy (including monetary and fiscal authorities), strong and effective institutions, (geo)political stability and engagement, and trust in those legal, political and institutional frameworks. Finally, financial innovation concerns the existence of financial frictions and the extent to which innovation can reduce them. In LPZ, this is the key offsetting factor. There are many interlinkages between these three concepts. A particularly relevant one is the close interaction of financial frictions with policy and institutions, through red tape and structural factors that financial innovations possibly cannot “innovate away”.

Let us now consider examples from the UK through the lens of the three uses of a reserve currency and the concepts of economic and financial size, policy and institutions, and financial innovation.

II.A. Case study: trade invoicing

The criteria outlined above apply to the relative attractiveness of currencies in their various uses. For example, the widespread use of a currency in cross-border trade invoicing can reinforce its attractiveness as a reserve currency. To illustrate this point, we consider the UK’s Brexit vote in 2016. The outcome of the EU referendum came as a surprise to financial markets, causing a significant depreciation in sterling. The vote represented a shock to trade openness and political stability by reducing the UK’s economic and political ties with its largest and geographically closest trading partner.

Garofalo, Rosso and Vicqu ry (2024) document that, following the Brexit vote and subsequent depreciation of sterling in 2016, the share of UK exports invoiced in sterling fell significantly, while the share invoiced in US dollars increased by almost the same amount. This large exchange rate adjustment associated with expectations of a material change in the UK's future trading relationship with the EU also yielded a shift in invoicing currency.

In other words, sterling became a less attractive (and less used) invoicing currency for UK exports, which prompted an increase in sterling currency risk. The Brexit vote therefore represented a turning point in UK exporters' ability to pass sterling exchange rate risk on to importers of UK goods.²

Chart 1.a shows the share of UK exports to the world (excluding exports to the EU) that are invoiced in GBP and USD. In the early- to mid-2010s, around 60% of UK exports to the world excluding the EU were invoiced in sterling. While this share was already in decline, a more significant step-down appears post-referendum – with a mere 35% of exports invoiced in GBP remaining in 2022. The USD was the main beneficiary, with over 50% of UK exports to the world invoiced in USD by 2022, compared to only around 30% in 2010.

² See Xie (2024) for a theoretical discussion of this argument, who demonstrates that the optimal currency choice considers the relative ability of buyers and sellers to bear exchange rate risk.

Chart 1: Share of UK exports' invoicing currency

Chart 1.a: Share of UK non-EU exports invoiced in GBP and USD

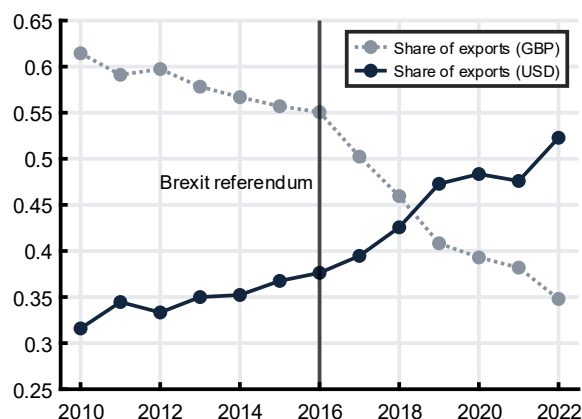
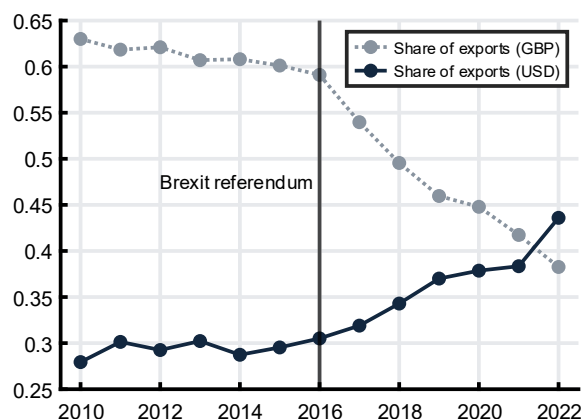


Chart 1.b: Share of UK non-EU, non-US exports invoiced in GBP and USD



Source: Garofalo, Rosso and Vicquéry, 2024.

Chart 1.b excludes exports to both the EU and the US and shows a similar picture to the previous chart. The decline in the use of sterling for export invoicing and the rise in the US dollar is still apparent, but slightly less pronounced. This suggests that a shock such as Brexit has reduced the attractiveness, or ability, of UK firms to invoice exports in sterling, thereby weakening sterling's value as a unit of account.

While sterling does not hold the role of dominant international currency, this case study serves as an important example of how a currency's use (in this case for trade invoicing) can be affected by shocks to factors that underpin a currency's attractiveness – in particular, political stability and openness to trade.

A second important finding by Garofalo, Rosso and Vicquéry (2024) is that, following the shift in invoicing currency post-2016, an appreciation of the US dollar reduces the demand for UK exports by twice as much as before, thereby increasing the role of international

spillovers from the US. This reflects the fact that the aggregate exchange rate pass-through effect and the allocative effects of price rigidities both move in line with changes in invoicing currency. Thus, export demand responds more strongly (via price rigidity) to movements in the US dollar compared to pre-referendum.

II.B. Case study: economic and institutional foundations of sterling's dominance in the 19th century

LPZ provide a detailed assessment of the various dimensions along which the US dollar dominates other currencies, including trade denomination and invoicing, international capital flows, and reserve holdings. US dollar dominance, however, has not always been the case. Before the rise of the US dollar, sterling was the dominant global currency. Several factors contributed to its prominence in the 19th century. The first was the UK's dominant role in global trade, reflecting its strong economic position following the industrial revolution and its extensive commercial and political ties across the world (the first determinant of a global currency listed in Section II).³ Sterling thereby became the standard currency for international transactions and was used to invoice and settle around 60 percent of global trade between 1860 and 1914. The UK's role as an imperial power further reinforced sterling's dominance. Its use across the British Empire reduced

³ British goods and services were exported worldwide, while the UK was also a major importer. Estimates suggest that the UK purchased nearly one-third of all goods exported by other countries in 1860 and around one-fifth in 1890 (Eichengreen 2005).

transaction costs and made it widely accessible and convenient to use (Eichengreen 2005).

The second factor was sterling's role as a reserve asset, which was underpinned by its convertibility into gold. While holding physical gold did not generate a return, countries could invest their sterling-denominated reserves into interest-bearing assets in London. Under the gold standard, countries were guaranteed a fixed exchange rate between their home currencies and sterling, which was backed by physical gold at a fixed price. This strengthened confidence in sterling and encouraged foreign governments and banks to hold sterling reserves in the major global financial center of the time – London (Karlstroem 1967).

Another factor was the UK's role as a major lender. Foreign governments seeking to borrow often turned to London's financial markets, which made sterling a preferred currency for debt issuance because bonds in their own currencies were often less liquid and more vulnerable to manipulation (Eichengreen 2005).

Overall, these interconnected factors strengthened London's position as a large, deep, and liquid financial market, highlighting the importance of stable institutions and financial infrastructure in supporting a currency's global status.

II.C. Case study: network effects, geopolitics, and the transition to dollar dominance

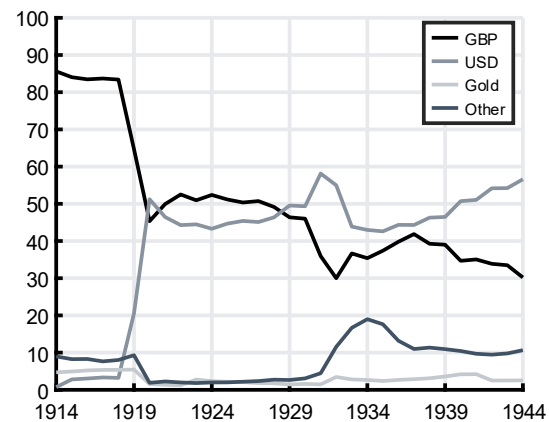
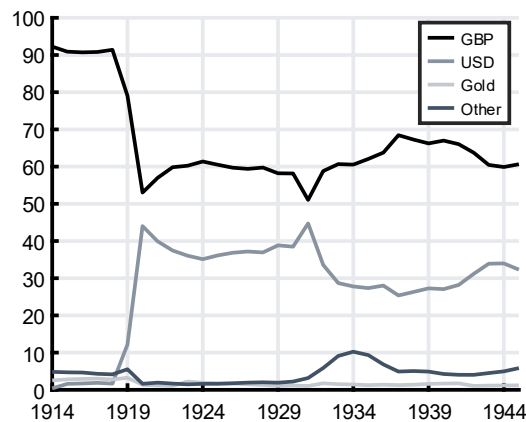
Several developments contributed to sterling's decline and the rise of the US dollar in the 20th century. From an institutional perspective, the founding of the Federal Reserve

System in 1914 increased New York's attractiveness as a financial market and supported the dollar's growing international role (Eichengreen 2005). World War I marked an important turning point – it led to the breakdown of the international gold standard, as many European countries, including the UK, restricted gold exports and suspended the convertibility of banknotes to gold. At the same time, the US emerged as a major international creditor, supplying loans to Europe and increasing the stock of dollar-denominated assets held abroad. And while Europe abandoned the gold standard, the US maintained the dollar's convertibility to gold (Eichengreen 2005, Karlstroem 1967). Chițu et al. (2014) document how sterling's global dominance weakened after World War I. Global foreign public debt denominated in sterling, for example, declined from more than 90 percent in 1918 to between 50 and 60 percent in the years following the war (**Chart 2.a**). Excluding Commonwealth countries, which were institutionally, militarily, and politically aligned with sterling, the US dollar accounted for an even larger share of the global stock of foreign public debt and overtook sterling in 1929, as **Chart 2.b** shows (Chițu et al. 2014).

Chart 2: Selected currency shares of global foreign public debt

Chart 2.a: Including Commonwealth countries (percent)

Chart 2.b: Excluding Commonwealth countries (percent)



Source: Chițu et al. (2014)

Notes: Selected currency shares of global foreign public debt as a percentage of total at current exchange rates, including and excluding Commonwealth countries.

The dollar's international role continued to expand during the interwar period. Although the UK restored sterling's gold parity in 1925, it proved difficult to sustain and the currency became overvalued, reducing the competitiveness of British exports. The UK ultimately abandoned the gold standard in 1931.

Yet sterling was remarkably persistent in its role as a reserve currency. In the early 1930s, the formation of the sterling area brought together countries with close economic and political ties to the UK, many of which pegged their currencies to sterling and held a substantial share of their foreign reserves in sterling assets.⁴ Sterling consequently remained the dominant currency for international payments and reserve holdings within the bloc, even though the UK's relative economic position had begun to decline. The sterling area helped sustain sterling's international role even as the dollar emerged as the

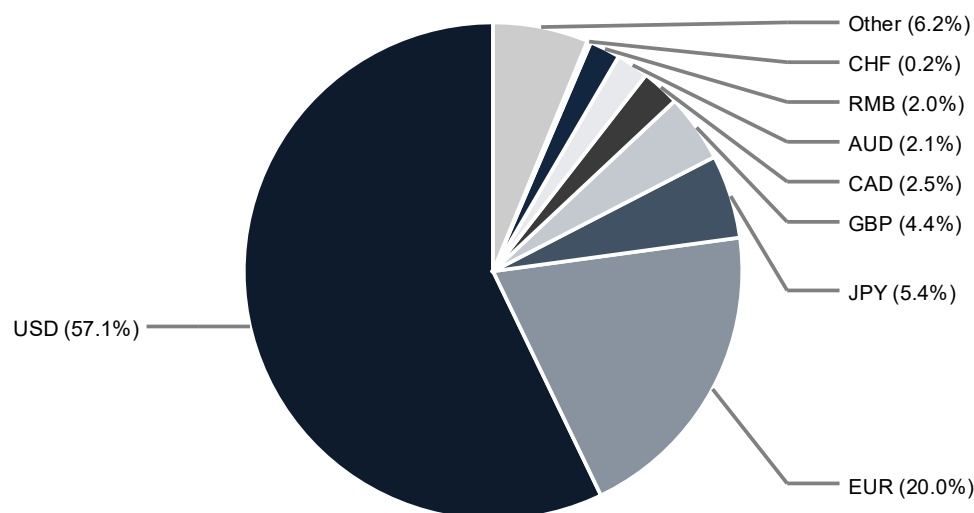
⁴ See for instance Schenk (2020) and de Bromhead et al. (2023) for more detail on the sterling area.

world's leading currency, highlighting the importance of institutional and geopolitical ties in maintaining an international currency's status.

Following World War II, the US emerged with a relatively strong external financial position, while Europe's depleted reserves and post-war reconstruction needs increased demand for US dollars (Karlstroem 1967), which the US provided via the Marshall Plan. Moreover, many European governments imposed capital controls and sought to limit the international use of their currencies amid concerns about inflation and currency stability (Eichengreen 2005).

The establishment of the Bretton Woods system in 1944 further institutionalized the dollar's role in the international monetary system. It pegged major currencies to the US dollar, which remained convertible into gold at a fixed rate. Although the Bretton Woods system collapsed in the 1970s, the dollar had by then become the dominant currency for international trade and payments (Bailey 2025), which still remains the case today (**Chart 3**).

Chart 3: Currency composition of foreign exchange reserves, 2026 Q1



Source: IMF (2026).

Notes: Shares may not add up to 100% due to rounding.

III. A model of international financial spillovers

The international role of a currency matters because it shapes the currency denomination and direction of cross-border capital flows. In financially open economies, domestic yields, equity prices, and exchange rates are determined not only by domestic macroeconomic news or monetary policy, but also by the portfolio choices of global investors allocating funds across a range of assets denominated in different currencies. These choices mean that various shocks – changes in relative safe-asset demand, shifts in global risk appetite, and country-specific reassessments of the attractiveness of holding assets denominated in a particular currency – are transmitted across borders.

To better understand how different kinds of shocks can affect domestic financial conditions, we develop a three-country UK-US-euro area model that uses financial data at a daily frequency to measure the effects of spillovers of international shocks on

domestic financial market variables. The model allows us to quantify the relative importance of cross-border spillovers in driving domestic outcomes, and to distinguish between shocks that operate through UK-specific channels and those transmitted through the dollar and euro blocs.

We find that the UK is largely a “taker” of global financial conditions – from both the US as driver of the global financial cycle (Rey 2015, Miranda-Agrippino and Rey 2022), and from its largest trading partner, the euro area. We also find that the euro area is significantly affected by international spillovers, but more so from the US than the UK.

The rest of this section discusses the model setup, followed by the model specification and identification. For readers interested in the results but not the technical details, please proceed to Section III.C.

The underlying setup is based on Brandt et al. (2026), who model spillovers from the US to euro area financial markets and highlight the important role of global investors’ risk preferences. We then adapt and extend the model for the UK.

More specifically, we use a Bayesian VAR at a daily frequency identified using sign and magnitude restrictions, composed of financial variables in the UK, the US, and the euro area (EA). The model is estimated over a period from September 1999 to December 2025. Where available, we use similar data for each country. A full description of the data is available in **Table 1**. The model includes short-term (2-year) and long-term (10-year) nominal risk-free yields derived from government bonds for the UK and the US. In the absence of a single EA sovereign bond (i.e. the absence of a single safe asset for the

euro area economy),⁵ we use euro area overnight index swap rates. These are only available from 2005 onwards, so we treat German Bund yields as euro area safe rates prior to that date. As in Brandt et al. (2026), we prefer not to use German Bunds after 2005 due to their specialness during and after the European sovereign debt crisis.⁶

Amber Market Sensitive

⁵ Bletzinger, Greif and Schwaab (2022) discuss the current obstacles to EU bonds achieving the euro-denominated safe asset status.

⁶ Investors perceived German government bonds as safer than those of other European economies, leading to a convenience premium on Bunds (Afonso, Arghyrou and Kontonikas 2015, Paret and Weber 2019). Moreover, the stock of German Bunds is too small relative to the size of the euro area economy to satisfy the demand for euro-denominated safe assets (Lane 2025).

Table 1: Endogenous variables

Variable	Exact data	Source
UK 2-year yield	Nominal government bond yield, in levels	LSEG Datastream Mnemonic: TRUK2YT RIC: GB2YT=RR
UK 10-year yield	Nominal government bond yield, in levels	LSEG Datastream Mnemonic: TRUK10T RIC: GB10YT=RR
UK price-to-earnings ratio	FTSE 250 price index divided by FTSE 250 12-month forward earnings per share	LSEG Datastream Mnemonic: FTSE250 and FTSE250(A12FE) RICs: .FTMC
US 2-year yield	Nominal government bond yield, in levels	LSEG Datastream Mnemonic: TRUS2YT RIC: US2YT=RRPS
US 10-year yield	Nominal government bond yield, in levels	LSEG Datastream Mnemonic: TRUS10 RIC: US10YTIP=RR
US price-to-earnings ratio	S&P 500 price index divided by S&P 500 12-month forward earnings per share	LSEG Datastream Mnemonic: S&PCOMP and S&PCOMP(A12FE) RIC: .INX
GBP/USD	United States Dollar to United Kingdom Pound spot price (price of US dollars per £1), in logs	LSEG Datastream Mnemonic: STUSBOE RIC: GBPBOEEES=
EA 2-year yield	Germany nominal government bond yield (until Sep 2005), then spliced onto Euro Eonia Overnight Index Swap, in levels	LSEG Datastream Mnemonic: splc#(TRBD2YT, OIEUR2Y, 01/09/05) RICs: DE2YT=RR and EUREON2Y=
EA 10-year yield	Germany nominal government bond yield (until Sep 2005), then spliced onto Euro Eonia Overnight Index Swap, in levels	LSEG Datastream Mnemonic: splc#(TRBD10T, OIEU10Y, 01/09/05) RICs: DE10YT=RR and EUREON10Y=
EA price-to-earnings ratio	Eurostoxx price index divided by Eurostoxx 12-month forward earnings per share	LSEG Datastream Mnemonic: DJEURST and DJEURST(A12FE) RIC: .STOXXE
GBP/EUR	Euro to United Kingdom Pound spot price (price of euros per £1), in logs	LSEG Datastream Mnemonic: EUSTBOE RIC: GBPEURREF=BOEL

As a measure of risky asset prices, we use the price-to-earnings (P/E) ratio for the FTSE 250,⁷ S&P 500 and Eurostoxx, respectively.⁸

We also include the three relevant bilateral exchange rates: US dollar-sterling (GBP/USD), euro-sterling (GBP/EUR) and US dollar-euro (EUR/USD). Here, GBP/USD refers to the number of US dollars that can be purchased with £1, GBP/EUR denotes the amount of euros that can be purchased with £1, and EUR/USD is the amount of US dollars that can be purchased with €1. An increase in GBP/USD would therefore denote an appreciation of sterling relative to the US dollar, or equivalently, a depreciation of the US dollar relative to sterling.⁹ **Chart 4.a – Chart 4.f** plot the endogenous variables described above over the sample period.

⁷ We select the FTSE 250 over the FTSE All-Share or FTSE 100 due to its more domestic focus – the FTSE 100 and All-Share indices quite heavily reflect the performance of multinational companies and thus are not a reflection of domestic UK news (Liu 2016).

⁸ We calculate the price-to-earnings ratio using the 12-month forward expected earnings per share (EPS) using I/B/E/S Broker Estimates. Since the data are only available at a weekly frequency, we linearly interpolate the expected earnings, essentially shifting the mean of the price return by a constant number each week.

⁹ We choose bilateral exchange rates over effective exchange rate indices (EERs) as EERs are generally trade-weighted using lagged trade data (due to publication lags), which makes conservative assumptions about the invoicing currency (for instance, exports are invoiced in the exporter's currency and imports are paid for in the exporting country's currency) that have been long overhauled by the literature on dominant currency pricing (Gopinath et al. 2020; and Garofalo, Rosso and Vicqu ry 2024 for UK).

All variables enter the VAR in first differences (yields) and log-differences (equity prices and exchange rates). We include four lags in differences and include no intercept or deterministic trends. Thus, as do Brandt et al. (2026), we essentially treat these variables as random walks without drift in levels. Any drift or cointegrating relationship that these variables exhibit in levels is assumed to be exogenous to the shocks in the model and captured by a country-specific real rate trend in yields, and a country-specific earnings expectations trend in equity prices. Exchange rates are fully without drift.

Chart 4: Endogenous variables

Chart 4.a: 2-year yields (percent)

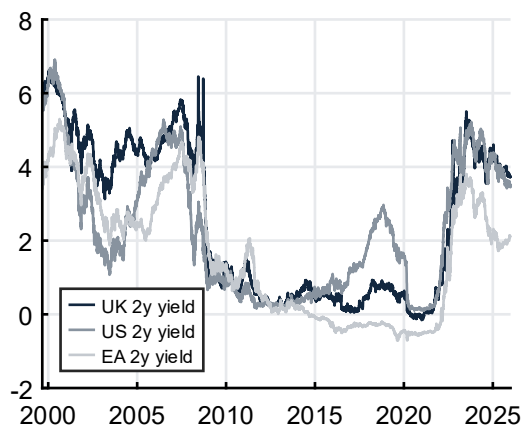


Chart 4.b: 10-year yields (percent)

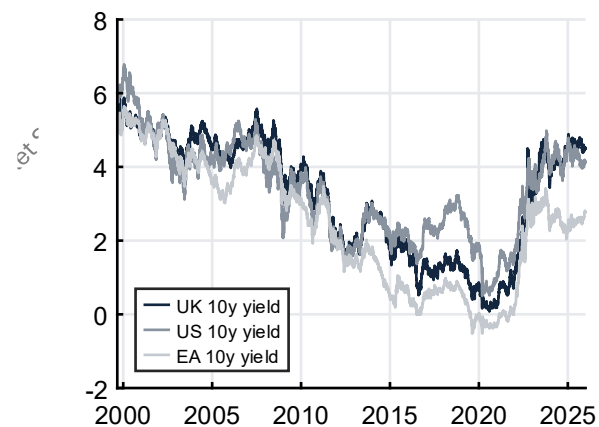


Chart 4.c: Price-to-earnings ratio

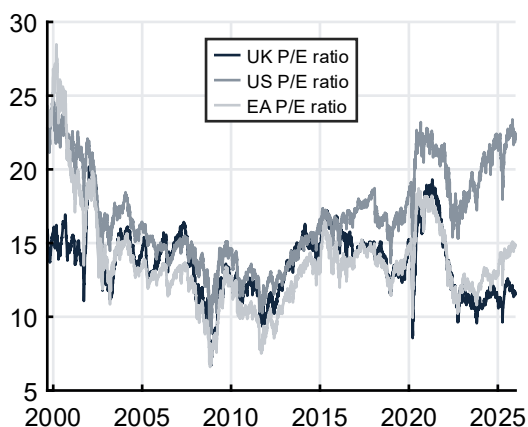
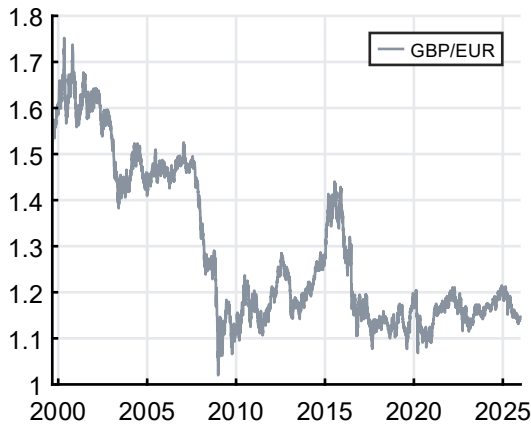


Chart 4.d: Exchange rate (GBP/USD)



Chart 4.e: Exchange rate (GBP/EUR)



Source: LSEG.

Chart 4.f: Exchange rate (EUR/USD)



III.A. Identification scheme

As in Brandt et al. (2026), we identify two fundamental domestic shocks for each region, namely a monetary policy and macroeconomic news shock, and a global risk shock that reflects flight-to-safety behavior of international investors. Additionally, we identify a novel country-specific risk shock for each of the three regions. These country-specific risk shocks are intended to capture investor sentiment towards dollar, sterling, and euro-denominated assets beyond the implications of short-run macroeconomic news. The response of endogenous variables to these shocks in the model is identified according to theoretical predictions about relative asset returns.

Within the same jurisdiction, monetary policy shocks and macroeconomic news shocks are disentangled by the co-movement of yields and equity prices. Ceteris paribus, a monetary policy shock induces a negative correlation between the two, while macroeconomic news shocks are restricted to induce a positive correlation. For UK and EA shocks, we assume that domestic monetary policy and macro shocks only affect the

respective domestic yield and equity variables. For shocks originating in the US, we assume that these also affect the respective UK and EA variables in the same direction (i.e. a US policy shock that increases US yields also increases UK and EA yields).

Additionally, there are two types of risk shocks in the model (domestic and global) which are designed to reflect changes in both risk preferences and risk perceptions by global investors.¹⁰ First, a global risk shock captures risk-on/risk-off movements common to all countries and causes a re-allocation between asset classes. It is identified as a shock that increases the attractiveness of risk-free (safe) relative to risky assets (i.e. bond prices up, stock prices down) and leads to safe-haven flows into dollar-denominated assets. A global risk-off shock therefore decreases UK, US and EA yields and causes an appreciation of the US dollar relative to both sterling and the euro.

Second, in addition to the global risk shock, there are country-specific risk shocks that capture flows in and out of assets denominated in that region's currency, regardless of their relative riskiness. A country-specific risk-off shock therefore reduces both bond and equity prices in the domestic market and depreciates the exchange rate relative to other currencies, as investors shed both risky and safe assets of that country. Crucially, and in contrast to the global shock, it causes an increase in domestic long-term yields. This is because even less risky country-specific assets such as government bonds lose

¹⁰ While risk preferences (an investor's tendency towards taking or avoiding risks – in other words their degree of risk aversion) and risk perceptions (subjective assessment of the quantity of risk) are distinct concepts, the model does not distinguish them explicitly.

attractiveness. This is designed to reflect a broad class of country-specific shocks – for instance relating to perceived institutional, political and policy choices.

All sign restrictions are imposed on impact and are documented in **Table 2**.

Table 2: Sign restrictions

	UK policy	UK macro	US policy	US macro	EA policy	EA macro	Global risk	UK risk	US risk	EA risk
UK 2y	+	+	+	+			+			
UK 10y	+	+	+	+			+	+		
UK P/E	-	+					+	-		
US 2y			+	+			+			
US 10y			+	+			+		+	
US P/E			-	+			+		-	
GBP/USD	+	+	-	-			+	-	+	
EA 2y			+	+	+	+	+			
EA 10y			+	+	+	+	+			+
EA P/E					-	+	+			-
GBP/EUR	+	+				-		-		+
EUR/USD			-	-	+	+	+		+	-

Notes: An empty cell denotes an unrestricted parameter. A "+" and "-" indicate a restriction on the impulse response function to respond positively or negatively, respectively, on impact in response to a shock. One shock remains unidentified. The posterior on-impact distributions of responses across draws of all variables to this unidentified shock are centered around 0, consistent with the shock not having been given a macroeconomic interpretation.
GBP/USD is the amount of US dollars that can be purchased with £1, thus an increase represents an appreciation of sterling relative to the US dollar. Similarly, GBP/EUR denotes the amount of euros that can be purchased with £1, so an increase represents an appreciation of sterling relative to the euro. For the third pair, EUR/USD, an increase denotes an appreciation of the euro relative to the USD.

While these sign restrictions allow the identification of shocks within a country, the shocks are not yet uniquely identified across countries. To achieve identification, we impose magnitude restrictions on the relative size of the effect on yields. That is, we assume that a shock originating in the UK has a larger effect on UK yields than on US or EA yields (but may still affect these to some extent). Similarly, a US shock is assumed to affect US yields more than UK or EA yields, and an EA shock is assumed to affect EA yields more than UK or US yields.

For the global risk shock, we assume that US yields move by more than UK and EA yields. This reflects the fact that global risk shocks are expected to generate relatively large portfolio flows into and out of US safe assets, reflecting the dollar's dominant role in the global financial system. Finally, within the country-specific risk shocks, we assume a steepening of the yield curve by restricting the response of the 10-year yield to be larger than that of the 2-year yield.

Finally, for non-US shocks, we implement these magnitude restrictions as absolute value restrictions. For example, the effect of the UK policy shock on domestic yields is restricted to be larger than its effect on foreign yields, irrespective of the direction in which foreign yields move. This implies that foreign yields can both rise and fall in response to the UK shock, but they can never move by more than UK yields on impact. Note that this does not apply to the US shocks as these are already assumed to have positive spillovers to the other regions, thereby ruling out a negative response altogether. Magnitude restrictions are again imposed on impact and documented in **Table 3**.

Table 3: Relative magnitude restrictions

	UK policy	UK macro	US policy	US macro	EA policy	EA macro	Global risk	UK risk	US risk	EA risk
UK 2y	> US2y > EA2y	> US2y > EA2y								
UK 10y	> US10y > EA10y	> US10y > EA10y						> US10y > EA10y >UK2y		
UK P/E										
US 2y			>UK2y >EA2y	>UK2y >EA2y			> UK2y > EA2y			
US 10y			>UK10y >EA10y	>UK10y >EA10y			> UK10y > EA10y		> UK10y > EA10y >US2y	
US P/E										
GBP/USD										
EA 2y					> UK2y > US2y	> UK2y > US2y				
EA 10y					> UK10y > US10y	> UK10y > US10y				> UK10y > US10y >EA2y
EA P/E										
GBP/EUR										
EUR/USD										

Notes: An empty cell denotes a parameter with no magnitude restriction. Magnitude restrictions, as sign restrictions, are implemented on impact in response to a shock.

GBP/USD is the amount of US dollars that can be purchased with £1, thus an increase represents an appreciation of sterling relative to the US dollar. Similarly, GBP/EUR denotes the amount of euros that can be purchased with £1, so an increase represents an appreciation of sterling relative to the euro. For the third pair, EUR/USD, an increase denotes an appreciation of the euro relative to the USD.

III.B. Sampler and implementation

This is a large and tightly restricted model. It features 124 linear restrictions to identify ten shocks in eleven endogenous variables, which largely rules out accept-reject samplers like the one in Arias, Rubio-Ramírez and Waggoner (2018) or Chan, Matthes and Yu (2026). Instead, we use a version of the elliptical slice sampler within Gibbs proposed by Arias, Rubio-Ramírez, Rudolf and Shin (2026) to generate draws consistent with the identification scheme. This approach allows us to draw directly from the relevant posterior region instead of repeatedly discarding rotations that fail to satisfy the restrictions. This is particularly important for our proposed model, as it combines a comparatively large set of sign and magnitude restrictions. As the number of restrictions rises, standard accept-reject algorithms can become prohibitively slow, while the Arias et al. (2026) algorithm is designed to make inference feasible even for large SVARs with tightly identified sets.

To fix notation, as in Rubio-Ramírez, Waggoner and Zha (2010), we write the model as a general structural VAR with n variables and n shocks.

$$y_t' A_0 = x_t' A_+ + \varepsilon_t'$$

Here, y_t is the $n \times 1$ vector of endogenous variables, ε_t is the $n \times 1$ vector of structural shocks, and x_t is a $(n \cdot p + m) \times 1$ vector that stacks all p lags of endogenous variables known at time t as well as m deterministic variables such as constants, trends, and dummies. A_0 and A_+ are conformable parameter matrices.

The model's reduced form is

$$y'_t = x'_t B_+ + u'_t$$

with $B_+ = A_+ A_0^{-1}$ and $u'_t = \varepsilon'_t A_0^{-1}$. The covariance matrix of reduced-form residuals is $\Sigma = E(u_t u'_t) = (A'_0)^{-1} A_0^{-1}$. We can express the structural on-impact response $L_0 = (A'_0)^{-1}$ in terms of an orthogonal rotation matrix Q and the lower Cholesky factor of the covariance matrix.

$$\begin{aligned} L_0 &= (A'_0)^{-1} \\ &= \text{chol}(\Sigma) \cdot Q \end{aligned}$$

In the Gibbs sampler, we look for combinations of Σ and Q (in our case) and B_+ (when there are restrictions on higher horizons of the impulse response function) that conform to the sign restrictions. As in Arias et al. (2018), we embed sign and magnitude restrictions as linear restrictions on the function of the structural parameters $F(A_0, A_+)$, which for us is simply the on-impact response L_0 .

That is, for each shock j , we require that

$$S_j \cdot F(A_0, A_+) \cdot e_j > 0$$

where e_j is a selection vector of length n that is one in position j and zero everywhere else and S_j is the matrix of linear restrictions. It has as many columns as parameters in $F(A_0, A_+) \cdot e_j$ and as many rows as restrictions on the response to the j 'th shock. This form lets us flexibly enforce beliefs about signs and relative magnitudes of these responses.

To provide an example of how our sign and magnitude restrictions are implemented, see **Table 4**. In this table, we show how the restrictions are encoded for our first shock, which is the UK policy shock, so this is the matrix S_1 . The table should be read line by line, each row representing an additional restriction. Each column represents the variable on which the restriction is imposed, or more precisely, a parameter of L_0 that is multiplied with the respective element of S_1 . A “1” denotes a positive sign, while a “-1” denotes a negative sign. An empty element implies a zero, so no parameter is selected. In other words, the on-impact (L_0) response of variable n to shock j is left unrestricted.

Table 4: Linear restrictions for the UK policy shock

	UK 2y	UK 10y	UK P/E	US 2y	US 10y	US P/E	GBP/ USD	EA 2y	EA 10y	EA P/E	GBP/ EUR
1	1										
2		1									
3			-1								
4							1				
5											1
6	1			-1							
7	1			1							
8	1							-1			
9	1							1			
10		1			-1						
11		1			1						
12		1							-1		
13		1							1		

Restrictions 1-5 are traditional sign restrictions – traditional in the sense that they restrict only the direction of the response of a variable to the chosen shock. This is also clearly visible by the fact that there is only one non-zero element in rows 1-5.

Magnitude restrictions instead have more than one non-zero element per row (6-13) and therefore imply a sign restriction on a linear combination of parameters. Going through each, restriction 6 imposes that $UK\ 2y - US\ 2y > 0$, or in other words, $UK2y > US\ 2y$, so we impose that in response to a UK policy shock, the response of the UK 2y yield is positive (restriction 1), and larger than the US 2y (restriction 6). Restriction 7 adds a further condition – it imposes that $UK2y + US2y > 0$, or in other words, $UK2y > -UK2y$. Taken together with restriction 6, this implies that $UK2y > |US2y|$, i.e. the move in the UK 2y yield is positive and larger than the move in US yields, regardless of whether this is an increase or a decrease. This is particularly important as we made a conscious decision not to restrict the direction of the US and EA yield responses to UK policy shocks (since as a small open economy, it is unlikely that a UK policy shock would affect US or EA financial conditions). Restrictions 8 and 9 impose the same condition for the EA, i.e. $UK2y > |EA2y|$.

III.C. Model results and implications for the UK

We use the model to decompose the movements of select financial market variables into the relative contributions of each identified shock. As a reminder, the international role of a currency matters because it shapes the currency denomination and direction of cross-border capital flows. In financially open economies, asset prices are determined not only by domestic macroeconomic news or monetary policy, but also by the portfolio choices of global investors allocating funds across a range of assets denominated in different currencies. These choices can transmit across borders through various shocks: changes in relative safe-asset demand, shifts in global risk appetite, and country-specific

reassessments of the attractiveness of holding assets denominated in a particular currency.

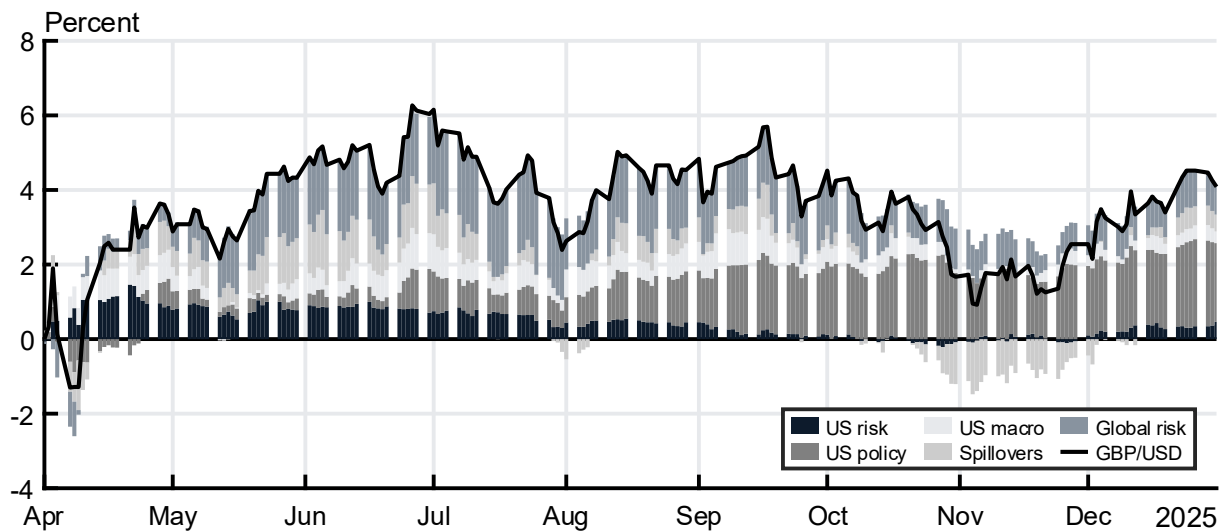
Financial innovation (such as stablecoins, which LPZ emphasize) is relevant in this context because it may affect both the transmission of shocks and investors' appetite for risk. In this regard, the nature of the investor could matter. Stablecoin transaction volumes are boosted by high-frequency financial trades rather than underlying real activity (Schär et al. 2026; Higginson 2026). This implies that small changes in relative returns could have outsized effects on capital flows, including across borders. When considering the UK, the growing role of high-frequency trader-investors such as hedge funds may be particularly relevant in light of what we learn from the model.¹¹

We now turn to the model's implications for a set of recent events. First, we consider the US administration's tariff announcement on 2nd April 2025. We look at how both a common global shock and a US-specific risk shock are reflected in the sterling-US dollar exchange rate. **Chart 5** decomposes the cumulative changes of the exchange rate from April to December 2025. An increase represents a depreciation of the US dollar relative to sterling. The dollar depreciates in immediate response to the announcement on 2nd April, recovers briefly for a week, before turning back to a prolonged depreciation for the remainder of the year. Through the lens of the model, this depreciation relative to sterling

¹¹ See Mann (2026) for a discussion of the role of hedge funds in gilt ownership.

was driven by a range of factors, all pushing in the same direction for most of the period of interest.

Chart 5: Decomposition of GBP/USD following the April 2025 tariff announcement



Of particular interest is the US-specific risk shock. An increase in the chart represents a country-specific risk-off shock, i.e. a shock that leads global investors to sell all US assets – stocks, government bonds, and the US dollar. As expected, this shock materially contributed to the depreciation of the US dollar relative to sterling, particularly over the first few months following the tariff announcement.

Perhaps more puzzling is the contribution of the global risk shock, which contributes to a depreciation of the US dollar relative to sterling. According to the shock definitions in Table 2, this represents a global *risk-on* shock. That is, a shock where the US dollar depreciates relative to sterling and the euro, while yields rise as flows into higher-return, riskier assets such as stocks dominate safe haven flows into the dollar and other safe

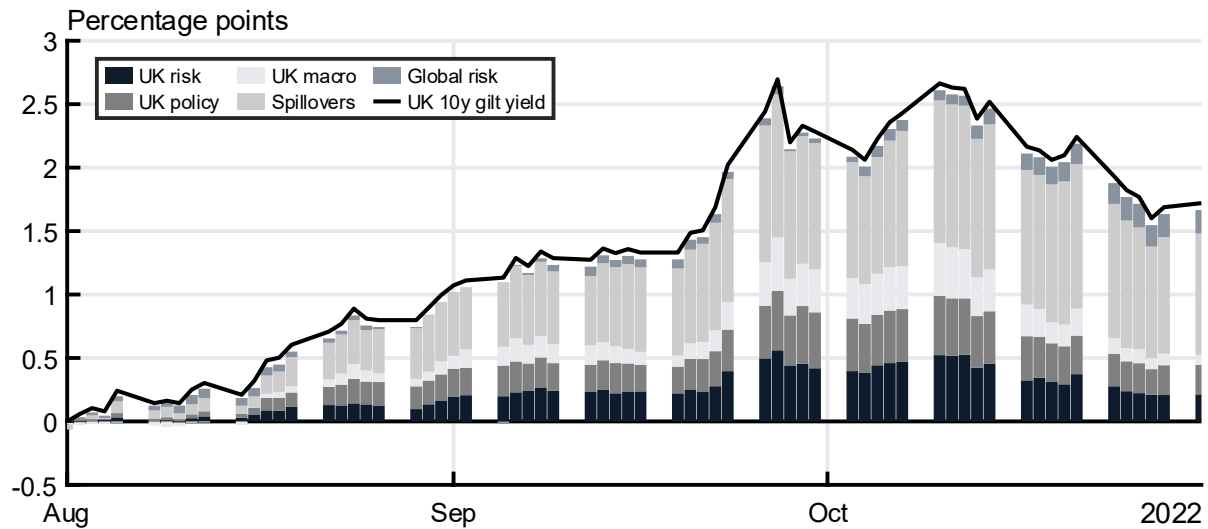
assets. Considered this way, the continued strength in global equity prices over that same period (see Chart 2.c) attracted international investors even as they allocated away from the US dollar and US Treasury assets. The peculiarities of this period reflect a breakdown of the 'normal' correlations between bonds, equities, and the dollar, but provide an important example of how the notion of a safe haven (the dollar, and all types of dollar-denominated assets) has become more nuanced as the perceived stability of policies, institutions and the political environment has changed.

Finally, looser-than-expected US monetary policy also contributed to the depreciation of the US dollar relative to sterling.

Consider a second event: a UK-specific risk shock. **Chart 6** shows a decomposition of the cumulative change in the UK 10-year gilt yield between August and October 2022. This covers a period of political turmoil, which resulted in significant stress in the gilt market that required intervention by the Bank of England.¹² Similar to the previous chart, the model identifies a significant contribution of the UK-specific risk shock to the tightening in the 10-year gilt yield. Over the second half of 2022, our results suggest that around half of the roughly 2 percentage point increase in UK yields was driven by domestic shocks. We also find positive contributions from tighter financial conditions in the US and euro area.

¹² In line with its financial stability objective, the Bank of England carried out temporary purchases of long-dated UK government bonds, in order to restore orderly market conditions (Bank of England 2022).

Chart 6: Decomposition of the UK 10-year gilt yield following the 2022 gilt market turmoil

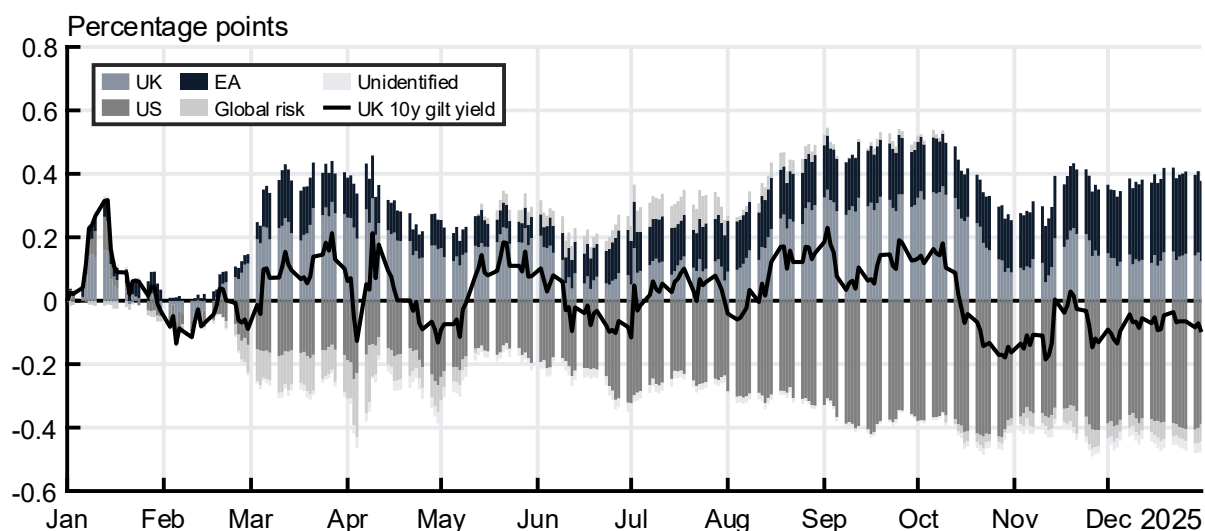


Consider a third event: spillovers to UK financial conditions. **Chart 7** shows another decomposition of the UK 10-year gilt yield, this time over 2025. Through the lens of the model, UK policy and macroeconomic factors contributed to a tightening in the 10-year yield, but these domestic effects were more than offset by loosening factors, mainly US monetary policy and macroeconomic conditions.

Overall, the UK 10-year gilt yield moved sideways on net over the year.¹³

¹³ See Mann (2022) and Mann (2024) for further discussions of the role of international spillovers for the UK.

Chart 7: Decomposition of the UK 10-year gilt yield over 2025



Taken together, these decompositions quantify the argument that domestic financial conditions are shaped not only by domestic macroeconomic and policy developments, but also by global shocks transmitted through international asset markets and dominant currency dynamics. This matters for the discussion of financial innovation, because innovations can alter the currency composition of transactions and may reinforce dollar-denominated markets. In doing so, they may change the strength of spillover channels. The next section therefore turns from financial market decompositions to the broader macroeconomic implications for the UK, focusing on how global financial shocks affect UK activity and inflation, and their implications for monetary policy.

IV. Macroeconomic and monetary policy implications of global financial innovations for the UK

The previous section used daily financial market data to analyze how various types of global and domestic shocks transmit to currencies and to financial conditions in the UK. In this section we consider how financial innovation shocks affect UK activity, prices and the implications of these effects for monetary policy decisions.

Anesti et al. (forthcoming) develop a global-to-UK Bayesian SVAR to identify how global shocks transmit to the UK economy. They identify five global shocks: two on the supply side – a global supply and an energy shock – and three on the demand side – a global demand shock, a US monetary policy shock, and a global financial shock.

A key contribution of this paper is its identification of a financial shock. A positive financial shock can be interpreted as a shock that reduces financial frictions, one of the two key channels through which LPZ analyze the effects of stablecoins on the US dollar's role as a global reserve currency.

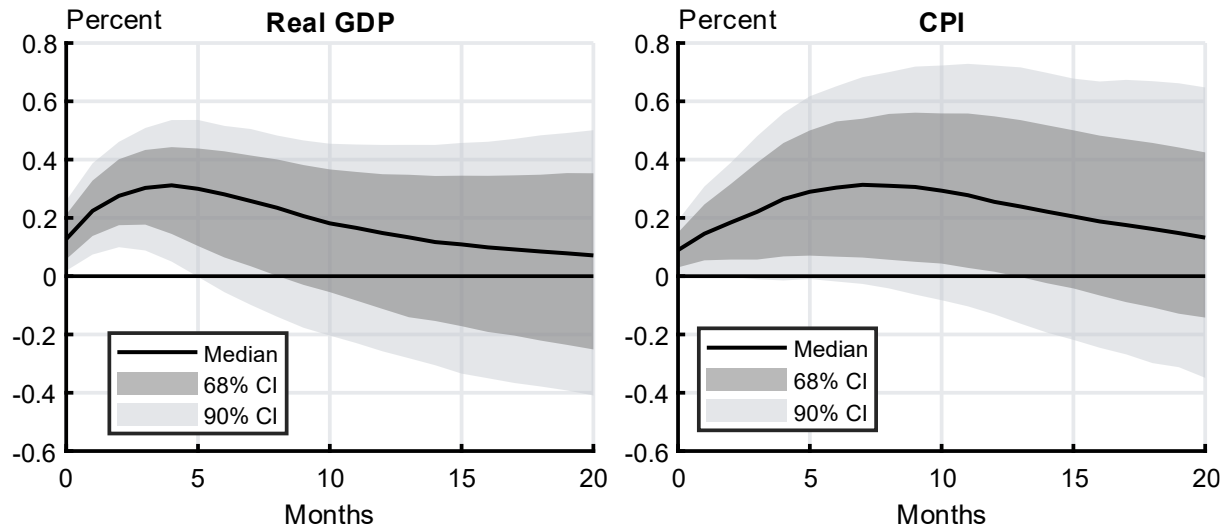
This positive world financial shock is expected to raise world GDP, CPI and US 1-year government bond yields, while reducing the borrowing rate.¹⁴ Since these are the same typical responses associated with a world demand shock, the challenge is to disentangle

¹⁴ The authors define the borrowing rate as the sum of the US 10-year government bond rate and the excess bond premium of Gilchrist and Zakrajsek (2012), where the latter represents a measure of the corporate bond spread.

and uniquely identify the different shocks. The authors identify the financial shock based on Cesa-Bianchi and Sokol (2022), where the borrowing rate for a loan is modelled as the sum of a government bond with a similar maturity and a credit spread. The credit spread responds countercyclically to shocks. The upward pressure on economic activity and prices exerted by a positive demand or financial shock leads the central bank to respond with more restrictive policy, resulting in a higher risk-free rate and lower credit spreads. The relative magnitude of these responses, however, determines in which direction the overall borrowing rate will move. The authors argue that in response to demand shocks, changes in monetary policy outweigh movements in credit spreads – a positive demand shock therefore raises the borrowing rate. If a financial shock hits the economy, however, movements in the credit spread are stronger than changes in the policy rate. A positive financial shock therefore reduces the borrowing rate. These differential responses allow the authors to separately identify world demand and financial shocks by imposing different sign restrictions on the borrowing rate.

We plot the impulse response functions of UK variables to a positive world financial shock (i.e. a reduction in global financial frictions), which allows us to measure the extent of international spillovers. **Chart 8** suggests that there are considerable spillovers from a global shock to financial frictions to the UK economy. Following a one-standard deviation positive world financial shock that reduces credit spreads by 15 basis points, UK real GDP increases by around 0.3% at peak after four quarters. UK CPI rises more gradually and also peaks at approximately 0.3% after seven quarters.

Chart 8: Impulse response functions of real GDP and CPI to a positive global financial shock

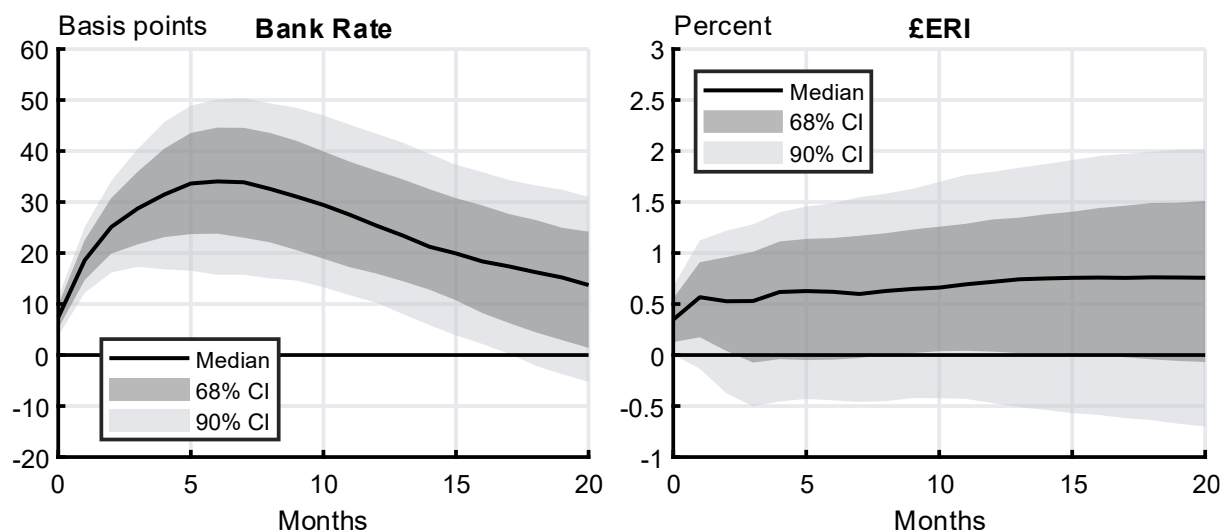


Source: Anesti et al. (forthcoming).

Notes: Impulse response functions are generated using a global-to-UK Bayesian structural VAR that identifies five global shocks (supply, demand, energy, US monetary policy and financial shocks) using sign, ranking and bound restrictions, in addition to five UK shocks which are separated from the world block using small open economy zero restrictions, but are not individually identified.

On the financial side, **Chart 9** shows that the UK policy rate, Bank Rate, increases by around 34 basis points at peak, six quarters following the shock, as monetary policy leans against higher activity and inflation. The sterling exchange rate index appreciates, consistent with risk-on behavior by investors.

Chart 9: Impulse response functions of Bank Rate and £ERI to a positive global financial shock



Source: Anesti et al. (forthcoming).

Notes: Impulse response functions are generated using a global-to-UK Bayesian structural VAR that identifies five global shocks (supply, demand, energy, US monetary policy and financial shocks) using sign, ranking and bound restrictions, in addition to five UK shocks which are separated from the world block using small open economy zero restrictions, but are not individually identified.

The authors also use forecast error variance analysis to evaluate the relative contribution of the global financial shock to changes in UK variables compared to other shocks. They find that the world financial shock accounts for around 40% of Bank Rate fluctuations after two years, suggesting that it explains more of the variance in the UK policy rate than for instance global demand shocks or domestic shocks (Anesti et al. forthcoming).

V. Conclusion and monetary policy implications

In conclusion, LPZ present compelling evidence that financial innovation can reinforce the US dollar's role as the dominant global currency. This is especially true when network effects are strong enough to outweigh the currency diversification benefits associated with lower financial frictions.

Our discussion paper contributes to several strands of literature that are relevant for monetary policymakers. First, it contributes to the literature on global reserve currencies and their determinants. We outline the various uses of a dominant international currency, including its role in foreign exchange reserves, trade invoicing, and the denomination of international capital flows and assets. LPZ do not use the common ‘uses of money’ lens in their analysis. By contrast, this discussion paper provides a framework that links the uses of money into concepts that are important determinants of reserve currency status: a country’s economic and financial size, its policy and institutions, and financial innovation. We discuss why considering the whole set of determinants is valuable in the current geo-economic-political environment.

Second, we contribute to the modeling and quantification of international financial spillovers. We develop a UK-US-euro area financial model that decomposes the channels through which international spillovers affect the sterling exchange rate and UK financial conditions. The model shows that during episodes of institutional and political instability, a country-specific premium can weigh on the exchange rate and push up yields on other assets, such as long-term bonds. Our results also indicate that global institutional and geopolitical spillovers are a significant driver of UK, US and euro area financial conditions. Quantifying these effects is important to understand the effectiveness of domestic monetary policy transmission in the UK.

Combining the themes of financial innovation through stablecoins and the role of international spillovers, the key implication for UK monetary policy is the following: if stablecoins increase the use of dollar-denominated money-like instruments, they may

also increase the UK's exposure to global financial conditions that the domestic policy framework does not control. There are three related channels through which these effects could take shape. First, monetary policy transmission could weaken if economic agents move money from bank deposits into unremunerated stablecoins. This could weaken the role of the banking system in transmitting changes in Bank Rate to broader financial conditions. Second, greater exposure to the dominant currency through the widespread use of US dollar-denominated stablecoins could make economies, particularly small open economies such as the UK, more susceptible to international spillovers. In particular, a country's exposure to global financial conditions, US monetary policy, and shifts in investor confidence could increase, with implications for currency mismatch and the financing of the UK's external imbalance. Third, stablecoins could increase volatility in transaction volumes. This volatility could be transmitted via wholesale bank funding and to gilt markets through responsiveness to regulatory news, collateral backing, investor types, and high trading volumes associated with short-term arbitrage strategies across platforms (see Mann 2026 for a discussion about the elasticity of demand of different investor types).

From a UK monetary policy perspective, the evidence we present from Anesti et al. (forthcoming) points in the same direction: if shocks to financial innovation have a comparably larger effect on UK financial conditions than a similarly sized demand shock, monetary policy needs to be attentive to these shocks.

The bottom-line is simple: financial innovation may look like nothing more than “plumbing” in the international monetary system, but for a small open economy like the UK it can change the way monetary policy transmits.

Amber Market Sensitive

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