Who Sustains the U.S. Treasury Premium? The Domestication of Exorbitant Privilege

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Abstract

In the canonical account of America's exorbitant privilege, the U.S. Treasury premium is paid by the rest of the world: foreign investors who value the convenience of Treasuries deliver the United States its funding advantage. This paper shows that this account no longer holds—the investors sustaining the premium changed around 2013. In a simple two-country framework, the sign of the comovement between the Treasury CIP basis and foreign Treasury holdings identifies whose non-pecuniary demand dominates the premium at the margin. Estimating this comovement, I find that it is close to zero for most of the 2000s and turns significantly negative after 2013: foreign investors now sell Treasuries when the premium rises. Decomposing the basis shows that the rotation is specific to government bonds rather than to dollar assets generally. Sector-level data attribute it to the retreat of foreign officials and banks and the emergence of U.S. banks. Bank-level evidence ties it to the Liquidity Coverage Ratio, with Treasury accumulation concentrated in covered banks that entered the regime short of qualifying liquid assets. The Treasury premium, once granted by foreign investors who valued the convenience of Treasuries, is now sustained by domestic banks required to hold them.

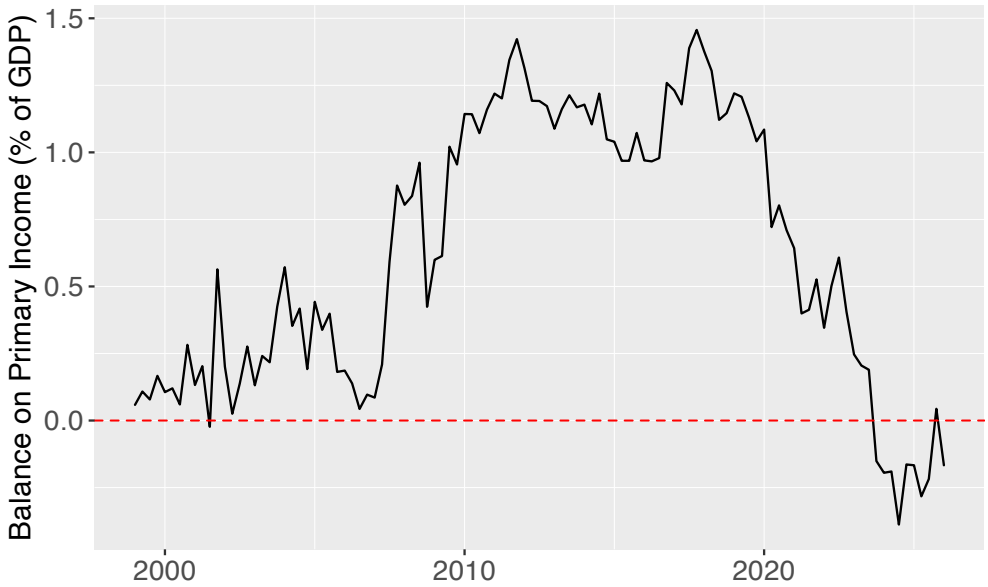
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1 Introduction

The United States plays a pivotal role in the global financial system. The U.S. dollar dominates the composition of official foreign exchange reserves (Ilzetzki et al. (2019)), the invoicing of international trade (Boz et al. (2022)), and the denomination of corporate debt (Maggiori et al. (2020)). Central to this dominance is the world's premier safe asset: U.S. Treasury securities. Investors value Treasuries beyond their cash flows—for their liquidity, collateral value, and favorable regulatory treatment—and this convenience yield lowers U.S. borrowing costs (Krishnamurthy and Vissing-Jorgensen (2012); Du et al. (2018a)). As a result, the United States issues low-yield safe liabilities while earning higher returns on its external risky assets, partly offsetting its persistent trade deficits (Gourinchas and Rey (2007)). This enduring funding advantage is known as America's "exorbitant privilege" (Eichengreen (2011)), a term attributed to then-French Finance Minister Val'ery Giscard d'Estaing.

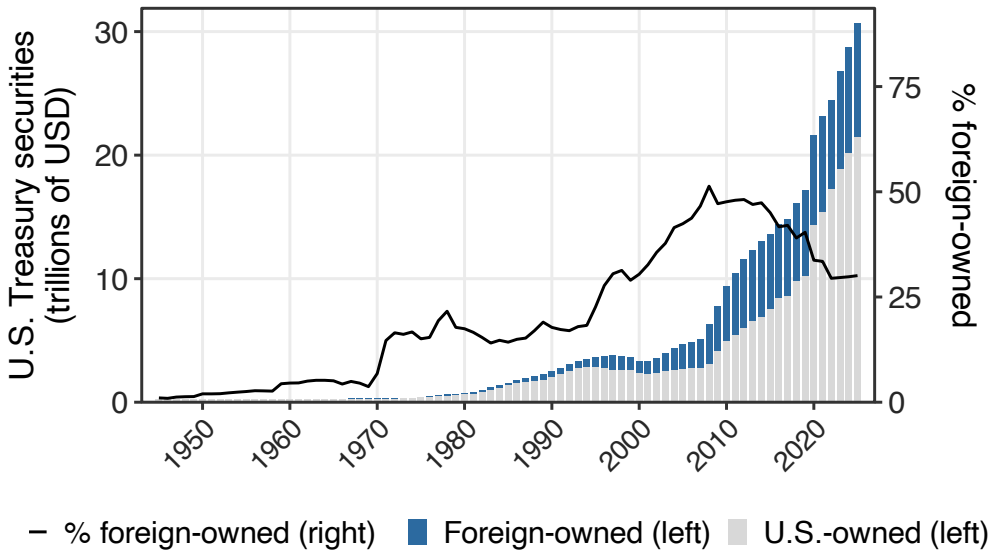
This privilege, however, shows signs of erosion. Figure 1 shows that the U.S. balance on primary income has declined in recent years, approaching zero for the first time in over two decades—the income the United States receives from abroad now barely exceeds what it pays out. Figure 2 shows that the foreign share of U.S. Treasury holdings has

Figure 1: Declining U.S. Balance on Primary Income



Notes: The balance on primary income is receipts from abroad minus payments to foreigners of investment income (interest, dividends, and reinvested earnings) and compensation of employees. Quarterly, seasonally adjusted at an annual rate, as a percent of GDP. *Source:* Bureau of Economic Analysis, retrieved from FRED.

Figure 2: Declining Foreign Share of U.S. Treasury Holdings



Notes: Bars show U.S. Treasury securities held by the public, in trillions of dollars, split into holdings of the rest of the world and of U.S. residents (left axis); U.S. holdings are computed as the total less foreign holdings and include the Federal Reserve. The solid line shows the foreign-owned share in percent (right axis). Year-end values of quarterly data. *Source:* Financial Accounts of the United States (Z.1), retrieved from FRED.

declined over the same period, falling from roughly 50 percent in 2008 to about 30 percent in 2025. Consistent with these patterns, a recent literature documents an erosion of the exorbitant privilege: Atkeson et al. (2025) show that the post-2007 surge in U.S. corporate asset values inflated the value of U.S. equity liabilities held by foreigners, turning rising asset prices into large transfers abroad, while Tabova and Warnock (2025) document that the positive differential on U.S. international portfolio returns has effectively disappeared.

This literature measures the erosion of the privilege in levels: how large the returns differential was, and whether it has disappeared. Levels alone, however, cannot reveal *who* sustains the U.S. funding advantage. The premium at which the United States borrows is an equilibrium price, and the same premium can be supported by very different investors—foreign central banks holding Treasuries for reserve purposes, or domestic banks holding them for regulatory reasons—with very different implications for the nature of the privilege. In the canonical account, this support comes from abroad: Eichengreen (2011) attributes the U.S. funding advantage to foreign banks and firms "that value the convenience of dollar securities" and are therefore willing to pay more to hold them.

This paper examines whether that account still holds by asking who sustains the U.S. Treasury premium. Specifically, I ask whether foreign investors still act as willing payers

of the premium—absorbing Treasuries even as they become expensive—as the canonical account presumes; whether the roles of foreign and domestic investors, whose demand drives the premium and whose accommodates it, have changed over time; and what such a change implies for the nature of the privilege, long understood as a subsidy extracted from abroad.

To this end, I study how the Treasury premium comoves with the Treasury purchases of foreign and domestic investors—that is, who adjusts quantities when the price of safety moves. I measure the premium using the Treasury covered interest parity (CIP) basis (Du et al. (2018a)): the yield on foreign government bonds, hedged into dollars, in excess of the U.S. Treasury yield, so that a higher basis means Treasuries are more expensive. The identification logic is simple. If foreign investors are the ones willing to pay for the convenience of Treasuries, their demand shocks move the premium, and foreign holdings and the premium should rise together. If instead foreign investors are price-sensitive, they buy less when Treasuries are expensive, and foreign holdings and the premium move in opposite directions. With total supply fixed, someone on the domestic side must then be absorbing Treasuries at a premium. I formalize this logic in a simple two-country portfolio model, in which the sign of the comovement identifies whose demand dominates at the margin.

I document three sets of findings. First, a significantly negative relationship between foreign Treasury purchases and the Treasury premium emerges around 2013. In the earlier part of the sample, the comovement is close to zero, consistent with the canonical account in which stable, price-insensitive foreign demand quietly sustains the premium. After 2013, however, the comovement turns significantly negative: foreign investors reduce their Treasury holdings when the premium rises, behaving like price-sensitive investors rather than willing payers of the premium—which implies, by market clearing, that domestic investors now absorb Treasuries when they are expensive. This pattern is robust to subsample splits, interaction specifications, and a battery of controls.

Two further pieces of evidence corroborate this rotation and identify who is behind it. A historical decomposition from a sign-restricted Bayesian vector autoregression (BVAR) shows that after 2013, domestic demand shocks systematically push the premium up, while foreign demand shocks pull it down. And sector-level data sharpen the picture: the foreign retreat is concentrated among official institutions and foreign banks, while U.S. banks emerge as price-insensitive accumulators. The Treasury premium is now sustained more by the U.S. banking sector, and less by foreign officials and banks.

Second, the rotation reflects the specialness of Treasuries rather than intermediary

balance-sheet constraints. The Treasury CIP basis can be decomposed into two components: a swap-spread component, which captures the price of government bonds relative to risk-free benchmarks, and an interbank (IBOR) CIP component, which reflects the balance-sheet cost of arbitrage common to all dollar assets. The post-2013 negative comovement of foreign holdings appears in the swap-spread component; the comovement with the IBOR CIP basis is statistically indistinguishable from zero. The rotation thus lives in the premium specific to Treasuries, not in the general cost of dollar intermediation.

Third, to understand why U.S. banks emerged as the new marginal buyers of Treasuries, I turn to post-crisis liquidity regulation—in particular, the Liquidity Coverage Ratio (LCR) introduced under Basel III. The LCR requires large banks to hold high-quality liquid assets (HQLA) sufficient to cover expected net cash outflows under stress, and U.S. Treasuries are a core eligible asset. Using bank-level data from Call Reports and FR Y-9C filings, I find that banks that entered the regulatory regime with scarcer HQLA—measured as of 2012Q4, before the rule took effect—increase their Treasury holdings more strongly when the premium rises. For these banks the new requirement was more binding, and their regulatory demand made them willing to accumulate Treasuries even at a premium. Consistent with a regulatory interpretation, the effect appears only among banks large enough to be subject to the LCR—those with assets of $50 billion or more—and is absent among smaller, exempt banks.

These findings recast the nature of the U.S. funding advantage. First, to the extent that the Treasury premium is now sustained by domestic regulated banks rather than by foreign investors, the privilege looks less like a subsidy extracted from abroad and more like a form of financial repression—a burden borne at home by the regulated banking sector. Second, the composition of the investor base has shifted: Treasuries are increasingly held by institutions that demand them to satisfy regulation, rather than by foreign officials and banks that value their convenience. Third, with domestic banks as the marginal absorbers of Treasuries, shocks to the Treasury market are more likely to be contained within—and amplified by—the U.S. banking system, with implications for financial stability.

Related Literature. This paper contributes to three strands of literature. First, this paper relates to the literature on global imbalances and the U.S. exorbitant privilege. Gourinchas and Rey (2007) show that, since the end of Bretton Woods, the United States has persistently earned more on its external assets than it pays on its liabilities. Gourinchas and Rey (2022) further argue that this privilege is accompanied by an insurance role in global crises, which they call "exorbitant duty." Eichengreen (2011) traces the historical

rise of the dollar as the dominant international currency. A recent literature asks whether the privilege is eroding. Atkeson et al. (2025) attribute the post-2007 deterioration in the U.S. net foreign asset position to the revaluation of U.S. corporate equity held by foreigners. Tabova and Warnock (2025) show that the portfolio return differential has largely disappeared as the share of equity in U.S. liabilities has increased. Jiang et al. (2024) find, in a portfolio framework, that the U.S. advantage weakened after 2010. These papers measure the privilege through return differentials and the external position. This paper instead locates the change inside the safe-asset market: I document a post-2013 shift in the relationship between the Treasury premium and foreign holdings, consistent with a rotation in its marginal support from foreign investors toward domestically regulated banks.

Second, this paper builds on the literature on the Treasury convenience yield and investor demand for Treasuries. Krishnamurthy and Vissing-Jorgensen (2012) show that investors are willing to pay for the liquidity and safety of Treasuries, and Jiang et al. (2021) link the convenience yield that foreign investors attach to U.S. safe assets to the dollar's value. Du et al. (2018a) measure the relative convenience of Treasuries against other developed-country government bonds using CIP deviations between government bond yields, which they call the U.S. Treasury Premium; this is the measure I adopt. Du and Schreger (2022) survey CIP deviations, and Du et al. (2026) show that the convenience yields on the dollar and on Treasuries have recently diverged. On the demand side, Chaudhary et al. (2024) estimate the price elasticity of Treasury demand across investor sectors and find that foreign investors have become much less influential for yields since 2008. My approach differs both in the price variable and in the object of identification: I study the premium rather than the yield level, which does not isolate the convenience component underlying the privilege, and I use the sign of the comovement between the premium and holdings to identify whose non-pecuniary demand sustains the premium at the margin. This distinction matters because a key interpretation of the privilege is that foreign demand provides the marginal, price-insensitive support for Treasuries, and my results suggest that this condition weakens after 2013.

Finally, this paper relates to work on post-crisis banking regulation and the Treasury market. Avdjiev et al. (2019) show that dollar appreciation tightens the balance-sheet constraints of global banks, which simultaneously widens CIP deviations and curtails cross-border dollar lending. Sundaresan and Xiao (2024) show that mandated liquidity buffers reshape bank balance sheets, crowding out lending and shifting liquidity risk toward institutions outside the regulatory perimeter. On the market-functioning side, He

et al. (2022) show that when dealer balance sheets are constrained, Treasuries can carry an inconvenience yield rather than a convenience yield, as in March 2020, and Duffie et al. (2023) shows that Treasury market functionality deteriorates when intermediation requires intensive use of dealer balance sheets. This literature examines what balance-sheet regulation does to bank behavior and market functioning; this paper argues that the regulatory demand it generates now helps sustain the Treasury premium—and with it, the U.S. funding advantage itself.

2 Conceptual Framework

I develop a stylized two-country portfolio model to guide the empirical analysis. The model shows that the sign of the comovement between the Treasury CIP basis and foreign Treasury purchases identifies whose demand—foreign or domestic—sustains the premium at the margin.

2.1 A Two-Country Model of Treasury Demand

I consider an economy with two countries, the United States and Foreign, each with a representative investor who allocates wealth between U.S. Treasuries and foreign government bonds. Following Du et al. (2018a), I measure the relative valuation of Treasuries using the Treasury CIP basis:

$$\text{CIP}_t = y_t - (f_t - s_t) - y_t^{\$}, \tag{1}$$

where y_t and $y_t^{\$}$ denote the yields on foreign government bonds and U.S. Treasury securities, and s_t and f_t are the log spot and forward exchange rates measured in foreign currency per U.S. dollar. The term $y_t - (f_t - s_t)$ is the dollar-hedged yield on the foreign government bond—a synthetic dollar bond—so a higher basis means that Treasuries yield less than their hedged foreign counterpart: Treasuries are expensive. This wedge is not a pure arbitrage. CIP deviations measured with risk-free rates represent riskless profits for global banks, and their post-crisis persistence reflects the balance-sheet cost of exploiting them (Du et al. (2018b)). The Treasury CIP basis contains this component, but it additionally reflects the non-pecuniary services that government bonds provide—liquidity and collateral value—which a hedged foreign bond position does not deliver. It can therefore be nonzero even for an unconstrained arbitrageur, and measures the premium investors

pay for the relative convenience of Treasuries, which Du et al. (2018a) call the U.S. Treasury Premium.

Each investor $i \in \{F, D\}$, where F denotes the foreign investor and D the domestic U.S. investor, holds Treasuries according to the linear demand curve

$$q_t^i = \alpha_t^i - b^i \cdot \text{CIP}_t. \tag{2}$$

Demand has two components. The preference shifter α_t^i captures the non-pecuniary motives for holding Treasuries—liquidity needs, collateral value, regulatory requirements, or home bias—and shifts demand outward when these motives strengthen. The slope $b^i > 0$ governs price sensitivity: when the basis rises and Treasuries become more expensive relative to hedged foreign bonds, investor i substitutes away from Treasuries at rate b^i. An investor with large b^i behaves like a yield-oriented arbitrageur; an investor with small b^i holds Treasuries largely irrespective of their price—the behavior the canonical account attributes to foreign investors. Wealth is normalized to one, so the investor's foreign bond holding is $1-q_t^i$. The model is deliberately minimal—static, with linear demands—because the empirical strategy relies only on its sign predictions.

The market clearing condition is

$$q_t^F + q_t^D = S_t, \tag{3}$$

where S_t denotes the total supply of U.S. Treasuries. Substituting the demand curves in equation (2) into the market clearing condition and solving for the basis yields the equilibrium CIP:

$$\text{CIP}_t = \frac{\alpha_t^F + \alpha_t^D - S_t}{b^F + b^D}, \tag{4}$$

or, in changes,

$$\Delta\text{CIP}_t = \frac{\Delta\alpha_t^F + \Delta\alpha_t^D - \Delta S_t}{b^F + b^D}. \tag{5}$$

Equation (5) makes the identification problem transparent: foreign and domestic preference shocks enter the basis symmetrically. A rise in the premium reveals that *someone* values the convenience of Treasuries more, but not *who*. The level of the basis is therefore uninformative about which investor sustains the premium—the question this paper asks—and the answer must come from quantities.

Substituting equation (5) into the foreign demand curve and setting $\Delta S_t = 0$ yields the equilibrium change in foreign holdings:

$$\Delta q_t^F = \frac{b^D \, \Delta \alpha_t^F - b^F \, \Delta \alpha_t^D}{b^F + b^D}. \tag{6}$$

Holding supply fixed is an expositional simplification; in the empirical analysis, I control for changes in total Treasury supply throughout, which, by the Frisch–Waugh–Lovell theorem, is equivalent to working with variables residualized with respect to ΔS_t. Equation (6) shows that the two preference shocks move foreign holdings in *opposite* directions. A foreign preference shock raises Δq_t^F: foreign investors buy the Treasuries they now value more. A domestic preference shock lowers it: stronger domestic demand pushes up the basis, and foreign investors, whose own valuation has not changed, sell into the higher price—domestic demand crowds out foreign holdings. Meanwhile, by equation (5), the same two shocks move the basis in the *same* direction. This asymmetry is what makes the pair $(\Delta \text{CIP}_t, \Delta q_t^F)$ informative: prices alone cannot separate the two shocks, but prices and foreign quantities together can, through the sign of their comovement.

2.2 What Does the Covariance Identify?

Under the assumption that $\Delta \alpha^F$ and $\Delta \alpha^D$ are independent, equations (5) and (6) deliver the covariance between the basis and foreign flows:

$$\text{Cov}(\Delta \text{CIP}_t, \; \Delta q_t^F) = \underbrace{\frac{b^D \, \text{Var}(\Delta \alpha^F)}{(b^F + b^D)^2}}_{=\text{Cov}(\Delta \text{CIP}_t, \; \Delta q_t^F \,|\, \Delta \alpha_t^D = 0)} + \underbrace{\left(-\frac{b^F \, \text{Var}(\Delta \alpha^D)}{(b^F + b^D)^2} \right)}_{=\text{Cov}(\Delta \text{CIP}_t, \; \Delta q_t^F \,|\, \Delta \alpha_t^F = 0)}. \tag{7}$$

The first term is the covariance generated by foreign preference shocks alone: such shocks push the basis up and foreign holdings up together, so the term is positive. The second is the covariance generated by domestic preference shocks alone: such shocks push the basis up while crowding out foreign holdings, so the term is negative. The sign of the covariance therefore reveals which configuration dominates:

$$\text{Cov}(\Delta \text{CIP}_t, \; \Delta q_t^F) \gtrless 0 \iff b^D \, \text{Var}(\Delta \alpha^F) \gtrless b^F \, \text{Var}(\Delta \alpha^D). \tag{8}$$

Condition (8) makes clear what the covariance does and does not identify. It does not separately identify the size of preference shocks, $\text{Var}(\Delta \alpha^i)$, and price sensitivity, b^i; it

identifies only the composite. Rearranging, the sign of the covariance compares the ratio

$$\nu^i \equiv \frac{\text{Var}(\Delta\alpha^i)}{b^i}, \tag{9}$$

across the two investors: the covariance is positive if and only if $\nu^F > \nu^D$. I interpret ν^i as the *intensity of non-pecuniary demand*: it is large when investor i's demand shifts a lot for non-price reasons ($\text{Var}(\Delta\alpha^i)$ large) and responds little to price (b^i small). Two special cases illustrate the composite. If price sensitivities are equal ($b^F = b^D$), the sign compares the size of preference shocks, and a positive covariance means foreign non-pecuniary motives are the more volatile force behind the premium. If preference shocks are equally sized ($\text{Var}(\Delta\alpha^F) = \text{Var}(\Delta\alpha^D)$), the sign compares price sensitivities, and a positive covariance means foreign investors are the more price-insensitive holders. The data cannot distinguish these cases—but for the question of this paper, they need not be distinguished. Under either reading, and under any combination of the two, a positive covariance identifies foreign investors as the side whose non-pecuniary demand sustains the premium, with domestic investors accommodating at the margin; a negative covariance identifies the reverse. The identified object is exactly the economically relevant one.

Figure 3 illustrates this result graphically. Each observation $(\Delta\text{CIP}_t, \Delta q_t^F)$ is generated by one of the two shocks. When a foreign shock hits, the equilibrium moves along the (unshifted) domestic demand curve, tracing a slope of $+b^D$; when a domestic shock hits, the equilibrium moves along the foreign demand curve, tracing a slope of $-b^F$. The scatter is thus a mix of points from two lines, and the projection coefficient of Δq_t^F on ΔCIP_t is a variance-weighted average of the two slopes,

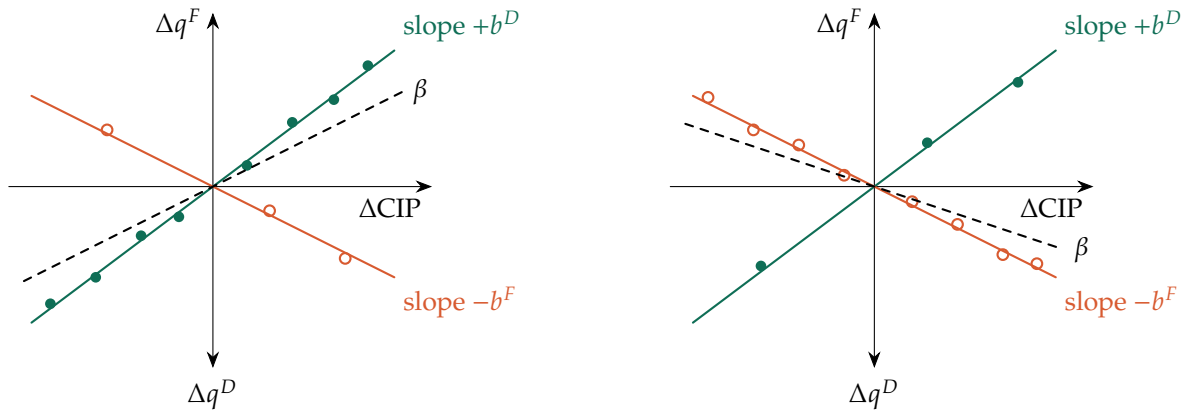
$$\beta = s\, b^D - (1-s)\, b^F, \qquad s \equiv \frac{\text{Var}(\Delta\alpha^F)}{\text{Var}(\Delta\alpha^F) + \text{Var}(\Delta\alpha^D)}, \tag{10}$$

where s is the share of preference-shock variance originating abroad. The sign of β therefore inherits the sign of the covariance, and this projection coefficient is exactly what I estimate in Section 3.

3 Who Sustains the Treasury Premium?

Guided by the framework in Section 2, this section estimates the comovement between the Treasury CIP basis and foreign Treasury holdings, and asks whether it has changed. I document a rotation around 2013—from a comovement near zero to a significantly

Figure 3: Identification from the Sign of the Covariance



(a) Foreign shocks dominate: $\beta > 0$.

(b) Domestic shocks dominate: $\beta < 0$.

Notes: Each observation $(\Delta\text{CIP}_t, \Delta q_t^F)$ is generated by one of the two shocks in equation (7). Foreign demand shocks (filled circles) move the equilibrium along the domestic demand curve, with slope $+b^D$; domestic demand shocks (open circles) move it along the foreign demand curve, with slope $-b^F$. The dashed line is the projection coefficient β, the variance-weighted average of the two slopes: its sign reveals which shock dominates. By market clearing with supply fixed, $\Delta q_t^D = -\Delta q_t^F$, so the same scatter read along the downward vertical axis describes domestic flows, with projection coefficient $-\beta$. Slopes are stated in the Δq^F orientation.

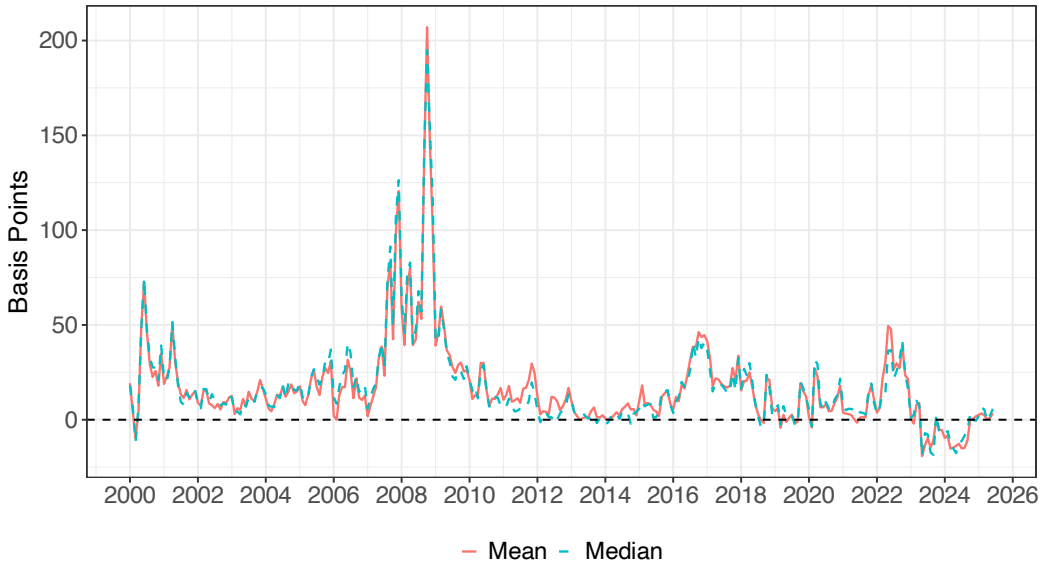
negative one—and then unpack it through a decomposition of the basis, sector-level holdings, and a sign-restricted BVAR.

3.1 Data

To estimate the sign of the covariance between ΔCIP_t and Δq_t^F, I need measures of the Treasury CIP basis and of foreign Treasury holdings.

Treasury CIP basis. I use the Treasury CIP basis estimated by Du et al. (2026). I focus on the 3-month tenor, the deepest and most liquid segment of the FX swap market and the benchmark maturity in the literature. To construct a single time series of the Treasury premium, I take the equal-weighted average of the government bond CIP deviations of the G10 currencies vis-à-vis the U.S. dollar: the Australian dollar (AUD), Canadian dollar (CAD), Swiss franc (CHF), euro (EUR), Danish krone (DKK), British pound (GBP), Japanese yen (JPY), Norwegian krone (NOK), New Zealand dollar (NZD), and Swedish krona (SEK). These are advanced economies whose government bonds carry negligible default risk, so the basis can be attributed to differences in convenience rather than to compensation for credit risk. Figure 4 plots the series. The basis spikes during the global

Figure 4: The Treasury CIP Basis, 2000–2025



Notes: Mean and median of the 3-month Treasury CIP basis across G10 currencies, in basis points. A higher basis means U.S. Treasuries are expensive relative to hedged foreign government bonds. *Source:* Du et al. (2026).

financial crisis and has since remained low—and occasionally negative—a first indication that the nature of the Treasury premium may have changed.

Foreign Treasury holdings. I measure foreign holdings as the sum of Foreign Portfolio Holdings of U.S. Long-Term and of Short-Term Treasury Securities (Grand Total), from FRED.[1] The series report positions at market value, combining data reported under the Treasury International Capital (TIC) system—the SLT form for long-term securities and the BL2 form for short-term securities—with staff estimates by the Federal Reserve Board. Two features of these data matter for the analysis. First, TIC data are reported based on the counterparty's country of legal residence rather than the beneficial owner, so holdings routed through custodial centers—Belgium, Luxembourg, or the Cayman Islands, for example—are attributed to those centers. This misattribution operates within the foreign total, reallocating holdings across countries; the main analysis, which uses the foreign aggregate, is therefore unaffected. Second, because positions are marked to market, the log change in holdings—my dependent variable—combines net purchases and valuation changes. This works against my main finding: episodes in which the basis rises tend to be episodes in which Treasuries appreciate, so revaluation mechanically pushes the comovement between the basis and measured holdings *upward*. The significantly negative

[1] FRED series FORLTTREASPOS99996 and FORSTTREASPOS99996.

post-2013 estimates I document below are therefore conservative lower bounds. Results are similar when I instead use net purchases scaled by lagged Treasury debt outstanding, a flow-based measure that removes valuation changes at the cost of an arbitrary scaling choice.

The estimation sample runs from 2001M2 to 2025M6 at the monthly frequency.

3.2 The Vanishing Foreign Support for the Treasury Premium

To trace how the covariance in equation (7) evolves over time, I estimate the following regression over rolling 60-month windows:

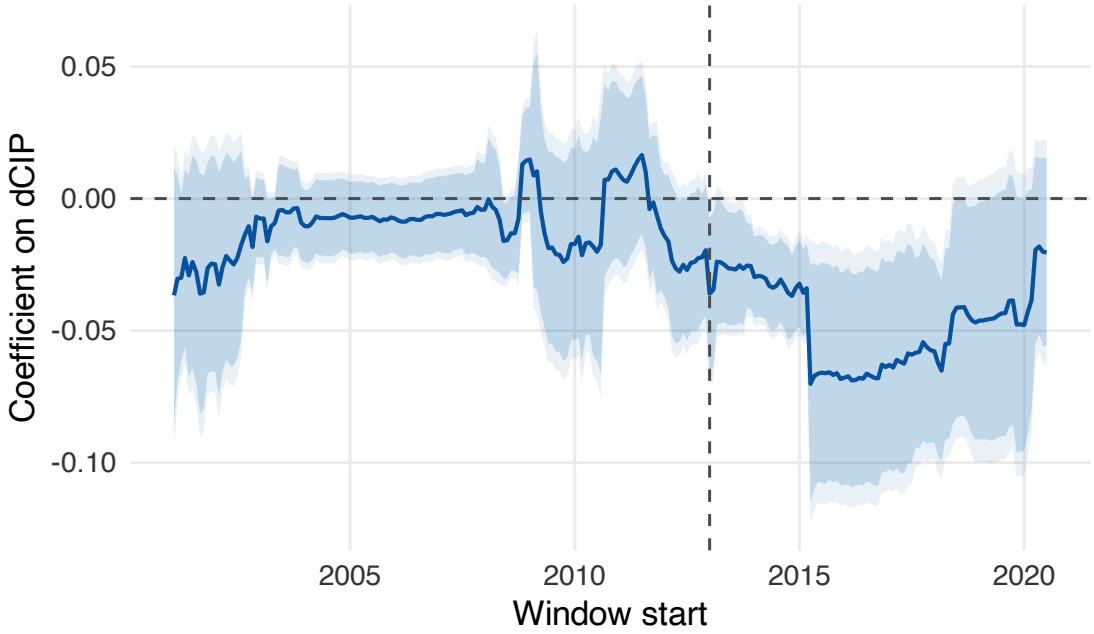
$$100 \times \Delta \log \text{ForeignUST}_t = \beta \, \Delta \text{CIP}_t^{\text{Treas}} + \gamma \, \Delta \log \text{TotalUST}_t + \alpha_{\text{year}(t)} + \varepsilon_t, \tag{11}$$

where ForeignUST_t denotes total foreign portfolio holdings of U.S. Treasuries in month t, and $\text{CIP}_t^{\text{Treas}}$ is the equal-weighted average of the three-month Treasury CIP basis of the United States vis-à-vis the G10 currencies. TotalUST_t is total marketable Treasury debt outstanding from the U.S. Treasury's Monthly Statement of the Public Debt (MSPD), net of Federal Financing Bank securities, which are excluded because they are not publicly held. Controlling for supply ensures that $\hat{\beta}$ maps into the covariance in equation (7), which is derived holding UST supply fixed ($\Delta S_t = 0$). Year fixed effects $\alpha_{\text{year}(t)}$ absorb common macroeconomic shocks within each year. Through the lens of the model, a positive $\hat{\beta}$ indicates that foreign non-pecuniary demand shocks dominate at the margin, so that foreign investors sustain the Treasury premium; a negative $\hat{\beta}$ indicates that domestic demand shocks dominate, with foreign holdings serving as the accommodating margin.

Figure 5 plots $\hat{\beta}$ from rolling estimation of equation (11); the horizontal axis denotes the start date of each 60-month window, so windows to the right of the dashed line contain only post-2013 data. Two patterns stand out. First, for most of the earlier sample, the coefficient is close to zero and statistically indistinguishable from it. Through the lens of the model, a near-zero comovement is consistent with the canonical account of the privilege: foreign demand that is stable and price-insensitive generates little covariance between the premium and foreign holdings, quietly sustaining the premium without responding to it.[2] Second, beginning with windows that start around 2013, the coefficient

[2] A comovement near zero does not point-identify the underlying configuration: it arises when foreign demand is stable and price-insensitive, but also when foreign and domestic demand shocks are both sizable and offsetting. Two considerations favor the first reading. The pre-2013 period includes large swings in reserve accumulation and QE, yet the comovement stays near zero—hard to square with large offsetting

Figure 5: Rolling Regression (60-Month Window): β on $\Delta\text{CIP}^{\text{Treas}}$



Notes: This figure plots the estimated coefficient $\hat{\beta}$ on $\Delta\text{CIP}_t^{\text{Treas}}$ from equation (11), estimated over rolling 60-month windows rolled forward one month at a time. The x-axis denotes the start date of each estimation window, so windows to the right of the vertical dashed line contain only post-2013 data. The dependent variable is the monthly log change in total foreign portfolio holdings of U.S. Treasuries; $\Delta\text{CIP}_t^{\text{Treas}}$ is the monthly change in the equal-weighted three-month Treasury CIP basis vis-à-vis the G10 currencies. Each window's regression controls for the log change in total marketable Treasury debt outstanding and includes year fixed effects. Dark and light shaded areas indicate 90% and 95% confidence intervals, respectively, based on Newey–West standard errors. The horizontal dashed line marks zero.

turns significantly negative and remains so. Foreign investors now reduce their Treasury holdings when the premium rises—the behavior of a price-sensitive investor, not of a willing payer of the premium—which, by the logic of Section 2, indicates that domestic demand has become the force sustaining the premium at the margin.

Table 1 formalizes the pattern in Figure 5 using 2013 as the breakpoint. Columns (1) and (2) estimate equation (11) separately on the pre- and post-2013 subsamples. Before 2013, the coefficient on the Treasury CIP basis is close to zero and statistically insignificant. After 2013, it is significantly negative: a one-basis-point increase in the basis is associated with a 0.04 percent decline in foreign Treasury holdings within the month. Column (3) estimates the interaction specification on the full sample, adding $\Delta\text{CIP}_t^{\text{Treas}} \times \mathbb{1}\{\text{year}(t) \geq 2013\}$;

shocks, which would produce a noisier coefficient. And the historical decomposition in Section 3.4, which separately identifies the two shocks, attributes little systematic movement in the basis to either demand shock before 2013.

Table 1: Foreign UST Holdings and the Treasury CIP Basis

	Δ log ForeignUST				
	Pre-2013	Post-2013	Interaction	Excl. COVID	Controls
	(1)	(2)	(3)	(4)	(5)
ΔCIP^{Treas}	-0.007	-0.042**	-0.003	-0.006	0.000
	(0.006)	(0.019)	(0.006)	(0.006)	(0.007)
$\Delta CIP^{Treas} \times$ Post-2013			-0.036*	-0.025**	-0.041**
			(0.019)	(0.011)	(0.019)
Δ log Total UST	57.276***	8.418	43.263***	54.244***	39.782***
	(6.401)	(15.152)	(10.086)	(5.972)	(10.555)
VIX					0.011
					(0.026)
Dollar Index					-0.025
					(0.032)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	143	150	293	227	234
R^2	0.381	0.200	0.345	0.410	0.373

Notes: This table reports estimates of equation (11). The dependent variable is the monthly log change in total foreign portfolio holdings of U.S. Treasuries; ΔCIP_t^{Treas} is the monthly change in the equal-weighted three-month Treasury CIP basis vis-à-vis the G10 currencies, in basis points. Post-2013 is an indicator equal to one from January 2013 onward. Columns (1) and (2) split the sample at 2013; columns (3)–(5) use the full sample with the interaction term. Column (4) ends the sample in December 2019 to exclude the COVID-19 period. Column (5) additionally controls for the VIX and the broad dollar index. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. The sample is monthly, 2001M2–2025M6. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

the interaction coefficient is significantly negative, confirming that the post-2013 shift is statistically distinguishable from the earlier period. The result survives excluding the COVID-19 period (column 4) and controlling for the VIX and the dollar index, which absorb shifts in global risk appetite (column 5); if anything, the interaction estimate is unchanged.

3.3 Unpacking the Rotation

What lies behind this rotation? I unpack the headline result along two dimensions. First, I decompose the Treasury CIP basis into a component specific to government bonds and a component common to all dollar assets, to ask *where* in the premium the rotation resides. Second, I turn to sector-level holdings to ask *who* is behind it—which foreign sectors

retreated, and which domestic sectors took their place.

3.3.1 Decomposition of the Treasury CIP Basis

Section 2 noted that the Treasury CIP basis bundles two conceptually distinct wedges: the balance-sheet cost of arbitrage, which applies to all dollar assets, and the relative convenience of government bonds, which is specific to Treasuries. If the rotation documented above reflects the changing investor base behind the *specialness* of Treasuries, it should appear in the second component, not the first. To separate them, I follow Du et al. (2026) and decompose the basis as

$$\begin{aligned} \text{CIP}_t^{\text{Treas}} &= y_t - (f_t - s_t) - y_t^{\$} \\ &= \underbrace{r_t - (f_t - s_t) - r_t^{\$}}_{\text{Risk-free CIP basis}} + \underbrace{(r_t^{\$} - y_t^{\$})}_{\text{U.S. swap spread}} - \underbrace{(r_t - y_t)}_{\text{Foreign swap spread}}, \end{aligned} \tag{12}$$

where r_t and $r_t^{\$}$ denote the foreign and U.S. risk-free rates, and the remaining notation is as in Section 2. The first term is the CIP deviation measured with risk-free rates: a pure arbitrage violation, sustained by the balance-sheet cost that global banks face in exploiting it, and common to all dollar assets. The remaining terms form the relative swap spread—the U.S. swap spread less its foreign counterpart—which captures the valuation of government bonds relative to risk-free benchmarks and thus isolates the convenience specific to Treasuries. I re-estimate equation (11) replacing the Treasury CIP basis with each component in turn.

Measuring the risk-free CIP basis requires a forward premium and a pair of risk-free rates. For the forward premium, I use the 3-month annualized forward premium on selling foreign currency for U.S. dollars, from Du et al. (2026). As the risk-free benchmark, I use 3-month Interbank Offered Rates (IBOR) from Bloomberg, and refer to the resulting deviation as the IBOR CIP basis.[3] The relative swap spread then follows from equation (12) as the difference between the Treasury CIP basis and the IBOR CIP basis. As with the Treasury basis, I take equal-weighted averages across the G10 currencies, and re-estimate equation (11) with each component in place of the Treasury CIP basis.

Table 2 reports the results. Columns (1) and (2) relate foreign Treasury holdings to

[3] IBOR rates embed bank credit risk and are not strictly risk-free. This is immaterial for the decomposition: what matters is that the same benchmark is used on both legs, so that credit components difference out of the cross-currency basis, and that the benchmark contains no government-bond convenience—the component the swap spread is designed to isolate.

Table 2: Decomposing the Treasury CIP Basis: IBOR CIP Basis and Swap Spread

	Δ log ForeignUST			
	IBOR CIP basis		Swap spread	
	Pre-2013	Post-2013	Pre-2013	Post-2013
	(1)	(2)	(3)	(4)
ΔCIP$^{\text{IBOR}}$	0.013	0.000		
	(0.014)	(0.016)		
Δ Swap spread			-0.010	-0.029**
			(0.007)	(0.015)
Δ log Total UST	52.131***	11.339	57.335***	13.294
	(6.351)	(13.063)	(5.991)	(10.314)
Year FE	Yes	Yes	Yes	Yes
Observations	143	141	143	141
R^2	0.378	0.149	0.385	0.199

Notes: This table re-estimates equation (11) replacing the Treasury CIP basis with each component of the decomposition in equation (12). $\Delta\text{CIP}_t^{\text{IBOR}}$ is the monthly change in the equal-weighted 3-month IBOR CIP basis across the G10 currencies, in basis points; Δ Swap spread is the monthly change in the corresponding relative swap spread, computed currency by currency as the Treasury CIP basis less the IBOR CIP basis. Both components are averaged over the currencies for which both series are available in a given month; coverage declines from ten currencies to six by the end of the sample as IBOR benchmarks are discontinued. The post-2013 sample ends in September 2024 and is slightly shorter than in Table 1; the swap spread columns use the same sample by construction. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

the IBOR CIP basis before and after 2013: in both periods, the coefficient is close to zero and statistically insignificant. Columns (3) and (4) repeat the exercise with the relative swap spread: the association is insignificant before 2013 and turns significantly negative afterward—mirroring the pattern of the headline result. The post-2013 rotation thus operates through the component that captures the specialness of government bonds relative to risk-free benchmarks, not through the balance-sheet cost of arbitrage common to all dollar assets. Foreign investors did not become more sensitive to the general price of dollar intermediation; they became more sensitive to the premium on Treasuries themselves.

3.3.2 Sector-Level Evidence

The analysis so far treats foreign and domestic investors as single blocks, but the aggregates pool sectors with very different motives for holding Treasuries: reserve managers, regulated banks, and unconstrained nonbanks need not respond to the premium in the

Table 3: Foreign Sector-Level UST Holdings and the Treasury CIP Basis

	Δ log UST					
	Foreign Official		Foreign Bank		Foreign Nonbank	
	Pre-2013	Post-2013	Pre-2013	Post-2013	Pre-2013	Post-2013
	(1)	(2)	(3)	(4)	(5)	(6)
ΔCIP$^{\text{Treas}}$	0.023	-0.075***	-0.081	-0.583*	-0.095	0.394
	(0.023)	(0.024)	(0.074)	(0.333)	(0.095)	(0.387)
Δ log Total UST	-68.743***	0.087	-3.130	-47.229	509.200***	-71.675
	(20.212)	(7.288)	(101.714)	(75.537)	(90.800)	(110.398)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	35	50	35	50	35	50
R^2	0.311	0.551	0.381	0.146	0.390	0.108

Notes: This table reports estimates of equation (13) for the three foreign holder sectors, estimated separately on the pre- and post-2013 subsamples. The dependent variable is the quarterly log change in the sector's holdings of U.S. government debt, from the Sovereign Debt Investor Base of Arslanalp and Tsuda (2014); $\Delta\text{CIP}_t^{\text{Treas}}$ is the quarterly change in the equal-weighted 3-month Treasury CIP basis across the G10 currencies, in basis points. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. The sample is quarterly, 2004Q1–2025Q2. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

same way. To identify *who* is behind the rotation, I turn to sector-level holdings from the Sovereign Debt Investor Base of Arslanalp and Tsuda (2014), which allocates U.S. government debt across six holder sectors: foreign official, foreign bank, and foreign nonbank; and the Federal Reserve, U.S. banks, and U.S. nonbanks. The data are quarterly, from 2004Q1 to 2025Q2.

I estimate equation (11) sector by sector:

$$100 \times \Delta \log \text{UST}_{s,t} = \beta_s \Delta\text{CIP}_t^{\text{Treas}} + \gamma_s \Delta \log \text{TotalUST}_t + \alpha_{s,\text{year}(t)} + \varepsilon_{s,t}, \tag{13}$$

where s indexes the six holder sectors, $\Delta \log \text{UST}_{s,t}$ is the quarterly log change in sector s's holdings of U.S. government debt, and $\Delta\text{CIP}_t^{\text{Treas}}$ is the quarterly change in the equal-weighted G10 Treasury CIP basis. As in Section 3.2, I control for the change in total Treasury debt outstanding and include year fixed effects, and estimate each regression separately on the pre- and post-2013 subsamples.

Table 3 reports the results for the foreign sectors. Columns (1) and (2) cover the foreign official sector. Before 2013, official holdings do not respond to the basis—if anything, the association is positive, though insignificant, consistent with reserve managers accumulating Treasuries irrespective of their price. After 2013, the coefficient turns significantly

Table 4: Domestic Sector-Level UST Holdings and the Treasury CIP Basis

	Δ log UST					
	Fed		U.S. Bank		U.S. Nonbank	
	Pre-2013	Post-2013	Pre-2013	Post-2013	Pre-2013	Post-2013
	(1)	(2)	(3)	(4)	(5)	(6)
ΔCIP^{Treas}	0.155***	0.027	0.015	0.208***	-0.005	0.022
	(0.056)	(0.041)	(0.069)	(0.066)	(0.010)	(0.045)
Δ log Total UST	96.049**	145.843***	245.156***	437.220***	24.903**	33.690
	(41.453)	(48.720)	(78.653)	(74.629)	(11.462)	(21.838)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	35	50	35	50	35	50
R^2	0.593	0.803	0.662	0.843	0.456	0.395

Notes: This table reports estimates of equation (13) for the three domestic holder sectors, estimated separately on the pre- and post-2013 subsamples. The dependent variable is the quarterly log change in the sector's holdings of U.S. government debt, from the Sovereign Debt Investor Base of Arslanalp and Tsuda (2014); ΔCIP_t^{Treas} is the quarterly change in the equal-weighted 3-month Treasury CIP basis across the G10 currencies, in basis points. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. The sample is quarterly, 2004Q1–2025Q2. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

negative: official institutions reduce their holdings when the premium rises. Columns (3) and (4) show a similar reversal for foreign banks—no significant relationship before 2013, a negative and marginally significant one after.[4] Foreign nonbanks, in columns (5) and (6), display no significant response in either period. The foreign retreat from the Treasury premium is thus concentrated in the two sectors at the heart of the canonical account—official reserve managers and global banks—while the foreign nonbank sector was never a systematic player at this margin.

Table 4 turns to the domestic sectors. Columns (1) and (2) cover the Federal Reserve. Before 2013, the coefficient is significantly *positive*: Fed holdings rise together with the premium. Through the lens of the model, this is the signature of a demand shifter—large-scale asset purchases, concentrated in the QE programs of this period, push up both Fed holdings and the price of Treasuries. The pattern disappears after 2013. Columns (3) and (4) show the reverse timing for U.S. banks: no significant relationship before 2013, and a significantly positive one after—banks accumulate Treasuries precisely when the premium rises, the behavior of a buyer whose demand does not yield to price. U.S. nonbanks, in columns (5) and (6), show no significant response in either period. Reading

[4]The foreign bank estimate is significant only at the 10 percent level and carries a large standard error, reflecting the volatility of bank holdings in a short quarterly sample; I read it as suggestive rather than sharp.

Tables 3 and 4 together: the positive comovement that sustains the premium migrates from the Federal Reserve to the U.S. banking sector around 2013, just as foreign officials and banks turn price-sensitive. The aggregate rotation documented in Section 3.2 is the sum of these sectoral movements.

3.4 Structural Evidence from Sign Restrictions

The regression evidence so far identifies which side's demand *dominates* at the margin, but by construction it cannot go further: the projection coefficient is a variance-weighted blend of the two configurations, so it reveals the sign of the balance between foreign and domestic demand shocks without separating their individual contributions to the premium. To disentangle them, I estimate a three-variable Bayesian VAR identified with sign restrictions, recovering foreign demand, domestic demand, and Treasury supply shocks. The endogenous variables are the Treasury CIP basis, log foreign Treasury holdings, and log U.S. bank Treasury holdings. I use bank holdings rather than a broader domestic aggregate for two reasons. First, the sector-level evidence identifies U.S. banks as the only domestic private sector whose demand comoves with the premium, so a residual aggregate would dilute the relevant variation with the unresponsive nonbank sector. Second, the identified domestic shock then carries a sharp interpretation—bank demand specifically—which is the object of the mechanism analysis in Section 4. The sign restrictions require only the direction of responses, not market clearing across the three variables.

To derive the sign restrictions, I return to the model of Section 2. Substituting the equilibrium basis into the two demand curves expresses all three equilibrium objects in terms of the primitives:

$$\text{CIP}_t = \frac{\alpha_t^F + \alpha_t^D - S_t}{b^F + b^D}, \qquad q_t^F = \frac{b^D \alpha_t^F - b^F \alpha_t^D + b^F S_t}{b^F + b^D}, \qquad q_t^D = \frac{b^F \alpha_t^D - b^D \alpha_t^F + b^D S_t}{b^F + b^D}. \tag{14}$$

Defining the structural shocks as innovations to the primitives—$\varepsilon_t^F = \Delta\alpha_t^F$, $\varepsilon_t^D = \Delta\alpha_t^D$, $\varepsilon_t^S = \Delta S_t$—the model delivers the impact responses

$$\Delta y_t = \frac{1}{b^F + b^D} \begin{bmatrix} 1 & 1 & -1 \\ b^D & -b^F & b^F \\ -b^D & b^F & b^D \end{bmatrix} \begin{bmatrix} \varepsilon_t^F \\ \varepsilon_t^D \\ \varepsilon_t^S \end{bmatrix}, \qquad y_t \equiv \begin{bmatrix} \text{CIP}_t \\ q_t^F \\ q_t^D \end{bmatrix}. \tag{15}$$

Because the model is static, I take from it only the signs of these impact responses, and let

the VAR estimate the dynamics. Since $b^F, b^D > 0$, the sign pattern of the impact matrix is unambiguous, with one exception discussed below. Mapping q_t^D into U.S. bank holdings requires only that bank demand share the sign responses of domestic demand—which is what the sector-level evidence establishes.

I estimate

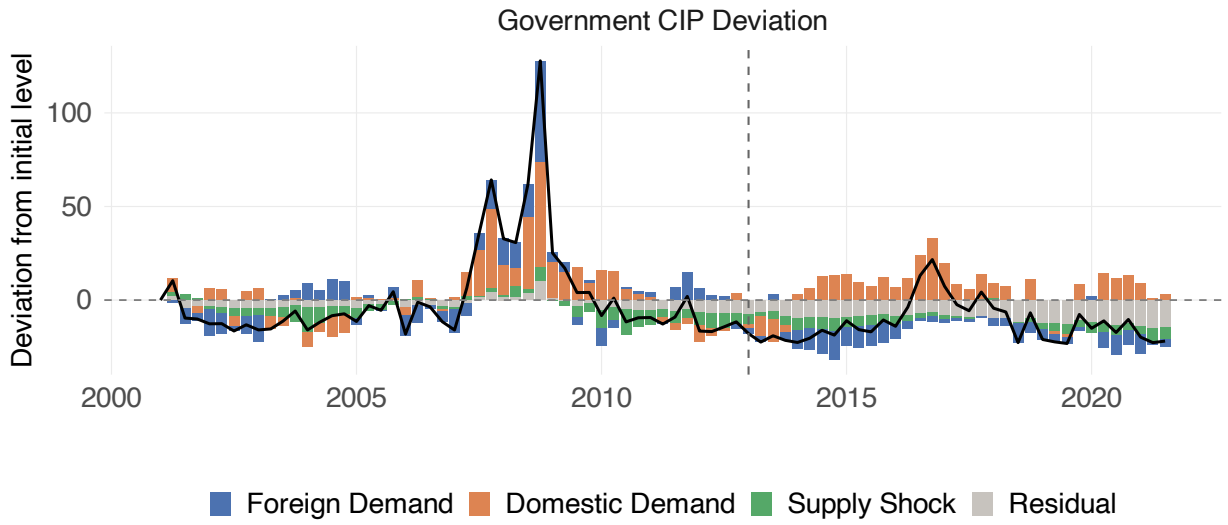
$$y_t = c + \sum_{\ell=1}^{4} A_\ell y_{t-\ell} + \underbrace{\begin{bmatrix} + & + & ? \\ + & - & + \\ - & + & + \end{bmatrix}}_{\text{Impact sign restrictions}} \begin{bmatrix} \varepsilon_t^F \\ \varepsilon_t^D \\ \varepsilon_t^S \end{bmatrix}, \qquad y_t \equiv \begin{bmatrix} \text{Treasury CIP basis}_t \\ \log(\text{Foreign UST holdings}_t) \\ \log(\text{U.S. bank UST holdings}_t) \end{bmatrix}, \tag{16}$$

where the restrictions are imposed on impact. A foreign demand shock raises the basis and foreign holdings while lowering bank holdings; a domestic demand shock raises the basis and bank holdings while crowding out foreign holdings; a supply shock raises both holdings, as both investors must absorb the new issuance in equilibrium. The one departure from equation (15) is the response of the basis to a supply shock, which the model signs as negative but I leave unrestricted: in the data, large issuance episodes coincide with fiscal news and flight-to-safety episodes that move the basis through channels outside the model, and leaving the cell open lets the data decide.

I estimate the VAR at the quarterly frequency, with the basis measured as the quarterly average of the monthly series and holdings entering in log levels, using four lags. Estimation is Bayesian with a Minnesota prior under the default hyperparameters of the `BVAR` package (Kuschnig and Vashold, 2021); I draw 6,000 posterior samples, discard the first 3,000 as burn-in, and retain the draws for which an admissible sign-restricted rotation is found. Historical decompositions are computed draw by draw, and I report posterior medians.

Figure 6 plots the historical decomposition, attributing the movements of the basis to the three identified shocks. Before 2013, neither demand shock plays a systematic one-directional role: foreign and domestic contributions alternate in sign, and during the global financial crisis both push the basis sharply upward—a flight to the safety of Treasuries by investors on both sides. After 2013, a stable pattern emerges: domestic demand shocks persistently push the premium up, while foreign demand shocks pull it down. The structural decomposition thus corroborates the regression evidence of Section 3.2, and adds to it: the reduced-form comovement identified only which side dominates on

Figure 6: Historical Decomposition of the Treasury CIP Basis



Notes: This figure plots the historical decomposition of the Treasury CIP basis from the sign-restricted BVAR in equation (16). The solid line is the observed basis, expressed as the deviation from its level at the start of the estimation sample. Bars show the posterior median contribution of each identified shock—foreign demand, domestic demand, and Treasury supply—in each quarter; the residual collects the deterministic component and the effect of initial conditions. The vertical dashed line marks 2013. The sample is quarterly, 2001Q1–2021Q3.

net, whereas the decomposition shows both margins operating simultaneously—domestic demand sustaining the premium, foreign demand leaning against it.

4 Mechanism: Post-Crisis Liquidity Regulation

Why did U.S. banks emerge as the new marginal buyers of Treasuries, and why around 2013? This section locates the answer in the Liquidity Coverage Ratio, finalized under Basel III in January 2013, which built a regulatory demand for Treasuries into the balance sheets of large U.S. banks.

4.1 Institutional Background: Basel III and HQLA Demand

The global financial crisis exposed a gap in the pre-crisis regulatory framework. In the words of the Basel Committee, during the liquidity phase of the crisis "many banks—despite adequate capital levels—still experienced difficulties because they did not manage their liquidity in a prudent manner" (Basel Committee on Banking Supervision, 2013).

Basel III responded by adding minimum liquidity standards alongside the traditional capital requirements: the Liquidity Coverage Ratio (LCR), which targets short-term resilience, and the Net Stable Funding Ratio, which targets the stability of funding over a one-year horizon. This paper focuses on the LCR, the standard that generates direct demand for holdings of liquid assets:

$$\text{LCR} = \frac{\text{High-Quality Liquid Assets (HQLA)}}{\text{Net Cash Outflows over 30 days}} \geq 100\%. \tag{17}$$

The requirement obliges banks to hold a stock of unencumbered liquid assets sufficient to survive a 30-day funding stress. The Basel Committee published the original standard in December 2010 and the revised, final text in January 2013, with the minimum phased in from 60 percent in January 2015 to 100 percent in January 2019. In the United States, the regulatory agencies proposed a domestic implementation in November 2013 and finalized it in September 2014, applying the requirement to bank holding companies with $50 billion or more in total assets.[5]

The rule's bite for Treasury demand comes from the definition of HQLA. The framework divides eligible assets into tiers. Level 1 assets—cash, central bank reserves, and marketable securities issued or guaranteed by sovereigns carrying a zero risk weight—enter the ratio without haircut or limit. Level 2 assets, comprising riskier public-sector and certain private-sector securities, enter at a haircut and may not exceed 40 percent of total HQLA.[6] The hierarchy makes Level 1 assets the workhorse of compliance. For a U.S. bank, the Level 1 menu consists of reserve balances, U.S. Treasuries—which qualify unconditionally—and certain foreign sovereign securities, which qualify only subject to marketability requirements and, in practice, only insofar as they match the currency of the bank's stressed outflows.[7] Since the aggregate supply of reserves is fixed by the Federal

[5]The U.S. implementation applies the full LCR to bank holding companies with $250 billion or more in total consolidated assets or $10 billion or more in on-balance-sheet foreign exposure, and a modified LCR—calibrated at 70 percent of the full requirement—to those with $50 billion or more in total assets that fall below these thresholds. The $50 billion threshold I use thus captures all banks subject to some form of the LCR, pooling the two intensity tiers. The 2019 tailoring rule subsequently raised the applicability thresholds; my identification relies on the original 2014 regime, with treatment intensity fixed by 2012Q4 balance sheets.

[6]In the U.S. implementation, Level 2A assets (mainly GSE securities) carry a 15 percent haircut, and Level 2B assets (certain corporate debt and equities) a 50 percent haircut, with Level 2B further capped at 15 percent of HQLA. Notably, the U.S. rule excludes municipal securities from HQLA.

[7]12 CFR 249.20(a). Treasuries are a standalone Level 1 category with no additional requirements; zero-risk-weight foreign sovereign debt must be liquid and readily marketable with a proven record in stressed markets, and non-zero-risk-weight sovereign debt qualifies only against net cash outflows in the issuing jurisdiction. Since the stressed outflows of U.S. banks are overwhelmingly dollar-denominated, foreign sovereign debt is not a practical substitute at the margin.

Reserve, Treasuries are the Level 1 asset that the U.S. banking system can accumulate at the margin.

The critical feature for this paper is the national structure of Level 1 eligibility. The framework guarantees Level 1 status to a bank's own sovereign regardless of its risk weight, and the requirement is monitored currency by currency, so that the natural Level 1 asset for a bank is the government bond denominated in the currency of its stressed outflows. A Japanese bank can satisfy its LCR with JGBs and a German bank with Bunds; a U.S. bank's dollar outflows point to Treasuries. Liquidity regulation thus created new demand for government bonds everywhere, but with an asymmetry in where that demand points. U.S. Treasuries qualify as Level 1 for any bank, so nothing prevents foreign banks from meeting the requirement with Treasuries; but foreign banks hold a guaranteed domestic alternative for the home-currency outflows that dominate their balance sheets, whereas for U.S. banks Treasuries are the only Level 1 asset the system can accumulate against dollar outflows. Regulatory demand for Treasuries should therefore be concentrated in—though not exclusive to—the U.S. banking sector. This is the shape of the rotation documented above: U.S. banks emerge as price-insensitive accumulators, while foreign banks, facing no comparable constraint, do not. The regulatory account also carries a sharper, testable implication within the U.S. banking sector: the banks for which the new requirement was most binding—those that entered the regime with the least HQLA—should be the ones accumulating Treasuries most strongly when the premium rises, and only if they are large enough to be covered by the rule. The next section takes this prediction to bank-level data.

4.2 Bank-Level Evidence: HQLA Scarcity and Treasury Accumulation

To test this prediction, I assemble bank-level balance sheets from FR Y-9C filings for bank holding companies and Call Reports for commercial banks, covering 2001Q1 to 2023Q4 at the quarterly frequency. To avoid double counting, I consolidate the data at the level of the top-tier holding company, consistent with the level at which the LCR applies: banks whose top holder files the FR Y-9C are represented by the holding company's consolidated filing, and only independent banks enter at the Call Report level.

The empirical design exploits two dimensions of variation. First, exposure to the rule: only banks with $50 billion or more in total assets are subject to the LCR, so smaller banks provide a placebo group that faces the same Treasury market but no regulatory requirement. Second, the intensity of the constraint within covered banks: banks that entered the regime holding little HQLA had the most ground to make up, so the regulatory

Table 5: Summary Statistics: U.S. Bank Panel

	Assets ≥ $50B			Assets < $50B		
	Mean	Median	N	Mean	Median	N
Log assets (2012Q4)	19.05	18.78	36	12.63	12.61	2,742
HQLA ratio (2012Q4)	0.108	0.068	36	0.173	0.132	2,742
Treasuries / assets	0.020	0.007	2,672	0.013	0.000	162,355
Cash / assets	0.089	0.049	1,747	0.077	0.046	115,609
Agency securities / assets	0.018	0.005	1,949	0.075	0.040	133,729
Loans / assets	0.525	0.609	2,672	0.615	0.655	162,355
Equity capital / assets	0.113	0.107	2,672	0.135	0.108	162,355

Notes: The unit of observation is the top-tier holding company (FR Y-9C) or, for independent banks, the commercial bank (Call Reports); the sample is quarterly, 2001Q1–2023Q4. Size groups are defined by total assets as of 2012Q4. The HQLA ratio is the sum of cash, U.S. Treasury holdings, and agency securities, scaled by total assets, measured as of 2012Q4. For the 2012Q4-fixed variables (log assets, HQLA ratio), N counts entities; for the remaining rows, N counts entity-quarter observations. Ratios are relative to total assets.

account predicts that their Treasury accumulation should respond most strongly to the premium after 2013. Table 5 reports summary statistics for the two size groups. Notably, the banks about to become subject to the rule entered it with substantially *lower* HQLA ratios than exempt banks—the requirement was binding on arrival.

I estimate the following regression separately for each size group and each subperiod:

$$100 \times \Delta \operatorname{asinh}(\mathrm{UST}_{it}) = \beta \left(\mathrm{HQLAScarcity}_i^{2012Q4} \times \Delta \mathrm{CIP}_t^{\mathrm{Treas}} \right) + \alpha_i + \tau_t + \varepsilon_{it}, \tag{18}$$

where UST_{it} denotes bank i's U.S. Treasury holdings in quarter t, transformed by the inverse hyperbolic sine to accommodate the many banks with zero holdings, and $\Delta \mathrm{CIP}_t^{\mathrm{Treas}}$ is the quarterly change in the equal-weighted G10 Treasury CIP basis. $\mathrm{HQLAScarcity}_i^{2012Q4}$ is the negative of the bank's HQLA ratio—cash, Treasury, and agency securities holdings, scaled by total assets—demeaned within the estimation sample, so that higher values indicate scarcer liquid assets. The measure is fixed at 2012Q4, the last quarter before the Basel Committee's final LCR text and the U.S. implementation proposal. Banks had known since the December 2010 publication of the original standard that a liquidity requirement was coming, so 2012Q4 balance sheets may already embed some anticipatory adjustment; but such adjustment compresses the cross-sectional variation in measured scarcity—the most exposed banks would have closed part of their gap in advance—and therefore attenuates β toward zero. Fixing the measure before the final text and the U.S. proposal ensures, at a minimum, that scarcity is not a response to the finalized rule that defines the

Table 6: Domestic Bank-Level UST Holdings and the Treasury CIP Basis

	Δ asinh(UST)			
	Total Assets $\geq$ \$50B		Total Assets $<$ \$50B	
	Pre-2013	Post-2013	Pre-2013	Post-2013
	(1)	(2)	(3)	(4)
$\text{HQLAScarcity}^{2012Q4} \times \Delta\text{CIP}^{\text{Treas}}$	-0.808**	2.146**	0.105	-0.010
	(0.359)	(1.048)	(0.180)	(0.396)
BHC/Bank FE	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
Observations	1,221	1,451	88,913	73,380
Within R^2	0.000	0.001	0.000	0.000

Notes: This table reports estimates of equation (18), separately by size group and subperiod. The dependent variable is the quarterly change in the inverse hyperbolic sine of the entity's U.S. Treasury holdings. $\text{HQLAScarcity}_i^{2012Q4}$ is the negative of the demeaned HQLA ratio (cash, Treasury, and agency securities over total assets) fixed at 2012Q4; $\Delta\text{CIP}_t^{\text{Treas}}$ is the quarterly change in the equal-weighted 3-month Treasury CIP basis across the G10 currencies, in basis points. The unit of observation is the top-tier holding company (FR Y-9C) or, for independent banks, the commercial bank (Call Reports); size groups are defined by 2012Q4 total assets. Quarter fixed effects absorb all aggregate variation, including the level of $\Delta\text{CIP}_t^{\text{Treas}}$ itself. Standard errors are two-way clustered by entity and quarter. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

post-2013 period. Bank fixed effects α_i absorb permanent differences in Treasury demand across banks, and quarter fixed effects τ_t absorb all aggregate shocks—including the level of the premium itself—so that β is identified purely from the differential response of scarce-HQLA banks. The regulatory account predicts $\beta > 0$ after 2013 for banks subject to the rule, and no effect for exempt banks in either period.

Table 6 reports the results. Columns (1) and (2) cover banks subject to the LCR. After 2013, the interaction is significantly positive: among covered banks, those that entered the regime with scarcer HQLA accumulate Treasuries more strongly when the premium rises—regulatory demand overriding price. Before 2013, the same interaction is significantly *negative*: scarce-HQLA banks were then the more price-sensitive holders, substituting away from Treasuries when they grew expensive. The regulation did not merely add demand at the margin; it reversed the sign of these banks' response to the price of Treasuries. This reversal is itself informative about the mechanism. Before the rule, holding few liquid assets was a portfolio choice—the revealed preference of banks with the least appetite for low-yielding safe assets—and these are precisely the banks a binding requirement would constrain most. The banks that were most price-sensitive before 2013 became the most price-insensitive after, because the LCR converted their distaste for liquid assets into a regulatory deficit.

Columns (3) and (4) show the placebo: among banks below the $50 billion threshold, the interaction is small and insignificant in both periods. Exempt banks with scarce HQLA display no differential response to the premium, before or after 2013. The pattern is thus specific to the banks the rule covers and to the period after it took effect. Alternative explanations struggle with this specificity: a story about bank size cannot explain the sign reversal at 2013, a general post-crisis flight to safety should appear among exempt banks as well, and any aggregate trend in Treasury demand is absorbed by the quarter fixed effects. A regulatory mechanism, by contrast, predicts each cell of the table. The bank-level evidence thus ties the aggregate rotation to its source: the demand now sustaining the Treasury premium originates in the regulatory constraint of large U.S. banks.

5 Discussion: Macroeconomic Implications

The evidence assembled above traces a single arc. The comovement between the Treasury premium and foreign holdings turns negative around 2013—the year the LCR was finalized; the rotation lives in the component of the basis specific to government bonds, not in the general cost of dollar intermediation; sector-level data locate the retreat among foreign officials and banks and the advance among U.S. banks; and within the U.S. banking sector, the accumulation is concentrated in precisely the banks the regulation binds most. In the language of the framework, the LCR moved both determinants of the intensity of domestic non-pecuniary demand, $\nu^D = \text{Var}(\Delta\alpha^D)/b^D$. It lowered b^D: a bank at its requirement cannot sell Treasuries when they grow expensive, so regulated holdings stop responding to price. And it raised $\text{Var}(\Delta\alpha^D)$: the required stock of HQLA moves with each bank's projected outflows, so the regulation itself became a recurring source of shifts in domestic demand. A rise in ν^D relative to ν^F is exactly what the sign of the comovement identifies, and its reversal after 2013 is the observable footprint of this transformation. Through the lens of the model, it is this regulatory demand that now sustains the premium at the margin, with foreign holdings serving as the accommodating side. This section draws out what the rotation implies for the nature of the U.S. funding advantage, for the country's debt capacity, and for financial stability.

First, the rotation recasts the nature of the U.S. funding advantage. In the canonical account, the premium is sustained by foreign investors "that value the convenience of dollar securities" (Eichengreen, 2011)—willing payers whose demand delivers cheap funding to the United States from abroad. The evidence indicates that this configuration no longer holds: foreign investors now behave as price-sensitive sellers into a rising premium, and

the demand that sustains it originates in the regulatory requirements of large domestic banks. Support that once came from investors who wanted Treasuries now comes from institutions that are required to hold them. Through the lens of the model, this shifts the premium from the family of external subsidies toward the family of financial repression—a funding advantage extracted from the regulated domestic banking sector rather than granted by the rest of the world. I emphasize what this claim is and is not. The comovement evidence identifies whose demand sustains the premium at the margin; it does not measure the welfare transfer itself, which depends on inframarginal holdings and on how far banks' private valuation of Treasuries falls short of the premium they pay—objects the covariance does not identify. The claim, rather, is that the *precondition* of the canonical interpretation—price-insensitive foreign demand as the marginal support—has failed, and that the institution now occupying that position holds Treasuries under compulsion.

Second, the rotation bears on the debt capacity of the United States. The demand that now absorbs Treasuries at the margin differs from the demand it replaced in a way that matters for issuance. Convenience-based foreign demand was, in principle, open-ended: reserve managers and global banks could scale their holdings with the growth of world savings and dollar trade. Regulatory demand is not. A bank's required HQLA is anchored to its projected outflows—ultimately to the size of its balance sheet—so the demand the LCR generates grows with the U.S. banking sector, not with the U.S. government's need to borrow. Marginal demand for Treasuries has thus become both narrower, concentrated in one regulated sector, and capped, tied to a regulatory formula rather than to an appetite for convenience. Neither property binds visibly in normal times, but both matter for large issuance: an expansion of supply that once would have been met by elastic foreign absorption must now be placed with buyers whose regulatory demand is satiated at a finite level, implying that the same fiscal expansion moves the premium—and marginal borrowing costs—by more than it once did.

Third, the rotation carries implications for financial stability. When foreign investors absorbed Treasuries at the margin, a shock to the Treasury market was partly exported: the rest of the world shared in the adjustment of prices and quantities. With domestic banks as the marginal absorbers, that adjustment now falls on balance sheets inside the U.S. financial system—and on a sector whose capacity to absorb is constrained by the very regulation that created its demand. A bank that runs down its HQLA in a stress episode sees its ratio fall toward the regulatory floor, triggering supervisory scrutiny; in practice, banks treat the requirement as a minimum to be defended rather than a buffer to be spent. The marginal buyers of Treasuries are thus the institutions most reluctant to expand their

balance sheets when it matters most. The March 2020 episode is instructive here: when dealer and bank balance sheets became the binding constraint, Treasuries briefly carried an inconvenience yield (He et al., 2022), a glimpse of how a domestically intermediated Treasury market transmits stress. The concentration of marginal absorption in regulated banks thus creates a channel through which Treasury market shocks and banking sector conditions reinforce each other, rather than dissipating abroad.

6 Conclusion

Who sustains the U.S. Treasury premium? For decades, the presumptive answer was the rest of the world: foreign investors who valued the convenience of Treasuries paid a premium to hold them, delivering the funding advantage known as America's exorbitant privilege. This paper shows that the answer has changed. Exploiting the sign of the comovement between the Treasury CIP basis and foreign Treasury holdings—which, in a simple two-country framework, identifies whose non-pecuniary demand dominates the premium at the margin—I document a rotation around 2013: foreign investors, once the quiet support beneath the premium, now sell into its rises, and the demand sustaining it originates instead within the United States. Decomposing the basis shows that the rotation is specific to Treasuries rather than to dollar assets generally; sector-level data attribute it to the retreat of foreign officials and foreign banks and the emergence of U.S. banks; and bank-level data tie it to the banks covered by the Liquidity Coverage Ratio—precisely those that entered the regime short of qualifying liquid assets. A premium once granted by foreign investors who wanted Treasuries is now sustained by domestic institutions required to hold them—a shift, through the lens of the model, from external subsidy toward financial repression, with marginal Treasury demand now narrower, anchored to regulatory formulas, and resident on regulated domestic balance sheets.

Two caveats delimit the claim. The comovement evidence identifies the marginal support of the premium, not the welfare transfer it generates; measuring the incidence of the new regime—how far banks' private valuation of Treasuries falls short of what they pay—requires structure beyond the covariance and is a natural next step. And the analysis concerns the Treasury premium, one pillar of the broader dollar privilege; whether parallel rotations operate in other jurisdictions' sovereign markets, where the same regulation directs bank demand toward other sovereigns' debt, is an open question that the framework here is equipped to address.

References

Arslanalp, S. and Tsuda, T. (2014). Tracking global demand for advanced economy sovereign debt. *IMF Economic Review*, 62(3):430–464.

Atkeson, A., Heathcote, J., and Perri, F. (2025). The end of privilege: A reexamination of the net foreign asset position of the united states. *American Economic Review*, 115(7):2151–2206.

Avdjiev, S., Du, W., Koch, C., and Shin, H. S. (2019). The dollar, bank leverage, and deviations from covered interest parity. *American Economic Review: Insights*, 1(2):193–208.

Basel Committee on Banking Supervision (2013). Basel iii: The liquidity coverage ratio and liquidity risk monitoring tools. Technical report, Bank for International Settlements.

Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A., and Nguyen, T. (2022). Patterns of invoicing currency in global trade: New evidence. *Journal of international economics*, 136:103604.

Chaudhary, M., Fu, J. Z., and Zhou, H. (2024). Anatomy of the treasury market: Who moves yields? *Olin Business School Center for Finance & Accounting Research Paper*, (2024/14).

Du, W., Im, J., and Schreger, J. (2018a). The us treasury premium. *Journal of International Economics*, 112:167–181.

Du, W., Keerati, R., and Schreger, J. (2026). Decoupling dollar and treasury privilege. Technical report, National Bureau of Economic Research.

Du, W. and Schreger, J. (2022). Cip deviations, the dollar, and frictions in international capital markets. In *Handbook of International Economics*, volume 6, pages 147–197. Elsevier.

Du, W., Tepper, A., and Verdelhan, A. (2018b). Deviations from covered interest rate parity. *The Journal of Finance*, 73(3):915–957.

Duffie, D., Fleming, M. J., Keane, F. M., Nelson, C., Shachar, O., and Van Tassel, P. (2023). Dealer capacity and us treasury market functionality. *FRB of New York Staff Report*, (1070).

Eichengreen, B. (2011). *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*. Oxford University Press.

Gourinchas, P.-O. and Rey, H. (2007). From world banker to world venture capitalist: Us external adjustment and the exorbitant privilege. In *G7 current account imbalances: sustainability and adjustment*, pages 11–66. University of Chicago Press.

Gourinchas, P.-O. and Rey, H. (2022). Exorbitant privilege and exorbitant duty.

He, Z., Nagel, S., and Song, Z. (2022). Treasury inconvenience yields during the covid-19 crisis. *Journal of Financial Economics*, 143(1):57–79.

Ilzetzki, E., Reinhart, C. M., and Rogoff, K. S. (2019). Exchange arrangements entering the twenty-first century: Which anchor will hold? *The Quarterly Journal of Economics*, 134(2):599–646.

Jiang, Z., Krishnamurthy, A., and Lustig, H. (2021). Foreign safe asset demand and the dollar exchange rate. *The Journal of Finance*, 76(3):1049–1089.

Jiang, Z., Richmond, R. J., and Zhang, T. (2024). A portfolio approach to global imbalances. *The Journal of Finance*, 79(3):2025–2076.

Krishnamurthy, A. and Vissing-Jorgensen, A. (2012). The aggregate demand for treasury debt. *Journal of Political Economy*, 120(2):233–267.

Kuschnig, N. and Vashold, L. (2021). Bvar: Bayesian vector autoregressions with hierarchical prior selection in r. *Journal of Statistical Software*, 100:1–27.

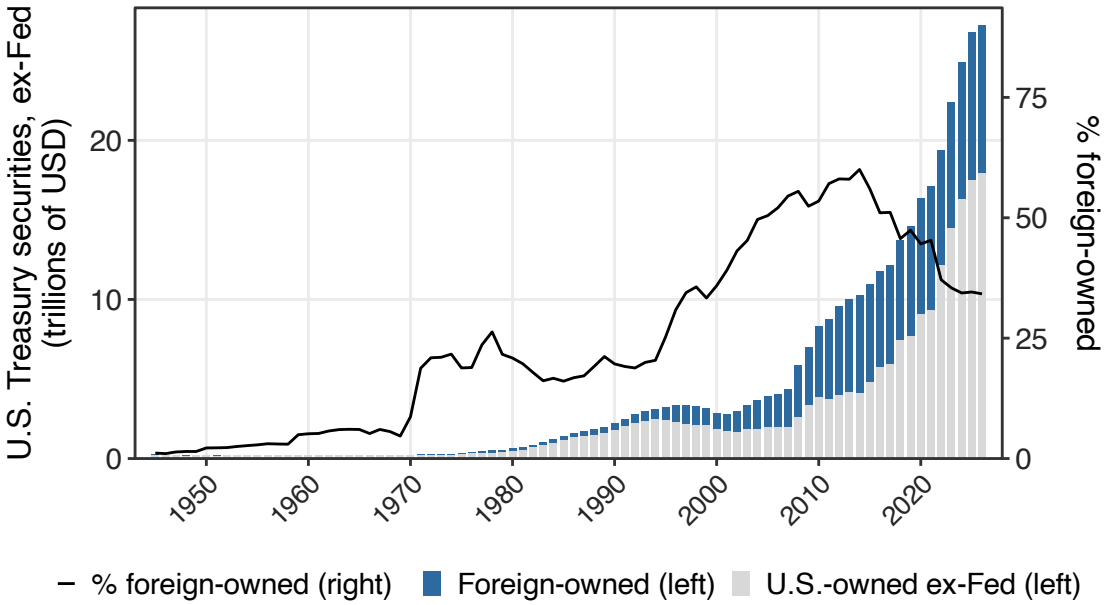
Maggiori, M., Neiman, B., and Schreger, J. (2020). International currencies and capital allocation. *Journal of Political Economy*, 128(6):2019–2066.

Sundaresan, S. and Xiao, K. (2024). Liquidity regulation and banks: Theory and evidence. *Journal of Financial Economics*, 151:103747.

Tabova, A. M. and Warnock, F. E. (2025). Exorbitant changes in three parts. Technical report, National Bureau of Economic Research.

A Robustness Checks

Figure A.1: Foreign Share of U.S. Treasury Holdings, Excluding the Federal Reserve



Notes: Bars show U.S. Treasury securities held by the public excluding those held by the Federal Reserve, in trillions of dollars, split into holdings of the rest of the world and of U.S. residents (left axis); U.S. holdings are computed as total publicly held debt less foreign holdings and less Federal Reserve holdings, so that the denominator reflects only privately held debt. The solid line shows the foreign-owned share of this ex-Fed total in percent (right axis). Year-end values of quarterly data. *Source:* Financial Accounts of the United States (Z.1), retrieved from FRED.

Table A.1: Foreign Short-term UST Holdings and the Treasury CIP Basis

	Δ log Foreign Short-term UST				
	Pre-2013	Post-2013	Interaction	Excl. COVID	Controls
	(1)	(2)	(3)	(4)	(5)
ΔCIP$^{\text{Treas}}$	0.012	-0.045*	0.018	0.017	0.026
	(0.020)	(0.027)	(0.017)	(0.018)	(0.019)
ΔCIP$^{\text{Treas}}$ $\times$ Post-2013			-0.059*	-0.115**	-0.078**
			(0.032)	(0.049)	(0.038)
Δ log Total UST	58.493***	43.146***	50.284***	51.560***	46.446***
	(8.365)	(3.915)	(4.511)	(5.971)	(4.947)
VIX					0.083**
					(0.040)
Dollar Index					0.129*
					(0.075)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	143	150	293	227	234
R^2	0.583	0.497	0.547	0.544	0.610

Notes: This table reports estimates of equation (11), replacing the dependent variable with the monthly log change in foreign portfolio holdings of *short-term* U.S. Treasury securities. $\text{CIP}_t^{\text{Treas}}$ is the monthly change in the equal-weighted three-month Treasury CIP basis vis-à-vis the G10 currencies, in basis points. Post-2013 is an indicator equal to one from January 2013 onward. Columns (1) and (2) split the sample at 2013; columns (3)–(5) use the full sample with the interaction term. Column (4) ends the sample in December 2019 to exclude the COVID-19 period. Column (5) additionally controls for the VIX and the broad dollar index. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. The sample is monthly, 2001M2–2025M6. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.2: Foreign Long-term UST Holdings and the Treasury CIP Basis

	Δ log Foreign Long-Term UST				
	Pre-2013	Post-2013	Interaction	Excl. COVID	Controls
	(1)	(2)	(3)	(4)	(5)
ΔCIP$^{\text{Treas}}$	-0.006	-0.040**	-0.006	-0.006	-0.004
	(0.005)	(0.018)	(0.005)	(0.005)	(0.005)
ΔCIP$^{\text{Treas}}$ $\times$ Post-2013			-0.037**	-0.015	-0.039**
			(0.019)	(0.012)	(0.017)
Δ log Total UST	76.777***	36.290	69.597***	74.708***	65.198***
	(13.967)	(36.746)	(13.583)	(13.809)	(15.148)
VIX					-0.005
					(0.024)
Dollar Index					-0.056*
					(0.029)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	143	150	293	227	234
R^2	0.286	0.187	0.316	0.350	0.339

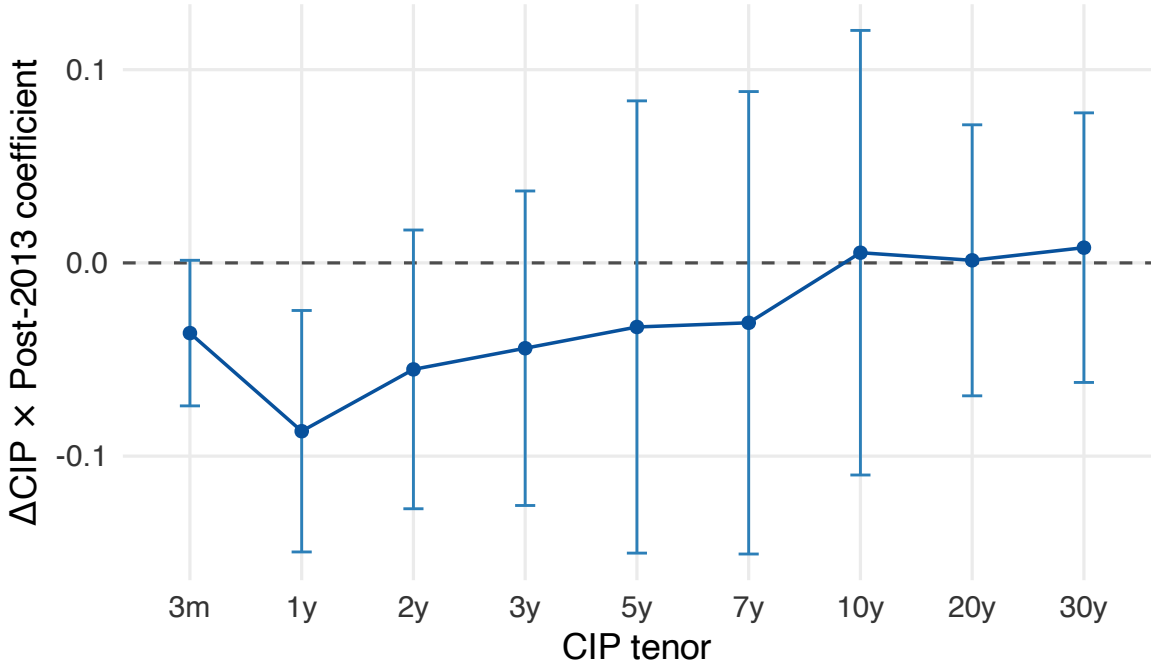
Notes: This table reports estimates of equation (11), replacing the dependent variable with the monthly log change in foreign portfolio holdings of *long-term* U.S. Treasury securities. $\text{CIP}_t^{\text{Treas}}$ is the monthly change in the equal-weighted three-month Treasury CIP basis vis-à-vis the G10 currencies, in basis points. Post-2013 is an indicator equal to one from January 2013 onward. Columns (1) and (2) split the sample at 2013; columns (3)–(5) use the full sample with the interaction term. Column (4) ends the sample in December 2019 to exclude the COVID-19 period. Column (5) additionally controls for the VIX and the broad dollar index. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. The sample is monthly, 2001M2–2025M6. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.3: Foreign UST Holdings and the Treasury CIP Basis: 1-Year Tenor

	Δ log ForeignUST				
	Pre-2013	Post-2013	Interaction	Excl. COVID	Controls
	(1)	(2)	(3)	(4)	(5)
ΔCIP$^{\text{Treas}}$	0.005	-0.072***	0.010	0.006	0.015
	(0.014)	(0.024)	(0.015)	(0.014)	(0.017)
ΔCIP$^{\text{Treas}}$ $\times$ Post-2013			-0.087***	-0.037	-0.095***
			(0.032)	(0.027)	(0.032)
Δ log Total UST	53.086***	16.344	42.885***	50.613***	40.697***
	(7.065)	(11.670)	(7.755)	(6.387)	(7.936)
VIX					0.002
					(0.030)
Dollar Index					-0.029
					(0.032)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	143	150	293	227	234
R^2	0.376	0.203	0.355	0.403	0.390

Notes: This table re-estimates equation (11) using the 1-year Treasury CIP basis in place of the 3-month baseline. The dependent variable is the monthly log change in total foreign portfolio holdings of U.S. Treasuries; $\Delta\text{CIP}_t^{\text{Treas}}$ is the monthly change in the equal-weighted 1-year Treasury CIP basis vis-à-vis the G10 currencies, in basis points. Post-2013 is an indicator equal to one from January 2013 onward. Columns (1) and (2) split the sample at 2013; columns (3)–(5) use the full sample with the interaction term. Column (4) ends the sample in December 2019 to exclude the COVID-19 period. Column (5) additionally controls for the VIX and the broad dollar index. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure A.2: The Interaction Coefficient Across the CIP Term Structure



Notes: This figure plots the estimated coefficient on ΔCIP × Post-2013 from the interaction specification in column (3) of Table 1, re-estimated separately at each tenor of the Treasury CIP basis. The x-axis denotes the tenor, from 3-month to 30-year; at each tenor, ΔCIP is the monthly change in the equal-weighted Treasury CIP basis across the G10 currencies, in basis points. The dependent variable is the monthly log change in total foreign portfolio holdings of U.S. Treasuries, scaled by 100. All regressions control for the log change in total marketable Treasury debt outstanding and include year fixed effects. Error bars denote 95% confidence intervals based on Newey–West standard errors. The horizontal dashed line marks zero.

Table A.4: Foreign UST Holdings and Alternative Credit Spreads

	Δ log ForeignUST			
	OIS − Treasury		Aaa − Treasury	
	Pre-2013	Post-2013	Pre-2013	Post-2013
	(1)	(2)	(3)	(4)
ΔSpread	0.000	-0.037*	0.026***	-0.010
	(0.009)	(0.021)	(0.009)	(0.016)
Δ log Total UST	53.183***	6.479	47.395***	8.617
	(6.447)	(13.628)	(7.178)	(17.674)
Year FE	Yes	Yes	Yes	Yes
Observations	132	159	143	159
R^2	0.350	0.139	0.403	0.127

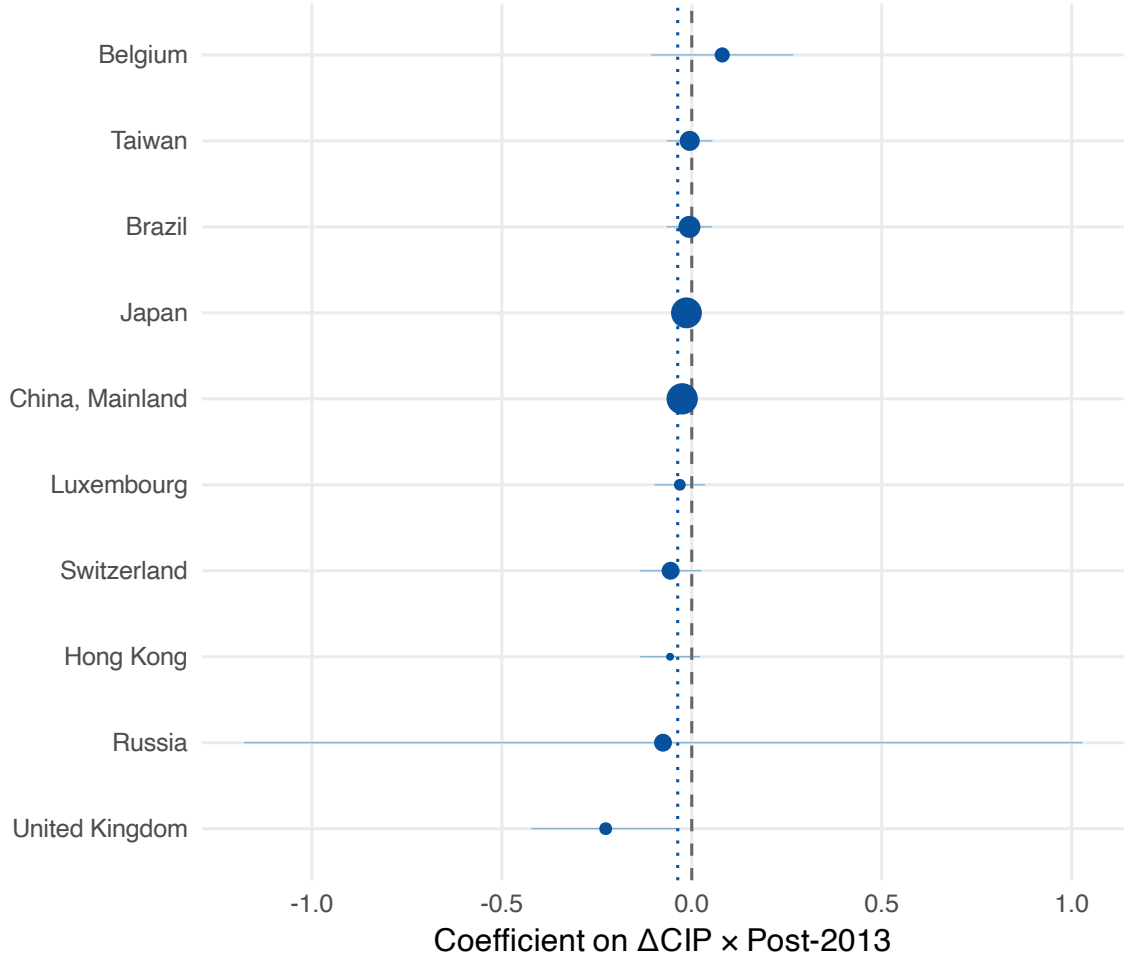
Notes: This table re-estimates equation (11) on the pre- and post-2013 subsamples, replacing the Treasury CIP basis with two alternative domestic credit spreads. Columns (1)–(2) use the OIS–Treasury spread (He, Nagel, and Song, 2022): the monthly change in the 3-month OIS rate less the 3-month Treasury bill (CMT) yield. Columns (3)–(4) use the Aaa–Treasury spread: the monthly change in the Moody's Seasoned Aaa corporate bond yield less the long-term Treasury (CMT) yield. The dependent variable is the monthly log change in total foreign portfolio holdings of U.S. Treasuries. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.5: FRBNY Custody Holdings and the Treasury CIP Basis

	Δ log CustodyUST	
	Pre-2013	Post-2013
	(1)	(2)
ΔCIP$^{\text{Treas}}$	-0.007	-0.031*
	(0.009)	(0.017)
Δ log Total UST	8.133	14.959*
	(20.054)	(8.426)
Year FE	Yes	Yes
Observations	65	150
R^2	0.368	0.147

Notes: This table re-estimates equation (11) on the pre- and post-2013 subsamples, using FRBNY custody holdings of marketable U.S. Treasury securities (FRED series WMTSECL1, Wednesday level, monthly) in place of TIC SLT foreign portfolio holdings. The dependent variable is the monthly log change in custody holdings; $\Delta\text{CIP}_t^{\text{Treas}}$ is the monthly change in the equal-weighted three-month Treasury CIP basis vis-à-vis the G10 currencies, in basis points. All columns control for the log change in total marketable Treasury debt outstanding and include year fixed effects. The sample begins in August 2007, the start of the WMTSECL1 series. Newey–West standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure A.3: Country-Level Estimates of the Post-2013 Shift



Notes: This figure plots the estimated coefficient on $\Delta \text{CIP}_t^{\text{Treas}} \times$ Post-2013 from country-by-country estimates of the interaction specification in column (3) of Table 1, with each country's log change in long-term U.S. Treasury holdings as the dependent variable. The sample covers the ten largest foreign holders as of 2012, ranked by average long-term holdings that year; point size scales with each country's 2012 holdings, and these ten countries account for 73.1 percent of foreign long-term Treasury holdings as of 2012. All specifications control for the log change in total long-term Treasury supply and include year fixed effects. Horizontal bars show 95% confidence intervals based on Newey–West standard errors. The vertical dashed line marks zero; the vertical dotted line marks the corresponding aggregate (all-foreign) interaction estimate. The sample is monthly, 2001M2–2025M6.