Identifying the World's Dominant Safe Asset: Measuring Belief-Based Safety Using Text and Portfolio Data*

Isha Agarwal† Wentong Chen‡ Eswar Prasad§

May 20, 2026

Preliminary.

Abstract

What makes an asset safe, and how do beliefs about safety shape global capital flows? We develop a belief-based framework for measuring safe asset status and apply it to distinguish the perceived safety of U.S. Treasury securities from that of the U.S. dollar. Combining security-level portfolio holdings of global institutional investors with large-scale newspaper data spanning eight countries over 2007-2022, we construct novel indices of perceived safety, narrative mechanisms, and higher-order coordination beliefs. We document three main findings. First, safety is multi-dimensional: Treasury safety narratives are anchored in fiscal credibility and institutional stability, while dollar safety narratives reflect global liquidity, funding, and geopolitical dominance. Second, first-order safety beliefs predict reallocations into U.S. sovereign bonds but have weaker and less stable relationships with broader dollar-denominated asset holdings. Third, beyond these asset-specific narratives, we find that higher-order coordination beliefs (investor expectations about how other market participants will collectively behave) play a central and distinct role: they strongly predict reallocations toward both Treasuries and broader dollar assets, with particularly large effects on broad dollar holdings, operating through a broader and more uniform set of narrative channels than first-order beliefs alone. Our results provide a unified belief-based framework for understanding safe asset demand and dollar dominance in international finance.

JEL Classification Numbers: F31, F32, G15, G12, D84
Keywords: safe assets, dollar safety, media narratives, cross-border flows, institutional investors, coordination beliefs, textual analysis, natural language processing

*The authors would like to thank Robert Kollmann (discussant) and seminar and conference participants at the European Commission "The international monetary system and the role of the euro". Sharan Banerjee and Yicheng Yang provided excellent research assistance.

†Sauder School of Business, University of British Columbia, E-mail: isha.agarwal@sauder.ubc.ca

‡Department of Economics, Santa Clara University, Santa Clara, CA, 95053, U.S.A, E-mail: wchen10@scu.edu

§Dyson School of Applied Economics and Management and Department of Economics, Cornell University, Ithaca, NY, 14853, U.S.A, Brookings Institution, and NBER, E-mail: eswar.prasad@cornell.edu

1 Introduction

What makes an asset safe? The canonical answer appeals to fundamentals: an asset is safe if it offers liquidity, serves as reliable collateral, preserves value in bad states, and is backed by a creditworthy sovereign (Longstaff, 2004; Krishnamurthy and Vissing-Jorgensen, 2011, 2012; Bansal, Coleman and Lundblad, 2012; Du, Im and Schreger, 2018a). Yet this account leaves a central puzzle unresolved. The United States is the world's dominant financial hegemon, but it anchors global safe-asset demand through two distinct objects: U.S. Treasury securities and the U.S. dollar, whose foundations, as we argue, are fundamentally different. U.S. Treasuries derive their safety from fiscal credibility, collateral quality, and institutional stability. The U.S. dollar derives its safety from liquidity dominance, global settlement networks, and, more importantly, from expectations: investors treat the dollar as safe partly because they expect other investors, reserve managers, banks, and central banks to treat it as safe. Are Treasury safety and dollar safety the same object? And if not, what beliefs sustain each, and which predicts portfolio behavior? These questions sit at the heart of international finance: what makes U.S. Treasury securities and the U.S. dollar the world's dominant safe assets, and are they dominant for the same reasons?

This paper develops and implements a belief-based framework for identifying safe assets. Rather than inferring safety from prices, yields, or realized capital flows, we measure perceived safety directly from text, decompose the narrative mechanisms underlying those perceptions, and test whether they predict the portfolio reallocations of institutional investors. Our framework distinguishes two types of beliefs that prior work has not separately measured: *first-order beliefs* about whether an asset will preserve value, and *higher-order coordination beliefs* about whether other investors, reserve managers, banks, and central banks will collectively treat an asset as safe in bad states. This distinction matters because an asset can be safe in equilibrium not because of its intrinsic properties, but because coordinated demand makes it so.

Our empirical strategy combines two novel data sources. The first is a comprehensive dataset of security-level portfolio holdings for global institutional investors, spanning eight major financial centers: Australia, Canada, Hong Kong, Ireland, Korea, Singapore, the United Kingdom, and the United States, over the period 2007–2022. This dataset allows us to track quarterly portfolio reallocations across U.S. Treasuries, dollar-denominated corporate bonds, dollar-denominated equities, and sovereign bonds issued by other reserve-currency economies. The second is a large-scale corpus of newspaper articles from the same eight countries, from which we extract structured belief statements using a multi-stage retrieval and language model pipeline. Each extracted statement encodes the asset being discussed, the directional safety tone, the strength and confidence of the statement, the underlying economic mechanism, the source-country perspective, and whether the statement contains higher-order coordination language.

Aggregating these safety belief statements, we construct three nested indices. The first is an asset-specific safety belief index that captures both the salience and the directional positivity of safety narratives for U.S. Treasuries and the U.S. dollar separately. The second decomposes safety beliefs into five underlying mechanisms: liquidity and market functioning, monetary policy credibility and backstops, fiscal capacity and sovereign creditworthiness, financial stability and counterparty risk, and geopolitical and global uncertainty. The third is a higher-order coordination belief index that isolates statements reflecting expectations about others' collective behavior, safe-haven demand, funding shortages, and coordinated flight-to-quality, rather than intrinsic fundamental assessments.

We document four stylized facts on portfolio reallocations during periods of global financial stress. First, U.S. inflows are exceptional during crisis periods, but aggregate flows conceal whether the safe-asset object is the dollar or Treasuries. Second, both U.S. and non-U.S. institutional investors reallocate into dollar assets during stress, with non-reserve-economy investors displaying especially strong Treasury demand; this pattern

is inconsistent with a pure flight-to-home explanation. Third, different crises reveal different dimensions of safety: Treasury demand rises consistently across episodes, but reallocations into risky dollar assets depend on the nature of the shock. During the taper tantrum, for instance, Treasuries experienced safe-haven inflows even as broader dollar demand declined. Fourth, sovereign bonds issued by other reserve-currency economies display substantially weaker and less consistent safe-haven demand, confirming that U.S. Treasuries occupy a uniquely privileged position in the global safe-asset hierarchy; the world features a dominant instrument, not merely a dominant currency.

Combining the two data sources, our first main finding is that safety is multi-dimensional. The narrative foundations of dollar safety and Treasury safety are systematically distinct across all eight source countries. For the U.S. dollar, geopolitical and global uncertainty narratives account for the largest share of safety-related discourse, typically more than one third of all extracted statements, while fiscal creditworthiness narratives contribute relatively little and sometimes negatively. For U.S. Treasuries, fiscal creditworthiness narratives are consistently the largest mechanism, while liquidity and monetary backstop narratives also contribute positively. These mechanism loadings are remarkably stable across countries, suggesting that the two assets possess distinct global narrative identities that are broadly shared rather than locally constructed.

Our second main finding is that narrative beliefs predict portfolio reallocations, but through distinct channels depending on whether beliefs are first-order or higher-order. Using lagged belief indices as predictors of fund-level portfolio shares, exploiting cross-country variation in safety narrative exposure rather than relying solely on aggregate global uncertainty, we show that first-order safety beliefs positively predict reallocations toward U.S. sovereign bonds, but display substantially weaker and less stable relationships with broader dollar-denominated asset holdings. The predictive content of first-order beliefs is concentrated in the Treasury market, consistent with the view that direct safety perceptions generate flight-to-safety demand for the safest sovereign instrument rather

than for dollar assets more broadly. Turning to mechanisms, Treasury reallocations are most strongly associated with geopolitical uncertainty and financial stability narratives, while broader dollar-asset reallocations are more closely tied to liquidity and monetary backstop narratives, and are actually negatively associated with geopolitical uncertainty, consistent with the view that stress redirects flows from risky dollar assets toward safe sovereign instruments.

Our third main finding is that *higher-order coordination beliefs play a central and distinct role*, amplifying reallocations through a broader and more systematic set of channels than first-order beliefs. Higher-order safety beliefs strongly predict reallocations toward both U.S. sovereign bonds and broader dollar assets, with effects on broad dollar holdings that are economically much larger than those of first-order beliefs and remain highly statistically significant even after controlling for financial conditions. At the mechanism level, first-order beliefs exhibit heterogeneous and sometimes weak or negative relationships with portfolio allocations. Higher-order beliefs, by contrast, are uniformly and strongly positive across nearly all narrative mechanisms and asset classes, a striking regularity that suggests coordination amplifies safe-asset demand through multiple reinforcing channels simultaneously. The coordination component of safe-asset beliefs spikes during systemic stress episodes, particularly for dollar assets during the Global Financial Crisis and Eurozone debt crisis, and for Treasuries during sovereign and institutional stress episodes such as the debt ceiling crisis and the taper tantrum. These findings are consistent with a self-fulfilling component of safe-asset dominance: investors allocate toward dollar assets and Treasuries not only because they personally assess them as safe, but because they expect other market participants to do the same.

Our results suggest that safe asset dominance is not a simple reflection of fundamentals. It is partly a coordination equilibrium sustained by shared narratives and self-reinforcing expectations. The U.S. dollar is safe in part because global investors expect other investors to treat it as safe. U.S. Treasuries are safe in part because investors expect coordinated

flight into Treasury markets during crises. Understanding this coordination component is essential for assessing the durability of dollar dominance and the conditions under which it might erode.

Related Literature. This paper contributes to several interconnected literatures on safe assets, dominant currencies, international capital flows, and narrative expectations. First, the safe-asset and convenience-yield literature interprets safe assets as claims that provide liquidity, collateral, and store-of-value services beyond their pecuniary returns (Longstaff, 2004; Krishnamurthy and Vissing-Jorgensen, 2011, 2012; Bansal, Coleman and Lundblad, 2012; Nagel, 2016; Du, Im and Schreger, 2018a; He, Krishnamurthy and Milbradt, 2019). Related theoretical work emphasizes that safe assets facilitate collateralized exchange, economize on information, and alleviate shortages of liquid stores of value (Gorton, Lewellen and Metrick, 2012; Gorton, 2017; Caballero, Farhi and Gourinchas, 2017; Gorton and Ordo nez, 2022; Krishnamurthy and Li, 2023; Brunnermeier, Merkel and Sannikov, 2024; Acharya and Laarits, 2026). Most of this literature identifies safety from prices and yield spreads. Our approach is complementary: we measure perceived safety directly from beliefs, decompose the underlying narrative mechanisms, and test whether those beliefs predict institutional portfolio reallocations.

Second, the paper relates to the literature on dominant currencies, reserve currencies, and dollar privilege. Existing work documents the central role of the U.S. dollar in trade invoicing, banking, reserve management, and global financial intermediation (Farhi and Maggiori, 2018; Maggiori, 2017; Gopinath, Boz, Casas, D'iez, Gourinchas and Plagborg-Møller, 2020; Gopinath and Stein, 2021; Maggiori, Neiman and Schreger, 2020). Closely related, Jiang, Krishnamurthy and Lustig (2018), Jiang, Krishnamurthy and Lustig (2021), and Du, Tepper and Verdelhan (2018b) connect dollar demand and convenience yields to exchange rates and global dollar funding conditions. Jansen, Shin and von Peter (2024b) provide related security-level evidence that dollar movements matter for global investors'

bond portfolios, reinforcing the role of the dollar as a global risk factor. Most closely, Du, Keerati and Schreger (2026) distinguish Treasury privilege from dollar privilege using price-based convenience yields. Our paper provides the belief-based and quantity-based counterpart to this price evidence by separately measuring safety beliefs about the U.S. dollar and U.S. Treasuries and linking them to portfolio allocations.

Third, the paper contributes to the literature on flights to safety, global capital flows, and institutional portfolio demand. Prior work studies flight-to-safety episodes using prices and flows (Baele, Bekaert, Inghelbrecht and Wei, 2020; Karolyi and McLaren, 2017; Alfaro, Faia, Judson and Schmidt-Eisenlohr, 2020). Related work emphasizes that investor heterogeneity, offshore intermediation, and information frictions shape global portfolio allocations (Schumacher, 2018; Tabova and Warnock, 2026). Recent work on institutional and granular Treasury demand shows that long-horizon investors, sectoral clienteles, arbitrageurs, and intermediary balance sheets shape yields and Treasury-market clearing (Jansen, 2025; Jansen, Li and Schmid, 2024a; Du, H'ebert and Li, 2023). Relative to this literature, our contribution is to distinguish reallocations toward Treasuries from reallocations toward broader dollar-denominated assets and to connect those reallocations to specific narrative mechanisms extracted from text.

Finally, the paper relates to the literatures on narrative expectations, coordination, and higher-order beliefs. Narrative economics emphasizes that shared stories shape beliefs and macro-financial outcomes (Shiller, 2017; Andre, Haaland, Roth, Wiederholt and Wohlfart, 2026), while the higher-order belief literature shows how expectations about others' expectations can amplify aggregate dynamics (Morris and Shin, 2002; Angeletos and La'O, 2013). Krishnamurthy and Li (2025) provide a closely related macro-finance framework in which financial crises are driven by both intermediation frictions and sentiment, modeled as time-varying beliefs about illiquidity states. We bring these ideas to safe-asset markets by separating first-order safety beliefs from coordination-based higher-order safety beliefs and showing that the two predict portfolio reallocations through different narra-

tive channels. In doing so, the paper connects the price-based safe-asset literature, the quantity-based institutional demand literature, and the belief-based narrative literature in a unified empirical framework.

The rest of the paper is organized as follows. Section 2 documents stylized facts on portfolio reallocations during crisis episodes. Section 3 develops the narrative-based measurement framework and reports the resulting belief indices. Section 4 tests whether belief measures predict institutional portfolio allocations, examines mechanism-specific reallocations, and isolates the role of higher-order coordination beliefs. Section 5 concludes.

2 Stylized Facts on Safe-Asset Demand

We first document a set of stylized facts on global portfolio reallocations during periods of financial stress. These patterns motivate the central questions of the paper: whether investors seek safety primarily in U.S. Treasuries or in U.S. dollar-denominated assets more broadly, whether global reallocations reflect flight-to-safety or flight-to-home dynamics, and whether different dimensions of safe-asset demand emerge during different crisis episodes.

Data. Our portfolio analysis draws on security-level holdings from Morningstar's universe of open-end mutual funds, money market funds, and ETFs. The dataset covers more than 55,000 funds domiciled in over 65 countries, with more than one million unique investment positions over the period 2007–2022. Two features make it well-suited for our purposes. First, unlike datasets such as Factset, Morningstar covers both equity and fixed income holdings, allowing us to track reallocations across asset classes rather than within a single market. Second, and more importantly for our analysis, Morningstar reports the currency denomination of each security, which can differ from both the issuer's home currency and the fund's domicile currency. For securities where currency denomination is

missing, we supplement Morningstar with CUSIP and ISIN-level information from CRSP and CUSIP Global Services. This currency-level granularity is essential for distinguishing demand for U.S. dollar-denominated assets broadly from demand for U.S. Treasury securities specifically. As Table 1 shows, the distinction is empirically meaningful: while virtually all U.S.-issued securities are dollar-denominated, significant shares of corporate bonds and equities issued by non-U.S. entities are also dollar-denominated, particularly among other advanced economies. Our final sample restricts to funds domiciled in advanced economies with Morningstar coverage exceeding 10 percent of ICI-reported net assets.[1] We exclude derivatives and cash holdings, focusing on conventional bond and equity positions.

2.1 Global Capital Flows During Crisis Episodes

Figure 1 plots quarterly net portfolio inflows for the United States, the United Kingdom, Germany, and all advanced economies excluding the United States over the period 2006Q1–2020Q4 using International Investment Position (IIP) data. Several patterns emerge.

The United States experienced exceptionally large capital inflows during major episodes of global financial stress, including the Global Financial Crisis and the COVID-19 crisis. During the Global Financial Crisis, cumulative inflows into the United States exceeded one trillion dollars over 2008Q3–2008Q4. Similarly, during the COVID-19 crisis, the United States experienced another large surge in inflows, while many other advanced economies experienced net outflows. By contrast, the United Kingdom and Germany display substantially smaller and less persistent inflow responses during the same periods.

These patterns suggest that the United States occupies a unique position in the global financial system during periods of stress. However, aggregate capital-flow data alone cannot distinguish whether these inflows reflect demand for the U.S. dollar as a reserve and

[1]The full sample covers Australia, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Jersey, Latvia, Lithuania, Luxembourg, Malta, Macau, Netherlands, Norway, Portugal, San Marino, Singapore, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan, United Kingdom, United States.

funding currency or demand for U.S. Treasuries as safe sovereign assets. More generally, aggregate balance-of-payments data cannot separate currency-specific safe-haven demand from demand for particular asset classes. This motivates our use of granular security-level institutional portfolio data together with narrative-based belief measures.

2.2 Institutional Reallocations Toward Dollar Assets and Treasuries

We next examine how institutional investors reallocate portfolios during periods of heightened financial stress. Our analysis uses security-level portfolio holdings of institutional investors and allows us to separately track reallocations toward U.S. Treasuries, U.S. dollar-denominated corporate bonds, and U.S. dollar-denominated equities.

Empirical framework. To assess U.S. institutional investors' portfolio reallocation behaviour across assets and currencies during periods of financial market stress, we estimate the following equation:

$$s^a_{f,t} = \alpha_f + \alpha_Y + \beta \Delta VIX_t + \epsilon_{A,f,t}, \tag{1}$$

where $s^a_{f,t}$ is the share of asset class a in the portfolio of fund f at time t. In particular, we consider shares of two asset classes: U.S. sovereign bonds and assets denominated in U.S. dollars. ΔVIX_t is the percent change in the quarterly VIX at time t. α_f and α_Y are fund and year fixed effects and equation (1) is estimated using quarterly data over our sample period.

In order to further isolate country or currency factors that drive portfolio reallocations of global institutional investors during times of heightened risk and uncertainty, a tractable framework requires us to abstract from cross-asset reallocations (for instance, from equities to government bonds). A simple way to accomplish this is to look at reallocations across issuing countries and currencies within each class of assets (or combinations thereof). We start by focusing on reallocations within the asset class of sovereign bonds and estimate

the following equation:

$$s_{i,h,d,t} = \alpha_{f,h} + \beta_{US}\mathbf{1}_{country\ d=US} + \beta_{crisis}\mathbf{1}_{t=crisis} + \beta_{FTS}\mathbf{1}_{country\ d=US} \times \mathbf{1}_{t=crisis} + \epsilon_{i,h,d,t}, \quad (2)$$

where $s_{i,h,d,t}$ is the share of sovereign bonds issued by the government of destination country d in the sovereign bond portfolio of fund i domiciled in home country h at time t. $\mathbf{1}_{country\ d=US}$ is an indicator variable that takes a value 1 if the destination country is the US. $\mathbf{1}_{t=crisis}$ is an indicator variable that takes a value 1 for crisis periods or periods of elevated market volatility. β_{US} captures the average share of U.S. treasuries in the sovereign bond portfolio of each fund. β_{crisis} captures the average share of sovereign bond holdings between each fund-destination country pair. The main coefficient of interest is β_{FTS}, which captures the flight to safety (FTS) into U.S. Treasuries by measuring how the share of U.S. treasuries in funds' sovereign bond holdings changes during crisis periods.

U.S. institutional investors. We begin by examining reallocations of U.S.-domiciled institutional investors during periods of elevated market uncertainty. Table 2 reports regressions linking changes in portfolio shares to increases in the VIX and to specific crisis episodes. First, U.S. institutional investors systematically increase the share of U.S. Treasuries in their portfolios during periods of heightened financial volatility. Increases in the VIX are associated with economically large increases in Treasury shares, particularly during periods of rising market stress rather than declining volatility. Second, reallocations toward broader U.S. dollar-denominated assets are more heterogeneous across crises. During the Global Financial Crisis, U.S. investors increased both Treasury and broader dollar-asset holdings, while during the Taper Tantrum investors reduced holdings of broader dollar-denominated risky assets despite continuing to increase Treasury allocations. During the COVID-19 crisis, Treasury reallocations became substantially weaker, consistent with temporary dysfunction in Treasury market liquidity during early 2020.

These results suggest that Treasury demand behaves more consistently as a traditional flight-to-safety asset, while broader demand for dollar-denominated risky assets depends more strongly on the nature of the underlying shock.

Global institutional investors. We next turn to global institutional investors. Table 3 reports portfolio reallocations toward dollar-denominated assets during periods of elevated market volatility. We find that global investors systematically increase the share of U.S. dollar assets in their portfolios during stress periods. Importantly, the strongest and most consistent reallocations occur toward U.S. Treasuries. The average share of U.S. Treasuries within sovereign-bond portfolios rises sharply during periods of elevated uncertainty, while reallocations toward other dollar-denominated risky assets are more heterogeneous across asset classes and investor groups.

The results also reveal important differences across investor types. Investors outside the United States increase their holdings of both U.S. Treasuries and other dollar-denominated assets during periods of stress, suggesting that global demand for dollar assets cannot be explained solely by flight-to-home effects among U.S. investors. Moreover, investors domiciled in non-reserve-currency economies exhibit particularly strong reallocations toward dollar-denominated assets and Treasuries, highlighting the central international role of U.S. safe assets during crises.

Crisis heterogeneity. Table 4 further shows that reallocations differ substantially across crisis episodes. During the Global Financial Crisis, investors strongly increased holdings of both U.S. Treasuries and U.S. dollar corporate bonds. During the Taper Tantrum, by contrast, investors shifted away from many dollar-denominated risky assets while continuing to increase Treasury holdings. During the COVID-19 crisis, Treasury reallocations remained positive but more modest, consistent with temporary dysfunction in Treasury market liquidity during early 2020.

Other reserve-currency sovereigns. Finally, Table 5 examines whether sovereign bonds issued by other reserve-currency economies display similar safe-haven properties. The results suggest that sovereign bonds issued by other reserve-currency economies exhibit substantially weaker and less consistent safe-haven demand than U.S. Treasuries. In many specifications, reallocations toward non-U.S. reserve-currency sovereign bonds are economically small or statistically insignificant, especially for investors outside reserve-currency economies. These findings suggest that U.S. Treasuries possess a uniquely strong global safe-asset role.

2.3 What Drives Safe-Asset Demand?

The portfolio evidence highlights several important puzzles. First, investors consistently reallocate toward U.S. Treasuries during periods of global stress, suggesting that Treasuries occupy a uniquely stable position within the global safe-asset hierarchy. Second, reallocations toward other U.S. dollar-denominated assets are broader but considerably more heterogeneous across crises and asset classes. Third, the magnitude and persistence of reallocations often appear too large to be explained solely by standard macroeconomic fundamentals.

These patterns motivate the central idea of this paper: safe-asset demand may depend not only on first-order beliefs about the intrinsic safety of an asset, but also on higher-order coordination beliefs regarding how other investors are expected to behave during periods of stress. In particular, the U.S. dollar may derive part of its dominance from expectations about collective global demand for dollar liquidity and settlement capacity, while U.S. Treasuries may derive safety from institutional credibility, sovereign backing, and coordinated reallocations into Treasury markets during crises.

The next section develops a narrative-based measurement framework designed to capture these dimensions of safe-asset beliefs directly from newspaper text. Rather than inferring safety from prices or realized flows alone, our framework measures perceived

safety, the narrative mechanisms underlying safety, and the coordination-based beliefs that shape investor expectations during periods of global financial stress.

3 Uncovering Asset Safety Using Belief Measures

We construct a layered set of narrative-based indices that jointly measure perceived safety, the sources of safety, and higher-order coordination beliefs across assets. These indices allow us to distinguish what assets are perceived as safe, why they are perceived as safe, and whether safety arises from expectations about others' behavior.

3.1 Extracting Safe-Asset Belief Statements

We construct our narrative-based safety measures using a multi-stage retrieval and extraction pipeline applied to the full archive of newspaper articles. The objective is to identify structured belief statements related to perceived safe-asset demand, safe-haven flows, reserve allocation, liquidity demand, and coordination-based reallocations during periods of financial stress.

The extraction procedure proceeds in three stages. First, we use a high-recall retrieval system combining safe-asset terminology, stress-event language, liquidity and reserve-demand terminology, and candidate safe-asset references to identify potentially relevant articles. Second, we apply a light large language model `gpt-4.1-mini` to classify article relevance and identify articles discussing perceived safety of the U.S. dollar, U.S. Treasuries, or competing reserve and safe-haven assets. Third, we extract structured statement-level belief objects from the retained articles using `gpt-5`.

Each extracted belief statement contains information on: (i) the asset being discussed, (ii) the directional safety tone, (iii) the strength and confidence of the statement, (iv) the economic mechanism underlying perceived safety, (v) the belief holder and source-country perspective, and (vi) whether the statement contains higher-order coordination language referring to expectations about the behavior of other investors or institutions.

We then aggregate these statement-level belief objects into the narrative indices developed below.

3.2 Constructing Asset-Specific Safety Beliefs

After extracting the belief entries from newspaper articles that mention safe-asset related content, we construct the three indices as follows:

Index 1: Asset-Specific Safety Beliefs. Our first set of indices measures asset-specific perceptions of safety across newspaper source countries. Specifically, the index captures whether an asset is framed as safe, reliable, or desirable during periods of financial stress, uncertainty, or market turmoil. Because our sample includes newspapers from different countries, we construct the index at the source country–asset–month level. This allows us to measure not only which assets are perceived as safe, but also where these safety beliefs are expressed.

We focus on extracted belief entries for which the asset target, ($asset_target$), is either U.S. Treasuries (UST) or the U.S. dollar (USD). For each belief entry, we assign a polarity score equal to +1 if the safety tone, ($safety_polarity$), is positive, and −1 if it is negative. We then multiply this polarity score by the statement-level strength ($strength$) and confidence ($confidence$) produced by the extraction model.

We decompose asset-specific safety beliefs into an extensive-margin *share index* and an intensive-margin *safety index*. The share index measures how prevalent safety-related discussion about a given asset is within the overall media environment, while the safety index measures how positive or negative those safety beliefs are conditional on discussing the asset.

Specifically, let $\mathcal{B}_{c,a,t}$ denote the set of extracted belief statements from newspapers associated with source country c in month t that refer to asset a, and let $N_{c,t}$ denote the total number of articles published by newspapers from source country c in month t.

We first define the extensive-margin safety share index as:

$$Share^{a}_{c,t} = \frac{|\mathcal{B}_{c,a,t}|}{N_{c,t}},$$

which measures the share of newspaper coverage devoted to safety-related narratives about asset a.

We next define the intensive-margin safety index as:

$$Safety^{a}_{c,t} = \frac{\sum_{i \in \mathcal{B}_{c,a,t}} s_i \times strength_i \times confidence_i}{|\mathcal{B}_{c,a,t}|},$$

where $s_i \in \{+1, -1\}$ denotes the safety polarity of statement i. This index measures the average directional safety sentiment associated with asset a conditional on discussing that asset in a safety-related context.

Combining the extensive and intensive margins yields the aggregate safety-belief index:

$$AggSafety^{a}_{c,t} = Share^{a}_{c,t} \times Safety^{a}_{c,t} = \frac{1}{N_{c,t}} \sum_{i \in \mathcal{B}_{c,a,t}} s_i \times strength_i \times confidence_i.$$

This decomposition separates two conceptually distinct dimensions of safe-asset narratives: the prevalence of safety-related discussion and the directional tone of those beliefs. The resulting indices capture perceived asset safety directly from text, rather than inferring safety from prices, yields, or capital flows. They therefore answer the question: which assets are perceived as safe, when, and from whose perspective?

Time-Series Dynamics of Safe-Asset Beliefs. Figure 2 shows that perceptions of U.S. dollar (USD) and U.S. Treasury (UST) safety vary substantially over time and respond strongly to major episodes of global financial and geopolitical stress. The aggregate safety-belief index in Panel (a) rises sharply during crisis periods, including the Global Financial Crisis, the Eurozone debt crisis, the COVID-19 pandemic, and the 2022 Federal Reserve

tightening cycle, consistent with flight-to-safety dynamics. However, the decomposition into extensive and intensive margins reveals that these movements arise through distinct channels.

Panel (b) shows that the intensive-margin safety index, the average directional tone of safety narratives conditional on discussing the asset, exhibits substantial volatility and cross-country dispersion. UST safety narratives are generally more positive during crisis periods, while USD safety narratives display greater sensitivity to geopolitical and global coordination shocks. In contrast, Panel (c) shows that the extensive-margin safety share index is considerably smoother and more persistent over time, capturing shifts in the prevalence of safety-related discussion itself. The extensive margin rises markedly during major crises, indicating that safe-asset narratives occupy a substantially larger share of the media environment during periods of stress. Together, these results suggest that fluctuations in aggregate safe-asset perceptions reflect both changes in the amount of safety-related discussion and changes in the directional tone of those beliefs.

Cross-Country Heterogeneity in Safe-Asset Beliefs. Figure 3 highlights substantial cross-country heterogeneity in safe-asset beliefs. The intensive-margin safety index in Panel (b) reveals that some newspaper-source countries consistently express much stronger positive safety perceptions toward UST or USD than others. In particular, Hong Kong and U.S. newspapers display especially strong positive safety perceptions toward U.S. Treasuries, while Korea exhibits relatively stronger positive perceptions toward the U.S. dollar. Meanwhile, the extensive-margin safety share index in Panel (c) shows that the prevalence of safety-related discussion differs sharply across countries, with Hong Kong and U.S. newspapers devoting substantially more coverage to safe-asset narratives than smaller financial centers. Importantly, the aggregate safety-belief index in Panel (a) combines these two dimensions and shows that high aggregate safety perceptions can arise either because safety narratives are very prevalent, because the narratives themselves are

strongly positive, or both.

The figures suggest that safe-asset perceptions are neither static nor homogeneous across countries. Instead, they evolve systematically with global crises and differ substantially across source-country information environments. Moreover, decomposing safe-asset beliefs into extensive and intensive margins reveals that changes in perceived safety reflect both the salience of safe-asset narratives and the directional content of those narratives themselves.

3.3 Decomposing the Narrative Foundations of Safety

Index 2: Narrative Mechanism Decomposition of Safety. Safety is not a primitive concept. To understand why assets are perceived as safe, we decompose safety-related narratives into distinct economic mechanisms. Using supervised and dictionary-based classification, we classify the extracted mechanism phrase (*mechanism_text*) into five narrative categories:

1. **Global liquidity and market functioning:** Reflecting beliefs that the asset is safe because it provides unmatched liquidity, market depth, and transaction capacity, and because it functions as a global settlement and funding medium during periods of stress.

2. **Monetary policy credibility and central bank backstops:** Reflecting beliefs that the asset is safe because it is supported by credible monetary institutions, including expectations of central bank interventions, swap lines, and lender-of-last-resort facilities in crisis states.

3. **Fiscal capacity and sovereign creditworthiness:** Reflecting beliefs that the asset is safe due to confidence in government solvency, debt sustainability, and the state's ability and willingness to honor obligations under stress.

4. **Financial system stability and counterparty risk:** Reflecting beliefs that the asset is safe because it is insulated from private-sector credit risk, counterparty failure, and systemic financial contagion.

5. **Geopolitical and global uncertainty:** Reflecting beliefs that the asset is safe due to geopolitical positioning, international acceptability, and systemic dominance in the global economic and political order.

These mechanism-specific measures answer the question: through which economic narratives is safety constructed? They allow us to study whether different assets derive perceived safety from different belief channels. For example, U.S. Treasuries may load more heavily on fiscal capacity and monetary credibility narratives, while the U.S. dollar may load more heavily on global liquidity, funding, and geopolitical narratives.

To summarize the relative importance of each mechanism for a given asset, we construct mechanism loadings based on the share of safety-related belief entries associated with each mechanism. Specifically, let $|\mathcal{B}^a_{c,m,t}|$ denote the number of extracted belief statements associated with source country c, asset a, mechanism m, and month t. We then define the mechanism loading for source country c, asset a, mechanism m, and month t as:

$$Loading^a_{c,m,t} = \frac{|\mathcal{B}^a_{c,m,t}|}{\sum_{m' \in \mathcal{M}} |\mathcal{B}^a_{c,m',t}|},$$

where $\mathcal{M}$ denotes the set of five safety mechanisms. This loading measure captures the relative share of safety-related discourse associated with each mechanism for a given source country, asset, and time period. By construction, the mechanism loadings are positive and sum to one across mechanisms.

In addition to mechanism loadings, we also construct a directional mechanism score that captures whether a given mechanism contributes positively or negatively to perceived safety. Specifically, define:

$$Score^{a}_{c,m,t} = \frac{\sum_{i \in \mathcal{B}^{a}_{c,m,t}} s_i \times strength_i \times confidence_i}{|\mathcal{B}^{a}_{c,m,t}|},$$

where $s_i \in \{+1, -1\}$ denotes the safety polarity of statement i. This score measures the average directional contribution of a mechanism to perceived safety conditional on discussing that mechanism. Positive values indicate that the mechanism contributes positively to perceived safety, while negative values indicate that the mechanism contributes negatively.

Combining the mechanism loadings and directional scores yields an additive decomposition of asset-specific safety beliefs across narrative channels:

$$Safety^{a}_{c,t} = \sum_{m \in \mathcal{M}} Loading^{a}_{c,m,t} \times Score^{a}_{c,m,t}.$$

This decomposition separates two conceptually distinct dimensions of safe-asset narratives: the relative importance of each mechanism in overall discourse and the directional contribution of each mechanism to perceived safety. For example, a mechanism may account for a large share of safety-related discussion while contributing negatively to perceived safety during crisis periods, such as fiscal-capacity narratives during debt-ceiling episodes.

We further construct mechanism-specific safety indices, analogous to the aggregate safety index.

Narrative Foundations of Safe-Asset Perceptions. Figures 4 and 5 reveal several striking patterns in the narrative structure of safe-asset beliefs across countries. Figure 4 shows that the U.S. dollar (USD) and U.S. Treasuries (UST) derive perceived safety from systematically different narrative channels. For the USD, geopolitical and global uncertainty narratives account for the largest share of safety-related discourse across nearly all countries, often representing more than one-third of all extracted safety narratives. Liquidity and market

functioning narratives also play an important role, while fiscal-creditworthiness narratives contribute relatively little to USD safety discussions. By contrast, UST safety beliefs load much more heavily on fiscal creditworthiness narratives, which consistently represent the largest mechanism across countries. UST narratives also exhibit substantial contributions from geopolitical uncertainty and liquidity-related channels, but monetary backstop and fiscal narratives appear considerably more central for Treasuries than for the dollar. Importantly, these mechanism loadings are remarkably stable across countries, suggesting that different safe assets possess distinct global narrative identities that are broadly shared across newspaper-source environments.

Figure 5 complements this decomposition by examining the directional contribution of each mechanism conditional on discussing that mechanism. Several notable asymmetries emerge. For the USD, liquidity and market-functioning narratives contribute strongly and consistently positively to perceived safety across all countries, reflecting the central role of the dollar in global funding, settlement, and payment systems. In contrast, fiscal-creditworthiness narratives often contribute negatively or only weakly positively to USD safety, especially in Canada, Ireland, and Hong Kong, suggesting that concerns about U.S. fiscal sustainability or sovereign balance-sheet risks can undermine dollar safety perceptions even when the dollar remains dominant in liquidity and geopolitical dimensions. For UST, the pattern is notably different: nearly all mechanisms contribute positively to perceived safety across most countries, including fiscal-creditworthiness narratives. This suggests that Treasury safety is supported by a broader and more internally coherent narrative structure than dollar safety. Moreover, the strong positive scores for liquidity and monetary-backstop narratives indicate that Treasuries are frequently perceived as safe not only because of sovereign credibility, but also because of expectations regarding institutional support and market functioning during crises.

The two figures suggest that safe-asset dominance is multidimensional. Different assets derive safety from different combinations of narrative channels, and these channels vary

not only in importance but also in directional contribution. The U.S. dollar appears to rely disproportionately on geopolitical dominance and global liquidity coordination, while U.S. Treasuries rely more heavily on fiscal credibility and institutional stability. More broadly, the results highlight that safe-asset perceptions are not monolithic objects, but are instead constructed through multiple interacting narrative mechanisms that vary across countries and across assets.

3.4 Higher-Order Safety Beliefs and Coordination Dynamics

Index 3: Higher-Order Safety Beliefs and Narrative Coordination. A distinctive feature of our framework is that it distinguishes between first-order and higher-order safety beliefs. Assets may be perceived as safe not only because investors expect them to preserve value, but also because investors expect other market participants to regard them as safe and reallocate toward them during periods of stress.

To capture this dimension, we construct higher-order safety belief indices using extracted belief statements that explicitly reference expectations about other investors' beliefs, market-wide reallocations, reserve demand, funding needs, or collective shifts toward or away from a given asset. Operationally, we classify a belief statement as higher-order when $higher_order_signal = yes$.[2]

Let $\mathcal{H}_{c,a,t}$ denote the set of extracted higher-order belief statements from newspapers associated with source country c in month t that refer to asset a. Analogous to the baseline safety measures above, we construct extensive-margin higher-order share indices and intensive-margin higher-order safety indices.

We first define the higher-order safety share index as:

[2]We distinguish between two related but conceptually distinct forms of higher-order belief. The first is cross-country attributed belief, where newspapers from source country c report or infer beliefs held by actors from another country $d \neq c$. The second is coordination-based higher-order belief, where the text explicitly references expectations about how other investors, banks, reserve managers, or markets will collectively behave during periods of stress. Our baseline higher-order index focuses on the latter coordination-based concept.

$$HOShare^{a}_{c,t} = \frac{|\mathcal{H}_{c,a,t}|}{N_{c,t}},$$

where $N_{c,t}$ denotes the total number of articles published by newspapers from source country c in month t. This index measures the prevalence of higher-order safety narratives associated with asset a within the broader media environment.

We next define the higher-order safety index as:

$$HOSafety^{a}_{c,t} = \frac{\sum_{i \in \mathcal{H}_{c,a,t}} s_i \times strength_i \times confidence_i}{|\mathcal{H}_{c,a,t}|},$$

where $s_i \in \{+1, -1\}$ denotes the safety polarity of statement i. This index measures the average directional tone of higher-order safety beliefs conditional on discussing the asset in a coordination-related safety context.

Combining the extensive and intensive margins yields the aggregate higher-order safety-belief index:

$$HOAggSafety^{a}_{c,t} = HOShare^{a}_{c,t} \times HOSafety^{a}_{c,t} = \frac{1}{N_{c,t}} \sum_{i \in \mathcal{H}_{c,a,t}} s_i \times strength_i \times confidence_i.$$

We further apply the same narrative mechanism decomposition framework developed in Index 2 within the subset of higher-order beliefs. This allows us to study not only whether safety perceptions are coordination-driven, but also through which economic channels those coordination beliefs operate. For example, higher-order beliefs about the U.S. dollar may load more heavily on liquidity, funding, and geopolitical coordination narratives, while higher-order beliefs about U.S. Treasuries may load more strongly on fiscal credibility and institutional-backing narratives.

These higher-order indices allow us to study coordination-based safe-asset perceptions directly from text. They therefore capture not only whether an asset is viewed as safe, but

also whether investors believe that other market participants will collectively regard the asset as safe during periods of stress.

Coordination Dynamics in Safe-Asset Beliefs. Figure 6 isolates the coordination component of safe-asset beliefs by plotting the difference between standardized higher-order and first-order safety-belief indices. Positive values indicate periods in which coordination-based safety beliefs — beliefs about how other investors are expected to behave — exceed ordinary first-order safety perceptions, while negative values indicate periods in which first-order safety beliefs dominate.

For the U.S. dollar (USD), the coordination component is strongly positive during the Global Financial Crisis and the Eurozone debt crisis, suggesting that dollar safety during these periods was driven not only by direct perceptions of safety, but also by expectations of collective reallocations and global coordination toward dollar assets. The coordination component remains elevated throughout much of the 2008–2012 period, consistent with the dollar's role as the central global funding and settlement currency during systemic crises. However, after roughly 2013–2014, the coordination component becomes persistently weaker and often negative, indicating that first-order safety beliefs increasingly dominated higher-order coordination beliefs outside acute crisis periods.

The pattern for U.S. Treasuries (UST) is even more striking. Treasury coordination beliefs exhibit sharp spikes during periods associated with institutional and sovereign stress, including the Eurozone debt crisis, the U.S. debt ceiling episode, and the taper tantrum period. In particular, the large spikes around 2011–2013 suggest that Treasury safety during these episodes was highly coordination-driven: investors not only viewed Treasuries as safe themselves, but also expected other investors and institutions to collectively reallocate toward Treasuries during periods of uncertainty. Outside major crises, however, the coordination component for Treasuries is generally modest and occasionally negative.

This suggests that safe-asset dominance contains an important coordination-based component that varies substantially across assets and over time. The U.S. dollar appears to derive coordination-driven safety primarily during episodes of global systemic stress, while U.S. Treasuries display episodic but extremely strong coordination dynamics during periods of sovereign and financial uncertainty. More broadly, the results support the view that safe assets are not merely passive stores of value, but coordination objects whose perceived safety partly depends on beliefs about the behavior of other market participants.

Narrative Channels of Coordination-Based Safety Beliefs. Figure 7 compares higher-order and first-order safe-asset narratives across mechanisms and countries for both the U.S. dollar and U.S. Treasuries. The heatmaps report the difference between higher-order and first-order mechanism measures, where positive values indicate that higher-order narratives place relatively greater emphasis on a given mechanism than first-order narratives, while negative values indicate relatively lower emphasis.

First, higher-order narratives systematically place greater emphasis on institutional and coordination-related mechanisms than first-order narratives. For the U.S. dollar, higher-order narratives disproportionately amplify monetary backstop, fiscal creditworthiness, and financial stability mechanisms, particularly in countries such as Ireland, Korea, Singapore, and the United Kingdom. By contrast, geopolitical and liquidity-related narratives exhibit comparatively smaller higher-order amplification for the dollar, suggesting that these dimensions are already deeply embedded in baseline first-order perceptions of dollar safety. For U.S. Treasuries, higher-order narratives more strongly emphasize liquidity, market functioning, and financial-stability mechanisms, consistent with the idea that Treasury safety during stress episodes depends critically on expectations about coordinated flight-to-safety behavior and market-wide reallocations. At the same time, fiscal-creditworthiness narratives for Treasuries exhibit comparatively limited higher-order amplification, implying that sovereign credibility is already strongly incorporated

into first-order Treasury safety perceptions. Overall, the figure suggests that higher-order safe-asset beliefs are not simply stronger versions of first-order beliefs, but instead reflect distinct coordination-based narrative structures that vary systematically across assets and countries.

4 Belief Measures and Portfolio Reallocations

The previous sections establish two complementary empirical facts. First, Section 2 documents that institutional investors systematically reallocate toward U.S. Treasuries and other dollar-denominated assets during periods of global financial stress, and that the magnitude of these reallocations varies substantially across crisis episodes and asset classes. Second, Section 3 shows that perceived safe-asset status is multidimensional: different assets are associated with different narrative mechanisms, and these mechanisms vary across countries and over time. Together, these findings raise a natural question: do changes in narrative-based safety beliefs *predict* the portfolio reallocations documented in Section 2, and if so, through which mechanisms? More importantly, to what extent are these reallocations driven by higher-order coordination beliefs rather than first-order perceptions of safety?

4.1 Empirical Framework

We estimate panel regressions linking institutional portfolio allocations to lagged belief-based safety measures. For institutional investor i, asset category a, fund domicile country c, and quarter t, we estimate:

$$\text{Share}^{a}_{i,c,t} = \beta \cdot \text{Belief}^{a}_{c,t-1} + \gamma_i + \delta_t + \varepsilon_{i,c,t}, \tag{1}$$

where $\text{Share}^{a}_{i,c,t}$ is the portfolio share allocated to asset class a, $\text{Belief}^{a}_{c,t-1}$ is a lagged belief-based safety index constructed from newspaper text, γ_i denotes investor fixed effects, and

δ_t denotes quarter fixed effects. The one-quarter lag ensures that the belief measure is predetermined relative to the portfolio allocation it is meant to explain, thereby reflecting the mechanism through which narrative shifts *precede* observable capital flows.

4.2 Do Safety Beliefs Predict Portfolio Reallocations?

Table 6 examines whether first-order and higher-order safe-asset beliefs predict subsequent portfolio reallocations by global investment funds. A key advantage of our belief measures is that they vary not only over time but also across source-country information environments, allowing us to exploit cross-country heterogeneity in narrative exposure rather than relying solely on aggregate fluctuations in global uncertainty.

Panel A shows that first-order safety beliefs are positively associated with reallocations toward U.S. sovereign bonds. The coefficients remain economically meaningful and statistically significant across specifications with quarter fixed effects and macro-financial controls. By contrast, first-order beliefs display substantially weaker and less stable relationships with broader U.S. asset holdings. In particular, the coefficient on the aggregate first-order safety index becomes small and only marginally significant once controls are included. These findings suggest that direct perceptions of safe-asset status are most strongly associated with flight-to-safety reallocations toward Treasuries rather than reallocations toward risky dollar-denominated assets more broadly.

Panel B reveals a markedly different pattern for higher-order beliefs. The higher-order aggregate safety index strongly predicts reallocations toward both U.S. sovereign bonds and broader U.S. assets, and the effects are particularly large for broad U.S. asset holdings. In contrast to the first-order specifications, the higher-order coefficients for broad U.S. assets remain economically large and highly statistically significant even after macroeconomic and financial controls are included. This result suggests that coordination-oriented narratives contain predictive information that is distinct from direct assessments of asset safety.

Overall, the contrast between Panels A and B points to an important distinction between first-order and higher-order beliefs. First-order narratives primarily capture investors' direct perceptions of safety and are most strongly associated with Treasury reallocations. Higher-order narratives, by contrast, appear to capture expectations about collective market behavior and coordination dynamics, and are substantially more important for explaining reallocations toward broader dollar-denominated assets. These findings are consistent with the view that international demand for U.S. assets depends not only on whether investors themselves perceive an asset as safe, but also on whether they expect other investors to do the same.

4.3 Coordination-Based Reallocations

Table 7 compares mechanism-specific first-order and higher-order safety beliefs directly. The results reveal a striking difference between the mechanisms associated with first-order safety perceptions and those associated with coordination-based reallocations.

Panel A shows that first-order mechanism-specific beliefs exhibit heterogeneous and sometimes weak relationships with portfolio reallocations. For U.S. sovereign bonds, geopolitical-and-global-uncertainty narratives are positively associated with Treasury demand, while liquidity narratives enter negatively. Monetary-backstop and fiscal-creditworthiness narratives are generally small or insignificant. For broader U.S. assets, liquidity narratives are positively associated with reallocations, while financial-stability narratives enter negatively. Overall, first-order mechanism effects are economically mixed and vary substantially across asset classes.

Panel B reveals a much more systematic pattern for higher-order beliefs. Nearly all higher-order mechanism measures are positively associated with reallocations toward both U.S. sovereign bonds and broader U.S. assets. The coefficients are particularly large for broad U.S. asset allocations, where higher-order liquidity, monetary-backstop, financial-stability, and geopolitical narratives all exhibit strong positive predictive power. In contrast

to the first-order specifications, the higher-order mechanism effects are economically large, statistically significant, and remarkably consistent across narrative channels.

These findings suggest that higher-order beliefs amplify portfolio reallocations through a broader and more stable set of narrative mechanisms than first-order beliefs alone. Whereas first-order narratives primarily capture investors' direct perceptions of asset safety, higher-order narratives capture expectations about how global investors collectively coordinate toward dollar assets during periods of stress. In this sense, safe-asset demand contains an important self-fulfilling component: investors allocate toward dollar assets not only because they personally regard them as safe, but also because they expect other market participants to do the same.

5 Conclusion

This paper develops a belief based framework for understanding safe asset demand and applies it to distinguish the safety of U.S. Treasury securities from that of the U.S. dollar. Combining security level portfolio holdings with large scale newspaper data, we construct novel measures of perceived safety, narrative mechanisms, and higher order coordination beliefs directly from text rather than inferring them from prices or realized flows.

Three findings stand out. First, U.S. Treasuries and the U.S. dollar are perceived as safe for different reasons. Treasury safety is most closely associated with institutional stability, fiscal credibility, and crisis insurance narratives, while dollar safety is more strongly linked to global liquidity provision, funding capacity, and geopolitical dominance. These differences are stable across countries and over time, suggesting that Treasuries and the dollar possess distinct narrative foundations within the international monetary system.

Second, belief based safety measures predict institutional portfolio reallocations. First order safety beliefs, which capture investors' direct assessments of asset safety, are most strongly associated with reallocations into U.S. sovereign bonds. Their predictive power for broader dollar denominated assets is weaker and less stable. By contrast, higher order

beliefs, which capture expectations about how other investors will behave, strongly predict reallocations toward both Treasuries and broader U.S. assets. The effects are particularly large for broad dollar asset holdings, suggesting that coordination dynamics play a central role in sustaining global demand for dollar assets.

Third, the mechanism level evidence shows that coordination based reallocations operate through multiple narrative channels simultaneously. First order mechanism specific beliefs exhibit heterogeneous and sometimes negative relationships with portfolio allocations. Higher order beliefs, however, are consistently positive across liquidity, monetary backstop, financial stability, fiscal credibility, and geopolitical mechanisms. This pattern suggests that safe asset demand contains an important self reinforcing component. Investors allocate toward dollar assets not only because they regard them as safe themselves, but also because they expect other investors to do the same.

The results imply that safe asset dominance is not solely a reflection of economic fundamentals. It is also sustained by shared narratives and coordination beliefs about how global investors will behave during periods of stress. The durability of dollar dominance therefore depends not only on institutional credibility and macroeconomic fundamentals, but also on the stability of collective expectations surrounding the global role of dollar assets.

These findings have several implications. Belief based safety measures may provide useful leading indicators of capital flow dynamics and systemic stress. Different narrative mechanisms affect Treasuries and broader dollar assets differently, implying that shocks to fiscal credibility, liquidity provision, or geopolitical positioning may transmit unevenly across asset classes. More broadly, the results suggest that shifts in coordination beliefs may amplify reallocations during crises and potentially contribute to abrupt changes in global portfolio demand.

Future work could extend this framework by linking belief based safety measures more directly to exchange rates and convenience yields, incorporating additional international

news sources, and studying how major policy events affect both beliefs and portfolio reallocations. We view the belief based measurement framework developed here as a first step toward understanding how narratives and coordination beliefs shape global safe asset demand and international capital flows.

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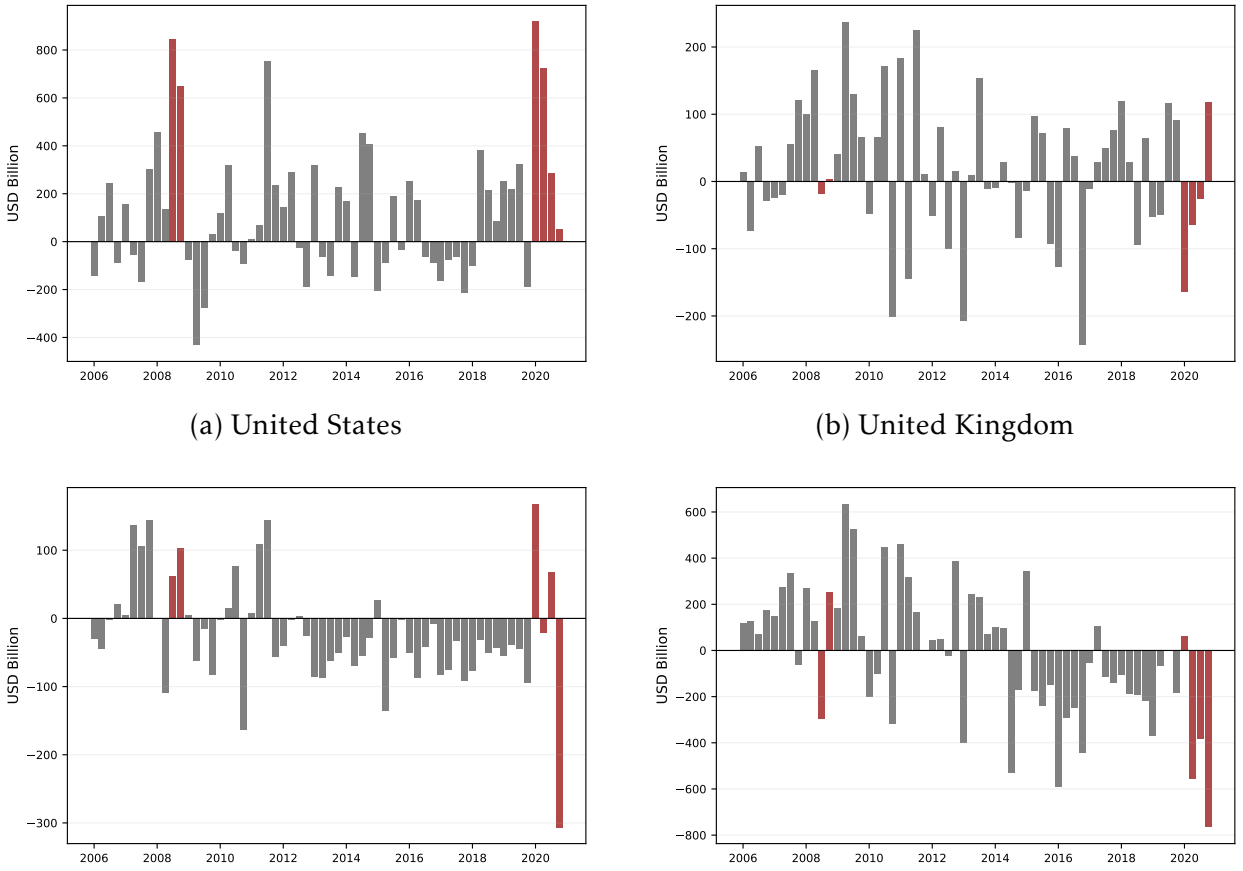
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Figures and Tables



(a) United States

(b) United Kingdom

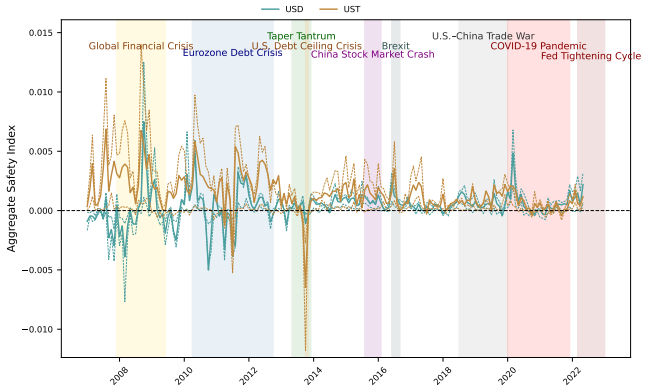
(c) Germany

(d) All advanced economies excluding the United States

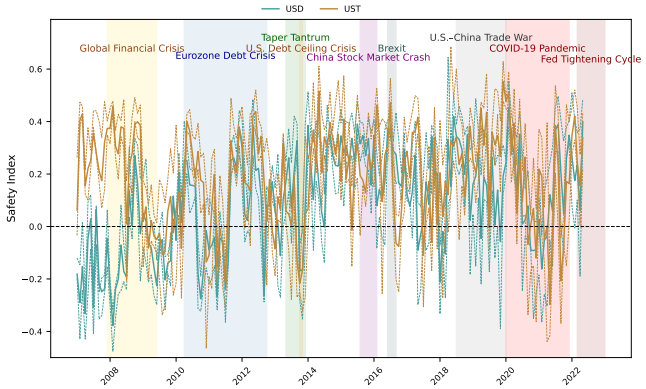
Figure 1: Net Portfolio Inflows Across Advanced Economies

Notes: This figure reports quarterly net portfolio inflows for the United States, the United Kingdom, Germany, and all advanced economies excluding the United States over the period 2006Q1–2020Q4 using International Investment Position (IIP) data. Red bars denote the Global Financial Crisis (2008Q3–2008Q4) and the COVID-19 crisis (2020Q1–2020Q4). Positive values indicate net portfolio inflows. The figure highlights the disproportionate increase in capital inflows into the United States during major episodes of global financial stress relative to other advanced economies.

(a) Aggregate safety-belief index



(b) Intensive-margin safety index



(c) Extensive-margin safety share index

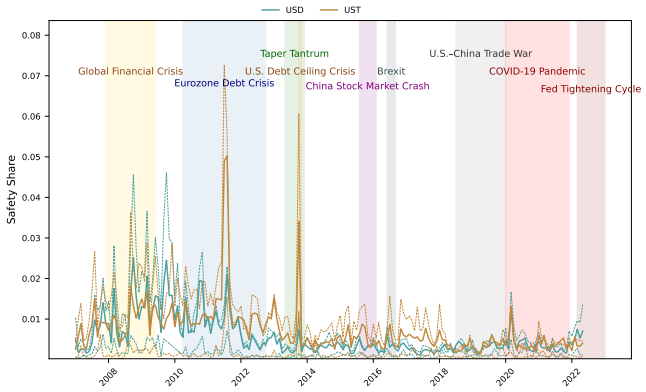


Figure 2: Time-Series Safe-Asset Belief Indices for the U.S. Dollar and U.S. Treasuries

Notes: This figure reports time-series safe-asset belief indices for the U.S. dollar (USD) and U.S. Treasuries (UST) from 2007 to 2022. Panel (a) reports the aggregate safety-belief index, which combines both the prevalence and directional tone of safety-related narratives. Panel (b) reports the intensive-margin safety index, measuring the average directional safety sentiment conditional on discussing the asset in a safety-related context. Panel (c) reports the extensive-margin safety share index, measuring the share of newspaper coverage devoted to safety-related narratives about the asset. Solid lines report cross-country means across newspaper-source countries, while dashed lines report the 25th and 75th percentiles across countries. Shaded regions denote major global financial and geopolitical episodes.

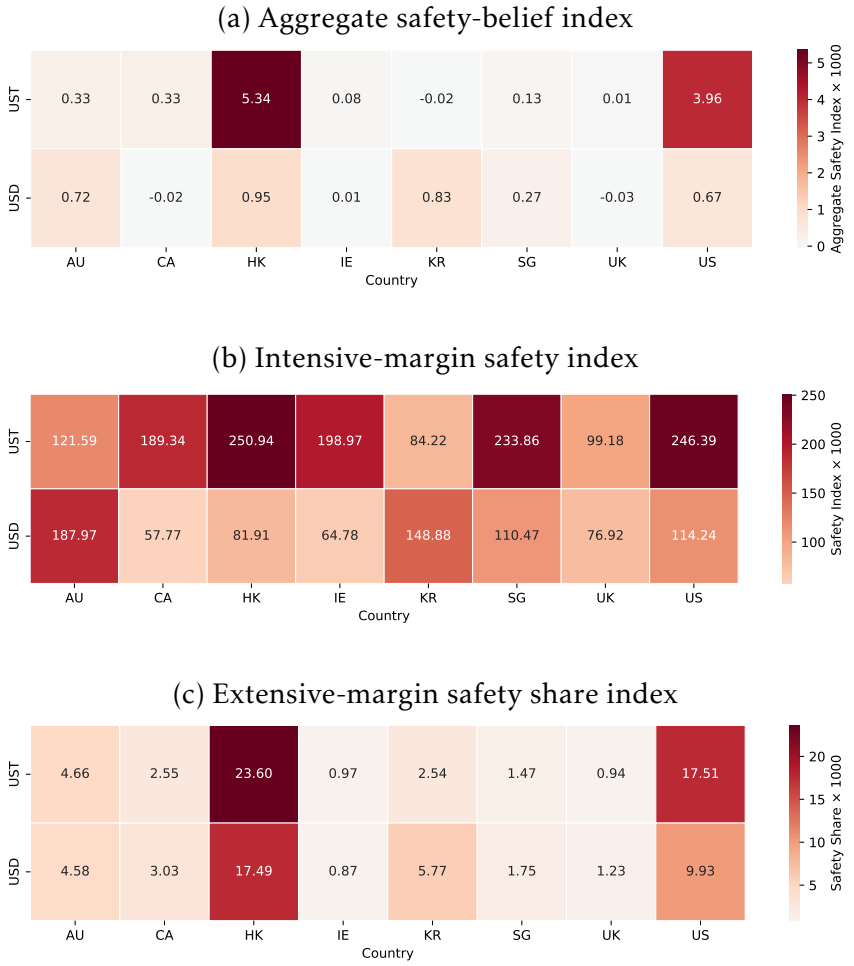
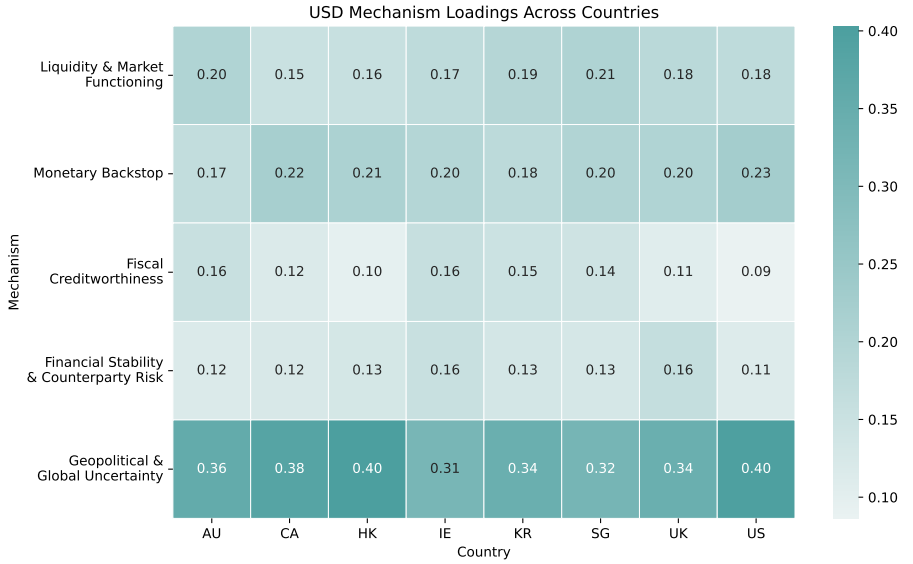


Figure 3: Cross-Country Safe-Asset Belief Indices

Notes: This figure reports cross-country averages of three complementary safe-asset belief measures for the U.S. dollar (USD) and U.S. Treasuries (UST). Panel (a) reports the aggregate safety-belief index, which combines both the prevalence and directional tone of safety-related narratives. Panel (b) reports the intensive-margin safety index, measuring the average directional safety sentiment conditional on discussing the asset in a safety-related context. Panel (c) reports the extensive-margin safety share index, measuring the share of newspaper coverage devoted to safety-related narratives about the asset. All indices are constructed from extracted belief statements in newspaper articles and averaged across the sample period. Values are multiplied by 1000 for readability.

(a) USD mechanism loadings across countries



(b) U.S. Treasury mechanism loadings across countries

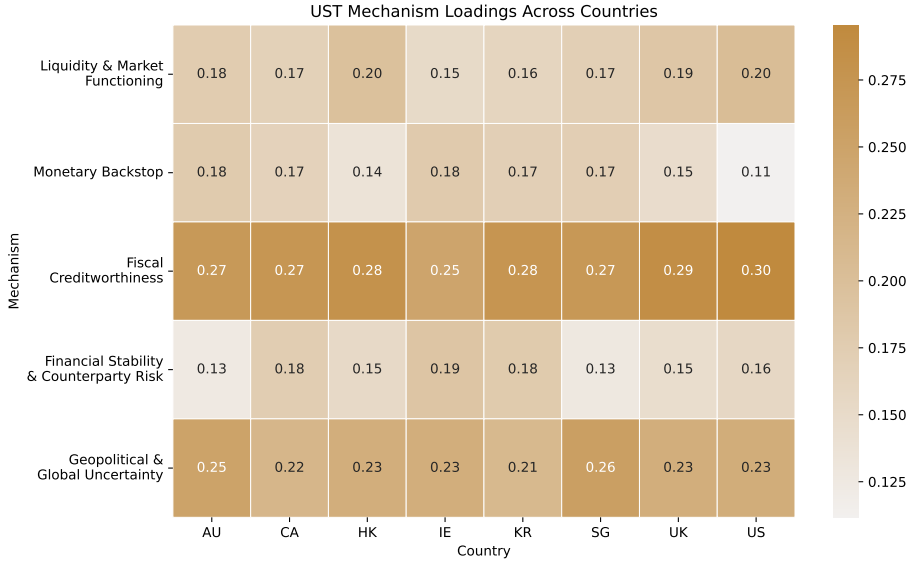
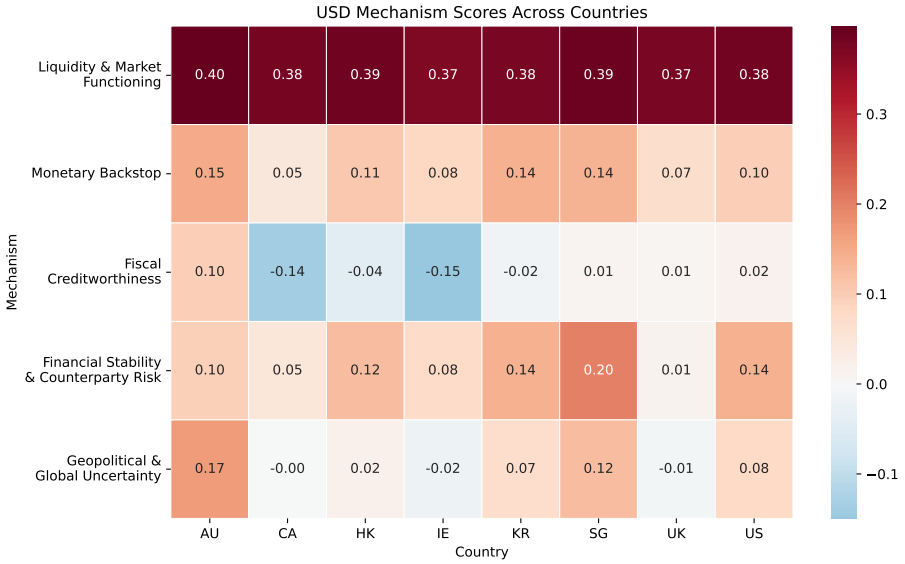


Figure 4: Cross-Country Narrative Mechanism Loadings for Safe-Asset Beliefs

Notes: This figure reports cross-country averages of mechanism loadings for the U.S. dollar (USD) and U.S. Treasuries (UST). Each cell reports the share of safety-related belief entries associated with a given narrative mechanism. Darker colors indicate larger mechanism loadings. By construction, the mechanism loadings sum to one across mechanisms for a given country and asset. The five narrative mechanisms correspond to liquidity and market functioning, monetary backstops, fiscal creditworthiness, financial stability and counterparty risk, and geopolitical and global uncertainty. The figures reveal substantial heterogeneity in the narrative channels through which different countries construct safe-asset perceptions.

(a) USD mechanism scores across countries



(b) U.S. Treasury mechanism scores across countries

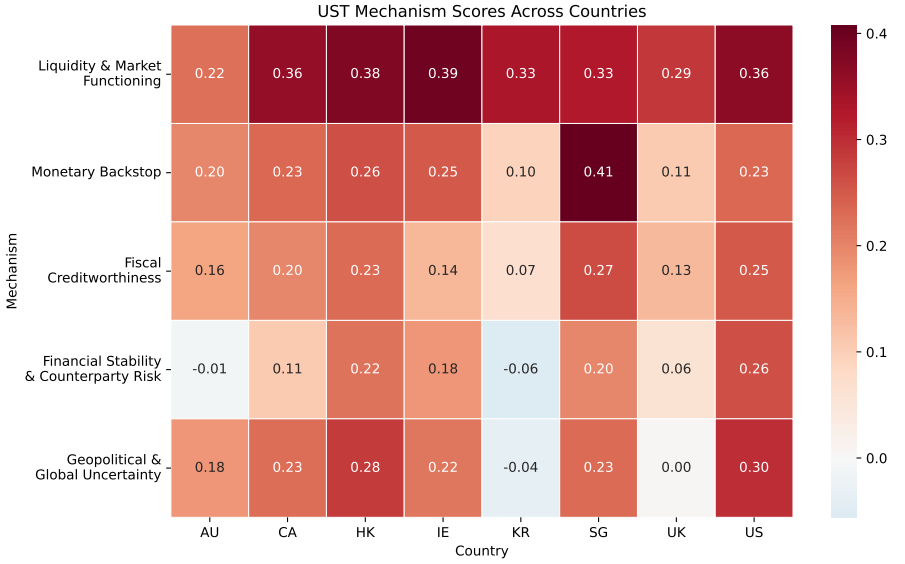


Figure 5: Cross-Country Narrative Mechanism Scores for Safe-Asset Beliefs

Notes: This figure reports cross-country averages of mechanism scores for the U.S. dollar (USD) and U.S. Treasuries (UST). Each cell reports the average directional contribution of a given narrative mechanism to perceived safety conditional on discussing that mechanism. Positive values indicate that the mechanism contributes positively to perceived safety, while negative values indicate that the mechanism contributes negatively. Red colors indicate more positive contributions to perceived safety, while blue colors indicate more negative contributions. The five narrative mechanisms correspond to liquidity and market functioning, monetary backstops, fiscal creditworthiness, financial stability and counterparty risk, and geopolitical and global uncertainty.

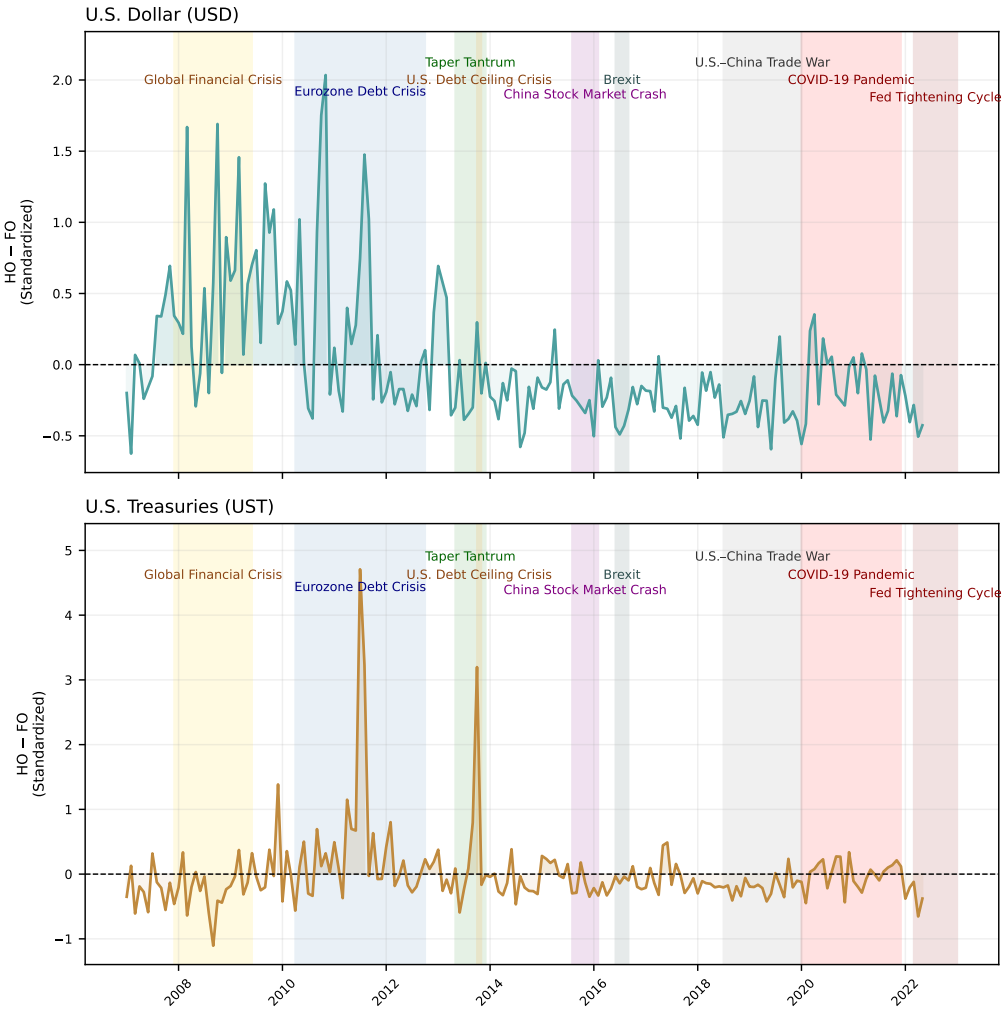
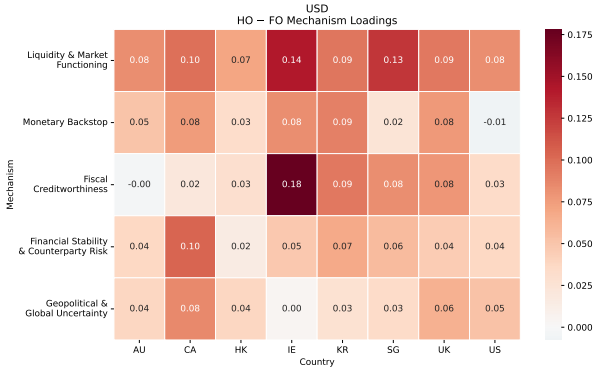


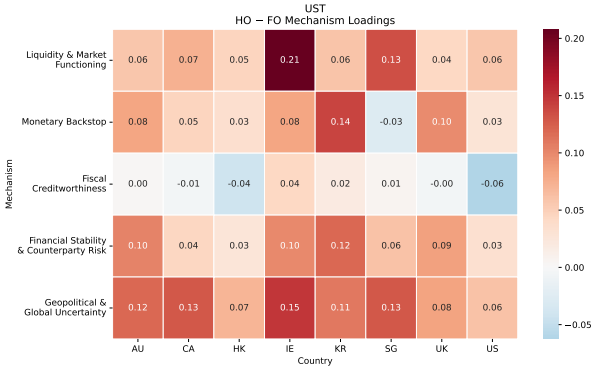
Figure 6: Coordination Component of Safe-Asset Beliefs: Higher-Order Minus First-Order Safety

Notes: This figure reports the difference between standardized higher-order and first-order aggregate safety-belief indices for the U.S. dollar (USD) and U.S. Treasuries (UST). Positive values indicate periods in which higher-order coordination-based safety beliefs exceed ordinary first-order safety beliefs, while negative values indicate periods in which first-order safety beliefs dominate. The higher-order indices capture statements referring to expectations about other investors' beliefs, collective reallocations, reserve demand, or market-wide coordination toward safe assets. Both first-order and higher-order indices are standardized separately before constructing the difference. Shaded regions denote major global financial and geopolitical episodes.

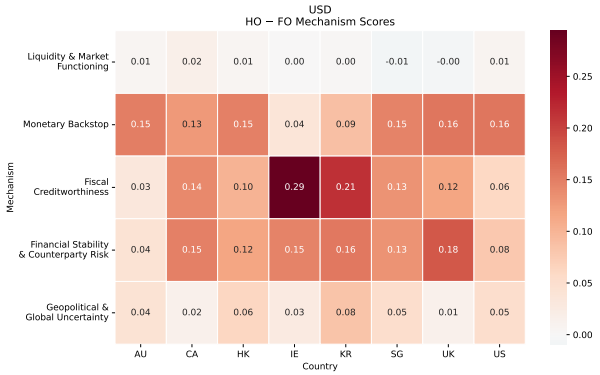
(a) USD: Higher-order minus first-order mechanism loadings



(b) UST: Higher-order minus first-order mechanism loadings



(c) USD: Higher-order minus first-order mechanism scores



(d) UST: Higher-order minus first-order mechanism scores

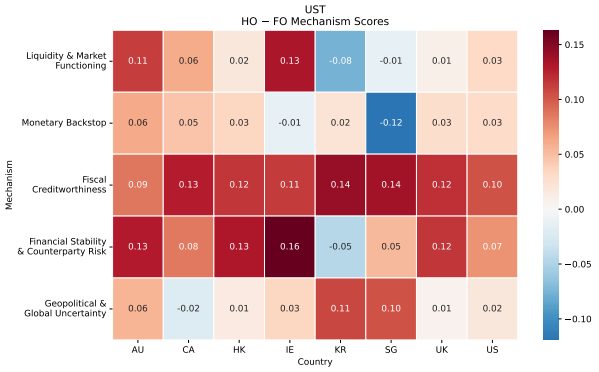


Figure 7: Higher-Order versus First-Order Safe-Asset Narrative Mechanisms

Notes: This figure compares higher-order and first-order safe-asset narratives across mechanisms and countries. Positive values (red) indicate that higher-order narratives place relatively greater emphasis on a mechanism compared with first-order narratives, while negative values (blue) indicate relatively lower emphasis. Panels (a) and (b) show differences in mechanism loadings, defined as the share of narratives associated with a given mechanism. Panels (c) and (d) show differences in mechanism scores, which capture the average intensity of safety-related sentiment within each mechanism. The figures are constructed using newspaper-based belief extraction across countries from 2007–2022.

Table 1: Shares of U.S. dollar-denominated securities issued by non-U.S. issuers

	Sovereign bonds	Corporate bonds	Equities
Major reserve currency economies	4.16	11.21	6.25
Other advanced economies	10.34	8.35	4.20

Notes: This table reports the shares of securities held by funds in our sample that are denominated in U.S. dollars and issued by non-U.S. entities. The table separately reports shares for sovereign bonds, corporate bonds, and equities. Major reserve currency economies (excluding the United States) include the euro area, Japan, and the United Kingdom.

Table 2: Share of U.S. Treasuries and USD assets during periods of stress: U.S. funds

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	US Sov Bonds Share					USD Asset Share				
% Δ VIX	0.0148***					0.0128**				
	(2.84)					(2.09)				
% Δ^+ VIX		0.0190***					0.0183**			
		(2.83)					(2.32)			
% Δ^- VIX		-0.00342					-0.0119			
		(-0.21)					(-0.56)			
gfc			0.0281***					0.0305***		
			(3.98)					(5.84)		
taper				-0.0125***					-0.0141***	
				(-2.59)					(-2.74)	
covid					-0.0397***					0.0121**
					(-6.44)					(1.99)
N	5616	5616	1089	1286	926	5613	5613	1087	1284	926

Notes: This table presents results from equation (1) estimated for the subsample of US-domiciled funds using quarterly data over our sample period. The dependent variables are the share of U.S. sovereign bonds in a fund's portfolio (columns 1–5) and the share of U.S. dollar-denominated assets (columns 6–10). The independent variable in columns (1) and (6) is the quarter-over-quarter percent change in the VIX ($\%\Delta VIX$). Columns (2) and (7) separately estimate the effects of positive and negative changes in the VIX, denoted by $\%\Delta^+VIX$ and $\%\Delta^-VIX$, respectively. The remaining columns present event-study results around the Global Financial Crisis (gfc), the Taper Tantrum (taper), and the COVID-19 crisis (covid). All regressions include fund fixed effects. Year fixed effects are included in columns (1)–(2) and (6)–(7). t-statistics are reported in parentheses. The superscripts *, **, and *** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 3: Within-asset class reallocation towards dollar denominated assets

	(1) All USD	(2) UST	(3) USD ex. UST	(4) USD Corp.	(5) USD Eq.
All countries	0.0120***	0.0279***	0.0043**	-0.0050	0.0111***
All countries, excluding U.S.	0.0138***	0.0195***	0.0137***	0.0050*	0.0221***
Reserve currency economies	0.0117***	0.0161***	0.0144***	0.0068**	0.0226***
Non-reserve currency economies	0.0163***	0.0249**	0.0122***	-0.0013	0.0199***

Notes: This table reports the estimated β_{FTS} coefficient from equation (2) using quarterly data for global institutional investors over our sample period. Columns (1)–(5) report the flight to safety (β_{FTS}) for different asset classes, starting with all U.S. dollar assets (column 1), U.S. sovereign bonds (column 2), all U.S. dollar assets excluding U.S. Treasuries (column 3), U.S. dollar corporate bonds (column 4), and U.S. dollar equities (column 5). Each row presents results for different subsamples of investors. The first row presents results for all countries in the sample, the second row excludes U.S. institutional investors, and the third and fourth rows present results for reserve currency issuing and non-reserve-currency economies, respectively. The superscripts *, **, and *** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 4: Within-asset reallocation towards dollar denominated assets in crisis periods

	(1) All USD	(2) UST	(3) USD ex. UST	(4) USD Corp.	(5) USD Eq.
All crises	0.0152***	0.0599***	0.0126***	0.0267***	-0.0141***
GFC	0.0138***	0.108***	0.0047	0.0956***	-0.0231***
Taper tantrum	-0.0136***	0.0588***	-0.0156***	-0.0044	-0.0193***
COVID-19	0.0209***	0.0339***	0.0199***	-0.0065***	0.0377***

Notes: This table reports the estimated β_{FTS} coefficient from equation (2) using quarterly data for global institutional investors around major crisis episodes over our sample period. Columns (1)–(5) report the flight to safety (β_{FTS}) for different asset classes, including all U.S. dollar assets (column 1), U.S. sovereign bonds (column 2), U.S. dollar assets excluding U.S. Treasuries (column 3), U.S. dollar corporate bonds (column 4), and U.S. dollar equities (column 5). Results for all crisis periods are reported in row 1, for the Global Financial Crisis in row 2, for the Taper Tantrum in row 3, and for the COVID-19 crisis in row 4. The superscripts *, **, and *** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 5: Within-asset reallocation toward sovereign bonds issued by reserve currency economies

	(1) Jump in VIX	(2) Three Crises	(3) GFC	(4) Taper Tantrum	(5) COVID-19
All countries	-0.0004	0.0102***	0.0232***	0.0119***	-0.0004
Non-US investors	0.0072*	0.0079***	-0.0060***	0.0083***	-0.0008
Reserve-currency economies	0.0040	0.0104***	0.0009	-0.0006	0.0039***
Non-reserve economies	0.0130	0.0014	-0.0171***	0.0361***	-0.0072***

Notes: This table reports the estimated β_{FTS} coefficient from equation (2) using quarterly data for global institutional investors oover our sample period. β_{FTS} is estimated for the asset class of sovereign bonds issued by reserve currency economies. Each row reports results for a different subsample of investors while columns report results for different periods of market volatility. Column (1) reports results for spikes in the VIX index as described in Section 7. Columns (2)–(5) report event-study estimations around all crisis episodes, the Global Financial Crisis (GFC), the Taper Tantrum, and the COVID-19 crisis, respectively. The first row reports results for all countries in the sample, the second row excludes U.S. institutional investors, and the third and fourth rows report results for reserve-currency and non-reserve-currency economies, respectively. The superscripts *, **, and *** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 6: First-order and higher-order safe-asset beliefs and fund portfolio reallocation

	U.S. Sovereign Bond Share			U.S. Asset Share		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: First-Order Belief Safety						
$AggSafety^{a}_{c,t-1}$	0.148***	0.160***	0.194***	0.238***	0.054	0.114*
	(0.007)	(0.016)	(0.020)	(0.019)	(0.046)	(0.049)
Controls	No	No	Yes	No	No	Yes
Quarter FE	No	Yes	Yes	No	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.799	0.800	0.809	0.945	0.946	0.949
N	1,839,306	1,839,306	1,371,498	1,870,336	1,870,336	1,400,538
Panel B: Higher-Order Belief Safety						
$HOAggSafety^{a}_{c,t-1}$	0.097***	0.165***	0.195***	0.193***	0.524***	0.665***
	(0.006)	(0.015)	(0.019)	(0.016)	(0.036)	(0.041)
Controls	No	No	Yes	No	No	Yes
Quarter FE	No	Yes	Yes	No	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.803	0.804	0.814	0.947	0.947	0.950
N	1,783,921	1,783,921	1,316,552	1,814,128	1,814,128	1,344,769

Notes: This table reports regressions of fund-level portfolio shares on lagged first-order and higher-order safe-asset belief indices estimated at the fund-quarter level over the period 2007Q1–2022Q1. The dependent variable is either the share of U.S. sovereign bonds or the share of U.S. assets in fund f's portfolio at quarter t. Panel A reports results using the first-order aggregate safety index, $AggSafety^{a}_{c,t-1}$, while Panel B reports results using the higher-order aggregate safety index, $HOAggSafety^{a}_{c,t-1}$. Higher-order beliefs capture narratives referring to expectations about other investors' beliefs, reallocations, or coordination behavior regarding safe assets. All independent variables are lagged by one quarter. Columns marked "Yes" include a set of financial controls. All specifications include fund fixed effects, while selected columns additionally include quarter fixed effects. Standard errors are clustered at the fund level and are reported in parentheses. Statistical significance is indicated by *, **, and *** for the 10%, 5%, and 1% significance levels, respectively.

Table 7: Mechanism-specific first-order and higher-order safe-asset beliefs and fund portfolio reallocation

	U.S. Sovereign Bond Share					U.S. Asset Share				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: First-Order Belief Safety										
Liquidity & Market Functioning	-0.049***					0.069***				
	(0.008)					(0.020)				
Monetary Backstop		-0.005					-0.008			
		(0.005)					(0.014)			
Fiscal Creditworthiness			0.011					0.168***		
			(0.007)					(0.016)		
Financial Stability & Counterparty Risk				0.011					-0.153***	
				(0.006)					(0.015)	
Geopolitical & Global Uncertainty					0.029***					0.109***
					(0.008)					(0.018)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.833	0.828	0.833	0.827	0.809	0.958	0.955	0.956	0.954	0.949
N	988,658	1,026,408	1,032,303	1,013,785	1,346,005	1,013,897	1,052,081	1,057,950	1,039,548	1,374,750
Panel B: Higher-Order Belief Safety										
Liquidity & Market Functioning	0.066***					0.226***				
	(0.010)					(0.023)				
Monetary Backstop		0.069***					0.344***			
		(0.014)					(0.037)			
Fiscal Creditworthiness			0.080***					0.197***		
			(0.010)					(0.024)		
Financial Stability & Counterparty Risk				0.190***					0.375***	
				(0.015)					(0.032)	
Geopolitical & Global Uncertainty					0.058***					0.347***
					(0.012)					(0.028)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.838	0.844	0.842	0.845	0.817	0.960	0.960	0.961	0.961	0.952
N	935,725	828,100	867,545	769,193	1,205,765	960,485	852,010	891,898	792,739	1,233,214

Notes: This table reports regressions of fund-level portfolio shares on lagged mechanism-specific first-order and higher-order safe-asset belief indices estimated at the fund-quarter level over the period 2007Q1–2022Q1. The dependent variable is either the share of U.S. sovereign bonds or the share of U.S. assets in fund f's portfolio at quarter t. Panel A reports results using first-order mechanism-specific safety indices, $Safety^{a}_{c,m,t-1}$, while Panel B reports results using higher-order mechanism-specific safety indices, $HOSafety^{a}_{c,m,t-1}$. Mechanisms include liquidity and market functioning, monetary backstop, fiscal creditworthiness, financial stability and counterparty risk, and geopolitical and global uncertainty. Higher-order beliefs capture narratives referring to expectations about other investors' beliefs, reallocations, or coordination behavior regarding safe assets. All independent variables are lagged by one quarter. All specifications include macroeconomic and financial controls, fund fixed effects, and quarter fixed effects. Standard errors are clustered at the fund level and are reported in parentheses. Statistical significance is indicated by *, **, and *** for the 10%, 5%, and 1% significance levels, respectively.

Appendix for Online Publication

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B Additional Results for Section 3 **4**

A Safe-Asset Narrative Extraction Procedure

This appendix summarizes the construction of the safe-asset narrative dataset used throughout the paper. The objective of the extraction pipeline is to identify structured belief statements related to perceived safety, safe-haven demand, reserve allocation, liquidity demand, and coordination-based reallocations toward candidate safe assets during periods of financial stress and uncertainty.

A.1 Overview of the Extraction Pipeline

The extraction procedure proceeds in three stages.

First, we construct a high-recall candidate set of potentially relevant articles using a broad retrieval system combining: (i) explicit safe-haven and reserve-asset terminology, (ii) candidate safe-asset references, (iii) market-liquidity and collateral terminology, (iv) crisis and stress-event language, and (v) reserve-currency competition terminology.

The retrieval stage is intentionally designed to prioritize recall rather than precision in order to minimize omission of implicit safe-asset narratives.

Second, we apply a light large language model to classify article relevance. This stage filters the candidate set to articles discussing perceived safety, reserve demand, liquidity demand, safe-haven flows, funding pressures, or coordination-based reallocations toward candidate safe assets. The relevance classifier is designed to identify both explicit and implicit safe-asset narratives.

Third, we extract structured statement-level belief objects from the retained articles. Each extracted statement contains information on:

- the asset being discussed;
- the directional safety tone;
- the strength and confidence of the statement;

- the narrative mechanism underlying perceived safety;
- the belief holder and source-country perspective;
- whether the statement contains higher-order coordination language.

The extraction system is designed to distinguish between first-order beliefs about asset safety and higher-order beliefs concerning expectations about the behavior of other investors, institutions, reserve managers, or markets.

A.2 Narrative Mechanism Classification

Each extracted belief statement is assigned a primary narrative mechanism corresponding to the dominant economic logic underlying the perceived safety or unsafe status of the asset. The baseline taxonomy contains five mechanisms:

1. liquidity and market functioning;
2. monetary policy credibility and institutional backstops;
3. fiscal capacity and sovereign creditworthiness;
4. financial stability and counterparty risk;
5. geopolitical and global uncertainty.

The classification procedure combines structured extraction rules with supervised language-model classification in order to maintain consistency across the full sample period.

A.3 Higher-Order Coordination Beliefs

A central feature of the extraction framework is the identification of higher-order coordination beliefs. A statement is classified as higher-order when it explicitly refers to

expectations about how other investors, banks, reserve managers, central banks, governments, or markets are expected to behave during periods of stress.

Examples include statements referring to:

- collective flight-to-safety behavior;
- reserve reallocations;
- expectations of global demand for dollar liquidity;
- coordinated demand for Treasury collateral;
- market-wide funding pressures;
- expectations about how others perceive asset safety.

These higher-order statements are used to construct the coordination-based indices developed in the main text.

A.4 Validation and Audit Procedure

The extraction pipeline was iteratively validated using manual audits of retrieved articles and extracted statements. The validation procedure focused on:

- false-positive relevance classifications;
- missed implicit safe-asset narratives;
- mechanism-classification consistency;
- higher-order belief identification accuracy.

The retrieval dictionaries and extraction rules were iteratively refined during this process to improve both recall and precision.

Additional implementation details, prompt specifications, and replication materials will be provided in the online replication appendix.

B Additional Results for Section 3

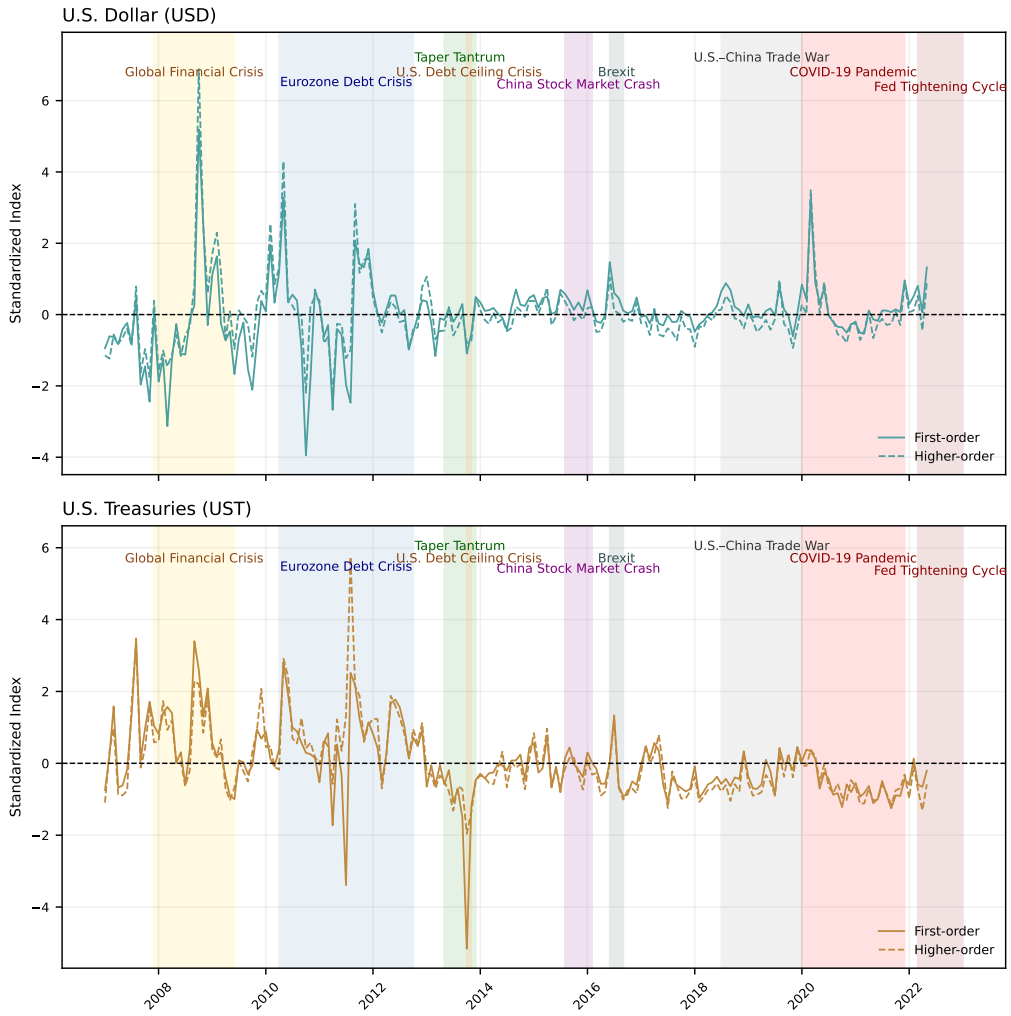


Figure A1: Standardized First-Order and Higher-Order Safe-Asset Belief Indices

Notes: This figure compares standardized first-order and higher-order aggregate safe-asset belief indices for the U.S. dollar (USD) and U.S. Treasuries (UST). Solid lines denote first-order safety beliefs, while dashed lines denote higher-order coordination-based safety beliefs. Higher-order beliefs capture statements referring to expectations about other investors' beliefs, collective reallocations, reserve demand, or market-wide coordination toward safe assets. Both series are standardized separately within each asset to facilitate comparison of their dynamics over time. Shaded regions denote major global financial and geopolitical episodes.

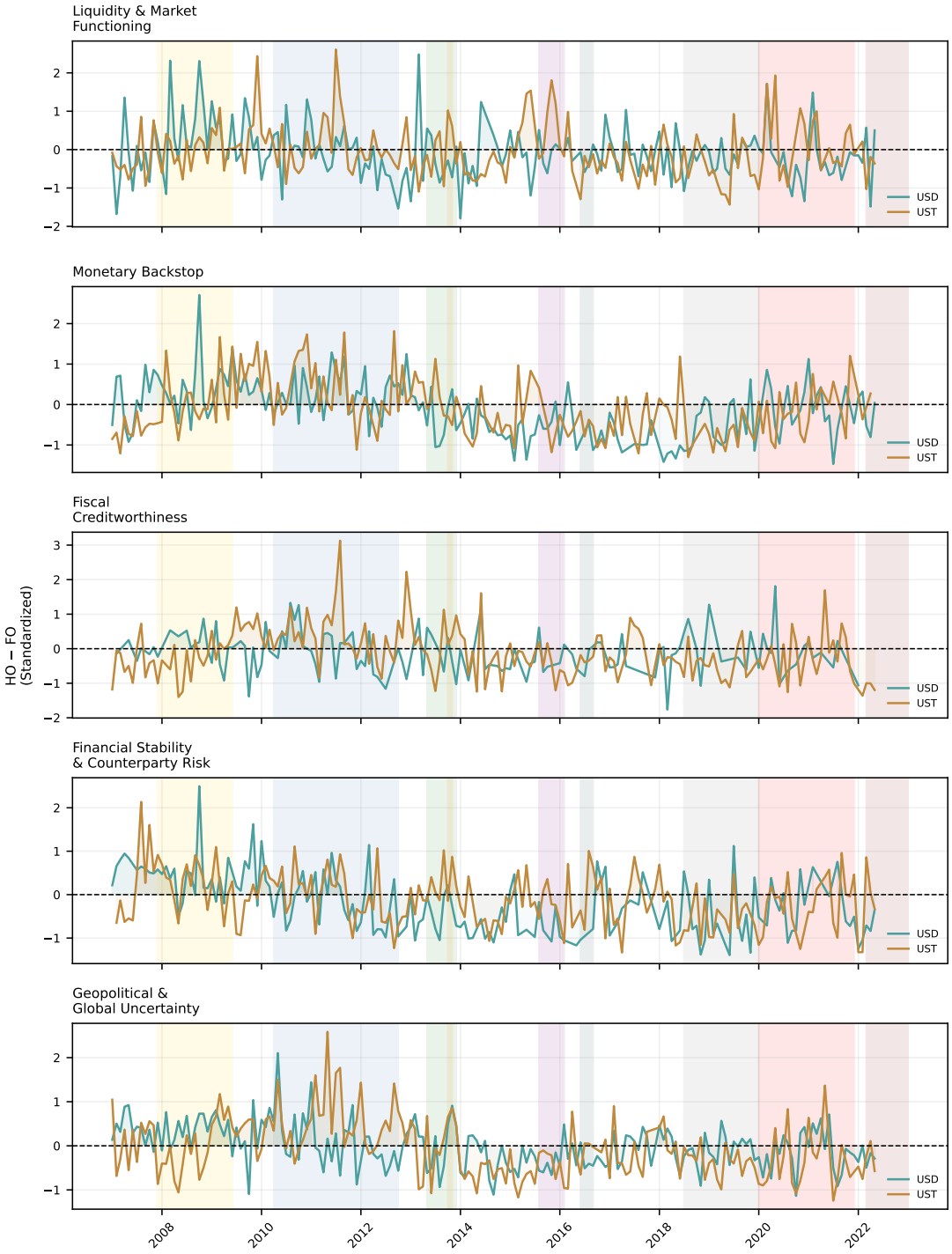


Figure A2: Coordination Component of Safe-Asset Beliefs Across Narrative Mechanisms

Notes: This figure reports the difference between standardized higher-order and first-order mechanism-specific safety scores for the U.S. dollar (USD) and U.S. Treasuries (UST). Each panel corresponds to one narrative mechanism. Positive values indicate periods in which higher-order coordination-based beliefs exceed ordinary first-order safety beliefs for the corresponding mechanism, while negative values indicate periods in which first-order beliefs dominate. The higher-order indices capture statements referring to expectations about other investors' beliefs, collective reallocations, reserve demand, funding needs, or market-wide coordination toward safe assets. Both first-order and higher-order mechanism scores are standardized separately within each asset-mechanism pair before constructing the difference. Shaded regions denote major global financial and geopolitical episodes.