U.S. Stablecoins and the Global Safe Asset Channel: Private Money Meets Public Debt*

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Abstract

This paper studies the international macro-financial implications of U.S. dollar-backed payment stablecoins, in absence of adverse risk scenarios. We show that these digital assets create a new *global safe asset channel* linking private money creation and global payment demand directly to U.S. public debt. By reshaping the demand for safe assets and the geography of dollar intermediation, stablecoins alter monetary transmission and international spillovers. Although they widen the dollar's global footprint and compress U.S. risk-free yields, they generate non-trivial macro-financial costs. Stablecoins amplify the pass-through of U.S. monetary policy to Treasury yields while dampening its real effects, and increase both U.S. and foreign exposure to cross-country shocks. These effects are limited at low adoption levels but rise non-linearly with stablecoin capitalization, tightening the fiscal–monetary nexus and reshaping the functioning of the international financial system.

Keywords: Stablecoins; Safe Asset Demand; Treasury Yields; Monetary Transmission; International Spillovers

JEL Codes: G15, E42, E44, E52, F3

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1 Introduction

Recent technological innovation has enabled the private sector to issue a new digital form of money: stablecoins.[1] These are crypto-assets designed to maintain a stable value against the U.S. dollar and are typically backed by short-term safe and liquid assets. So far, their main use has been to facilitate transactions within crypto markets, allowing traders to move between volatile digital assets without repeatedly converting into fiat currency (Mizrach, 2025).[2] They are now gaining ground in mainstream finance and global payments as regulatory clarity improves and demand rises for faster, cheaper, and continuous cross-border settlement.[3] The U.S. GENIUS Act (Guiding and Establishing National Innovation for U.S. Stablecoins), approved in July 2025, provides a legal framework for issuance and supervision that supports their global diffusion. Yet their rise has the potential to reshape global financial markets by creating new trade-offs, even when adverse risk scenarios do not materialize. More fundamentally, the economic mechanism at stake is not limited to stablecoins, but would apply to any instrument used internationally for payments and store-of-value purposes that is redeemable at par and backed one for one by safe public assets. At present, however, stablecoins are the only instrument that combines all of these features. The aim of this paper is to study whether and how the growing relevance of stablecoins affects the transmission of U.S. monetary policy, the propagation of shocks across countries, and macroeconomic stability.

Our central insight is that U.S. dollar-backed payment stablecoins create a new *global safe asset channel* linking private money creation, global payment needs, and international store-of-value demand directly to U.S. public debt. Through this channel, fluctuations in stablecoin demand translate mechanically into fluctuations in demand for the global safe asset. To make the intuition transparent, we first present a stripped-down two-country model that isolates the core balance-sheet logic. We then embed the same

[1]Throughout the paper, "stablecoins" refers to USD-pegged payment stablecoins under the U.S. GENIUS Act: unremunerated and fully backed by U.S. safe assets. More generally, stablecoins are crypto-assets pegged to a reference value and usually backed by short-term safe assets (Scotti, 2025), though some use commodities, other crypto-assets, or algorithms. Under the EU MiCAR framework, reserves may mix bonds and bank deposits.

[2]Only a fraction, about USD 10 billion, of the market capitalization of stablecoins is currently estimated to be used in payments outside the crypto world.

[3]The average cost of retail transactions ranges between 2 and 2.6% with 24% of corridors with costs exceeding 3% and peaks of 4% in South America or Sub-Saharan Africa. In addition, 30% of retail payments take more than one day to execute, with peaks of 100% in some regions of Africa. Sending remittances is even more expensive, up to 12% of the transacted amount, and is also slower and more difficult to access (see Financial Stability Board (June 2025)).

mechanism in an open-economy multi-country model in which U.S. stablecoins are fully backed by U.S. Treasuries and used both as settlement tokens and as trading tokens. In this environment, stablecoin adoption generates a new form of convenience yield on U.S. debt and reshapes the dynamics of global financial markets.

The intuition of the main mechanism highlighted in this paper is straightforward, and a simplified model presented in section 2.1 makes it immediate. Because stablecoins are backed by U.S. safe assets, swings in demand for stablecoins directly affect the demand for U.S. short-term Treasuries. In steady state, this benefits the U.S. by compressing risk-free yields, more the larger is their market capitalization. But the diffusion of stablecoins also has costs. Any shock that appreciates (depreciates) the dollar creates positive (negative) valuation effects for foreign holders of dollar-backed stablecoins. This incentivises foreign holders to redeem stablecoins for two reasons: (i) to realise valuation gains on their positions (in their role as trading tokens), and (ii) because they need fewer of them to settle a given amount of domestic-currency payments (in their role as settlement tokens). As a consequence, the stablecoin issuer must sell U.S. bonds to meet redemptions and repay foreign holders—and, symmetrically, purchase bonds when foreign demand for stablecoins increases. In this respect, the mechanism parallels the deposits channel of Drechsler et al. (2017), in which a policy tightening induces deposit outflows. Here, redemptions of stablecoins generate capital flows that directly affect Treasury demand through reserve backing.

Therefore, these balance-sheet adjustments generate capital outflows (inflows) from (into) the United States, and their magnitude grows with the steady-state stock of stablecoins. The amplification is non-linear. When stablecoin holdings are small, their marginal value derives mainly from liquidity services, so demand is relatively insensitive to financial returns. As capitalization rises, the marginal liquidity value declines and stablecoins are increasingly held for portfolio purposes. Demand then becomes more responsive to interest rate differentials and exchange rate movements. Because issuance is fully backed by Treasuries, these portfolio reallocations map one-for-one into bond sales and purchases, magnifying fluctuations in Treasury demand and yields.

As a result, in the U.S., as equilibrium holdings of stablecoins grow, the pass-through of monetary policy to yields increases –amplified by stablecoin-driven Treasury demand movements– but its effects on real variables fall, due to dampened exchange rate responses. Therefore, U.S. monetary policy becomes less effective in steering aggregate demand, by up to 30% less, and a stronger reaction of interest rates to inflation is needed to preserve macroeconomic stability. In addition, stablecoins strengthen the cross-country transmission of shocks both from the U.S. to the rest of the world and from foreign economies to the U.S. These effects are small at low adoption levels but increase non-linearly with stablecoin adoption. Consistent with this mechanism, we show empirically that the response of short-term Treasury yields to monetary policy shocks is amplified when the stablecoin footprint in U.S. debt markets is larger.

Although stablecoins are still far from large-scale adoption, their global footprint has expanded rapidly. U.S. dollar stablecoin capitalization exceeded $300 billion in January 2026 (Figure 1a), making major issuers comparable in size to mid-sized sovereign investors (Ahmed and Aldasoro, 2025) in their holdings of U.S. debt (Figure 1b). As shown in Figure 2, while Money Market Funds still hold larger amounts of U.S. debt, stablecoin issuers are beginning to emerge among significant Treasury holders and could become important marginal participants in bond markets if adoption accelerates. A key driver of such expansion is the potential diffusion of stablecoins beyond crypto trading into domestic and cross-border payments, where faster and continuous settlement may generate additional demand for dollar liquidity.[4] Under the GENIUS Act (in contrast to MiCAR), issuance is open to non-bank entities, potentially broadening participation beyond the traditional banking sector. Market projections suggest that capitalization could reach up to USD 4 trillion by 2028.[5]

Despite their potential expansion, stablecoins remain structurally different from bank deposits. Because they are unremunerated, they are unlikely to be perfect substitutes for deposits as a store of value.[6] In addition to potential disintermediation, regulatory arbitrage and multi-issuer arrangements could also arise (Liang et al., 2024; Portes, 2025).[7] In what follows, we abstract from these channels and show that stablecoins reshape

[4]Non-crypto payment use remains limited; early cross-border cases have primarily involved sanction-evasion activity (*Financial Times*, 6 October 2025).

[5]Projections vary widely. J.P. Morgan estimated $500 billion by 2028, Coinbase $1.2 trillion, Citigroup $1.6–3.7 trillion by 2030, Standard Chartered $2 trillion by 2028, and Bernstein $4 trillion by 2035 (Singh, 2025).

[6]Although the GENIUS Act prohibits the payment of interest on stablecoins, issuers or affiliated platforms may attempt to offer indirect forms of remuneration—such as rewards or yield products linked to reserve portfolios.

[7]Multi-issuer stablecoins arise when Electronic Money Tokens can be issued in multiple jurisdictions by different legal entities but are de facto identical. Disintermediation risk and multi-issuer arrangements are extensively studied in the ESRB report (European Systemic Risk Board, 2025).

bond-market transmission and global financial linkages even under these conservative assumptions.[8]

The diffusion of stablecoins echoes the historical development of the eurodollar market. In the 1960s, dollar-denominated deposits held outside the United States emerged to satisfy growing global demand for dollar liquidity,[9] much like stablecoins are now envisioned to do in digital form. The expansion of eurodollars was partly driven by regulatory and capital flow restrictions,[10] and enabled foreign institutions to access dollar funding without operating within the U.S. banking system. At the time, observers debated whether offshore dollar liquidity would destabilize U.S. money markets by draining domestic funding or instead function as a complementary extension of the banking system (Frydl, 1979; Friedman, 1971).[11]

Similarly, the emergence of stablecoins has sparked an intense debate among economists and policymakers about their potential risks and benefits. Some observers warn that the absence of binding capital and liquidity requirements may foster excessive risk-taking and reinforce dollar dominance (Rey, 2025; Eichengreen, 2025; Eichengreen et al., 2025), while others emphasize the risk of cyber runs or peg instability during stress episodes (Rogoff et al., 2025; Cipollone, 2025; Kosse et al., 2023). At the same time, stablecoins may deliver efficiency gains by providing a dollar-denominated digital asset that combines safety and immediacy (Waller, 2025; Ahmed et al., 2025), and could compress U.S. yields in the long run (Azzimonti and Quadrini, 2025).

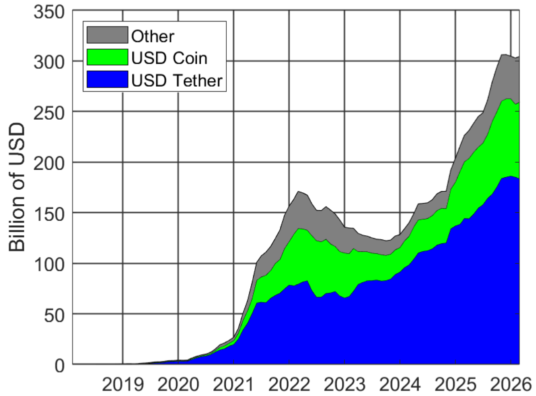
Despite these parallels, stablecoins differ from eurodollar deposits in three fundamental respects. First, they are expected to be fully backed one-for-one by short-term

[8] Appendix A provides a broader discussion of additional macro-financial and institutional implications of large-scale U.S. stablecoin adoption.

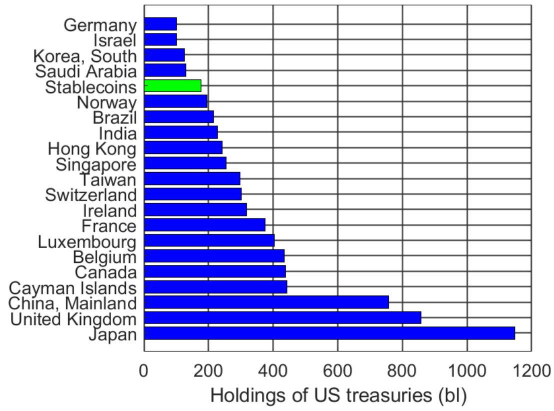
[9] The U.S. dollar is central to the global monetary system, comprising 50% of international loans, over half of foreign reserves, 90% of FX transactions, and 40% of trade invoicing (European Central Bank, June 2025). This dominance fuels global demand for dollar liquidity to settle liabilities and hold assets.

[10] The 1963 Interest Equalization Tax drove international borrowers to less regulated markets, making London a hub for eurodollars—dollar-denominated deposits outside the U.S. These offered tax benefits, anonymity, and freedom from controls, boosting global finance and cementing London as a financial center. During the Cold War, Soviet and Eastern Bloc countries sought dollar reserves beyond U.S. reach, while European and Asian banks met rising demand for dollar financing, fueling offshore markets and complicating global financial oversight.

[11] Over time, both visions proved to be partially right. On one hand, the eurodollar market became an institutionalized central mechanism for global dollar liquidity, enabling firms, governments, and financial institutions worldwide to access U.S. dollars without operating directly within the U.S. banking system. However, on the other, it proved to be an important channel for the transmission of both U.S. monetary policy and U.S. shocks across the globe (e.g. during the 2008 global financial crisis, see McCauley (2024)).



(a) Stablecoin market capitalization.



(b) Holdings of U.S. debt.

Figure 1: Stablecoin market capitalization and holdings of U.S. debt by countries and stablecoin issuers.

Notes: Panel a, billion U.S. dollars. Sources: Chainalysis, CryptoCompare, CoinGecko, IntoTheBlock. Last observation February 2026. Panel b: holdings as of June 2025 in billion U.S. dollars. Sources: U.S. Treasury (TIC); "Stablecoins" include reported holdings of Tether (USDT) and USD Coin (USDC).

U.S. safe assets, mechanically linking private digital money creation to Treasury demand. Unlike eurodollar banks, which operated with fractional reserves (Friedman, 1971), stablecoin issuers must adjust their Treasury holdings one-for-one with changes in demand, amplifying fluctuations in U.S. bond markets and affecting the U.S. current account. Second, stablecoins are unremunerated under both the GENIUS Act and MiCAR. Changes in U.S. financial conditions therefore affect issuers' margins rather than directly altering returns to holders,[12] although foreign holders remain exposed to exchange rate movements. Third, while eurodollars were primarily accessed by banks and wholesale institutions, stablecoins are designed for direct retail and household use. This broadens the base of global dollar demand and creates a more immediate balance-sheet link between foreign economic conditions and U.S. Treasury markets.

Stablecoins also differ from Central Bank Digital Currencies (CBDC). The issuance of a CBDC does not generate additional demand for safe assets, as agents swap liabilities directly with the central bank, leaving asset prices unchanged (Adalid et al., 2022).[13] By

[12] This is meant to prevent them from competing directly with dollar deposits in their role as a store of value. As a result, the risks of stablecoins disintermediating banks remain limited (since deposits are remunerated), and they are more likely to substitute cash-like instruments.

[13] CBDCs can be issued through several channels: (i) in exchange for banknotes, (ii) in exchange for bank reserves, (iii) against additional borrowing by banks from the central bank, or (iv) in exchange for assets sold by banks to the central bank. The first two cases represent a substitution among existing central bank liabilities. Under the third, the central bank effectively re-injects into the banking system the liquidity withdrawn through the conversion of deposits into CBDC. In the fourth, the transfer of assets from banks to the central bank merely alters ownership without exerting meaningful effects on asset prices.

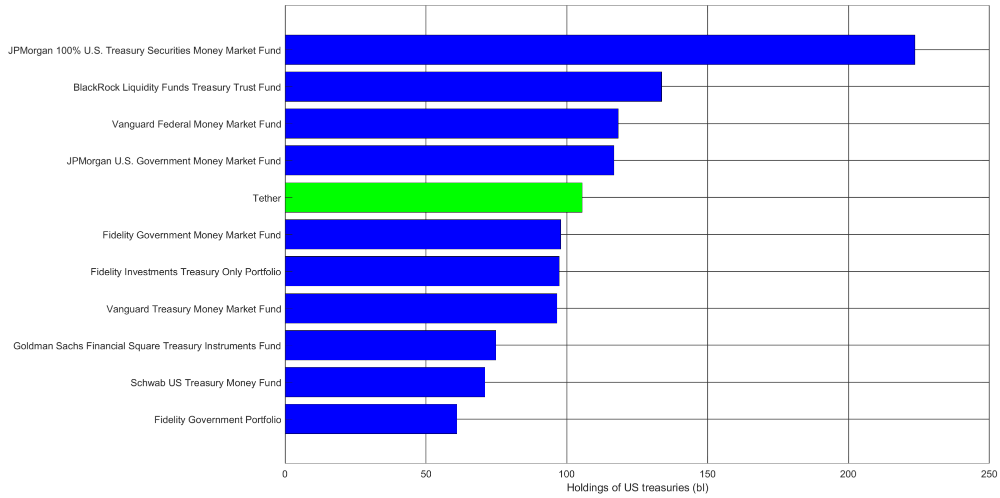


Figure 2: Stablecoin holdings of U.S. Treasury bills compared to major hedge fund holdings, 2024.
Sources: Bloomberg.

contrast, each unit of stablecoins minted or redeemed requires a corresponding purchase or sale of U.S. Treasuries, directly affecting bond demand.

These structural differences imply that stablecoins may alter not only the foreign transmission of U.S. shocks but also the sensitivity of U.S. financial conditions to developments abroad. In this paper, we therefore ask: (i) How does the presence of stablecoins change the transmission of US monetary policy, domestically and internationally? (ii) How should the Federal Reserve adapt its monetary policy strategy in a world where stablecoins play a growing role in liquidity creation and fiscal financing? (iii) Does the dependence of U.S. government debt markets on stablecoin demand introduce new volatility channels for the dollar and for Treasury yields? (iv) What happens if real Treasury bill rates turn negative, reducing issuers' profits and leading households to demand a risk premium, possibly triggering a run?

We address these questions in a multi-country DSGE model in which dollar-backed stablecoins enter the liquidity constraint alongside money and are fully backed one-for-one by short-term U.S. Treasuries. Stablecoins serve both as settlement instruments and as dollar-denominated stores of value, with demand depending on a confidence parameter, $\mu_{sc,t}$, that captures perceived redemption and valuation risk. This framework allows us to quantify how stablecoin adoption alters Treasury demand, monetary transmission, and international spillovers. Our central contribution is to show that stablecoins amplify the fiscal–monetary nexus: by tying private money creation to public debt markets, they generate new trade-offs for the Federal Reserve and increase the sensitivity of U.S. financial conditions to global shocks.

Quantitatively, this global safe asset channel has sizable effects. On the U.S. side, the presence of stablecoins increases the pass-through of domestic monetary policy to short-term yields but dampens its real effects. In our simulations, a U.S. tightening raises Treasury yields more than in a world without stablecoins yet limits dollar appreciation, so that the output response is about 30% smaller. On the spillover side, shocks originating abroad have a larger impact on U.S. yields because changes in foreign payment needs and portfolio demand for stablecoins translate one-for-one into adjustments in Treasury holdings. This mechanism increases the sensitivity of U.S. financial conditions to global shocks and tightens the two-way link between the U.S. and the rest of the world.

The global safe asset channel arises from a cross-country arbitrage condition introduced by stablecoin adoption. We show analytically that these effects are driven by the concavity of preferences over liquid assets: the larger the steady-state holdings of stablecoins, the larger the portfolio adjustments required to re-equilibrate after shocks. As agents hold larger quantities of stablecoins, their use for payments declines and their role for portfolio diversification increases, making stablecoin holdings more responsive to changes in monetary conditions and, through full backing, to fluctuations in Treasury demand and yields. This feature contrasts with CBDCs, where issuance is sterilized by the central bank and does not require one-for-one purchases of U.S. debt (Ferrari Minesso et al., 2022).[14]

Related literature. This paper is linked to the growing literature on the macro-financial role of stablecoins. One strand of literature has considered the characteristics, dynamics and implications of stablecoins balance sheets. Oefele et al. (2024) and Mizrach (2025) document that typically stablecoins hold more cash than most government funds and experience flight-to-quality dynamics during episodes of stress in crypto markets, Anadu et al. (2024). Additionally, Liang et al. (2024) show that stablecoins reduce banks' deposit market power, thereby intensifying the transmission of monetary policy by making banks respond more strongly to policy rate changes, leading to higher

[14]Concrete CBDC projects, like the digital euro, explicitly target neutrality with the objective of keeping CBDCs only as a payment instrument, European Central Bank (2025).

deposit rates and greater loan contractions.

The literature has highlighted potential risks for stability and for the peg (Eichengreen et al., 2025; Kosse et al., 2023; Arner et al., 2020; d'Avernas et al., 2022; Hoang and Baur, 2024; Lyons and Viswanath-Natraj, 2023); adoption (Bertsch, 2023), and runs (Gorton et al., 2022). Lessons for today's stablecoins have also been drawn from history, for example from the free banking era in the U.S. (Luck, 2025) or even further back in time to the collapse of the Bank of Amsterdam, Bolt et al. (2024).[15] Altavilla et al. (2025) shows empirically the spillovers from shocks to stablecoin demand to the real economy, in particular thorough their impact on the financial system.[16]

More recently stablecoins have been studied in relation to the demand for safe assets. There are evidence that demand for dollar liquidity suppresses Treasury yields (Krishnamurthy and Vissing-Jorgensen, 2012), including from outside the U.S. (Ahmed and Rebucci, 2024), with potential implications for financial stability, Greenwood et al. (2015). Eren et al. (2025), importantly, estimate the elasticity of U.S. yields to demand from different investor types. Demand from money market funds, in particular, is shown to influence the price of other liquid assets (Doerr et al., 2023), a mechanism that could apply to stablecoins if their adoption were to extend outside crypto markets. Recently, empirical evidence suggests that stablecoins already influence US safe asset markets. Ahmed and Aldasoro (2025) and Kim (2025) show that stablecoin inflows reduce three-month Treasury yields, while outflows have asymmetric and stronger effects.Aldasoro et al. (2025) document that stablecoins and money market funds respond differently to US monetary policy shocks: while prime-MMF assets tend to rise after a monetary tightening, stablecoin capitalization declines. Relatedly, Azzimonti and Quadrini (2025) investigate from a theoretical perspective how stablecoins could affect the centrality of the US debt in global financial markets in the long-run. By developing a multi-country model, they find that the financial demand (reserve banking) will dominate over the real demand (service substitution), structurally increasing global demand for US dollar safe assets. This dominance would lead to a decline in long-run US interest rates, greater US

[15]There is also a growing literature on the economics of crypto-assets: Karau (2023) looks at the reaction of the Bitcoin price to monetary policy while other contributions (Liu and Tsyvinski, 2021; Corbet et al., 2020) consider the implications of crypto-assets for traditional asset prices.

[16]Specifically, in this empirical setting, stablecoin growth diverts deposits from banks, reshapes their funding and lending capacity, and ultimately weakens deposit-based while strengthening lending-based monetary policy transmission—especially if foreign-currency stablecoins dominate.

foreign borrowing, and ultimately reinforce the US dollar's "exorbitant privilege" in the global financial system. From a different perspective, but also focusing on the supply of safe assets from the U.S., Barthélemy et al. (2025) build on the international monetary system framework of Farhi and Maggiori (2018) and endogenize the hegemon's debt issuance in the presence of fully backed stablecoins. They show that while stablecoins are neutral for total debt issuance unless they attract new entrants or the hegemon values stablecoin profits, once these conditions are met they introduce a non-trivial trade-off: the issuer is tempted to over-issue debt to capture stablecoin rents but is also pushed-back by the need to avoid devaluation and preserve the safe-asset status of stablecoins. This has ambiguous implications for Triffin Dilemma (i.e. the conflict between domestic policy goals and the need to supply safe reserve assets to the rest of the world) and the stability of the international monetary system. These papers connect the discussion on stablecoins with the broader literature that studies the role of dominant currencies and dollar-denominated safe assets in shaping global portfolios and capital allocation (Gabaix and Maggiori, 2015; Maggiori, 2017; Maggiori et al., 2020).

Our paper is also related to the growing literature on the macroeconomic implications of digital assets. Brunnermeier and Niepelt (2019) derive equivalence conditions under which a particular type of digital asset, a central bank digital currency (CBDC), can be economically neutral. In our case one of their conditions does not hold, namely the neutrality of the digital asset demand for equilibrium allocations. Benigno et al. (2022) show that a remunerated global digital asset would equalize asset returns across countries leading to a loss of monetary autonomy. Ikeda (2022) shows that these effects can be limited by the role of government in collecting taxes and financing public goods. Ferrari Minesso et al. (2022) find that a global CBDC would also create a new cross-country asset holding conditions that constrains policy autonomy abroad. Kumhof et al. (2023) find similar results in a different setting and experimenting with policy rules. Stablecoins are however different from both cases: they are unremunerated, fully backed by assets and not issued by a public institution which aims at “market neutrality”. Our results point therefore to slightly different macroeconomic implications of stablecoins that derive from them connecting consumption in foreign countries with the U.S. treasury market. This paper also draws on the literature on CDBC for the modelling of liquidity demand and the characterization of digital assets, like Niepelt (2024) and Burlon et al.

(2024).[17] Possibly more related to our work is Cova et al. (2022). This early contribution, however, studies CBDCs against a global crypto-asset which differs significantly from the current configuration of stablecoins: backing is not perfect, the issuers optimizes its holding of different assets (money, domestic and foreign bonds) to maximise profits, and more importantly the exchange rate between the crypto-asset and the domestic currency is set optimally by the issuer, i.e. it is set to maximise profits of the issuer and can therefore absorb part of the shocks. Under these characteristics, the issuer does not back fully minted coins with bonds and when the bond price soars, optimally shifts to other source of liquidity (cash) which are price insensitive. In this way, the link between foreign demand and U.S. bond markets is broken, while we think it is one of the key characteristics of the GENIUS Act. The connection of balance sheets movements with exchange rates and capital flows borrows a lot from Maggiori (2022).

The remainder of the paper is structured as follows. Section 2 introduces first a simple model to highlight the main mechanism and then a fully fledged model, describing in details its key features and the equilibrium dynamics associated with the role of stablecoins. Section 3 presents the simulation results. It first examines the effects of U.S. monetary policy and TFP shocks within and outside the United States, and then analyzes how stablecoins transmit foreign shocks back to U.S. financial markets. Section 4 provides empirical evidence on the impact of stablecoins on the transmission of U.S. and third country monetary policy shocks to U.S. Treasury yields. Finally, Section 5 concludes by summarizing the macro-financial implications of this new global safe asset channel.

2 Model

2.1 A simple illustration of the global safe asset channel

To fix ideas, we present a stripped-down two-country version of the mechanism. There are two economies, the United States (US) and a foreign country (F), each with its own currency. Financial markets are incomplete and there are only two traded bonds, the U.S. bond and the Foreign bond, that pay respectively R^{US} and R^{F}. A private intermediary issues dollar-denominated digital payment claims, denoted by X, just to foreign

[17] The literature on CBDC is indeed much larger and ranges from transition dynamics, Assenmacher et al. (2024), to implications for monetary operations, Assenmacher et al. (2023) Abad et al. (2024) to competition and financial stability, Andolfatto (2021) and Schilling et al. (2024).

households. There is no need to call them Stablecoins. These claims are redeemable at par in U.S. dollars and are backed one-for-one by short-term U.S. Treasury securities. The total stock of U.S. Treasuries is fixed and equal to $\bar{B}$. Prices are constant, there is no uncertainty, and the expected exchange rate is given and constant $\bar{S}^e$.[18] The nominal exchange rate, $S = NER_{US,F}$, is defined as units of dollars to buy a foreign currency (i.e. an increase is a dollar depreciation).

We first present how this payment claim affects the bond market. Then, we derive an inverse demand function for the dollar-payment claim's market. These two markets combined are sufficient to show the intuition of the global safe asset channel.

U.S. Bond Market Supply: Because each dollar-digital payment claim is backed, inelastically to prices, one-for-one by a Treasury security the intermediary's balance sheet implies:

$$B^X = X^S,$$

where B^X is the amount of U.S. bonds held by the dollar-digital payment claim issuer and X^S is the supply of dollar-denominated digital payment claims. This implies that the quantity of U.S. Treasuries available to the bond market is the remaining after netting out the total issuance of the dollar-digital payment claims:

$$B^S = \bar{B} - X.$$

Demand: The demand for U.S. bonds is a positive function b of the expected relative return on the bond, as in a standard Portfolio-Balance models (from Branson (1977), Dornbusch (1975), Frankel (1983) to Gabaix and Maggiori (2015)). Keeping the expression as general as possible and compatible with different possible microfundations, we can write it as:

$$B^d = b\left(R^{US} - R^F - \frac{\overline{S}^e - S}{S}\right), \qquad b'(\cdot) > 0,$$

where, as mentioned, R^{US} is the return on the U.S. bond, R^F is the return on a foreign bond, and $(\overline{S}^e - S)/S$ is the expected rate of dollar depreciation.

[18] Three are the key assumptions for the the mechanism: (i) payment claims are redeemable at par; (ii) reserve backing is one-for-one in U.S. safe assets; (iii) the supply of U.S. Treasuries is fixed in the short run. All the remaining are just simplifying assumptions. Notice that U.S. payment Stablecoins issued under the GENIUS act satisfy all these three assumptions.

Equilibrium: The equilibrium in the U.S. bond market requires

$$B^S = \bar{B} - X = b\left(R^{US} - R^F - \frac{\overline{S}^e - S}{S}\right).$$

By inverting bond demand, we can show that

$$R^{US} - R^F - \frac{\overline{S}^e - S}{S} = \rho(\bar{B} - X), \qquad \rho'(\cdot) > 0. \tag{1}$$

Equation (1) implies that a larger stock of digital payment claims reduces the quantity of U.S. bonds left to private investors, compressing the return required to clear the market.

Foreign demand for digital payment claims. Foreign households demand X for two reasons. First, these claims provide payment services in cross-border and domestic transactions. Second, they allow households to transfer wealth across periods in dollars. We summarize these motives with a simple Euler equation derived from the constrained optimization problem of an household, which defines the inverse demand for dollar payment claims:

$$-\frac{\lambda^F}{S} + \beta\frac{\lambda^{e,F}}{\overline{S}^e} + \gamma^C\frac{L'(X/S)}{S} = 0, \tag{2}$$

where λ^F and $\lambda^{e,F}$ are the current and expected marginal value of wealth for foreign households, $\gamma^C > 0$ measures the payments value of the claim, and $L'(\cdot) > 0$, $L''(\cdot) < 0$ denote the marginal liquidity service of claim holdings measured in foreign-currency terms. The concavity of $L(\cdot)$ captures the idea that the marginal payment value of additional balances declines with adoption.

Equation (2) is the optimality condition for X and therefore implicitly defines a demand function $X = x(S)$. It is easy to show that $\frac{\partial X}{\partial S} > 0$.[19] This implies that a dollar

[19] Rewriting it as

$$\lambda^F - \beta\frac{\lambda^{e,F}}{\overline{S}^e}S = \gamma^C L'(X/S),$$

and differentiating with respect to S gives

$$-\beta\frac{\lambda^{e,F}}{\overline{S}^e} = \gamma^C L''(X/S)\frac{S\frac{dX}{dS} - X}{S^2}.$$

Because $\beta > 0$, $\lambda^{e,F} > 0$, $\overline{S}^e > 0$, $\gamma^C > 0$, and $L''(X/S) < 0$, it follows that

$$S\frac{\partial X}{\partial S} - X > 0, \qquad \text{hence} \qquad \frac{\partial X}{\partial S} > \frac{X}{S} > 0.$$

appreciation ($S \downarrow$) unambiguously reduces foreign demand for dollar payment claims ($X \downarrow$). Intuitively, when the dollar appreciates, each claim is worth more in foreign-currency terms, so households need fewer claims for a given amount of transactions and the expected appreciation pushes for a reduction in the portfolio holdings.

Transmission. Using the fact that Equation (2) implicitly defines $X = x(S)$ with $x'(S) > 0$, we can rewrite Equation (1) to get:

$$S = \frac{S^e}{1 + R^{US} - R^F - \rho(\bar{B} - x(S))}. \tag{3}$$

Equation (3) summarize the main mechanism. The issuance of dollar-denominated payment claims compresses U.S. yields in steady state because it increases demand for U.S. safe assets through reserve backing. But exchange-rate movements also feed back into the demand for those claims and, therefore, into Treasury demand. This reduces the elasticity of nominal exchange rate movements to the domestic interest rate.

This is clear when we see the reaction to a U.S. monetary tightening, $R^{US} \uparrow$. Holding X fixed, equation Equation (3) delivers the standard effect: the dollar appreciates, $S \downarrow$. However, the appreciation also reduces foreign demand for dollar payment claims X through equation Equation (2). As foreign households reduce their holdings, the intermediary contracts its balance sheet and sells U.S. Treasuries. This raises the net supply of bonds available to the private sector, $\bar{B} - X$, increases $\rho(\bar{B} - X)$, and partly offsets the initial dollar appreciation.

This simple framework isolates the core mechanism of the paper. Whenever a private payment instrument is redeemable at par in dollars and backed one-for-one by U.S. safe assets, fluctuations in foreign demand for that instrument map directly into fluctuations in Treasury demand. In this sense, the mechanism is not specific to stablecoins. Rather, stablecoins are a prominent institutional example of a more general class of digital payment systems inelastically backed by U.S. public debt.

Figure 3 illustrates the core mechanism. Panel (a) plots equilibrium dollar payment claims $X = x(S)$ against the US policy rate: a tightening appreciates the dollar and lowers foreign demand for dollar-denominated claims. Panel (b) traces the resulting Treasury convenience yield $\rho(\bar{B} - X)$, which is invariant to R^{US} when X is held fixed (dashed

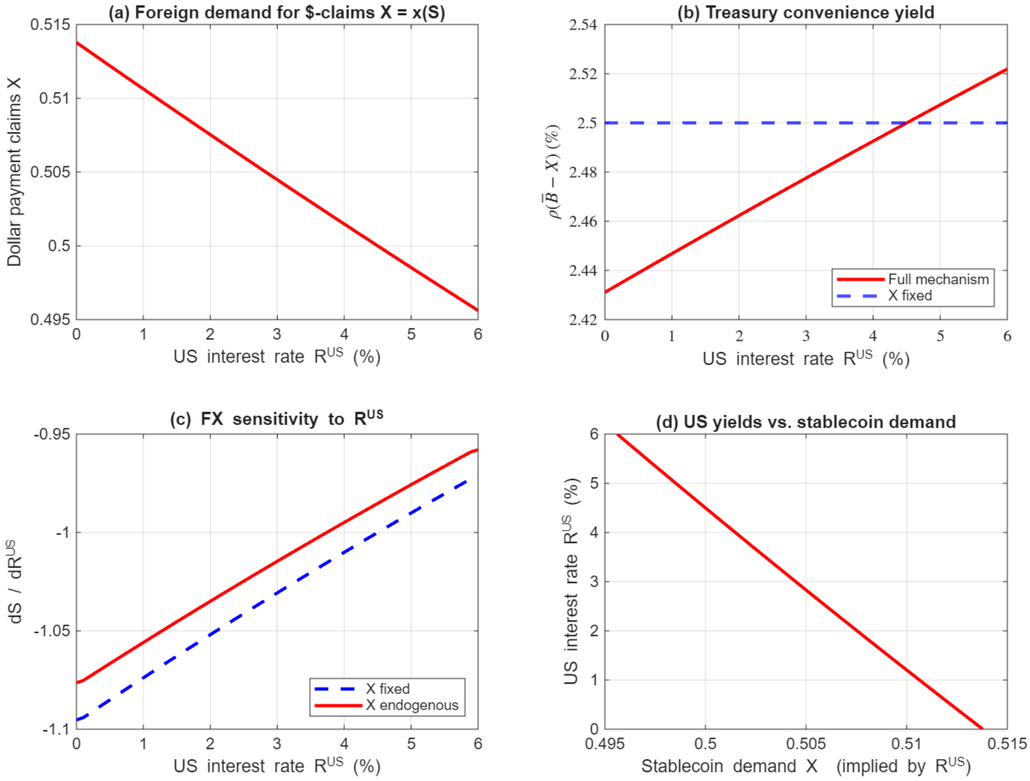


Figure 3: Key mechanism illustration.
Notes: The chart shows the partial-equilibrium elasticities implied by Equation (3). All parameters of the simple model are kept constant, except the one on the x-axis. The calibration is: $S_e = 1$ (expected future exchange rate); $R_F = 0.02$ (foreign exchange rate); $\bar{B} = 1$ (total Treasury supply, normalized); $\rho_0 = 0.05$ (slope of convenience-yield); $\alpha = 0.6$ (elasticity of X w.r.t. S); $\bar{X} = 0.5$ (baseline level of X). The exchange rate S is expressed in units of dollars per units of foreign currency, i.e. lower S is an appreciation of the US dollar.

line) but rises monotonically under the full mechanism (solid line), as the contraction in X raises the net supply of Treasuries to the private sector. Panel (c) reports the exchange-rate sensitivity $\frac{\partial S}{\partial R^{US}}$ with and without X. Both schedules are negative sloped, consistent with uncovered-parity logic, but the full-mechanism lies uniformly above the fixed-X benchmark. This indicates that the endogenous response of stablecoin demand dampens FX pass-through. Panel (d) summarizes the joint determination of R^{US} and X in steady state: higher stablecoin demand is associated with lower equilibrium US yields, reflecting the inelastic backing of dollar payment claims by Treasury securities. Together, the panels make precise the paper's central observation: fluctuations in foreign demand for privately issued dollar payment instruments map one-for-one into fluctuations in Treasury demand, compressing both the level of U.S. yields and the elasticity of the nominal exchange rate to domestic monetary policy. Figure B.1 in the Appendix explores changes around the calibration of the simple model's parameters, our main conclusions remain.

2.2 Fully fledged model

We now construct a three-country DSGE model, based on Eichenbaum et al. (2021) and Ferrari Minesso et al. (2022), incorporating two key features: the introduction of a U.S. stablecoin used for payments across countries, and a convenience yield on U.S. bonds capturing their special role as the world's dominant safe and liquid asset. These elements jointly allow us to study how the rise of stablecoins alters the international transmission of shocks through changes in global demand for U.S. debt. The stripped-down two-country toy model presented above already isolates the core balance-sheet mechanism: foreign demand for a dollar payment instrument translates one-for-one into demand for U.S. Treasuries through reserve backing. The purpose of the fully fledged model is to embed that mechanism in a standard open-economy DSGE environment with endogenous consumption, production, exchange rates, and monetary policy, so that we can quantify its aggregate and cross-country implications. Stablecoins are introduced following the framework shaped by the GENIUS Act: they are unremunerated instruments for transactions issued by a global stablecoin issuer located in the U.S. that backs each coin minted with a safe U.S. bond. Stablecoins serve households both as settlement (i.e. payment) and trading (i.e. store of value) tokens.

Figure 4 visualizes the overall structure of the model from a U.S. perspective. The full framework is, however, a three-country model, where countries are indexed by $c = \{US, 1, 2\}$ and have size n_c. In the baseline calibration, the countries are symmetric and of the same size. Relative to the toy model, the third country is introduced to capture how shocks originating in a non-U.S. economy propagate both to the stablecoin-issuing country (the U.S.) and to another non-issuing country. This feature is important for our question because it allows us to study how stablecoin adoption not only changes how foreign shocks feed back to the issuer, but also how those shocks are redistributed across non-issuing economies. It is therefore necessary to accurately capture the complexity and two-way amplification of international financial spillovers introduced by the global safe asset channel.

In each country there are households, firms, a government and a central bank; additionally, in the U.S. there is a sector of stablecoin issuers. Households derive utility from consumption, leisure, and holdings of U.S. bonds. The assumption that U.S. bonds enter households' utility functions captures the special role of U.S. dollar bonds—that they are the most liquid and safe financial asset in the world (see e.g. Jiang et al., 2021). This creates a convenience yield from holding U.S. dollar bonds, as in e.g. Valchev (2020) and Bianchi and Sosa-Padilla (2023). For this reason the U.S. pays lower interest rates on its debt in equilibrium, calibrated following Eren et al. (2025). Households also require liquid instruments to perform transactions, which can be either domestic money or an internationally traded stablecoin. As in the toy model, these two instruments are not perfect substitutes. Firms are standard: they are owned by households, produce intermediate goods that are sold domestically and internationally, using labor and capital. Prices have quadratic adjustment costs à la Rotemberg.

Stablecoins are perfectly liquid and can be used by households worldwide to settle transactions, acting as an imperfect substitute for money in the liquidity aggregator. The issuer's balance sheet is simple: assets consist of U.S. Treasuries, and liabilities correspond to outstanding stablecoins. This is the DSGE counterpart of the one-for-one backing condition in the toy model. Issuers earn a spread equal to the return on Treasuries, reflecting seigniorage-like profits from private issuance of dollar-backed liquidity. Since both assets and liabilities are denominated in U.S. dollars, the issuer faces no exchange rate risk, while foreign holders of stablecoins remain exposed to FX fluctuations. Finally, because stablecoins increase aggregate demand for Treasuries, we account for the fact that this pushes down the cost of financing for the Federal Government, in line with the evidence from Eren et al. (2025) on the impact of foreign demand on U.S. yields.

The rest of the model follows Eichenbaum et al. (2021): international markets are incomplete and uncovered interest parity does not hold. Monetary policy is set in each country independently by a central bank reacting to inflation (π_c) and output (Y_c). Government expenditures (consumption of final goods and debt repayment) are financed through taxes and issuance of new debt. Taxes are set to reach a target level of deficit. Implicitly the government balance sheet determines the amount of bonds in circulation. For our purposes, this supply of U.S. debt is taken as exogenous and policy-invariant at business-cycle frequency: for a given level of government expenditure and taxation, stablecoin issuers compete with foreign households for the same quantity of U.S. bonds.

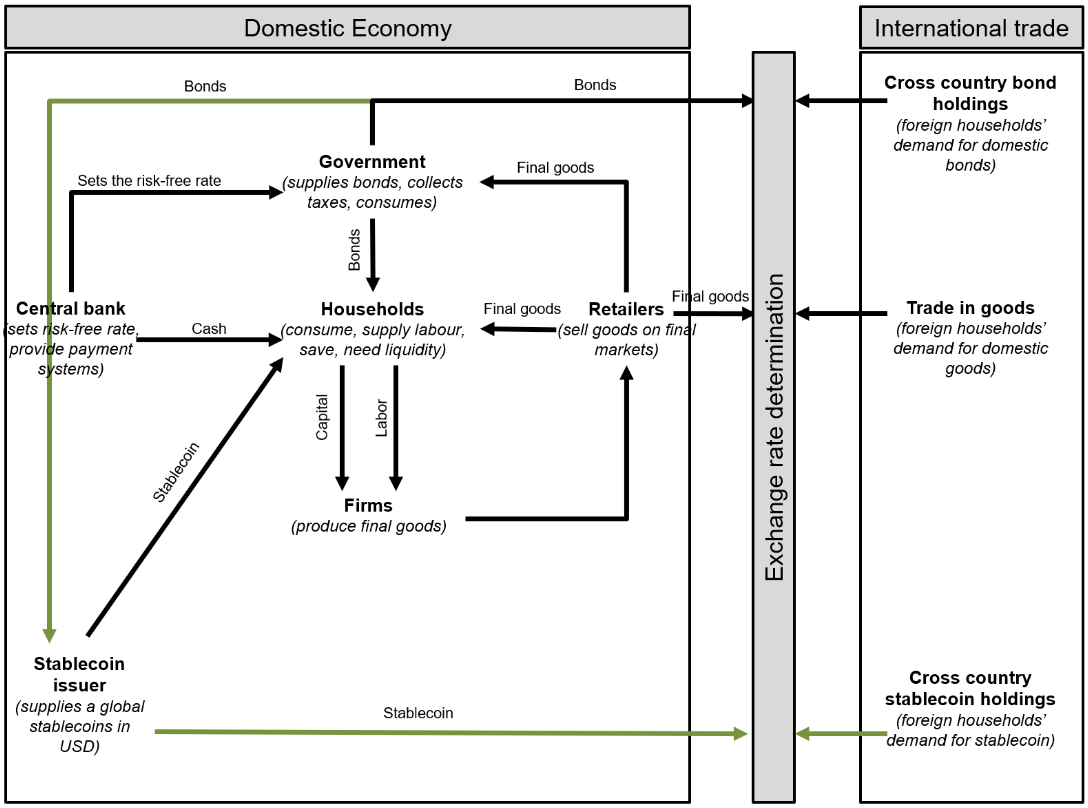


Figure 4: Description of the model.
Notes: The chart shows a description of the model from the U.S. perspective. The two foreign economies are symmetric. Green lines show the additional channels deriving from stablecoin adoption.

This is the general-equilibrium analogue of the fixed short-run Treasury supply assumption in the toy model and is what makes changes in stablecoin demand translate into U.S. yield movements.[20]

The full model is explained in greater detail in Appendix B. In the next subsections we focus on the most distinctive and novel features, starting from the stablecoin block that generalizes the mechanism highlighted in the toy model.

2.3 Stablecoins

As mentioned, we model stablecoins following the spirit of the GENIUS Act. They are assumed to have evolved beyond crypto markets and to be used by households as a payment instrument. We consider alternative steady-states with different degrees of global adoption, from limited use (USD 500 billion) to widespread circulation with a market capitalization of around USD 2 trillion. A global issuer located in the United

[20] A complementary line of work endogenizes the issuance decision of a monetary hegemon in the presence of stablecoins and studies the changes in the international monetary system (Azzimonti and Quadrini, 2025; Barthélemy et al., 2025)

States backs each coin one-to-one with U.S. Treasury securities, earning the return on these assets as profit. The issuer's balance sheet satisfies:

$$B_{sc,t} = \sum_{c=\{US,1,2\}} n_c SC_{c,t}, \tag{4}$$

where $B_{sc,t}$ denotes the issuer's holdings of U.S. bonds and $SC_{c,t}$ the outstanding stablecoins held by households in country c. This is the exact analogue of the balance-sheet identity in the toy model, now aggregated across all countries. Each coin is fully backed by a U.S. bond, implying that any change in global stablecoin demand requires the issuer to buy or sell Treasuries, directly altering demand for the global safe asset. The issuer earns a spread equal to the return differential between U.S. bonds and the stablecoin rate, $(R_t - R_{sc,t})$, which is positive under the GENIUS Act as stablecoins are unremunerated $(R_{sc,t} = 1)$. Profits are given by:

$$PSC_t = \frac{B_{sc,t-1}(R_{t-1} - R_{sc,t-1})}{\pi_t}, \tag{5}$$

and allow the issuer to accumulate a seigniorage-like income. Since both assets and liabilities are denominated in U.S. dollars, the issuer is insulated from exchange rate risk. In steady-state, the stablecoin rate is normalized to one and the issuer's profits are constant.

On the demand side, households can use stablecoins to transfer wealth, in U.S. dollars, across time (trading tokens) and as a payment instrument alongside domestic money (settlement tokens). Transactions are subject to a cash–in–advance constraint with a CES liquidity aggregator,

$$\begin{aligned} P_{c,t}C_{c,t} &= \mathcal{L}_t\left(\frac{SC_{c,t}}{NER_{US,c,t}},\ M_{c,t},\ \mu_{sc,c,t}\right) \\ &= \left[\mu_{sc,c,t}\left(\frac{SC_{c,t}}{NER_{US,c,t}}\right)^{\eta_{c,m}} + (1-\mu_{sc,c,t})\,(M_{c,t})^{\eta_{c,m}}\right]^{\frac{1}{\eta_{c,m}}}. \end{aligned} \tag{6}$$

where $M_{c,t}$ is *fiat* money, $\eta_{c,m} \in (0,1]$ governs the substitutability between the two instruments (notice that for $\eta_{c,m} \to 1$ Equation (6) becomes linear) and $\mu_{sc,c,t} \in [0,1]$ measures households' confidence in using stablecoins as a payment instrument. It summarizes perceptions of safety, liquidity, and operational reliability, and hence determines the relative weight of stablecoins in the liquidity aggregator. Relative to the toy model, this block microfounds the reduced-form foreign demand for dollar payment claims by making it depend jointly on intertemporal motives, transaction services, and endogenous confidence. Confidence is decreasing in three dimensions of perceived fragility: (i) valuation risk of the reserve portfolio, (ii) negative-carry risk due to interest-rate movements, and (iii) run risk associated with the payment infrastructure. Formally, we specify:

$$\mu_{sc,c,t} = \mu^*_{sc,c} - \Big(\alpha_\mu\, \sigma^2_{q,t} + \beta_\mu\, \exp\{1 - R_{US,t}\} + \gamma_\mu\, \rho_t\Big), \tag{7}$$

where $\mu^*_{sc,c}$ is the steady-state level of confidence, $\sigma^2_{q,t} \equiv \text{Var}\Big(\frac{\Delta q_t}{q_t}\Big)$ measures valuation volatility of the reserve portfolio, $R_{US,t}$ is the gross return on U.S. bonds, and ρ_t denotes the intensity of potential redemption pressures (e.g., cyber or governance shocks). The parameters $\alpha_\mu, \beta_\mu, \gamma_\mu > 0$ capture the sensitivity of confidence to each component. When reserves are stable, returns are positive, and redemption risk is low, $\mu_{sc,c,t} \simeq \mu^*_{sc,c}$, and stablecoins are close substitutes for money. Conversely, a decline in confidence (e.g., due to rising valuation uncertainty or run expectations) reduces $\mu_{sc,c,t}$, lowering the effective liquidity services provided by stablecoins and shifting demand back toward domestic money. Notice that Equation (7) endogenously dampens demand for stablecoins as they grow: the more stablecoins are minted, the more U.S. debt the issuer needs to purchase, compressing its yields. Lower remuneration decreases the issuer's intermediation margin, making it more likely to default. Appendix C.1 shows that the main results are unchanged assuming a constant $\mu_{sc,c}$. This implies that Equation (7) is not the driver of results, but acts as a realistic amplification channel.

The first-order condition for stablecoin holdings equates the marginal liquidity value of stablecoins to their opportunity cost. Intuitively, households hold stablecoins up to the point where the liquidity and portfolio benefits they provide equal the cost of keeping resources in an unremunerated digital dollar instrument.[21] Notice that although stablecoins are not remunerated, foreigners can earn capital gains (losses) from an appreciation (depreciation) of the U.S. dollar against their domestic currency.

Finally, we deliberately abstract from the financial stability implications of stablecoins

[21] Our main results are unchanged if liquidity demand is modeled through money-in-utility preferences, which similarly capture micro-founded frictions behind the use of payment instruments; see Feenstra (1986).

and the possibility of multi-issuer stablecoins (European Systemic Risk Board, 2025). Throughout the paper, we adopt the perspective of a regulatory framework in which stablecoins have limited implications for the banking sector. Additionally, we assume that stablecoins are issued only by U.S. entities. While these considerations are important, we leave them for future research. In the baseline model stablecoins do not charge redemption fees, which are negligible in real-world stablecoins,[22] but this assumption is relaxed in the Appendix.

2.4 The household problem

Consider the allocation problem of a representative household (HH) in economy c. Period utility is:

$$U_{c,t} = e_{c,t} \ln \left(C_{c,t} - h_c C_{c,t-1} \right) - \frac{\chi_{c,l}}{1 + \phi_{c,l}} L_{c,t}^{1+\phi_{c,l}} + \mathcal{F}_b \left(\frac{B_{US,c,t}}{NER_{US,c,t} P_{c,t}} \right) \tag{8}$$

where C denotes consumption, L hours worked, M domestic nominal money balances, P_c the domestic price index, $B_{US,c}$ holdings of internationally-traded U.S. bonds, $NER_{US,c}$ the nominal exchange rate (defined as dollars per unit of currency c) and e is a preference shock.[23] As in Valchev (2020) and Jiang et al. (2024), $\mathcal{F}_b(\bullet)$ defines the utility of liquidity services arising from holding international reserve assets, with $\mathcal{F}_b(0) = 0$, $\mathcal{F}_b'(\bullet) > 0$, $\mathcal{F}_b''(\bullet) < 0$. $\mathcal{F}_b(\bullet)$ generates an international premium on U.S. bonds. Households optimize utility subject to an intertemporal budget constraint and a liquidity cash-in-advance constraint, that captures demand for liquid assets (money and stablecoins) to conduct transactions as in Equation (6). We explicitly distinguish the non-pecuniary benefits of U.S. bonds, which do not serve as a medium of exchange, from cash and stablecoins, whose transactional role is captured through a cash-in-advance constraint. This distinction highlights how stablecoins' introduction makes part of the U.S. bond supply synthetically more liquid, namely the portion held as reserve by the issuer,

[22] Tether charges 0.1% redemption fee while USDC charges no fee to non institutional accounts.

[23] In other words, for country c, a fall in $NER_{US,c,t}$ is a depreciation of the their currency. For the U.S., $NER_{US,US} = 1$.

strengthening the global demand for U.S. assets. The budget constraint is:

$$
\begin{aligned}
& P_{c,t}C_{c,t} + B_{c,c,t} + \sum_{l\neq c} NER_{l,c,t}B_{l,c,t} + P_{c,t}I_{c,t} + M_{c,t} + \frac{SC_{c,t}}{NER_{US,c,t}} \\
& \leq w_{c,t}L_{c,t} + R_{c,t-1}B_{c,c,t-1} + \sum_{l\neq c} NER_{l,c,t}R_{l,t-1}B_{l,c,t-1} - \sum_{l\neq c}\frac{\phi_c^B}{2}\left(\frac{B_{l,c,t}NER_{l,c,t}}{P_{c,t}}\right)^2 P_{c,t} \\
& \quad + P_{c,t}R^k_{c,t}K_{c,t-1} + M_{c,t-1} + \frac{R_{sc,t-1}SC_{c,t-1}}{NER_{US,c,t}} + \Pi_{c,t}
\end{aligned} \tag{9}
$$

where SC are stablecoin holdings, R, R_{sc}, R^k are respectively nominal returns on bonds, on stablecoins and on capital holdings and K are capital investments by households (who fully own firms). We assume international bond markets are incomplete because of transactions costs proportional to ϕ^B. As mentioned, $NER_{l,c}$ is the nominal exchange rate, defined as units of currency l for currency c: an increase in $NER_{l,c}$ is an appreciation of currency c against currency l. Stablecoins are assumed to bring no remuneration, so $R_{sc,t} = 1\ \forall t$. $\mu_{sc,t}$ is endogenous and varies according to the confidence that HHs attach to stablecoins. Equation (6) is characterised also by decreasing returns to scale as in standard macro-theory. In other words, households' need for payment instruments decreases in the total amount of payment assets they hold. Hence any additional purchase of payment assets has less value in terms of the payment it brings to households. Therefore $\mathcal{L}(0) = 0$, $\mathcal{L}'(\bullet) > 0$ and $\mathcal{L}''(\bullet) < 0$. First order conditions for U.S.dollar denominated internationally traded assets, bonds and stablecoins, are:

$$
-\frac{\lambda_{c,t}}{NER_{US,c,t}} + \beta_c E_t\left(\frac{\lambda_{c,t+1}}{NER_{US,t+1}}\frac{R_{US,t}}{\pi_{c,t+1}}\right) - \frac{\phi^B\lambda_{c,t}}{NER_{US,t}}\left(\frac{B_{US,c,t}}{P_{c,t}NER_{US,c,t}}\right) + \frac{\mathcal{F}_b'(\bullet)}{NER_{US,c,t}} = 0. \tag{10}
$$

where $\{\lambda_{c,t}\}_{t=0}^{\infty}$ is the sequence of Lagrangian multipliers associated to the budget constraint of the household. We can rewrite Equation (10) as:

$$
-\frac{\lambda_{c,t}}{NER_{US,c,t}} + \beta_c E_t\left(\frac{\lambda_{c,t+1}}{NER_{US,t+1}}\frac{R_{US,t}}{\pi_{c,t+1}}\right) + \mathcal{P}_{US,t} = 0.
$$

to highlight the role of the premium on U.S.bonds. $\mathcal{P}_{US,t} = \frac{\mathcal{F}_b'(\bullet)}{NER_{US,c,t}} - \frac{\phi^B\lambda_{c,t}}{NER_{US,t}}\left(\frac{B_{US,c,t}}{P_{c,t}NER_{US,c,t}}\right)$ denotes the premium given by the liquidity minus transaction costs. The first order condition for stablecoins is:

$$-\frac{\lambda_{c,t}}{NER_{US,c,t}} + \beta_c E_t \left(\frac{\lambda_{c,t+1}}{NER_{US,c,t+1}} \frac{R_{sc,t}}{\pi_{c,t+1}} \right) + \gamma_{c,t} \frac{\mathcal{L}'(\bullet)}{NER_{US,c,t}} = 0 \tag{11}$$

where $\{\gamma_{c,t}\}_{t=0}^{\infty}$ is the sequence of Lagrangian multipliers associated to the cash-in-advance constraint.[24]

Combining Equation (10) and Equation (11), conditional on the issuance constraint of the stablecoin holder of Equation (4), leads to the key equation of the model:

$$\beta_c E_t \left[\frac{\lambda_{c,t+1}}{NER_{US,c,t+1}\pi_{c,t+1}} \right] [R_{US,t} - R_{sc,t}] = \gamma_{c,t} \frac{\mathcal{L}'(\bullet)}{NER_{US,c,t}} - \mathcal{P}_{US,t} \tag{12}$$

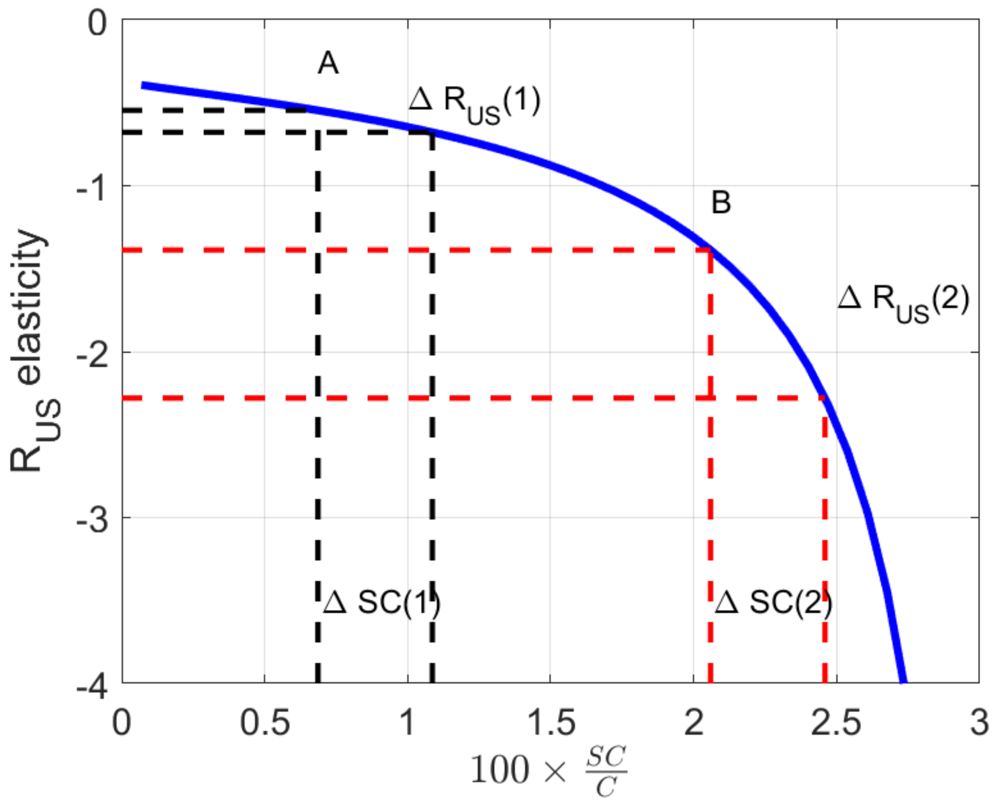


Figure 5: Demand for stablecoins against returns differential.

Notes: the chart shows the elasticity of U.S. yields (vertical axis) against stablecoin demand (horizontal axis). The elasticity is computed as in Equation (13) by keeping all other variables constant and changing values of stablecoins. $\Delta SC(1)$ and $SC(2)$ show the change in U.S. yields for the same change in stablecoin holdings.

It can be shown analytically, see Appendix B.7, that the elasticity of stablecoins holdings to changes in the interest rates depends on steady-state holdings. Log-linearizing

[24] Notice that for a U.S. household first order conditions would be identical, with the only difference that $NER_{US,US,t} = 1 \; \forall \; t$

Equation (12) leads to the following elasticity of the demand for stablecoins to the interest rate differential:

$$(\eta_{c,m}-1)\frac{\mu_{sc,c,ss}\gamma_{c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_{c,m}-1}}{\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_{c,m}-1}-\chi_{c,b}B_{US,c,ss}^{-\sigma_{c,b}}}\frac{1}{\Gamma_{ss}} \tag{13}$$

ss indicates steady-state holdings, Γ is a positive scalar that depends on $\mu_{sc,c}$ and on the steady-state U.S. risk-free rate. It is strictly positive under a wide range of calibrations.[25] Under the baseline calibration, the sign of Equation (13) is negative because $\eta_{c,m}-1<0$ for $\eta_{c,m}\in(0,1]$. For low stablecoin preferences, $\mu_{sc,c}\to 0$, the elasticity tends to zero, meaning that low stablecoin demand is almost unaffected by U.S. yields and vice-versa. In other words, unsurprisingly, if preferences for stablecoins are low, they have no aggregate effects. Similarly, if stablecoins and cash are linear substitute, that is $\eta_{c,m}\to 1$, the elasticity is also zero. This is intuitive as households would hold only one payment instrument cash: there would be a corner solution. In practice, it is unlikely that fiat money would lose completely its convenience relative to other forms of money, if nothing because of the role of government taxes and its role in aggregate demand, see Ikeda (2022). Data from existing surveys also convey this intuition, see Li (2023).

Dynamics might change if stablecoins are high in demand. While the numerator is larger than zero by construction, $\mu_{c,sc}\gamma_{c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_{c,m}-1}>0$, the denominator might change size. Equation (13) can turn negative if $\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_{c,m}-1}>\chi_{c,b}B_{US,c,ss}^{-\sigma_{c,b}}$. That can happen if stablecoins holdings are particularly high, as $\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_{c,m}-1}$ (i.e. the marginal value of stablecoins for payments) decreases the more stablecoins are held by households. In other words as $\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_{c,m}-1}$ declines households place limited value on additional stablecoins as payment instruments. In that extreme case, the relationship would be opposite: an increase in the rate differential would generate more demand for stablecoins, leading to macro instability. This happens because stablecoins would be held more and more as a financial asset, therefore households would react more aggressively to changes in financial conditions, see Figure B.3 in the Appendix.

Indeed Equation (12) is similar to the CBDC holding condition derived in Ferrari Minesso et al. (2022) but with one important difference. CBDC in that model are issued elastically by the central bank, which in the background sterilizes the effects of CBDCs on

[25] See Figure B.3 and Appendix B.7 for the full derivation.

financial markets. Stablecoin issuers, on the contrary, must follow the budget constraint in Equation (4). This constraint implies that any fluctuation in stablecoins issuance is balanced by a proportional change in holdings of U.S. safe assets. These shifts are not sterilized by monetary authorities and lead to real effects from stablecoin demand. That creates the new channel of transmission for shocks, as stablecoin demand amplifies the impact on U.S. financial markets from changes in returns on U.S. assets or households' consumption and intertemporal preferences in foreign countries (i.e. λ_c).

Importantly, the financial market impact of stablecoin adoption is amplified by the amount of stablecoins minted. The larger are stablecoin holdings in country c, the lower is $\mathcal{L}'$ and therefore the more stablecoins households in country c will need to liquidate (purchase) to balance the two sides of Equation (12). Notably, a similar relation to Equation (12) can be derived for domestic bonds and money in country c, amplifying the global spillovers of domestic shocks in c through U.S.bond markets, see Section B for full derivation.

2.5 Calibration

The standard parameters of the model are calibrated as Eichenbaum et al. (2021) and Ferrari Minesso et al. (2024), with a sensitivity to inflation in the Taylor rule set to 2; the reaction to output to 0.6 and the persistence of monetary policy to 0.75. The home bias in trade is set to 0.75. All parameters are reported in Table B.1 in the Appendix. In the baseline configuration, all countries are symmetric and have the same size (1/3). The three shocks (monetary policy, TFP and stablecoin preference) follow an AR(1) process, with autoregressive parameter set to 0.2 for the monetary policy shock process and to 0.5 for the others. The standard deviation of shocks is calibrated to 0.01. We calibrate α_μ, $\sigma^2_{q,t}$, β_μ and γ_μ to 0.1, 0.05, 0.01 and 1 respectively. We set the volatility of the stablecoin shock (ρ_t) to 0.01 and the persistence of its process to 0.5. The steady-state value of $\mu_{sc,c}$ is calibrated to reach a market capitalization of USD 500 billion (0.05) and USD 2 trillion (0.1). In the absence of stablecoins, the premium on U.S. yields is calibrated to 1% annualized; we follow the quantitative results of Eren et al. (2025) increasing it by 30 bps when stablecoins market capitalization reaches 2 tr.

3 Results

In this section, we assess how the introduction of stablecoins affects both the issuing and foreign economies. We first examine implications for monetary stability and business-cycle dynamics in the issuing country; we then analyze how stablecoins modify the transmission of shocks originating abroad; finally, we study how shocks to stablecoin demand propagate across countries. The analysis considers three calibrations: (i) no stablecoins; (ii) moderate adoption with a steady-state market capitalization of USD 500 billion (about USD 200 billion above the level at the time of writing, ≈1.3% of total U.S. debt); and (iii) large-scale adoption of USD 2 trillion (≈5.3% of U.S. debt), consistent with the upper range of investment-bank projections.

At the core of the results is a global safe asset channel. When the dollar appreciates (depreciates) there are valuation effects for foreign holders of dollar-backed stablecoins. Foreign holders are incentivized to redeem (purchase) stablecoins due to the two specific features of stablecoins: to i) realise valuation gains (as trading tokens) and ii) because they need fewer units to settle transactions (as settlement tokens). But because payment stablecoins are fully backed by short-term U.S. Treasuries, portfolio flows into and out of stablecoins map one-for-one into changes in Treasury demand, as the issuer sells (buys) bonds to meet redemptions. Redeemed dollars are then converted into foreign currencies and transferred abroad, leading to a dollar depreciation (the opposite in case of flows into stablecoins). This ties private money creation directly to public debt and makes U.S. yields react not only to domestic policy but also to global payment needs and portfolio rebalancing.

Overall, stablecoins modify the transmission of U.S. monetary policy through three bond-market mechanisms. First (level effect, steady-state): by adding structural demand for T-bills, stablecoins lower equilibrium risk-free yields but also require central banks to be more aggressive in responding to inflation because digital capital flows limit the ability of central banks to steer aggregate demand. Second (domestic pass-through): as a growing share of Treasuries is held indirectly via foreign stablecoin demand, the pass-through of U.S. policy shocks to short maturities is amplified, as issuers sell Treasuries when foreign households realise capital gains and need fewer stablecoins to settle transactions if the dollar appreciates. Third (foreign sensitivity): by strengthening the link between foreign payment needs and U.S. bond markets, external shocks exert a larger influence on U.S.

financial conditions, amplifying two-way international spillovers. These effects are small when adoption is modest relative to the size of the U.S. bond market, but scale non-linearly with market size, creating sharper trade-offs for monetary and financial stability as stablecoin capitalization rises.

3.1 Macro-Financial Stability: The Risks of the Global Safe Asset Channel

We begin by examining the implications of stablecoin introduction for macro-financial stability. Figure 6 presents a stability map in which we vary the response coefficient to inflation in the U.S. central bank's Taylor rule, θ_π in Equation (14), (vertical axis) and the steady-state demand for stablecoins (horizontal axis), expressed as a share of total U.S. debt.

$$\ln R_{c,t} = (1-\varrho)\ \ln R_{c,t-1} + \varrho\big[\ \ln R_{c,ss} + \theta_\pi \ln \pi_{c,t} + \theta_y (\ln Y_{c,t} - \ln Y_{c,ss})\big] + \varepsilon_{c,t}. \quad (14)$$

The blue area denotes parameter combinations yielding a stable equilibrium while the red area indicates instability.[26] The vertical black lines mark levels of stablecoin holdings corresponding to total market capitalizations of USD 500 billion and USD 2 trillion, respectively.

For low levels of stablecoin adoption (below USD 500 billion) the conventional Taylor principle holds: monetary stability requires the policy rate to respond to inflation with a coefficient greater than one. As stablecoin adoption increases, this relationship changes. Higher stablecoin capitalization necessitates a stronger policy response to inflation for the model to remain stable. This result stems from the new linkage stablecoins create between U.S. bond markets, the dollar exchange rate and foreign holdings. With widespread stablecoin use across countries, U.S. yields and the dollar exchange rate become increasingly influenced by foreign demand for stablecoins. As a result, aggregate demand reacts less to domestic monetary policy, requiring a stronger reaction to inflation to stabilize prices and the business cycle.

These effects are non-linear, as illustrated in Figure 6. Even under substantial, though

[26] The model is linearized to first order. Stability is assessed using the Blanchard–Kahn conditions. The model is solved using Dynare, Adjemian et al. (2024).

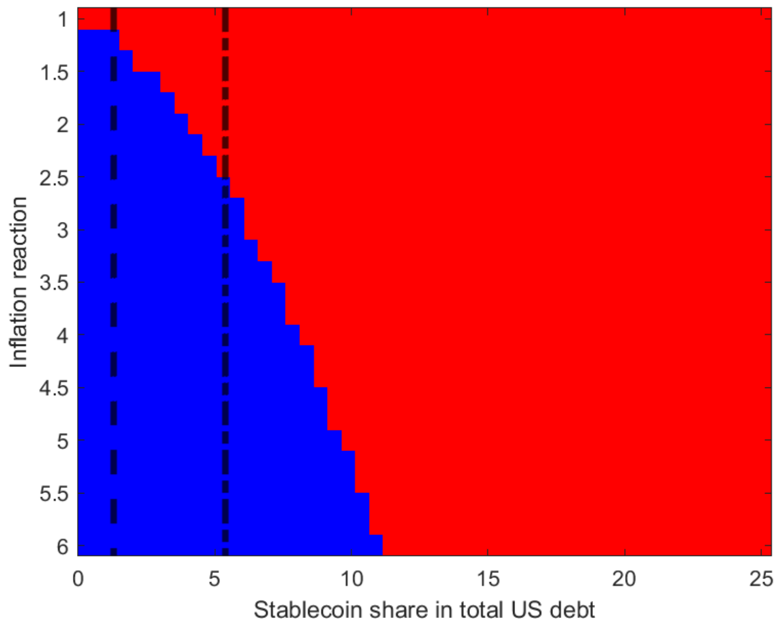


Figure 6: Stability map.
Notes: the chart shows combinations of values for the U.S. Taylor rule inflation reaction parameter (θ_π) and the stablecoin preference parameter (μ_{sc}). Blue areas indicate that the model is stable and red areas that it is unstable. Vertical lines indicate a stablecoin total market cap of USD 500 bln and 2 Tr.

plausible, stablecoin adoption in line with market expectations, the model remains stable for standard parametrizations of the inflation response, typically between 1 and 2.5. The situation changes once stablecoin capitalization exceeds USD 2 trillion, as monetary policy must react disproportionately strongly to inflation to preserve stability. For instance, if stablecoins account for 10% of the U.S. debt market (twice the upper bound of current projections) the inflation coefficient must rise to around 6. This finding underscores the potential for stablecoins to reshape the fundamental drivers of the U.S. bond market and, consequently, the behavior of U.S. yields.

This outcome follows directly from Equation (12). When the steady-state demand for stablecoins is high, their marginal value as a means of payment declines. Consequently, following a shock, households rapidly change their stablecoin holdings, strengthening the reaction of yields and exchange rates.

Figure 7 replicates the exercise while varying the elasticity of substitution between different types of liquid assets ($\eta_{c,m}$) and the extent to which stablecoins lower U.S. yields in the steady-state .[27] The results are broadly consistent with our previous results,

[27]We do this by varying the risk-premium parameter controlling the steady-state reduction in U.S. yields imputed by the demand for stablecoins. Additionally, notice that as $\eta_{c,m} \to 1$, preferences become

but it is interesting to see two regularities across calibrations: (i) the destabilising force of stablecoins increases as their impact on the U.S. steady-state yield increases. Larger reductions in yields are amplifying the global safe asset channel of stablecoins. This means that larger swings in stablecoins' demand across the globe imply a necessarily stronger monetary policy reaction to stabilize the economy. (ii) As stablecoins become closer substitutes for money in providing liquidity services ($\eta_m \rightarrow 1$), the economy becomes more stable for a given monetary policy response. This occurs because stablecoin demand becomes less volatile, as part of the adjustment in payment needs can be absorbed by money. In turn, this mitigates the strength of the global safe asset channel. In the extreme case of $\eta_m = 1$, as shown in Equation (12), the impact would be zero.

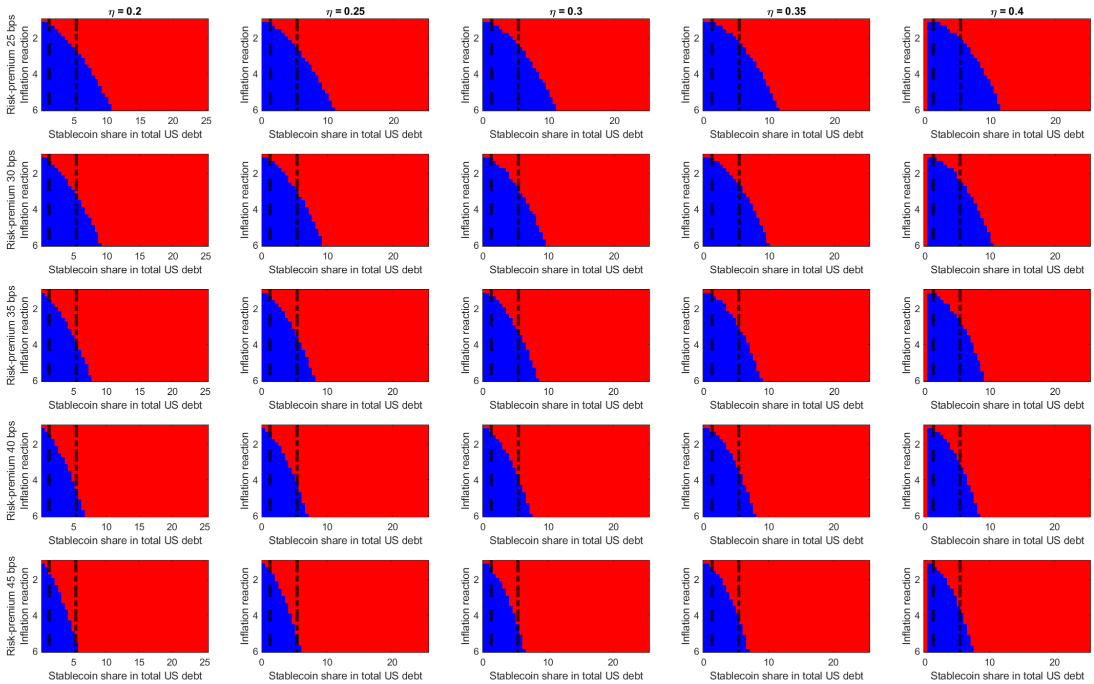


Figure 7: Stability map.

Notes: the chart shows combinations of values for the U.S. Taylor rule inflation reaction parameter (θ_π) and the elasticity of substitution between different types of liquid assets ($\eta_{c,m}$). Blue areas indicate that the model is stable and red areas that it is unstable. Vertical lines indicate a stablecoin total market cap of USD 500 bl and 2 Tr.. Different calibrations for the U.S. convenience yield and the CES liquidity aggregator parameter are considered. Vertical lines indicate a stablecoin total market cap of USD 500 bl and 2 Tr.

linear.

3.2 Impulse-responses

Turning to the impulse responses, we analyse three scenarios. The first considers two shocks originating in the U.S.: a one–standard-deviation contractionary U.S. monetary policy tightening and a one-standard deviation expansionary TFP shock. The second simulates the same shocks in a non-issuer stablecoin country. The third introduces a negative preference shock to stablecoins, designed to mimic a sudden loss of confidence and a sharp drop in demand for stablecoins across both domestic and foreign markets.

3.2.1 U.S. shocks: Monetary Policy and TFP

Figure 8 presents the effects of a U.S. monetary policy shock under the three adoption assumptions: (i) no stablecoins (black line), (ii) a steady-state stablecoin market capitalization of USD 500 billion (green line), and (iii) USD 2 trillion in steady-state stablecoin capitalization (red line). Consistent with the stability results, the low-adoption scenario has little impact on real outcomes relative to the baseline without stablecoins. The effects on domestic output and the interest rate are similar, reflecting the limited role of stablecoins in U.S. debt market dynamics at this scale.

However, macroeconomic consequences become important as stablecoins' capitalization increases (compare the red dots to the green line in Figure 8). Interestingly, output losses decrease when the economy is characterized by higher steady-state holdings of stablecoins. This occurs because when the dollar appreciates it creates positive valuation effects for foreign holders of dollar-backed stablecoins. This incentivises foreign holders to redeem stablecoins to realise valuation gains and because they need fewer units to settle transactions. As a consequence, the stablecoin issuer needs to sell U.S. dollar bonds and to convert proceeds from the sales into foreign currency to pay for those redemptions. The bond price falls, amplifying the contractionary effects of the monetary policy shock, consistently with Equation (12). Although higher U.S. rates also make Treasuries more attractive for foreign households, this additional direct demand is more than offset by the bond sales of the issuer, so that the net effect of the shock is a stronger rise in U.S. yields when stablecoins are present. Therefore, despite higher yields, redemption flows from the U.S. to the foreign country (and corresponding exchanges of dollars into foreign currency) dampen the appreciation of the dollar. Consequently, U.S. yields rise more in response to a shock of a given size (top-right panel of Figure 8), as the liquidation of

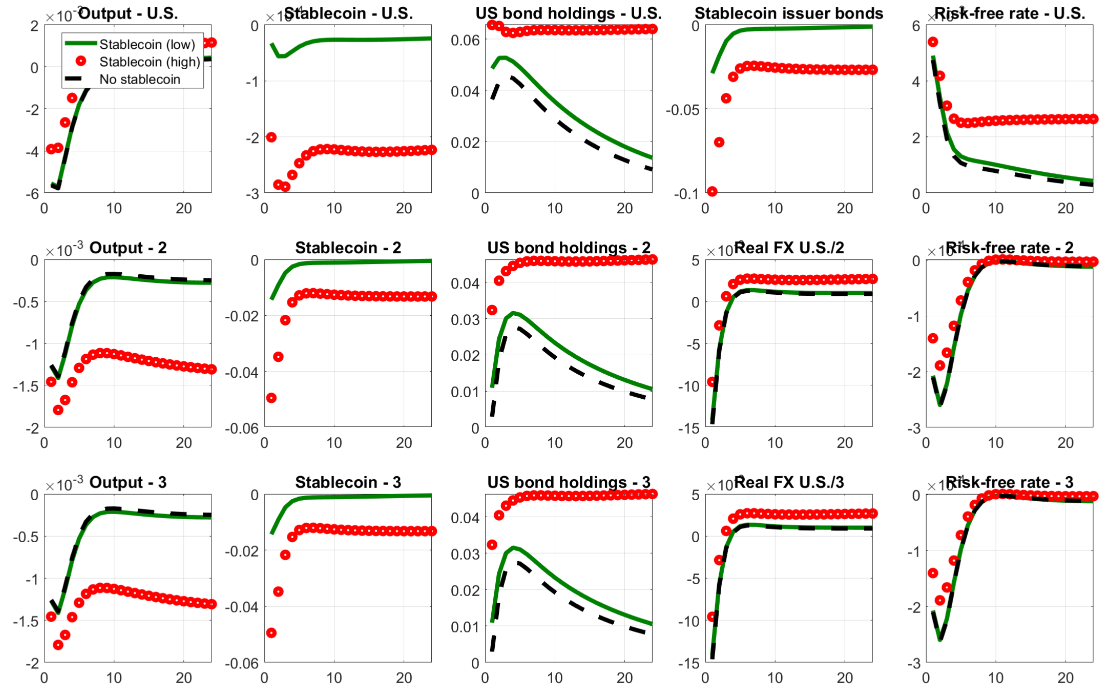


Figure 8: Impulse responses to a U.S. monetary policy shock.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

bonds by stablecoin issuers depresses bond prices and raises returns. At the same time, the U.S. dollar appreciates less against its trading partners (fourth column of Figure 8), supporting trade. This effect is economically significant: U.S. output declines by roughly 30% less. This result explains why central banks need to react more strongly to inflation as stablecoins become widely adopted: with large holdings of stablecoins monetary policy is less effective in steering aggregate demand because of (digital) capital flows.

Higher stablecoin holdings also amplify volatility in international demand for U.S. bonds, as foreign investors arbitrage between bonds and stablecoins. This effect strengthens with greater stablecoin adoption. Turning to foreign countries, the contractionary effects of U.S. tightening shocks are amplified the higher is stablecoin adoption because of exchange rate movements: the higher is the steady-state demand for stablecoins, the less the dollar appreciates, the more foreign countries lose competitiveness against the U.S.

The dynamics are similar when considering a U.S. TFP shock, Figure 9. In this case, however, aggregate effects are smaller, as the shock is real rather than financial. Following

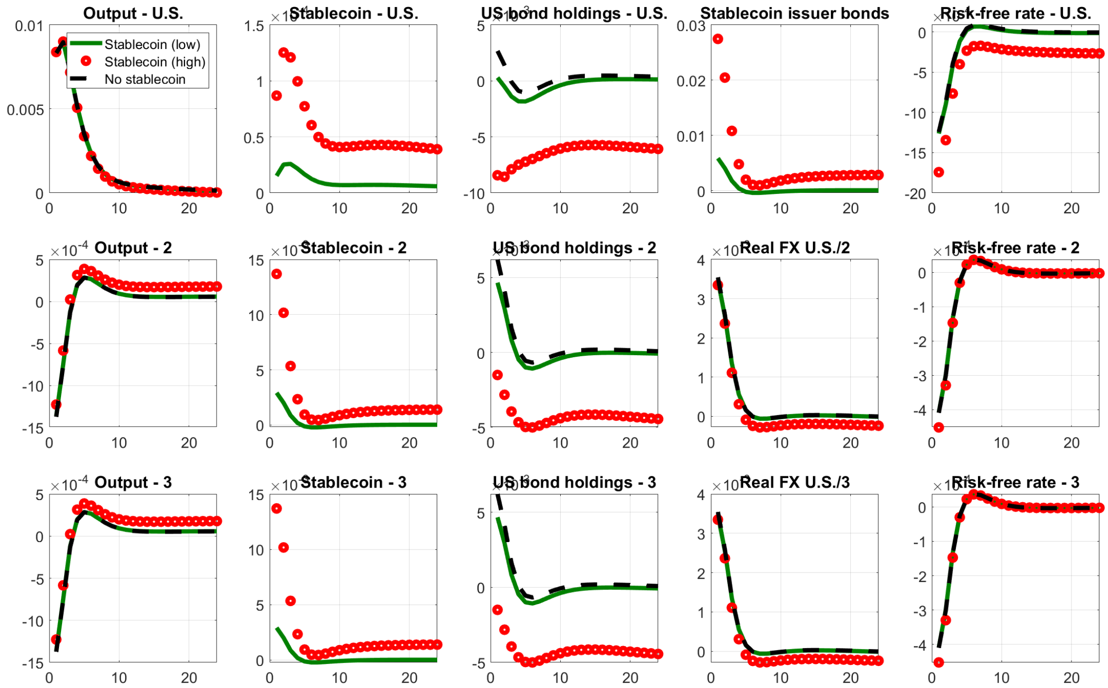


Figure 9: Impulse responses to a U.S. TFP shock.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. TFP shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

a positive TFP shock, U.S. yields decline more sharply when stablecoins are present. This occurs because foreign households purchase stablecoins, which are appreciating assets. Moreover, while U.S. bonds experience a decline in returns, stablecoin remuneration remains constant. This increases the incentive for households to hold stablecoins rather than U.S. bonds, even if this increase is muted by the decrease in confidence coming from an endogenous fall in $\mu_{c,t}$, due to the higher issuer risk. In the absence of stablecoins, foreign households would have rebalanced into domestic bonds or cash. These flows are partially offset by purchases of bonds by the stablecoin issuer. As demand for stablecoins rises, the issuer must buy additional bonds, leading to a decline in U.S. yields, about 50% larger than in the absence of stablecoins. This fall in yields helps offset the appreciation pressures resulting from inflows into dollar-denominated stablecoins. Foreign spillovers also decrease, although the difference between low and high stablecoin adoption is smaller than for a monetary policy shock. Exchange rate movements are amplified as well, with the dollar depreciating more in response to the shock, consistent with standard theory, and the magnitude of this effect rises with the level of stablecoin adoption. Figure B.4 and

[Figure B.5](#) in the Appendix show impulse responses for a broader set of variables. Notably, the inclusion of stablecoins generates more fluctuations in the convenience yield on U.S. bonds, as now bonds compete with stablecoins in delivering non-pecuniary benefits to households. Unsurprisingly, money demand moves in the opposite direction to stablecoin demand in all countries as the two are (imperfect) substitutes as liquid assets.

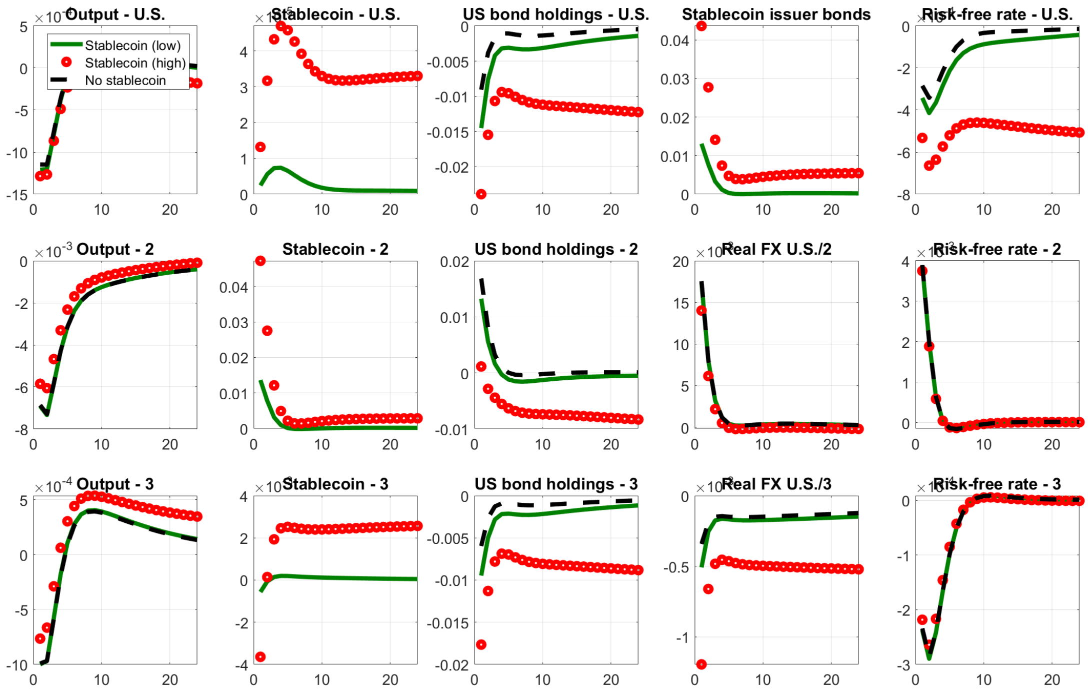


Figure 10: Impulse responses to a monetary policy shock from country 2.

Notes: the chart shows the impulse response to a 1 standard deviation monetary policy shock from a non-issuer country (country 2). The black line shows the responses of the model without stablecoins, the green line shows the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

3.2.2 Non-issuer country shock: Monetary Policy and TFP

Figure 10 examines spillovers to the U.S. from a monetary policy tightening in a non-issuing country, Country 2. Domestic variables in this country respond similarly with or without stablecoins; the main differences appear in the demand for foreign assets, particularly stablecoins and U.S. bonds: stablecoin demand increases while direct U.S. bond holdings decrease.

Spillovers to the U.S., however, are amplified. As U.S. yields fall, households in both the U.S. and Country 2 rebalance their portfolios toward stablecoins, generating additional demand for U.S. bonds through the stablecoin issuer. This demand further reduces

U.S. yields compared to a scenario without stablecoins. At the same time, increased demand for dollars in Country 2 limits the depreciation of the U.S. dollar against that country's currency. Similarly, when agents in Country 3 liquidate stablecoins, the dollar appreciates against their currency. Taken together, these forces alter the spillovers of foreign shocks to both the U.S. and third countries. In the U.S., foreign shocks become more pronounced, with output contracting by roughly 10% more, as the dollar remains stronger due to inflows into stablecoins from both Country 2 and domestic agents. In Country 3, however, stablecoin flows have a stabilizing effect: the stronger dollar dampens the decline in trade, and output contracts by approximately 15% less when stablecoins are widely used. Figure B.6 shows all the IRFs.

Country 2 TFP shocks have broadly similar effects on macroeconomic variables across different stablecoin configurations. The main difference is that higher stablecoin market shares generate somewhat larger fluctuations in the demand for U.S. bonds and therefore in the U.S. convenience yield, see Figure B.7.

3.2.3 Negative shock to stablecoin demand

Finally, we simulate a negative preference shock to stablecoins across all countries, that is, a decline in $\mu_{sc,c,t}$. Figure 11 presents the results. This shock affects households in both the United States and the other two countries. Following the shock, stablecoin holders sell their positions. Sales by foreign investors lead to a depreciation of the U.S. dollar, which in turn makes holding dollar-denominated stablecoins even less attractive due to capital losses. The dollar depreciation benefits the U.S. by improving export competitiveness. At the same time, the stablecoin issuer sells U.S. bonds held as reserves, putting upward pressure on U.S. interest rates.

Overall, the net effect on U.S. output is positive: the expansionary impact of a weaker dollar outweighs the contractionary effect of higher rates. However, higher interest rates reduce domestic consumption and aggregate demand, even if external demand supports total output (see Figure B.8).

Economic effects in foreign economies are negative. The dollar depreciation reduces the competitiveness of foreign exports, leading to a loss of trade shares and a decline in aggregate output. In addition, as households liquidate their stablecoin holdings, part of the proceeds are redirected toward consumption, increasing domestic demand and inflation. The resulting rise in prices prompts a monetary policy tightening. Higher foreign interest rates further depress output and contribute to an additional appreciation of foreign currencies relative to the U.S. dollar.

Also in this case, stronger steady-state stablecoin holdings magnify the spillover from stablecoins shocks

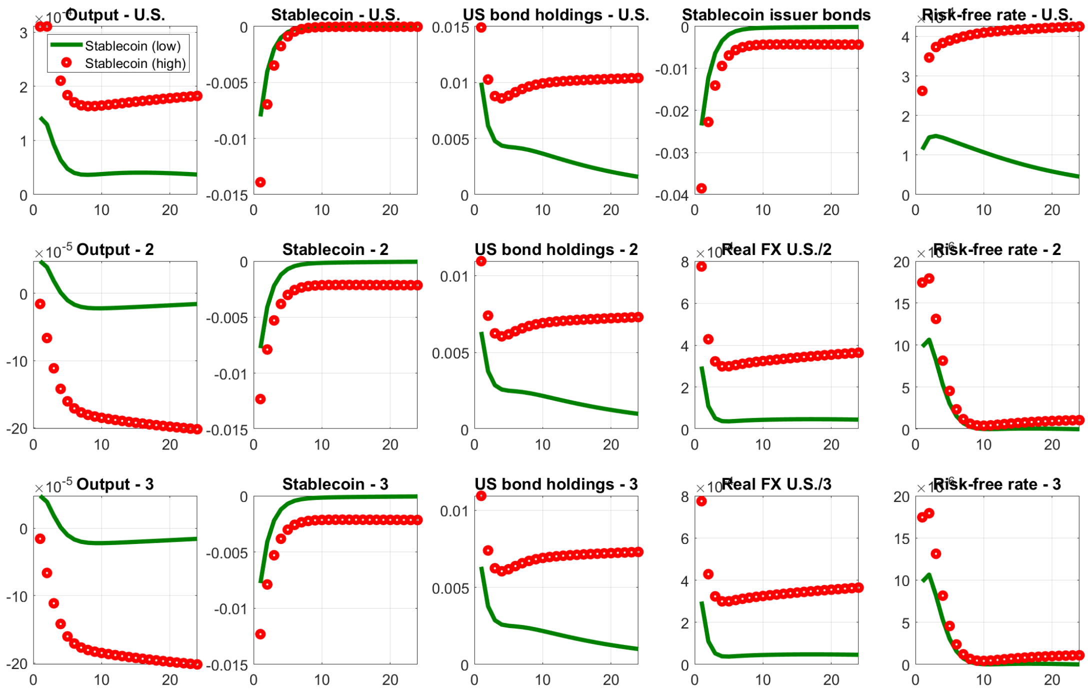


Figure 11: Impulse responses to a stablecoin preference shock.

Notes: the chart shows the impulse response to a 1 standard deviation shock to stablecoin preferences ($\mu_{sc,c}$). The the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

3.3 Welfare Implications

To assess the welfare impact of stablecoin adoption for the U.S. and the other countries, we compare the model with and without stablecoins. Figure B.9 in the Appendix reports the resulting welfare changes as a function of the assumed effect of stablecoin demand on equilibrium U.S. yields. The model is solved at second order with pruning and welfare is defined recursively: $\mathcal{W}_{c,t} = U_{c,t} + \beta_c E_t \mathcal{W}_{c,t+1}$, with U_c denoting the period utility function. When stablecoin demand does not reduce the U.S. risk-free rate ($\Delta R_{US,ss} = 0$), welfare effects are small: at low adoption the U.S. is slightly negatively affected while foreign countries gain slightly, and at high adoption all three countries experience modest welfare gains, stronger for non U.S. economies. As the assumed impact on equilibrium rates increases, welfare becomes more skewed towards the U.S.: once $\Delta R_{US,ss} \geq 0.2$, U.S. welfare rises monotonically with the size of the yield compression and with the level of adoption, whereas both foreign countries start to lose, with losses growing in both dimensions. For example, when the steady-state U.S. yield falls by 1 percentage point and stablecoin adoption is high, U.S. welfare gains are around 1.5%, while each foreign country loses close to 2%.

This pattern reflects the trade-off generated by the global safe asset channel. The U.S. benefits from cheaper public financing and a lower average cost of capital, while the attenuation of domestic monetary transmission documented above has only a second-order effect on its welfare. Foreign countries, instead, ultimately bear the cost of lower safe yields and stronger exposure to U.S.-centered financial conditions. Overall, it is necessary to assume a sufficiently large impact of stablecoin demand on the equilibrium risk-free rate to generate sizable welfare gains for the U.S. and corresponding losses for the rest of the world.

3.4 Extensions and Robustness

We consider several extensions of the model to assess the robustness of our results.

First, we contrast two benchmark cases in which stablecoins are issued exclusively in the United States or exclusively abroad. The corresponding results are reported in Section C.3. These simulations highlight the central mechanism: the global safe-asset channel amplifies the propagation of shocks in the presence of stablecoins. When issuance is restricted to the domestic economy, the model's dynamics and stability properties are equivalent to those without stablecoins. In contrast, when stablecoins are held internationally, their adoption alters the transmission of shocks through shifts in demand for dollar-denominated bonds and thereby constrains the autonomy of domestic monetary policy.

Second, we remove the cash-in-advance constraint and instead adopt a money-in-the-utility specification. As shown by Feenstra (1986), this approach allows for a broader set of assumptions regarding the demand for liquid assets. Our results remain robust under this alternative formulation, indicating that the intuition derived from Equation (12) is general and does not depend on specific functional forms. The corresponding results are reported in Appendix C.2.

Third, we relax the symmetry assumptions in the calibrated model and employ estimated parameters and weights to conduct simulations. Specifically, we use parameters from the estimated three-country model (U.S., euro area and rest of the world) of Ferrari Minesso and Pagliari (2023). The main intuition again proves robust, as shown in Appendix C.4.

Fourth, we include redemption fees on stablecoin holdings. While redemption fees are very small (0.1% for Tether) or completely absent (USDC) for existing stablecoins, the GENIUS act does allow issuers to impose them. Section C.5 simulates the model under a quite large, 2%, redemption fee. While the presence of a fee reduces redemptions, thus dampening the impact of stablecoins on yields and the exchange rate, the key results of the model are preserved.

4 Empirical Validation

Stablecoins are a relatively recent phenomenon in monetary history, so the limited availability of long time series poses a challenge for empirically validating the model. Nevertheless, financial market data provide a useful alternative for testing the predictions of our theoretical framework.

In this section, we examine how U.S. yields respond to monetary policy shocks in the U.S. and the euro area, depending on the share of stablecoins' market capitalization. We implement a local projection framework and estimate:

$$y_{t+k} = \alpha_k + \beta_k^1 MPS_t + \beta_k^2 MPS_t SC_{t-1} + \beta_k^3 SC_{t-1} + \sum_{l=1}^{L} \gamma' X_{t-l} + T_k + \alpha_{year,k} + \varepsilon_{t+k} \quad (15)$$

where MPS is a measure of monetary policy shock, SC is the log of the market capitalization of dollar stablecoins in the total U.S. bond market, proxied by the capitalization of USDT and USDC which constitute almost the entire supply of dollar stablecoins until now. X_{t-l} includes lagged variables to control for global risk factors and macro developments: the dependent variable, SC, the log of the USD Nominal Effective Exchange Rate and the S&P500. The lag-length is $L = 4$. Year dummies ($\alpha_{year,k}$) and a time trend (T_k) are also included. We use weekly data from 2018 to September 2025.

As dependent variable we focus on the U.S. 3-month yield –as stablecoin issuers are

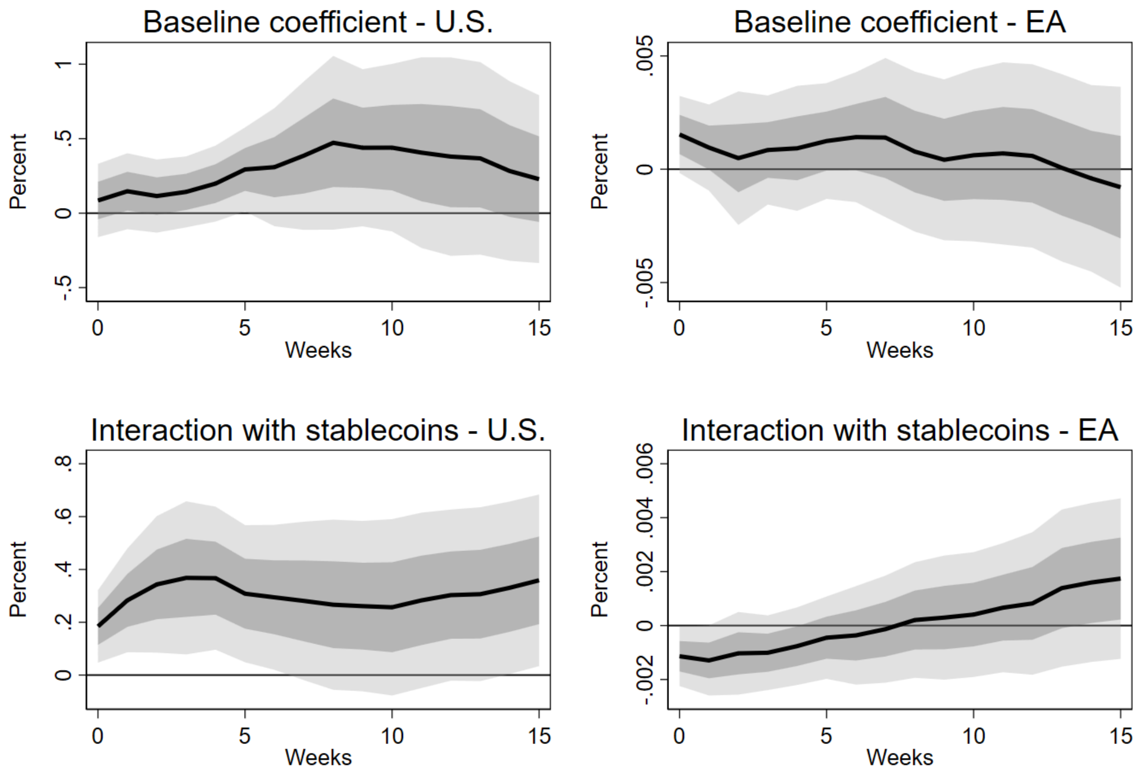


Figure 12: Response of U.S. yields to U.S. and euro area monetary policy shocks.
Notes: the chart shows the impulse response of U.S. 3-month yields to a 25 basis points U.S. (left column) and EA monetary policy shock. The upper panel shows the baseline coefficient and the lower panel the interaction with the stablecoin share in U.S. debt, β^1 and β^2 respectively in Equation (15). Local projection control for 4 lags of the dependent variable, the (log) U.S. dollar nominal effective exchange rate, the (log) U.S. stock price, the log of stablecoins market capitalization (proxied by USDT and USDC market capitalization), a time trend and year dummies.

constrained to invest in short-term debt– and use high-frequency monetary policy shocks for both the U.S. and the euro area, identified on the same maturity. The coefficients of interest are β^1 and β^2: according to theoretical results, a stronger footprint of stablecoins should amplify the reaction of U.S. yields to U.S. monetary policy shocks and increase also the impact of foreign shocks.

Figure 12 reports the estimated coefficients (β^1 in the upper row and β^2 in the lower row). Consistent with the evidence in Ahmed and Aldasoro (2025) and Kim (2025), stablecoin demand appears to affect U.S. yields. Higher stablecoin capitalization amplify the impact of U.S. monetary policy shocks on yields, in line with the predictions of the theoretical model. The estimates are not statistically significant, likely reflecting the still limited adoption, for spillovers of euro area shocks to the U.S. Although the sign of the coefficient aligns with the theoretical prediction—higher stablecoin capitalization amplifies spillovers to the U.S.—the estimates are volatile and not statistically significant.

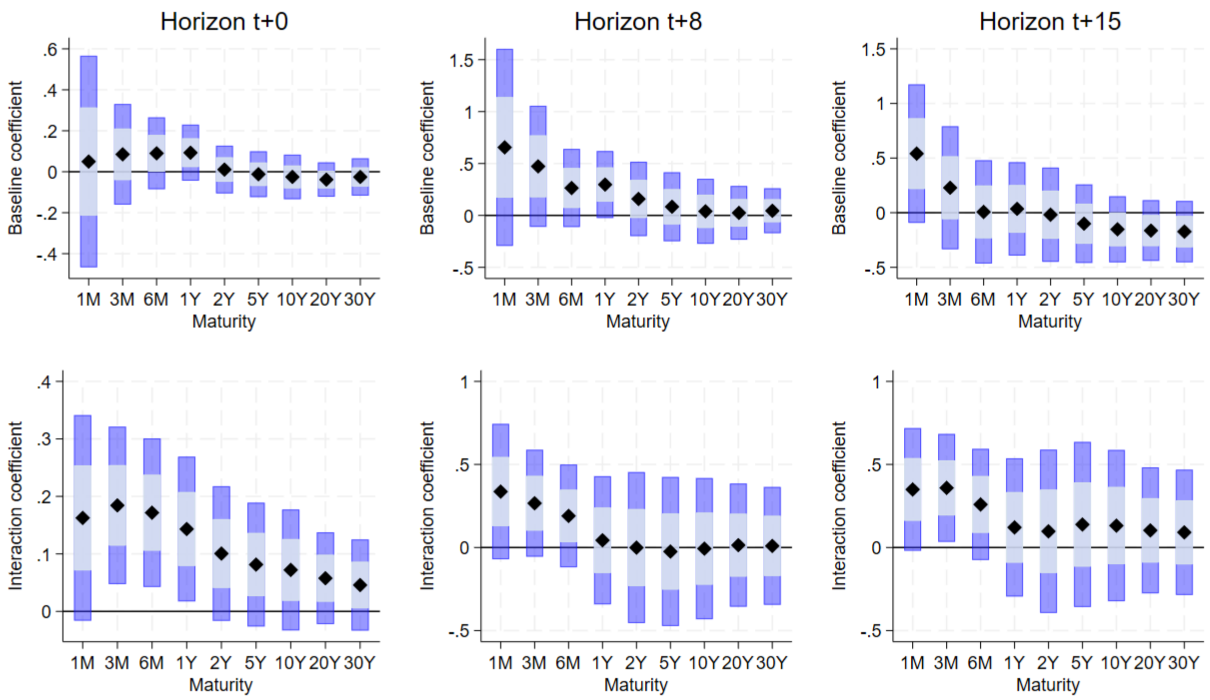


Figure 13: Response of U.S. yields at different maturities to U.S. monetary policy shocks. **Notes**: the chart shows the impulse response of the U.S. yield curve to a 25 basis points U.S. monetary policy shock. Responses are estimated with Equation (15) and the figure shows coefficients for $k = 0, 4, 8$. The upper panel shows the baseline coefficient and the lower panel the interaction with the stablecoin share in U.S. debt, β^1 and β^2 respectively in Equation (15). Local projection control for 4 lags of the dependent variable, the (log) U.S. dollar nominal effective exchange rate, the (log) U.S. stock price, the log of stablecoins market capitalization (proxied by USDT and USDC market capitalization), a time trend and year dummies.

This likely reflects the still limited adoption of U.S. stablecoins in the euro area.

Figure 13 reports the response of the entire yield curve estimated using Equation (15). We focus on three horizons: on impact $(t + 0)$, after two month $(t + 8)$, and after one quarter $(t + 15)$. The results broadly align with prior intuition: stablecoins increase the pass-through of monetary policy shocks to the U.S. yield curve as a whole. The effect is initially concentrated at shorter maturities, consistent with the composition of assets held by stablecoin issuers. Over time, the shock gradually propagates to longer maturities of U.S. government debt.

Finally, Figure B.10 in the Appendix reports the response of the stablecoin market capitalization to U.S. monetary policy shocks. In line with the model's predictions and the results by Ahmed and Aldasoro (2025), the market capitalization of stablecoins contracts after a U.S. monetary policy tightening.

Taken together, the evidence supports the model's central prediction that stablecoin-driven shifts in Treasury demand amplify the transmission of monetary policy to short-term yields.

5 Conclusion

This paper studies the macro-financial implications of dollar-backed stablecoins in a three-country DSGE framework. We show that fully collateralized, unremunerated stablecoins strengthen the fiscal–monetary nexus by tying private money creation and global payment demand directly to U.S. public debt.

Through this global safe asset channel, stablecoins lower equilibrium U.S. Treasury yields in steady state but alter monetary transmission and international spillovers. When adoption is sufficiently large, U.S. monetary policy shocks transmit more strongly to Treasury yields yet less to the real economy. In our simulations, the output response to a tightening is reduced by about 30%, implying that monetary policy must react more aggressively to inflation to preserve stability. Stablecoins also amplify two-way spillovers, increasing the sensitivity of U.S. financial conditions to foreign shocks and vice versa.

These effects are non-linear and depend on the scale of adoption. As stablecoin holdings increase, they are increasingly used as portfolio assets rather than purely for transactions, making demand more responsive to financial conditions. Because issuance is fully backed by Treasuries, these portfolio adjustments translate directly into fluctuations in bond demand and yield volatility. Empirically, we find that the response of short-term Treasury yields to monetary policy shocks is amplified when the stablecoin footprint in U.S. debt markets is larger, consistent with the model's predictions.

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Online appendix

A Macro-Finance Implications of Stablecoins

The GENIUS Act establishes a formal regulatory foundation for U.S. dollar–backed stablecoins, enabling their transition from niche crypto-market settlement tools to broadly used digital payment instruments. In fact, the new framework was explicitly constructed to allow stablecoins to evolve into a mainstream means of U.S. digital dollar payments for trade, remittances, and cross-border transactions. The implicit goal was also to reinforce the global role of the U.S. dollar and increase demand for U.S. government debt. Importantly, issuance is now open to non-bank entities, which may accelerate its diffusion, but also raises risks, especially in economies where cross-border payments remain slow and costly. These developments carry significant macroeconomic implications, for U.S. monetary and financial conditions and for international spillovers. The discussion that follows outlines the principal channels through which expanding stablecoin use may influence the U.S. economy, global dollar dynamics, and international financial linkages. We do so by consciously being silent on all financial risks arising from international regulatory arbitrage or multi-issuer risks (European Systemic Risk Board, 2025).

We start by highlighting the **differences with other forms of dollar assets**. Stablecoins importantly differ from (i) international dollar deposits, (ii) money market fund (MMF) shares, (iii) U.S. bond holdings, and (iv) hypothetical dollar CBDC. (i) Their global, app-based accessibility and 24/7 transferability enable faster and lower-cost cross-border payments than international dollar bank deposits. Unlike bank deposits, moreover, stablecoin units are fully backed by dollar assets. This makes stablecoin issuers potentially larger players in the Treasury market than Eurodollar banks. (ii) Because stablecoins promise on-par convertibility –backed one-for-one by dollar assets– and are not officially remunerated, their function is closer to digital money than to investment products. In fact, While MMF assets increase after a monetary policy tightening (as deposit rates lag policy rates), stablecoin market capitalization significantly declines. Additionally, unlike MMFs, whose investors bear portfolio losses, stablecoin issuers must absorb asset-side shortfalls to maintain parity, creating run-risk dynamics specific to privately issued par-money. (iii) U.S. stablecoins can be used for transactions, connecting pure U.S. debt holdings to liquidity services. (iv) Finally, stablecoins are different from

CBDC. In fact, CBDCs constitute a direct central-bank liability and need not be backed by Treasuries on a one-to-one basis (Adalid et al., 2022); as a result, a CBDC would operate under a fundamentally different balance-sheet regime and would not generate the same incremental demand for U.S. government securities as stablecoins do.

Expanded global use of stablecoins would **increase demand for Treasuries but also the risk of making it more volatile**. In fact, as for other safe dollar assets, an increase in demand would compress yields, while fluctuations in stablecoin balances –especially from foreign holders– could heighten Treasury market volatility. In particular, stronger structural demand at the front end would compress short-term yields and, via expectations and portfolio-balance channels, may flatten the long end of the curve, influencing monetary transmission to long-term borrowing costs. This could generate an important direct channel of transmission from foreign demand to the U.S. bond market, amplifying two-way spillovers between the United States and the global economy. This effect amplifies non-linearly as stablecoins constitute a larger share of household portfolios.

Backing requirements favouring liquid short-term U.S. debt may intensify demand for bills, incentivize the sovereign to issue more short-term debt. This could **increase system-wide exposure to rollover and duration risks**; notably, Tether, which is issued outside the GENIUS Act, already allocates almost 80% of its portfolio to short-dated instruments. Additionally, stablecoin-driven demand for Treasury bills would **exacerbate the global scarcity of high-quality collateral**, placing further downward pressure on U.S. bond yields.

While these were implications affecting mostly the U.S. economy, consequences could also be felt in the rest of the world. In fact, in high-inflation economies, the frictionless access to dollar-backed stablecoins via mobile wallets could **accelerate dollarization**, eroding non-U.S. monetary autonomy and amplifying the international reach of U.S. monetary policy. In jurisdictions without access to Federal Reserve swap lines, this greater dependence on dollar liquidity may translate into heightened financial fragility during global stress episodes. Stablecoins may also sustain the dollar's primacy in global payments and reserves. By offering a safe, convenient digital dollar, they counter the advance of foreign digital currencies and extend U.S. monetary influence abroad. Assuming momentarily that stablecoins would increase the net world demand for U.S. assets (Azzimonti and Quadrini, 2025), this would **preserve the dollar's "exorbitant privilege"** and the associated convenience yield on U.S. liabilities.

Additionally, the widespread foreign adoption of dollar-backed stablecoins would introduce an additional transmission channel of U.S. monetary policy to foreign households, beyond traditional trade and financial linkages. An example can summarize the intuition. Higher U.S. interest rates appreciate the dollar. This generates capital gains for foreign stablecoin holders, partly offsetting contractionary financial spillovers. Symmetrically, U.S. easing imposes wealth losses that dampen the expansionary spillovers. Large-scale use of stablecoins internationally would also generate new capital flows to and from the U.S. when coins are purchased or redeemed, impacting the dollar exchange rate. This also implies that stablecoin demand responds non-linearly to short-term interest rates: higher rates raise the opportunity cost of holding stablecoins, as they are not remunerated, yet simultaneously bolster confidence by improving issuer carry and easing redemption pressures. For foreign users, rate hikes also generate capital gains via dollar appreciation, adding a wealth channel to demand. This asymmetry can induce liquidity imbalances, with elevated demand and issuance in tightening cycles and depressed demand in easing phases. As mentioned, however, all these channels would be absent if international investors simply changed the composition of their international portfolios, substituting stablecoins with already-held dollar assets.

Other potential challenges are related to the technology used. By enabling instantaneous global portfolio rebalancing, stablecoins may **increase the speed and amplitude of capital flows**, potentially magnifying price swings in U.S. bond and foreign-exchange markets and increasing the likelihood of short-lived instability episodes that are difficult to address with conventional lender-of-last-resort tools. Related to this, with stablecoins also heavily involved in crypto-asset trading, widespread adoption could allow **disturbances in crypto markets to transmit more directly to the real economy**, raising the likelihood of systemic spillovers. Additionally, widespread adoption of stablecoins for payments and savings can **disintermediate banks and legacy payment networks**, eroding deposit bases and incumbent revenues Liang et al. (2024). Competitive pressures may push traditional intermediaries to integrate crypto infrastructure, yet diminished intermediation weakens banks' capacity to absorb shocks. This shift also complicates the Federal Reserve's lender-of-last-resort function, as extending liquidity support to stablecoin users is substantially less direct. Competition among stablecoin issuers may gradually degrade collateral quality, especially when low interest rates or return pressures encourage shifts from short-term government securities toward riskier assets. Such deterioration reintroduces MMF-style run risk (Bolt et al., 2024), with confidence shocks prompting fire sales and broader market spillovers. This dynamic echoes historical episodes—such as the collapse of the Bank of Amsterdam —where weakening asset quality ultimately eroded monetary trust.

Finally, stablecoins carry significant **geopolitical implications**, potentially undermining U.S.-centric financial sanctions and global leverage by allowing settlement to migrate outside traditional CHIPS- and SWIFT-based channels.[28] Maintaining a strong domestic presence is therefore critical, while widespread use of foreign tokens exposes users to extraterritorial control and data risks. Competition over standards and security in digital payments is emerging as a new dimension of global monetary geopolitics. Taken together, the expansion of dollar-backed stablecoins can strengthen the global role of the U.S. currency and reduce transaction costs, but it also introduces new sources of financial instability, fiscal vulnerability, and geopolitical tension for the international monetary system.

[28] Countries under sanctions are already experimenting with stablecoin-based settlement to bypass restrictions, see European Central Bank (June 2025).

B Model

B.1 Model setup

There are three economies in the model, indexed by $c \in \{US,\ S,\ F\}$, each with size n_c. Within each country, households consume, save, hold real balances, supply labor to firms and invest in firms' capital. Households also need liquidity to finance transactions, which we model as an aggregator of money and stablecoins. Firms produce undifferentiated final goods which are bundled together by retailers and sold on final markets with monopoly power. Under Rotemberg pricing, firms face a quadratic cost proportional to the parameter $\phi_{c,r}$ to update prices. We set the Rotemberg parameter to match a frequency of price adjustment of 0.6 under the equivalent Calvo pricing formalism of the problem. Goods and bonds are traded across countries and determine the exchange rate. We assume that bond markets are incomplete, hence the UIP condition does not hold across countries, and that U.S. bonds deliver a convenience yield. For this reason, in steady-state, U.S. bonds have lower returns.

Central banks set the interest rate and the government the level of public consumption. It taxes and borrows on national and international markets. We assume a convenience yield on US bonds, the value of the convenience yield is calibrated as in Eren et al. (2025). Finally, we assume there is a global stablecoin issuer, owned by US households, that issues a dollar-denominated stablecoin to households in all three countries. Stablecoins bear no remuneration and are fully backed by US safe assets. Intermediation profits from stablecoin issuance are rebated to US households.

B.2 Households

Households derive utility from consumption, holdings of real balances (domestic cash and US bonds) and leisure:

$$U_{c,t} = e^{C}_{c,t} \ln\left(C_{c,t} - h_c C_{c,t-1}\right) - \frac{\chi_{c,l}}{1+\phi_{c,l}} L_{c,t}^{1+\phi_{c,l}} + \frac{\chi_{c,b}}{1-\sigma_{c,b}} \left(\frac{B_{US,c,t}}{P_{c,t} NER_{US,c,t}}\right)^{1-\sigma_{c,b}} \tag{B.1}$$

with c the country index. The budget constraint is:

$$
\begin{aligned}
&P_{c,t}C_{c,t} + B_{c,c,t} + \sum_{l\neq c} NER_{l,c,t}B_{l,c,t} + P_{c,t}I_{c,t} + M_{c,t} + \frac{SC_{c,t}}{NER_{US,c,t}} \\
&\leq w_{c,t}L_{c,t} + R_{c,t-1}B_{c,c,t-1} + \sum_{l\neq c} NER_{l,c,t}R_{l,t-1}B_{l,c,t-1} - \sum_{l\neq c}\frac{\phi_c^B}{2}\left(\frac{B_{l,c,t}NER_{l,c,t}}{P_{c,t}}\right)^2 P_{c,t} \\
&\quad + P_{c,t}R^k_{c,t}K_{c,t-1} + M_{c,t-1} + \frac{R_{sc,t-1}SC_{c,t-1}}{NER_{US,c,t}} + \Pi_{c,t}
\end{aligned}
\tag{B.2}
$$

C_c is aggregate consumption, L_c aggregate labor and $e^C_{c,t}$ is a consumption preference shock. I_c, K_c R^k_c, w_c are investments, capital, capital returns, nominal wages. P_c is an aggregate price level. $NER_{l,c,t}$ is the nominal exchange rate between country c and country l (expressed in units of currency of l per currency of c), $B^F_{l,c,t}$ are bonds issued in country l and held in country c (i.e. foreign bond holdings) and $R_{l,t}$ is the (foreign) interest rate on bonds issued in country l. M_c are money balances; $\frac{\chi_{c,b}}{1-\sigma_{c,b}}\left(\frac{B_{US,c,t}}{NER_{US,c,t}}\right)^{1-\sigma_{c,b}}$ captures the utility value of holding U.S. bonds, that reflects, for example, liquidity services. SC_c are stablecoin holdings expressed in U.S. dollars while R_{sc} is the stablecoin remuneration that we set to 1 in the baseline calibration. Finally, Π_c includes lump-sum taxes as well as profits transferred from retailers to households. The cash-in-advance constraint takes the form of:

$$
C_{c,t} = \left[\mu_{sc,c,t}\left(\frac{SC_{c,t}}{NER_{US,c,t}}\right)^{\eta_m} + (1-\mu_{sc,ct})\,(M_{c,t})^{\eta_m}\right]^{\frac{1}{\eta_m}} \tag{B.3}
$$

with $\mu_{sc,c,t} = \mu^*_{sc,c} - \left(\alpha_\mu\,\sigma^2_{q,t} + \beta_\mu\,\exp\{1-R_{US,t}\} + \gamma_\mu\,\rho_t\right)$, where $\alpha_\mu\sigma_{sc}$ capture the change in stablecoin preferences due to volatility, $\beta_\mu\exp\{1-R_{US,t}\}$ due to risks of stablecoin issuers incurring in negative profits and $\gamma_\mu\rho_t$ is a stablecoin demand shock. The law of motion of capital in each sector is:

$$
K_{c,t+1} = \left\{(1-\delta_c)K_{c,t} + I_{c,t}\left[1 - \frac{\phi^K_c}{2}\left(\frac{I_{c,t}}{I_{c,t-1}} - 1\right)^2\right]\right\} \tag{B.4}
$$

δ_c the depreciation rate of capital and ϕ^K_c the capital adjustment cost. Households optimize utility (Equation (B.1)) under the budget constraint (Equation (B.2)), liquidity constraint (Equation (B.3)) and the law of motion of capital (Equation (B.4)). First order conditions are:

$$\frac{e^C_{c,t}}{C_{c,t} - hC_{c,t-1}} - E_t \frac{\beta_c e^C_{c,t+1} h_c}{C_{c,t+1} - h_c C_{c,t}} = \lambda_{c,t} \tag{B.5}$$

$$\chi_c L^{\phi_c}_{c,t} = \lambda_{c,t} \frac{w_{c,t}}{P_{c,t}} \tag{B.6}$$

$$\beta_c E_t \left(\frac{R_{c,t} \lambda_{c,t+1}}{\pi_{c,t+1}} \right) = \lambda_{c,t} \tag{B.7}$$

$$\lambda_{c,t} \left[1 + \phi^B_c \left(\frac{RER_{l,c,t} B_{l,c,t}}{P_{l,t}} \right) \right] = \beta_c E_t \left(\frac{\lambda_{c,t+1}}{\pi_{c,t+1}} R_{l,t} \frac{NER_{l,c,t+1}}{NER_{l,c,t}} \right) \tag{B.8}$$

$$Q_{c,t} \left\{ \left[1 - \frac{\phi^K_c}{2} \left(\frac{I_{c,t}}{I_{c,t-1}} - 1 \right)^2 \right] - \frac{I_{c,t}}{I_{c,t-1}} \phi^K_c \left(\frac{I_{c,t}}{I_{c,t-1}} - 1 \right) \right\} +$$

$$+ \beta_c E_t \left[Q_{c,t+1} \phi^K_c \left(\frac{I_{c,t}}{I_{c,t-1}} - 1 \right) \left(\frac{I_{c,t+1}}{I_{c,t}} \right)^2 \right] = \lambda_{c,t}$$

$$\beta_c E_t \left[Q_{c,t+1}(1 - \delta_c) + \Lambda_{c,t+1} R^k_{c,t+1} \right] = Q_{c,t} \tag{B.9}$$

$$-\frac{\lambda_{c,t}}{NER_{US,c,t}} + \beta_c E_t \left(\frac{\lambda_{c,t+1}}{NER_{US,c,t+1}} \frac{R_{sc,t}}{\pi_{c,t+1}} \right) + \gamma_{c,t} \mu_t \left(\frac{SC_{c,t}}{NER_{US,c,t} P_t C_{c,t}} \right)^{\eta_m - 1} \frac{1}{NER_{US,c,t}} = 0 \tag{B.10}$$

$$-\lambda_{c,t} + \beta_c E_t \left(\frac{\lambda_{c,t+1}}{\pi_{c,t+1}} \right) + \gamma_{c,t} \left(\frac{M_{c,t}}{C_{c,t}} \right)^{\eta_m - 1} = 0 \tag{B.11}$$

Q_c is the price of capital in country c and $\{\lambda_{c,t}\}^{\infty}_{t=0}$, $\{\gamma_{c,t}\}^{\infty}_{t=0}$ the sequences of Lagrangian multipliers associated to the optimization problem. Equation (B.5) is the Euler equation for consumption, defining the marginal utility of consumption (λ_c). Equation (B.6) defines labor supply which equals the value, in terms of consumption, of the real wage. Equation (B.7) determines the demand for domestic bonds while Equation (B.8) for foreign bonds. The liquidity premium ($\frac{\chi_{c,b}}{\lambda_{c,t}} \left(\frac{B_{US,c,t}}{RER_{US,c,t}} \right)^{-\sigma_{c,b}}$) applies only to holdings of U.S. bonds outside the U.S. Notice that bond markets are not complete (because of cross-border transactions costs for $\phi^B_c > 0$), therefore combining Equation (B.7) and Equation (B.8) does not lead to perfect UIP. Moreover, as each country has two trade partners, there is one Equation (B.8) for each of them. Finally, Equation (B.8) is the Tobin's Q equation, Equation (B.10) is the stablecoin demand equation and Equation (B.11) is the money demand equation. First order conditions are exactly symmetric in each country excluding the U.S. for which the Euler condition on domestic bonds is:

$$\beta_c E_t \left(\frac{R_{c,t} \lambda_{c,t+1}}{\pi_{c,t+1}} \right) + \chi_{c,m} \left(\frac{B_{c,c,t}}{P_{c,t}} \right)^{-\sigma_{c,b}} = \lambda_{c,t} \tag{B.12}$$

B.3 Production

In each country there is a *continuum* of perfectly competitive firms, indexed by k. Firms' production function is:

$$X_{c,t}(k) = A_{c,t} \left(K_{c,t}(k) \right)^{\alpha_c} \left(L_{c,t}(k) \right)^{1-\alpha_c} \tag{B.13}$$

where A_c is a total factor productivity shock. Total output is the sum of output consumed domestically and exported, formally $X_t(k) = \sum_{l=US,S,RoW} X^b_{c,l,t}(k)$ with domestic demand being for $X^b_{c,c,t}(k)$. Cost minimization implies:

$$R^k_{c,t}(k) = A_{c,t} MC_{c,t}(k) \alpha_c \left(K_{c,t}(k) \right)^{\alpha_c - 1} \left(L_{c,t}(k) \right)^{1-\alpha_c} \tag{B.14a}$$

$$W_{c,t}(k) = A_{c,t} MC_{c,t}(k) (1 - \alpha_c) \left(K_{c,t}(k) \right)^{\alpha_c} \left(L_{c,t}(k) \right)^{-\alpha_c} \tag{B.14b}$$

where MC_c is the Lagrangian multiplier associated to the optimization problem of firms and W_c real wages.

B.4 Retailers and aggregation

Retailers aggregate intermediate goods and transform them into final goods. Define $Y_{c,c}$ and $Y_{l,c}$ as domestic demand and export, to country l, of final goods. We adopt the following aggregators for domestic demand:

$$C_{c,c,t} + I_{c,c,t} + G_{c,c,t} = Y_{c,c,t} \tag{B.15}$$

where $C_{c,c}$, $I_{c,c}$, $G_{c,c}$ denote final consumption, investment and government spending in country c of goods produced in country c. Exports aggregators are defined as:

$$\sum_{l \neq c} C_{l,c,t} + I_{l,c,t} + G_{l,c,t} = Y_{l,c,t} \tag{B.16}$$

where $C_{l,c}$, $I_{l,c}$, $G_{l,c}$ denote final consumption, investment and government demand in country l of goods produced in country c. In other terms, these are total exports from country c to country l. $Y_{c,c}$ and $Y_{l,c}$ are produced aggregating across undifferentiated intermediate goods produced by domestic and foreign firms, respectively. The demand function for these goods are:

$$Y_{c,c,t} = \left[\int_0^1 X_{c,c,t}(k)^{\frac{\nu_c-1}{\nu_c}} dk\right]^{\frac{\nu_c}{\nu_c-1}}, \quad Y_{l,c,t} = \left[\int_0^1 X_{l,c,t}(k)^{\frac{\nu_c-1}{\nu_c}} dk\right]^{\frac{\nu_c}{\nu_c-1}} \tag{B.17}$$

where ν_c is the elasticity of substitution across different goods produced by country c. Price aggregators are:

$$P_{c,c,t} = \left[\int_0^1 P_{c,c,t}(k)^{1-\nu_c} dk\right]^{\frac{1}{1-\nu_c}}, \quad P_{l,c,t} = \left[\int_0^1 P_{l,c,t}(k)^{1-\nu_c} dk\right]^{\frac{1}{1-\nu_c}} \tag{B.18}$$

with $P_{c,c,t}$ and $P_{l,c,t}$ being the prices of domestically consumed and exported goods. Demand functions for individual varieties are:

$$X_{c,c,t}(k) = \left[\frac{P_{c,c,t}(k)}{P_{c,c,t}}\right]^{-\nu_c} Y_{c,c,t}, \quad X_{l,c,t}(k) = \left[\frac{P_{l,c,t}(k)}{P_{l,c,t}}\right]^{-\nu_c} Y_{l,c,t} \tag{B.19}$$

Final consumption goods are created by combining goods from each country. Aggregate consumption C_c then is:

$$C_{c,t} = \left\{\sum_l \omega_{c,l} \left(C_{c,l,t}\right)^{\rho_c}\right\}^{\frac{1}{\rho_c}} \tag{B.20}$$

$C_{c,l}$ is intermediate consumption consumed in country c and produced in l, so that for example $C_{c,c}$ is domestic consumption of domestically produced goods. $\omega_{c,l} \in [0,1]$ captures the share of goods produced in country l in total consumption, with $\omega_{c,c}$ the home bias. Similarly, aggregate government spending and investment are:

$$G_{c,t} = \left\{\sum_l \omega_{c,l} \left(G_{c,l,t}\right)^{\rho_c}\right\}^{\frac{1}{\rho_c}} \tag{B.21}$$

$$I_{c,t} = \left\{\sum_l \omega_{c,l} \left(I_{c,l,t}\right)^{\rho_c}\right\}^{\frac{1}{\rho_c}} \tag{B.22}$$

where $G_{c,c}$ ($I_{c,c}$) is government consumption (investment) of domestically produced goods while $G_{c,l}$ ($I_{c,L}$) is government consumption (investment) of goods produced in country l. Cost minimization defines the demand function for consumption of domestic and imported goods:

$$\begin{aligned} C_{c,c,t} &= \left(\frac{P_{c,c,t}}{P_{c,t}}\right)^{\frac{1}{\varrho_c - 1}} \omega_{c,c} C_{c,t}, \quad C_{c,l,t} = \left(\frac{P_{c,l,t}}{P_{c,t}}\right)^{\frac{1}{\varrho_c - 1}} \omega_{c,l} C_{c,t} \\ G_{c,c,t} &= \left(\frac{P_{c,c,t}}{P_{c,t}}\right)^{\frac{1}{\varrho_c - 1}} \omega_{c,c} G_{c,t}, \quad G_{c,l,t} = \left(\frac{P_{c,l,t}}{P_{c,t}}\right)^{\frac{1}{\varrho_c - 1}} \omega_{c,l} G_{c,t} \\ I_{c,c,t} &= \left(\frac{P_{c,c,t}}{P_{c,t}}\right)^{\frac{1}{\varrho_c - 1}} \omega_{c,c} I_{c,t}, \quad I_{c,l,t} = \left(\frac{P_{c,l,t}}{P_{c,t}}\right)^{\frac{1}{\varrho_c - 1}} \omega_{c,l} I_{c,t} \end{aligned} \tag{B.23}$$

whereby, demand in country c for goods produced in country l depends on their price relative to the aggregate price level and by total consumption in country c. The aggregate price level is then obtained by substituting Equation (B.23) into Equation (B.20):

$$P_{c,t} = \left\{ \sum_l \omega_{c,l} \left(P^b_{c,l,t}\right)^{\frac{\rho_c}{1-\rho_c}} \right\}^{\frac{\rho_c - 1}{\rho_c}} \tag{B.24}$$

B.5 Monopolists

Goods are sold on the final market by monopolists who set prices with some degree of market power. We assume that there are frictions in price setting à-la Rotemberg. Formally, monopolists optimize:

$$E_t \sum_{d=0}^{\infty} (\beta_c)^d \Lambda_{c,t+d} \left\{ \frac{NER_{l,c,t} P_{l,c,t}}{P_{c,t}} X_{l,c,t}(k) - TC_{c,t} - \frac{\phi_{c,r}}{2} \left(\frac{P_{l,c,t}}{P_{l,c,t-1}} - 1 \right)^2 \right\} \tag{B.25}$$

where TC are total costs and $\phi_{c,r}$ the Rotemberg parameter. $l = c$ is the case of domestic goods sold in the domestic economy and the exchange rate $NER_{c,c,t}$ is 1. First order conditions are:

$$\begin{aligned} (1 - \nu_c) + \frac{MC_{c,t} \nu_c}{P_{l,c,t} NER_{l,c,t}} - \phi_{c,r} \left(\pi_{l,c,t} - 1\right) \frac{\pi_{l,t}}{P_{l,c,t-1} NER_{l,c,t}} + \\ \beta_c E_t \left[\frac{\lambda_{t+1}}{\lambda_t} \frac{Y_{l,c,t+1}}{Y_{l,c,t}} \phi_{c,r} \left(\pi_{l,c,t+1} - 1\right) \frac{\pi_{l,c,t+1}}{P_{l,c,t} NER_{l,c,t}} \right] = 0 \end{aligned} \tag{B.26}$$

Inflation rates are $\pi_{c,l,t} = \frac{P_{c,l,t}}{P_{c,l,t-1}}$ and $\pi_{c,t} = \frac{P_{c,t}}{P_{c,t-1}}$. Notice that the Rotemberg parameter $\phi_{c,r}$ can be written as a function of the probability of updating prices ξ_c as: $\phi_{c,r} = \frac{(\nu_c-1)\xi_c}{(1-\xi_c)(1-\beta_c\xi_c)}$

B.6 Public sector & stablecoin issuer

The central bank sets the policy rate and manages its own balance sheet. The policy rate follows a Taylor-type rule of the form:

$$\ln R_{c,t} = (1-\varrho)\ \ln R_{c,t-1} + \varrho\big[\ \ln R_{c,ss} + \theta_\pi \ln \pi_{c,t} + \theta_y(\ln Y_{c,t} - \ln Y_{c,ss})\ \big] + \varepsilon_{c,t}. \quad \text{(B.27)}$$

where Y_c is total output.

The government sets public consumption exogenously and follows a tax rule aimed at stabilizing debt as share of GDP relative to the steady-state $(\frac{Debt_{c,t}}{Y_{c,t}} - \frac{Debt_{c,ss}}{Y_{c,ss}})$:

$$\ln\left(\frac{T_{c,t}}{T_{c,ss}}\right) = \varrho_T \ln\left(\frac{T_{c,t-1}}{T_{c,ss}}\right) + (1-\varrho_T)\kappa_T\left[\frac{Debt_{c,t}}{Y_{c,t}} - \frac{Debt_{c,ss}}{Y_{c,ss}}\right] \quad \text{(B.28)}$$

where $\varrho_T \in [0,1]$ measures the persistency of taxation and κ_T the strength of the fiscal adjustment. The government budget is:

$$G_{c,t} + Debt_{c,t-1}R_{c,t} = T_{c,t} + Debt_{c,t} \quad \text{(B.29)}$$

Total debt is the sum of outstanding debt:

$$Debt_{c,t} = \sum_c n_c B_{l,c,t} + B_{sc,t} \quad \text{(B.30)}$$

in the case of the U.S. it also includes central bank purchases of U.S. securities as reserve assets.

The stablecoin issuer purchases government bonds using seigniorage from stablecoins minting. Stablecoins are backed one-to-one by US assets, are not remunerated and produced with negligible costs. The balance sheet of the issuer is:

$$B_{sc,t} = \sum_{c=\{US,F,S\}} n_c SC_{c,t} \quad \text{(B.31)}$$

profits from arbitrage are: $\Pi_{sc,t} = B_{sc,t-1}R_{US,t}$.

All shocks follow an AR(1) process.

B.7 Log-linearization

Consider Equation (12), which under the parametrization of the previous section takes the form of:

$$\beta_c E_t \left[\frac{\lambda_{c,t+1}}{NER_{US,c,t+1}\pi_{c,t+1}}\right](R_{US,t} - R_{sc,t}) = \gamma_{c,t}\left(\frac{SC_{c,t}}{C_{c,t}}\right)^{\eta_m - 1}\frac{\mu_{sc,c,t}}{NER_{US,c,t}} - \frac{\chi_{c,b}}{NER_{US,c,t}}B_{US,c,t}^{-\sigma_{c,b}} \tag{B.32}$$

for simplicity consider negligible cross-border transaction costs, $\phi_c^B \to 0$. Multiply on both sides for the nominal exchange rate against the dollar and call $\beta_c E_c[\frac{NER_{US,c,t}\lambda_{c,t}}{NER_{US,c,t+1}\pi_{c,t+1}} = D_{c,t}$ and $(R_{US,t} - R_{sc,t}) = \mathcal{S}_t$. Taking the natural logs the previous become:

$$\ln(D_{c,t}) + \ln(\mathcal{S}_t) = \ln\left[\gamma_{c,t}\mu_{sc,c,t}\left(\frac{SC_{c,t}}{C_{c,t}}\right)^{\eta_m - 1} - \chi_{c,b}B_{US,c,t}^{-\sigma_{c,b}}\right] \tag{B.33}$$

linearize around the steady-state (denoted by ss), calling $\hat{x}$ variables in percent deviation from the steady-state:

$$\begin{aligned}\hat{D_{c,t}} + \frac{R_{US,ss}}{\mathcal{S}_t}\hat{R_{US,t}} = \frac{1}{\gamma_{c,ss}\mu_{scc,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m} - \chi_{c,b}B_{US,c,ss}^{-\sigma_{c,b}}}\Bigg\{\left[\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{-\eta_m}\right]\hat{\gamma_{c,t}} + \\ (\eta_m - 1)\left[\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1}\right]\hat{SC_{c,t}} - (\eta_m - 1)\left[\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1}\right]\hat{C_{c,t}} + \\ + \left[\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1}\right]\hat{\mu}_{sc,c,t} + \left[\gamma_{c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1}\beta_\mu \exp\{1 - R_{US,ss}\}R_{US,ss}\right]\hat{R_{US,t}} + \\ - \left[\gamma_{c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1}\gamma_\mu\right]\hat{\rho}_t + \chi_{c,b}\sigma_{c,b}B_{US,c,ss}^{-\sigma_{c,b}}\hat{B_{c,t}}\Bigg\}\end{aligned} \tag{B.34}$$

the elasticity of stablecoin holdings to U.S. yields ($\hat{R_{US,t}}$) is:

$$(\eta_m - 1)\frac{\left[\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1}\right]}{\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1} - \chi_{c,b}B_{US,c,ss}^{-\sigma_{c,b}}}\frac{1}{\Gamma_{ss}} \tag{B.35}$$

with $\Gamma_{ss} \equiv \frac{R_{US,ss}}{\mathcal{S}_t} - \frac{\left[\gamma_{c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1}\beta_\mu \exp\{1 - R_{US,ss}\}R_{US,ss}\right]}{\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1} - \chi_{c,b}B_{US,c,ss}^{-\sigma_{c,b}}}$ the denominator of the previous function is always positive, while the numerator can change sign depending on the share of stablecoins in total consumption. For large stablecoin holdings, $\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1} \rightarrow 0$, hence $\gamma_{c,ss}\mu_{sc,c,ss}\left(\frac{SC_{c,ss}}{C_{c,ss}}\right)^{\eta_m - 1} - \chi_{c,b}B_{US,c,ss}^{-\sigma_{c,b}}$ becomes negative.

Table B.1: Calibration

Parameter	Description	Value	Parameter	Description	Value
h_c	Habit formation	0.65	$\gamma_{c,r}$	Interest rate smoothing	0.75
ϕ_c	Inverse of Frish elasticity of labor	1	$\theta_{c,Y}$	Interest rate sensitivity to output	0.6
β_c	Discount factor	0.9926	$\theta_{c,\pi}$	Interest rate sensitivity to inflation	2
$\sigma_{c,m}$	Elasticity of money (*only on money-in-utility model*)	10.62	$\kappa_{c,T}$	Tax sensitivity to deficit	0.48
$\sigma_{c,b}$	Elasticity of bonds	10.62	$\varrho_{c,T}$	Persistency of taxation	0.5
ϕ_c^K	Investment costs	1.728	$\frac{G_{ss}}{Y_{ss}}$	steady-state gov. spending over output	0.2
$\omega_{c,c}$	Home bias	0.8	$\rho_{c,R}$	Persistency of monetary shocks	0.2
ϱ_c	Elasticity of substitution across goods	1/3	$\rho_{c,A}$	Persistency of TFP shocks	0.5
δ_c	Capital depreciation rate	0.025	$\sigma_{c,r}$	Volatility of monetary shocks	0.01
ξ_c	Prob. of price update	0.6	$\sigma_{c,A}$	Volatility of TFP shocks	0.01
ν_c	Demand elasticity	6	ϕ_c^B	Cross-country bond holding cost	0.001
α_c	Capital share in production	0.3			
α_μ	Wight of volatility	0.01	$\sigma_{q,t}^2$	Stablecoin variance	0.05
β_μ	Weight of stablecoin default risk	0.01	γ_μ	Weight of stablecoin shock	1
$\eta_{\mu,c}$	Elasticity of substitution across money	0.25	ρ_μ	persistency stablecoin shock	0.5

B.8 Additional figures

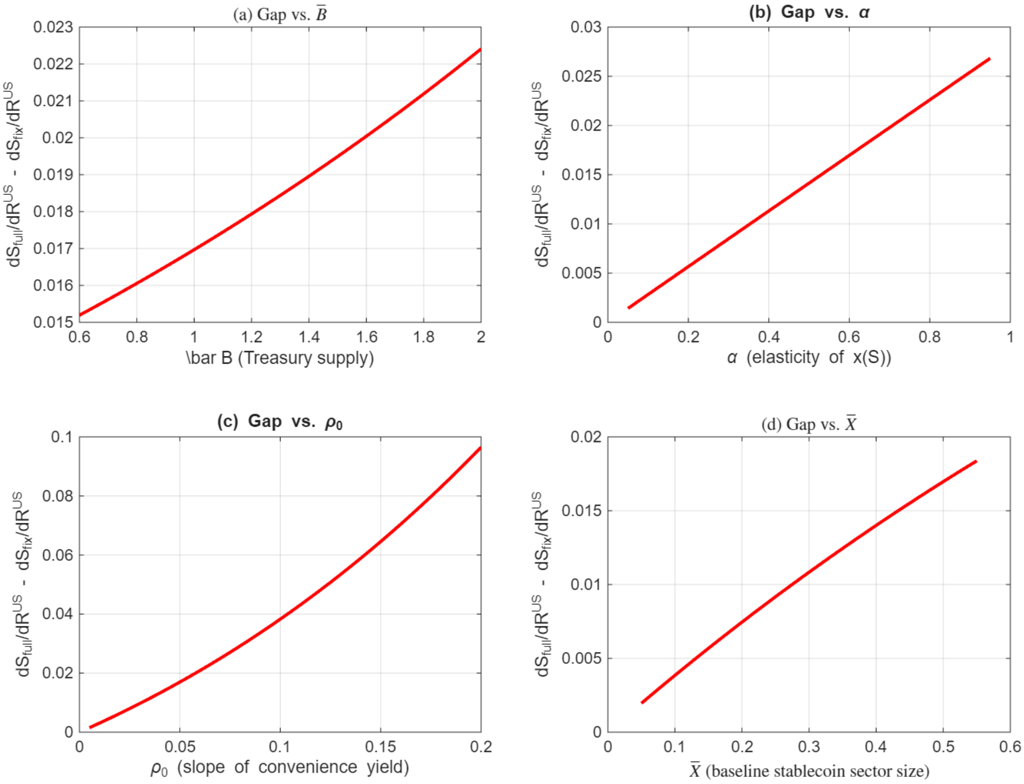


Figure B.1: Sensitivity of the exchange rate dampening effect to parameters in the simple model of Section 2.1.

Notes: The chart shows how changes in the key parameters of the simplified model affect one of the key results: the dampening of the reaction of the US exchange rate to interest rate changes. The model is solved through partial-equilibrium elasticities implied by Equation (3). The vertical axis shows the difference in the exchange rate reaction to a change of the US risk free yield between having or not an active US digital asset demand. The elasticities are computed for a baseline level of the US risk-free rate of 2%. All parameters of the simple model are kept constant, except the one on the x-axis. The calibration is: $S_e = 1$ (expected future exchange rate); $R_F = 0.02$ (foreign exchange rate); $\bar{B} = 1$ (total Treasury supply, normalized); $\rho_0 = 0.05$ (slope of convenience-yield); $\alpha = 0.6$ (elasticity of X w.r.t. S); $\bar{X} = 0.5$ (baseline level of X). The exchange rate S is expressed in units of dollars per units of foreign currency, i.e. lower S is an appreciation of the US dollar.

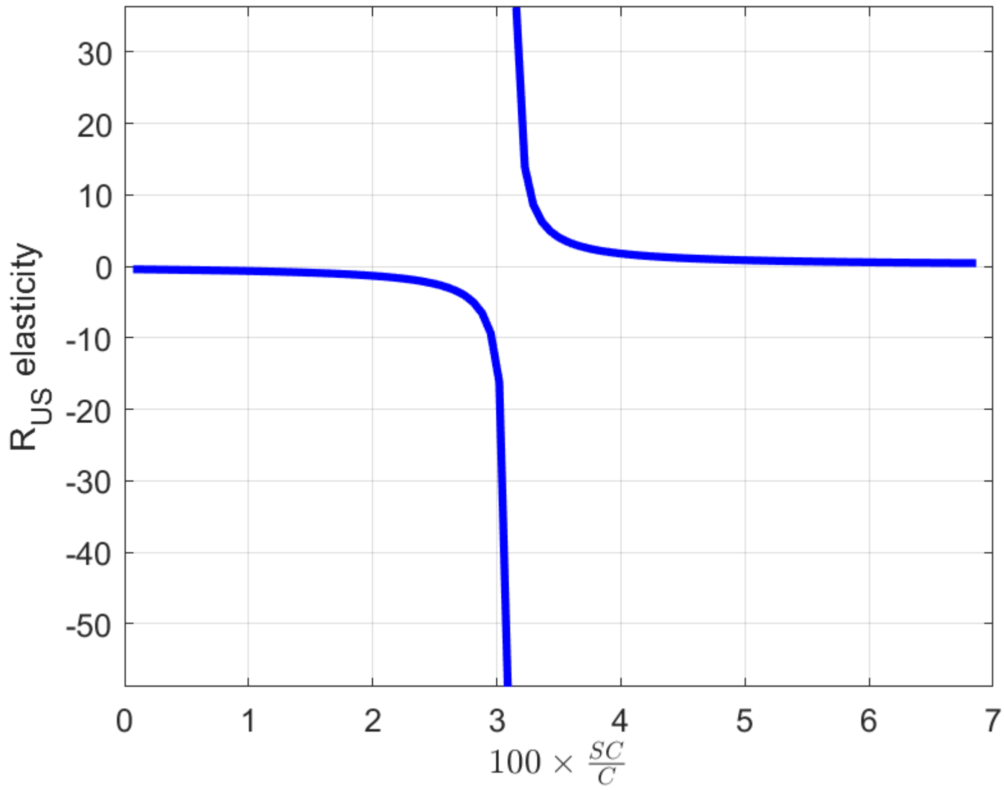


Figure B.2: Demand for stablecoins against returns differential – extreme holdings.
Notes: the chart shows the elasticity of U.S. yields (vertical axis) against stablecoin demand (horizontal axis). The elasticity is computed as in Equation (13) by keeping all other variables constant and changing values of stablecoins. Holdings of stablecoins are allowed to increase up until the elasticity is reversed.

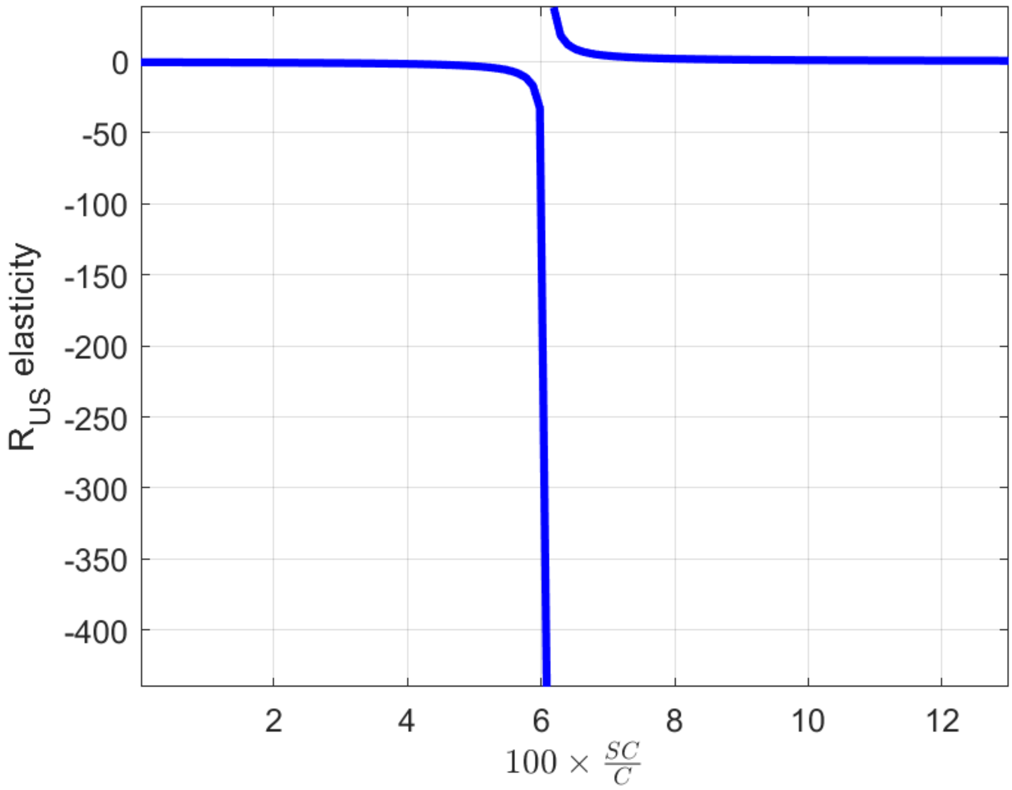


Figure B.3: Demand for stablecoins against returns differential – full solution.
Notes: the chart shows the elasticity of U.S. yields (vertical axis) against stablecoin demand (horizontal axis). The elasticity is computed as in Equation (13) by solving the model for different values of μ_{sc}. Holdings of stablecoins are allowed to increase up until the elasticity is reversed.

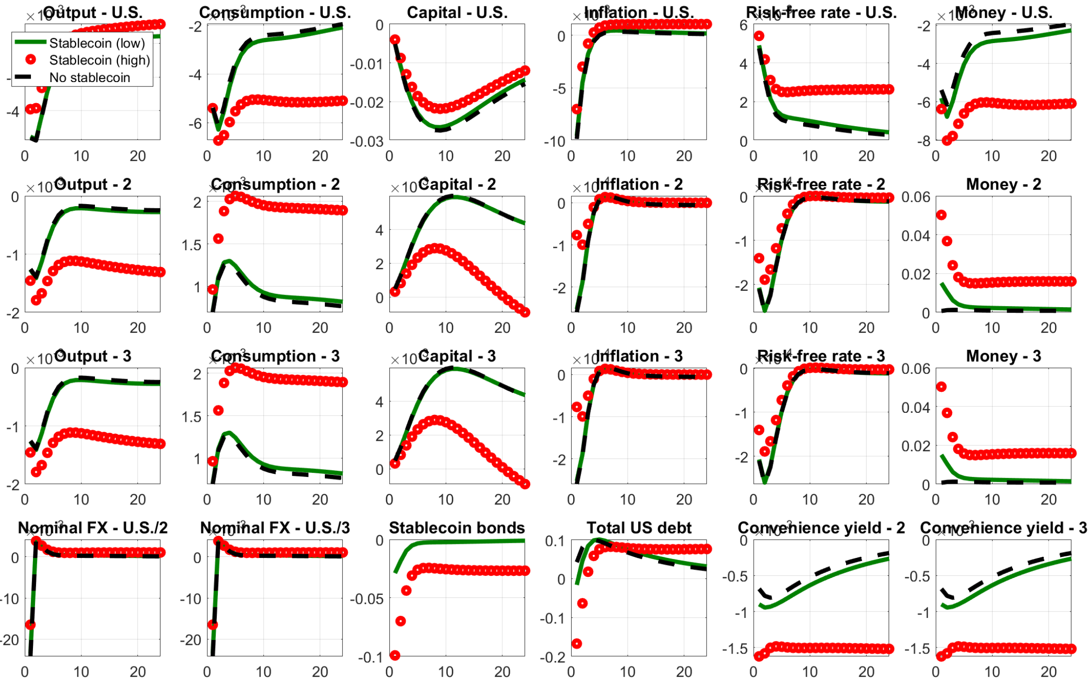


Figure B.4: Impulse responses to a U.S. monetary policy shock.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

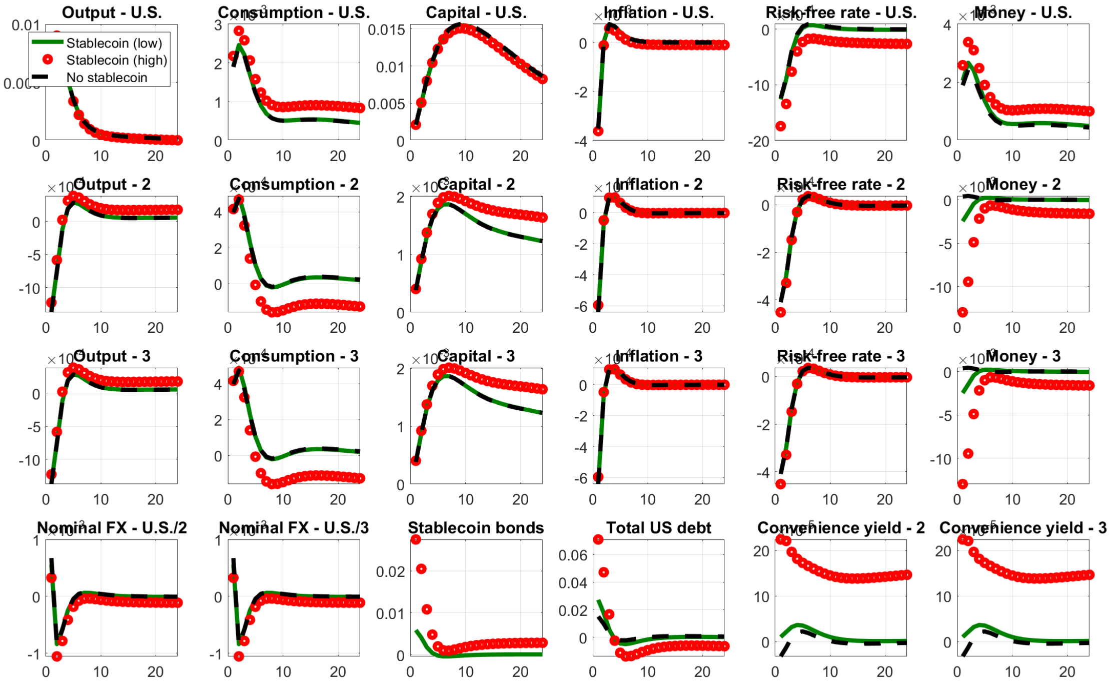


Figure B.5: Impulse responses to a U.S. TFP shock.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. TFP shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

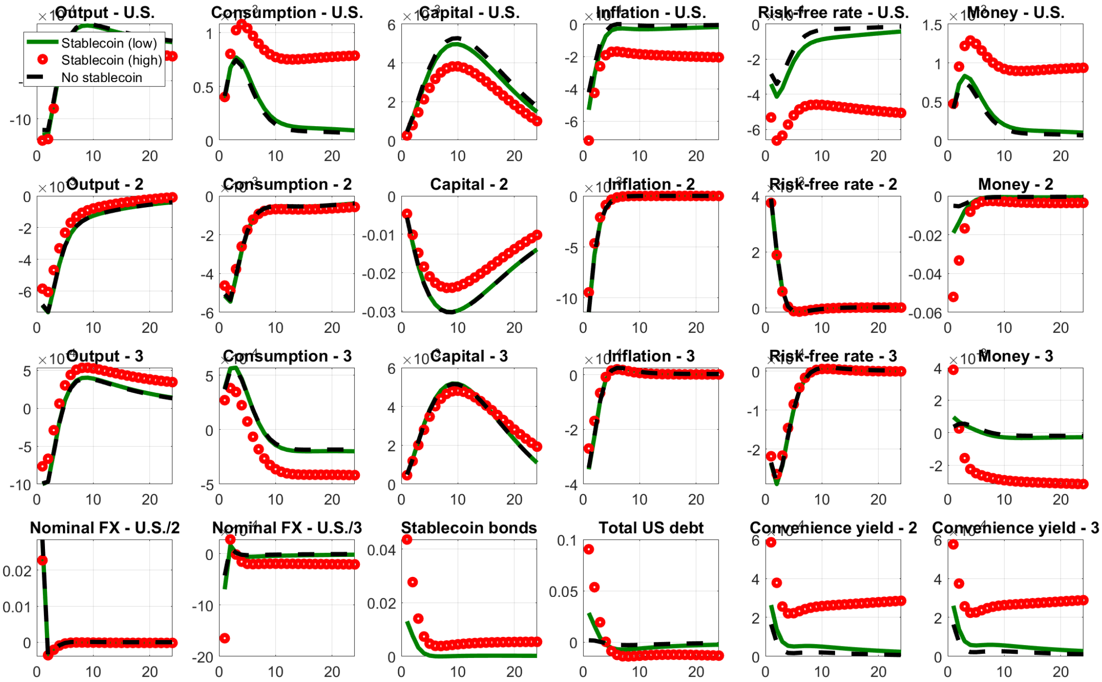


Figure B.6: Impulse responses to a monetary policy shock from country 2.

Notes: the chart shows the impulse response to a 1 standard deviation monetary policy shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

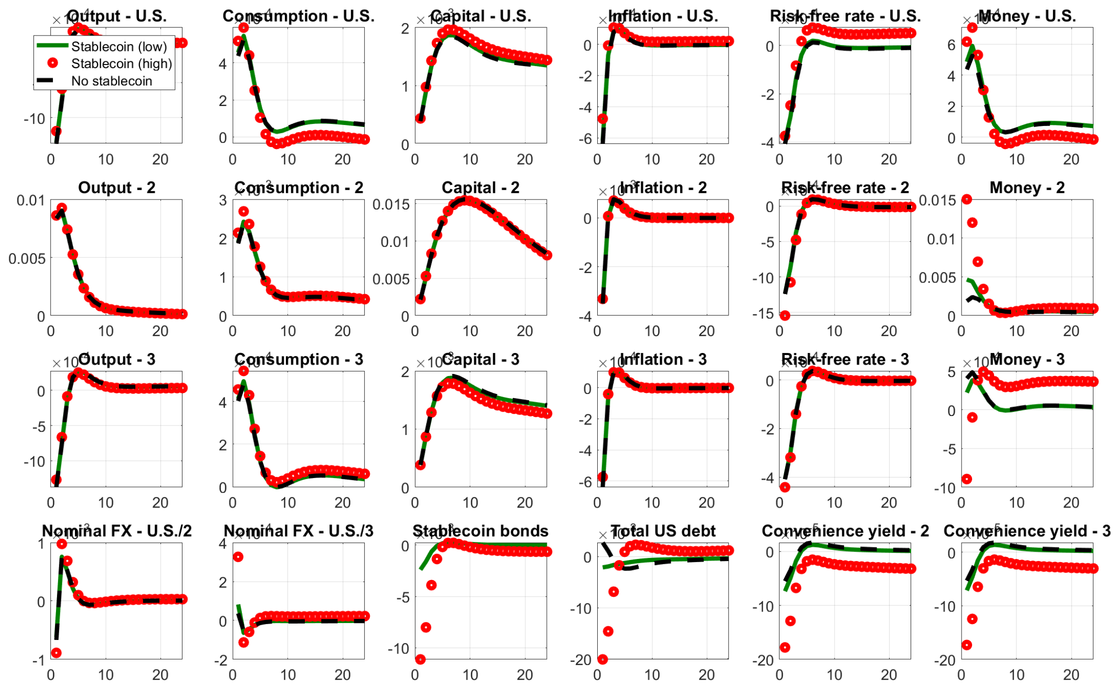


Figure B.7: Impulse responses to a TFP shock from country 2.

Notes: the chart shows the impulse response to a 1 standard deviation TFP shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

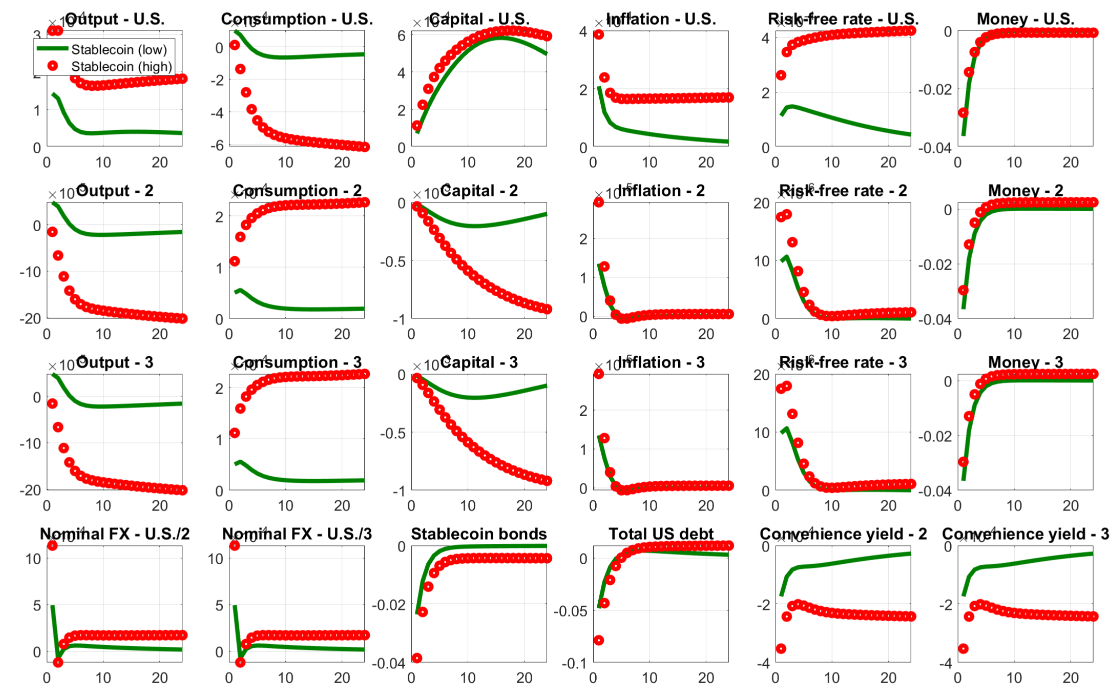


Figure B.8: Impulse responses to stablecoin preference shock.

Notes: the chart shows the impulse response to a stablecoin preference shock. The the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).

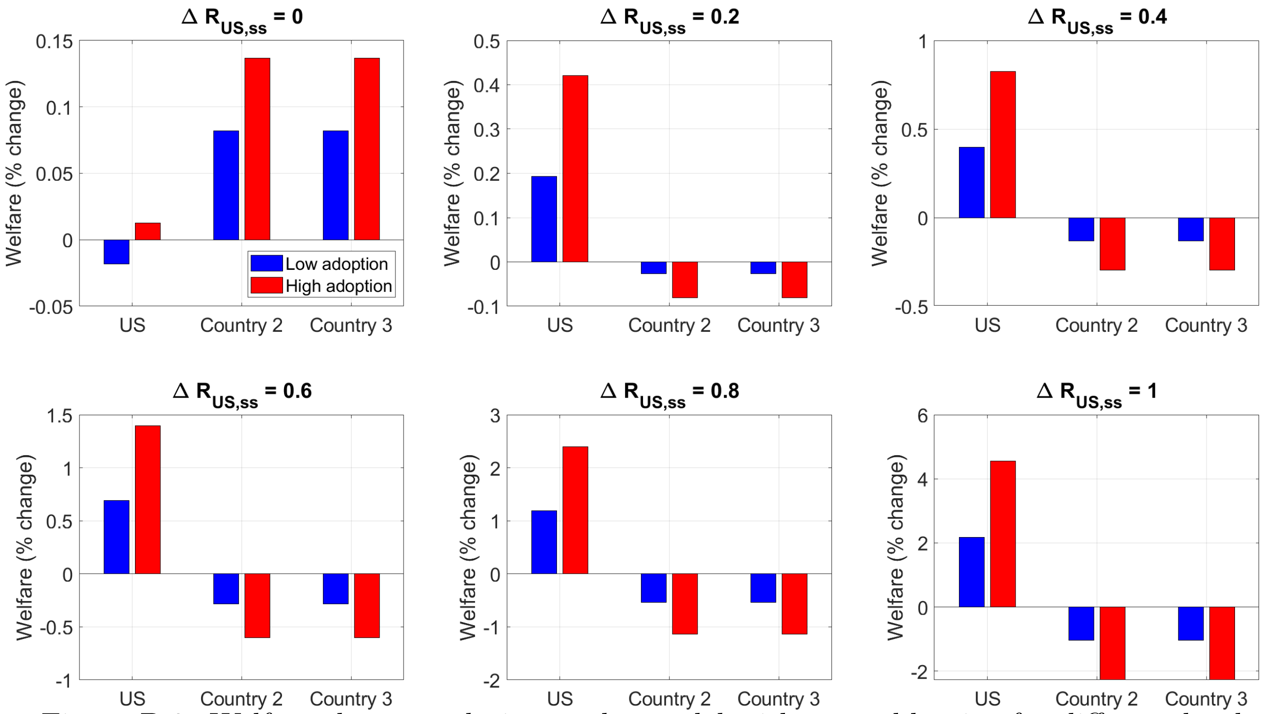


Figure B.9: Welfare changes relative to the model without stablecoins for different level of U.S. yield reduction.

Notes: the chart shows the percent change in welfare relative to the model without stablecoins for the U.S. and the other two country depending on how much stablecoin adoption reduces equilibrium U.S. yields. The model is solved at second order with pruning. Welfare is defined recursively, i.e. $\mathcal{W}_{c,t} = U_{c,t} + \beta_c E_t \mathcal{W}_{c,t+1}$, with U_c the period utility function.

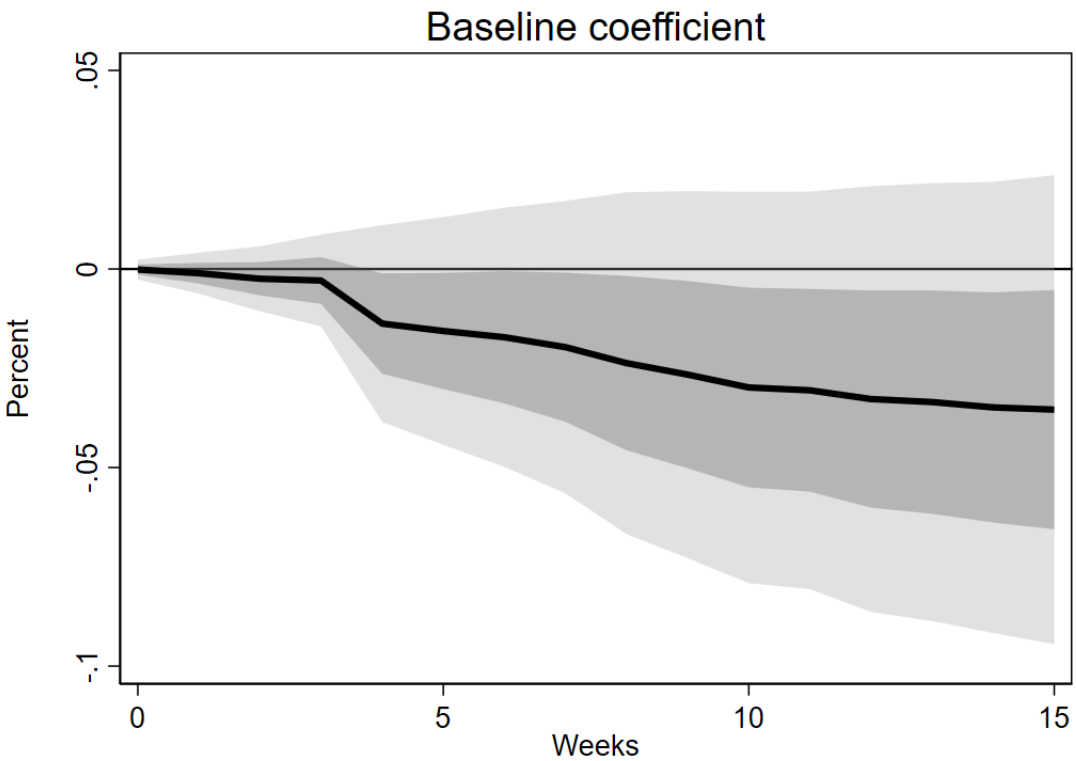


Figure B.10: Response of stablecoin market capitalization to U.S. monetary policy shocks.
Notes: the chart shows the impulse response of the stablecoin market capitalization (proxied by the sum of USDT and USDC) to a 25 basis points U.S. Local projection control for 4 lags of the dependent variable, the (log) U.S. dollar nominal effective exchange rate, the (log) U.S. stock price, the log of stablecoins market capitalization (proxied by USDT and USDC market capitalization), a time trend and year dummies. Equation (15) is estimated without interaction terms.

C Alternative specifications

C.1 Constant preferences for stablecoins

This section simulates the model under constant preferences for stablecoins $\mu_{sc,c,t} = \mu_{sc,ss}$. In this case, stablecoin preferences do not change with higher or lower interest rates, implicitly assuming that households do not consider the possibility of a default of the stablecoin issuer. Under this specification results are qualitatively the same, only slightly smaller in magnitude, showing the amplification effect of the riskiness channel.

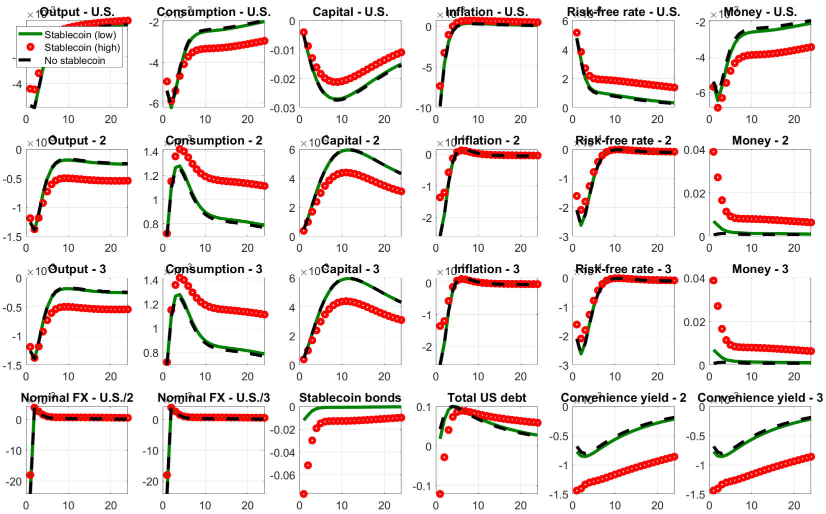


Figure C.1: Impulse responses to a U.S. monetary policy shock – constant $\mu_{sc,c}$.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). $\mu_{sc,c}$ is constant.

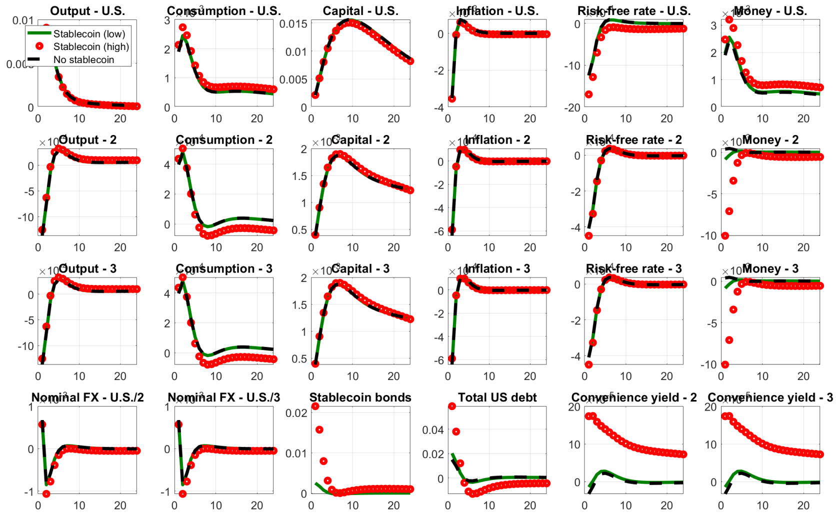


Figure C.2: Impulse responses to a U.S. TFP shock – constant $\mu_{sc,c}$.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). $\mu_{sc,c}$ is constant.

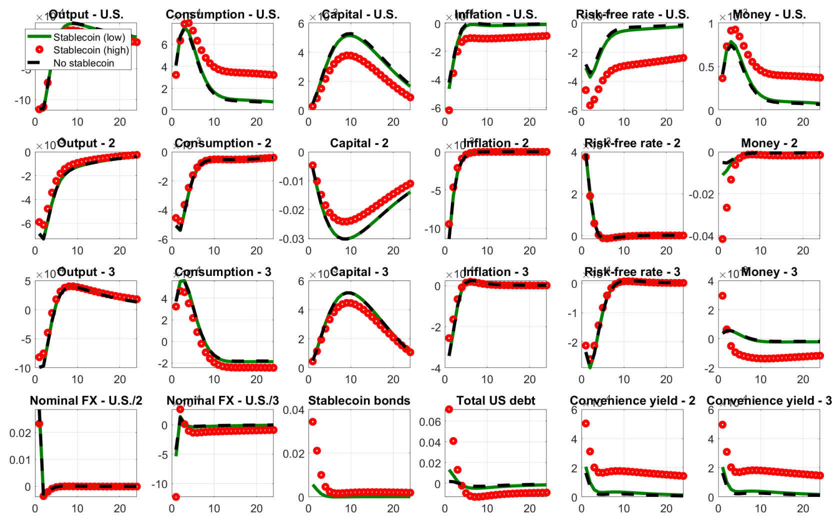


Figure C.3: Impulse responses to a monetary policy shock from country 2 – constant $\mu_{sc,c}$.

Notes: the chart shows the impulse response to a 1 standard deviation monetary policy shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). $\mu_{sc,c}$ is constant.

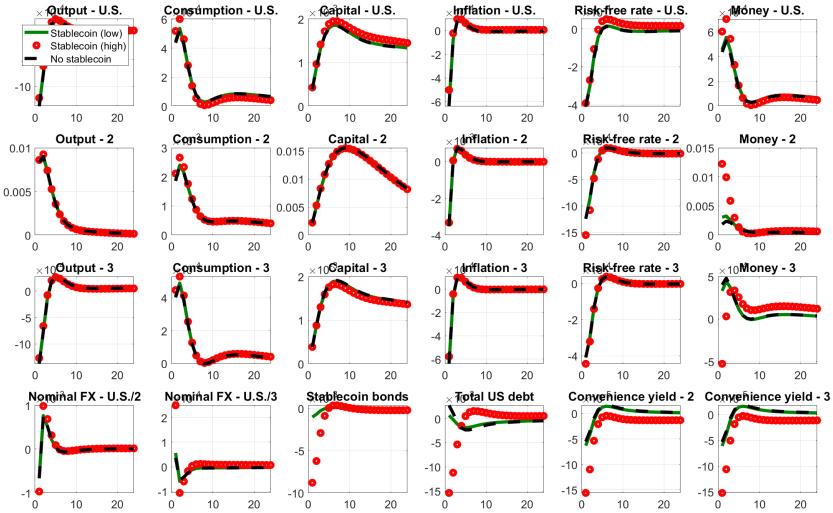


Figure C.4: Impulse responses to a TFP shock from country 2 – constant $\mu_{sc,c}$.

Notes: the chart shows the impulse response to a 1 standard deviation TFP shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). $\mu_{sc,c}$ is constant.

C.2 Money in the utility

We consider an alternative specification to generate demand for liquid instrument in the model, the money-in-utility framework. As shown by Feenstra (1986), money in utility captures a wide range of micro-founded frictions that generate demand for payment instruments, such as cash-in-advance or shopping-time constraints. Specifically, we assume that households directly derive utility from holding liquid instruments:

$$U_{c,t} = e^{C}_{c,t} \ln\left(C_{c,t} - h_c C_{c,t-1}\right) - \frac{\chi_{c,l}}{1+\phi_{c,l}} L_{c,t}^{1+\phi_{c,l}} + \frac{\chi_{c,l}}{1-\sigma_{c,l}} \left(\mathcal{L}_{c,t}\right)^{1-\sigma_{c,l}} + \frac{\chi_{c,b}}{1-\sigma_{c,b}} \left(\frac{B_{US,c,t}}{P_{c,t} NER_{US,c,t}}\right)^{1-\sigma_{c,b}} \tag{C.1}$$

where total liquidity $\mathcal{L}$ is: $\left[\mu_{sc,c,t}\left(\frac{SC_{c,t}}{NER_{US,c,t}}\right)^{\eta_m} + \left(1-\mu_{sc,c,t}\right)\left(M_{c,t}\right)^{\eta_m}\right]^{\frac{1}{\eta_m}}$.

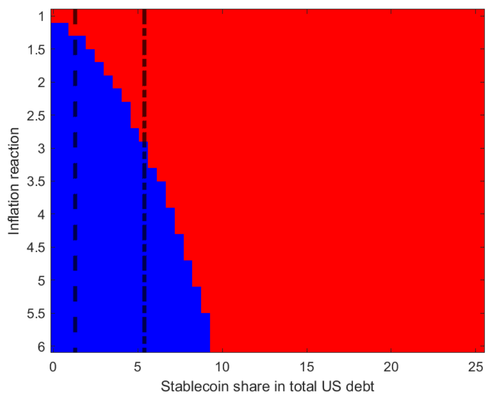


Figure C.5: Stability map.

Notes: the chart shows combinations of values for the US Taylor rule inflation reaction parameter (θ_π) and the stablecoin preference parameter (μ_{sc}). Blue areas indicate that the model is stable, red areas that it is unstable, yellow areas that the model is stable, but wealth effects dominate leading to expansionary monetary policy tightening. Liquidity demand is introduced as money-in-utility.

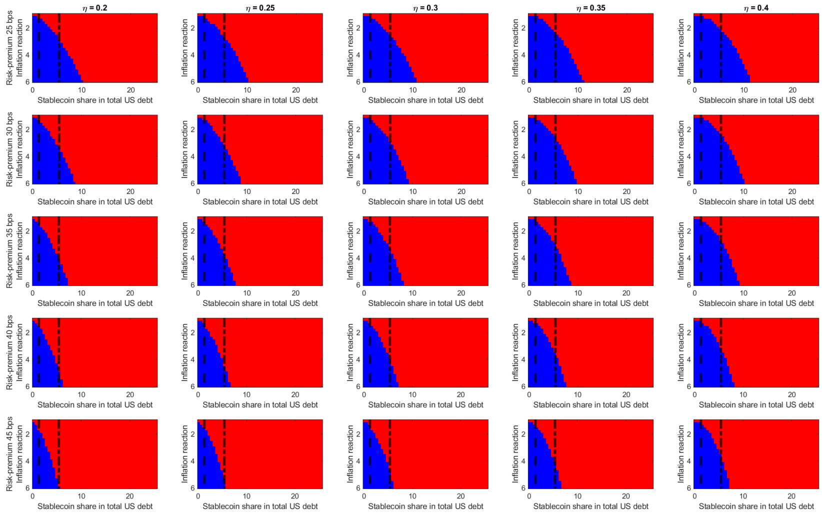


Figure C.6: Stability map.

Notes: the chart shows combinations of values for the US Taylor rule inflation reaction parameter (θ_π)and the stablecoin preference parameter (μ_{sc}). Blue areas indicate that the model is stable, red areas that it is unstable, yellow areas that the model is stable, but wealth effects dominate leading to expansionary monetary policy tightening. Different calibrations for the US convenience yield and the CES liquidity aggregator parameter are considered. Liquidity demand is introduced as money-in-utility.

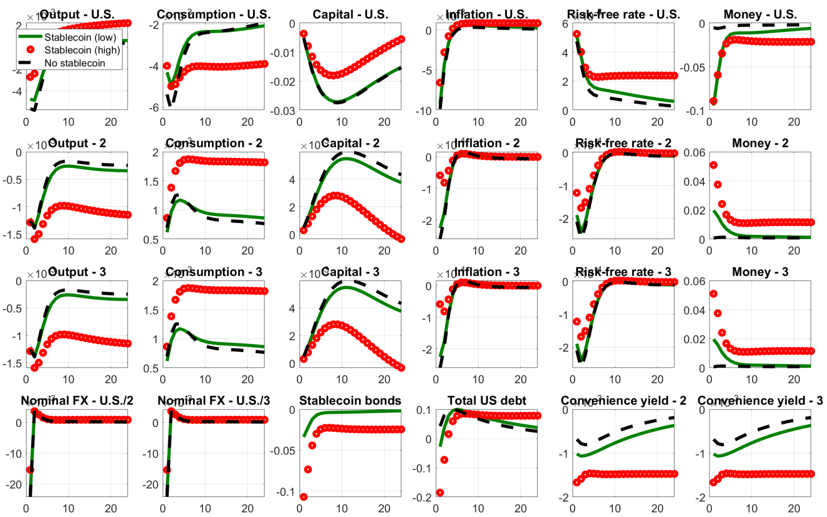


Figure C.7: Impulse responses to a U.S. monetary policy shock – money-in-utility.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). Demand for payment instruments is generated through money-in-utility framework.

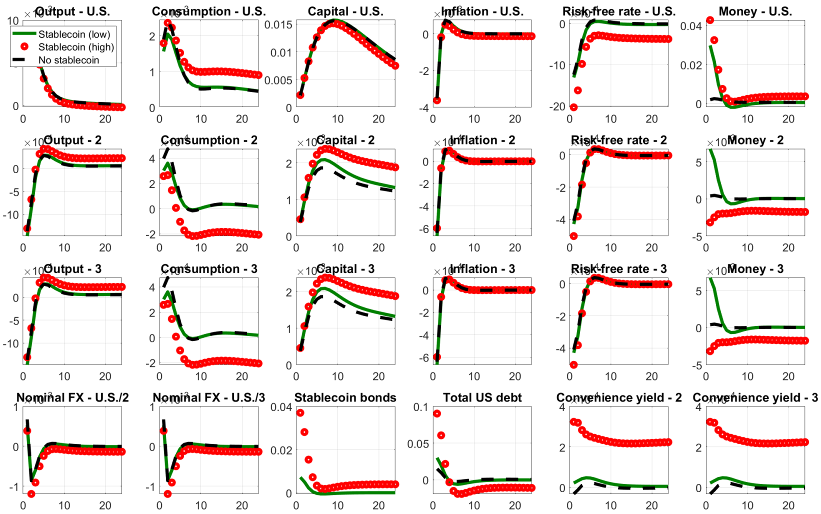


Figure C.8: Impulse responses to a U.S. TFP shock – money-in-utility.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). Demand for payment instruments is generated through money-in-utility framework.

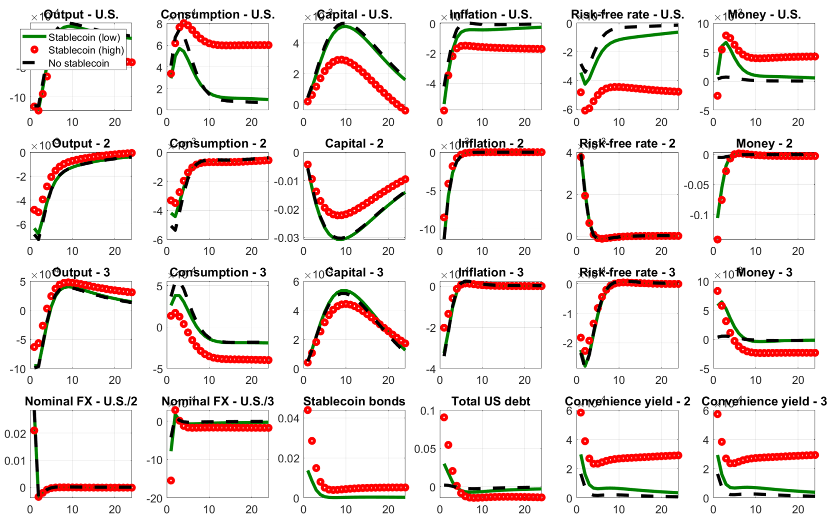


Figure C.9: Impulse responses to a monetary policy shock from country 2 – money-in-utility.

Notes: the chart shows the impulse response to a 1 standard deviation monetary policy shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). Demand for payment instruments is generated through money-in-utility framework.

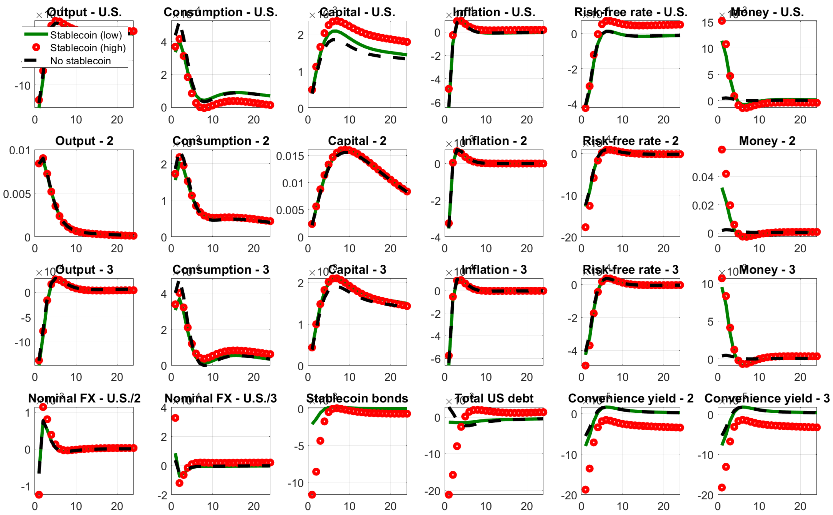
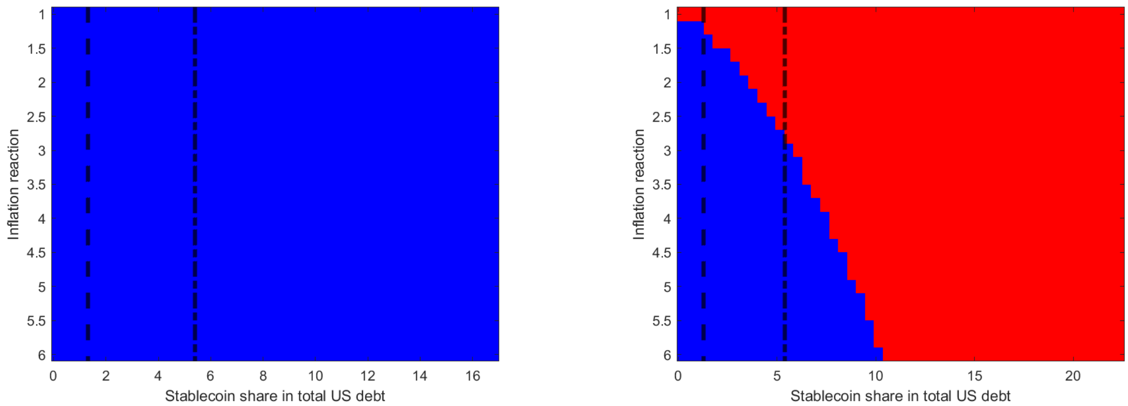


Figure C.10: Impulse responses to a TFP shock from country 2 – money-in-utility.

Notes: the chart shows the impulse response to a 1 standard deviation TFP shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). Demand for payment instruments is generated through money-in-utility framework.

C.3 Stablecoins only in the domestic or foreign economy

In this section we compare two calibrations of the model one in which stablecoins are issued only domestically and one in which they are available only to foreign households. Figure C.11 shows the stability plot for both cases. As the figure shows, macroeconomic instability arises only from foreign demand for stablecoins. Impulse responses confirm this intuition: when stablecoins are held only in the U.S. macroeconomic spillovers are limited. On the contrary, most of the dynamics are determined by international demand for stablecoins. This highlights the role of the global safe asset channel, which is reinforced through international demand for stablecoins, as a multiplier of shocks.



(a) Stablecoins only in the U.S.

(b) Stablecoins only in foreign markets

Figure C.11: Stability map when stablecoins are issued only domestically or only internationally.

Notes: Panel a, stablecoins are issued only in the domestic economy (U.S.). Panel b, stablecoins are issued only in the foreign economies. The chart shows combinations of values for the US Taylor rule inflation reaction parameter (θ_{π}) and the stablecoin preference parameter (μ_{sc}). Blue areas indicate that the model is stable and red areas that it is unstable.

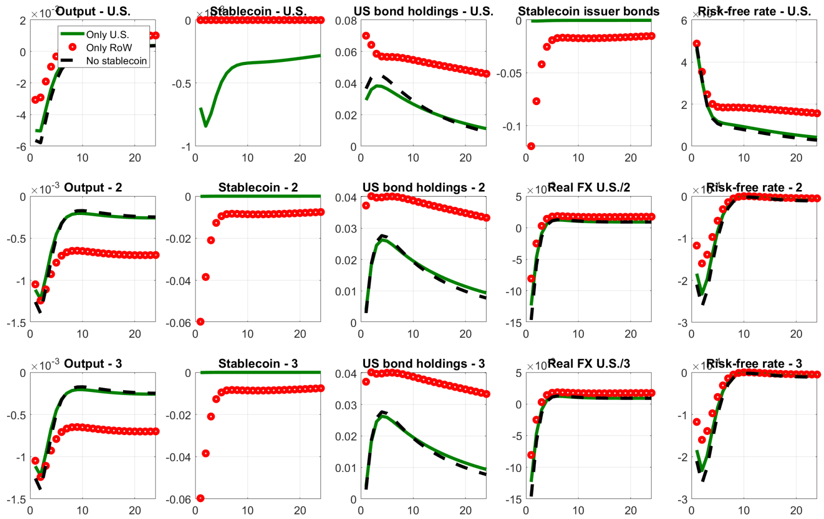


Figure C.12: Impulse responses to a U.S. monetary policy shock – U.S. vs foreign issuance.
Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with stablecoins issued only in the U.S. while the red dots show the response of the model with stablecoins issued only in foreign countries. Both models are simulated for high steady-state holdings of stablecoins.

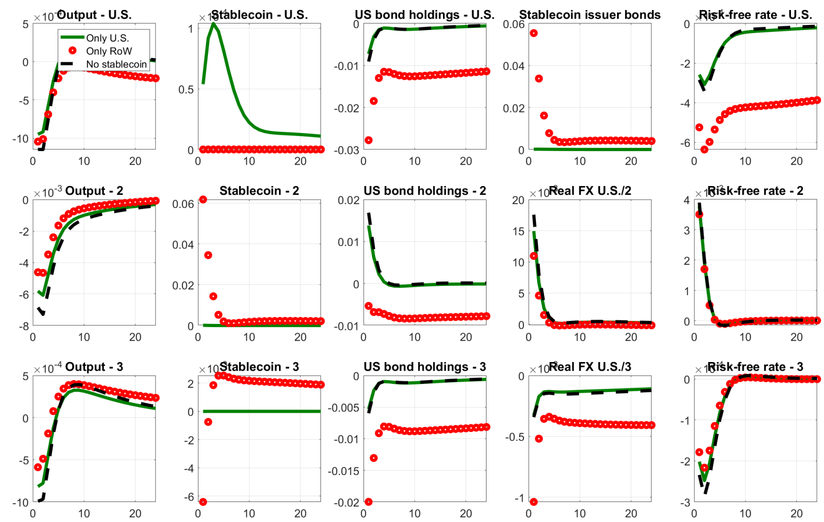


Figure C.13: Impulse responses to a monetary policy shock from country 2 – U.S. vs foreign issuance.
Notes: the chart shows the impulse response to a 1 standard deviation monetary policy shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with stablecoins issued only in the U.S. while the red dots show the response of the model with stablecoins issued only in foreign countries. Both models are simulated for high steady-state holdings of stablecoins.

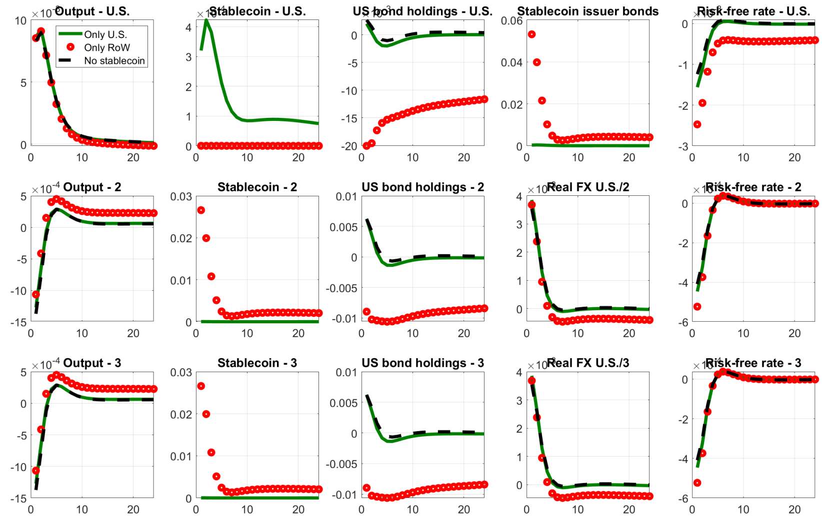


Figure C.14: Impulse responses to a U.S. TFP shock – U.S. vs foreign issuance.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. TFP shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with stablecoins issued only in the U.S. while the red dots show the response of the model with stablecoins issued only in foreign countries. Both models are simulated for high steady-state holdings of stablecoins.

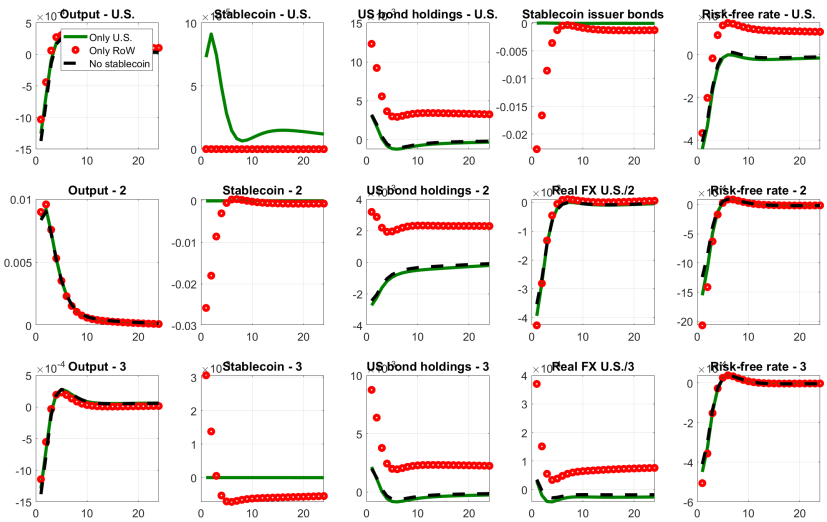


Figure C.15: Impulse responses to a TFP shock from country 2 – U.S. vs foreign issuance.

Notes: the chart shows the impulse response to a 1 standard deviation TFP shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with stablecoins issued only in the U.S. while the red dots show the response of the model with stablecoins issued only in foreign countries. Both models are simulated for high steady-state holdings of stablecoins.

C.4 Estimation of key parameters

We use the estimate of key parameters as in Ferrari Minesso and Pagliari (2023). The U.S. accounts for 42% of world GDP, the euro area (country 2) for 28 while rest of the world takes the remaining.

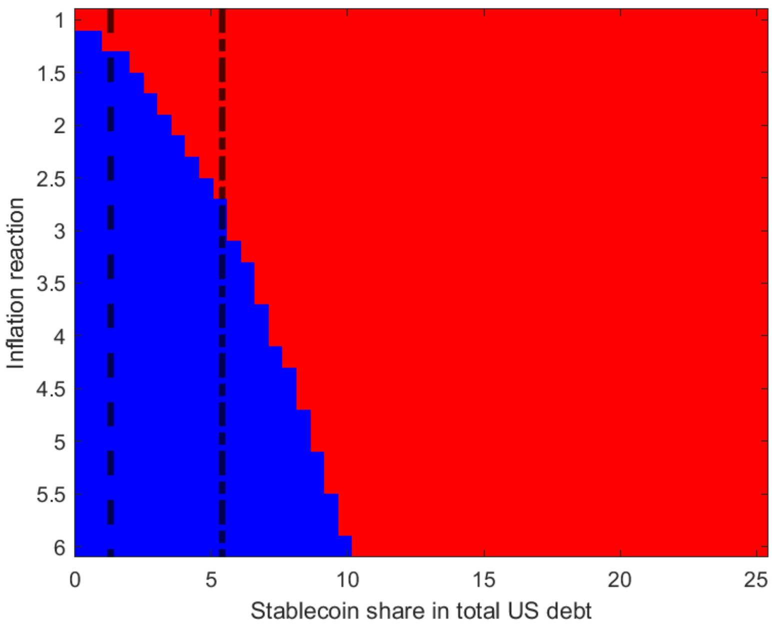


Figure C.16: Stability map.
Notes: the chart shows combinations of values for the US Taylor rule inflation reaction parameter (θ_π) and the stablecoin preference parameter (μ_{sc}). Blue areas indicate that the model is stable and red areas that it is unstable. Estimated parameters from Ferrari Minesso and Pagliari (2023) are used.

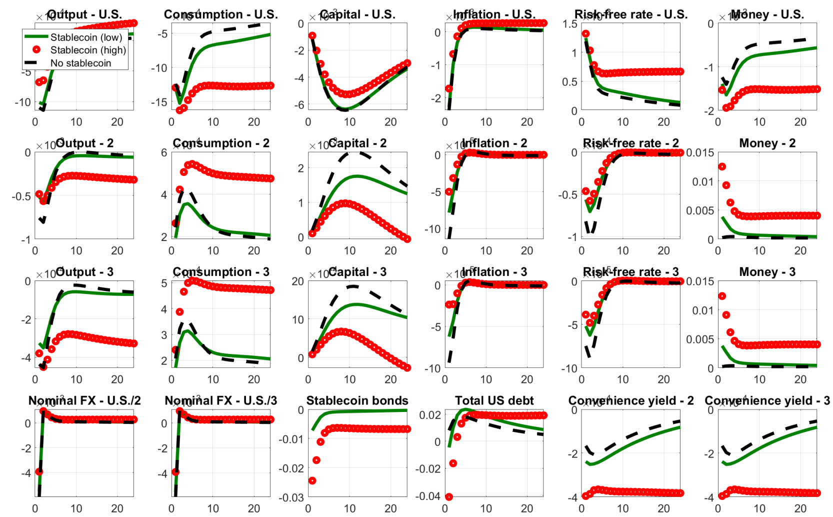


Figure C.17: Impulse responses to a U.S. monetary policy shock – estimated model.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). We use parameter estimates and country weights as in Ferrari Minesso and Pagliari (2023).

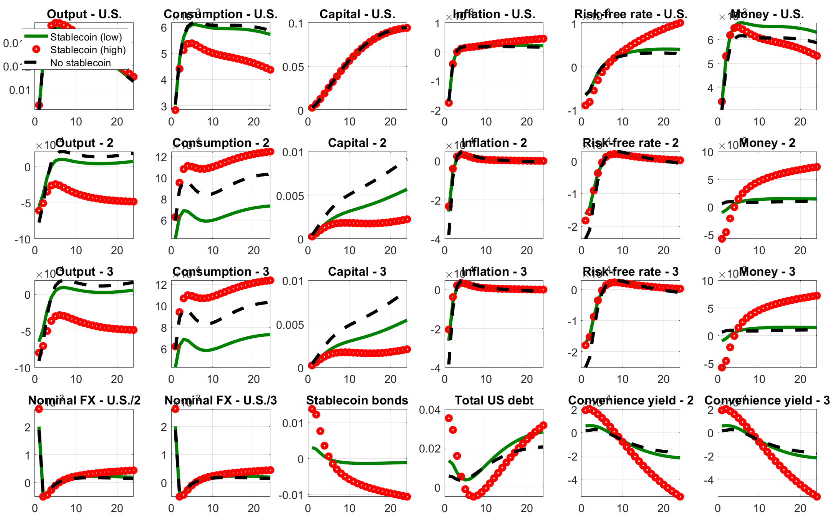


Figure C.18: Impulse responses to a U.S. TFP shock – estimated model.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). We use parameter estimates and country weights as in Ferrari Minesso and Pagliari (2023).

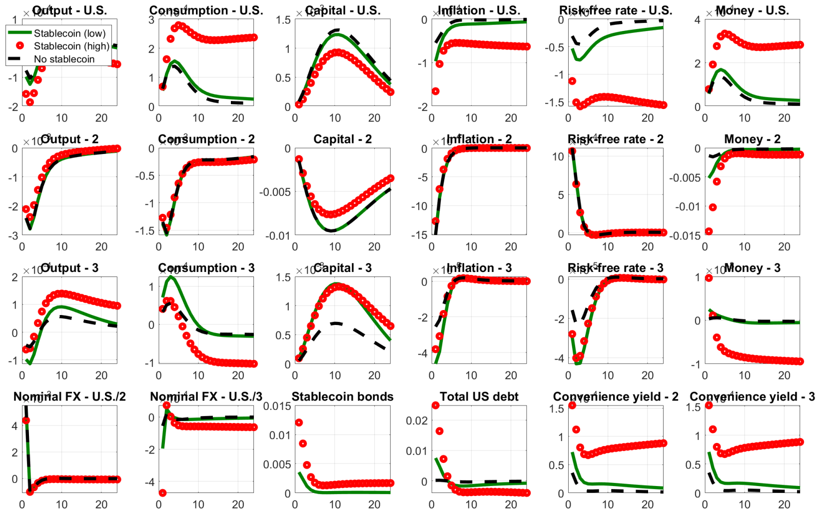


Figure C.19: Impulse responses to a monetary policy shock from country 2 – estimated model.

Notes: the chart shows the impulse response to a 1 standard deviation monetary policy shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). We use parameter estimates and country weights as in Ferrari Minesso and Pagliari (2023).

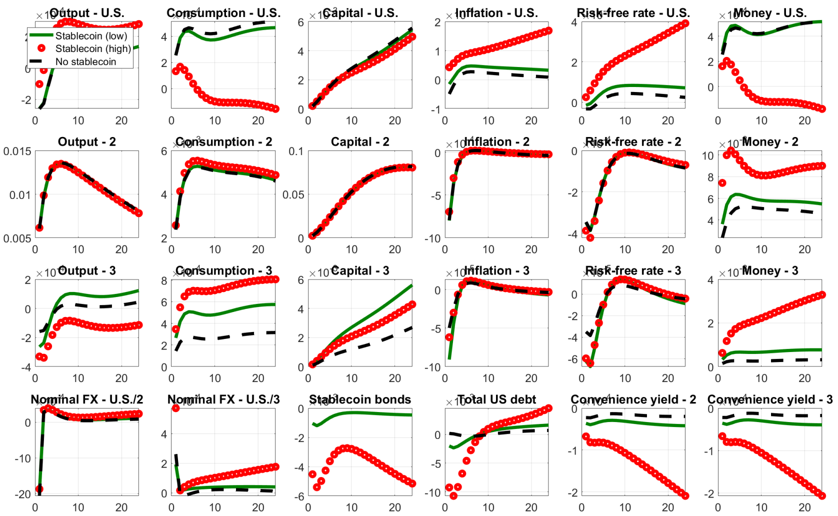


Figure C.20: Impulse responses to a TFP shock from country 2 – estimated model.

Notes: the chart shows the impulse response to a 1 standard deviation TFP shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). We use parameter estimates and country weights as in Ferrari Minesso and Pagliari (2023).

C.5 Redemption fee

We extend the model by including a very large redemption fee of 2%, which is 20 times larger than the one applied by Tether (while USD Circle does not have any). Expectedly, redemption fees reduce the quantitative impact of stablecoins on yields and exchange rate as households balance less out of stablecoins following each shock. The main mechanism however still holds.

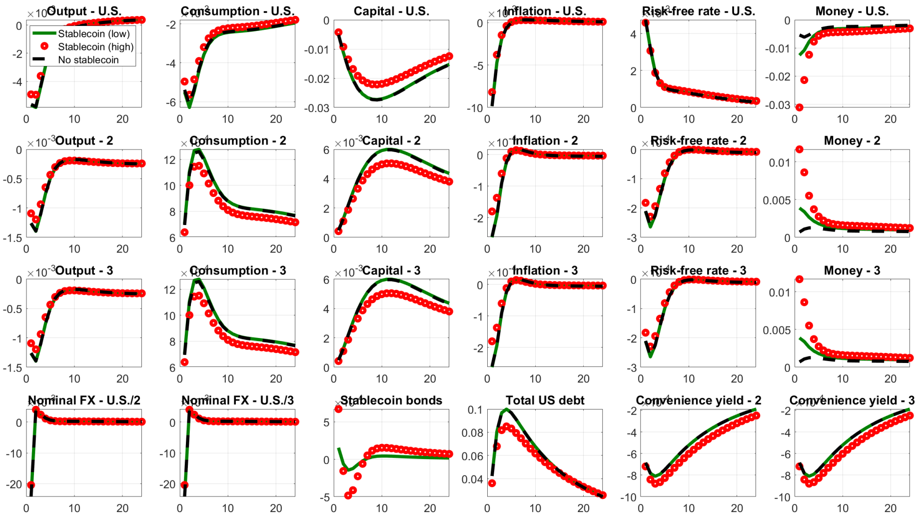


Figure C.21: Impulse responses to a U.S. monetary policy shock – model with redemption fee.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). A 2% redemption fee on stablecoin holdings is imposed.

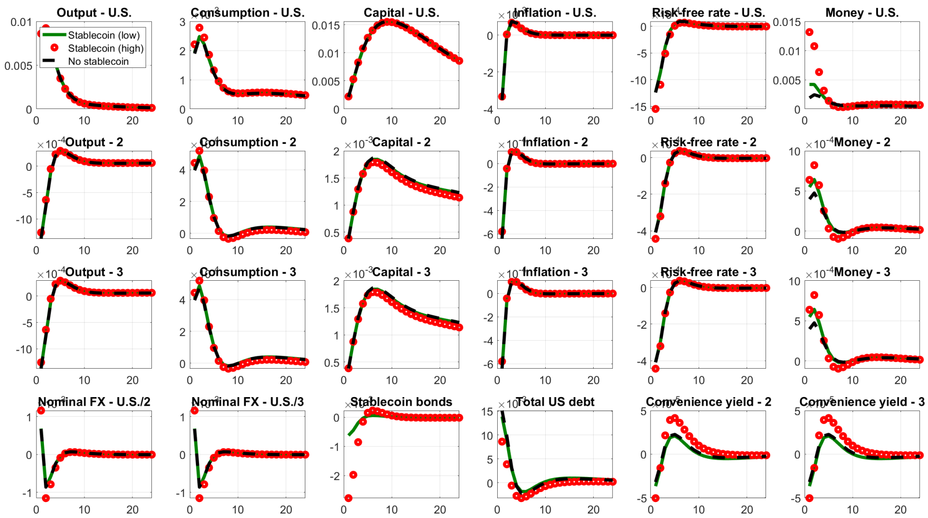


Figure C.22: Impulse responses to a U.S. TFP shock – model with redemption fee.

Notes: the chart shows the impulse response to a 1 standard deviation U.S. monetary policy shock. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market).A 2% redemption fee on stablecoin holdings is imposed.

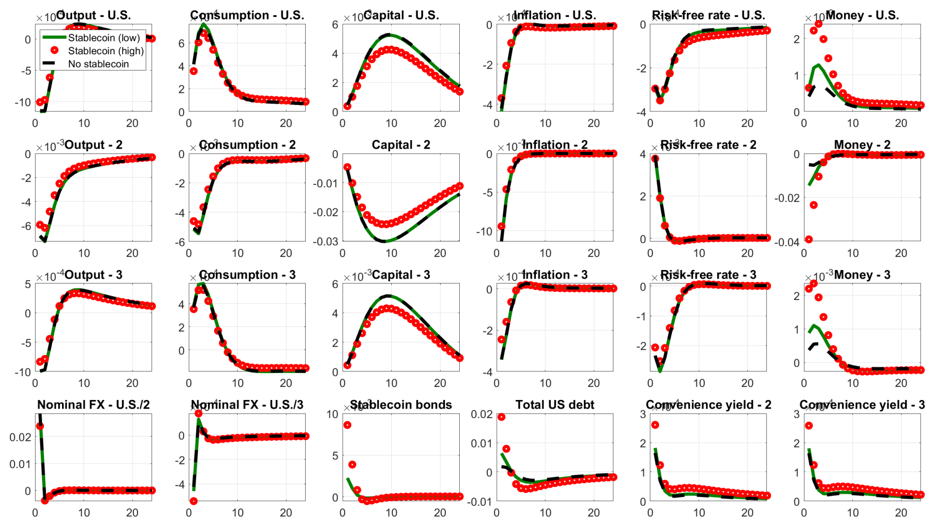


Figure C.23: Impulse responses to a monetary policy shock from country 2 – model with redemption fee.

Notes: the chart shows the impulse response to a 1 standard deviation monetary policy shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). A 2% redemption fee on stablecoin holdings is imposed.

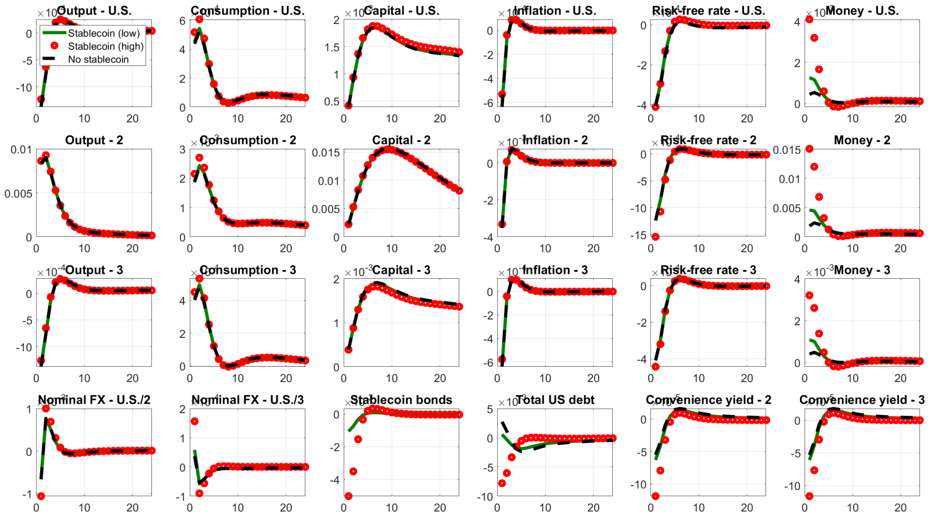


Figure C.24: Impulse responses to a TFP shock from country 2 – model with redemption fee.

Notes: the chart shows the impulse response to a 1 standard deviation TFP shock from country 2. The black line shows the responses of the model without stablecoins, the green line the responses of the model with low steady-state stablecoin market capitalization (about 500 USD bl, 1.3% of the U.S. bond market), the red dots the responses of the model with high steady-state stablecoin market capitalization (about 2 USD tr, 5.4% of the U.S. bond market). A 2% redemption fee on stablecoin holdings is imposed.