Macro-Financial Impact of Stablecoin's Demand for Treasuries

Sang Rae Kim*

Department of Economics

Kyung Hee University

May 2025

Abstract

This paper studies how the expansion of reserve-backed stablecoins affects Treasury markets and credit intermediation. Using high-frequency data from the Ethereum blockchain matched to intraday Treasury-linked asset prices, I show that large Tether issuance events induce statistically significant increases in Treasury prices. To interpret these effects, I develop a quantitative macro-finance model featuring capital-constrained banks and stablecoin issuers who demand Treasuries as reserves. The model replicates the empirical patterns and reveals strong nonlinearities in the transmission mechanism: the macro-financial impact of stablecoin issuance accelerates as the sector grows. I use the model to evaluate policy experiments and demonstrate how crypto-sector growth may transform Treasury demand and financial stability dynamics.

JEL Codes: E44; G28; E58; G12

Keywords: Stablecoins; US Treasuries; Financial intermediation; High-frequency identification

*Corresponding Author. Email: sangkim.econ@gmail.com. I thank Gary Gorton for the initial conversation that started this project. I thank comments from seminar participants.

1 Introduction

Recent episodes of volatility and rapid growth in the cryptocurrency market have raised important questions about the extent to which developments in the digital asset space can transmit to the traditional financial system or the real economy. As crypto-based financial activity expands in both scale and complexity, policymakers and market participants have become increasingly concerned about the potential for shocks originating in this sector to affect broader asset markets, funding conditions, and financial stability.

Bitcoin was originally introduced in 2008 as an alternative form of money, intended to operate outside the control of centralized institutions such as central banks. However, the substantial price volatility of Bitcoin and other early cryptocurrencies has rendered them impractical as transactional media. In response to this limitation, stablecoins were developed. Stablecoins are a form of cryptocurrency designed to maintain a stable value relative to a fiat currency, most commonly the US dollar. Reserve-backed stablecoins such as Tether and USD Coin aim to maintain their peg by holding reserves in dollar-denominated money market instruments, including US Treasury bills, commercial paper and reverse repurchase agreements. As a result, recent studies such as Kim (2025) and Barthélemy, Gardin, and Nguyen (2025) identify reserve-backed stablecoin as the medium through which the cryptocurrency market and the traditional financial market are connected.

This paper examines the macro-financial impact of reserve-backed stablecoin issuers' demand for Treasuries using a high-frequency identification strategy and a quantitative model. Kim (2025) and Barthélemy, Gardin, and Nguyen (2025) focused on the fact that prior to 2021, commercial paper constituted a significant share of stablecoin issuers' reserve portfolios. However, the inclusion of privately issued assets such as commercial paper raised concerns regarding transparency, liquidity, and credit risk. In response to mounting scrutiny, major reserve-backed stablecoin issuers, including Tether and USD Coin, shifted their reserve compositions away from private-label instruments and toward public assets such as US Treasuries.[1] According to Tether's public disclosures (Tether 2025), as of March 2025, the firm holds no commercial paper, with over 80 percent of its reserves allocated to US Treasury bills, reverse repurchase agreements, and cash equivalents.

Recognizing the shift in reserve management strategies among stablecoin issuers and the greater macroeconomic importance of the Treasury market relative to the commercial paper market, this paper examines the macro-financial impact of the cryptocurrency sector's expansion on the demand for US Treasuries. However, the sheer size of the Treasury market relative to the commercial paper market makes it challenging to identify a causal relationship between stablecoin issuance and Treasury prices.

In the first part of the paper, I address this challenge by implementing a high-frequency identification strategy that exploits the precise timing of stablecoin issuance events and aligns them with intraday fluctuations in Treasury-linked asset prices. The identification relies on the institutional feature that stablecoin issuers, such as Tether, must acquire Treasuries after issuing new stablecoins to maintain their peg. Using transaction-level data from the Ethereum blockchain, I track transfers from Tether's designated Treasury wallet to construct a time series of issuance activity at an hourly frequency. These events are then matched to minute-level transaction prices of the BIL ETF, which closely tracks the performance of short-maturity US Treasury bills and provides a real-time proxy for Treasury demand during US trading hours.

The empirical design focuses on large issuance episodes that represent the top decile of net issuance volumes and constructs event windows centered around the time each issuance is recorded on-chain. I examine BIL ETF price's responses in the hours and days following each event, using a standard event-time framework. The high-frequency nature of the data mitigates confounding influences from broader macroeconomic news and allows for a more credible identification of short-run price effects associated with

[1] https://tether.io/news/tether-slashes-commercial-paper-to-zero/

stablecoin-related Treasury demand.

Using this high-frequency identification strategy, I find that large Tether issuance events generate immediate and statistically significant increases in the price of short-term Treasury instruments. Specifically, BIL ETF prices rise by approximately 1.5 basis points in the hour following a major issuance event, with no evidence of pre-trends. This transitory price response is consistent with a temporary demand shock driven by stablecoin issuers' reserve purchases. A complementary daily-frequency event study shows similar dynamics: BIL ETF prices increase by nearly 3 basis points on the day following large issuance episodes before gradually reverting over the next two trading days. The absence of abnormal price movements in the pre-event windows reinforces the identification assumption that issuance events are exogenous to contemporaneous Treasury market conditions.

Taken together, these results provide credible evidence that the issuance of reserve-backed stablecoins transmits demand shocks into the short-term Treasury market, at least over short time horizons. The observed effects are modest in magnitude but systematic across both intraday and daily windows. These findings establish a micro-level transmission channel through which developments in the cryptocurrency sector can affect traditional safe asset markets.

While the current effects of stablecoin issuance are modest, reflecting the relatively small size of the cryptocurrency market compared to the Treasury market, it is important to understand how these effects may evolve as the sector grows. Therefore, in the second part of the paper, I develop a quantitative macro-finance model that replicates the empirical findings and provides a structural evaluation of how the impact of stablecoin issuance scales with the expansion of the cryptocurrency market.

The model features a household that derives liquidity services from both bank deposits and stablecoins, a bank subject to capital requirements, and a stablecoin issuer that holds Treasuries to back its liabilities. As the share of liquidity provision attributed to stablecoins increases, issuers acquire more Treasuries, bidding up their price. Higher

Treasury prices affect banks' balance sheet decisions through two offsetting channels. On one hand, rising bond prices improve the collateral value of safe assets, relaxing the capital requirement and encouraging additional risky lending. On the other hand, lower Treasury yields raise the relative attractiveness of risky loans, leading banks to reallocate toward higher-return assets, which tightens the capital constraint. The net effect on credit supply depends on which channel dominates in equilibrium.

The simulated results reveal a highly nonlinear transmission mechanism: when the stablecoin sector is small, its macro-financial effects are limited, but once the sector crosses a critical threshold, further expansion generates disproportionately larger impacts on Treasury prices and credit provision. These dynamics underscore the potential for stablecoins to become a meaningful driver of financial conditions as they gain broader acceptance as monetary instruments.

To further explore how the shock in the cryptocurrency market transmit to the traditional financial market and the real economy, I analyze the impulse responses of key macro-financial variables to a negative shock to crypto demand across different levels of stablecoin sector size. The results reveal that when the stablecoin sector is small, the shock has only muted effects on Treasury prices and bank lending. However, as the sector expands, the same shock generates increasingly larger and more persistent deviations in safe asset prices, lending volumes, and household liquidity. This amplification reflects the growing macro-financial sensitivity of the system to crypto sector developments and underscores the state-dependent nature of the stablecoin–Treasury–bank nexus.

To assess the policy implications of this mechanism, I conduct a counterfactual analysis in which the government increases the supply of Treasuries in response to the growing demand from the stablecoin sector. This scenario captures the potential effects of proposals such as the GENIUS Act, which would institutionalize the role of stablecoin issuers as structural buyers of public debt. The simulations show that while an increase in Treasury supply dampens the upward pressure on prices and limits the loosening of bank capital constraints, the macro-financial impact of stablecoin adoption remains significant, particularly when the sector becomes large. These results suggest that the integration of stablecoins into sovereign funding markets may alter the transmission of monetary and regulatory policy, and that managing the interaction between crypto-driven demand and public asset supply will be critical for ensuring financial stability.

The findings in this paper provide new evidence that the expansion of the cryptocurrency sector, while currently limited in scale, has the potential to influence key financial market outcomes through its demand for Treasuries. This connection has broader implications, as many consumer interest rates such as mortgage rates and credit card lending rates are closely linked to Treasury yields. As stablecoins become more widely adopted, the effects of cryptocurrency market developments on everyday financial conditions may grow, even for individuals who are not directly involved in crypto markets. In an extreme scenario, a financial crisis within the cryptocurrency sector could trigger a run on reserve-backed stablecoins, prompting issuers to liquidate Treasury holdings rapidly to meet redemption requests. Such fire sales could severely disrupt Treasury markets and impair funding conditions across the financial system.

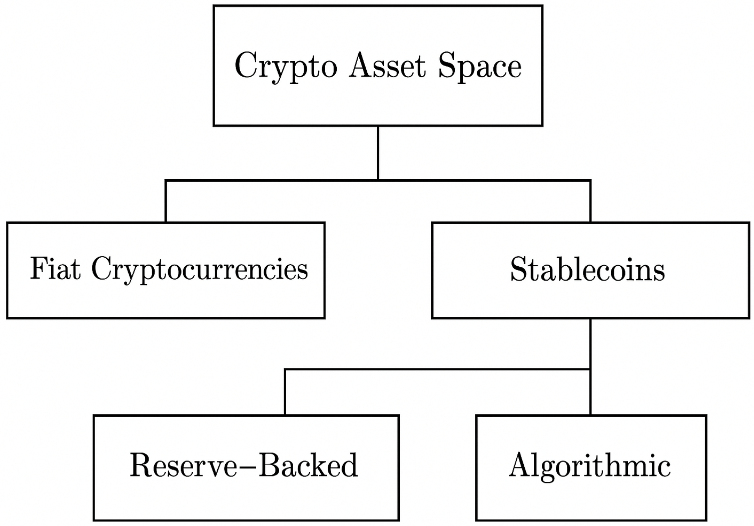
Taken together, the empirical findings and model results highlight a previously underappreciated source of macro-financial fragility. While current price effects may appear small, the transmission mechanism linking stablecoin issuance to Treasury pricing and bank credit allocation is inherently nonlinear. As the sector grows, even modest expansion could generate disproportionately larger impacts, placing stablecoin regulation and Treasury market structure at the center of debates over monetary and financial stability.

Literature review: This paper is the most related to Kim (2025) and Barthélemy, Gardin, and Nguyen (2025) that make connection between the cryptocurrency market and the short-term debt market through reserve-backed stablecoin. However, these studies concentrate on stablecoin issuers' commercial paper holdings, a market that is smaller than the Treasury market and has become largely irrelevant because major issuers have eliminated commercial paper from their reserves. This paper extends the literature by examining how growth in the cryptocurrency sector may affect what is arguably the world's most important debt instrument, US Treasury securities. In addition, it develops a structural macro-finance model that unifies the crypto sector with the traditional financial system, enabling forward projections of further market expansion and the evaluation of crypto-related policy interventions. Papers like Bellia and Schich (2020), Baur and Hoang (2021), Gorton and Zhang (2021), Gorton, C. Ross, and S. Ross (2024), and Y. Li and Mayer (2022) study different aspects of the stablecoin market.

This paper contributes to the broader literature on economics of cryptocurrency and fintech. A body of research applies established economic methods to study the optimal organization and design of blockchain technology. (Budish 2018; Biais et al. 2019; Gans and Gandal 2019; Saleh 2020; Cong, He, and J. Li 2020; Cong, Y. Li, and Wang 2020; Abadi and Brunnermeier 2022; Abadi and Brunnermeier 2024). Also, papers like Hu, Parlour, and Rajan (2019), Liu and Tsyvinski (2020), and Liu, Tsyvinski, and Wu (2022) apply asset pricing methodologies to examine the return characteristics of fiat denominated cryptocurrencies, with Bitcoin receiving the greatest focus. Makarov and Schoar (2020) examine arbitrage opportunities among different exchanges around the world in the cryptocurrency market.

In the broader literature, this paper contributes to private money creation and banking. Seminar papers like Diamond and Dybvig (1983) and Gorton and Pennacchi (1990) characterizes the role of financial intermediaries as producers of a money-like safe asset. In this paper, the stablecoin issuer is the novel type of financial intermediary that collects deposit in the form of stablecoin and intermediate it to the real economy though its effect on money market instruments like the US Treasuries. Further empirical work like Stein (2012), Gorton, Lewellen, and Metrick (2012), Gorton and Metrick (2012), C. P. Ross (2022), Nagel (2016), and Sunderam (2014) provide empirical justification for this literature.

Figure 1: Categorization of the Crypto Asset Space



Notes: This figure summarizes the structure of the crypto asset space.

2 Background

2.1 Structure of the Cryptocurrency Market

As of May 2025, the global cryptocurrency market has reached a total capitalization of approximately $3.04 trillion. Within this ecosystem, assets can be broadly categorized into two primary groups: fiat cryptocurrencies and stablecoins.[2]

Fiat cryptocurrencies are digital tokens such as Bitcoin and Ether that are not backed by any physical assets or fiat currencies. These assets are known for the price volatility and are often utilized for speculative investment. Bitcoin, currently the largest of these, holds a market capitalization of approximately $1.88 trillion as of May 2025.

Stablecoins, in contrast, are digital assets designed to maintain a stable value relative to a reference asset, typically a national currency like the US dollar. As of early May 2025, the total market capitalization of stablecoins stands at approximately $245 billion, accounting for about 8.1% of the overall cryptocurrency market. Stablecoins serve as a

[2] https://www.coingecko.com/en/global-charts?utm_source=chatgpt.com

medium of exchange, a unit of account, and a store of value within the crypto ecosystem.

Stablecoins can be further divided into two main categories based on their stabilization mechanisms:

- Reserve-backed stablecoins: These are backed by reserves of fiat currencies or other assets held by a central entity. Examples include Tether (USDT) and USD Coin (USDC). Tether, the largest stablecoin, has a market capitalization of approximately $148 billion, while USDC stands at around 62.1 billion as of May 2025.

- Algorithmic stablecoins: These rely on algorithms and smart contracts to maintain their peg, often without holding traditional reserves. They adjust the supply of the stablecoin in response to market demand to stabilize its price.

Understanding the structure and scale of the crypto asset space, particularly the significant role of stablecoins, is crucial for analyzing their impact on traditional financial markets, including the demand for short-term government securities. The structure of the crypto asset space is summarized in Figure 1.

2.2 Pegging Mechanism and Reserve Composition

The peg of reserve-backed stablecoins is typically maintained through a promise of redeemability at par, supported by a portfolio of liquid and low-risk assets held in reserve by the issuer. When a user deposits fiat currency or other payment instruments with a stablecoin issuer, the issuer mints a corresponding quantity of stablecoins. Conversely, when a user seeks redemption, the issuer destroys (burns) the stablecoins and returns the fiat equivalent. This issuance and redemption mechanism helps stabilize the token's market price around the target peg.

To ensure that redemption is credible and sustainable, reserve-backed stablecoins must hold sufficient collateral. Public disclosures from major issuers show that the composition of these reserves is heavily skewed toward short-duration US Treasury bills, along with some allocations to reverse repos and bank deposits. For instance, Tether's quarterly attestation reports indicate that over 80 percent of its reserves are held in US government securities with an average maturity under 90 days. Similarly, USDC issuer Circle allocates most of its reserves to Treasury bills and custodial cash held at regulated financial institutions.

The credibility of the peg hinges critically on both the liquidity and transparency of these reserves. In the event of a market shock or redemption wave, the issuer must be able to liquidate its holdings promptly and at predictable prices. As such, stablecoin demand introduces an additional layer of demand for short-term safe assets, particularly Treasury bills. This feature motivates the framework developed in this paper, where the stablecoin sector interacts with the traditional financial system through its portfolio allocation to public debt securities.

2.3 Institutional Structure and Policy Relevance

Stablecoin issuers are not currently subject to the same prudential regulations as banks or money market funds, though policy debates are ongoing. Several proposals, including the US President's Working Group Report and provisions under the proposed Stablecoin TRUST Act, have called for issuers to be regulated as insured depository institutions or to meet equivalent reserve and disclosure requirements. In the interim, the collateralization ratio remains a key policy tool. A stablecoin issuer with a one-to-one collateralization ratio faces minimal risk under normal conditions, but a run scenario can still expose the broader financial system to price volatility in the Treasury market if large-scale liquidations occur.

Therefore, understanding the macro-financial implications of reserve-backed stablecoins is essential for both monetary policy and financial stability. This paper develops a theoretical framework to examine how the presence of these entities affects the allocation of safe assets, the pricing of government debt, and the risk-bearing capacity of financial intermediaries under varying assumptions about collateralization and funding competition.

2.4 The GENIUS Act and Stablecoin Demand for Treasuries

Recent legislative developments have further elevated the policy relevance of stablecoins within the traditional financial system. One prominent proposal is the Guiding and Establishing National Innovation for US Stablecoins (GENIUS Act), which seeks to formalize and regulate the use of reserve-backed stablecoins as a strategic source of demand for Treasuries. The act seeks to designate qualified stablecoin issuers as "special-purpose public liquidity providers," mandating that they hold a specified minimum share of their reserves in short-term Treasury instruments. The GENIUS Act reflects the trend of integrating crypto-financial structures into government funding strategies.

If implemented, the GENIUS Act would institutionalize stablecoin-driven demand for Treasuries, effectively making stablecoin issuance a channel through which private sector liquidity preferences shape government debt markets. This policy shift would reinforce the linkage between the cryptocurrency ecosystem and the traditional safe asset market, amplifying the role of non-bank financial intermediaries in absorbing Treasury supply. While such a mechanism could provide short-term funding stability, it may also introduce new sources of cyclicality and price sensitivity, particularly if redemptions in the crypto sector trigger synchronized asset sales. In this context, the macro-financial dynamics explored in this paper offer a theoretical foundation for understanding the transmission mechanisms through which stablecoin regulation may influence public debt pricing, liquidity conditions, and financial stability.

By explicitly tying stablecoin reserve composition to Treasury holdings, the GENIUS Act would effectively transform the cryptocurrency sector into a standing buyer of US government debt. This would formalize what has so far been a discretionary practice among large issuers and embed crypto-related flows into the structural demand for safe assets. As the issuance of stablecoins expands with adoption and usage, so too would the sector's mandated Treasury purchases, potentially creating a new, endogenous channel of demand for public debt. In the framework of this paper, such a development corresponds to an increase in the share of liquidity provision attributed to the stablecoin sector, thereby elevating its influence on Treasury pricing and amplifying the transmission mechanism from crypto sector growth to traditional financial markets.

3 High Frequency Identification of the Effect of Stablecoin Issuance on the Treasury Market

In this section, I provide empirical evidence that the growth of stablecoin issuance has had a measurable impact on the demand for US Treasury bills. This relationship arises from the reserve-backed stablecoin issuers' need to acquire Treasuries as collateral to maintain the peg of their stablecoins to the US dollar. Among reserve-backed stablecoins, Tether stands out as the largest and most influential player in the market. Therefore, I focus my analysis on the effect of Tether issuance on Treasury market dynamics.

3.1 Data and Summary Statistics

To monitor stablecoin issuance and redemption activity, I construct a transaction data from Etherscan that records transfers into and out of Tether's designated Treasury wallet. This wallet serves as the centralized address from which USDT stablecoins are issued or redeemed. Outflows from the Treasury wallet represent new issuances. Under Tether's stated reserve policy, this outflow must be backed by an equivalent increase in reserve assets, predominantly US Treasury bills.[3] In contrast, inflows to the wallet correspond to redemption requests, in which case Tether reduces its liabilities by withdrawing USDT from circulation and liquidating reserve assets to meet outflows.

[3] https://tether.io/news/tether-usdt-and-us-treasury-dynamics/?utm_source=chatgpt.com

This wallet-level activity provides a direct link between on-chain stablecoin flows and off-chain reserve transactions, offering a novel empirical proxy for measuring Treasury demand originating from the stablecoin sector. By monitoring these outgoing and incoming transfers, one can identify the timing and scale of new stablecoin issuance and redemption activity, which in turn implies reserve management behavior by Tether that involves the purchase or sale of short-term Treasuries. This forms the empirical foundation for examining how stablecoin issuance or redemption may influence Treasury markets.

For each transaction, I record the timestamp and direction of flow—positive for mints (outflows from the treasury) and negative for burns (inflows). These transactions are then aggregated into hourly intervals, forming a panel of net issuance activity indexed by UTC timestamps.

On the financial market side, I use Bloomberg data for the BIL ETF, which tracks short-maturity Treasury securities and provides minute-level pricing during regular US trading hours. Using BIL ETF data enables high-frequency measurement of short-term Treasury demand during intraday trading hours, which is essential for capturing immediate market responses to Tether issuance. Unlike actual Treasury yields, which are often stale or interpolated at high frequency, BIL ETF prices reflect real-time trading activity and are directly observable at minute-to-hour resolution. Moreover, the BIL ETF closely tracks the prices of very short-term Treasury bills—maturities of one to three months—which align with the primary reserve assets held by stablecoin issuers. The BIL price series is then aggregated to the same hourly frequency by taking the last observed transaction price within each interval. This ensures that the timing of both series is harmonized and suitable for event-style analysis.

To merge Tether issuance events with market price data, I align the blockchain-based minting timestamps from Etherscan with Bloomberg-provided BIL ETF prices using a high-frequency event-time framework. Since Etherscan records events in UTC and Bloomberg

Table 1: Summary Statistics

	Obs	Mean	Std Dev	Max	Min
BIL ETF hourly return	5,838	0	1	2	-3
BIL ETF daily return	830	1.5	1.7	7.7	-2.7
Tether hourly net issuance	3,051	$275,155	$203.4M	$4.5B	-$2B
Tether hourly net issuance (matched)	383	$13.8M	$134.6M	$220.3M	-$1B
Tether daily net issuance	1,214	-$691,362	$280M	$4.5B	-$1.86B

Notes: BIL ETF hourly return and daily return are in basis points. M stands for millions and B stands for billions. Positive net issuance means issuance of Tether and negative net issuance means redemption of Tether. Matched net flow refers to Tether minting and burning events that occur during US market trading hours and can be aligned with BIL ETF price intervals. Unmatched net flow includes events that occur outside of trading hours and therefore lack corresponding BIL return observations.

timestamps are in US Eastern Time, I first convert all Bloomberg timestamps to UTC to ensure temporal consistency. I then merge the two datasets by matching each BIL ETF hourly observation to the most recent Tether net issuance activity within a one-hour window. This backward merge structure is motivated by the assumption that stablecoin issuers first mint tokens before deploying reserves into financial markets, such that minting events precede any corresponding Treasury demand.

Finally, the empirical analysis focuses on the period from January 1, 2022, to April 30, 2025, which begins shortly after Tether publicly announced its shift in reserve management toward holding primarily US Treasury securities. This time frame ensures that the observed minting events are more likely to be accompanied by actual Treasury purchases, thereby strengthening the identification assumption that stablecoin issuance generates direct and immediate demand for government securities.

Summary statistics for the data used is in Table 1. Note that for the hourly data, matched net flow refers to Tether minting and burning events that occur during U.S. market trading hours and can be aligned with BIL ETF return intervals. Unmatched net flow includes events that fall outside of trading hours and therefore lack corresponding BIL return observations.

One caveat of the empirical analysis is that it relies solely on issuance data from the Ethereum blockchain, excluding Tether activity on other networks. In particular, a substantial share of Tether issuance takes place on the Tron blockchain, which is comparable in scale to Ethereum. Moreover, this paper focuses exclusively on Tether, while USD Coin remains a prominent—albeit smaller—reserve-backed stablecoin. This narrower focus was chosen to ensure consistency across the empirical analysis, particularly in aligning on-chain issuance data with high-frequency asset price observations. As a result, the estimated effects on Treasury prices likely understate the full scope of stablecoin-induced demand. Incorporating issuance data from the Tron blockchain and USD Coin would likely reveal a larger aggregate impact of stablecoins on Treasury market dynamics.

3.2 Empirical Strategy

3.2.1 Hourly frequency

To quantify the short-run financial market response to stablecoin issuance, I implement a high-frequency identification (HFI) strategy centered on the timing of large Tether issuance (minting) events and the intraday pricing of short-term US Treasury instruments. Utilizing the constructed dataset described in the previous section, I compute log returns of BIL prices and identify the top 10% of net mint events by magnitude.[4] For each of these extreme events, I construct an event-time window spanning four hours before and after issuance. Average BIL returns are then plotted across event time with the 95% confidence bands. This approach allows for a granular view of how the Treasury market responds to large-scale stablecoin activity within intraday windows.

The validity of the HFI strategy rests on the assumption that, conditional on the timing of Tether minting, there are no other systematic shocks to Treasury markets within the narrow event window. By focusing on the one-hour windows surrounding each minting event and aggregating across a large number of high-volume issuance episodes, the strategy minimizes the likelihood that observed price movements are driven by confounding macroeconomic news or policy announcements.

[4] The cutoff issuance amount for the top 2% was 64 millions USDT across 39 issuance events.

Averaging across many events further reinforces this identification: while any single minting episode might coincide with an unrelated market shock by chance, the probability that such confounders consistently align across dozens of independently timed minting events is vanishingly small. Thus, systematic patterns in asset price responses around Tether issuance can be interpreted as reflecting the causal impact of stablecoin-related Treasury demand.

3.2.2 Daily frequency

To further validate the strategy and ensure that the observed effects are not artifacts of short-term noise, I complement the intraday analysis with a daily frequency event study. In this approach, I aggregate Tether net issuance to the daily level and identify the top 2% of minting and burning days by issuance amount.[5] I then examine how daily changes in BIL ETF prices respond around these extreme issuance days, using a $\pm$ 4 day window.

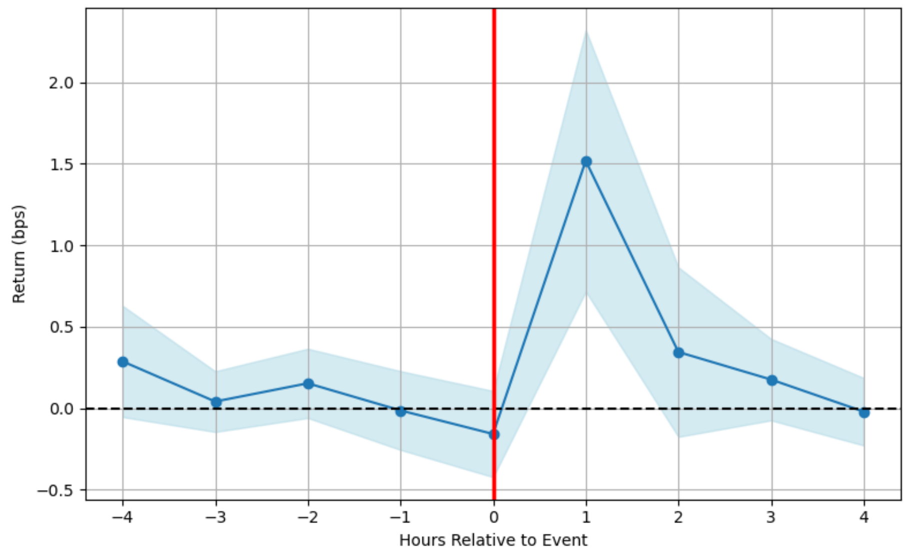
The daily analysis serves two key purposes. First, it provides a robustness check for the hourly-frequency results by asking whether similar patterns emerge when observed over longer intervals. Second, it allows for the possibility that market participants respond to Tether issuance not instantaneously, but over the course of several trading sessions as reserve deployment unfolds and information diffuses.

3.3 Result

Figure 2 presents the high-frequency return dynamics of the BIL ETF surrounding large Tether issuance events. The sample includes all Tether minting events in the top 10% by net flow volume from January 1, 2022, through April 30, 2025. For each of these events, I construct an event-time window spanning from four hours before to four hours after the minting transaction is recorded on-chain. I then compute the average BIL ETF return for each event hour, normalized in basis points, and plot the mean return across events along

[5] The cutoff issuance amount for the top 2% was 1.027 billions USDT across 25 issuance events.

Figure 2: Hourly BIL ETF Return Movement Around Large Tether Mint Event



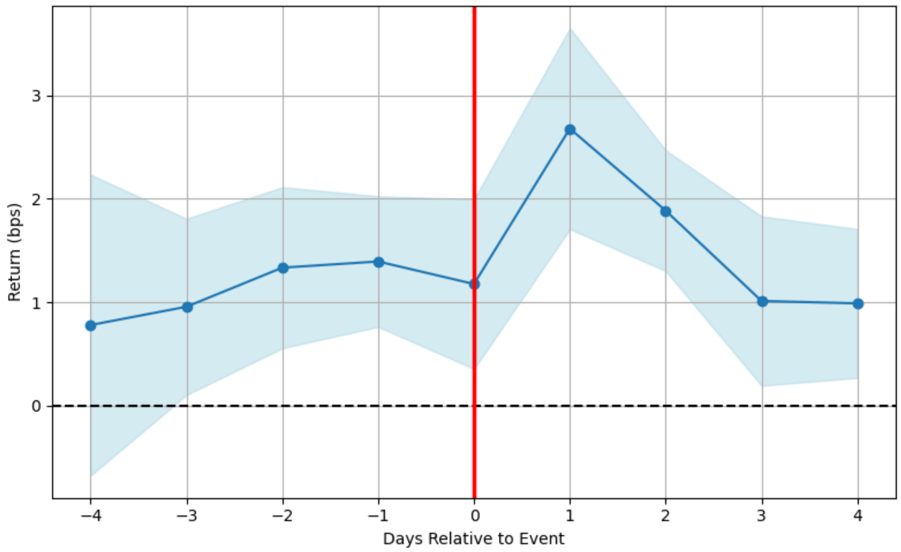
Notes: This figure shows the average BIL ETF return in the hours surrounding large Tether issuance events, defined as the top 10% of minting transactions by volume between January 1, 2022, and April 30, 2025. Returns are plotted in basis points over a ±4-hour window centered on the hour the minting was recorded on-chain, with 95% confidence intervals reflecting cross-event variation.

with 95% confidence intervals. The event time is aligned such that time zero represents the hour in which the minting event is first observed, as timestamped by the Ethereum blockchain.

The figure reveals a clear and concentrated price response following large issuance episodes. In the first hour after a minting event, the BIL ETF exhibits a statistically significant increase in price, with the average return rising to approximately 1.5 basis points. This response follows statistically insignificant returns in the pre-event window, suggesting the absence of anticipatory price movements or pre-trends. Returns gradually revert toward zero over the next few hours, indicating that the initial price impact is temporary and consistent with a transitory demand shock.

This pattern supports the identification assumption underlying the high-frequency strategy that the timing of Tether issuance is conditionally exogenous to contemporaneous shocks in the Treasury market. Because the events are drawn from a large number

Figure 3: Daily BIL ETF Return Movement Around Large Tether Mint Event



Notes: This figure shows the average BIL ETF return in the days surrounding large Tether issuance events, defined as the top 2% of minting transactions by volume between January 1, 2022, and April 30, 2025. Returns are plotted in basis points over a ±4-day window centered on the hour the minting was recorded on-chain, with 95% confidence intervals reflecting cross-event variation.

of issuance episodes and the returns are averaged across those events, the probability that the post-event pattern reflects other systematic drivers is extremely low. The results suggest that stablecoin issuance induces immediate, short-lived increases in demand for short-term Treasuries, as reflected in BIL ETF pricing. This interpretation is consistent with the institutional mechanics of Tether's reserve management, wherein newly issued stablecoins are backed by purchases of Treasury securities executed shortly after minting.

To validate the robustness of the high-frequency return dynamics, I complement the intraday analysis with a daily-frequency event study. Figure 3 plots the average BIL ETF return from four days before to four days after large Tether issuance events, restricted to the top 2% of minting episodes by size. The return is measured as the daily log price change of BIL, expressed in basis points. The graph reveals a consistent and statistically significant increase in ETF returns on the day following the minting event, with the average return rising to approximately 2.7 basis points. This positive response is followed by a gradual reversion over the subsequent two days, echoing the transitory nature of the price impact observed in the hour-level specification.

Importantly, there is no evidence of abnormal price movement in the pre-event period, further supporting the identification assumption that the timing of Tether issuance is unanticipated by the Treasury market. The fact that the same directional response is observed at both minute and daily frequencies reinforces the causal interpretation: stablecoin issuance is associated with temporary price pressure in short-term Treasuries, as stablecoin issuers deploy newly received fiat reserves into safe assets. The consistency of these results across different time resolutions mitigates concerns about market microstructure noise or intraday timing mismatch, and supports the broader claim that large-scale stablecoin issuance can transmit demand shocks into traditional asset markets, even over short horizons.

3.4 Summary

The empirical findings provide consistent evidence that large Tether issuance events generate short-lived price responses in short-term Treasury instruments. Using high-frequency BIL ETF data, I show that returns increase significantly in the first hour following a minting event, with the average price change reaching approximately 1.5 basis points before reverting in subsequent hours. This dynamic response is robust to varying event window lengths and persists when analyzed at the daily frequency: BIL returns rise by nearly 3 basis points on the day following large minting events before gradually returning to pre-event levels. Across both intraday and daily windows, the absence of systematic pre-trends supports the identification assumption that Tether issuance is exogenous to contemporaneous Treasury market conditions.

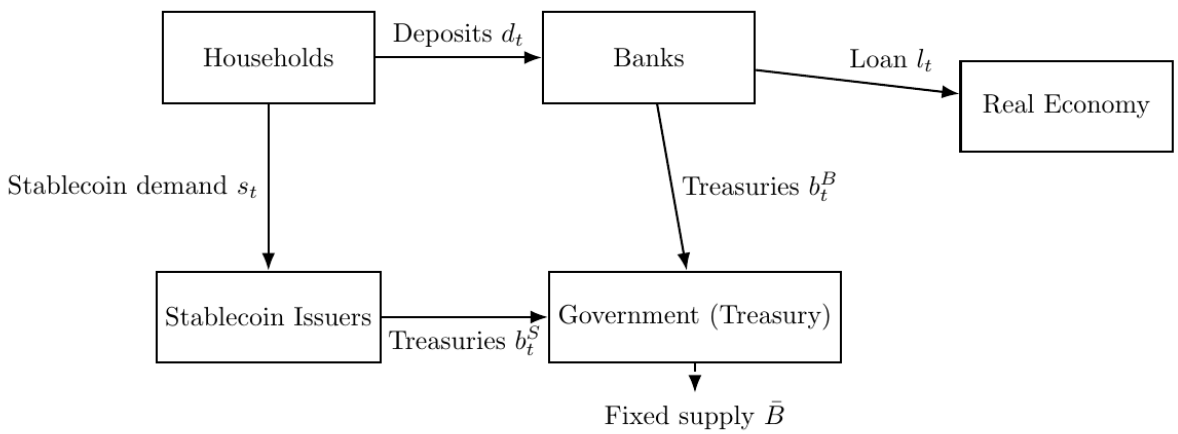
These results are consistent with the interpretation that reserve-backed stablecoin issuance acts as a temporary demand shock for government securities. The economic mechanism is straightforward: when Tether is minted in large volumes, the issuer must purchase short-term US Treasuries to back the newly issued stablecoins, exerting immediate pressure on Treasury prices. Because the reserve deployment is concentrated in highly liquid, short-maturity assets, the effect is most visible in instruments such as the BIL ETF, which closely tracks short-term government debt and trades continuously during market hours. The temporary nature of the price response further supports the view that the effect reflects liquidity-driven flow dynamics rather than persistent shifts in macroeconomic expectations.

4 Model

I develop a macro-finance model that incorporates stablecoin issuers as an additional source of demand for Treasuries. Using this framework, I investigate how the resulting demand from the cryptocurrency market affects the real economy by influencing the traditional financial sector's capacity to intermediate funds. I also examine how the continued expansion of the cryptocurrency market introduces a novel source of risk to the financial system, particularly if its rapid growth trajectory persists.

The model runs for infinite period of time. The time is discrete and is denoted by $t = 0, 1, 2, \ldots$. The economy is populated by four agents: the household, the bank, the stablecoin issuer, and the government. The model is characterized by the following three key features. First, households derive direct utility from both bank deposits and stablecoins due to their liquidity services. Bank deposits provide monetary utility by facilitating transactions in the traditional economy, while stablecoins offer direct utility by serving as a medium of exchange within the cryptocurrency market. Second, stablecoins serve as a gateway to the cryptocurrency market, which means holding stablecoins exposes the household to shocks originating from the highly volatile crypto sector. Finally, the stablecoin issuer holds reserves of Treasury securities to back their issuance, creating a direct link between the cryptocurrency market and the demand for government bonds.

Figure 4: Bank Balance Sheet



Notes: This figure summarizes the structure of the model.

The model structure is summarized in Figure 4.

4.1 The Household

There is a continuum of identical infinitely-lived households. The household's objective is to maximize its expected discounted lifetime utility subject to her budget constraint. The first key friction in the model is that the household derives utility not only from consumption but also from holding assets that provide liquidity services. Two such assets exist in the model: bank deposits and stablecoins.

Bank deposits enable the household to transfer wealth intertemporally and also serve as a medium of exchange in the traditional economy. Similarly, stablecoins facilitate intertemporal wealth transfer, but they also function as a medium of exchange within the cryptocurrency ecosystem. For example, stablecoins allow households to purchase volatile crypto assets such as Bitcoin and Ether and to participate in decentralized finance (DeFi) lending markets.

Following the literature,[6] I employ the money-in-utility function to reflect monetary

[6] Krishnamurthy and Vissing-Jorgensen (2012), Sunderam (2014), Krishnamurthy and Vissing-Jorgensen

value of the bank deposit and the stablecoin. The period utility function of the household is as follows:

$$\frac{(c_t)^{1-\gamma_c}}{1-\gamma_c} + \psi \frac{(M_{t+1})^{1-\gamma_m}}{1-\gamma_m}$$

where

$$M_{t+1} = \left[(1-\omega)(d_{t+1})^{\eta} + \omega (s_{t+1})^{\eta} \right]^{\frac{1}{\eta}}$$

c_t denotes the household's consumption in period t. d_{t+1} and s_{t+1} denote the household's holding of bank deposits and stablecoins going from period t to $t+1$. I aggregate the household's deposit and stablecoin holding using a CES aggregator to derive the household's aggregate money holding M. γ_c and γ_m control the curvature of the household's utility function with respect to consumption and money holding, respectively. ψ controls the relative utility of money holding.

The parameter ω plays a central role in the model by governing the relative utility weight the household assigns to bank deposits versus stablecoins. In the counterfactual experiment presented in the following section, I examine how increasing ω that captures the growing importance of stablecoins in household portfolio decisions affects the real economy through its effect on the Treasury market. This exercise allows me to assess the implications of continued expansion in the cryptocurrency market for government bond demand and broader financial market dynamics. The parameter η controls the elasticity of substitution between bank deposits and stablecoins. Parameters ψ, ω, and η are calibrated in the following section to match empirical moments related to the cryptocurrency market.

The household's problem can be written as follows:

(2015), and Nagel (2016) to name a few.

$$\max_{\{c_t, d_{t+1}, s_{t+1}\}_{t+1}^{\infty}} \mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t \Big[\frac{(c_t)^{1-\gamma_c}}{1-\gamma_c} + \psi \frac{(M_t)^{1-\gamma_m}}{1-\gamma_m} \Big]$$

$$c_t + d_{t+1} + s_{t+1} = (1+i_t) d_t + \exp(z_t^C) s_t + div_t$$

$$M_{t+1} = \Big[(1-\omega)(d_{t+1})^{\eta} + \omega (s_{t+1})^{\eta} \Big]^{\frac{1}{\eta}}$$

$$\log z_{t+1}^C = \rho^C \log z_t^C + \sigma^C \epsilon_{t+1}^C$$

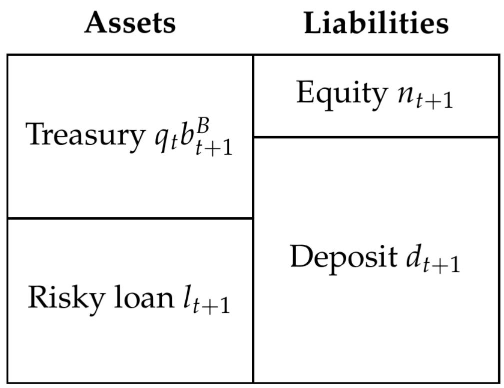
In each period t, the household chooses between consuming c_t, saving in the bank d_{t+1}, and saving in the stablecoin s_{t+1}. div_t is the dividend paid to the houshold by the bank as the household is assumed to be the owner of the bank.

Another key feature of the model, reflected in the household's budget constraint, is that holding stablecoins exposes the household to the cryptocurrency market risk z_t^C, highlighting the stablecoin's role as a gateway to the cryptocurrency market. This feature aligns with industry norms, where most major cryptocurrency exchanges require users to first convert fiat currency into stablecoins such as Tether (USDT) or USD Coin (USDC) before purchasing volatile fiat cryptocurrencies like Bitcoin or Ether.[7] In addition, this modelling choice captures the fact that individuals must hold stablecoins to engage in decentralized finance (DeFi) lending markets, as most DeFi platforms conduct transactions exclusively in stablecoin denominations.

Modeling these features of the cryptocurrency side in detail is beyond the scope of this paper, as the focus is on how risks originating in the cryptocurrency market can propagate to the traditional financial system and the real economy. Therefore, I summarize the overall risk associated with holding fiat cryptocurrencies or participating in DeFi markets as exposure to a cryptocurrency market shock z_t^C that directly affects the return on stablecoin holdings s_t.

[7] Fiat cryptocurrencies like Bitcoin and Ether are typically quoted in terms of USDT or USDC, rather than in traditional fiat currencies such as the US dollar, reinforcing the intermediary role of stablecoins in accessing the cryptocurrency market.

Figure 5: Bank Balance Sheet



Notes: This figure summarizes the asset and the liability side of the bank's balance sheet.

4.2 The Bank

The economy is populated by a continuum of identical banks. The objective of the bank is to maximize the shareholder value by maximizing the discounted sum of dividends paid out to the owners of the bank, which in my model is the household.

Figure 5 summarizes the structure of the bank's balance sheet. The asset side of the bank balance sheet is made up of two types of investment vehicles: risky loan l_t and Treasury bond b^B_t with its price q_t. The risky loan l_t can be interpreted as lending to nonfinancial firms, which use the proceeds to accumulate productive capital. Therefore, I assume that the return on l is subject to a TFP shock z^l_t, that follows the following log AR(1) process:

$$\log z^l_{t+1} = \rho \log z^l_t + \sigma^l \epsilon^l_{t+1}$$

where $\epsilon^l_{t+1} \sim N(0,1)$. The Treasury bond in the model is a one-period discount bond. When the bank buys b^B_{t+1} units of Treasuries in period t at price q_t, it receives a par payment of b^B_{t+1} in period $t+1$. Modelling only the short-term Treasuries is appropriate, as the objective of the paper is to capture the competition in the short-term bond market between agents in the traditional financial sector and those in the cryptocurrency sector.

Also note that to be consistent with real-world institutional arrangements, the bank rather than the household is the agent in the traditional economy that holds Treasury bonds in the model. The liability side of the bank is made up of its own net worth n_t, demand deposit from the household d_t.

Taking all this into account, the bank's problem is written as follows:

$$\max_{\{div_t, n_{t+1}, l_{t+1}, b^B_{t+1}, d_{t+1}\}_{t=0}^{\infty}} \mathbb{E}_0 \sum_{t=0}^{\infty} \Lambda_t div_t$$

$$\text{such that } div_t + n_{t+1} = (1-\delta)l_t + z^l_t (l_t)^\alpha + b^B_t - (1+i_t)d_t$$

$$l_{t+1} + q_t b^B_{t+1} = d_{t+1} + n_{t+1}$$

$$n_{t+1} \geq \xi l_{t+1}$$

$$\Lambda_t = \beta^t \left(\frac{c_t}{c_0}\right)^{-\gamma}$$

$$\log z^l_t = \rho^l \log z^l_t + \sigma^l \epsilon_{t+1}$$

The first constraint shows the budget constraint for the bank. In each period t, the bank decides whether to pay out the dividend div_t or accumulate its net worth n_{t+1}. The bank gets the income from the risky asset $z^l_t(l_t)^\alpha$ where α controls the decreasing return to lending. As the risky loan is analogous to productive capital, it is subject to depreciation controlled by depreciation rate δ. b^B_t denotes the payoff the bank receives in period t from its investment in Treasuries, corresponding to a purchase of $q_{t-1}b^B_t$ units in period $t-1$. The bank also has to pay interest i_t on the household's deposit holding d_t.

The second constraint ensures that the bank's balance sheet is consistent by matching its assets, composed of the risky loan l_{t+1} and Treasury holdings $q_t b_{t+1}$, with its liabilities, which include net worth n_{t+1} and demand deposits d_{t+1}. The third constraint incorporates the capital requirement regulation imposed by financial authorities, which requires that a specified portion of the bank's assets be financed with equity. In line with regulatory standards, I assume that asset classes are subject to risk-weighting in the capital calculation, meaning their contributions to the constraint vary by type. Under this framework, the risky loan l carries a full risk weight, while the Treasury bill b is treated as risk-free and given a weight of zero. Finally, Λ_t reflects the stochastic discount factor of the household who is the owner of the bank.

4.3 The Stablecoin Issuer

The stablecoin issuer serves as the medium through which the traditional economy and the cryptocurrency market is connected. While the model captures the interaction between the traditional financial system and the cryptocurrency market, it deliberately refrains from modeling the entire cryptocurrency ecosystem in detail. The focus of the analysis is on how increased stablecoin activity that is driven by demand from crypto-related applications can propagate shocks and affect the behavior of financial intermediaries in the traditional sector. Rather than specifying the full range of functions and risks associated with fiat cryptocurrencies or DeFi protocols, I take a reduced-form approach that summarizes exposure to the crypto sector through a single stochastic process.

In particular, the stablecoin issuer plays a passive role in the model. It intermediates between households and Treasury securities by issuing stablecoins fully backed by reserves of Treasuries. The issuer does not optimize over its own portfolio or engage in strategic behavior. This modelling choice allows the model to isolate the financial spillover effects of stablecoin-driven demand for safe assets without introducing additional complexity related to stablecoin issuance mechanics or crypto market microstructure. Instead, the stablecoin issuer simply meets the household's demand for stablecoins by acquiring an equivalent quantity of Treasuries, subject to a collateralization parameter θ as follows:

$$\theta q_t b^S_{t+1} = s_{t+1}$$

Based on the household's demand for stablecoins s_{t+1}, the stablecoin issuer purchases

Figure 6: Stablecoin Issuer Balance Sheet

Assets	**Liabilities**
Treasury $\theta q_t b^S_{t+1}$	Stablecoin s_{t+1}

Notes: This figure summarizes the asset and the liability side of the stablecoin issuer's balance sheet.

b^S_{t+1} units of Treasuries at price q_t. The collateralization parameter $\theta \in (0, 1]$ governs the degree to which the stablecoin issuer's assets must back its liabilities. A value of $\theta = 1$ corresponds to a fully collateralized arrangement, while values below one imply overcollateralization. In practice, most major stablecoins like Tether and USD Coin are fully collateralized, meaning that θ is close to one. However, choosing θ can serve as a policy lever through which regulators require stablecoin issuers to maintain an equity buffer, analogous to capital requirements imposed on banks. Figure 6 shows the balance sheet of the stablecoin issuer.

Exposure to the cryptocurrency market is summarized by a shock z^C_t, which enters directly into the household's return on stablecoin holdings. This reduced-form treatment reflects the empirical observation that holding stablecoins is a prerequisite for engaging in crypto-related activities, such as purchasing volatile assets like Bitcoin and Ether or participating in DeFi lending. Modeling these activities in detail is beyond the scope of this paper. Instead, I focus on the stablecoin's role as a gateway asset and investigate how this channel links risks originating in the cryptocurrency sector to prices and intermediation capacity in the traditional financial system.

4.4 The Government

The government in the model plays a passive role by supplying a fixed quantity of Treasury bills, denoted by $\bar{B}$, which are jointly demanded by the bank and the stablecoin issuer. In the baseline model, the supply of Treasuries is assumed to be exogenous and invariant to changes in financial sector conditions. This assumption allows me to isolate the general equilibrium effects of stablecoin-driven shifts in safe asset demand. In a counterfactual exercise, I relax this assumption and examine how the macro-financial implications differ when Treasury supply increases in response to additional demand from the crypto sector, as would be consistent with the policy framework proposed under the GENIUS Act.

4.5 Definition of the equilibrium

An equilibrium in this economy consists of sequences of allocations $\{c_t, d_{t+1}, s_{t+1}\}_{t=0}^{\infty}$, $\{l_{t+1}, b_{t+1}^B, n_{t+1}, d_{t+1}, div_t\}_{t=0}^{\infty}$, and $\{b_{t+1}^S, s_{t+1}\}_{t=0}^{\infty}$ and prices $\{q_t, i_t\}_{t=0}^{\infty}$, along with stochastic processes $\{z_t^C, z_t^l\}_{t=0}^{\infty}$, such that:

1. The household maximizes its expected lifetime utility subject to its budget constraint and liquidity aggregation condition, taking prices and shocks as given.

2. The bank maximizes the discounted value of dividends to its owner (the household), subject to its budget constraint and capital requirement.

3. The stablecoin issuer passively meets stablecoin demand by holding Treasury bonds to back issuance.

4. The government supplies a fixed amount of Treasuries.

$$b_{t+1}^B + b_{t+1}^S = \bar{b}$$

5. Markets clear:

   - Goods market: All resources used in consumption and investment.
   - Treasury market: Supply equals combined bank and stablecoin demand.
   - Deposits and stablecoin holdings match household portfolio choices.

6. Stochastic processes follow:

$$\log z^C_{t+1} = \rho_C \log z^C_t + \sigma^C \epsilon^C_{t+1}$$
$$\log z^l_{t+1} = \rho_l \log z^l_t + \sigma^l \epsilon^l_{t+1}$$

4.6 Equilibrium Characterization

4.6.1 Effect of the crypto sector on the Treasury market

The first order conditions to the household's problem with respect to deposit holding and stablecoin holding are as follows:

$$\begin{aligned}(c_t)^{-\gamma_c} =& \psi M_{t+1}^{-\gamma_m}(1-\omega)\left(\frac{M_{t+1}}{d_{t+1}}\right)^{1-\eta} + \beta \mathbb{E}_t[c_{t+1}^{-\gamma_c}] \\ (c_t)^{-\gamma_c} =& \psi M_{t+1}^{-\gamma_m}\omega\left(\frac{M_{t+1}}{s_{t+1}}\right)^{1-\eta} + \beta \mathbb{E}_t[c_{t+1}^{-\gamma_c}]\end{aligned}$$

Subtracting these two equations cancels out the common terms, we have:

$$\psi M_{t+1}^{-\gamma_m}\left[(1-\omega)\left(\frac{M_{t+1}}{d_{t+1}}\right)^{1-\eta} - \omega\left(\frac{M_{t+1}}{s_{t+1}}\right)^{1-\eta}\right] = 0$$

Then canceling $\psi M_{t+1}^{-\gamma_m}$, we get:

$$(1-\omega)\left(\frac{M_{t+1}}{d_{t+1}}\right)^{1-\eta} = \omega\left(\frac{M_{t+1}}{s_{t+1}}\right)^{1-\eta}$$

Finally, divide both sides:

$$\frac{(1-\omega)}{\omega} = \left(\frac{d_{t+1}}{s_{t+1}}\right)^{1-\eta} \Rightarrow \frac{s_{t+1}}{d_{t+1}} = \left(\frac{\omega}{1-\omega}\right)^{\frac{1}{1-\eta}} \tag{1}$$

From the stablecoin issuer's balance sheet, we have $s_{t+1} = \theta q_t b^S_{t+1}$. Plugging this in Equation (1) and rearranging, we have an expression of the price of the Treasury as follows:

$$q_t = \frac{d_{t+1}}{\theta b^S_{t+1}}\left(\frac{\omega}{1-\omega}\right)^{\frac{1}{1-\eta}} \tag{2}$$

which gives us our first analytical result.

Remark 1. As the cryptocurrency sector's relative share in liquidity provision ω increases, the equilibrium price of Treasuries q_t rises (i.e., yields fall). This reflects intensified competition for a fixed supply of Treasuries, as stablecoin issuers demand more Treasuries to back their liabilities.

The parameter ω captures the relative share of liquidity provision accounted for by the cryptocurrency sector, with higher values indicating a greater reliance on stablecoins as money-like instruments. As ω increases, stablecoin issuers demand more Treasuries to back their liabilities, placing upward pressure on Treasury prices in equilibrium. This model result is consistent with the empirical result I showed in Section 3, which shows that large Tether issuance events are followed by transitory increases in the prices of short-term government securities. Together, the theoretical and empirical findings highlight the transmission mechanism through which stablecoin expansion can affect traditional asset markets via reserve demand channels.

4.6.2 Effect of the crypto sector on the real economy

I examine how the growing importance of the cryptocurrency sector affects the real economy by studying its impact on banks' ability to intermediate credit. In particular, I analyze how stablecoin-driven demand for Treasuries influences banks' portfolio allocation between safe assets and risky loans in the presence of a binding capital requirement.

When the Treasury price q_t increases in response to a higher share of liquidity provision by stablecoins ω, the effect on risky lending l_{t+1} operates through two offsetting channels.

First, an increase in ω raises the demand for Treasuries as issuers acquire additional reserves to back newly minted stablecoins. The resulting price increase raises the marked-to-market value of Treasuries already held by banks, increasing net worth n_{t+1}. Higher net worth relaxes the capital requirement $\xi l_{t+1} \leq n_{t+1}$, lowers the marginal value of regulatory capital, and reduces the incentive to expand risky lending, holding all else equal.

Second, the same rise in ω widens the return spread between risky loans and Treasuries. Banks respond by reallocating their portfolios toward higher-return lending. Because risky loans carry full risk weight, this reallocation increases risk-weighted assets and tightens the capital constraint. The shadow price of capital μ_t adjusts upward, raising the effective return on lending and encouraging additional credit supply.

Whether an increase in ω ultimately expands or contracts bank lending depends on the relative strength of these two channels. The calibration in the next section quantifies each mechanism and determines the net effect on equilibrium lending.

Remark 2. As the cryptocurrency sector's relative share in liquidity provision ω increases, the Treasury price q_t rises, which loosens the capital requirement by boosting equity yet tightens it through portfolio rebalancing into risk weighted loans, so the shadow price μ_t and risky lending l_{t+1} shifts in a direction that only the calibrated model can pin down.

4.7 Implication of Relaxing the Fixed Treasury Supply Assumption

An important feature of the baseline model is the assumption that the supply of Treasuries is fixed at $\bar{B}$. Under this assumption, any increase in demand for safe assets, such as from stablecoin issuers seeking to back their stablecoins with short-term government securities, raises the equilibrium price of Treasuries and lowers their yields.

The magnitude of this adjustment, however, depends on the government's response to increased demand for Treasuries. If the Treasury adjusts its issuance to accommodate the additional demand, then prices and yields remain more stable. As a result, the increase in the shadow value of the constraint is more limited, and the effect on bank lending becomes less pronounced. In this environment, the expansion of the stablecoin sector exerts a more muted impact on the allocation of credit.

This distinction becomes particularly relevant in light of recent discussions surrounding the proposed GENIUS Act in the United States introduced in Section 2. The act would authorize federally regulated issuance of reserve-backed stablecoins by institutions including large technology firms. Under the proposed framework, reserves would be held entirely in short-term Treasuries. If implemented without a corresponding increase in Treasury issuance, this policy would create persistent upward pressure on safe asset prices, reinforcing the mechanisms described in the model. On the other hand, if Treasury supply expands to meet the stablecoin-driven demand, the macro-financial consequences become more contained. Whether the integration of stablecoins leads to financial crowding-out or is absorbed smoothly depends critically on how the supply side of the safe asset market is managed. This is one of the counterfactual experiments conducted in the subsequent quantitative analysis.

5 Quantitative Analysis

In this section, I quantify the model to investigate the implications of stablecoin demand for Treasuries on asset allocation and credit provision in the financial system and use the calibrated model to evaluate set of counterfactual scenarios.

5.1 Calibration

Table 2 shows parameter values chosen for the model. The top panel shows externally calibrated parameters. As one period in the model corresponds to a year, time discount

Table 2: Calibrated Parameters

Parameter	Target Description	Value
External		
β	Time discount factor	0.98
δ	Depreciation rate	0.1
α	Capital share	0.33
γ_c	Consumption utility function curvature	1
γ_m	Money holding utility function curvature	1
ξ	Capital requirement	0.08
θ	Stablecoin overcollateralization rate	1
$\bar{B}$	Treasury supply	1
ρ^l	Productive shock persistence	0.98
σ^l	Productive shock volatility	0.02
ρ^C	Crypto shock persistence	0
σ^C	Crypto shock volatility	0.6
Internal		
ω	Liquidity share of stablecoin	0.3411
ψ	Relative utiltiy weight on money holding	1.1288
η	EOS between deposit and stablecoin	0.8167

Notes: The top panel shows externally calibrated parameters that are chosen either to reflect standard values or average values in the financial market. The bottom panel shows internally calibrated parameters where they are chosen to match empirical moments shown in Table 3.

factor β is set to 0.98. I employ CRRA utility function to reflect the household's risk aversion toward consumption and money holding. I assume log utility for both, which means I set $\gamma_c = \gamma_m = 1$. Depreciation rate δ and capital share α parameters are chosen to follow the literature. Stablecoin overcollateralization rate is set to 1 to be consistent with the current environment of Tether fully-, but not over-collateralizing its stablecoin issuance. The capital requirement parameter ξ is chosen to be 8% to be consistent with the Basel standard. Finally, the parameters governing the TFP shock z^l follow standard values commonly used in the macroeconomic literature. In contrast, the parameters for the crypto-related shock z^C are calibrated to reflect the empirical properties of Bitcoin returns. Specifically, z^C is modeled as a white noise process with volatility calibrated to match the historical standard deviation of daily Bitcoin returns, reflecting the high-frequency and non-persistent nature of crypto market fluctuations.

The remaining parameters are internally calibrated to match key empirical moments

Table 3: Moments

Moment Description	Data	Model
E[Crypto market cap/Total bank deposit]	0.487	0.481
E[Crypto market cap/US GDP]	0.166	0.16
E[Crypto market cap/Treasury bill market cap]	0.117	0.113

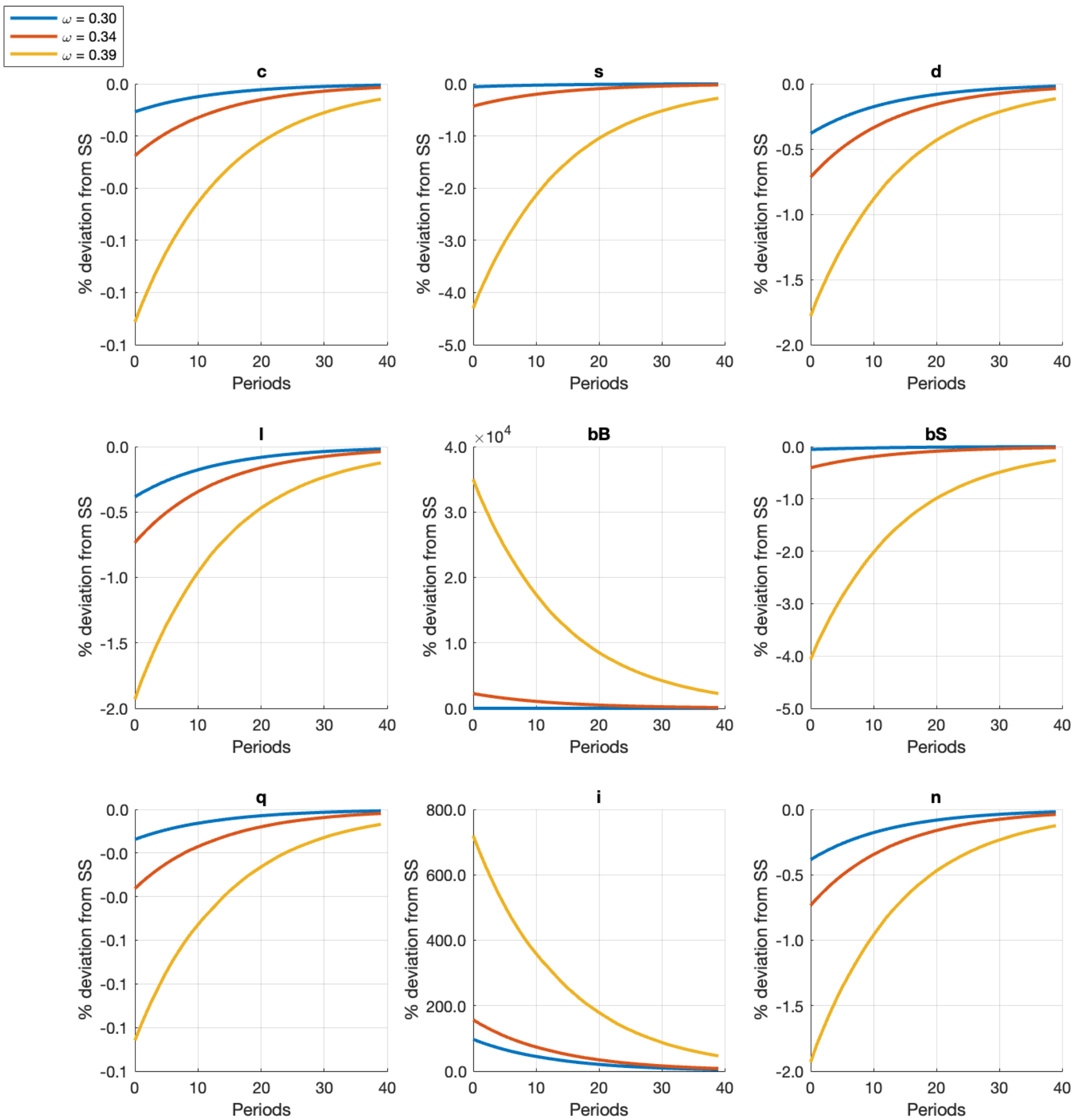
that characterize the relative size of the cryptocurrency sector in comparison to the traditional financial system and the real economy. Specifically, the target moments are summarized in Table 3. These moments are chosen to capture the scale and macro-financial relevance of the cryptocurrency sector. The ratio to bank deposits reflects the relative funding capacity of decentralized systems compared to traditional intermediaries. The ratio to GDP serves as a broad indicator of the sector's size relative to the real economy. The ratio to the Treasury bill market highlights the extent to which stablecoins and other reserve-backed instruments could influence or compete with government debt markets through reserve asset demand.[8]

5.2 Crypto Shock Transmission Mechanism

This section examines the dynamic effects of a negative crypto shock on the real economy through the stablecoin-Treasury-bank transmission channel, focusing on how the magnitude of passthrough varies with the scale of the stablecoin sector. The impulse response functions (IRFs) shown in Figure 7 trace the response of key model variables to a one-standard-deviation negative shock to stablecoin holdings under three values of the stablecoin sector's liquidity share: $\omega = 0.30$, $\omega = 0.34$, and $\omega = 0.39$. These values span a transition range identified in the steady-state simulations, with $\omega = 0.34$ calibrated to current market conditions and $\omega = 0.39$ reflecting a expansion in the crypto sector's role.

[8] The crypto market capitalization data are taken from CoinMarketCa. US bank deposit data are from the Federal Reserve's H.8 release, GDP data are from the BEA NIPA Tables, and Treasury bill market size is calculated from monthly Treasury statements (combined volume of bills outstanding).

Figure 7: Impulse Response Functions



Notes: This figure shows the percent deviation from steady state following a one-standard-deviation negative crypto demand shock for three levels of the stablecoin sector's liquidity share: μ. The responses illustrate how the macro-financial impact of a crypto shock amplifies as ω increases; i.e. when the crypto sector expands its influence.

Recall that the crypto shock enters the model through the household's budget constraints;

$$c_t + d_{t+1} + s_{t+1} = (1 + i_t)d_t + \exp(z_t^C)s_t + div_t$$

where $z_t^C = \epsilon_t^C$ as we assumed a white-noise process for z^C.

The crypto shock reduces the demand for stablecoins, leading stablecoin issuers to redeem outstanding stablecoines and liquidate part of their reserve portfolios. Because reserve holdings consist primarily of Treasuries, this results in asset sales that depress the Treasury price q_t, as seen in the bottom-left panel of Figure 7. The decline in q_t is modest when $\omega = 0.30$, but becomes substantially larger as ω increases. This reflects the growing market impact of stablecoin reserve adjustments as their presence in the Treasuryt market expands. A larger stablecoin sector generates a more pronounced sell-off, amplifying the effect of the crypto shock on safe asset prices.

The decline in Treasury prices has downstream effects on bank behavior. A lower q_t tightens the capital requirement by reducing the collateral value of banks' safe asset holdings, thereby increasing the shadow cost of capital and tightening the constraint. Furthermore, the higher return on Treasuries raises their relative attractiveness, making the bank to steer away from risky lending toward holding more Treasuries. The net result is a reduction in bank lending l_t, shown in the middle-left panel, which is steeper for higher values of ω. Like its effect on the Treasury price, the amplification is highly nonlinear: while the effect on lending is muted when $\omega = 0.30$, the same shock induces nearly twice the decline in l_t when $\omega = 0.39$.

The macroeconomic impact of the crypto shock also propagates through household consumption c_t, liquidity holdings (s_t, d_t), and bank net worth n_t. In each case, the size and persistence of the response grow significantly with ω, consistent with the nonlinear mechanism identified in the simulation. Importantly, the pass-through to consumption and deposits remains limited when the stablecoin sector is small, but becomes materially stronger as the share of liquidity provided by stablecoins increases.

Taken together, these results highlight a core message of the paper: the real effects of crypto-sector shocks are strongly state-contingent. When the stablecoin sector is small, Treasury prices and bank lending are largely insulated from crypto-related fluctuations. But once the sector surpasses a critical scale, the same shock generates disproportionately larger macro-financial disruptions.

5.3 Counterfactual Simulations

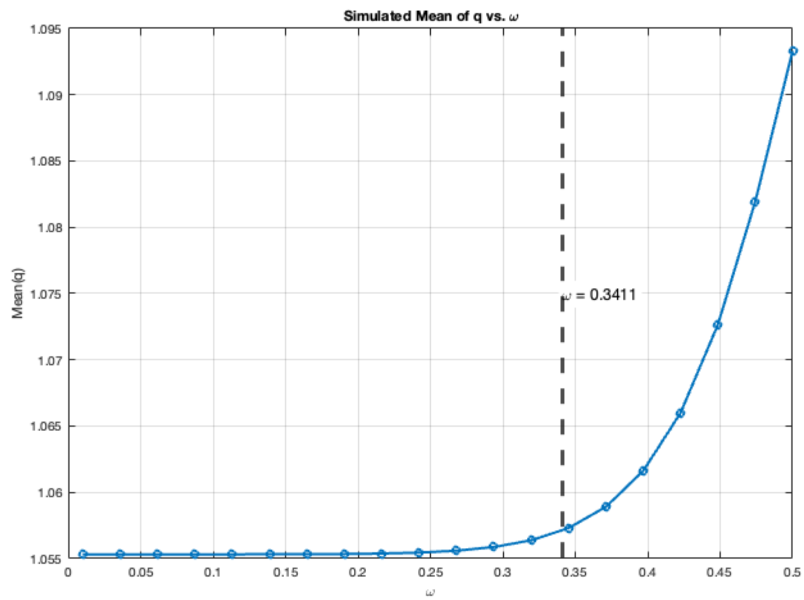
5.3.1 Expansion of the cryptocurrency sector ($\omega \uparrow$)

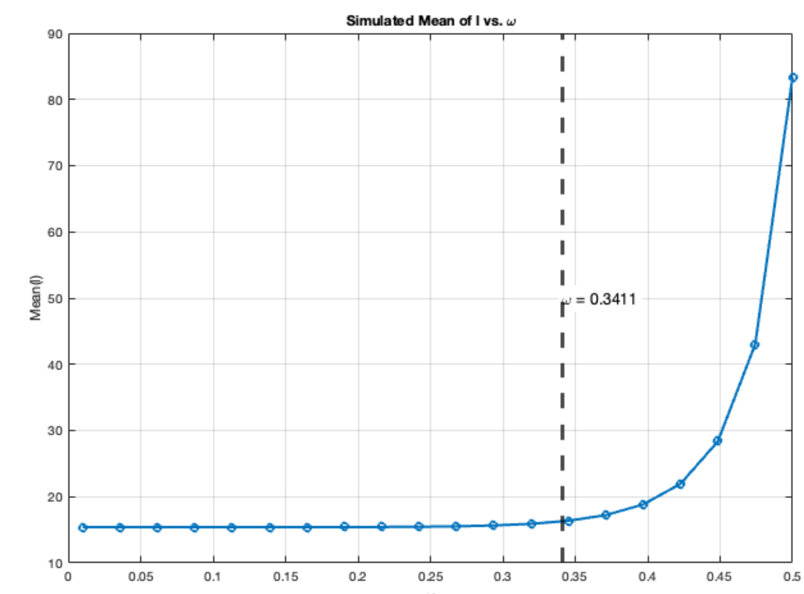
The first counterfactual simulation examines how an increase in the stablecoin sector's share of liquidity provision affects the equilibrium allocation of assets and the supply of credit to the real economy. In the model, stablecoins contribute to household liquidity through a CES aggregator that combines deposits and stablecoins, with ω denoting the weight on stablecoins.

To simulate this scenario, I vary the parameter ω from its calibrated baseline level, solve the model for each new value, simulate the model, and compute the first moments of key variables. Specifically, I focus on: (1) the Treasury price q_t to assess the effect of the growing importance of the crypto sector on the Treasury market and (2) the bank's risky lending l, to evaluate the impact on the bank's ability to intermediate funds to the real economy.

Figure 8 illustrates how key equilibrium variables respond to increases in the cryptocurrency sector's share of liquidity provision ω.The Treasury price q_t rises monotonically as ω increases, reflecting heightened demand for safe assets from stablecoin issuers who must hold Treasuries to back their liabilities. As we saw in the previous section, this effect is nonlinear: at low levels of ω, the demand is too small to affect market prices meaningfully. But once the stablecoin sector reaches sufficient scale, its Treasury pur-

Figure 8: Simulated q, l, and μ against ω





Notes: This figure plots the simulated mean of l and q across different ω values. I vary the parameter ω from its calibrated baseline level, solve the model for each new value, simulate the model, and compute the first moments of these variables. The vertical line signifies the current calibrated ω.

chases place upward pressure on prices and reduce yields in equilibrium.

As Treasury prices rise, banks' ability to satisfy capital requirements improves, since Treasuries receive preferential regulatory treatment and do not count against risk-weighted assets. This loosening of the capital requirement constraint lowers the implicit cost of lending and enables banks to reallocate balance sheet capacity toward risky loans. As a result, the volume of risky lending l_{t+1} increases more rapidly at higher values of ω producing a convex response.

As we saw in the inpulse response functions, the simulation results highlight a threshold dynamic. When the stablecoin sector is small, its impact on financial intermediation is negligible. But once it grows beyond a certain scale, the resulting demand for Treasuries induces asset price movements that alter banks' balance sheet constraints. The nonlinear increase in lending reflects this regime shift. Stablecoins, though nontraditional in form, can materially affect credit supply through their interaction with regulatory capital structures and safe asset markets. As Treasury prices rise with stablecoin demand, the bank's capital constraint becomes more or less binding depending on whether the expansion in net worth outweighs the shift in relative returns. On one hand, higher Treasury prices raise net worth and relax the capital constraint. On the other hand, they also reduce Treasury yields, increasing the relative attractiveness of risky lending, which puts pressure on the capital buffer. The simulated path of lending l_{t+1} reflects the net outcome of these offsetting forces, with the model predicting an inflection point beyond which stablecoin growth generates increasingly strong credit spillovers.

The model provides a structural foundation for interpreting the empirical findings. While the estimated price impact of Tether issuance on Treasury instruments such as the BIL ETF is currently modest, typically on the order of a few basis points following large minting events, the model demonstrates that such effects may scale nonlinearly as the stablecoin sector grows. In particular, the simulations reveal that when the stablecoin sector accounts for a small share of liquidity provision, its influence on Treasury prices and credit supply is limited. However, once a critical threshold is crossed, the marginal impact of further growth becomes increasingly pronounced.

The implication is that the current measured impact may understate the future macro-financial relevance of stablecoin issuance. If the crypto sector continues to expand in both market size and its role in liquidity provision, its demand for Treasuries will place increasing pressure on safe asset prices, with broader consequences for financial intermediation. The model highlights that the transition from limited to systemically meaningful effects is not gradual but nonlinear, meaning that the amplification of stablecoin-induced asset price effects could accelerate rapidly once the sector reaches sufficient scale. Although the observed basis-point responses appear small in the current environment, the underlying mechanism uncovered in the model suggests they may grow disproportionately larger as the sector expands. Looking at the vertical line on Figure 8, we can see that at the calibrated value of $\omega = 0.3411$, the model lies near this threshold. This suggestes that even a modest increase in the relative importance of the cryptocurrency sector from now on could lead to a disproportionately larger effect of stablecoin issuance on Treasury market conditions.

5.3.2 Increasing Treasury supply as the cryptocurrency sector expands ($\omega \uparrow$ and $\bar{B} \uparrow$)

In this section, I examine the implication of the government taking advantage of the growing cryptocurrency sector to secure a new source of structural demand for US Treasuries. To quantify the macro-financial impact of this shift, I simulate a calibrated macroeconomic model in which the government increases its supply of Treasury as the cryptocurrency sector expands. In practice, I increase the moneyness parameter ω, which captures the degree to which households view stablecoins as money-like assets, and the parameter $\bar{B}$, which governs the overall supply of Treasuries available for private intermediation.

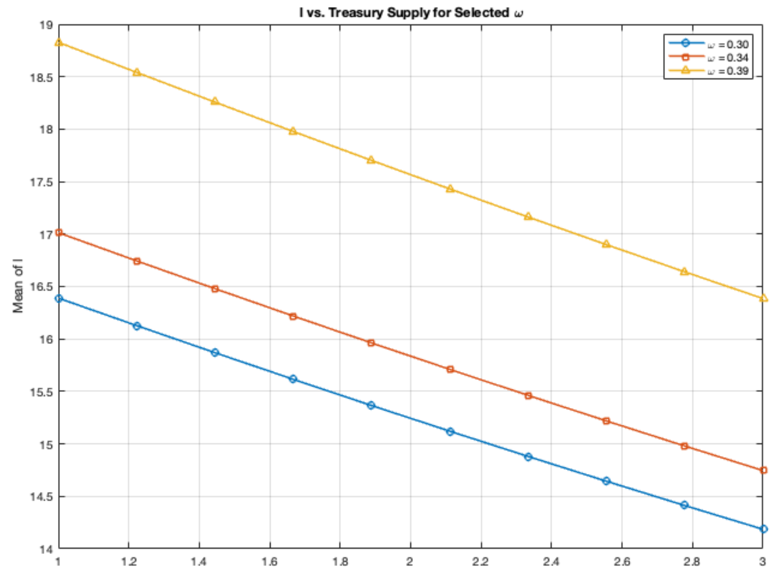
By jointly varying these two parameters, I assess how the rise of stablecoins as monetary instruments and the associated government's supply of Treasuries reshape the bank's ability to intermediate funds to the real economy. For each parameter combination, I solve the model and compute the simulated mean of risky lending l and the price of Treasuries q to trace out the general equilibrium implications of stablecoin-induced Treasury demand.

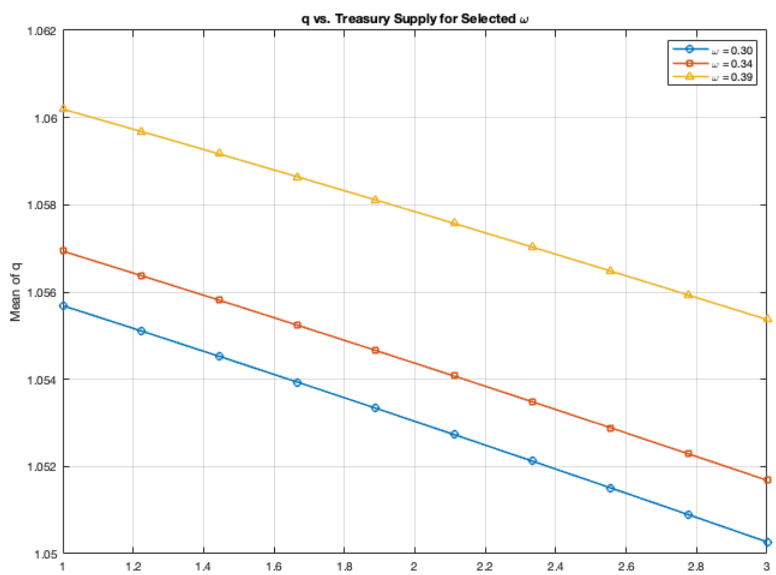
Figures 9 show the simulated result for different combinations of ω and $\bar{B}$. Several observations can be made from Figure 9. First, we can see that an increase in Treasury supply $\bar{B}$ results in a lower Treasury price and consequently a reduction in bank lending. This effect operates through the capital constraint: as more Treasuries are introduced into the economy, their marginal value as collateral declines, leading to lower equilibrium prices (q) and tightening the collateral constraint. The resulting increase in the shadow price of capital forces banks to reduce their risky lending l.

Second, consistent with the simulated result in the previous section shown in Figure 8 the figure clearly shows that the effect of increasing ω is nonlinear. Across all panels, higher values of ω that represent the degree to which households view stablecoins as money-like consistently lead to higher levels of both q and l. However, this increase is not uniform: the difference between $\omega = 0.30$ and $\omega = 0.34$ is modest, while the jump from$\omega = 0.34$ to $\omega = 0.39$ produces a significantly larger effect on both lending and Treasury prices. This convexity is consistent with a threshold mechanism in which the moneyness of stablecoins becomes macroeconomically significant only once it crosses a certain critical point.

The underlying mechanism is as follows. As ω increases, households shift more of their liquidity demand into stablecoins. To maintain the peg, stablecoin issuers must absorb a growing share of Treasuries, which increases demand for safe assets and bids up their price. A higher Treasury price q improves banks' collateral position and relaxes their capital constraint. This reduces the shadow cost μ, allowing banks to extend more credit to the risky sector. Notably, this indirect effect where the liquidity preference of households impacts bank lending via stablecoin issuers' reserve behavior becomes more

Figure 9: Simulated Result of Increasing ω and $\bar{B}$





Notes: This figure shows how the simulated mean of risky lending l and Treasury price q respond to changes in Treasury supply $\bar{B}$, for selected levels of stablecoin moneyness ω.

powerful at higher levels of ω, as seen in the widening vertical distance between the plotted lines.

The figure also highlights that while both ω and $\bar{B}$ affect lending and asset prices, their relative importance differs. Changes in $\bar{B}$ have a consistent but relatively linear and modest effect, whereas changes in ω generate highly nonlinear shifts in equilibrium outcomes. This suggests that the growth of the stablecoin sector has the potential to reshape financial market conditions even in the absence of changes to the total stock of Treasuries. The mechanism is structural: when stablecoin moneyness rises, it endogenously increases the private sector's demand for Treasuries, which feeds back into the financial system through collateral values and bank balance sheet constraints.

Together, these results point to a nontrivial macro-financial channel through which stablecoin adoption can influence interest rate spreads and credit provision—particularly when the government treats the cryptocurrency sector as a novel and increasingly important source of structural demand for Treasuries. Importantly, the effects are highly nonlinear in ω, suggesting that the macro-financial effect of stablecoins may remain limited in the early stages of adoption but can accelerate rapidly once they gain broader acceptance as monetary instruments. As stablecoins become more money-like in the eyes of households, the induced demand for Treasury collateral rises disproportionately, amplifying shifts in asset prices and loosening balance sheet constraints in the traditional financial sector.

6 Conclusion

This paper investigates a novel macro-financial transmission channel through which the growing cryptocurrency sector, particularly reserve-backed stablecoins, influences Treasury markets and credit provision. Using high-frequency issuance data from the Ethereum blockchain matched to intraday Treasury-linked asset prices, I show that large Tether minting events are followed by statistically significant increases in the price of short-term Treasuries. A complementary daily-frequency analysis confirms that these effects persist beyond the intraday window, with price impacts reverting gradually over subsequent days. Together, these results provide micro-level evidence that stablecoin issuance generates transitory but systematic demand shocks in the Treasury market.

To interpret and extend these findings, I build a quantitative macro-finance model in which stablecoin issuers hold Treasuries to back their liabilities and banks face capital constraints. The model shows that as the stablecoin sector's share of liquidity provision increases, the resulting Treasury demand raises bond prices and alters banks' balance sheet decisions. The transmission mechanism is highly nonlinear: while small stablecoin sectors have limited macro impact, beyond a certain scale, further growth amplifies pressure on safe asset markets and reshapes intermediation outcomes. Risky lending initially expands as capital constraints loosen, but can later be crowded out if Treasury prices rise sufficiently to tighten balance sheet conditions.

The framework also provides a lens through which to evaluate policy proposals such as the GENIUS Act, which would formalize the role of stablecoin issuers as structural buyers of public debt. Embedding stablecoin demand for Treasuries into the regulatory architecture could stabilize short-term funding but may also expose Treasury markets to procyclical pressures stemming from crypto sector dynamics. While the current empirical effects are modest, the model highlights that as the sector grows, these effects may become disproportionately larger. The findings underscore the importance of monitoring stablecoin adoption not only as a payments innovation, but as a potentially significant force in public debt markets and financial intermediation.

Taken together, the evidence and the model point to a novel source of macro financial instability. Today's basis point effects may persuade observers that stablecoins are too small to matter, but the model suggests that underlying transmission is inherently convex. Should the sector expand even modestly, its influence on Treasury pricing and bank intermediated credit is poised to rise at an accelerating rate, elevating stablecoin regulation and Treasury issuance strategy to first order issues for monetary and financial stability policy.

References

Abadi, Joseph and Markus Brunnermeier (2022). "Blockchain Economics". In: *working paper*.

— (2024). "Token-based platform governance". In: *Journal of Financial Economics* 162.

Barthélemy, Jean, Paul Gardin, and Benoit Nguyen (2025). "Stablecoin and the Real Economy". In: *Working Paper*.

Baur, Dirk G. and Lai T. Hoang (2021). "A crypto safe haven against Bitcoin". In: *Finance Research Letters* 38, p. 101431.

Bellia, Mario and Sebastian Schich (2020). "What Makes Private Stablecoins Stable?" In: *working paper*.

Biais, Bruno et al. (2019). "The Blockchain Folk Theorem". In: *The Review of Financial Studies* 32.5, pp. 1662–1715.

Budish, Eric (2018). "The Economic Limits of Bitcoin and the Blockchain". In: *working paper*.

Cong, Lin William, Zhiguo He, and Jiasun Li (2020). "Decentralized Mining in Centralized Pools". In: *The Review of Financial Studies* 34.3, pp. 1191–1235.

Cong, Lin William, Ye Li, and Neng Wang (2020). "Tokenomics: Dynamic Adoption and Valuation". In: *The Review of Financial Studies* 34.3, pp. 1105–1155.

Diamond, Douglas W. and Philip H. Dybvig (1983). "Bank Runs, Deposit Insurance, and Liquidity". In: *Journal of Political Economy* 91.3, pp. 401–419.

Gans, Joshua and Neil Gandal (2019). "More (or Less) Economic Limits of the Blockchain". In: *working paper*.

Gorton, Gary, Stefan Lewellen, and Andrew Metrick (2012). "The Safe-Asset Share". In: *American Economic Review* 102.3, pp. 101–06.

Gorton, Gary and Andrew Metrick (2012). "Securitized banking and the run on repo". In: *Journal of Financial Economics* 104.3, pp. 425–451.

Gorton, Gary and George Pennacchi (1990). "Financial Intermediaries and Liquidity Creation". In: *The Journal of Finance* 45.1, pp. 49–71.

Gorton, Gary, Chase Ross, and Sharon Ross (2024). "Making Money". In: *Working Paper*.

Gorton, Gary and Jeffery Zhang (2021). "Taming Wildcat Stablecoins". In: *working paper*.

Hu, Albert S., Christine A. Parlour, and Uday Rajan (2019). "Cryptocurrencies: Stylized facts on a new investible instrument". In: *Financial Management* 48.4, pp. 1049–1068.

Kim, Sang Rae (2025). "How the Cryptocurrency Market is Connected to the Financial Market". In: *Working Paper*.

Krishnamurthy, Arvind and Annette Vissing-Jorgensen (2012). "The Aggregate Demand for Treasury Debt". In: *Journal of Political Economy* 120.2, pp. 233–267.

— (2015). "The impact of Treasury supply on financial sector lending and stability". In: *Journal of Financial Economics* 118.3, pp. 571–600.

Li, Ye and Simon Mayer (2022). "Money Creation in Decentralized Finance: A Dynamic Model of Stablecoin and Crypto Shadow Banking". In: *working paper*.

Liu, Yukun and Aleh Tsyvinski (2020). "Risks and Returns of Cryptocurrency". In: *The Review of Financial Studies* 34.6, pp. 2689–2727.

Liu, Yukun, Aleh Tsyvinski, and Xi Wu (2022). "Common Risk Factors in Cryptocurrency". In: *The Journal of Finance* 77.2, pp. 1133–1177.

Makarov, Igor and Antoinette Schoar (2020). "Trading and arbitrage in cryptocurrency markets". In: *Journal of Financial Economics* 135.2, pp. 293–319.

Nagel, Stefan (2016). "The Liquidity Premium of Near-Money Assets". In: *The Quarterly Journal of Economics* 131.4, pp. 1927–1971.

Ross, Chase P. (2022). "The Collateral Premium and Levered Safe-Asset Production". In: *Working Paper*.

Saleh, Fahad (2020). "Blockchain without Waste: Proof-of-Stake". In: *The Review of Financial Studies* 34.3, pp. 1156–1190.

Stein, Jeremy (2012). "Monetary Policy as Financial Stability Regulation*". In: *The Quarterly Journal of Economics* 127.1, pp. 57–95.

Sunderam, Adi (2014). "Money Creation and the Shadow Banking System". In: *The Review of Financial Studies* 28.4, pp. 939–977.

Tether (2025). "Tether Independent Auditor's Report". In.

Appendix

A Equilibrium Conditions

- Household

$$\max \ \mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t \Big[\frac{((1+i_t)d_t + \exp(z_t^C)s_t + div_t - d_{t+1} - s_{t+1})^{1-\gamma} - 1}{1-\gamma}$$
$$+\psi v(\Big[(1-\omega)(d_{t+1})^{\eta} + \omega(s_{t+1})^{\eta}\Big]^{\frac{1}{\eta}})\Big]$$

$$-(c_t)^{-\gamma_c} + \psi M_{t+1}^{-\gamma_m}(1-\omega)\Big(\frac{M_{t+1}}{d_{t+1}}\Big)^{1-\eta} + \beta c_{t+1}^{-\gamma_c} = 0$$

$$-(c_t)^{-\gamma_c} + \psi M_{t+1}^{-\gamma_m}\omega\Big(\frac{M_{t+1}}{s_{t+1}}\Big)^{1-\eta} + \beta c_{t+1}^{-\gamma_c} = 0$$

- Bank

$$\max \mathbb{E}_0 \sum_{t=0}^{\infty} \Lambda_t \Big[(1-\delta)l_t + z_t^l (l_t)^{\alpha} + b_t^B - (1+i_t)d_t - l_{t+1} - q_t b_{t+1}^B + d_{t+1}\Big]$$
$$+ \mu_t(l_{t+1} + q_t b_{t+1}^B - d_{t+1} - \xi l_{t+1})$$

$$-1 + \mu_t(1-\xi) + \beta\Big(\frac{c_{t+1}}{c_t}\Big)^{-\gamma_c}\Big[1 - \delta + \alpha z_{t+1}^l (l_{t+1})^{\alpha-1}\Big] = 0$$

$$-q_t + q_t\mu_t + \beta\Big(\frac{c_{t+1}}{c_t}\Big)^{-\gamma_c} = 0$$

$$1 - \mu_t - \beta\Big(\frac{c_{t+1}}{c_t}\Big)^{-\gamma_c}(1 + i_{t+1}) = 0$$