

Do Public Safe Assets Still Crowd Out Private Ones?

Abstract

U.S. Treasury securities trade at a premium for their liquidity and safety attributes, which incentivizes the financial sector to write safe and liquid claims against risky and illiquid assets. Previous empirical evidence suggests that Treasury supply, as it satiates the demand for safety and liquidity, lowers that premium and crowds out lending by the financial sector. We reassess this relationship for the 1998–2023 period by solving endogeneity issues using an instrument based on intraday futures price changes around U.S. Treasury announcements. Our analysis not only confirms the presence of the crowding-out effect but also finds it to be more salient than previously estimated. We place these findings in the context of large-scale asset purchases by central banks in times of constrained monetary policy.

Introduction

The U.S. financial sector engages in liquidity transformation by writing safe and liquid claims against risky and illiquid assets. Private liquidity creation, albeit central to the financial system, threatens financial stability when it becomes excessive.

The U.S. Treasury issues the world's safest and most liquid asset. Evidence suggests that Treasury supply, as it satiates the demand for safety and liquidity, reduces the convenience yield, thereby discouraging financial intermediaries from engaging in liquidity transformation.¹ As such, Treasuries can crowd out financial sector short-term lending.

Identifying how Treasury supply affects the financial sector's ability to lend is hard:

1. The possibility for the Treasury to be somewhat discretionary by adjusting its debt issuance in response to fluctuating liquidity needs creates reverse causality.
2. Since the GFC, the Fed has actively managed debt with its LSAPs aimed at easing long-term borrowing costs. The resulting coexistence of LSAPs and debt-financed fiscal stimulus warrants caution in examining the crowding-out effect.

We tackle these identification issues by using an instrument based on intraday futures price changes around Treasury auction announcements, to isolate the effect of Treasury supply on financial sector lending.

Data & Methodology

1. Treasury supply shocks

We identify U.S. Treasury supply shocks following Phillot (2025), as k -year Treasury futures price changes within a 30-minute window around auction announcements:²

$$S_t^k = P_{t+k}^k - P_t^k$$

We aggregate these surprises across maturities (2, 5, 10, and 30 years) using PCA to assess the overall impact. This approach assumes stable demand for debt securities during the announcement period and no other significant market-moving news.

2. Financial sector balance sheet

We calculate the U.S. financial sector's net supply of short-term debt D_t by constructing an aggregate balance sheet following KVJ (2015).¹ This balance sheet includes all financial institutions that provide short-term debt, which is typically backed by loans or government bonds.

Net supply of short-term debt = total short-term debt issued by the financial sector – gov. securities holdings and other short-term assets

3. Crowding-out effect

We estimate the effect of Treasury supply on net short-term debt relative to GDP:

$$D_t = \beta_0 + \beta_1 \hat{T}_t + \beta_2' X_t + \varepsilon_t,$$

where \hat{T}_t are the fitted values from the first-stage regression of debt-to-GDP on Treasury supply shocks, cumulated over quarters:

$$T_t = \alpha_0 + \alpha_1 S_t + \alpha_2' X_t + u_t.$$

4. Large-scale asset purchases

We hypothesize that Fed's LSAPs might affect the crowding-out effect:

$$D_t = \gamma_0 + \gamma_1 \hat{T}_t + \gamma_2 L_t + \gamma_3 (\hat{T}_t \times L_t) + \gamma_4' X_t + v_t,$$

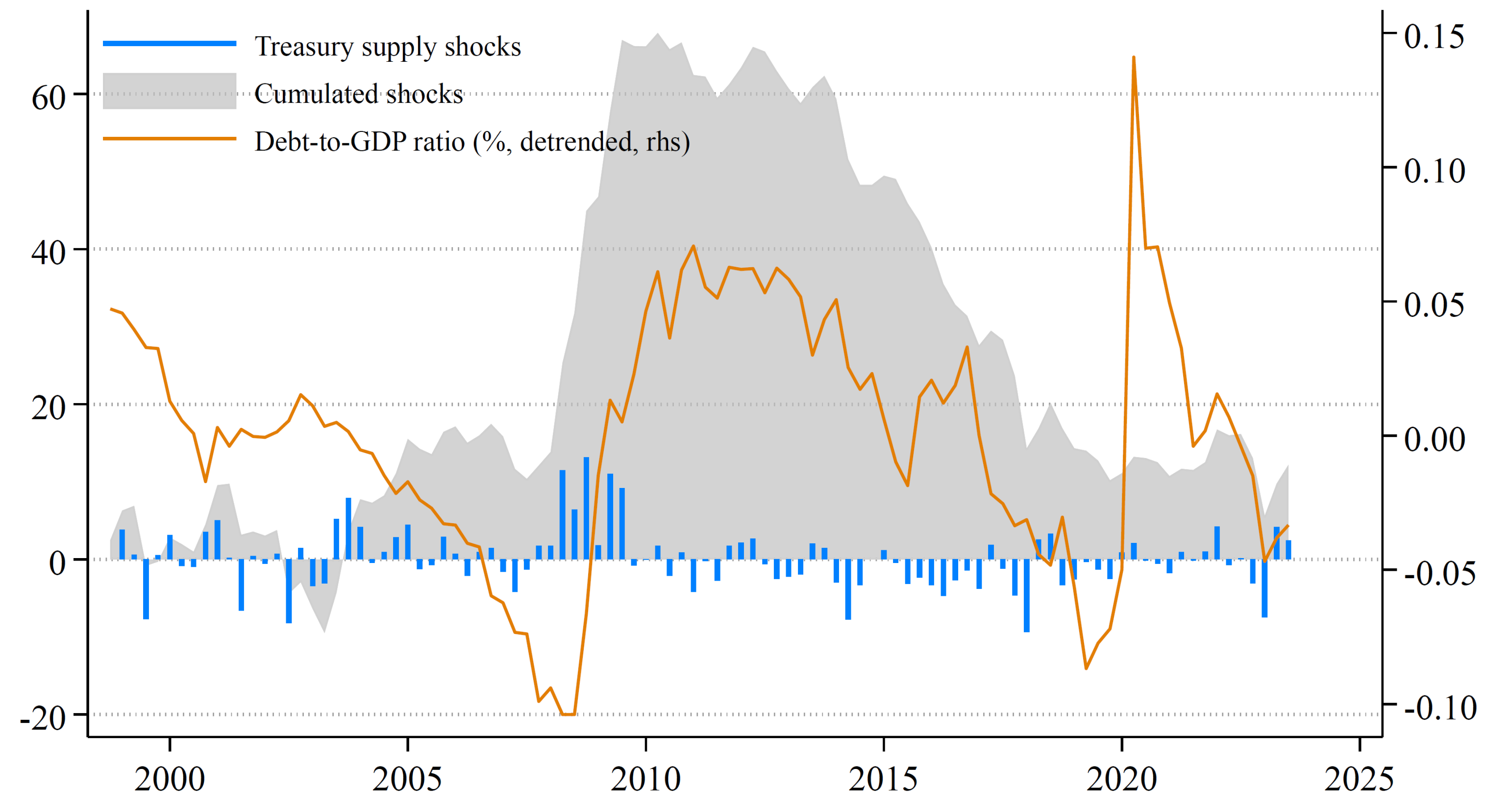
where L_t is the U.S. debt held by the Fed as a share of GDP.

Table 1. U.S. Financial Sector Balance Sheet

| Name | 1999:Q1 | 2007:Q3 | 2015:Q1 | 2023:Q3 |
|---|---------|---------|---------|---------|
| Treasury securities | 397 | 296 | 1,184 | 3,676 |
| Short-term asset | 183 | 285 | 2,572 | 3,190 |
| (Positions with Fed, currency and coins, foreign deposits, trade credit) | | | | |
| Long-term assets | 7,107 | 16,834 | 15,997 | 22,129 |
| (Depository institution loans, mortgages, consumer credit, municipal securities, agency GSE backed securities, miscellaneous, other loans advances) | | | | |
| Equity | 264 | 1,076 | 1,150 | 1,730 |
| (Corporate equities, US direct investment abroad, Mutual fund shares) | | | | |
| Overall asset | 7,950 | 18,491 | 20,903 | 30,724 |
| Short-term debt | 6,596 | 13,655 | 15,497 | 24,106 |
| (Time and saving deposits, checkable deposits and currency, money market fund shares, net interbank liabilities, Federal funds and repo, securities lending, commercial paper, taxes payable) | | | | |
| Long-term debt | 1,104 | 3,582 | 2,977 | 3,426 |
| (Corporate and foreign bonds) | | | | |
| Equity | 250 | 1,254 | 2,429 | 3,192 |
| (Investment by companies, financial sector equity) | | | | |
| Overall liability | 7,950 | 18,491 | 20,903 | 30,724 |

Source: Financial Accounts of the United States, Federal Reserve, December 2023 release

Figure 1. U.S. Treasury Supply Shocks & Debt-to-GDP ratio, 1998–2023



Results

Columns (1) and (2) of Table 2 report our β_1 estimates for OLS and IV, respectively. Our results indicate that an increase in U.S. debt-to-GDP ratio causes a significant decrease in the net supply of short-term debt issued by the U.S. financial sector. This effect is larger when debt-to-GDP is instrumented with Treasury supply shocks.

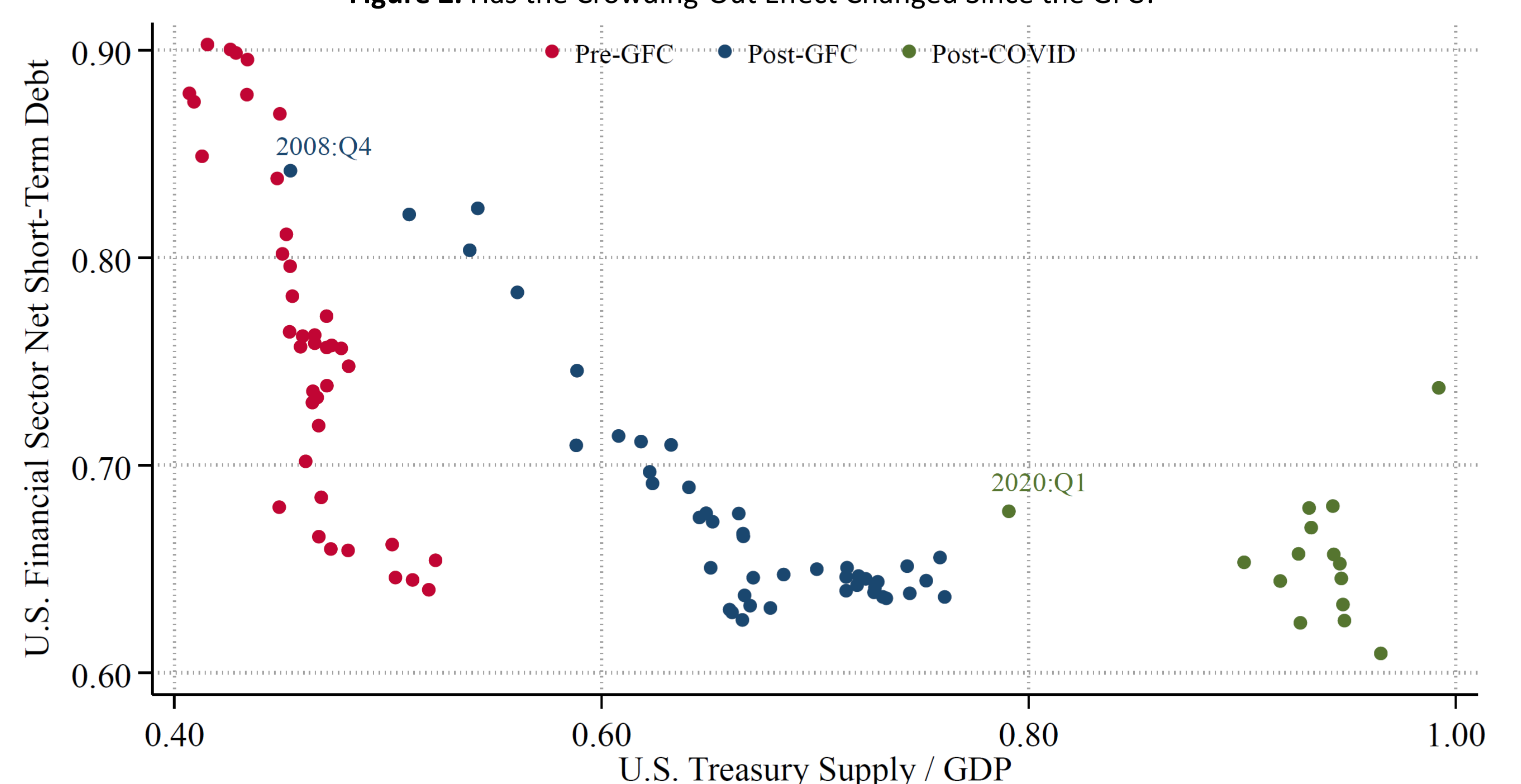
Column (3) of Table 2 reports our γ_3 IV estimate. The positive interaction between public debt and Fed holdings indicates that the detrimental effect of public debt on private short-term debt is less severe when the Fed increases its holdings.

Table 2. Do Public Safe Assets Still Crowd Out Private Ones?

| | OLS | IV | IV |
|------------------|------------------|------------------|------------------|
| Treasury supply | -0.6*** (0.2) | -1.2*** (0.2) | -1.1*** (0.1) |
| Fed holdings | | | -5.7*** (0.7) |
| Interaction | | | 7.0*** (1.0) |
| Observations | 100 | 100 | 100 |
| Effective F-stat | | 77 | 77 |

Notes: Robust standard errors in parentheses. *** p<0.001. Weak IV test: critical value = 46 ($\alpha = 0.01$, bias < 5%). Controls: Fed funds rate, Treasury yields & term premia, stock prices, CPI, government spending, quadratic trend.

Figure 2. Has the Crowding-Out Effect Changed Since the GFC?



Conclusions

Our analysis confirms the crowding out effect. Increasing U.S. government debt by 1% of GDP leads to a decrease in short-term lending by the U.S. financial sector of 1.2% of GDP. This effect is larger than previously estimated.

We find a structural break in the relationship since the GFC, and preliminary evidence suggests Fed's LSAPs mitigate the crowding-out effect. Next steps include exploring this interaction further by identifying exogenous changes to Fed's policies.

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References

1. Krishnamurthy & Vissing-Jorgensen (2015). The impact of Treasury supply on financial sector lending and stability. *Journal of Financial Economics*.
2. Phillot, Maxime (2025). US Treasury Auctions: A High Frequency Identification of Supply Shocks. *American Economic Journal: Macroeconomics*.