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Rashad Ahmed, Iñaki Aldasoro

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Are stablecoins and bank deposits substitutes?

Rashad Ahmed[*] Iñaki Aldasoro[†]

March 2026

Abstract

We test whether stablecoins and bank deposits act as substitutes. Using local projections fit to weekly U.S. data from January 2019 to June 2025, we find that deposit rate increases predict slower stablecoin market capitalization growth. To address endogeneity, we exploit a nonlinearity in deposit rate pass-through. Unlike other money market rates, banks reprice deposits more aggressively once the federal funds rate exceeds approximately 3%. Against average ten-week stablecoin growth of 15%, ordinary least squares estimates imply a reduction of roughly 3 percentage points per basis point of deposit repricing, while instrumental variable estimates are roughly three times larger and pass a bitcoin placebo test. Effects are stronger for Circle's USDC than for Tether's USDT, consistent with USDC's closer ties to U.S. depositors. Cross-sectional variation in repricing across deposit tiers provides independent supporting evidence of substitution.

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[*] Andersen Institute for Finance and Economics, `rashad.ahmed@andersen.com`.

[†] Bank for International Settlements (BIS), `inaki.aldasoro@bis.org`. Corresponding author. We thank Jon Frost for helpful comments and suggestions. The views expressed here are those of the authors only and not necessarily those of the Andersen Institute or affiliated institutions, nor the BIS.

1 Introduction

Stablecoins and non-maturity bank deposits share fundamental features: they strive to offer stability, are redeemable on demand, serve or aspire to serve as payment instruments, and pay no or little interest. This overlap has raised the concern that stablecoins could compete with deposits for funding, eroding banks' low-cost funding base and impairing credit intermediation. Recent work discusses this possibility (Liao and Caramichael, 2022; Coste, 2024; Cong, 2025; Wang, 2025; Ahmed and Aldasoro, 2026a) and survey evidence yields mixed conclusions (Ahmed et al., 2025). However, empirical evidence remains scarce.

This paper provides a direct empirical test. A simple portfolio choice model in which stablecoins and deposits provide overlapping convenience services rationalizes two intuitions: deposit rate increases should reduce stablecoin holdings conditional on market rates, and this substitution effect should be stronger at higher deposit rates. We use weekly U.S. data for January 2019–June 2025 to estimate local projections (Jordà, 2005) of logged stablecoin market capitalization on deposit rate changes, controlling for the federal funds rate, Treasury rates, the U.S. dollar index, bitcoin prices, and the Chicago Board Options Exchange Volatility Index (VIX). These controls absorb the opportunity cost of holding non-interest-bearing assets, exchange rate movements, crypto market conditions, and broader financial volatility.

The key challenge is endogeneity. If stablecoin growth draws funds from banks and banks raise deposit rates to retain funding, this reverse causality biases ordinary least squares (OLS) estimates toward zero, working against finding substitution. To address endogeneity, we exploit a nonlinearity in deposit rate pass-through. Below approximately 3%, deposit rates barely respond to federal funds rate changes; above this threshold, they adjust more aggressively as competitive pressure on banks intensifies. This state-dependent pass-through in the form of nonlinear *deposit betas* is well documented and became particularly salient during the most recent monetary tightening cycle (Drechsler et al., 2023; Greenwald et al., 2023; Kang-Landsberg et al., 2023; Emin et al., 2025). Crucially, the kink is specific to deposit rates; Treasury bill rates adjust linearly across all rate levels.

We present three sets of results. First, OLS estimates with controls show that deposit rate increases predict slower stablecoin market capitalization growth. Second, instrumenting with the nonlinear deposit rate kink using an instrumental variable (IV) strategy amplifies the estimates roughly threefold, consistent with attenuation bias and the instrument concentrating identification in the high-rate period where substitution incentives are strongest. Against unconditional average ten-week stablecoin growth of 15%, OLS estimates imply a growth reduction of roughly 3 percentage points per basis point of deposit repricing. A bitcoin placebo test confirms that the

IV does not predict bitcoin returns, ruling out potentially confounding crypto cycles. Disaggregating by stablecoin, the effect is stronger for Circle's USDC than for Tether's USDT, consistent with USDC's closer ties to U.S. institutional users. Third, cross-sectional variation in repricing across deposit tiers provides independent supporting evidence of substitution. The results are robust to excluding the Silicon Valley Bank episode, including a time trend, and varying the kink threshold.

We contribute to the literature on stablecoin-bank interactions (Liao and Caramichael, 2022; Coste, 2024; Wang, 2025) by providing, to our knowledge, the first empirical evidence that deposit rate changes affect stablecoin flows. In a companion paper, Ahmed and Aldasoro (2026b) document that stablecoin inflows compress short-term Treasury yields, suggesting that stablecoins interact with traditional financial markets through multiple channels.

2 A simple model of substitution

Consider an agent who allocates wealth W across three assets: stablecoins (S, yield zero, crypto convenience), non-maturity deposits (D, yield r^d, payment convenience), and Treasury bills (B, yield r^m, no convenience). The agent maximizes

$$\max_{S,D,B} \quad r^d D + r^m B + V(S,D), \qquad \text{s.t.} \quad S + D + B = W, \tag{1}$$

where $V(S,D)$ captures the convenience yield from holding money-like assets. We assume V is strictly concave in (S,D) with $V_S, V_D > 0$.

The key modeling choice is $V_{SD} < 0$: an increase in deposits reduces the marginal convenience value of stablecoins. This captures the idea that both instruments serve partially overlapping functions (payments, liquidity, store of value). We refer to $V_{SD} < 0$ as *substitutability*. An alternative view, where stablecoins serve primarily crypto-ecosystem functions (decentralized finance (DeFi) collateral, exchange settlement) rather than deposit-like functions, would imply $V_{SD} \approx 0$ or even $V_{SD} > 0$. The sign is ultimately an empirical question.

Assuming an interior solution, the first-order conditions are $V_S = r^m$ and $V_D + r^d = r^m$. Totally differentiating and solving by Cramer's rule, with $\Delta \equiv V_{SS}V_{DD} - V_{SD}^2 > 0$:

Prediction 1 (Substitution). $\partial S/\partial r^d|_{r^m} = V_{SD}/\Delta < 0$. An increase in the deposit rate, holding the market rate fixed, reduces stablecoin holdings.

Prediction 2 (Opportunity cost). $\partial S/\partial r^m|_{r^d} = (V_{DD} - V_{SD})/\Delta < 0$. An increase in the market rate reduces stablecoin holdings through the opportunity cost channel, absorbed by the regression controls (see Appendix A).

Prediction 3 (State-dependent substitution). A heterogeneous-agent extension (Appendix A) shows that the aggregate substitution effect is stronger when deposit rates are higher: as the deposit rate rises, the switching threshold moves into a region where more agents are on the margin, so the same basis point increase causes more substitution. This rationalizes the OLS-to-IV amplification.

3 Data

We assemble a weekly dataset covering January 2019 through June 2025 (339 observations).[1]

Our outcome variable is log aggregate reserve-backed stablecoin market capitalization from CoinMarketCap, comprising USDT, USDC, and other reserve-backed tokens.[2] The key regressor is the weekly change in the national non-maturity deposit rate, ΔDR_t, constructed as the simple average of six national-level deposit rate series from RateWatch (accessed via Haver Analytics):[3] savings deposits (balance of \$2,000 or more), preferred money market deposit accounts (MMDA) with balances of \$25,000 and \$10,000, and standard MMDA with balances of \$2,000, \$10,000, and \$25,000.

Control variables include the midpoint of the lower and upper federal funds rate targets, the 3-month Treasury bill rate, the 10-year Treasury yield (all from FRED), bitcoin prices (from Coinbase), the CBOE VIX index, and the nominal broad trade-weighted U.S. dollar index. The 10-year yield, bitcoin prices, and the VIX control for crypto and financial market conditions along with the broader investment opportunity set available to stablecoin holders. The dollar index controls for exchange rate movements that may independently affect demand for dollar-denominated stablecoins, particularly for foreign holders. Figure 1 plots the data. Stablecoin market capitalization grew from under \$5 billion in 2019 to over \$220 billion by mid-2025, dominated by USDT and USDC (left panel). The right panel shows interest rates alongside the individual deposit rate series. The T-bill rate tracks the federal funds rate nearly one-for-one; pass-through to deposit rates is incomplete, consistent with deposit rate stickiness (Drechsler et al., 2017).[4]

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[1] The sample starts in 2019, when stablecoin market capitalization first exceeded \$1 billion on a sustained basis. Earlier observations (2017–2018) contain negligible stablecoin market cap and contribute no useful identifying variation.

[2] The "other" category includes reserve-backed stablecoins TUSD, BUSD, FDUSD, PYUSD, and RLUSD. Algorithmic stablecoins (e.g., TerraUSD (UST) prior to its collapse) are excluded. For reserve-backed stablecoins trading at par, market capitalization closely tracks total tokens outstanding.

[3] Haver Analytics suspended its publication of deposit rate data in June 2025 to review methodological changes in RateWatch's national deposit rate calculations, thereby marking the end of our dataset.

[4] On average, only 6-8% of federal funds rate changes are passed on to demand deposits (Emin et al., 2025), and bank surveys report that 10-15% is passed through to savings deposit rates (OCC Interest Rate Risk Statistics Report (Fall 2025)).

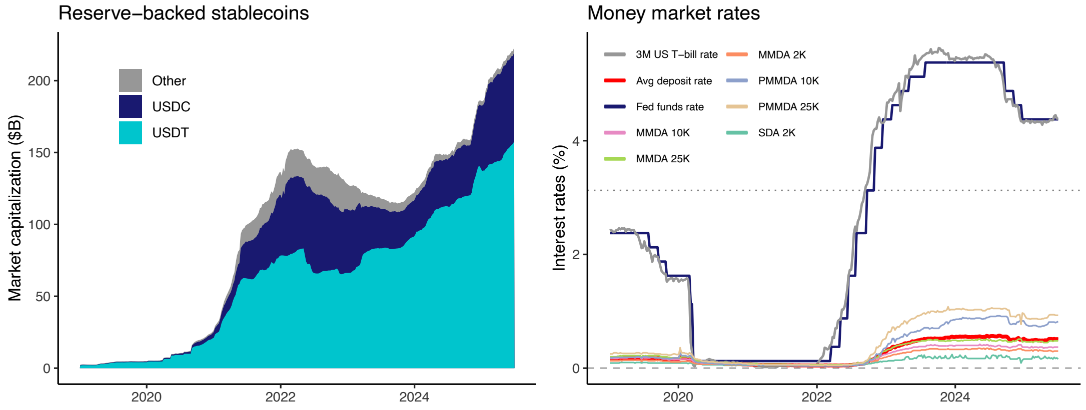

Figure 1: Left: reserve-backed stablecoin market capitalization by issuer (USDT, USDC, and other). Right: federal funds rate, 3-month T-bill rate, average non-maturity deposit rate (red line), and individual deposit rates by tier. Sample: January 2019 – June 2025. The dotted horizontal line indicates a federal funds target rate mid-point of 3.125%.

Table 1: Summary statistics (January 2019 – June 2025)

Variable	T	Mean	St. Dev.	Min	Max
Stablecoin market cap ($B)	339	95.42	66.69	2.40	222.71
Federal funds rate (%)	339	2.60	2.11	0.12	5.38
Deposit rate (%)	339	0.26	0.20	0.05	0.57
Δ Deposit rate (pp)	338	0.10	0.81	−3.50	3.50
US 3-month T-bill rate (%)	339	2.64	2.16	0.01	5.63
US 10-year Treasury yield (%)	339	2.74	1.34	0.55	4.93
Bitcoin price ($)	339	36,420	27,465	3,438	107,794
VIX index (%)	339	20.22	7.73	11.93	66.04
US dollar index	339	112.09	5.12	101.59	124.58

4 Empirical strategy

4.1 Local projection specification

We estimate local projections of the form:

$$\ln SC_{t+h} - \ln SC_{t-1} = \alpha_h + \beta_h \, \Delta DR_t + \sum_{l=1}^{4} \delta_{h,l} \Delta DR_{t-l} + \sum_{l=0}^{4} \gamma_{h,l} \mathbf{X}_{t-l} + \sum_{l=1}^{4} \omega_{h,l} \Delta \ln SC_{t-l} + e_{t+h}, \tag{2}$$

where $\ln SC_{t+h}$ is logarithm of stablecoin market capitalization for for horizons $h = 0, 1, \ldots, 10$ weeks. The treatment variable is the contemporaneous change in the non-maturity deposit rate, $\Delta DR_t = DR_t - DR_{t-1}$. Lags one through four of ΔDR_t absorb persistence in deposit rate dynamics.[5] The vector $\mathbf{X}_t$ contains first differences of the federal funds rate, the 3-month T-bill rate, the 10-year Treasury yield, the log bitcoin price, the log U.S. dollar index, and the VIX. The response is normalized to a 1 basis point deposit rate change (approximately 1.2 standard deviations of ΔDR_t). Standard errors use the Newey and West (1987) estimator with bandwidth h.[6] The full sample yields 324 effective observations at $h = 10$ after accounting for leads and lags. Online Appendix OA.A reports coefficient estimates at selected horizons.

4.2 Identification

The OLS estimate of β_h may not admit a causal interpretation. A key concern is reverse causality: if stablecoin growth draws funds from banks and banks respond by raising deposit rates, this generates a positive bias that works *against* finding a negative substitution effect. The OLS estimates may therefore understate the true effect. We adopt an IV strategy that exploits the nonlinear pass-through of the federal funds rate to deposit rates.

The deposit rate pass-through kink. As documented in Figure 2, the pass-through from the federal funds rate to deposit rates is strongly state-dependent. Below approximately 3%, banks pass through very little of any rate change. Above this threshold, pass-through increases sharply as depositors' outside options become salient, intensifying competitive pressure (Drechsler et al., 2017). As such, the pass-through of interest rates to deposit rates tends to increase with the level of interest rates (Drechsler et al., 2023; Greenwald et al., 2023; Emin et al., 2025). By contrast, the pass-through to the T-bill rate is approximately linear across all rate levels (Figure 2, right panel). The nonlinearity is specific to deposit markets.

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[5] The controls $\mathbf{X}_t$ enter at lags 0 through 4 because these variables are determined in financial markets and can affect stablecoin holdings contemporaneously. The deposit rate change, by contrast, enters with its own contemporaneous value and four additional lags because deposit repricing is sluggish and its effects may unfold over several weeks.

[6] At horizon h, the overlapping dependent variable induces a moving average of order h (MA(h)) structure in the residuals, making bandwidth h appropriate (Plagborg-Møller and Wolf, 2021). At $h = 0$ (no overlap), this reduces to heteroskedasticity-robust standard errors.

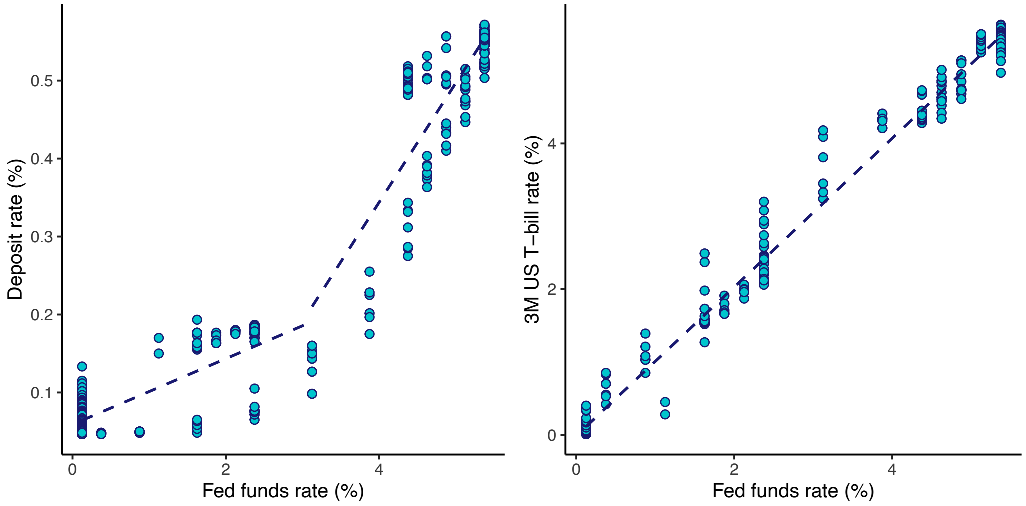

Figure 2: The federal funds rate vs. deposit rates (left) and T-bill rates (right). Dashed lines show piecewise OLS fits above and below a federal funds rate of 3.125%. Sample: January 2019 – June 2025.

First-stage specification. We formalize the nonlinearity through a first-stage regression:

$$\Delta DR_t = a_1 + a_2 \, \mathbf{1}_{[FFR_{t-4} \geq 3.125\%]} + \sum_{l=0}^{4} B_l \, \Delta FFR_{t-l} + \sum_{l=0}^{4} C_l \, \Delta FFR_{t-l} \times \mathbf{1}_{[FFR_{t-4} \geq 3.125\%]} + \varepsilon_t, \tag{3}$$

where the interaction terms allows the pass-through of the federal funds rate to deposit rates to differ across regimes. The regime indicator uses the four-week lagged federal funds rate to reflect the delay in deposit repricing decisions. The threshold of 3.125% corresponds to the midpoint of the 3.00–3.25% Federal Open Market Committee (FOMC) target range; Online Appendix OA.D shows robustness to alternative thresholds. The first-stage F-statistic is 9.78 with an adjusted R^2 of 0.22. In the second stage, we replace the contemporaneous deposit rate change with its first-stage fitted value; lags ΔDR_{t-1} through ΔDR_{t-4} enter as predetermined controls.

The main threat to the exclusion restriction is that the high-rate period coincides with a distinct phase of the economic and crypto market cycles, so the kink-specific variation may capture factors other than deposit repricing. The controls for bitcoin prices, the U.S. dollar index, the VIX, and Treasury rates absorb the major channels through which the rate environment affects crypto markets independently of deposit substitution. The bitcoin placebo test (below) provides a direct check on whether the instrument predicts broad crypto returns.

Bitcoin placebo test. We assess the concern of a concurrent crypto cycle within the high interest rate regime directly with a placebo replacing the stablecoin outcome with bitcoin price changes:

$$\begin{aligned}\ln BTC_{t+h} - \ln BTC_{t-1} = \alpha_h + \beta_h\, \Delta DR_t + \sum_{l=1}^{4} \delta_{h,l} \Delta DR_{t-l} + \sum_{l=0}^{4} \gamma_{h,l} \mathbf{X}_{t-l} \\ + \sum_{l=1}^{4} \omega_{h,l} \Delta \ln BTC_{t-l} + e_{t+h},\end{aligned} \tag{4}$$

where $\mathbf{X}_{t-l}$ includes the same controls as equation (2) except for bitcoin, which is now the dependent variable. If deposit rates affect stablecoins through substitution, they should not predict bitcoin, which due to its volatile nature carries no money-like convenience yield. An indirect channel exists, however, if stablecoin outflows reduce crypto-market liquidity, but this would predict *negative* bitcoin returns, whereas a confound from the rate cycle would predict positive returns.

Cross-sectional variation. As an independent test, we exploit differential repricing across deposit tiers. When banks raise preferred MMDA rates (≥\$25,000) more than savings deposit rates (≥\$2,000), the resulting spread captures competitive deposit pricing orthogonal to aggregate rate movements. We replace deposit rate changes (ΔDR_{t-l}, for $l = 0, ..., 4$) in Equation (2) with changes in the deposit rate spread between preferred MMDA (≥\$25,000) and savings (≥\$2,000). The regression controls for federal funds rate changes, which absorbs the correlation arising from differential deposit betas across tiers.

5 Results

5.1 Full-sample estimates

Figure 3 presents the full-sample results. The OLS estimates (left panel) show a statistically significant negative response: a 1 basis point deposit rate increase reduces ten-week stablecoin market capitalization growth by roughly 3 percentage points, from an unconditional average of about 15% to about 12%.

After instrumenting (center panel), the estimated reduction in ten-week growth is roughly 9 percentage points per basis point, implying that growth slows from 15% to about 6%. The amplification relative to OLS is consistent with attenuation bias in weekly deposit rate changes and the instrument concentrating identification in the high-rate period where substitution incentives are strongest (Prediction 3).

The right panel reports the bitcoin placebo. The IV does not predict statistically significant bitcoin returns, with the 95% confidence band spanning zero throughout the horizon. This rules out the concern that the instrument captures variation correlated with the broad crypto cycle rather than the deposit-stablecoin substitution channel.

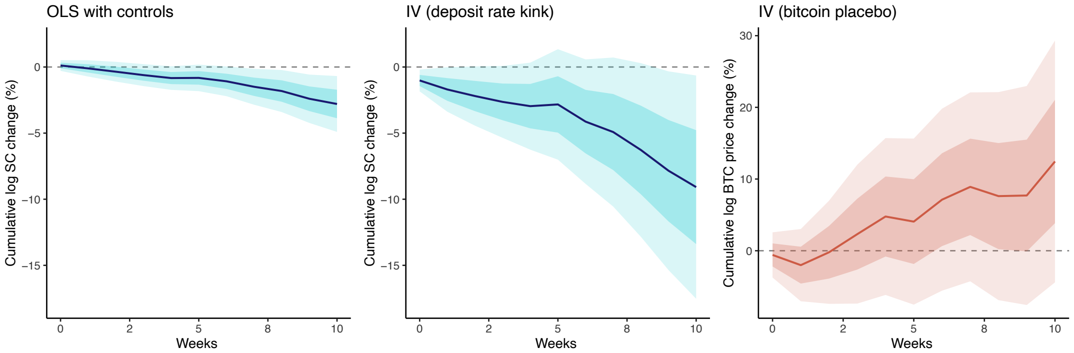

Figure 3: Full-sample results. Cumulative response to a 1 bps deposit rate increase. Left: OLS with controls. Center: IV using the deposit rate kink. Right: bitcoin placebo for the IV specification. Darker and lighter shaded regions correspond to 68% and 95% Newey-West confidence bands (bandwidth h).

5.2 Disaggregation and cross-sectional evidence

We estimate the OLS specification separately for USDT and USDC. Figure 4 reports the results. The effect is substantially stronger for USDC (roughly -5% at $h = 10$) than for USDT (roughly -2% at $h = 10$). This is consistent with USDC's greater use among U.S. institutional and DeFi users, who are more likely to substitute between deposits and stablecoins. USDT, which is predominantly used in offshore activities or in developing economies, responds more weakly but still in the predicted direction.

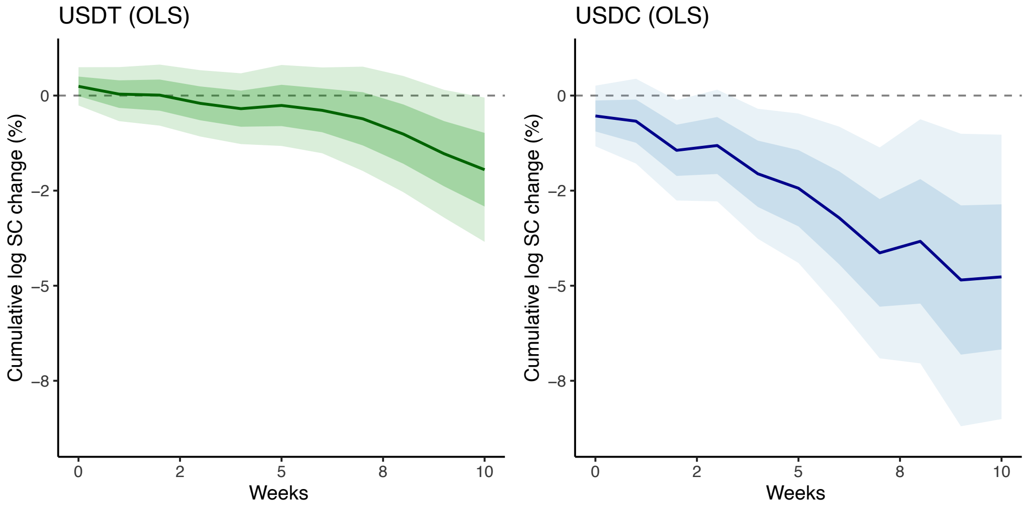

Figure 4: OLS estimates by stablecoin. Left: USDT. Right: USDC. Darker and lighter shaded regions correspond to 68% and 95% Newey-West confidence bands (bandwidth h).

Figure 5 presents the OLS specification using the cross-sectional spread instead of the average deposit rate. When preferred MMDA rates rise relative to savings deposit rates, stablecoin market capitalization declines (roughly -0.7% at $h = 10$). The bitcoin placebo is statistically insignificant. The magnitudes are much smaller than the IV estimates because the spread captures only the cross-sectional component of deposit repricing; the common rate movement is absorbed by the controls. The consistent negative sign across these independent sources of variation strengthens the case for substitution.

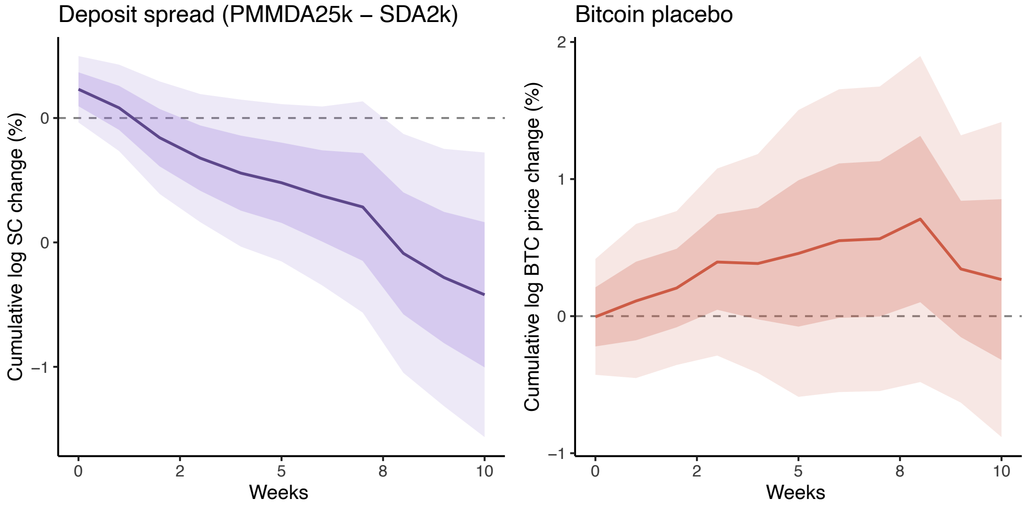

Figure 5: Cross-sectional results. Left: response to deposit rate spread (PMMDA25k − SDA2k). Right: bitcoin placebo. Darker and lighter shaded regions correspond to 68% and 95% Newey-West confidence bands (bandwidth h).

5.3 Magnitudes and caveats

The coefficients represent percentage point reductions in cumulative stablecoin market capitalization growth, not level declines. The average 10-week cumulative log change is 15%. The OLS estimate of roughly -3 percentage points per basis point implies that a 1 basis point deposit rate increase reduces ten-week growth from 15% to about 12%. The IV estimate of roughly -9 percentage points implies a reduction to about 6%. Growth slows but does not necessarily reverse. Figure 6 replots the OLS and IV estimates from Figure 3 against average cumulative growth at each horizon, illustrating that stablecoin market capitalization continues to grow after a deposit rate increase, but at a slower pace. To fully offset average ten-week growth under the OLS estimate would require approximately a 5 basis point one-week deposit rate increase, a 6-standard-deviation event. During the 2022–2023 tightening cycle, stablecoin market capitalization did fall by roughly 30%, consistent with the gradual accumulation of deposit repricing effects alongside other adverse forces (Federal Reserve rate hikes, Terra collapse, FTX).

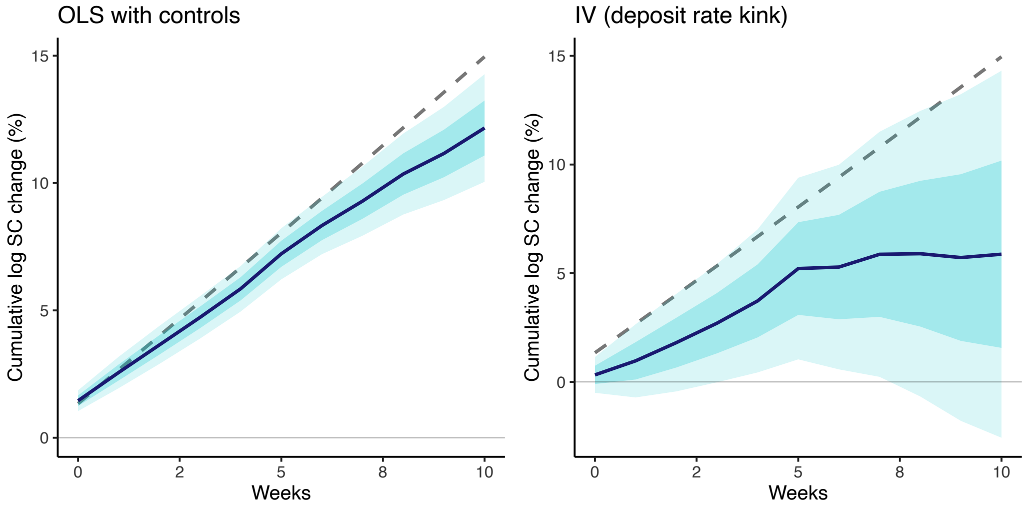

Figure 6: OLS (left) and IV (right) estimates plotted against average cumulative stablecoin growth (dashed line). The solid line and shaded bands show the implied growth path after a 1 basis point deposit rate increase. Darker and lighter shaded regions correspond to 68% and 95% Newey-West confidence bands (bandwidth h).

Several additional considerations bear on the interpretation. First, the first-stage F-statistic of 9.78 is close to but below the conventional Stock and Yogo (2005) threshold of 10, suggesting some instrument weakness. Second, our analysis uses aggregate data and cannot distinguish whether substitution operates through retail depositors, institutional investors, or crypto-native users. Third, the sample spans a single high-rate episode (2022–2025), a constraint imposed by the availability of the data. Fourth, a small but growing segment of yield-bearing stablecoins and tokenized money market funds may alter the substitution margin over time. Fifth, our identification strategy captures the effect of deposit rate *changes*, not levels; the policy implications should be understood accordingly. Additional robustness checks are reported in the Online Appendix, including sensitivity to the Silicon Valley Bank (SVB) episode (Online Appendix OA.B), a linear time trend (Online Appendix OA.C), and alternative threshold values (Online Appendix OA.D).

6 Conclusion

This paper asks whether stablecoins and bank deposits are substitutes. We find consistent evidence that they are. Deposit rate increases predict stablecoin outflows across OLS with controls, an IV strategy exploiting the nonlinear pass-through kink, and a cross-sectional specification using differential repricing across deposit tiers. The effect is stronger for USDC than for USDT and absent for bitcoin. For monetary policy, the results point to a novel transmission channel: the pass-through of policy rates to deposit rates has a ripple effect on the allocation of funds between the banking system and the stablecoin ecosystem. For stablecoin regulation, the substitutability we document suggests that policymakers should consider how regulatory frameworks interact with bank funding conditions.

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A Model details

A.1 Comparative statics derivations

Totally differentiating the first-order conditions $V_S = r^m$ and $V_D + r^d = r^m$:

$$\underbrace{\begin{pmatrix} V_{SS} & V_{SD} \\ V_{DS} & V_{DD} \end{pmatrix}}_{\equiv \mathbf{H}} \begin{pmatrix} dS \\ dD \end{pmatrix} = \begin{pmatrix} dr^m \\ dr^m - dr^d \end{pmatrix}. \tag{5}$$

Let $\Delta \equiv V_{SS}V_{DD} - V_{SD}^2 > 0$. Setting $dr^m = 0$:

$$\left.\frac{\partial S}{\partial r^d}\right|_{r^m} = \frac{V_{SD}}{\Delta} < 0, \qquad \left.\frac{\partial D}{\partial r^d}\right|_{r^m} = -\frac{V_{SS}}{\Delta} > 0. \tag{6}$$

Setting $dr^d = 0$:

$$\left.\frac{\partial S}{\partial r^m}\right|_{r^d} = \frac{V_{DD} - V_{SD}}{\Delta} < 0, \qquad \left.\frac{\partial D}{\partial r^m}\right|_{r^d} = \frac{V_{SS} - V_{SD}}{\Delta}. \tag{7}$$

The sign of the last expression requires $|V_{SS}| > |V_{SD}|$ (own-effects dominate cross-effects) for deposits to decline when the market rate rises.

Why conditioning on r^m matters. The unconditional derivative confounds two channels:

$$\frac{dS}{dr^d} = \underbrace{\left.\frac{\partial S}{\partial r^d}\right|_{r^m}}_{\text{substitution }(<0)} + \underbrace{\left.\frac{\partial S}{\partial r^m}\right|_{r^d} \cdot \frac{dr^m}{dr^d}}_{\text{opportunity cost }(<0)}. \tag{8}$$

Both terms are negative but reflect different channels. The regression controls for r^m (through ΔFFR, ΔT-bill, Δ10Y) shut down the second channel.

A.2 Parametric example

With a quadratic convenience function $V(S, D) = a_s S - \frac{b_s}{2} S^2 + a_d D - \frac{b_d}{2} D^2 - c\,SD$ where $c > 0$ governs substitutability, the comparative statics become $\partial S^* / \partial r^d = -c/(b_s b_d - c^2) < 0$.

A.3 Heterogeneous agents (Prediction 3)

Suppose agents indexed by $\theta \sim F(\theta)$ hold stablecoins if their idiosyncratic convenience exceeds a threshold $\theta^* = \phi + r^d$, where ϕ is the common deposit convenience yield. Aggregate stablecoin holdings are $S^{agg} = \bar{S}[1 - F(\theta^*)]$, so $\partial S^{agg} / \partial r^d =$

$-\bar{S} f(\phi + r^d)$. The sensitivity of aggregate stablecoin holdings to the deposit rate thus depends on the density of agents at the switching threshold. When deposit rates are low, the threshold is low, and relatively few agents are near it. As deposit rates rise, the threshold moves into a region where more agents are clustered, so the same basis point increase causes more switching. Formally, this requires $f'(\theta^*) > 0$: the density of agents is increasing at the threshold. This rationalizes the OLS-to-IV amplification: the IV identifies the effect in the high-rate period where the density of marginal agents is greatest.

Online Appendix

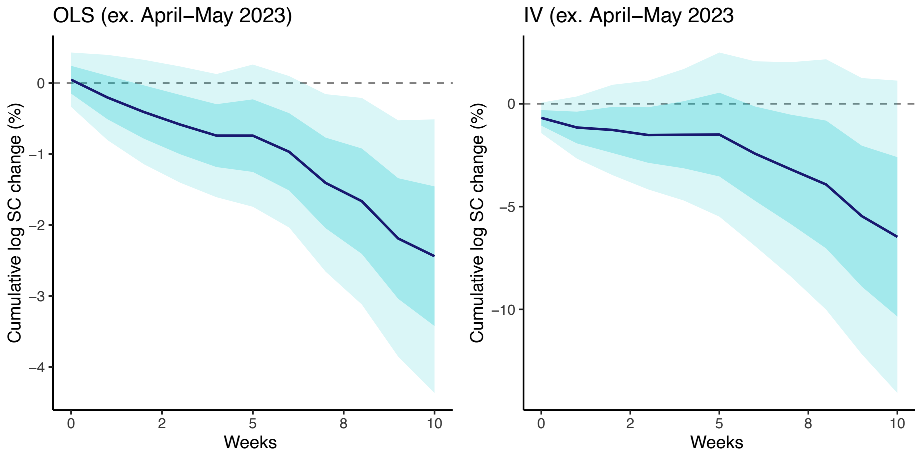
OA.A Coefficient estimates

Table OA.A.2: Local projection coefficient estimates at selected horizons (% per basis point)

	Aggregate (OLS)	Aggregate (IV)	USDT (OLS)	USDC (OLS)	Spread (OLS)
$h = 0$	0.1	-1.0	0.2	-0.5	0.1
$h = 5$	-0.8	-2.8	-0.3	-2.4	-0.3
$h = 10$	-2.8	-9.1	-1.9	-4.8	-0.7
1st-stage F	—	9.78	—	—	—
N (at h=10)	324	324	324	324	324

OA.B Sensitivity to the SVB episode

The Silicon Valley Bank (SVB) failure in March 2023 triggered a large USDC outflow unrelated to deposit rate substitution (Circle held reserves at SVB, and USDC briefly lost its peg). Figure OA.B.1 re-estimates the OLS and IV specifications on the full sample excluding April–May 2023. The point estimates remain negative under both OLS (roughly -2% at $h = 10$) and IV (roughly -7% at $h = 10$), confirming that the results are not driven by the SVB episode.


OLS (ex. April–May 2023)

IV (ex. April–May 2023

Figure OA.B.1: Full-sample OLS (left) and IV (right) excluding April–May 2023. Darker and lighter shaded regions correspond to 68% and 95% Newey-West confidence bands (bandwidth h).

OA.C Time trend

The sample features strong secular growth in stablecoin adoption. The baseline specification controls for four lags of stablecoin growth, which captures local trend dynamics. As an additional check, Figure OA.C.1 reports estimates with a linear time trend. The OLS estimate at $h = 10$ is attenuated from roughly -3% to -2.5% but remains negative. The IV estimate is attenuated from roughly -9% to -4%, retaining the correct sign.

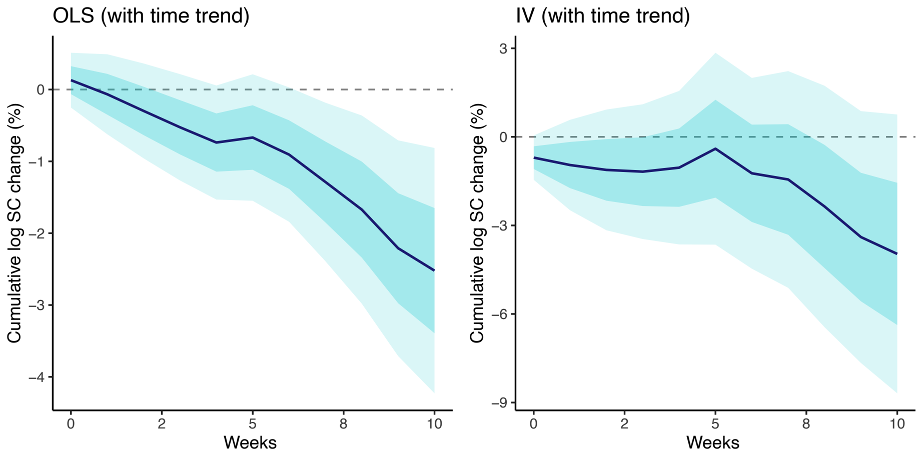


Figure OA.C.1: Full-sample OLS (left) and IV (right) with a linear time trend. Darker and lighter shaded regions correspond to 68% and 95% Newey-West confidence bands (bandwidth h).

OA.D Threshold robustness

The baseline threshold of 3.125% corresponds to the midpoint of the 3.00–3.25% FOMC target range. Figure OA.D.1 re-estimates the full-sample IV at thresholds of 2.5%, 3.125%, 3.5%, and 4.0%. The $h = 10$ point estimate ranges from roughly -8% to -11%, and all specifications produce negative effects. Note that thresholds of 2.5% and 3.125% yield identical results because the federal funds rate transitions discretely between FOMC target steps.

Figure OA.D.2 plots the first-stage sum of squared residuals across a grid of candidate thresholds. The minimum occurs near the chosen value, and the profile is relatively flat, indicating that the results are not sensitive to the precise threshold choice.

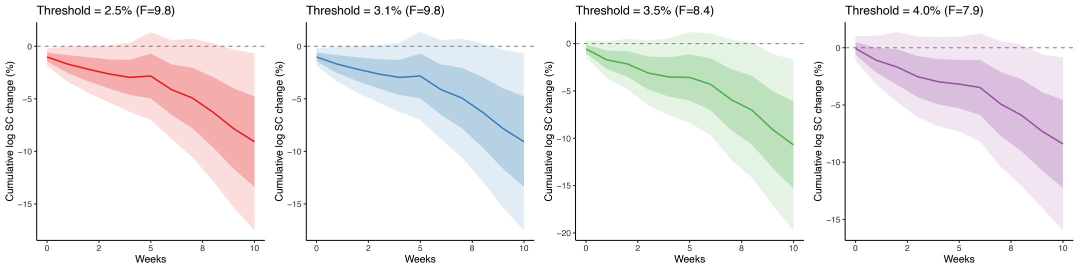


Figure OA.D.1: Full-sample IV at alternative thresholds. First-stage F-statistics reported in panel titles. Darker and lighter shaded regions correspond to 68% and 95% Newey-West confidence bands (bandwidth h).

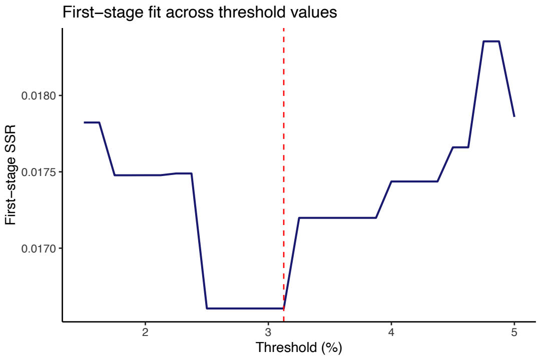


Figure OA.D.2: First-stage sum of squared residuals across candidate thresholds.