

The Effects of Monetary Policy on Macroeconomic Expectations: High-Frequency Evidence from Traded Event Contracts

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Background

Question we want to know the answer to:

How does **monetary policy** affect **macroeconomic expectations**?

Question we *can* answer (using high-frequency data):

What is the correlation between **interest-rate surprises** and **macro forecast revisions**?

When do these coincide?

When **interest-rate surprises** = **monetary policy shocks**.

Identification Challenge

Taylor rule

$$\dot{i}_t = \phi \mathbf{x}_t + \varepsilon_t$$

Let $\bar{}$ denote post-FOMC expectations; underlines pre-announcement.

$$\underbrace{\bar{\dot{i}}_t - \dot{i}_t}_{\text{MP surprise (observed)}} = \underbrace{\bar{\phi}(\bar{\mathbf{x}}_t - \underline{\mathbf{x}}_t)}_{\text{Information effect}} + \underbrace{(\bar{\phi} - \underline{\phi}) \underline{\mathbf{x}}_t}_{\text{Fed response to news}} + \underbrace{\varepsilon_t}_{\text{MP shock}}$$

Empirically, one often finds “wrong signed” relationship

$$\text{corr}(\text{MP surprise, GDP forecast revisions}) > 0$$

Why? Either *information effects*, or *Fed response to news* components are large

Frequency Mismatch

Typically

$$\text{corr} \left(\underbrace{\text{MP surprise}}_{\text{high frequency (30 minutes)}}, \underbrace{\text{GDP forecast revisions}}_{\text{low frequency (1 month)}} \right) > 0$$

- Lots of factors influence GDP expectations over a month
⇒ makes *Fed response to news* more likely
- This paper: high-frequency expectations from Kalshi
- *Fed response to news* less likely
- Better laboratory for testing strength of *information effects* vs. MP shocks
- Evidence, based on the draft I saw, seems mixed. [▶ Table 5](#)

Kalshi Data

Benefits

- **High-frequency** (unlike professional forecasts – monthly/quarterly)
- **Direct measure of expectations of macro variables**
(Not a proxy like the S&P (Jarociński and Karadi, 2020) or text-based measures (Acosta, 2026))
- **Free and easy to get**
(Unlike futures-market data, Kalshi has a free API — I use the data here)
- **Can observe changes in multiple variables from same “person”**
(Not combining markets and professional forecasters— I'll come back to this)

Drawbacks

- **Limited maturity** (e.g., cannot see GDP expectations beyond 2-3 months)
- **Limited sample (2021/2+)** (This will be less of a concern over time)
- **Not much known about the properties of these forecasts** (My discussion)

Discussion

How do Kalshi data line up with “standard” sources?

- High-frequency interest-rates: correlation can get up to 0.5
- GDP expectations: sometimes close, sometimes far from professionals.
- Whose expectations are we measuring? Trades are small.

Comparing apples (Kalshi-based interest rates) to apples (Kalshi-based GDP)

- More mixed evidence of information effects

Interest Rates

Comparing High-Frequency Interest Rate Surprises

Intraday changes in interest-rate futures around FOMC announcements

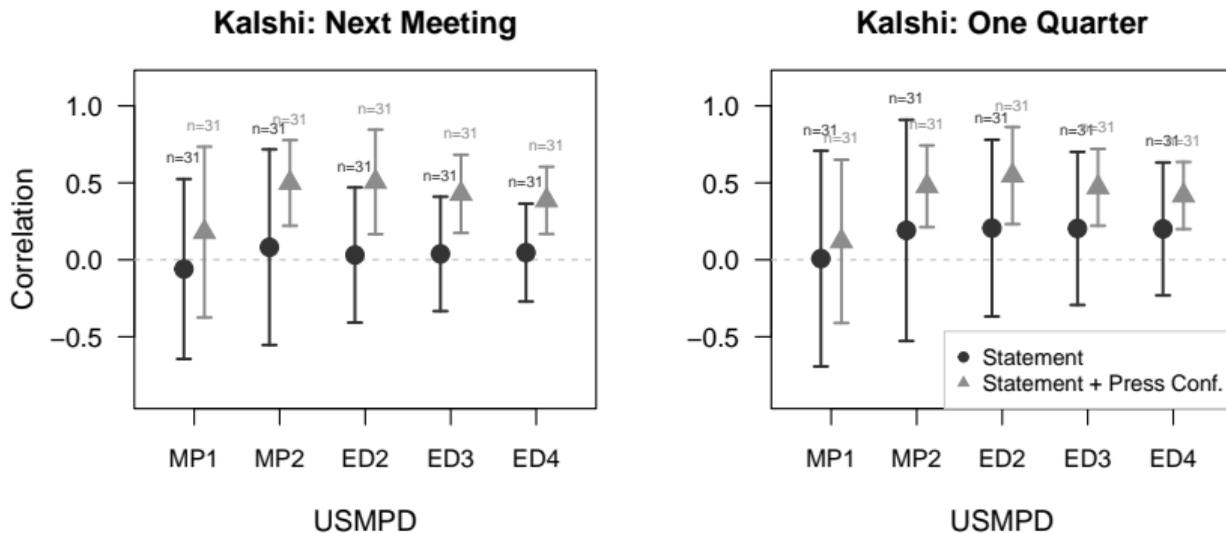
Source: U.S. Monetary Policy Event-Study Database (USMPD; Acosta et al. (2025))

- Changes around FOMC statement and press conference
- Maturities (Gürkaynak, Sack and Swanson, 2005):
 - ▶ Current and next FOMC (MP1, MP2)
 - ▶ 2-, 3-, 4-quarters ahead (ED2, ED3, ED4)

Compare with Kalshi-based measures

- Corresponding changes (forward-filling if needed)
- Maturities:
 - ▶ Current meeting
 - ▶ Next meeting
 - ▶ Next quarter (2 meetings)
 - ▶ Remaining months

Comparing High-Frequency Interest-Rate Changes



- Kalshi measures up to 0.5 correlation with “standard” measures if press conference included.
- Almost no correlation in response to the statement.
- More systematic evidence could be useful here.

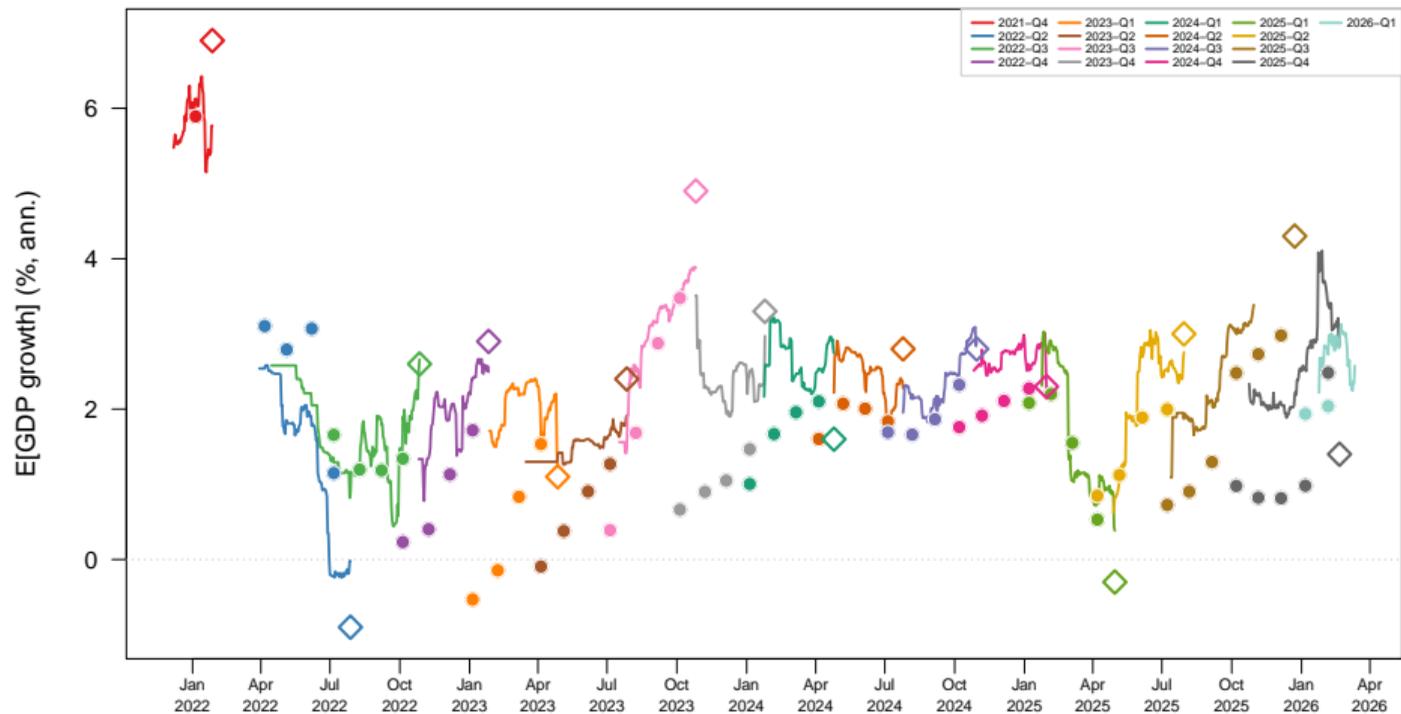
GDP

Comparing GDP Expectations

Next slide: 3 datasets

- **Kalshi**-based *daily* expectations of GDP release
- **Blue Chip** *monthly* expectations of GDP release
Plotted on the *last day* that Blue Chip survey is conducted
- **Actual GDP release**, plotted on day of announcement

GDP-Expectations Data



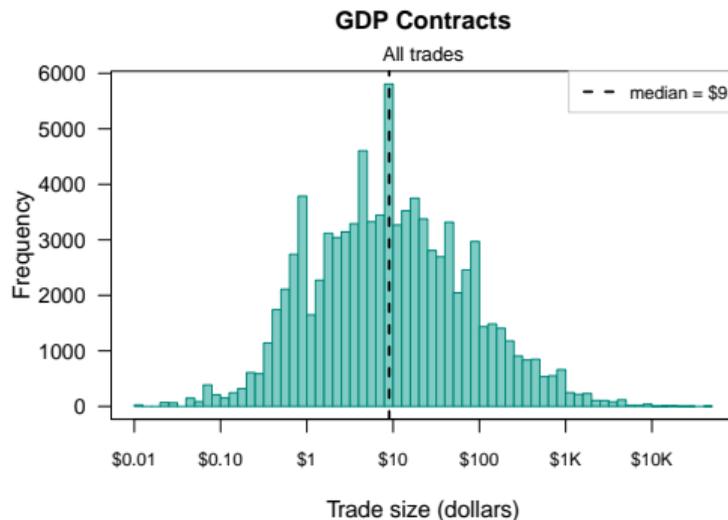
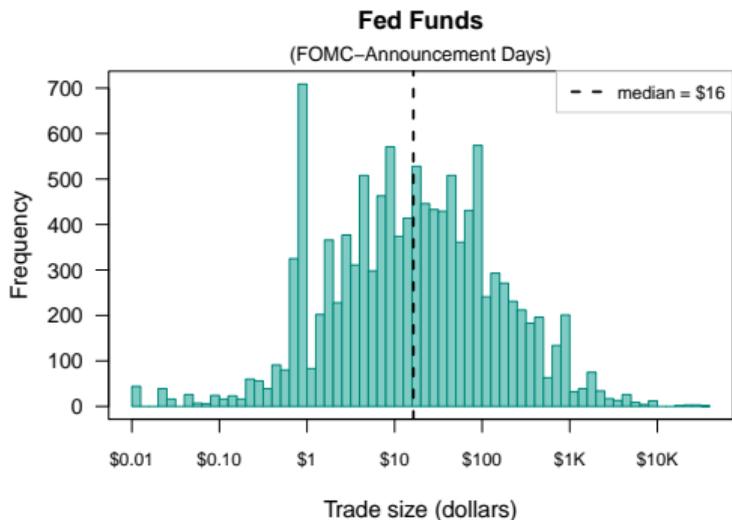
circle = Blue Chip consensus diamond = BEA advance estimate

Note. Not enough strikes to compute expectations until late December 2021.

GDP Expectations: Summary

- Kalshi and Blue Chip expectations often quite different.
- Conditional on measuring expectations on same day, hard to tell who is “better” at forecasting.
- Again, more evidence could be useful here.

Who is trading? Distribution of trade sizes



- Trades generally small (almost all $< \$1,000$, and median is well below \$20)
- No sign that this is changing [▶ Fed Yearly](#) [▶ GDP Yearly](#)
- My (only) first-hand experience: had \$76 to sell and could only sell \$12 upon learning some relevant news (in 2025). Had to sell rest at a discount later.

Apples to apples

Whose expectations?

- Benefit of Kalshi data: can see how macro and interest rate expectations of “same person” react *jointly* to Fed announcements
- Next slide: daily GDP forecast revisions (Kalshi) regressed on
 - ▶ Standard high-frequency interest-rate measures
 - ▶ Kalshi-based measures
- Results
 - ▶ Standard measures have no measurable effect
 - ▶ Kalshi-based measures show no effect, or an effect consistent with info. effects. Depends on window used.

GDP Expectations and Rate Surprises

	USMPD				Kalshi		
	MP1	ED2	ED3	ED4	Next Mtg	1 Qtr	Long
<i>20-min window (Statement Only)</i>							
Rate surprise	-1.74	-0.64	-0.45	-0.32	0.82	0.78	0.07
	(1.24)	(0.46)	(0.34)	(0.30)	(0.20)	(0.35)	(0.61)
R^2	0.07	0.04	0.03	0.02	0.24	0.17	0.00
N	28	28	28	28	28	28	18
<i>60-min window (Statement + Press Conference)</i>							
Rate surprise	-1.52	0.47	0.24	0.21	0.38	0.32	-0.30
	(1.11)	(0.52)	(0.37)	(0.31)	(0.63)	(0.59)	(0.29)
R^2	0.05	0.05	0.02	0.02	0.03	0.03	0.03
N	28	28	28	28	28	28	17

Conclusion

Conclusion

Contribution: Kalshi data offer a new, high-frequency window into macroeconomic expectations around FOMC announcements

My take:

- Kalshi interest-rate expectations are *somewhat* correlated with standard measures — but far from one-for-one
- GDP expectations sometimes align with professionals, sometimes diverge
- Trade sizes are small — whose expectations do these represent?
- Apples-to-apples comparison (Kalshi rates \rightarrow Kalshi GDP) yields mixed evidence on information effects, sensitive to the window used

Bottom line: Exciting new data source with a lot of promise, but hard to know what we're looking at here. With a new data source, it's useful to show properties beyond basic summary statistics and examples.

APPENDIX

References I

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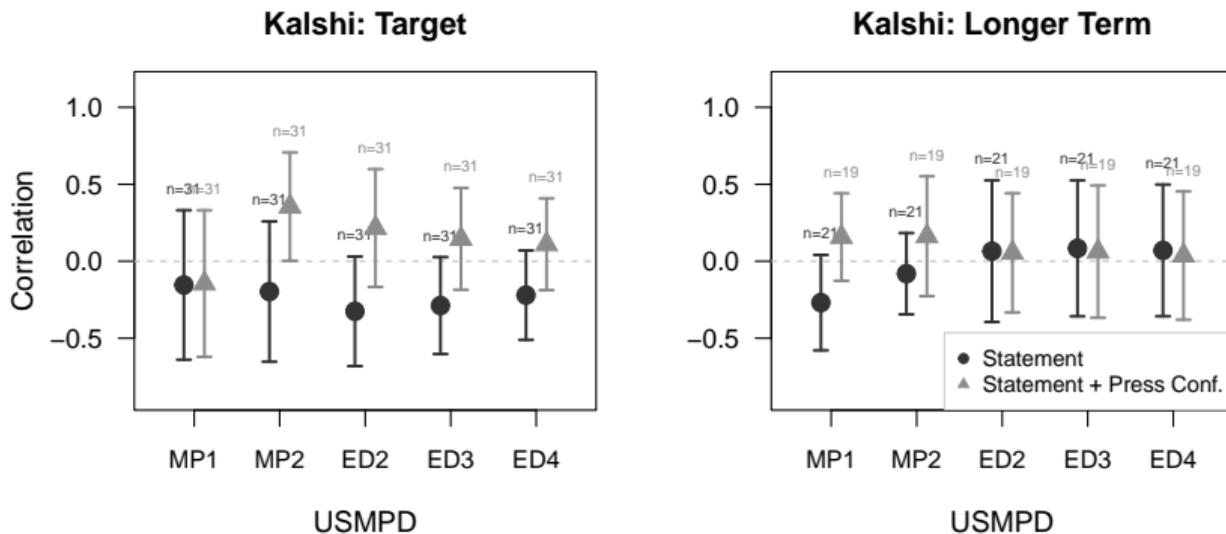
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- Romer, Christina D. and David H. Romer**, “Federal Reserve Information and the Behavior of Interest Rates,” *American Economic Review*, 2000, 90 (3), 429–457.

SWW Table 5

Daily Interest Rate Delta Contract Horizon		Daily Changes in Macroeconomic Expectations					
		CPI		Unemployment		GDP	Payrolls
		Front	Longer-term	Front	Longer-term	Front	Longer-term
Near	FOMC Announcement	0.108 (0.167)	-0.833** (0.346)	0.087 (0.386)	-2.902 (1.821)	1.706 (2.664)	-0.245* (0.131)
	Fed Chair Speech	-0.917 (1.011)	0.392 (0.265)	0.539 (0.813)	2.514 (3.002)	-14.219*** (3.730)	1.620 (1.988)
	Fed Event Day	0.128*** (0.049)	0.216*** (0.062)	-0.146 (0.146)	1.638*** (0.174)	0.147 (0.541)	-1.639 (1.167)
Far	FOMC Announcement	0.004 (0.109)	-0.338* (0.177)	0.136 (0.153)	-1.996 (1.325)	-0.118 (0.991)	-0.261** (0.106)
	Fed Chair Speech	0.248 (0.467)	-0.275** (0.125)	-0.108 (0.304)	-1.144 (1.455)	0.681 (1.620)	-0.412** (0.160)
	Fed Event Day	0.099 (0.085)	0.262* (0.154)	0.431 (0.309)	-0.241 (0.147)	0.107 (1.222)	0.404* (0.243)
Contract FE		Yes	Yes	Yes	Yes	Yes	Yes
Observations		1,115	3,636	1,115	2,296	1,115	1,017
R ²		0.010	0.010	0.003	0.023	0.005	0.011
Adjusted R ²		-0.028	-0.002	-0.037	0.005	-0.011	-0.017

Comparing HF Interest-Rate Changes (Target & Longer Term)



Data Construction: Kalshi–USMPD Correlations

Kalshi-implied expected rate

- Following SWW, I interpret each contract's yes-price $p_{\text{yes}}(s)$ as the probability that the rate exceeds strike s , giving CDF $F(s) = 1 - p_{\text{yes}}(s)$.
- I compute a PDF over bins between adjacent strikes and take $E[r] = \sum_i \text{pdf}_i \times \text{midpoint}_i$. If ≥ 5 strikes are available, the highest and lowest are trimmed (SWW fn. 9).
- Within each FOMC day, strike prices are *fill-forwarded*: the most recent trade price for each strike is carried forward, and $E[r]$ is recomputed after every new trade.

High-frequency changes

- For each FOMC announcement at time T , I record $E[r]$ at $T - 10$ min and $T + W$ min, where $W \in \{20, 60\}$.
- The 30-min window ($W = 20$) is compared to USMPD *Statement-only* surprises; the 70-min window ($W = 60$) to *Statement + Press Conference* surprises.
- *Next meeting*: change in $E[r]$ for the nearest future meeting contract. *One quarter*: average of next two. *Longer term*: remaining contracts.
- *Target surprise*: actual announced upper bound of the target range minus the pre-announcement $E[r]$ at the current meeting.

Correlations

- Estimated as the slope from a regression of standardized Kalshi changes on standardized USMPD changes. Standard errors are heteroskedasticity-robust; confidence intervals are 90%.
- Sample: 31 FOMC announcements, January 2022–October 2025.

Data Construction: GDP Expectations Regression

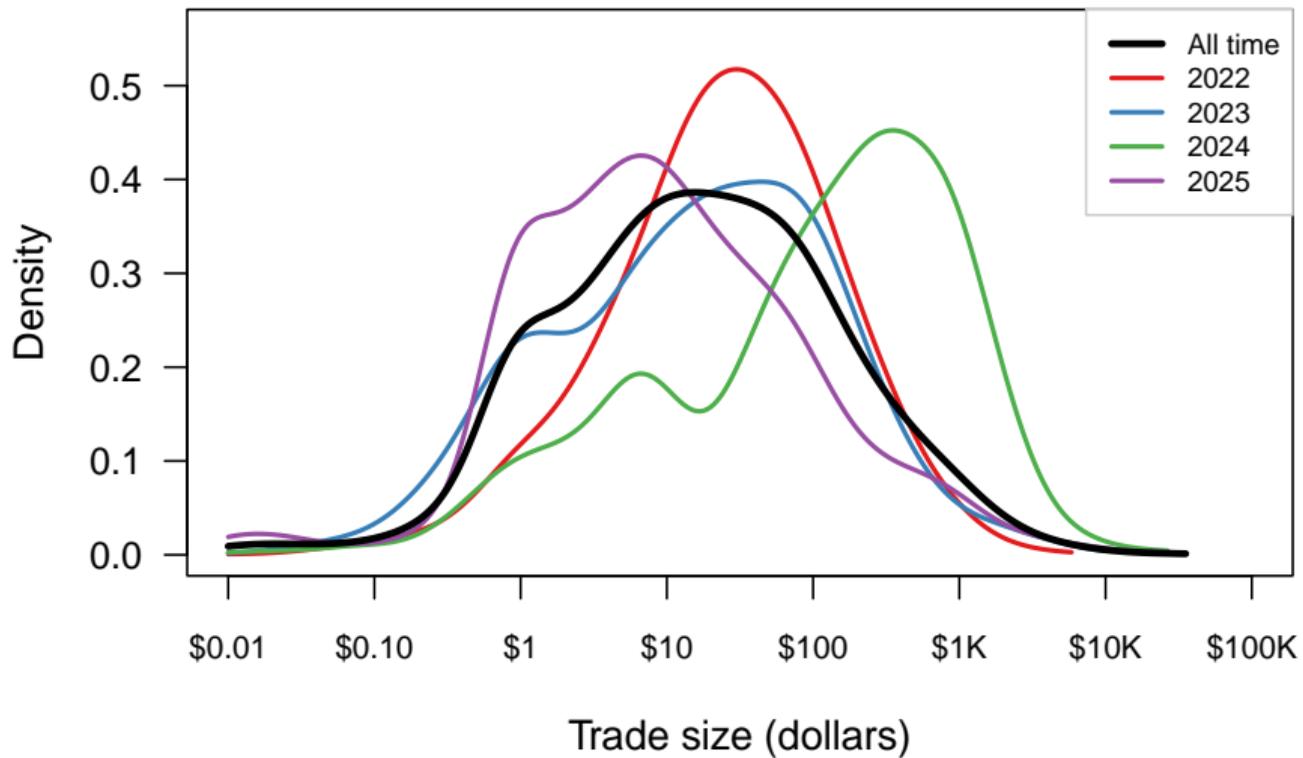
Dependent variable: $\Delta E[\text{GDP}]$

- Kalshi operates prediction markets on quarterly US real GDP growth (annualized).
- Binary contracts pay \$1 if GDP growth exceeds a strike (e.g., 2.5%, 5.0%).
- I infer the market-implied $E[\text{GDP}]$ each day from traded prices across strikes, using the fill-forward convention for days without trades.
- On each FOMC date, I compute $\Delta E[\text{GDP}] = E[\text{GDP}]_t - E[\text{GDP}]_{t-1}$ for the front (nearest-to-expire) GDP contract.
- I require that at least one GDP trade occurred on the FOMC date itself (i.e., the daily expectation is not purely fill-forwarded).

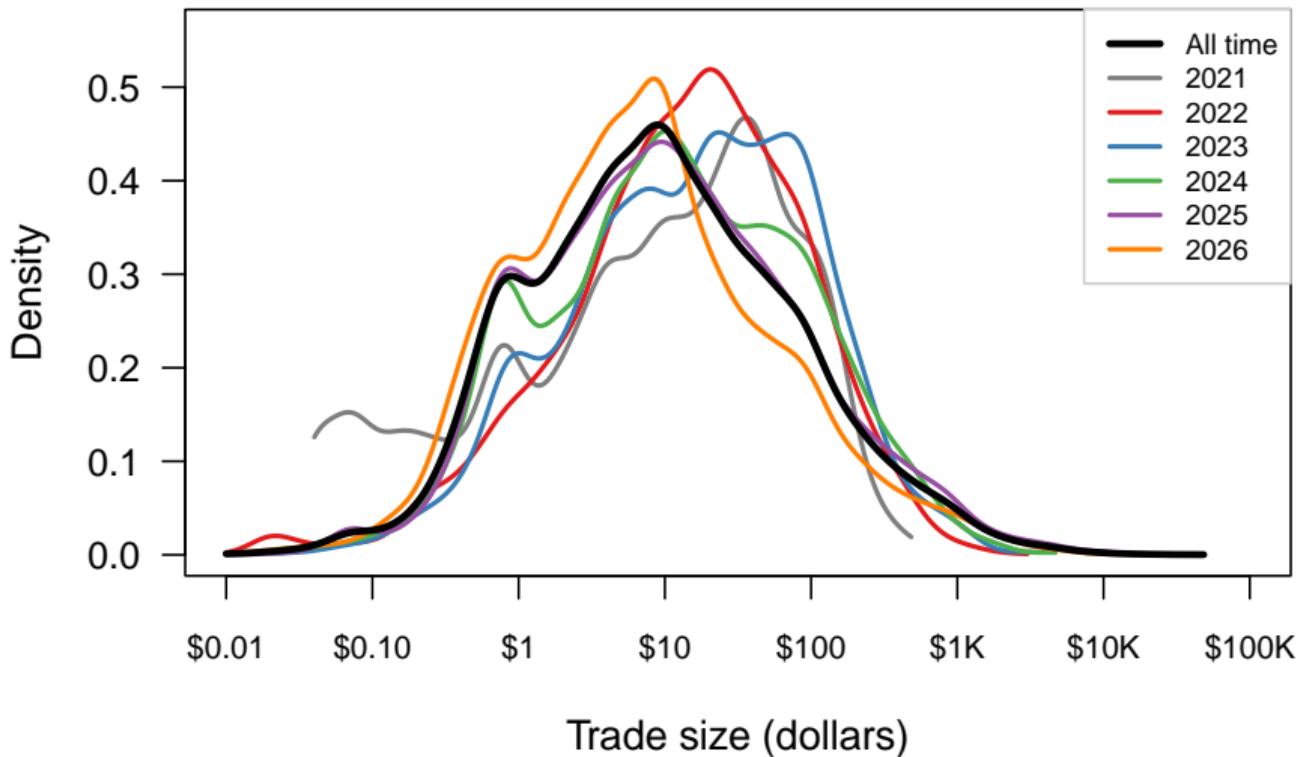
Sample

- 31 FOMC announcements from January 2022 through October 2025.
- 28 FOMC dates have an active front GDP contract with trades on the announcement day.
- Each regression is univariate OLS with heteroskedasticity-robust standard errors.

Trade Sizes: Fed (Yearly)



Trade Sizes: GDP (Yearly)



Replication: Table 1

	Per Contract Per Day			Per Contract			Per Event		
	Trades	Volume	\$Volume	Trades	Volume	\$Volume	Trades	Volume	\$Volume
N	3,305	3,305	3,305	113	113	113	15	15	15
Mean	3	397	208	102	11,612	6,084	769	87,474	45,833
s.d.	6	928	510	114	13,161	6,862	346	51,276	27,466
Min	1	1	0	1	5	1	135	7,271	4,495
P25	1	25	10	25	3,302	1,586	582	59,984	31,020
P50	2	106	49	58	8,036	4,495	769	77,326	45,167
P75	4	384	186	131	14,989	7,320	952	99,274	52,102
Max	163	19,402	9,592	585	66,773	32,928	1,445	197,240	104,148

NOTE. Replication of the GDP panel of SWW Table 1 from Kalshi trade-level data. Sample: July 1, 2021 to January 13, 2025. Volume is the taker's cost per trade ($\text{count} \times p_{\text{yes}}$) for yes-takers, $\text{count} \times p_{\text{no}}$ for no-takers.

Replication: Figure 3 (A)

Kalshi July 2022 Federal Funds Rate above 2.25%

