

In the Fed we trust? Measuring trust in central banks and its macroeconomic effects

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National Bank of Ukraine, 22 April 2025

Swings in public trust in major central banks

Should we believe what central bankers are saying?

There has been a lot of talk in recent weeks — not all of it was informative



ECB president Christine Lagarde speaks to the media after the governing council's monetary policy meeting in Frankfurt last month.

Opinion **Unhedged**

Is Jay Powell lucky or good?

Policy, happenstance and the soft landing

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The Fed's vice chair resigns as questions mount about his early-pandemic trades.

Richard Clarida, the vice chair of the Federal Reserve, will leave on Friday, two weeks ahead of schedule. Updated disclosures showed rapid moves out of and back into stocks as the central bank prepared to reassure markets.

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FINANCIAL TIMES

Bank of England [+ Add to myFT](#)

Public confidence in Bank of England's inflation strategy hits record low

Central bank receives worst rating since 1999 ahead of vote on new interest rate rise



Trade Secrets **Global trade** [+ Add to myFT](#)

Stagflation piece of polycrisis has stubbornly failed to materialise

Competent central banks have avoided a repeat of the Great Depression



What do we mean by “trust”?

- **Credibility:** The likelihood that the central bank will fulfil its commitments
 - Hinges on making commitments that align with policymakers' incentives (Kydland-Prescott, 1977, and Barro-Gordon, 1983)

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- **Trust:** A related but broader concept, which captures the belief:
 - that the central bank has the technical competency to meet its goals
 - that the central bank will act in the public interest
 - in the goodwill or integrity of the central bank and its leadership/staffSee e.g. Mayer et al. (1995) and Ehrmann (2024)

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- While credibility can be established through formal mechanisms, trust relies on informal norms and social capital, making it more fragile

Maintaining public trust is critical for a central bank

- Schnabel (ECB, 2020): “money is a social convention, the value of which depends on trust in the money-issuing institution.”
- Trust underpins the transmission mechanism of monetary policy (Ehrmann et al., 2013, and Christelis et al., 2020)
- In a financial crisis, a central bank that is viewed as technocratic, competent and focused on the public good will have greater capacity to restore calm
- A central bank that is trusted by the public is likely to be more resilient to political interference

What we do

- We develop a novel measure of trust in the Fed using GenAI to analyse millions of tweets about the Fed, its leadership, and its policy framework and decisions
- We study how our measure correlates with various macro-financial variables and indicators of US monetary policy
- We explore how exogenous changes in trust affect the economy
 - We derive **narrative shock-sign restrictions** from ethical scandals embroiling various Fed officials
 - We find that trust shocks are akin to trade-off inducing shocks, in line with Bursian and Faia (2018).

Data

- We use the Twitter API v2 to download tweets in English from 1 January 2007 to 31 December 2023
 - This also gives us information on the number of likes and retweets for each tweet
- We search for tweets containing the terms “the Fed” OR “the Federal Reserve” OR the names of Fed Governors and Presidents AND words relating to the economy AND words relating to trust

Issues

- **Homonymy:**



Issues

- **Homonymy:**



- **Data access:** After Musk's takeover of Twitter, access to the tweets has been severely limited: 5000\$ to access up of 1 million tweets.

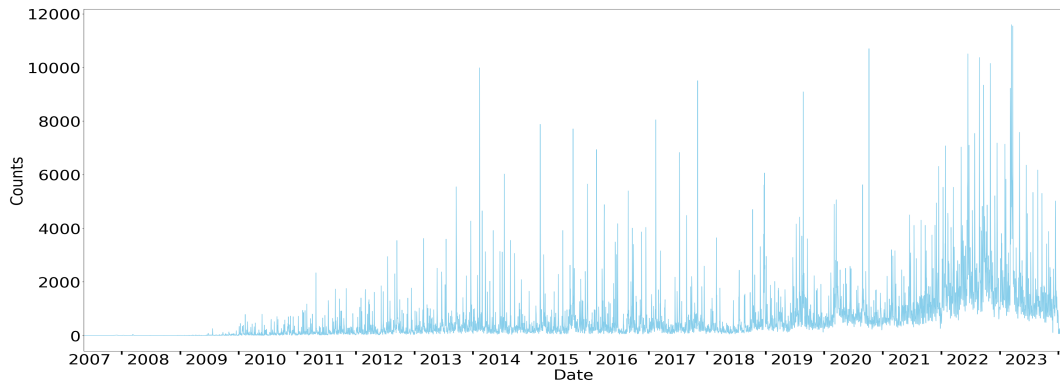
⇒ crucial to identify tweets that pertain to trust in the Federal Reserve.

Details

Some examples

- 'The Fed had credibility?'
- 'Buffett Is Still Packing As Yellen Steps In '
- 'The Federal Reserve raised interest rates by half a percentage point and scaled back other pandemic-era economic supports, strengthening its efforts to fight the highest inflation in 40 years and vowing to keep up the pressure'
- 'Bad news for US economy. Jerome Powell warned only today that no stimulus package risk far much outweighs that of the unsustainable federal spending path the US is on. Dow already tanking! '
- 'There literally is unlimited ammo. Don't panic. There are many, many things the fed and there is fiscal policy which will back it.'

Data



- Altogether, we have 3,798,214 individual tweets

Sentiment analysis

We use a pre-trained large language model to categorise tweets based on whether they express support or criticism of the Fed, its leadership and/or policies

Some examples

- We use ChatGPT-4o mini API (plus in some cases the web version of GPT-4) to generate our sentiment index
- We focus on prompt engineering rather than fine-tuning **prompt**
- We set the temperature to 0: makes the system deterministic to the maximum extent

Alternatives

Accuracy

The index

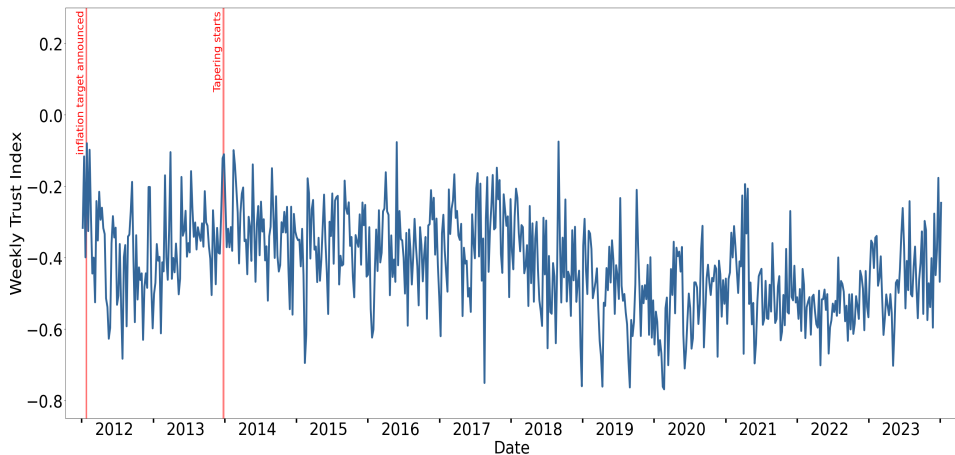
- The index is constructed as

$$T_t = \frac{N_t^+ - N_t^-}{N_t}$$

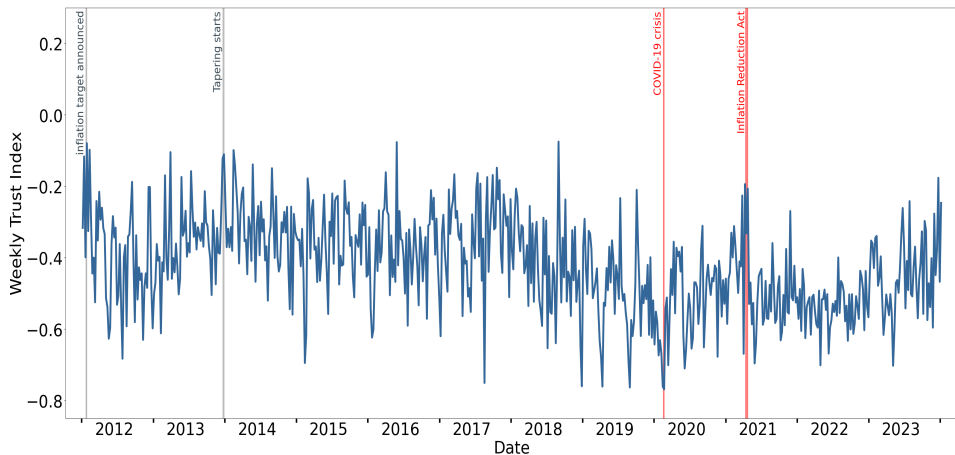
where $N_t = (N_t^+ + N_t^- + N_t^0)$

- Under this specification $T_t \in [-1, 1]$
- Our baseline includes retweets and likes within N , i.e., these are weighted in the same way as new tweets
- The index is available at daily frequency and can easily be aggregated at a lower frequency

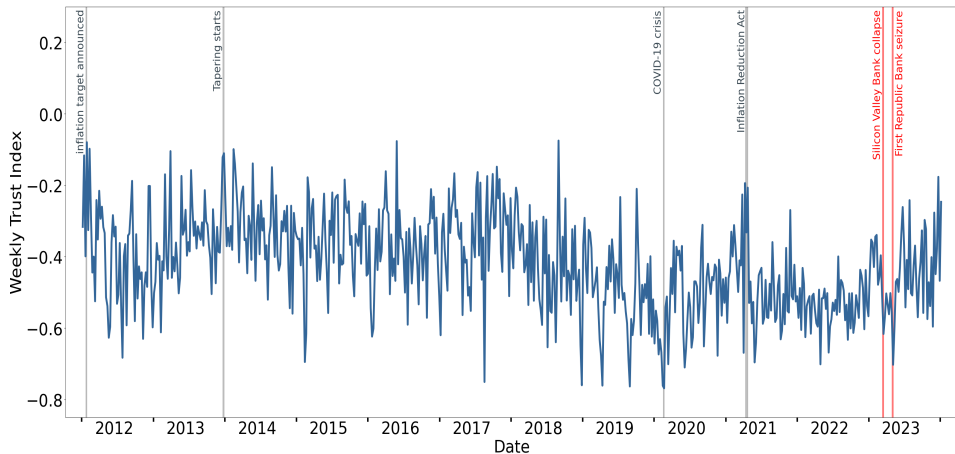
Our social media-based index of trust



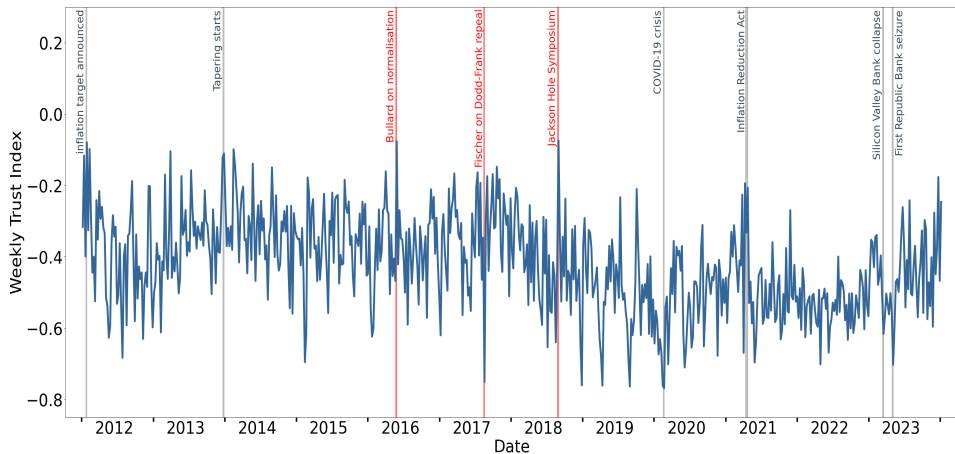
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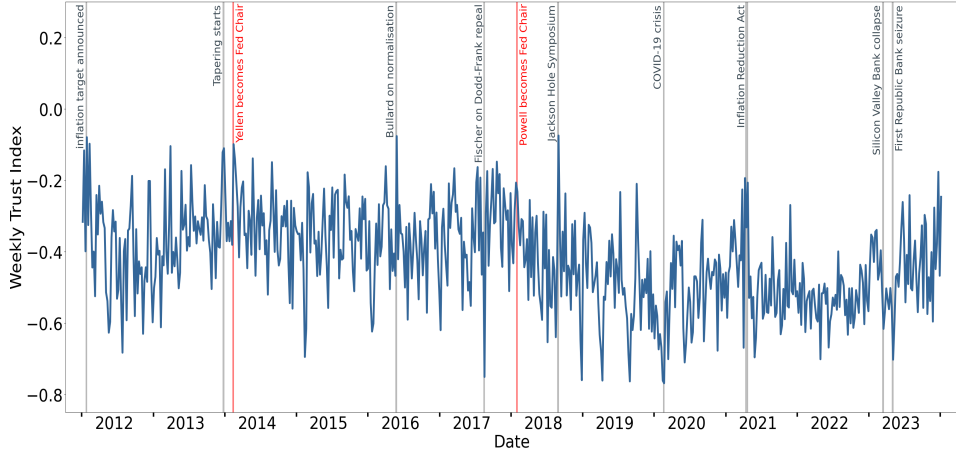
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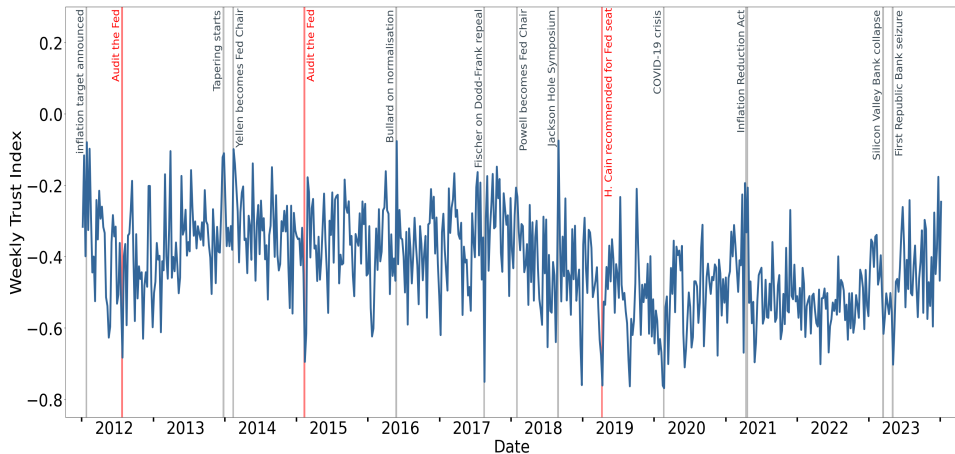
Our social media-based index of trust



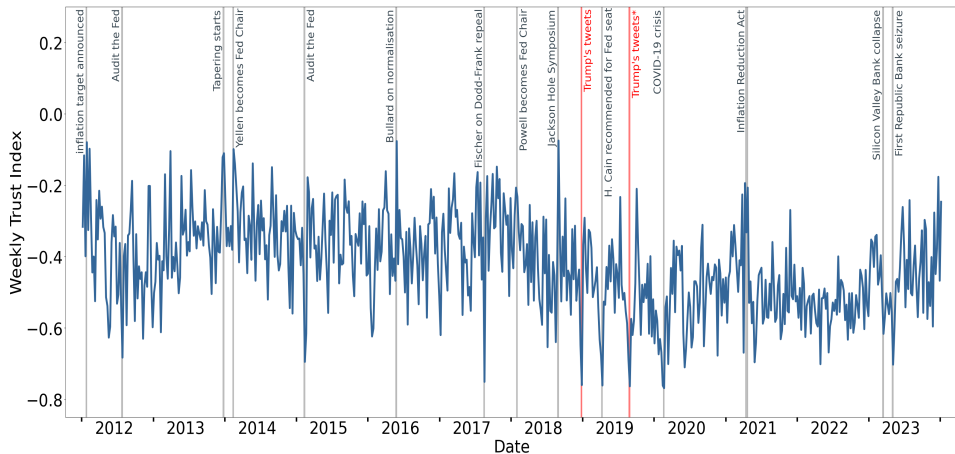
Our social media-based index of trust



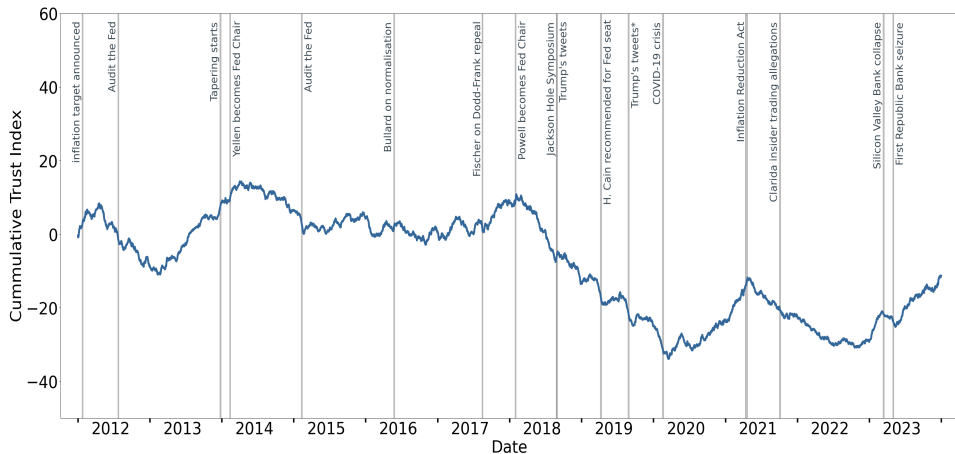
Our social media-based index of trust



Our social media-based index of trust



Cumulating the trust index



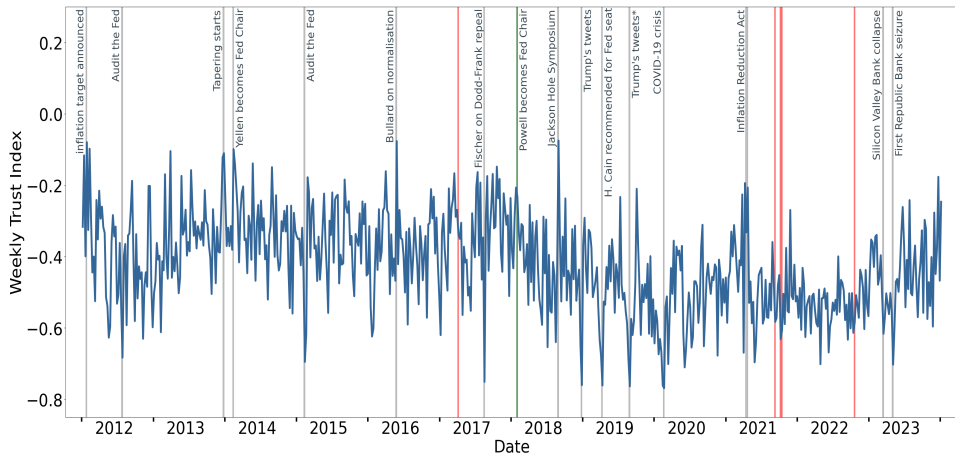
What drives trust in the Fed?

- We regress the daily trust index T_t on a large set of **macro-financial indicators**
- Plus on dummy variables capturing:
 - Publication of Monetary Policy Reports and Jackson Hole speeches
 - Nomination, confirmation, and start dates for Yellen (2014) and Powell (2018)
 - **Tweets by President Trump**, differentiating those that pose direct threats to the Fed's independence as per Bianchi et al. (2023) [trump tweets examples](#)

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 - **Tweets by President Trump**, differentiating those that pose direct threats to the Fed's independence as per Bianchi et al. (2023) [Trump tweets examples](#)
 - **Ethics scandals involving Fed officials**: 10 separate events from in our sample [Dates events](#)
 - **#popyourcollar Twitter trend** to mark Yellen's departure from the Fed [details](#)

The Narrative Proxy



What drives trust in the Fed?

<i>Macro-financial variables:</i>				
$E\pi_{t-1}$	-0.0180***	-	-	-0.0197***
Fed Funds rate $_{t-1}$	-0.1350**	-	-	-0.1133**
10-year Treasury yield $_{t-1}$	0.0416***	-	-	0.0342***
NASDAQ $_{t-1}$	0.0146*	-	-	0.0137
VIX $_{t-1}$	-0.0157***	-	-	-0.0128**
US dollar $_{t-1}$	-0.0182**	-	-	-0.0190**
<i>Monetary policy:</i>				
JK CB information $_t$	-	0.0064***	-	0.0068***
Monetary Policy Report $_t$	-	0.1433***	-	0.1461***
Jackson Hole $_t$	-	0.1581***	-	0.1680***
Leadership changes $_t$	-	0.2149**	-	0.1950**
<i>Exogenous drivers of trust:</i>				
Narrative proxy $_t$	-	-	-0.3050***	-0.2650***
Trump tweets Bianchi et al. $_t$	-	-	-0.1661***	-0.1533***
β_0	-0.2689***	-0.2106***	-0.2089***	-0.2757***
Ad. R^2	0.1405	0.1203	0.1215	0.1537
N	4,378	4,378	4,378	4,378

Dynamic response to a trust shock

- We estimate a Bayesian VAR (uninformed Jeffreys prior) with 28 lags of our daily trust index plus a set of macro-financial variables
- Our **primary identification strategy is based on the reporting of alleged breaches of ethical scandals involving FOMC members**
 - Insider trading allegations: VC Clarida and Presidents Bostic, Kaplan, and Rosengren
 - Leaking of information: Presidents Bullard and Lacker
- There are lags between when these alleged scandals occurred and when they were reported: 5 years (President Lacker) to 6 days (President Bullard)

Dynamic response to a trust shock

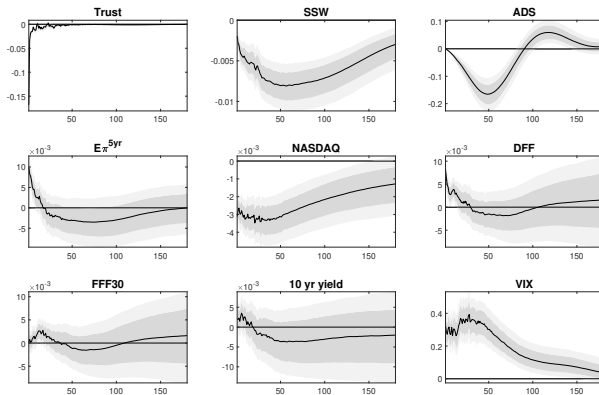
- The BVAR is:

$$A(L)Y_t = u_t = B\varepsilon_t$$

where $\varepsilon_t = [\varepsilon_t^1 \ \varepsilon_t^{2'}]'$ is the vector of structural shocks and ε_t^1 is the shock to identify.

- Plaborg-Moller and Wolf (2021): cast narrative shock-sign restrictions as proxies
Scandals $\Rightarrow -1$, positive events $\Rightarrow +1$
- We construct this narrative instrument with
 - **Narrative Proxy:**
 - HAC-robust F-statistics is 12.3 $\Rightarrow$ instrument is strong
 - Convincingly exogenous

Dynamic response to a trust shock: narrative proxy



Impulse response functions to a trust shock identified using the narrative proxy. The dark and light shaded areas correspond to the 68% and the 90% high probability density (HPD) sets, respectively.

Robustness

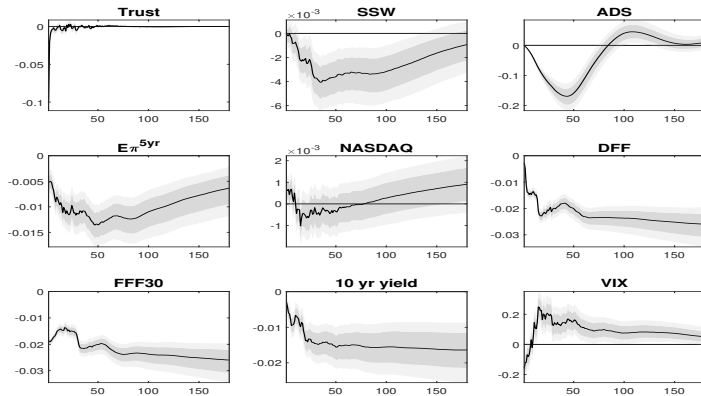
- Other identification strategies: Trump tweets **Trump**, Cholesky **Cholesky**
- Cumulated trust index **Level**
- Alternative construction of trust index **Alternative**
- Weighted regression results **WLS**
- Removing FOMC announcement windows **Removing FOMC**
- Subsample regression results **Subsample**
- Positive and negative components **Components**

Conclusions

- We use Twitter/X and GenAI to construct an index of trust in the Fed
- We find that Fed trust is affected by:
 - The Fed not meeting its mandate (eg high inflation, weak economic activity) (-)
 - Ethical scandals embroiling Fed officials (-)
 - Public criticism by the President (-)
 - Fed publications/speeches and new leadership (+)
- We use narrative information about scandals to identify a trust shock
- These shocks create a small but persistent inflation-output trade-off despite having short-lived effects on our trust measure

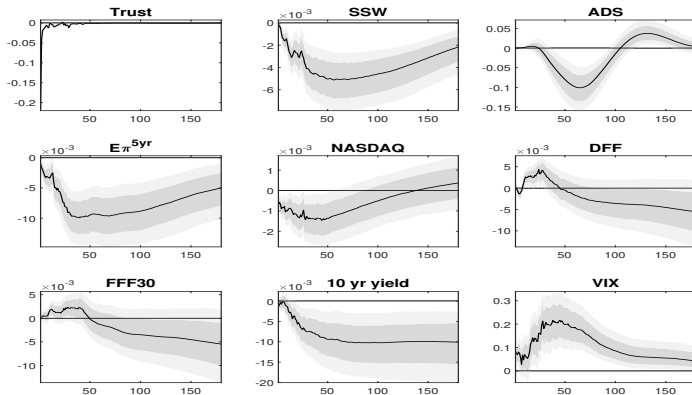
BACKGROUND SLIDES

Dynamic response to a trust shock: Trump tweets



back

Dynamic response to a trust shock: Cholesky



back

Some examples

- 'The Fed had credibility?'
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- 'Janet is like a cool aunt. Everyone needs one.'
- 'Well he's honest! And only took the fed 5 years to catch him. Doaps!'

Some examples

- 'The Fed had credibility?' → **NEGATIVE**
- 'Buffett Is Still Packing As Yellen Steps In ' → **NEGATIVE**
- 'The Federal Reserve raised interest rates by half a percentage point and scaled back other pandemic-era economic supports, strengthening its efforts to fight the highest inflation in 40 years and vowing to keep up the pressure' → **NEUTRAL**
- 'Bad news for US economy. Jerome Powell warned only today that no stimulus package risk far much outweighs that of the unsustainable federal spending path the US is on. Dow already tanking! ' → **NEUTRAL**
- 'There literally is unlimited ammo. Don't panic. There are many, many things the fed and there is fiscal policy which will back it.' → **POSITIVE**
- 'Janet is like a cool aunt. Everyone needs one.' → **POSITIVE**
- 'Well he's honest! And only took the fed 5 years to catch him. Doaps!' → **UNRELATED**

Alternative construction of trust index

Macro-financial variables:				
ST $E\pi_{t-1}$	-0.0230***	-	-	-0.0237***
Fed Funds rate $_{t-1}$	-0.1355**	-	-	-0.1130*
30-day Fed Funds Futures rate $_{t-1}$	0.1161*	-	-	0.1022
10-year Treasury yield $_{t-1}$	0.0233***	-	-	0.0159*
VIX $_{t-1}$	-0.0124**	-	-	-0.0092
Monetary policy:				
JK CB information $_{t-1}$	-	0.0103***	-	0.0104***
Monetary policy report publication $_t$	-	0.2298***	-	0.2314***
Jackson Hole speech $_t$	-	0.2187***	-	0.2233***
Leadership change $_{t-1}$	-	0.3659**	-	0.3445**
Exogenous drivers of trust:				
Narrative proxy $_t$	-	-	-0.2978***	-0.2650***
Trump tweets Bianchi et al. $_t$	-	-	-0.1411***	-0.1295***
β_0	-0.4435***	-0.3950***	-0.3920***	-0.4520***
Ad. R^2	0.0835	0.0801	0.0730	0.0974
N	4,378	4,378	4,378	4,378

[back](#)

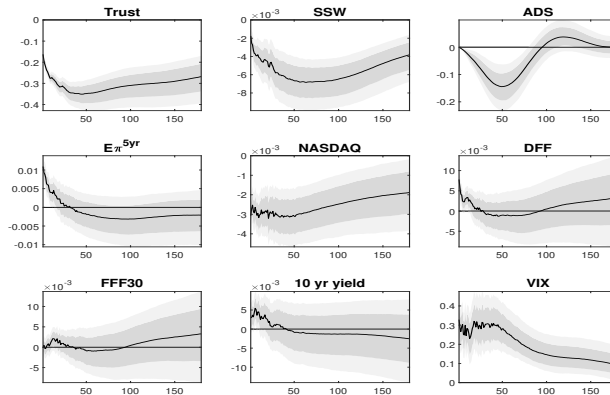
Weighted regression results

<i>Macro-financial variables:</i>				
ST $E\pi_{t-1}$	-0.0172***	-	-	-0.0195***
Fed Funds rate $_{t-1}$	-0.1341**	-	-	-0.1115*
30-day Fed Funds Futures rate $_{t-1}$	0.1007*	-	-	0.0862
10-year Treasury yield $_{t-1}$	0.0408***	-	-	0.0326***
NSADAQ100 $_{t-1}$	0.0153*	-	-	0.0143
VIX $_{t-1}$	-0.0167***	-	-	-0.0137**
US dollar $_{t-1}$	-0.0239***	-	-	-0.0236**
<i>Monetary policy:</i>				
JK CB information $_{t-1}$	-	0.0061***	-	0.0064***
Monetary policy report publication $_t$	-	0.1428***	-	0.1416***
Jackson Hole speech $_t$	-	0.1469***	-	0.1591***
Leadership change $_{t-1}$	-	0.2240*	-	0.2004*
<i>Exogenous drivers of trust:</i>				
Narrative proxy $_t$	-	-	-0.2967***	-0.2580***
Trump tweets Bianchi et al. $_t$	-	-	-0.1602***	-0.1528***
β_0	-0.2596***	-0.2021***	-0.2001***	-0.2682***
Ad. R^2	0.1485	0.1261	0.1280	0.1633
N	4,378	4,378	4,378	4,378

Removing FOMC announcement windows

<i>Macro-financial variables:</i>				
ST $E\pi_{t-1}$	-0.0210***	-	-	-0.0229***
10-year Treasury yield $_{t-1}$	0.0375***	-	-	0.0293***
S&P $_{t-1}$	-0.0216**	-	-	-0.0194*
NSDAQ100 $_{t-1}$	0.0211**	-	-	0.0202**
VIX $_{t-1}$	-0.0153**	-	-	-0.0122*
<i>Monetary policy:</i>				
JK monetary policy shock $_{t-1}$	-	-0.0056***	-	-0.0099***
JK CB information $_{t-1}$	-	0.0144***	-	0.0178***
Monetary policy report publication $_t$	-	0.1486***	-	0.1512***
Jackson Hole speech $_t$	-	0.1637***	-	0.1734***
Leadership change $_{t-1}$	-	0.2297*	-	0.2031*
<i>Exogenous drivers of trust:</i>				
Narrative proxy $_t$	-	-	-0.2453***	-0.2060***
Trump tweets Bianchi et al. $_t$	-	-	-0.1723***	-0.1658***
β_0	-0.2685***	-0.2167***	-0.2150***	-0.2744***
Ad. R^2	0.1321	0.1172	0.1153	0.1444
N	3,322	3,322	3,322	3,322

Dynamic response to a trust shock: narrative proxy



Impulse response functions to a trust shock identified using the narrative proxy. The dark and light shaded areas correspond to the 68% and the 90% high probability density (HPD) sets, respectively.

Subsample regression results

	2012-2020	2021-2023
<i>Macro-financial variables:</i>		
ST $E\pi_{t-1}$	-0.0114	-0.0148
LT $E\pi_{t-1}$	-0.0039	-0.0664***
Fed Funds rate $_{t-1}$	-0.2141**	-0.0319
10-year Treasury yield $_{t-1}$	0.0461***	0.0461*
VIX $_{t-1}$	-0.0139**	-0.0057
<i>Monetary policy:</i>		
JK CB information $_{t-1}$	0.0072***	0.0043
Monetary policy report publication $_t$	0.1261***	0.2043**
Jackson Hole speech $_t$	0.2027***	0.0913*
Leadership change $_{t-1}$	0.1967**	-
<i>Exogenous drivers of trust:</i>		
Narrative proxy $_t$	-0.5189***	-0.1908***
Trump tweets Bianchi et al. $_t$	-0.1291***	-
β_0	-0.2712***	-0.3764***
Ad. R^2	0.1616	0.0497
N	3,283	1,095

Positive component

<i>Macro-financial variables:</i>				
ST $E\pi_{t-1}$	-0.0058**	-	-	-0.0061***
LT $E\pi_{t-1}$	0.0061*	-	-	0.0068*
<i>Monetary policy:</i>				
JK CB information $_{t-1}$	-	0.0031***	-	0.0033***
Monetary policy report publication $_t$	-	0.0482***	-	0.0491***
Jackson Hole speech $_t$	-	0.0422***	-	0.0428***
Leadership change $_{t-1}$	-	0.0798**	-	0.0760**
<i>Exogenous drivers of trust:</i>				
Narrative proxy $_t$	-	-	-0.0845***	-0.0799**
Trump tweets Bianchi et al. $_t$	-	-	-0.0374***	-0.0392***
β_0	0.0775***	0.0733***	0.0752***	0.0780***
Ad. R^2	0.0352	0.0354	0.0332	0.0423
N	4,378	4,378	4,378	4,378

Negative component

<i>Macro-financial variables:</i>				
ST $E\pi_{t-1}$	-0.0129***	-	-	-0.0142***
Fed Funds rate $_{t-1}$	-0.1077***	-	-	-0.0917**
30-day Fed Funds Futures rate $_{t-1}$	0.0728*	-	-	0.0619
10-year Treasury yield $_{t-1}$	0.0415***	-	-	0.0368***
S&P $_{t-1}$	-0.0133**	-	-	-0.0128**
NSADAQ100 $_{t-1}$	0.0151**	-	-	0.0146**
VIX $_{t-1}$	-0.0147***	-	-	-0.0133***
US dollar $_{t-1}$	-0.0179***	-	-	-0.0181***
<i>Monetary policy:</i>				
JK CB information $_{t-1}$	-	0.0030**	-	0.0035**
Monetary policy report publication $_t$	-	0.0853***	-	0.0903***
Jackson Hole speech $_t$	-	0.1116***	-	0.1233***
Leadership change $_{t-1}$	-	0.1465**	-	0.1310**
<i>Exogenous drivers of trust:</i>				
Narrative proxy $_t$	-	-	-0.2184***	-0.1822***
Trump tweets Bianchi et al. $_t$	-	-	-0.1350***	-0.1247***
Other Trump tweets about Fed $_t$	-	-	-0.0638**	-0.0623*
β_0	-0.3271***	-0.2299***	-0.2306***	-0.3349***
Ad. R^2	0.1853	0.1557	0.1594	0.1968
N	4,378	4,378	4,378	4,378

SVAR-IV

- The BVAR is:

$$A(L)Y_t = u_t = B\varepsilon_t$$

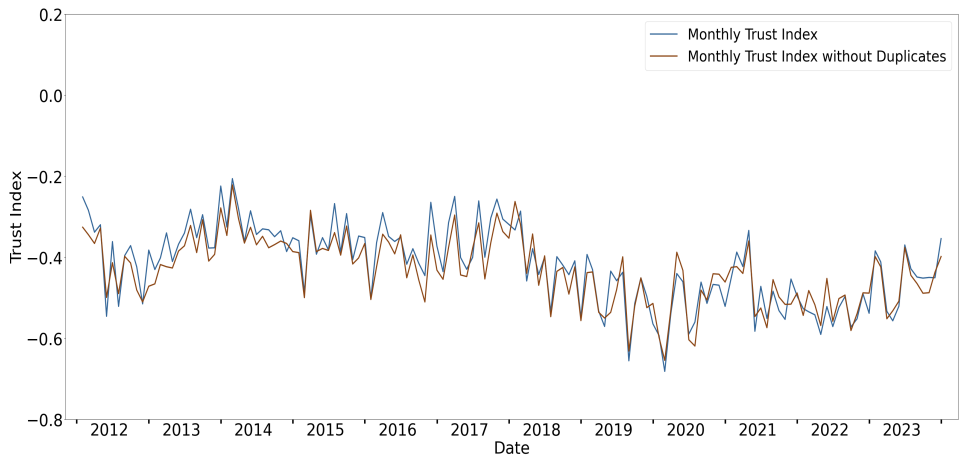
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Scandals $\Rightarrow -1$, positive events $\Rightarrow +1$
- We construct this narrative instrument with either
 - **Narrative Proxy:**
 - HAC-robust F-statistics is 12.3 $\Rightarrow$ instrument is strong
 - Convincingly exogenous
 - or **Trump tweets** :
 - HAC-robust F-statistics is 26.5 $\Rightarrow$ instrument is strong
 - Possibly function of the macro-financial environment.

Dealing with Bots

- bot-generated tweets are mostly identical or very similar, so **we drop identical tweets**, while still accounting for the retweets and the likes
- Confirm it with specialized websites that identify bot accounts, such as Botometer X,
- Example: Dec 22, 2018 "Trump Discusses Firing Fed's Powell After Latest Rate Hike, Sources Say" appears more than 3000 times.

Bots vs no Bots



Exogenous Events

- (a) 04/04/2017, Richmond Fed President Lacker Resigns, Admitting He Violated Confidentiality in 2012.
- (b) 31/01/2018, Launch of #popyourcollar trend honoring Janet Yellen.
- (c) 07/09/2021, Kaplan made multiple stock trades in 2020, with several \$1 million dollar-plus stakes.
- (d) 08/09/2021, Rosengren made multiple purchases and sales in REITs and other securities in 2020, during which he was publicly warning of contagion in real estate markets.
- (e) 09/09/2021, Federal Reserve Banks of Boston and Dallas simultaneously issued statements with nearly identical language, both noting that their financial transactions complied with the Fed's ethics rules.
- (f) 02/10/2021, News that Fed Vice Chairman Clarida traded between \$1 million and \$5 million out of a Pimco bond fund and into two stock funds in Feb 2020.
- (g) 10/01/2022, Clarida sent a letter to President Joe Biden announcing that he will be stepping down on Jan 14, instead of the Jan. 31 day that his term was originally set to expire.
- (h) 14/10/2022, Bostic reported that he had failed to disclose financial transactions on his official central bank forms.
- (i) 20/10/2022, Bullard came under fire Thursday after The New York Times revealed that he spoke last Friday.
- (j) 15/06/2023, Bostic revealed transactions made on May 2 2022, one day before the FOMC gathered for a two-day policy meeting.

New York Fed Helps Send Off Yellen by Saluting Her Fashion Sense

Tweets celebrate departing Fed chief's 'extraordinary tenure'—and popped collars

By Michael S. Derby

Jan. 31, 2018 5:50 pm ET | WSJ PRO

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Second Straight Half

Word selection

- 1 Analyse subset of tweets on the Fed and its governors
- 2 Ask GPT to identify tweets that express criticism or support for the Fed
- 3 For the selected tweets, analyse the relative frequency of the words that appear
- 4 Use selected words that appear frequently
- 5 And we also adopt GPT-4 interface to generate sentiment for the tweets repeatedly posted more than 100 times. In our sample, there are a total of 1,532,877 tweets with duplicates. Among these, 526 unique tweets are repeated more than 100 times.

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Words used to select relevant tweets

- **relating to policy:** monetary policy, financial stability, policy, testimony, strategy, remit, decision, dots, credibility, qe, taper, tapering, dove, dovish, hawk, hawkish, regulate, regulation, regulator, easy, tight, loose, inflation, crisis, overheat, volatility, bubble, aggressive, risk, threat, dissent, surprise, fedspeak, stability, authority, credible, credibility, soundness
- **relating to ethics/governance:** ethic, ethics, unethical, ethical, trading, scandal, insider, scrutiny, disclosure, corrupt, abuse, investigation, criminal, violation, violate, disruption, influence, controversy, corruption, jail, accountability, governance, integrity, independence, reliability, regulatebitcoin, gold, bitcoin
- **competence:** experience, socialist, right, good, competent, honest, confident, trust, trustworthy, trustworthiness, comfort, steady, assurance, predictable, innocent, stable, composed, sensible, logical, smart, genius, rational, consistent, wise, sophisticated, experienced, clear, knowledgeable, trump, wrong, bad, disgrace, disgraceful, cautious, socialist, fraud, vague, distrust, fickle, confuse, conflict, outrage, lie, blame, doubt, deception, denial, mistake, gaffe, fear, overreact, panic, tantrum, bombshell, crazy, nonsense, idiot, clown, clumsy, loonie, wacky, "flip flop", flop, nuts, fool, foolish, buffoon, bullshit, rookie, muddle, muddy, unpredictable, excuse, critic, catastrophic, erratic, fake, ignorant, bogus, outrageous, trouble
- **hashtags:** #endthefed, #auditthefed, #popyourcollar

Summary Statistics of Tweets Counts

	min	mean	median	max	25%	75%	<10	std	num
2012	23	300.37	160.50	3,543	96.00	318.50	0	408.88	109,934
2013	38	437.58	276.00	5,546	168.00	442.00	0	586.63	159,715
2014	39	476.39	264.00	9,984	161.00	411.00	0	840.91	173,881
2015	53	532.00	300.00	7,878	180.00	536.00	0	823.98	194,180
2016	51	525.55	279.50	6,936	148.00	483.00	0	821.68	192,352
2017	65	533.24	303.00	9,505	184.00	524.00	0	893.25	194,634
2018	55	481.96	257.00	6,062	163.00	451.00	0	719.86	175,914
2019	123	736.82	495.00	9,088	347.00	848.00	0	768.64	268,940
2020	207	903.35	706.00	10,699	502.50	998.25	0	832.19	330,625
2021	263	1,100.16	866.00	6,310	596.00	1,287.00	0	802.22	401,557
2022	446	2,275.02	1,790.00	10,504	1,354.00	2,723.00	0	1,523.24	830,382
2023	111	1,779.47	1,318.00	11,593	970.00	1,889.00	0	1,537.12	649,507

Table: Summary Statistics of Tweets Counts for Each Year

The prompt

Aims	Query
Clarify the questions	Please classify each of the following tweets according to whether they have a positive, neutral, or negative sentiment toward the Fed, the Federal Reserve System, or its leadership (FOMC members). If a tweet is unrelated to the Fed, please classify it as 'unrelated'. Consider each tweet independently.
Show some instructions	Instructions: Each tweet will be provided with a number. For each tweet, provide the sentiment classification as one of the following: [positive, neutral, negative, unrelated].

The prompt (CONT.)

Aims	Query
Give the format of the answer	Format your response as follows: 'Tweet number', 'First 2 words of the tweet', 'Sentiment: [positive, neutral, negative, unrelated]'.
Add the aimed tweets	Tweets to classify:
Provide response examples	Response format example: 'Tweet number 1' 'First 2 words' 'Sentiment: positive', 'Tweet number 2' 'First 2 words' 'Sentiment: neutral', 'Tweet number 3' 'First 2 words' 'Sentiment: negative', 'Tweet number 4' 'First 2 words' 'Sentiment: unrelated'. Please start from tweet number X and end with tweet number X+20.

The chat history of ChatGPT-4 interface access is [HERE](#)

Sentiment analysis

After cleaning the tweets, we tag tweets that contain specific phrases. These phrases are identified and summarized through a manual review of a sample of around 4,000 tweets. Notably, 15 tweets are tagged as belonging to both UNRELATED and NEGATIVE categories, indicating that they contain phrases from both categories. To ensure accuracy, we use the GPT-4 interface to generate sentiment for these tweets.

Tags	Phrases	Number
UNRELATED	"fed state government", "fed state govt", "fed supreme court"...	13,782
NEGATIVE	"#endthefed", "endthefed", "end the fed", "#auditthefed", "auditthefed"...	42,770
POSITIVE	"#popyourcollar", "popyourcollar", "pop your collar"	93

Table: Tag tweets

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Sentiment analysis: Alternatives

- ① Dictionary-based methods: natural language processing technique to assess a text's sentiment. **Fast but not very accurate**
- ② Classification models: **Need a lot of robust training data...**
- ③ Pre-trained large language models: **ChatGPT**

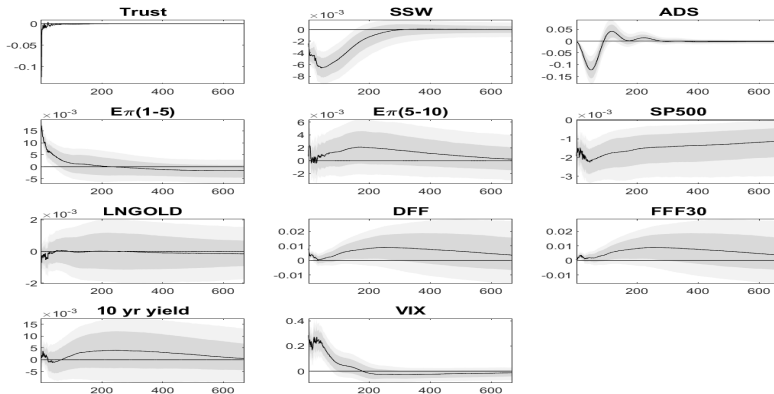
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Forecast comparison

Lexicon	Accuracy	Supervised ML	Accuracy	GAI	Accuracy
FS	56.07%	Logistic Regression	65.25%	GPT-4o-mini	70.05%
LM	53.63%	MLP Classifier	64.50%	GPT-4	73.74%
Opinion	44.70%	Bernoulli NB	63.88%		
AFINNLM	40.27%	Decision Tree	62.50%		
Harvard-IV	39.40%	Multinomial NB	62.25%		
VADER	38.10%	Linear SVC	61.00%		
		Ridge Classifier	60.50%		
		Random Forest	60.38%		
		Extra Tree	60.12%		
		Label Spreading	60.12%		
		Gaussian NB	50.00%		

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Macroeconomic response to a trust shock 2 Years



Impulse response functions to a trust shock using the narrative proxy. The dark and light shaded areas correspond to the 68% and the 90% high probability density (HPD) sets, respectively.

What is trust?

Meta-analysis by Mayer et al. (1995)'s finds that the key characteristics of trust are:

- Ability: “group of skills, competencies, and characteristics that enable a party to have influence within some specific domain”
- Benevolence: “Benevolence is the extent to which a trustee is believed to want to do good to the trustor”
- Integrity: “the trustor’s perception that the trustee adheres to a set of principles that the trustor finds acceptable”

⇒ ABI model of trust.