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«FAKE NEWS AND FINANCIAL MARKETS: MECHANISMS, EVIDENCE, AND POLICY IMPLICATIONS»

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Abstract

This paper examines how misinformation, rumors, and fabricated news stories influence modern financial markets. The study builds on theories of information asymmetry, behavioral finance, and market microstructure to show that false information can trigger significant volatility, distort investor behavior, and erode trust in financial systems. Using recent global cases such as the Associated Press Twitter hack in 2013, the GameStop and AMC short squeeze episodes of 2021, the collapse of the Terra–Luna cryptocurrency ecosystem, and rumors that contributed to the Silicon Valley Bank crisis in 2023, the paper illustrates how digital platforms amplify misinformation. Special attention is also paid to emerging markets, including Uzbekistan, where Telegram channels and social media commentary often affect perceptions of currency stability and bank liquidity. The paper concludes with policy recommendations, emphasizing the need for stronger regulatory frameworks, improved market surveillance, and digital literacy programs for investors.

Introduction

In recent years, financial markets have become increasingly vulnerable to fake news. Traditionally, information was filtered through newspapers, television, and specialized financial publications. Today, however, platforms like Twitter (now X), Reddit, Telegram, and TikTok allow any individual to publish statements that can instantly reach millions of investors. This shift has lowered the barriers for manipulation. False or misleading information does not need to be carefully designed by insiders; it can be as simple as a viral post or an anonymous blog entry.

The implications are profound. Market efficiency relies on the assumption that information available to investors is accurate and equally distributed. Yet, misinformation undermines this assumption, creating short-term dislocations in asset prices, influencing order flow, and shaping investor sentiment. In volatile environments, even a single post can trigger billions of dollars in market value losses.

Theoretical foundations: from information asymmetry to behavioral amplification

- **Efficient markets, qualified.** In the strict EMH, public misinformation should be quickly arbitraged away (Fama, 1970). In reality, *asymmetric access and reaction speeds* create temporary wedges: not everyone sees the correction at once, and some agents (news-algos, HFT) react far faster than retail.

- **Behavioral channels.** Empirically, media tone and salience shift risk premia and trading intensity (Tetlock, 2007). Heuristics—availability, anchoring, herd dynamics—convert ambiguous headlines into coordinated order flow, especially under uncertainty.

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Related literature

Media tone → returns & volume. Tetlock (Journal of Finance) shows that pessimistic language in daily news predicts short-run market declines and volatility upticks—establishing a quant link between text tone and prices.

- **Volatility dynamics.** GARCH (Bollerslev, 1986) remains the workhorse to quantify conditional volatility spikes after news shocks

- **Propagation on platforms.** Falsehood diffuses faster than truth on social networks (Vosoughi, Roy & Aral, *Science*), a structural reason misinformation shocks are sharp and self-reinforcing.

- **Social media & runs.** During the 2023 U.S. banking turmoil, research documents that Twitter activity accelerated withdrawals at Silicon Valley Bank—illustrating macro-relevance of platform dynamics.

Measurement: from raw text to "information pressure"

A practical pipeline for detecting and quantifying misinformation-risk around tickers:

Data & signals

- **Prices/volume/quotes:** consolidated feeds or exchange prints (minute-bar granularity minimum).
- **News & social:** full-text vendor feeds (e.g., Bloomberg News Sentiment "BNS"), plus social-media firehoses where permitted; include *timestamps and source provenance*.
- **Third-party analytics:** Refinitiv MarketPsych provides real-time sentiment/emotion/scarcity metrics across assets—useful as exogenous signals in VAR.

Text features

- Polarity/subjectivity (VADER/TextBlob as baselines) and domain-adapted transformers (FinBERT) for finance-specific tone; flag *asserted facts* vs *opinion/forecast*; detect *low-provenance claims* (no source, "insider says", synthetic images). (See also recent LLM-in-finance sentiment surveys.) **Composite "Information Pressure Index (IPI)"**

- Roll up (i) negative/uncertain tone, (ii) novelty, (iii) virality (retweet/repost velocity, cross-platform synchrony), and (iv) provenance penalties (anonymous, newly created handles). Use exponentially weighted aggregation and z-scores relative to ticker baselines.

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Econometric toolkit (with templates)

- **GARCH(1,1)**: model the conditional variance around events to estimate the post-shock volatility multiplier. (Bollerslev, 1986).
- **VAR**: treat prices, order imbalance, and IPI as an interacting system; impulse-response functions (IRFs) reveal how a misinformation shock propagates and decays. (Sims-style VAR).
- **DiD**: compare "treated" tickers exposed to a misinformation burst vs. matched controls, before/after the event, to estimate abnormal returns/volatility while controlling for market-wide moves (Card & Krueger for DiD canon).

Event studies: documented U.S./U.K. cases

1. **AP-Twitter hack (2013)** — S&P futures lurched within seconds after a fake tweet about White House explosions; prices normalized as the hack was identified, illustrating extreme sensitivity of latency-aware strategies to breaking headlines.

2. **F-35/Lockheed Martin tweet (Dec. 12, 2016)** — A single tweet by the U.S. president-elect that the F-35 program was "out of control" knocked billions off LMT's market value intraday; defense peers also wobbled. Bloomberg, The Guardian, and other major outlets documented the immediate drawdown.

3. **"Short-and-distort" (Farmland Partners, 2018)** — An anonymous Seeking Alpha post alleging questionable loans triggered a >20–40% slide; the company later sued and a jury found defamation on key claims. Illustrates how *plausible-sounding but incorrect* allegations can reprice small/mid caps with thin float.

4. **Crypto headlines and policy repetition (2021)** — Re-circulated headlines on China's longstanding crypto restrictions coincided with sharp BTC drawdowns; the *re-statement* effect matters when audiences treat old news as new—something both newsroom practice and algorithmic curation can exacerbate.

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5. **SVB (Mar. 2023)** — Social-media velocity accelerated deposit flight dynamics during the bank's failure episode; in markets, financials saw gap moves and elevated intraday vol as rumors and commentary proliferated.

Stylized empirical results you can expect (replicable blueprint)

- **Volatility multiplier (GARCH):** conditional variance rises by ~40–60% (event-window average) vs. pre-event baseline, decaying with half-life on the order of tens of minutes but sometimes persisting days when narratives linger. (Method anchored in Bollerslev 1986).

- **Abnormal returns (DiD):** treated names underperform matched peers by ~1–2% over 30–120 minutes when the misinformation is *negative* and plausibly firm-specific; dispersion widens as retail share of volume rises. (DiD framework per Card-Krueger).

- **Dynamics (VAR/IRFs):** a 1σ shock to IPI raises order-imbalance and widens spreads; price impact peaks quickly and mean-reverts as refutation circulates, consistent with Tetlock-style tone effects and "limits to arbitrage".

Microstructure mechanisms: why prices move "too much"

- **Parsing at the speed of code.** Headline-reading algos trade before humans verify, creating initial overshoots.
- **Inventory & limits to arbitrage.** Dealers widen quotes; capital-constrained arbitrageurs cannot instantly offset one-sided flow.
- **Believability cues.** Official-looking branding, "insider" framing, or technical jargon increases perceived credibility and delays skepticism—precisely why some manipulative posts mimic press releases or lab memos.
- **Echo & re-statement.** Old or partial stories recirculate as "new," driving multiple mini-shocks (documented frequently in crypto and single-stock news cycles

Governance, enforcement, and platform policy (U.S./U.K. focus)

- **U.S. SEC enforcement.** The SEC has charged and/or settled with celebrities and influencers who touted crypto assets without proper disclosures (e.g., Kim Kardashian, 2022; a group of celebrities in 2023 in the TRX/BTTC matter). Even "unlicensed" voices fall under promotion rules if they're making security/asset promotions.

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- **U.K. FCA "finfluencer" regime.** Tightened social-media promotion rules require authorized approval or exemption and ban "click-bait" style promotions that could mislead; guidance explicitly targets the financial-promotions lifecycle on platforms.

- **Platform analytics.** Market data vendors productize news-sentiment (e.g., Bloomberg BNS) and behavioral feeds (Refinitiv MarketPsych), enabling surveillance teams to set thresholds, alerts, and anomaly detectors in real time.

Emerging Market Perspective: Uzbekistan

In Uzbekistan, social media plays a growing role in shaping financial perceptions. Telegram channels and anonymous posts often speculate about currency exchange rates or bank liquidity. For example, during periods of global economic uncertainty, rumors about shortages of U.S. dollars in local banks have circulated widely online, prompting long queues at exchange offices. While such rumors are often exaggerated, they influence behavior in real time.

The country's stock exchange is relatively small, but investor psychology is still shaped by narratives. In the future, as Uzbekistan's capital markets deepen, the influence of fake news could become even more pronounced. Understanding this risk is vital for regulators and policymakers.

Practitioner playbook: detecting and trading around misinformation

For risk & surveillance

- Maintain a *source-credibility registry* (domain age, historical accuracy, disclosure practices).
- Alert on (i) unusually *negative/uncertain* tone, (ii) *first-time source* for a ticker, (iii) *cross-platform synchronization* within short windows, and (iv) *image/video artifacts* (synthetic detection).
- Couple IPI spikes with *market-quality metrics* (spreads, depth, cancel-replace ratios) to trigger circuit-breakers in algo routing.

For systematic portfolios

- Treat information shocks as a *state variable*: condition intraday risk budgets and participation rates on IPI; widen "do-not-trade" bands during unverifiable bursts; fade only when (a) reputable refutation arrives or (b) order-flow imbalances normalize.

For IR/Compliance teams at issuers

- Pre-authorize rapid response channels (verified accounts, press pages with cryptographic timestamps).
- Publish *machine-readable* corrections (RSS/Atom/structured JSON) so data vendors propagate refutations as fast as the original rumor.

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Replication guide (concise)

1. **Sample.** Identify misinformation events via (a) platform takedown logs, (b) vendor tags (BNS "Rumor/Unverified"), (c) fact-checking archives.
2. **Windows.** [-60, +240] minutes around timestamp t_0.
3. **Outcomes.** Mid-quote returns, realized variance, bid-ask spread, order imbalance, depth.
4. **Models.**
   - GARCH(1,1) on 1-min returns to estimate post-event variance uplift (Bollerslev). VAR([prices, IPI, imbalance]) with IRFs (Sims).
   - DiD on abnormal returns vs. matched peers/ETFs (Card-Krueger).
5. **Robustness.** (i) Drop days with scheduled macro releases, (ii) placebo on *old* news resurfacing, (iii) jackknife by venue/liquidity quartiles.

Policy proposals (actionable)

- **Faster provenance.** Platform-level labels for *unverified market-moving claims* plus prominent, machine-indexable corrections.
- **Clearer promotion rules.** Extend/clarify disclosure and anti-touting rules to cover paid "signals," Telegram/Discord rooms, and revenue-share affiliate links (SEC/FCA models).
- **Public "trust scores."** Independent, open-method ratings for financial news handles and channels, based on post-event accuracy and volatility externalities.
- **Reg-Tech co-ops.** Shared early-warning networks between exchanges, large brokers, and vendors to broadcast misinformation refutations as structured data.

Information sources:

- **Media tone & markets:** Tetlock, *Journal of Finance* (2007). **Volatility modeling:** Bollerslev, "GARCH," *Journal of Econometrics* (1986).
- **Social media diffusion:** Vosoughi, Roy & Aral, *Science* (2018). **AP Twitter hack market impact:** CNBC (2013).
- **Presidential tweet → LMT drawdown:** Bloomberg; The Guardian (2016). **Short-and-distort litigation:** *The Denver Post*; *Institutional Investor* (Farmland Partners).
- **China crypto headlines and BTC:** Reuters (2021).
- **SVB & social media runs:** Jiang et al., NBER/SSRN (2023). **SEC enforcement (U.S.):** SEC press releases (2022–2023).
- **FCA finfluencer/social-media rules (U.K.):** FCA webpage/guidance.
- **Vendor analytics for surveillance:** Bloomberg BNS; Refinitiv MarketPsych.