



Insider Trading & Market Manipulation Literature Watch

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Each quarter, this newsletter summarizes newly published literature in the areas of Insider Trading and Market Manipulation. The authors' own abstracts are included below and are unedited. Links to the full paper are provided. The inclusion of a paper in this newsletter does not signify that CRA or any of its experts agree or disagree with the content or conclusions therein.

Insider Trading

Time for a Broad Prophylactic against Congressional Insider Trading

In 2011, Peter Schweizer published a book, *Throw Them All Out*, in which he exposed some questionable means by which politicians manage to increase their personal wealth 50 percent faster than the average American. Schweizer suggested that trading on material nonpublic information is one method by which congresspersons achieve outsized returns on their investments. He cited one study finding that while the average American investor underperforms the market when trading in individual stocks, "[t]he average senator beats the market by 12 percent a year." This statistic is concerning on its own, but it is downright disturbing when considered alongside the same study's finding that corporate insiders and hedge funds (the usual targets of most insider trading complaints) beat the market on average by only 7 percent.

Schweitzer's book was followed by a feature story on the CBS News show, *60 Minutes*, highlighting some dubious stock trades by leaders of both political parties. These stories got the public's attention and spurred Congress to act, adopting the Stop Trading on Congressional Knowledge (STOCK) Act in April of 2012.

The STOCK Act made explicit what many already regarded as implicit—that congressional trading based on material nonpublic information acquired by virtue of their position as a public servant was a breach of their fiduciary duties and would therefore violate Section 10b of the Securities Exchange Act of 1934. It also expanded disclosure requirements for members of the executive branch and their staff members.

No sooner had the STOCK Act passed, however, than it was quietly overhauled to weaken certain of its key provisions, and in any event the Act has not been enforced consistently since its adoption. As a result, public cynicism concerning congressional insider trading has once again snowballed. A recent poll found that 76 percent of American voters think members of Congress

have an “unfair advantage” in trading stocks. In fact, many market participants build their trading strategies upon the assumption that congresspersons are trading on material nonpublic information. For example, Speaker Nancy Pelosi's stock trades have a regular online following on Twitter, TikTok, and Reddit, with popular accounts such as “@NancyTracker”. Moreover, the search “Pelosi stock trades” hit a record high on Google in January 2022.

Of course, Speaker Pelosi is not the only congressperson suspected of insider trading. A number of U.S. Senators were scrutinized recently over suspicious trades as the threat of the COVID-19 pandemic emerged in 2020. So what, if anything, is to be done? Just as they did in 2011, members of congress on both sides of the aisle are rushing to get out in front of the issue. And a number of bills have garnered bipartisan support. Many of these bills propose the broad prophylactic of proscribing members of congress from trading in individual stocks while in office. Some bills would go so far as proscribing trades by spouses and dependent children as well.

Some representatives have openly resisted calls for an outright ban on trading in individual stocks by members of Congress, arguing, for example, that “[w]e’re a free-market economy” and members of Congress “should be able to participate in that.” This Article counters such arguments and defends a broad prophylactic against congressional insider trading in individual stocks as a means of preserving market integrity and restoring the public’s trust in the legislative branch. Part I offers a brief summary of the current state of insider trading laws, with a special focus on their application to Congress. Part II surveys some of the proposed insider trading reform bills under consideration. Part III argues that, given congresspersons’ unique role vis-à-vis securities markets, a broad prophylactic against congressional trading is both justified and needed.

Anderson, John P., Time for a Broad Prophylactic against Congressional Insider Trading (February 17, 2022). Georgetown Law Journal Online (forthcoming), Available at SSRN: <https://ssrn.com/abstract=4037496> or <http://dx.doi.org/10.2139/ssrn.4037496>

Unobservable Information Acquisition and Insider Trading

I model the investors’ costly information acquisition behaviours with strategic communication of asymmetric information in financial markets. I extend the dynamic market order model similar to Kyle (Econometrica 53 (1985) 1315) to allow for costly, unobservable information acquisition, in which assuming that the insider’s trading strategies cannot be directly detected by market makers. The analysed results demonstrate that, there cannot exist pure strategy equilibria in which acquisition occurs after the beginning of the game. Information acquisition amplifies the component of private information that is unforecastable by uninformed traders and thus alters the fundamental value of the firm to facilitate his trading profits: he always deviates by either preemptively entering or delaying entry: (i) Given a proposed information disclosure date, the insider finds it optimal to deviate by preemptively, acquiring information earlier and trading against an unresponsive pricing rule; (ii) Without observability, instead of acquiring information at the start, the insider can profitably deviate by waiting-while his trading gains are unaffected, he benefits by delaying the cost of acquisition. On the basis of these findings, I discuss the implications for practice and future research, as well as the relative legal regulation in U.S. cases, in which highlights the role of information disclosure as a crucial determinant of insiders’ abnormal profits and illegal trading behaviours.

Zhang, Xiangguo, Unobservable Information Acquisition and Insider Trading (January 12, 2022). Available at SSRN: <https://ssrn.com/abstract=4033470> or <http://dx.doi.org/10.2139/ssrn.4033470>

Do Financial Advisors Matter for M&A Pre-Announcement Returns?

This study documents economically meaningful and persistent financial advisor fixed effects in target firms' abnormal stock returns shortly prior to takeover announcements. Additional difference-in-differences analyses suggest that advisors are associated with lower pre-bid stock returns after their senior staff were defendants in SEC insider trading enforcement actions. Returns are higher for advisors with more previously advised deals and those located in NYC. The evidence helps explain the prevalent phenomenon of pre-bid stock returns. It contributes to the inconclusive literature on banks' exploitation of private information gained via advisory services, which is limited to disclosed, traceable activities indicative of information leakage.

Betzer, André, Gider, Jasmin, and Limbach, Peter, Do Financial Advisors Matter for M&A Pre-Announcement Returns? (February 2, 2022). Available at SSRN: <https://ssrn.com/abstract=4024067> or <http://dx.doi.org/10.2139/ssrn.4024067>

Patterns in Insider Trading: Buyers Worsen, Sellers Improve

We consider the novel question of whether the trading performance of an individual insider changes over time. We find that buying performance declines steadily and markedly as an insider executes successively more purchase transactions; conversely, insider returns slightly improve over successive sales. Our findings add an important perspective to a well-studied area of research that, until now, has relied upon the unexamined assumption that the trading results of an insider remain constant over time.

Hibbert, Ann Marie, Schein, Josh, and Lee, Keonhi, Patterns in Insider Trading: Buyers Worsen, Sellers Improve (January 31, 2022). Available at SSRN: <https://ssrn.com/abstract=4021661> or <http://dx.doi.org/10.2139/ssrn.4021661>

Trading Ahead of Barbarians' Arrival at the Gate: Insider Trading on Non-Inside Information

This paper formalizes a novel form of corporate insider trading based on non-insider information. In our model, insiders make trading decisions in anticipation of activist intervention. Because insiders have access to private information about firm fundamentals, they can better separate activism-motivated trades from those by speculators based on signals about firm fundamentals. We validate this prediction empirically by showing that when activists (privately) accumulate shares ahead of Schedule 13D filings, insiders are less likely to sell shares and are more likely to buy shares. Consistently with the proposed mechanism, insiders respond to activist trading more decisively precisely when there is an absence of positive news about the firm's fundamentals—so that insiders are able to attribute high buy order flow to activist interest instead of speculation on positive fundamentals.

Chabakauri, Georgy, Fos, Vyacheslav, and Jiang, Wei, Trading Ahead of Barbarians' Arrival at the Gate: Insider Trading on Non-Inside Information (January 26, 2022). *Columbia Business School Research Paper Forthcoming*, Available at SSRN: <https://ssrn.com/abstract=4018057> or <http://dx.doi.org/10.2139/ssrn.4018057>

Climate Disasters and Insider Trading

The monthly value of insider trades increases over 200% in firms headquartered in counties with a climate disaster. Climate-induced insider trading holds in general but is stronger when investors are distracted and less prevalent when insiders face higher litigation risk. Firm fundamentals decline following disasters, and insiders benefit by selling prior to this decline being priced. Insiders living in disaster counties do not trade more than those in unaffected counties, which indicates against a personal liquidity motivation. Our paper documents a new way through which climate impacts investor behavior and financial markets.

Ma, Rui, Marshall, Ben R., Nguyen, Harvey, Nguyen, Nhut H., and Visaltanachoti, Nuttawat, Climate Disasters and Insider Trading (January 14, 2022). Available at SSRN: <https://ssrn.com/abstract=4008601> or <http://dx.doi.org/10.2139/ssrn.4008601>

Tax-favored Stock Donations by Corporate Insiders and Consequences for Equity Markets

Corporate insiders face substantial restrictions on stock sales, but many have viewed receiving tax deductions from charitable donations of stock holdings as an attractive alternative. In fact, empirical evidence consistently indicates that executives even make use of their private information in determining the size and timing of their charitable giving. This paper develops a parsimonious model of informed stock trading that accounts for the practical consideration that disposal of stock by insiders often takes the form of tax-favored charitable donations rather than direct trading. We demonstrate that equilibrium charitable gifts by insiders reflect nonpublic information about firm value and do so in a manner that facilitates price discovery even more efficiently than routine informed trading does. Given the heightened sensitivity of stock donations to firm value, the results provide implications of such donations for market properties, market participants, and charity proceeds, as well as identify how these effects vary with prevailing tax policy.

Arya, Anil, Mittendorf, Brian, and Ramanan, Ram, Tax-favored Stock Donations by Corporate Insiders and Consequences for Equity Markets (March 8, 2022). Available at SSRN: <https://ssrn.com/abstract=4003698> or <http://dx.doi.org/10.2139/ssrn.4003698>

How Harmful Is Insider Trading for Outsiders? Evidence from the Eighteenth Century

This paper provides evidence on the financial consequences of insider trading for outsiders. We collect a novel data set that contains all equity trades of all corporate insiders and outsiders in an era without restrictions on informed trading. These data features allow us to study the profitability of insider trades and the expected loss outsiders incur due to insider trading. We show that access to private information creates a performance gap of 7% per year between insiders and outsiders. Nonetheless, outsiders' unconditional expected losses from insider trading are small because the probability of trading with an insider is low.

Cosemans, Mathijs and Frehen, Rik, How Harmful Is Insider Trading for Outsiders? Evidence from the Eighteenth Century (January 5, 2022). *AFA 2022 Meetings Paper*, Available at SSRN: <https://ssrn.com/abstract=4001612> or <http://dx.doi.org/10.2139/ssrn.4001612>

Price revelation from insider trading: Evidence from hacked earnings news

From 2010 to 2015, a group of traders illegally accessed earnings information before their public release by hacking several newswire services. We use this scheme as a natural experiment to investigate how informed investors select among private signals and how efficiently financial markets incorporate private information contained in trades into prices. We construct a measure of qualitative information using machine learning and find that the hackers traded on both qualitative and quantitative signals. The hackers' trading caused 15% more of the earnings news to be incorporated in prices before their public release. Liquidity providers responded to the hackers' trades by widening spreads.

Pat Akey, Vincent Grégoire, and Charles Martineau, Price revelation from insider trading: Evidence from hacked earnings news, *Journal of Financial Economics*, Volume 143, Issue 3, 2022, Pages 1162-1184, ISSN 0304-405X, <https://doi.org/10.1016/j.jfineco.2021.12.006>.
(<https://www.sciencedirect.com/science/article/pii/S0304405X21005237>)

Price discovery and gains from trade in asset markets with insider trading

The present study contributes to the ongoing debate on possible costs and benefits of insider trading. We present a novel call auction model with insider information. Our model predicts that more insider information improves informational efficiency of prices, but this comes at the expense of reduced gains from trade. Testing these hypotheses in the lab, we find that insider information increases informational efficiency of call auction prices but does not decrease the realized gains from trade. We further find that the call auction does not perform worse than the continuous double auction. In fact, when the probability of insider information is high, the call auction has the most informative prices and highest realized gains from trade. Our experiment provides new evidence, from markets with very asymmetrically dispersed information, that lends support to the decision by many stock exchanges to use call auctions when information asymmetries are severe and the need for accurate prices is large, e.g. at the open or close of the trading day.

Brünner, Tobias and Levínský, René, Price discovery and gains from trade in asset markets with insider trading, *The European Journal of Finance* (January 10, 2022).
<https://doi.org/10.1080/1351847X.2022.2032241>

Market Manipulation

Detecting Stock Market Manipulation from Online Forums

The intersection of social media, low-cost trading platforms, and naive investors has created an ideal situation for information-based market manipulations, especially pump & dumps. Manipulators accumulate small-cap stocks, disseminate false information on social media to inflate their price, and sell at the peak. We collect a dataset of stocks and posts and label cases as pump & dump when price and volume profiles have the characteristic shape, and social media posts for those same stocks match the times of the initial price rises. From these we build predictive models for pump & dump events based on the language used in the social media posts. There are multiple difficulties: not every post will cause the intended market reaction, some P&D events may be triggered by posts in other forums, and there may be accidental confluences of post timing and market movements.

Nevertheless, our best model achieves a prediction accuracy of 85 and an F1-score of 62%. Such a tool can provide early warning to investors and regulators that a P&D is underway.

Skillicorn, David and Nam, David, Detecting Stock Market Manipulation from Online Forums (February 15, 2022). Available at SSRN: <https://ssrn.com/abstract=4041038> or <http://dx.doi.org/10.2139/ssrn.4041038>

The Echo Chamber Effect Resounds on Financial Markets: A Social Media Alert System for Meme Stocks

The short squeeze of Gamestop (GME) has revealed to the world how retail investors pooling through social media can severely impact financial markets. In this paper, we devise an early warning signal to detect suspicious users' social network activity, which might affect the financial market stability. We apply our approach to the subreddit r/WallStreetBets, selecting two meme stocks (GME and AMC) and two non-meme stocks (AAPL and MSFT) as case studies. The alert system is structured in two steps; the first one is based on extraordinary activity on the social network, while the second aims at identifying whether the movement seeks to coordinate the users to a bulk action. We run an event study analysis to see the reaction of the financial markets when the alert system catches social network turmoil. A regression analysis witnesses the discrepancy between the meme and non-meme stocks in how the social networks might affect the trend on the financial market.

Gianstefani, Ilaria, Longo, Luigi, and Riccaboni, Massimo, The Echo Chamber Effect Resounds on Financial Markets: A Social Media Alert System for Meme Stocks (March 9, 2022). Available at SSRN: <https://ssrn.com/abstract=4053771> or <http://dx.doi.org/10.2139/ssrn.4053771>

Short Sellers, Persuasion Games, and Predicting the 'V'

In a noteworthy recent paper, Mitts (2020) presents empirical evidence that published attacks on publicly-traded companies by certain presumed short-sellers generate "V"-shaped pricing patterns, whereby targeted companies' stock prices fall precipitously when a negative report is published, but later substantially rebound. Mitts associates these dynamics with manipulative practices by the reports' authors and their confederates. In a recent response, Block (2022) criticizes Mitts (2020) on several fronts (both academic and otherwise), taking particular issue with the fact that the "V" emerges out of a data restriction imposed by Mitts (2020), whereby issuers with less than \$2 billion in market capitalization were excluded from the baseline analysis. When one introduces smaller size cutoffs, the empirical effect dissipates. This note develops a theoretical model to study the valuation of financial assets in the presence of short sellers who may issue false reports about targeted companies, as well as targeted companies who may choose to fight back. I derive equilibria of the model, and show that (a) "V"-shaped pricing paths for targeted firms can (and do) emerge along the equilibrium path; (b) when they emerge, such paths are symptomatic of an inaccurate report; (c) "V"-shaped paths are always part of a unique equilibrium for "large" firms; and (d) "V"-shaped paths are never part of a unique equilibrium for "small" firms. Jointly, these results provide theoretical support and a helpful interpretive lens for Mitts (2020)'s data restriction and findings. At the same time, the model also predicts that "V"-shaped patterns for wrongly-attacked firms would be difficult to discern from aggregated market data that was generated via equilibrium play. Consequently, additional research is needed to assess whether the sub-groups analyzed by Mitts (2020) constitute a sufficiently diagnostic screen to pinpoint manipulative practices.

Talley, Eric L., Short Sellers, Persuasion Games, and Predicting the 'V' (March 7, 2022). Available at SSRN: <https://ssrn.com/abstract=4052076> or <http://dx.doi.org/10.2139/ssrn.4052076>

The Causal Relationship between Social Media Sentiment and Stock Return: Experimental Evidence from an Online Message Forum

This paper examines the impact of sentiment in an online message forum on stock returns. Using a novel controlled experiment, we collect a large panel of messages with no fundamental information but strong sentiment and stock return data. We uncover a significant causal effect of social media sentiment on the same-day stock returns. The sentiment has no significant effects on stock returns on subsequent days. This effect is mainly driven by messages with positive sentiment, which has a strong positive impact on stock returns. Our results establish a causal relationship between social media sentiment and stock returns and highlight the risk of market manipulation via social media.

Wang, Xinjie, Xiang, Zhiqiang, Xu, Weike, and Yuan, Peixuan, The Causal Relationship between Social Media Sentiment and Stock Return: Experimental Evidence from an Online Message Forum (February 15, 2022). Available at SSRN: <https://ssrn.com/abstract=4035197> or <http://dx.doi.org/10.2139/ssrn.4035197>

AI-Driven Market Manipulation and Limits of the EU Law Enforcement Regime to Credible Deterrence

As in many other sectors of EU economies, 'artificial intelligence' (AI) has entered the scene of the financial services industry as a game-changer. Trading on capital markets is undoubtedly one of the most promising AI application domains. A growing number of financial market players have in fact been adopting AI tools within the ramification of algorithmic trading. While AI trading is expected to deliver several efficiency gains, it can also bring unprecedented risks due to the technical specificities and related additional uncertainties of specific 'machine learning' methods.

With a focus on new and emerging risks of AI-driven market manipulation, this study critically assesses the ability of the EU anti-manipulation law and enforcement regime to achieve credible deterrence. It argues that AI trading is currently left operating within a (quasi-)lawless market environment with the ultimate risk of jeopardising EU capital markets' integrity and stability. It shows how 'deterrence theory' can serve as a normative framework to think of innovative solutions for fixing the many shortcomings of the current EU legal framework in the fight against AI-driven market manipulation.

In concluding, this study suggests improving the existing EU anti-manipulation law and enforcement with a number of policy proposals. Namely, (i) an improved, 'harm-centric' definition of manipulation; (ii) an improved, 'multi-layered' liability regime for AI-driven manipulation; and (iii) a novel, 'hybrid' public-private enforcement institutional architecture through the introduction of market manipulation 'bounty-hunters'.

Azzutti, Alessio, AI-Driven Market Manipulation and Limits of the EU Law Enforcement Regime to Credible Deterrence (January 16, 2022). Available at SSRN: <https://ssrn.com/abstract=4026468> or <http://dx.doi.org/10.2139/ssrn.4026468>

They Still Haven't Told You

The world's stock markets display a decades-long pattern of overnight and intraday returns seemingly consistent with only one explanation: one or more large, long-lived quant firms tending to expand its portfolio early in the day (when its trading moves prices more) and contract its portfolio later in the day (when its trading moves prices less), losing money on its daily round-trip trades to create mark-to-market gains on its large existing book. In the fourteen years since this extraordinary pattern of overnight and intraday returns was first noted in the literature, no plausible alternative explanation has been advanced. The main question remaining is therefore which of the few firms capable of profitably trading in this manner are guilty of having done so. If any of this is news to you, it is because the people you trust to alert you to such problems still haven't told you.

Knuteson, Bruce, They Still Haven't Told You (January 1, 2022). Available at SSRN: <https://ssrn.com/abstract=3998202> or <http://dx.doi.org/10.2139/ssrn.3998202>

Unravelling the JPMorgan spoofing case using particle physics visualization methods

On 29 September 2020, JPMorgan was ordered to pay a settlement of \$920.2 million for spoofing the metals and Treasury futures markets from 2008 to 2016. We examine these cases using a visualization method developed in particle physics (CERN) and the messages that the exchange receives about market activity rather than time-based snapshots. This approach allows to examine multiple indicators related to market manipulation and complement existing research methods, thereby enhancing the identification and understanding of, as well as the motivation for, market manipulation. In the JPMorgan cases, we offer an alternative motivation for spoofing than moving the price.

Debie, P., Gardebroek, C., Hageboeck, S., Leeuwen, P. v., Moneta, L., Naumann, A., Pennings, J. M. E., Trujillo-Barrera, A. A., and Verhulst, M. E. (2022). Unravelling the JPMorgan spoofing case using particle physics visualization methods. *European Financial Management*, 1– 38. <https://doi.org/10.1111/eufm.12353>

Price discovery during parallel stocks and options preopening: Information distortion and hints of manipulation

Many exchanges act to prevent manipulative orders from distorting informative price discovery during stock and options' markets preopening. Most preopening sessions run in parallel: indicative book-based stock prices alongside traded index options, whose underlying asset is the indicative index. Lead-lag patterns between the options-implied and the indicative indexes may point to differences in informational efficiency and/or manipulated prices. With three regulatory events throughout our sample, serving as natural experiments, we explore price discovery properties in both markets. We find significant lead-lag, price reversal, and order cancellation patterns similar to those predicted by theoretical models of manipulation, together with informational inefficiencies.

Shmuel Hauser, Haim Kedar-Levy, and Orit Milo, Price discovery during parallel stocks and options preopening: Information distortion and hints of manipulation, *Journal of Financial Markets*, 2022, 100705, ISSN 1386-4181, <https://doi.org/10.1016/j.finmar.2022.100705>.
(<https://www.sciencedirect.com/science/article/pii/S1386418122000015>)

GameStop and the Reemergence of the Retail Investor

The GameStop trading frenzy in January 2021 was perhaps the highest profile example of the reemergence of capital market participation by retail investors, a marked shift from the growing domination of those markets by large institutional investors. Some commentators have greeted retail investing, which has been fueled by app-based brokerage accounts and social media, with alarm and called for regulatory reform. The goals of such reforms are twofold. First, critics argue that retail investors need greater protection from the risks of investing in the stock market. Second, they argue that the stock market, in term, needs protection from retail investors.

This Article challenges calls for broad-based regulatory reform. It argues that, although retail investing is likely to impact the capital markets, claims about the harms from increased retail investing are overstated. More importantly, the debate overlooks potential benefits from retail investing both to investors themselves and the capital markets. Regulators should not be clamping down on the conditions such as commission-free trading, gamified trading platforms, and the expanded use of social media, that have enabled a generation of new investors to participate in the capital markets. These innovations, through their ability to facilitate direct market participation by retail investors have the potential to democratize the capital markets and increase the connections between ordinary citizens and U.S. businesses. Regulators should instead be focusing on how to facilitate the effectiveness of that process.

The Article defends the reemergence of the retail investor and its potential promise in enabling citizen capitalism – providing ordinary citizens with a stake in the nation’s productivity while, at the same time, increasing the accountability of those businesses to societal interests. It explains that retail investment can reduce the increasing problematic power of institutional intermediaries. It also holds the possibility of increasing corporate consideration of stakeholder interests without the need for formal structural changes or heavy-handed regulation.

Critically, however, effective citizen capitalism requires retail shareholders to participate in the capital markets on an informed basis. Although the extent to which the GameStop frenzy reflected rational investing behavior is questionable, its effect has been to draw retail investors to the market, and there is evidence that retail investment and engagement will both continue and evolve. The Article identifies opportunities to improve the retail investing experience, including greater oversight of sources of investment information, limiting the manipulative use by brokers of customer information, and the extension of fintech innovation to mechanisms for improving financial literacy. Attention to these concerns, rather than heavy-handed efforts to discourage retail investing, will increase the effectiveness of the retail investor.

Fisch, Jill E., GameStop and the Reemergence of the Retail Investor (February 8, 2022). U of Penn, Inst for Law & Econ Research Paper No. 22-16, Boston University Law Review, Forthcoming, Available at SSRN: <https://ssrn.com/abstract=4049896>

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