

Research Statement

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February 15, 2019

My research falls in the domain of asset pricing. Through my research I aim to contribute to our understanding of the information efficiency of financial markets and more specifically how it is shaped by limited attention, strategic communication between market participants, and informed trading. Another strand of work relates to the literature on noisy rational expectation equilibrium (NREE) models. Most of my research is empirical, but always aspires to be well-grounded in theory. Two of my papers (one forthcoming, the other a very recent working paper) make theoretical contributions, but also feature empirical tests of the theory.

Below, I briefly describe my research papers and discuss how they connect to my research agenda. Table 1 in the Appendix provides an overview of all my papers and summarizes their publication status. Full electronic versions (including internet appendices) are available on my website: <http://www.daniel-schmidt.eu/>.

A. Limited Attention

Ever since my PhD studies, I have been fascinated by the tension between the perfect and instantaneous Bayesian updating assumed in rational models and the reality that attention is limited. This research interest has resulted in two forthcoming papers.

[1] “Glued to the TV: Distracted Noise Traders and Stock Market Liquidity,” joint with Joël Peress, forthcoming at the *Journal of Finance*

In this article, we study how noise trading affects stock market liquidity. This is an important question as existing theories make opposing predictions regarding the role of noise trading on liquidity. On the one hand, adverse selection models à la Kyle (1985) and Glosten and Milgrom (1985) predict that noise trading promotes liquidity, as market makers’ are less concerned about losing to informed traders. On the other hand, inventory risk models à la Ho and Stoll (1981) and Grossman and Miller (1988) emphasize that noise trades increase fluctuations in market makers’ inventory value, prompting them to supply less liquidity. Teasing out these two channel is challenging as noise trading is endogenous and itself a function of liquidity. We overcome this challenge by exploiting quasi-exogenous variation in noise trading coming from *highly sensational* but *non-economic* news events.¹ We first

¹We identify these sensational news events thanks to the *news pressure* measure proposed by Eisensee and Stroemberg (2007). A prominent example of such an event was the televised verdict in the O.J. Simpson murder trial on 3 October 1995, which led to a spike in television viewership and—as we show in Figure 1 of our paper—to a corresponding drop in stock market trading volume.

document that sensational news events distract retail and institutional noise traders (i.e., investors that trade actively, perform poorly, and have underdiversified portfolios) from trading in the stock market. We then report that stocks predominantly held by noise traders (e.g., small stocks) experience a simultaneous decrease in trading activity, volatility, price reversals, and liquidity—findings that we demonstrate to be consistent with a reduction in noise trading in an extended Kyle (1985) model. Finally, we make use of the long time-series of our data in order to shed light on the evolution of distraction effects over time, focusing in particular on the influence of technological changes such as rise of the Internet and the advent of high-frequency trading.

Our paper makes two important contributions. First, we contribute to the literature on the determinants of liquidity by providing what we think is the first well-identified evidence in support of noise traders’ mitigating impact on adverse selection risk. Second, we add to the literature on limited attention in financial markets. Unlike prior work that focuses on the attention of informed traders or market makers (e.g., Corwin and Coughenour, 2008; DellaVigna and Pollet, 2009; Hirshleifer et al., 2009; Ben-Rephael et al., 2017), we study noise traders and, specifically, how their trading contributes to liquidity, volatility, and price efficiency.

[2] “Distracted Institutional Investors,”

forthcoming at the *Journal of Financial and Quantitative Analysis*

Following up on my work studying how limited attention affects retail (noise) trading, I investigate how attention constraints affect the trading behavior of large institutional investors—investors that are thought to be less attention constrained to begin with. Using detailed transaction data covering a representative subset of U.S. institutional investors, I develop an identification strategy that allows to identify quasi-exogenous attention shifts at the individual stock level. Specifically, I postulate that earnings announcements of portfolio stocks have the potential to draw away attention from other portfolio stocks. Since portfolio holdings are heterogenous, investors are differentially distracted from trading in a given stock at a given point in time, allowing me to control for any stock-specific reason for why investors may or may not want to pay attention to it at that point in time. Implementing this identification approach in panel regressions with high-dimensional fixed effects, I document that distraction has a strong effect on the extensive margin of trading (i.e., the decision whether or not to trade), but no effect on the intensive margin (i.e., how much to trade conditional on trading). I further show that distracted managers trade less profitably, incur slightly higher transaction costs, and are less likely to close losing positions.

These findings have important implications for the development of a *positive* theory of attention choice. Overall, they are most consistent with a model in which investors face a *fixed* search cost for finding profitable trading opportunities, and in which attention governs the quality of trade execution. They are less consistent, however, with the common approach of modeling attention as the choice of signal precisions. Moreover, additional results suggest that, beyond rational considerations, attention allocation decisions are also influenced by subconscious and/or psychological factors such as a stock’s salience and emotions toward gains and losses.

B. Strategic Communication and Trading

In this line of inquiry, I shed light on how exactly information finds its way into prices. One theoretical paper deals with strategic information sharing between investors, another paper studies empirically the trading behavior of presumably informed investors (long-short equity hedge funds).

[3] “Stock Market Rumors and Credibility,” forthcoming at the *Review of Financial Studies*

In this paper, I focus on voluntary information sharing as one potentially important channel for information dissemination in financial markets. Specifically, I develop a cheap talk model in the spirit of [Benabou and Laroque \(1992\)](#) and [Van Bommel \(2003\)](#) to show that short investment horizons are conducive to credible information sharing between investors. The intuition is that a *short-term investor* in possession of *long-term information* has an incentive to share this information in order to accelerate its capitalization into market prices; as a result, investors who receive such messages have the incentive to trust and trade on the rumor. In contrast, a long-term rumormonger prefers to lie as a successful market manipulation results in a price reversal that she can profit from. Studying a sample of takeover rumors, I find support for this prediction: takeover rumors are more likely to come true (in the sense that they are followed by actual takeover bid announcements) and elicit a stronger market response when the target stock’s institutional owners have a shorter investment horizon.

The paper’s main contribution is to propose a new channel for credibility based on the interplay between a rumormonger’s investment horizon and subsequent information arrivals, thereby complementing existing work on strategic communication that focuses on the sender’s reputation as a source of credibility (e.g., [Benabou and Laroque, 1992](#); [Van Bommel, 2003](#); [Pasquariello and Wang, 2018](#)). More generally, my paper complements an extensive literature propounding the negative aspects of investors’ myopia (e.g., [Stein, 1996](#); [Chen et al., 2007](#)) by highlighting an overlooked benefit of short investment horizons: they can encourage information sharing among investors.

[4] “Fundamental Arbitrage under the Microscope: Evidence from detailed Hedge Fund Transaction Data,” joint with Sandro Lunghi and Bastian von Beschwitz, reject & resubmit at the *Review of Financial Studies*

In addition to strategic communication, strategic trading by informed investors is another key driver of stock price informativeness. In real-world financial markets, the closest equivalent to our textbook informed traders are arguably long-short equity hedge funds. Indeed, these type of hedge funds routinely undertake independent long and short investments (“directional bets”) and are known to invest in fundamental research.

In this paper, my co-authors and I analyze a novel transaction dataset to offer a first in-depth description of the trading behavior of long-short equity hedge funds. We document that both their long and short position openings are highly profitable, but that they close their positions too early, thereby foregoing about *a third* of the trades’ potential profitability. We explain this behavior by the existence of arbitrage constraints: hedge funds close positions

early in order to reallocate their capital to more profitable investments and/or to accommodate tightened financial constraints. Consistent with this view, we find that premature position closures are more pronounced—implying that more money is left on the table—when hedge funds (1) simultaneously open a large number of new positions, (2) have suffered from poor past performance, and (3) when they are faced with a spike in volatility or funding costs.

This paper contributes to the literature on the limits of arbitrage. While there is a wealth of evidence suggesting that arbitrage is limited, we are the first to document precisely how arbitrage frictions affect the trading behavior of fundamental investors at the *micro-level*. Moreover, by measuring forgone profits from prematurely closed positions, we are able to quantify the economic importance of hedge funds’ arbitrage constraints. Such quantitative estimates are still rare as the trades that are impeded by the presence of arbitrage constraints typically remain unobserved. My co-authors and I are currently finalizing a deep revision of the paper with the intention of resubmitting it to the Review of Financial Studies within the next couple of months. For our revision, we have collected and hand-matched additional data from a variety of sources (e.g., fund characteristics such as leverage and track record from commercial hedge fund databases; inside ownership from SEC Form ADV filings) in order to better understand the ultimate sources of hedge funds’ arbitrage constraints. We are convinced that these and other results sharpen the contribution of our paper significantly; and we are thus hopeful that our revision is able to address the main concerns of the review team.

C. On NREE Models

I have written three papers contributing to the literature on noise rational expectation equilibrium (NREE) models. Two papers are empirical and aim to test or help calibrate NREE models. One very recent working paper develops and tests a model in which investors are uncertain about which signals are already reflected in the price.

[5] “Learning from Noise? Price and Liquidity Spillovers around Mutual Fund Sales,” joint with Pekka Honkanen, reject & resubmit at Management Science

While the preceding papers are concerned with how price informativeness is directly or indirectly shaped by the actions of market participants, Pekka Honkanen (a PhD student at HEC Paris) and I study *how much* investors actually do learn from prices. Identifying learning from prices is challenging as it is difficult to control for all the information that reaches investors and that could explain certain price movements. We overcome this problem by isolating stock price movements that are *ex post* identified as non-fundamental: transient price pressure effects triggered by mutual fund fire sales (Coval and Stafford, 2007). We then ask whether these price pressure effects spill over onto the close economic peers of fire sale stocks—as is expected when investors learn from prices but cannot immediately grasp the non-fundamental nature of a fire sale shock.

In line with this intuition, we document strong return spillovers for peer stocks, which revert over time as the non-fundamental reason of the fire sale shock becomes apparent. These spillovers extend to liquidity and are not

explained by common funding shocks, reverse causality, or the hedging activity by liquidity providers. Cross-sectional tests as well as the absence of a spillover effect for index inclusion events—when the reason for the buying pressure is well understood and there should thus be no cross-asset learning—provide further support for our learning-based interpretation. Taken together, our results establish learning from prices as an important driver for the commonality in returns and liquidity. They also demonstrate that investors—when faced with the enormous filtering problem posed by an abundance of price signals—are bound to occasionally make mistakes and update on noise.

We are currently planning how to address the various comments made by the referees, mostly revolving around potential endogeneity concerns of mutual fund fire sales.² Preliminary ideas include testing for additional spillover effects using customer-supplier relationships and/or common ownership linkages, as well as trying to exploit quasi-exogenous variation in mutual fund flows as triggered, for example, by mutual fund scandals (Koch et al., 2016).

[6] “Noise Traders Incarnate: Describing a Realistic Noise Trading Process,” joint with Joël Peress, revise & resubmit at *Journal of Financial Markets*

While NREE models have brought enormous insight for understanding the informational role of prices (e.g., Grossman and Stiglitz, 1980; Hellwig, 1980), many qualitative predictions from these models are highly sensitive to the properties of an exogenously-specified process for the asset’s noisy supply (e.g., its persistence and intensity). Motivated by this fact, we describe the empirical properties of this noisy supply process with the aim of helping theorists that want to calibrate NREE models. Using “noise trading” data from a variety of sources—including retail trading data from a discount brokerage house, small-size TAQ trades (before decimalization), and flows to retail mutual funds—we obtain remarkably consistent estimates for the degree of autocorrelation, its distributive properties, as well as its intensity (estimated based on a novel econometric approach that we develop in the paper). We further find that the intensity of noise trading has declined over time, thereby complementing recent evidence suggesting that stock prices have become more informative over recent decades (e.g., Greenwood and Scharfstein, 2013; Bai et al., 2016).

We are currently in the process of revising the paper for resubmission at the Journal of Financial Markets. The most important part of our revision involves conducting additional empirical analysis using the Boehmer et al. (2017) methodology to identify retail trading (for which we recently obtained the data).

[7] “Uncertainty about What’s in the Price,” joint with Joël Peress

Most of the literature on trading under asymmetric information arguably presupposes an unrealistic degree of common knowledge about what is known about the information environment of a stock. In this new working paper, Joël Peress and I relax this restrictive common knowledge assumption. Prior work in this field has modeled the case of *uninformed* investors being uncertain about the presence of informed investors (Banerjee and Green, 2015).

²While our most recent working paper version (which is the one we submitted at Management Science) dates from April 2018, we only got the decision in mid-November, explaining why our revision process is still in its infancy.

In contrast, this paper focuses on the uncertainty faced by *informed* investors about how informed they really are: do they possess genuinely novel information—on which it would be very profitable to trade—or do they possess *stale* information that is already reflected in the price? Such type of uncertainty should be common since prices can move for a myriad of reasons, making it extremely difficult, nay impossible for investors to know whether a given piece of information is already priced in.

In our paper, we put forth a parsimonious trading model in which investors face this type of uncertainty—which we dub “uncertainty about what’s in the price”—and describe the resulting trading equilibrium. In the model, speculators update the probability that their information is novel rather than stale based on recent price movements; in turn, market makers are aware that speculators may be trading on stale news. The model predicts that the stock price is an asymmetric function of past price movements: after a recent price uptick, buy volume—because it may result from speculators trading on stale news—has a lower price impact compared to sell volume (and vice versa after recent price downticks). Analyzing a comprehensive sample of order flow imbalances and price impact costs, we find strong support for this prediction and further show that uncertainty about what’s in the price is associated with less informative stock prices.

This is a new working paper and we are excited about collecting feedback from conferences and presentations to come. We think that the research question is important and we are thus optimistic that a future (more polished) version of the paper has a good chance of being published in a top journal.

D. Other Work

In addition, I have two old working papers.

[8] “Investors’ Attention and Stock Covariation: Evidence from Google Sport Searches”

In my former job market paper, I had found that countries with a high Google sport search volume exhibit a decline in trading volume and a reduction in stock return dispersion. Back then, I had interpreted these results as evidence that distracted investors rationally withdraw their attention from less important, idiosyncratic news items (Peng and Xiong, 2006). However, in light of the evidence reported in Peress and Schmidt (2018a), I am now more convinced that the results are driven by retail (noise) trader distraction leading to a reduction in idiosyncratic volatility. This new interpretation obviously requires a major overhaul and repositioning of the paper.

The good news is that my empirical results stand strong and robust. This allows me to use Google sport searches as a powerful source of quasi-exogenous variation in noise trading intensity over time and across countries. I am currently thinking of exploiting this idea to study the causal effect of noise trading on the profitability of return anomalies that have been explained as being driven by behavioral biases. For instance, return momentum has often been attributed to feedback trading and/or overreaction due to self-attribution bias (Daniel et al., 1998; Hong and Stein, 1999). To the extent that these traits are more pronounced among retail traders, one would expect the profitability of momentum to be mediated by a measure that captures their level of (in)attention.

[9] “Insider Trading in the Bond Market: Evidence from Loan Sale Events,” joint with Massimo Massa, revise & resubmit at *Journal of Financial and Quantitative Analysis*

In this working paper, Massimo Massa and I document that secondary loan market trading benefits the holders of outstanding corporate bonds by reducing information asymmetry. Specifically, we argue that loan sales obligate lenders to share sensitive information about the borrower with loan market participants, which levels the playing field for debt-market investors. In support of this view, we find that, in the month when a borrower’s loan is sold and starts trading, (1) the bond yield spreads of its outstanding corporate bonds decrease, (2) their liquidity improves, and (3) there is a reduction in speculative short selling demand. Moreover, we show that asset managers affiliated with lending banks reduce their stakes in the borrower’s bonds (without predicting low future returns), consistent with them understanding that they have lost a part of their information advantage due to the loan sale. Overall, our results highlight the importance of informational frictions in debt markets.

Appendix: Overview of Research Activities

Table 1: List of Research Papers

#	Paper Title	Publication Status
[1]	Glued to the TV: Distracted Noise Traders and Stock Market Liquidity, joint with Joël Peress	<i>Journal of Finance</i> (forthcoming)
[2]	Distracted Institutional Investors	<i>Journal of Financial and Quantitative Analysis</i> (forthcoming)
[3]	Stock Market Rumors and Credibility	<i>Review of Financial Studies</i> (forthcoming)
[4]	Fundamental Arbitrage under the Microscope: Evidence from Hedge Fund Transaction Data, joint with Bastian von Beschwitz and Sandro Lunghi	reject & resubmit at <i>Review of Financial Studies</i>
[5]	Learning from Noise? Price and Liquidity Spillovers around Mutual Fund Sales, joint with Pekka Honkanen	reject & resubmit at <i>Management Science</i>
[6]	Noise Trading Incarnate: Describing a Realistic Noise Trading Process, joint with Joël Peress	revise & resubmit <i>Journal of Financial Markets</i>
[7]	Uncertainty about What's in the Price, joint with Joël Peress	preparing for submission
[8]	Investors' Attention and Stock Covariation: Evidence from Google Sport Searches	preparing for submission
[9]	Insider Trading in the Bond Market: Evidence from Loan Sale Events, joint with Massimo Massa	revise & resubmit at <i>Journal of Financial and Quantitative Analysis</i>

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