Facts about financial market, old and new facts, Huberman regev, then talk about amplification due to social media.

We show that many of these facts can be captured by introducing information frictions in the form of social learning in the expectation formation process of the economic agents.

It now useful to consider a baseline model with traders’ heterogeneity but no social learning. In our framework this implies that agents keep their expectation constant to their prior beliefs.

Financial markets exhibits certain robust empirical regularities. Returns in asset markets display fat-tailed distributions, marked by pronounced skewness and excess kurtosis, while new information often penetrates slowly and asymmetrically, leading to delayed absorption of shocks into prices. While the literature has had success in capturing these behavior with reduced form approaches, even well-calibrated rational expectations models fail to generate these patterns, calling attention to the need for richer, more flexible structures that acknowledge the complexity and heterogeneity of real-world investors.

A natural starting point in addressing these puzzles is to relax the assumption of a representative agent. Introducing heterogeneous traders opens the door to novel dynamics, as a diverse population can produce more realistic price fluctuations. Yet such heterogeneity alone, while capable of matching certain market statistics, only partially explains the observed nonnormalities and imperfect information absorption. The next logical step is to incorporate a mechanism of belief updating—such as the simple DeGroot rule—to capture how agents adjust their expectations when confronted with signals and their neighbors’ opinions. Embedding this process within a framework of heterogeneous agents enriches the model’s internal dynamics, generating more realistic return distributions and allowing for some degree of delayed response to informational shocks.

Still, standard belief updating models miss a crucial dimension of real-world information flows: the structure of social interactions. In practice, investors form networks through which information diffuses unevenly, and the topology of these networks shapes the trajectory of expectations and, ultimately, price dynamics. The present paper demonstrates that moving beyond basic information aggregation toward social learning—a richer, network-dependent updating process—can reconcile theory with several perplexing empirical findings. By coupling heterogeneous agents with a social network through which beliefs evolve, we reproduce key stylized facts such as skewness, kurtosis, and the protracted integration of new information into market prices. These patterns, elusive in more parsimonious frameworks, emerge naturally once we acknowledge that investors learn not only from their private signals and aggregate price movements, but also from each other.

In what follows, we develop a parsimonious Agent-Based Model (ABM) that nests standard heterogeneity and simple belief updating as special cases, then extends these features to incorporate social learning. This layered approach highlights the incremental contributions of each modeling element, culminating in a framework capable of matching complex empirical regularities that have long challenged conventional, fully rational models.

The use of social networks has drastically reshaped communication in recent years. The effect of these new form of communication on society has been studied in disciplines like sociology, psychology, and information diffusion. The network topology plays a crucial role in enabling rapid information sharing but can also raise issues on how beliefs are formed. A prominent one is polarization, where groups of individuals, are exposed to opinions of individuals with similar beliefs and divergent viewpoints become more isolated. This creates echo chambers that can significantly distort the flow and perception of information.

While the diffusion of information through social networks has been extensively studied in fields like political science and sociology, its implications for financial markets are less understood. Prices are expected to reflect all available information, but then the presence of polarized and fragmented information channels raises questions about the efficiency of price formation.

Specifically, how does the structure of social networks influence the flow of information to investors, and how do these dynamics impact financial markets?

In this paper, we address this question by constructing an Agent-Based Model (ABM) of financial agents connected through a social network with parsimonious relaxations to rationality in two dimensions: heterogenous access to information and delayed transmission of news mediated by the social network. These deviations from rationality for which there is ample empirical evidence, will be enough to qualitatively reproduce stylized facts of financial markets, that cannot be captured in a rational setting and that other models of bounded rationality are able to match only by introducing zero intelligence or backward-looking individuals.

although the returns distribution is qualitatively similar.

Misinformed agents are still incurring a loss, altough of smaller magnitude than in the baseline case. While they are able to influence their cluster, prices are still not fully incorporating their wrong beliefs. The main effect in this case is that uninformed agents belonging to informed cluster can profit off of their peers in the misinformation group.