

Abstract

We design, field and exploit novel survey data, from a representative sample of the French population in December 2014 and May 2015 to provide insights regarding social interactions and whether they are informative for financial decisions, or they encourage imitation, mindful or mindless. We provide a model where purely informative social interactions influence subjective expectations of future stock market returns and demand for investing in stocks, and find strong support for the presence of informative social interactions. The extent to which the respondent's financial circle is informed about or participates in stock market appears to influence perceptions of recent stock returns and, only through them, expectations of future returns. Controlling for subjective expectations, stock market participation and the conditional portfolio share are positively influenced by the extent to which the financial circle is informed about or participating in the stock market. Alongside informative social interactions with the respondent's financial circle, we also find some evidence of mindless imitation of stock market participation observed in the outer social circle. These findings suggest that informative social interactions are significant and create a social multiplier for financial education and information, even though the potential for mindless imitation is also present.

Non technical description

In recent times, financially developed economies experienced dramatic events such as the fast spread of stock market participation in the 1990s leading up to the burst of the dot-com bubble, and the spread of excessive borrowing against home equity leading to the recent global financial crisis. In the face of such large scale and systemically important events, it is natural to ask, what the role of social interactions and peer effects is for the spread of financial behavior in the general population. In this paper, we focus on how social interactions and peer effects affect individuals' decisions to rationally invest in the stock market.

Recent literature broadly identifies two channels via which social interactions may generally affect financial decisions such as investing in the stock market: (i) information peer effects, which arise solely from directly communicating and disseminating information to and from friends and acquaintances and (ii) imitation or endorsement peer effects, also referred to as those driven by social utility motives, broadly understood as comprising of social norm effects in preferences (conformity) or complementarities in production. Information peer effects obtain from agents learning socially, but are distinct from observational learning. Observational learning happens when agents infer the information of their peers only from observing peers' decisions. Both peers' decisions and peers' information should augment individual information sets. Imitation peer effects obtain instead when peers' decisions are adopted without augmenting individual information sets.

Although a rigorous derivation of the equilibrium underpinnings of endorsement effects has recently been advanced for the linear-in-means workhorse econometric specification of social interactions models (Blume, Brock, Durlauf and Jayaraman, 2015), no such a microfoundation exists for information effects. The starting point of our analysis is therefore to model direct communication social learning within a competitive financial market. Agents are privately informed and have access to a large information network, gathering private information from peers, friends and acquaintances (information network) as well as publicly, from equilibrium asset prices. The model extends Ozsoylev and Walden (2011) to heterogeneity in risk preferences and to more general information network structures. A key prediction of the model is that individuals with higher 'connectedness', i.e. with more and/or more informative social interactions, invest in risky assets more aggressively. This is because well-connected individuals pool more and/or more precise privately received signals by individuals they are acquainted with, increasing the precision of their conditional stock market return expectations and thereby, the share of their wealth invested in risky assets.

With this prediction in mind, we design, field and exploit novel survey data that provide measures of stock market participation (relative to individuals' financial wealth), connectedness, but also of subjective expectations and perceptions of stock market returns via probabilistic elicitation techniques. Our empirical analysis exploits cross-sectional variation for a representative sample by age, asset classes and wealth of the population of France, collected in two stages, in December 2014 and May 2015. In addition to the aforementioned variables, the questionnaire contains a rich set of covariates for socioeconomic and demographic controls, preferences, constraints and access and frequency of consultation of information sources, typically absent from social network empirical studies. Crucially, it also contains specific questions designed to obtain quantitative measures of relevant network characteristics that enable identification of information network effects on financial decisions from individual answers, in the spirit of the classic work by Katz and Lazarsfeld (1955).

There are four key advantages of using our survey data: (i) the actual mechanism whereby social interactions matter for financial decisions can be empirically identified from respondents' answers to questions on beliefs and perceptions of stock market returns, when combined with data on measures of access and frequency of consultation of both publicly and privately available information sources (see Blume et al. 2015); (ii) we can sidestep the 'reflection problem' that arises when social interactions are identified empirically from linear-in-means econometric specifications (see Blume, Brock, Durlauf and Ioannides, 2011), because we exploit variation in respondents' perceptions about peers' behavior (and characteristics) instead of the actual behavior of their peers; (iii) our main identification strategy for disentangling 'informed holdings' from 'uninformed holdings' of risky assets is to separately ask respondents' perceptions about peers' holdings and peers' information, and (iv) the survey is done over a representative sample of a population of a financially developed country (France), with a mature stock market and abundantly publicly available information. Although we cannot trace the actual network structure, neither at the individual level, nor for the whole stock market (DePaula, 2016), this is an inherent feature of the stock market rather than a limitation of our empirical approach. We are able to focus on perceptions that respondents have and on the basis of which they make stockholding choices, even though we cannot validate the extent to which individual perceptions about peer information or behavior correspond to their objective counterparts.

Our empirical analysis suggests that an information effect indeed obtains from social interactions, first on perceptions of the past and, through them, on expectations of future stock market returns; and second, on whether and how much respondents invest in the stock market, controlling for subjective stock market expectations.

To reinforce our evidence of an information channel and address the possibility that our estimates simply reflect unobserved heterogeneity, we put to use an interesting interpretation of the theoretical model in the design of the survey in the spirit of Grinblatt, Kerlohaju and Ikaheimo (2009). Specifically, our theoretical framework suggests that aside from the usual social circle of friends and acquaintances of an individual, we can also identify a subset of it which we call the financial circle, i.e. members of the respondent's social circle with whom the individual specifically interacts on financial matters, e.g. investments. Implicit in this distinction is the fact that members of the financial circle have been specifically selected to discuss financial matters, because they are more knowledgeable and the respondent trusts their views (in the context of the theoretical model, members of the financial circle are considered to have more precise, informative signals). By asking respondents to directly report numbers and information about their financial circle, we can generate variables that correspond to both their financial circle and their outer circle (i.e. all those remaining members of respondents' social circles with whom they do not discuss financial matters).

With this novelty in place, we can address three issues in one go. First, we can reinforce our main conclusion that there is a strong and significant information effect present: we find that when we regress expectations, perceptions or the share of financial wealth invested in the stock market on the proportions of one's financial and outer circles that are perceived to follow the stock market controlling for household characteristics, the effect of the former is sizeable and significant, while the effect from the latter is statistically insignificant. The interpretation of this is that information about the stock market simply does not pass from the outer circle to the respondents, because respondents do not discuss financial matters with them.

Second, it allows us to separately identify observational learning from mindless imitation in financial decisions. By mindless imitation we mean that respondents follow the financial behavior of others in their circle, due to e.g. peer pressure, conformity or a fad effect. Observational learning instead obtains when the respondent emulates the behavior of those in one's circle that are considered knowledgeable and trustworthy about financial matters. If observational learning is present, we consider social interactions as being indirectly informative as opposed to observing peers' signals, which are directly informative. We find no evidence in support of mindless imitation with respect to expectations, perceptions or conditional portfolio shares. We do find some evidence of mindless imitation, though, when it comes to the decision to participate in the stock market. With the advent of modern technology, the spread of social media, and the establishment of online investment and lending platforms, one can expect informative social interactions, but also the potential for mindless imitation to grow in importance.

Third, our approach of splitting the social circle of respondents into financial and outer circle helps us tackle the issue of unobserved heterogeneity. If indeed respondents and their social circles all follow and/or invest in the stock market (or not) because people tend in general to socialize with those that are similar to them and face common unobserved factors, then we would expect to see positive and significant effects of the knowledge and participation of both the financial and outer circles on the share of financial wealth invested in the stock market by respondents. The fact that the effects from the outer circles are insignificant, except for the stock market participation decision, indicates that it is not the similarities in people's circles that matter for their stock market decisions, but rather their informative social interactions with members of their financial circle. This conclusion is reinforced through placebo tests, where perceptions regarding the financial and outer circles are reshuffled among respondents of the same age, education, and region (department). To overcome the possibility of selection bias, we also allow for respondents to select friends and acquaintances with whom to exchange on their own financial matters jointly with whether to invest in stocks or not, but fail to find any evidence in support of correlated unobserved factors in these two decisions.

Research output

One working paper has now been completed, with the title "Informative Social Interactions", and is available from the authors (L. Arrondel, H. Calvo-Pardo, C. Giannitsarou and M. Haliassos) upon request.