

CERF Fellows Report – March 2016

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Research Title and Abstract as provided upon application to CERF

Learning, networks and stock market participation

Key Research Findings to date

We examine the role of information accumulation for the formation of subjective expectations and stock market participation. Recent empirical literature documents that in comparison to middle-aged investors, young agents are broadly uninformed about stock market performance. The same appears to be true for agents that are not very socially active. The proposed research programme provides a theoretical framework that is consistent with these findings whereby agents start their lives with no information about the stock market. As young agents grow older, they accumulate information by participating in the stock market and by social interactions, which they use to update their beliefs about stock market performance, in line with the evidence.

Comments and Additional Information

LEARNING, NETWORKS AND THE STOCK MARKET

Summary

We examine the role of information accumulation for the formation of subjective expectations and stock market participation. Recent empirical literature documents that in comparison to middle-aged investors, young agents are broadly uninformed about stock market performance. The same appears to be true for agents that are not very socially active. The proposed research programme provides a theoretical framework that is consistent with these findings whereby agents start their lives with no information about the stock market. As young agents grow older, they accumulate information by participating in the stock market and by social interactions, which they use to update their beliefs about stock market performance, in line with the evidence.

Detailed Report

Based on a novel survey data set from France, recent empirical literature (Arrondel, et. al., 2013) establishes that stock ownership and stock-market participation are strongly correlated with individuals' subjective expectations of stock market returns, which are in turn strongly correlated

with the information set of the potential investors. Expectations of stock market returns are broadly hump-shaped in age. Young people are pessimistic about the stock market returns: as they enter adulthood at 18 years, less than 40% of them expect stock market returns to be positive five years ahead, but the percentage gradually increases as they become middle-aged. At the same time, the young people tend to be the least informed about stock market performance (this is documented by their wrong responses when asked about stock market performance in the recent past), but their information sets get enlarged as they grow older. The survey therefore suggests a clear link between age, the amount of information used to form subjective expectations about future stock market performance and stock market participation.

In collaboration with Dr Hector Calvo-Pardo, the research programme undertaken is motivated by these empirical observations and aims to address an array of questions related to these facts.

The first aim is to propose a theoretical framework that is consistent with the above findings. In this framework there is a large number of ex-ante identical dynasties, where agents' subjective expectations about the future performance of the stock market (e.g. expected stock price growth) endogenously determines current stock prices. The age profile of agents is determined as follows: at a given point in time, an agent retires with some probability and his offspring takes over and continues the dynasty. At that point in time, the offspring inherits the given amount of stocks accumulated by the parent, but not the parent's knowledge about the stock market (for example information on past realisations of returns, prices and dividends). In other words, every newly born agent 'resets' his information set. This assumption captures the empirical regularity that young agents are broadly uninformed about stock market performance. How do young agents accumulate knowledge/experience and form expectations about future returns? This is achieved in two ways: first by simply accumulating information that is revealed to them over time (in the form of private signals about future stock market returns) and second by pooling information from the social acquaintances.

The second aim of the project is to understand the impact of such pessimistic subjective beliefs of the uninformed young investors on the aggregate outcomes in the stock market. Preliminary analysis indicates some interesting asymmetric effects: asset price booms appear to be milder compared to sharp, severe and prolonged asset price busts. The aforementioned framework successfully generates the differences in subjective return expectations depending on the age of the investors. Heterogeneity among agents of the same age stems from differences in their social circles and how these are used to pool information about the stock market.

The novelty of our approach is that networks are explicitly embedded into the expectations formation and updating mechanism. This setting provides valuable insights about what types of network structures are compatible with the observed stock market participation rates of different age cohorts. It can also be very useful in understanding why subjective beliefs about stock market returns are misaligned for young agents. In other words it may provide a quantification of the speed of information accumulation and thus convergence (or not) to rational expectations.

The research programme is in progress and is being developed in parallel with its empirical counterpart (a survey on how agents' decisions to invest in the stock market may depend on exchange of information via social interactions).