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The delegated portfolio management problem: Reputation and herding ☆

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ABSTRACT

We study the relationship between financial intermediaries' reputation and herding in a delegated portfolio management problem context. We identify conditions under which equilibria exist such that intermediaries with good reputation invest in private information, whereas those with poor reputation herd. The model's empirical predictions are discussed and found to be consistent with previous evidence. From a normative stand, our work points out the possible existence of a policy trade-off between protecting investors by demanding more transparency from intermediaries and encouraging herding by free-riders for whom imitating portfolio decisions would be easier under tighter regulation, such as more frequent portfolio disclosure.

1. Introduction

Financial intermediaries (FI) play an important role in the economy as they channel resources from agents with liquidity surpluses towards those with liquidity needs. The group of FI formed by insurance companies, pension funds and investment companies (e.g. open and closed-end mutual funds and hedge funds) has experienced considerable growth in the recent years: assets under management (AUM) have grown 90.3% between 1993 and 2001, while banks' AUM grew 37.9% in the same period.

The growth of these FI has been perceived as a positive development for several reasons (see BIS (2003) and IMF (2004)): they have greater diversification capacity than individual investors; reduce transaction costs; and, due to their information processing capacity, can improve the efficiency of financial markets, exploiting arbitrage opportunities and avoiding financial securities' prices to deviate from fundamentals. However, there are also reasons to monitor and study the development and behavior of FI. In particular, there is substantial evidence that mutual and pension fund exhibit herd behavior, showing similar investment strategies and portfolios, which could increase volatility in financial markets.[1]

There are several reasons that could explain herding: Maug and Naik (1995) and Arora and Ou-Yang (2001) argue that if part of a risk-averse FI's profits depends on his performance in relation to some benchmark he may partially mimic the benchmark's composition to reduce the risk of losing part of his income.[2] Additionally, Scharfstein and Stein (1990) argue that if managers worry about their reputation (i.e. the market's perception about their ability) they could ignore useful private information to make investment decisions and imitate the rest of managers if investors doubt more the skill of a manager when he makes a bad choice that is different from the one made by his peers, as opposed to a bad choice that is similar to the one made by others. In fact, Claessens et al. (2000) suggest this could be one of the mechanisms operating during the Asian crisis. Avery and Chevalier (1999) further elaborate on the relationship between reputation and herding and build a model where managers, who ignore their own ability, herd early in their career. However, once they learn about their skills they may choose a contrarian strategy, ignoring private information and making decisions that differ from those of others to signal their type. In a related work, Graham

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[1] See Wermers (1999) for evidence for the US market. Chang et al. (2000) and Maturana and Walker (2001) present evidence for the Asian and Chilean markets, respectively.

[2] See Hirshleifer and Hong Teoh (2003) and Bikhchandani and Sharma (2001) for reviews of herd behavior literature in financial markets.

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(1999) predicts that as the initial reputation of agents improves they will herd more as they want to avoid a large drop in profits associated with a fall in reputation, which occurs if an agent's decision is different from others'. However, unlike Avery and Chevalier (1999), Graham does not study how an agent's incentives to herd change as his reputation endogenously changes over time.

On the other hand, there is a strand of the delegated portfolio management problem (DPMP) literature that highlights FI's reputation potential role as an incentive aligning device: if the FI's future profits depend on his reputation (e.g. greater fees, more clients), he could be willing to make a greater level of effort to manage the portfolio to avoid possible future losses in income. The works by Heinkel and Stoughton (1994) and Farnsworth (2003) explore this argument, showing how the DPM market could develop even with the use of simple remuneration schemes (e.g. a fixed percentage of AUM).[3] However, this literature has some limitations. Heinkel and Stoughton (1994) make strong assumptions about the principal–agent relationship to obtain a tractable model, casting doubt on the general validity of their conclusions.[4] Farnsworth (2003) assumes that the principal has committed ex-ante to increase the flow of AUM if the agent's performance is good. Moreover, these works do not study the relationship between reputation and herding.

On the other hand, the papers mentioned above overlook the fact that in a multiple-period setup, unless there is a permanent source of uncertainty regarding the FI's characteristics, in a long-run equilibrium there will not be investing in reputation. This point is made by Hölmstrom (1999), Mailath and Samuelson (1998, 2001) and Vial (2008), although not in a DPM context, and we take it into consideration in our work.

We find that, under certain conditions, there are equilibria in which FI with high reputation are prone to invest in information, whereas those with poor reputation will tend to imitate other FI's portfolio decisions. This prediction is consistent with previous empirical work by Chevalier and Ellison (1999) and Hong et al. (2000). Also, we use numerical examples to determine the magnitude of herd behavior in response to changes in the model's parameters.

We view our work as an alternative rationalization for the empirical evidence found in Chevalier and Ellison (1999) and Hong et al. (2000). In our setup, the mechanisms operating in equilibrium are different from those in Scharfstein and Stein (1990), Avery and Chevalier (1999) and Graham (1999); in particular due to our modeling decision of using a continuum of FI, the portfolio choice of a FI contains no information regarding the type of another FI. This is the mechanism affecting the behavior of managers in these three works. Our findings are more optimistic in the sense that lack of herding by FI with high reputation is associated with efficient use of private information. This is important because Avery and Chevalier (1999) and Scharfstein and Stein (1990) assume a positive relationship between reputation and profits for managers in a two-period setup. However, in the presence of the pathological behavior implied by these models, endogenously deriving a long-term positive relationship between reputation and willingness to pay seems harder to achieve. Moreover, rationalizing the increasing importance of institutional investors documented above is difficult if all FI, regardless of their reputation, make little or no use of private information.

The rest of the paper is organized as follows. Section 2 presents the model. Sections 3 and 4 discuss and characterize it. Section 5 discusses the empirical predictions. Section 6 presents some final remarks regarding the generality of our results and concludes.

2. The model

The economy has infinite periods. Investors live for one period and have a wealth endowment, which they can delegate to FI. FI have (potentially) infinite lives; some have the ability to invest in private information that is useful to predict the risky asset's return. This characteristic is non-observable by investors.

2.1. Financial securities

There is a risk-free asset which returns r_f by unit of wealth and has price q_f. There is also a risky asset which returns r by unit of wealth. This payoff can take two values: r_H with probability π, or r_L with probability $(1-\pi)$, with $r_H > r_L$. The risky asset's price is q. The life of both assets lasts one period; their short sale is prohibited for investors and FI; and their prices are exogenous, in the sense that they do not reveal the FI's private information. If the last assumption is not fulfilled FI would not be willing to invest in information, because they would not be able to benefit from this if their portfolio decisions reveal their information to all agents through changes in assets' prices.[5]

We make the following assumption:

$$\pi\left(\frac{r_H}{q}\right)+(1-\pi)\left(\frac{r_L}{q}\right)=\left(\frac{r_f}{q_f}\right). \tag{1}$$

If Eq. (1) holds, a risk neutral investor will be indifferent (ex ante) between buying the risky and the risk-free asset.[6,7]

2.2. Investors

There is a continuum of risk neutral investors with measure 1 who live for one period. At the beginning of their lives they are endowed with wealth W_t, identical for all investors. They decide whether to manage their own portfolio or to delegate this task to a FI.

Since investors are risk-neutral, they delegate their entire wealth only if the gross expected return for the portfolio managed by a FI with reputation μ, R_μ, is greater than R, the gross expected return that he would have if he managed the portfolio by himself. Otherwise, the amount of delegated wealth is 0. R_μ is given by Eq. (10) and R is given by (1).

2.3. Financial intermediaries

There is a continuum of risk-neutral FI, with measure 1, indexed by j. The FI are hired by investors to manage their portfolios. A skilled FI may invest in information useful to predict the risky asset's return. The FI's type is not known to investors, but everyone knows there is a mass θ of skilled FI in the population and assign probability μ_j to the event that FI j is skilled, given his investment decisions record up until t. This probability is FI j's reputation, and we detail its analytical expression in Eq. (9).

[3] Bhattacharya and Pfleiderer (1985) and Stoughton (1993), suggest that in order to align incentives, remuneration schemes should include quadratic sharing rules, while, Heinkel and Stoughton (1994) argue that, from the agency literature's point of view, contracts should use performance-based fees. The work by Baptista (2008) explores the use of optimally derived contracts. Finally, Basak et al. (2008) make a case for the use of benchmarks in remuneration schemes.

[4] The authors assume, for instance, that all negotiation power shifts from the principal to the agent if the relationship between them extends beyond one period.

[5] This assumption could be justified by the existence of noise traders, whose transactions cause an additional source of uncertainty so prices are not perfectly revealing (see Grossman and Stiglitz (1980)).

[6] Rather than an assumption, (1) could be seen as an equilibrium condition for the prices of both assets in an economy in which investors are risk-neutral.

[7] Given that Eq. (2) implies that in the good (bad) state the risky asset's gross return is higher (lower) than that of the risk-free asset. This means that the agent's optimal portfolio composition would be different if he knew which state was to materialize.