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E Explaining mutual fund behavior through the structure-conduct-performance lens

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> "I'm an investment adviser. I advise people how to invest their money until it's all gone."
>
> Woody Allen character in *A midsummer night's sex comedy* (1982)

Abstract

This paper examines mutual funds. These are economically important as the largest institutional investors, and form an important principal-agent relationship as custodians of retirement savings. Despite a huge literature, there is no agreed explanation of mutual fund behavior. This analysis links mutual fund research across disciplines under the structure-conduct-performance paradigm (SCP), which is widely used in strategy research to explain firm actions and results. SCP explains mutual fund actions after placing the fund manager at the center of fund operations, where their conduct is driven by structure of markets and the funds management industry. Structural influences on fund managers include unpredictability of markets, the oligopolistic nature of the mutual fund industry, and disengagement of clients. As a result, funds derive income as commission on assets under management, which is sub-optimal for clients. In addition, fund managers' conduct is driven by their homogeneity and socialization with competitors and investee firms. While the most obvious role of fund managers is construction of investment portfolios, outperformance is not their sole, or perhaps even principal, objective. The SCP lens offers insights into mutual funds of value to fund managers, investors, regulators and executives of investee firms. This paper impounds evidence from real-world data in theory to offer an actor-centric perspective of investment which is an archetypal practitioner driven discipline.

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1. Introduction

Institutions are the dominant investor group in developed markets with ownership of over half the equities, and are custodians of the retirement savings of most individuals. This makes them central to one of the most important principal-agent relationships in modern economies. Despite that, there is no shared description of the industry's workings, which can leave researchers struggling to explain their findings. The research objective of this paper is to help fill that gap with a theory of the behavior of mutual funds, which are the largest category of institutional investor.

Given the economy-wide importance of the mutual fund industry, it is not surprising that it has a huge literature, nor that it is fragmented across disciplines. The first challenge, then, is how to make sense of all the research data and present a grounded theory of fund manager investment. The solution proposed here is the structure-conduct-performance (SCP) framework which was developed by Bain (1959) and is widely used in strategy research for industry analyses. It posits that the performance of an industry is determined by the conduct of firms within it, which in turn depends on the industry's structure.

SCP conceptualizes decisions in a multi-dimensional framework that typifies finance and so has been used to interpret performance of finance industry sectors including banking (e.g. Hannan, 1991) and mutual funds (Otten and Schweitzer, 2002). But in these – as in other applications - the SCP paradigm ignores discretionary conduct by managers, assuming they passively mediate stable relationships between industry structure, and firm conduct and performance. The mutual fund industry, though, is an archetypal practitioner-driven sector where managers' role is not benign. So, the SCP framework here follows Panagiotou (2006) and places fund managers at the center of fund operations. Thus structure of markets and the industry's social and structural features influence fund managers' personalized investment decisions, which determine fund performance.

The most important conclusion from the SCP-based descriptive theory of investment is that mutual funds behave very differently to the representative investor envisaged by the modern finance paradigm who is a risk averse individual seeking optimum performance. In particular, funds operate in a global oligopoly and compete around non-price factors. Funds are left to self-regulate because established investors are relatively insensitive to return and it is only one criterion for new investors. Investment decisions are made by salaried employees whose compensation is weakly linked to fund results but often incorporates a bonus linked to growth of assets under management. Even though construction of investment portfolios is fund managers' most obvious role, it is not their only function; nor is maximizing performance necessarily their sole, or even principal, objective despite its importance to clients.

What is the contribution of such an analysis? First, data probe the black box of decision making and so complement empirical studies which remotely infer fund managers' behavior. This more granular understanding should be useful in unravelling the bases of fund performance. Second, a better understanding of the context and process of fund manager decisions should help people who interface with them. Third, the proposed model provides a

coherent foundation for empirical and behavioral studies, and informs the burgeoning literature on performance of investment analysts which should shed light on other puzzles such as agency problems and herding, whose longevity suggests they meet some unrecognized economic need.

This article makes a number of innovations. One is to extend the SCP paradigm to describe behavior of a practitioner-driven industry, which offers insights of value to industry regulators, fund managers, investors and executives of investee firms. The actor-centric perspective provides an exemplar for researchers interested in socialized explanations of industry and manager behavior; and also offers an alternative to the standard mechanical evaluation of mutual funds against benchmark returns, where fund managers are passive conduits functioning in a social vacuum.

A second innovation is to tie mutual fund managers' performance to exogenous influences, which points to structural changes to the industry that could improve its functionality. Perhaps the strongest contribution of the model is that it captures evidence from field research and impounds real-world data in theory. This technique is widely applied in medicine – that, like investment, is an archetypal practitioner-driven discipline – where it is termed knowledge translation (Straus et al., 2009). This disseminates practical knowledge back into research, which ensures that theory does not stagnate, but is alert to its environment and directed at adding value for practitioners.

The following sections describe behavior of mutual funds, develop hypotheses, and test them using an international database reporting funds' structure, conduct and performance.

2. Institutional influences on the mutual fund sector

As envisaged by institutional economics, mutual funds are embedded in broad political, social and human systems with a wide range of time-varying impacts (Hamilton, 1919).

External organizations are important structural influences on the mutual fund industry. The most influential group is legislators who prevent mutual funds from incorporating leverage in their portfolios or short selling assets, and – until recently - charging performance-based fees (Alpert et al., 2015: 21).

Securities regulation and equity market listing rules have influence through requirements that investors share equal access to price-sensitive data, which renders most information a public good. This forces innovative measures on fund managers to identify attractive investments by building social contacts that provide superior private information, or herding to minimize the consequences of under-performance (Sias, 2004).

Empirical studies report that returns to investors are higher in countries with strong legal systems and good governance and (Shleifer and Vishny, 1997), which can be seen in enhanced protection to shareholders. Given that mutual funds are well resourced for research, this capability is most effective in generating returns when information asymmetry is minimized between firms and investors.

This suggests the following hypotheses:

H1. Investor protection improves fund performance

H2. Restraints on fund activities hamper performance.

3. The mutual fund industry: Structure and conduct

The most prominent structural feature of the mutual fund industry is its concentration, so that the five largest portfolio managers hold about half the market in most countries (Ferreira and Ramos, 2009). This can be traced to high barriers to entry from onerous government licensing

requirements and the importance of reputation, which make it hard for outsiders to gain traction.

Mutual funds' oligopoly discourages competition through price, and promotes a business model where funds' income is derived from commissions on assets under management (AUM). Most AUM come from mandated or tax-incentivized retirement savings, so future growth is limited to the number of investors and size of their income, which are both increasing slowly in developed economies. This puts pressure on profits and encourages scale, so that funds' management fees are negatively related to size of the fund and its family (Khorana et al., 2009). Funds' oligopoly establishes other points of alignment in their conduct, such as similarity in products and glacial innovation; and vigorous signaling of non-price attributes such as skill and reliability.

A contributor to other structural aspects of the mutual fund industry is that the most important criteria used by investors to select funds are subjective such as trust, reputation and manager attributes (Foster and Warren, 2015), which rejects the intuitively obvious assumption that they unconditionally seek highest risk-adjusted return. Moreover, established clients tend to be disengaged and few adjust their asset allocation or trade in any year (Agnew et al., 2003), so investments are 'sticky', and only withdrawn from the worst performing funds (Del Guercio and Tkac, 2002). Because regulation is typically ineffectual, funds are left free to self-regulate (Almazan et al., 2004).

An interesting question about mutual funds' business model is that - even though performance-based fees are legal almost everywhere - they are uncommon (Alpert et al., 2015: 21). Funds probably reject performance-based fees because they have difficulty in replicating performance which would leave performance-based revenues open to random fluctuation. Commercial imperatives of AUM-based fees, though, could motivate fund managers to ignore performance in favor of building AUM by diverting resources into marketing to potential clients, or growing AUM beyond a level that can produce optimum return. Funds can actually reduce return by not optimizing investment risk because of a tendency to either bank good results early, or take on greater risk after poor results in an effort to recover ground (Clare et al., 2004). They can also manipulate risk adjusted performance measures (which scale return by volatility such as the Sharpe Ratio) through use of data with lower frequency, and truncating extreme returns using collars and swaps (Spurgin, 2001).

Funds are generally weak in managing this complex set of potential agency conflicts. An obvious solution is to compensate managers for performance relative to an index, but this is generally limited, so that only a third of fund managers report that results have 'a lot of impact' on their bonus (Farnsworth and Taylor, 2006). Most funds simply self-select into low cost ways of signaling favorable return and risk. This includes upgrading the quality of communication and reporting, enhancing governance through adoption of style labels, and appointing fund managers with external characteristics that build investor confidence such as education, CFA accreditation, experience and appearance. This helps clients overcome information asymmetry, as does the existence of rating agencies such as Lipper and Morningstar whose reports are relied upon by financial advisors as objective performance measures (Jones et al., 2005).

An incidental benefit to investors from funds' concern to mitigate risks to their reputation and business is that they voluntarily constrain investment strategy through ethical and similar investment criteria to avoid companies with unfavorable attributes, and avoid firms with business models that incorporate threats to sustainability of society, the environment and the economy, including markets. Voluntary constraints are more pronounced in funds that have fewer monitoring mechanisms embedded in their governance structure such as not being part of a large family (which facilitates peer monitoring), and

having fewer independent directors. Serendipitously, such constraints do not adversely affect performance (Almazan et al., 2004).

Finally, funds have a preference to self-limit their property rights and remain passive in relation to investee firms, which explains why institutional shareholding is not related to firm performance. However, they monitor investee firm performance, and – if it drops below the industry average – will use their influence to reduce firm free cash (Coleman, 2014).

A clear indicator of funds' success in structuring the investment industry to their benefit can be seen in a study by (BCG (2015) which found that "asset management continues to rank among the most profitable industries."

Funds management is a typical oligopoly with the usual competitive constraints, which in conjunction with its structural features and business objectives suggests the following hypotheses:

H3. Greater competition between mutual funds will lift performance

This is based on evidence that funds appropriate rent from their outperformance, which is less likely under competitive pressure for fund flows.

H4. Mutual fund age and size will lift returns

Age and size proxy for scale and development of the industry and thus improve performance.

4. Fund managers' conduct: A brief description of how they invest

Conduct of fund managers shares many similarities because they are overwhelmingly male, invariably university educated, often with a finance specialty or CFA accreditation, and aged around 40 years with at least 10 years industry experience across several firms. Most appear confident, and also experienced, well-trained, well-resourced and motivated. Because psychology and personal characteristics shape conduct, it is not a surprise to find limited heterogeneity in FMs' investment decisions. Even so, they rebuff a cookbook style of valuation that leaves limited room for personal skill and favor personalized investment models that display judgment and emphasize the value of their human capital (Chevalier and Ellison, 1999).

Investment is characterized by weighty stresses and cognitive constraints. This is typical of complex naturalistic decision making where: information is ambiguous, which forces simplification of decisions; and success depends on judgment, which promotes use of experience-based mental models that are rich in heuristics and stories that reflect personalized prejudgments (Kahneman, 2011). This is exactly what is observed in fund managers (e.g. Coleman, 2015) who follow an intuitive modelling process because the structure of markets stymies reliable forecasts. They start with an experience-based mental model that sets outs their assumptions about determinants of equity valuations. This builds into a tops down view of how industries and sectors will play out through investment themes and value-relevant measures that signal superior return and low possibility of loss (e.g. Olsen, 2002). This uses fund managers' unique paradigm to process an eclectic mix of publicly available information, insights gained from company visits, and anecdotes gleaned from industry experts, company insiders and colleagues. Reliance on intuitive skill and qualitative data prompted Treynor and Black (1973: 66) to observe that investment involves "subjective, judgmental work".

Structural features of security prices influence FMs' conduct. For example, funds are open ended and investor flows are strongest around month end, so that the timing of FMs' investment decisions is largely involuntary. Fund managers also look to prices for signals, so that technical analysis or some form of charting based on historical price is the most important investment technique in the short term (Menkhoff, 2010). Over a market cycle, FMs will rely on prices' mean reversion to construct seemingly crude anti-cyclical heuristics, and - when facing the need to liquidate some securities - will sell winners and hold losers

because they are expected, respectively, to drop and rise on reversion to the mean. FMs will also overload on well-priced securities at the bottom of their historical range, trim holdings after a run up in prices, and take profits around historical highs (Beckmann et al., 2008).

Normative investment techniques – such as discounted cash flow analysis and the capital asset pricing model – play a conflicted role in FM valuations. On one hand, structural features of markets make it impractical to forecast key inputs such as earnings and discount rates (Francis et al., 2000). Similarly there is limited predictive capability in normative predictors of equity returns such as lagged firm traits and risk (Ferreira and Santa-Clara, 2011). Conversely, it is unusual to see any investment proposal that is not accompanied by an impressive analysis that incorporates core elements of modern portfolio theory, discounted cash flows and risk evaluation. In practice quantitative analyses are largely impression management that is consistent with signaling theory (Schlenker, 1980) because they are often unrelated to analysts' recommendations (e.g. Barniv et al., 2010).

Although information is FMs' most important investment resource, requirements of disclosure and governance mean that most information is a shared, public good. Moreover, drawing insights from any information is complicated because most is non-standardized and unprocessed, so it must be interpreted and conflicting conclusions reconciled. Thus fund managers continually seek ways to secure proprietary information and enhance data's quality through building a social economy of communications channels with competitors, analysts, and other investment insiders. These can be formal through meetings and conferences, less formal as co-location in recognized financial enclaves which promotes information sharing, and - through what one securities lawyer described to me as "the drumbeat of Wall Street" - almost ephemeral via tips, whispers and rumors.

FMs' most important social link is with executives of investee firms where private information is the common mixing variable. FMs expect to gain insights into industry trends and firms that will help them to deliver superior investment performance (Holland and Doran, 1998). Corporate executives seek to create favorable impressions of their firm's outlook that will be reciprocated by fund managers' support through investment (Barker, 1998). Value that fund managers place on information sourced from executives is consistent with other evidence of value in executives' knowledge, including the success of investment strategies that follow insiders' announced trades, and the significance of executive fixed effects in explaining variation in firms' financial decisions (Brochet et al., 2011).

Socialization brings one of the fund industry's most striking features, which is herding (Sias, 2004) that reflects co-ordination of competitors' decisions, and elicits the common complaint over crowded trades. Somewhat counter-intuitively, competition can also encourage FMs to replicate competitors' behaviors because they are competing for common pools of investible assets (e.g. Warther, 1995), or to avoid the risk that a divergent strategy poses to their reputation and compensation.

Mutual funds' oligopoly converges FM analyses and outlook. Funds cluster in a hand-ful of cities led by London and New York, where there and elsewhere they laager in financial enclaves. Fortunately for investors, return is better for funds in larger cities (Christoffersen and Sarkissian, 2009). As if to emphasize their conformance, most mutual funds occupy im-pressive buildings with similar open foyers, cloned security processes, and be-flowered meet-ing rooms with dewy carafes of iced water, good coffee, and – especially in New York and Pacific Rim financial hubs - outstanding views.

Structural aspects of the mutual fund industry set up a variety of complex social and game-theoretic relationships and involuntary responses between fund managers, their competitors, and executives in investee companies (Cuthbertson et al., 2016). Linkages are so strong as to bring comparisons between investor social networks and epidemics (e.g. Shive, 2010), so that investment decisions arise at least in part as a social construct. As a result, fund

managers depart from normative investment theory in relation to the information, research strategy and analytical techniques that they use.

5. Explaining performance of mutual funds

Mutual fund performance is usually reported as return relative to an appropriate benchmark. However, surveys of fund clients reveal they have other important criteria including trust and reputation (Foster and Warren, 2015), so it seems reasonable to also evaluate funds' performance as investors' agents. This section shows how structure of the mutual fund industry and conduct of fund managers drives fund performance.

Turning first to fund return, stylized facts since the 1960s are that funds under-perform their benchmark (for a review see: Cuthbertson et al., 2010). Although this is often explained by reference to the efficient markets hypothesis (e.g. Malkiel, 1995), there is extensive evidence that investors can profitably use information, especially that from private sources. For example, a study by Coleman (2011) found that totally unexpected events – sudden CEO deaths and fatal industrial accidents – were reflected in share prices hours before their first media mention. Private information is also used in the lead up to major corporate transactions. In a typical study, Meulbroek (1992) examined cases of insider trading detected by the SEC ahead of acquisitions, and concluded that insiders were responsible for most of the abnormal trading volume prior to the announcement, and caused about half the pre-announcement price move. More broadly, studies that retrospectively examine extreme moves in markets (Fair, 2002) and individual shares (Cutler et al., 1989) cannot explain them in terms of public information.

Empirical evidence that private data and private interpretation of public data offer significant opportunities for sophisticated investors to profit is consistent with recent more granular studies of fund performance using improved datasets which find that – before fees – mutual funds generate excess return from their skill and information gathering capability. In a typical analysis, Wermers (2000) found that the average fund's stock picks outperformed the market index by 1.3 percent per year, which became a net of minus one percent after expenses and transaction costs of 1.6 percent and the drag from holding cash of 0.7 percent. In addition, performance persists over the medium term (e.g. Ferreira et al., 2013), which indicates existence of replicable skill.

This evidence is consistent with a model developed by Berk and Green (2004) which showed that fund managers have heterogeneous ability to produce abnormal returns. However, because this skill is in short supply, fund managers are able to capture rents on their skill rather than passing return to investors. To date this has been only lightly examined because studies of the fees that mutual funds charge investors generally do not consider return as a dependent variable. As an aside, conclusions that mutual funds are unable to outperform their benchmark invariably compare return net of all fees and expenses, which can be well below the gross return fund managers achieved.

Important structural influences on fund managers' performance are that it is impractical to forecast inputs to equity valuation models such as macroeconomic variables and firm cash flows, and most information is a public good. FMs cannot identify outperforming stocks using traditional finance theory, so replicable investment expertise is not widespread and chasing outperformance involves career risk. Another impact on fund managers' performance is that they are salaried employees whose compensation is weakly linked to fund results. FMs test their performance against competitors or use benchmarks that match their portfolios' style; and the risks of most interest to FMs are left tail investment risk and their employers' commercial risk.

These structure-conduct features have multiple pathways to mutual fund underperformance. One is funds' AUM-based business model which is sub-optimal because best performance comes from a symmetrical, performance-based fee (Clare et al., 2014). Further, FMs lack incentive to be unconditional performance maximizers, and – because improving return is only of benefit in attracting new investors - they can compromise performance in favor of boosting AUM. One example is window dressing, or the practice of altering portfolios at the end of a reporting period to show higher than actual holdings of outperforming stocks and lower than actual poorly performing stocks. Because FMs are only partly judged on performance, under-performing managers can survive with a good explanation of strategy that attracts clients (e.g. Delgado and Cueto, 2012). Even though construction of investment portfolios is FMs' most obvious role, it is not their only function; nor is maximizing performance necessarily their sole, or even principal, objective despite its importance to clients.

Turning to integrity of funds in their role as investors' agents, there is strong evidence of abuses of investors' trust, such as fines in excess of $3 billion on 25 US fund families during 2003-4 for illegal trading to the disadvantage of their clients (Houge and Wellman, 2005). These abuses took advantage of pervasive agency relationships where financial institutions provide advice, manage funds and execute transactions on behalf of investors who have less skill or confidence. It is also possible that the environment around and within financial institutions tips the ethical balance between promoting client and fund interests and facilitates illegal behavior (e.g. Baddy, 2011).

The simplest way to summarize how structure and conduct impact on mutual fund performance is graphically. Figure 1 flowcharts the three most important S-C-P linkages that bring mutual fund underperformance and exploitation of clients.

[Insert figure 1 about here]

The top chart shows that weak regulation and opaque operations of the mutual fund industry set up a structure that is not optimized for investors and leads to agency abuses. The middle chart shows how the industry's global oligopoly and lack of competition divert fund managers away from performance maximization. The bottom chart shows how the unpredictability of markets and wide sharing of price-sensitive information promote social behaviors of fund managers that further divert them from performance maximization

This discussion suggests the following hypotheses:

H5. Mutual fund fees will be negatively related to net performance

This combines evidence that mutual funds can outperform their benchmark, and will increase fees to capture this rent.

H6. Mutual funds will not significantly outperform their benchmark

This reflects difficulty in predicting financial markets, overlain by an oligopolistic industry structure and incentive scheme that diverts FMs from performance optimization. Consequences of under-performance are few because investors are disengaged and uninformed.

6. Testing hypotheses arising from the SCP mutual fund behavior model

This section tests the hypotheses established above using data published in Ferreira et al. (2012), Ferreira et al. (2013), and Keswani et al. (2017) which provide a rich dataset of open-ended, actively managed, domestic equity funds from 26 countries. Quarterly data on characteristics are taken from the Lipper Hindsight database which obtains it directly from fund management companies; returns are available monthly from Bloomberg. The dataset includes 46 independent variables covering fund features, manager traits, and industry parameters; and three performance-related variables, namely:

- fund fees - total expense ratio plus one-fifth of loads
- fund expenses - total annual expenses as a fraction of total net assets
- fund return versus market benchmark.

Most other variables are self-explanatory, but a few need amplification. Active share is percent of fund holdings that differ from the benchmark; antidirector is an index of shareholder protection; education is average number of years in school; fund flow is net inflow; Herfindahl index equals the sum of the squares of market share and is proportional to industry concentration; management team is a dummy with value 1 when the fund is managed by more than one person; quality of the judicial system covers courts, rule of law, corruption and risk of expropriation; securities regulation covers disclosure requirements, liability and public enforcement; and share turnover is annual transaction volume divided by market capitalization.

Given that funds management is a global oligopoly, this multinational dataset enables validation of structural factors driving fund performance. Table 1 reports results of univariate regressions ($R>0.2$) of dependent variables against independent variables that are relevant to hypotheses developed above in relation to SCP depiction of the mutual fund industry.

[Insert table 1 about here]

Looking first at performance, expense ratio is negatively related to excess return, which is consistent with hypothesis 5, and indicates that funds may extract rent at investors' cost.

Structural influences from the industry's institutional framework also prove important. Increased education and more reliable judicial system give investors better understanding of investment and greater protection, which – consistent with hypothesis 1 – are positively related to performance. More onerous securities regulation promotes disclosure which dilutes the value of proprietary information and – consistent with hypothesis 2 - is negatively related to performance. Higher GDP per capita opens up more growth opportunities and lifts excess return.

In terms of industry structure, age has sweeping impact on performance as suggested by hypothesis 4, in particular that longer established funds benefit investors through lower fees and higher excess return. One possible explanation is that maturing of the industry increases competition and investor knowledge, which drives costs down and improves net performance. This is an interesting feedback where conduct of funds and investors changes the structure of the industry and market. Industry Herfindahl Index is negatively related to excess return – which consistent with hypothesis 3 – means performance falls with weaker competition from greater industry concentration.

Together, these correlations suggest that mutual fund investors benefit from greater competition and weaker concentration of funds, fewer restrictions, greater information and wealth, and better development of industry and political institutions.

Table 2 reports parsimonious results from OLS regressions of dependent variables, which confirm results above. Fund expenses and excess return are negatively related, which matches hypothesis 5. Fund expenses are a function of actual costs, and fall with age of the industry and its share of equity ownership. Returns are reduced by shareholder protections and industry concentration.

[Insert table 2 about here]

While the small sample and multicolliearitry between variables cautions against sweeping conclusions, results show that a large proportion of variation in mutual fund performance across countries can be explained through a handful of independent variables that are consistent with the SCP framework.

7. Conclusion

The discussion above points to two structural factors that result in mutual fund under-performance: equity returns are fundamentally hard to predict, which makes superior performance very challenging; and fund managers are not incentivized to make out-performance their principal objective. In short, structural features of markets and the managed investments industry promote fund manager conduct that more than offsets any skill they might have. Despite this and extensive study of agency problems in strategy and corporate finance research, they are little recognized in research into managed investments. Thus mutual funds' owners, employees and agents are assumed to be rational, unconditional value maximizers, and studies pay little heed to the influence on asset pricing of the incentives, socialization and biases of professional investors.

This paper shows a new application of the SCP paradigm to an industry with rigid costs and resources where the principal difference between firms' performance is the conduct of their managers. Once the assumption of passive managers is relaxed, SCP explains structural influences on behavior of funds and managers, and how this flows to their performance.

In closing, the findings above point to two promising research areas. One is to further extend the SCP-based descriptive model in analyses of skill-based industries. Second, is to examine alternatives to practices in the mutual fund industry that damage investors' interests, especially the AUM-basis of revenue that discourages fund managers from acting as unconditional value maximizers. Paradoxically, the structure of the industry is not optimized for clients, but enables funds to avoid the uncomfortable fact that they add little or no value for investors. Inarguably the funds management business needs to be more competitive and better attuned to investors' interests.

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Independent Variable	Dependent Variable		
	Total investor charges (KMR)	Expense ratio (FKMS13)	Excess return on domestic market (FKMS13)
Performance measures			
Excess return on the domestic market		-0.054	
Expense ratio	0.474		-1.979
Institutional framework			
Education			0.017
GDP per capita		-0.00002	0.00001
Quality of the judicial system		-0.021	0.006
Securities regulation			-0.038
Industry structure			
Fund age		-0.088	0.009
Fund flow	0.117		-0.005
MF industry age in years		-0.011	
MF industry equity:Market capitalisation		-2.412	
MF industry Herfindahl Index			-0.662
Mutual fund transaction cost	0.280		
Trading cost (bp: stock market)			-0.003

Table 1: Significant univariate regressions (R>0.2) of mutual fund performance against industry structure and fund conduct

Independent Variable	Dependent Variable		
	Total investor charges (KMR)	Expense ratio (FKMS13)	Excess return on domestic market (FKMS13)
Constant	5.29	4.57	1.29
Antidirector			-0.044 ***
Excess return on the domestic market		-2.772 *	
Expense ratio			-0.057 **
Fund flow			-0.0059 **
Management team	-1.193 **		
Mutual fund industry age	-0.013 **		
Mutual fund industry Herfindahl Index			-0.624 ***
MF industry equity:Market capitalisation		-2.114	
Return per quarter	-0.152 **		
Share turnover	-0.010 ***		
Adjusted R-squared	0.320	0.211	0.511

Table 2: Parsimonious results from OLS regression of mutual fund performance against industry structure and fund conduct

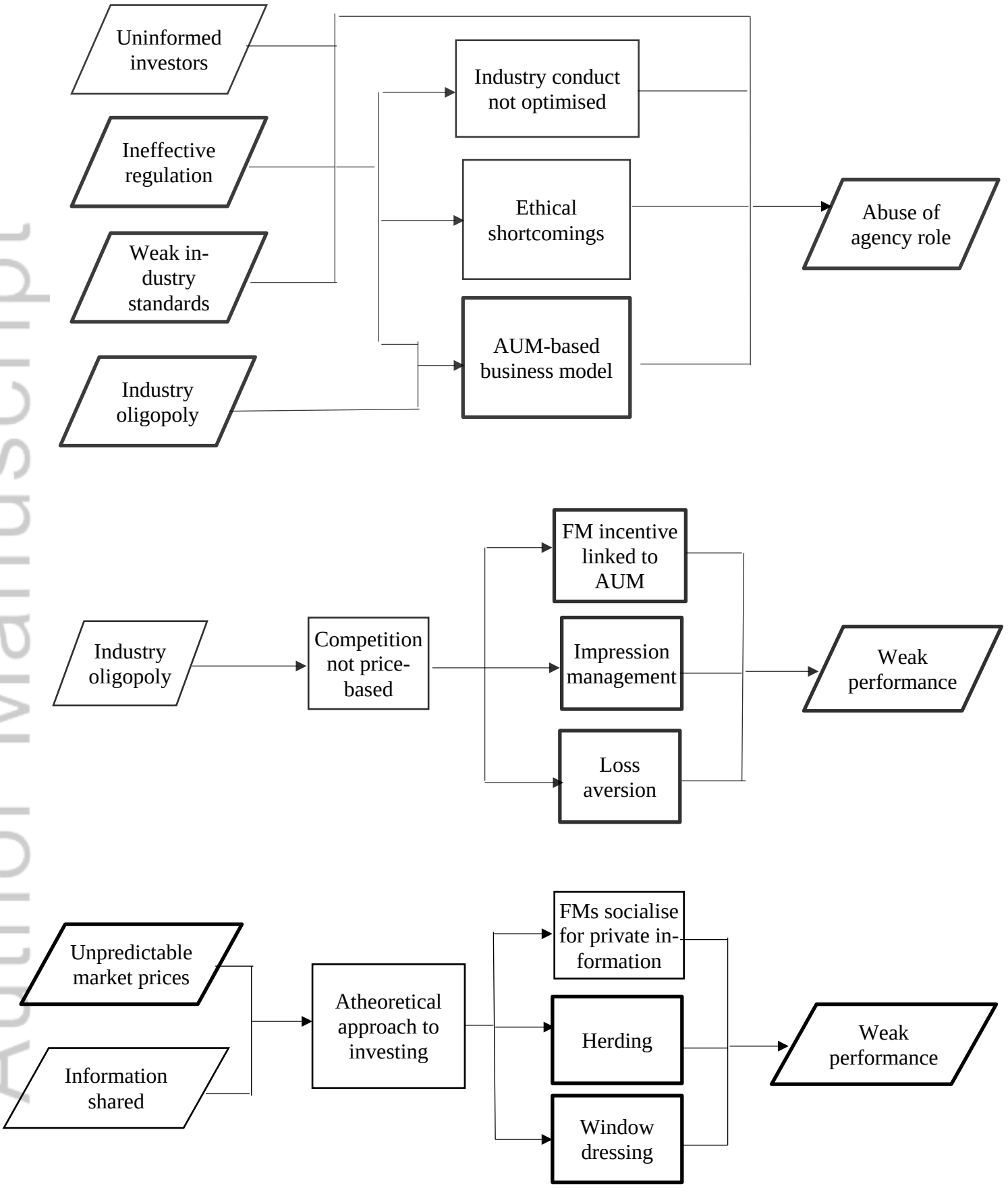

Figure 1: Flow charts showing principal structure-conduct-performance links that cause underperformance and agency problems in mutual fun

Explaining mutual fund behavior through the structure-conduct-performance lens

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