

The Impact of Shrouded Fees: Evidence from a Natural Experiment in the Indian Mutual Funds Market*

Santosh Anagol

Hoikwang Kim

Wharton

Wharton

October 5, 2010

Abstract

We study a natural experiment in the Indian mutual funds sector that created a 22 month period in which closed-end funds were allowed to charge an arguably shrouded fee whereas open-end funds were forced to charge entry loads. 45 new closed-end funds were started during this period collecting 7.6 billion \$U.S, whereas only two closed-end funds were started in the 66 months prior to this period collecting .42 billion \$U.S., and no closed-end funds were started in the 20 months after this period. We estimate that investors lost and fund firms gained approximately 500 million \$U.S. due to this shrouding.

1 Introduction

An important puzzle in investor behavior is the prevalence of high-fee investment vehicles that provide no benefits in terms of return performance. This puzzle applies to the popularity of actively managed mutual funds as described in Gruber (1996) and the popularity of high-fee index mutual funds (Choi et al., 2009). Two possible explanations exist. One is that high-fee funds offer some other unobservable benefits that investors find worth paying for.

**Contact information: anagol@wharton.upenn.edu and hoikwang@wharton.upenn.edu. Thanks to John Beshears, James Choi, Shawn Cole, Keith Gamble, Todd Gormley, Olivia Mitchell, David Musto, Shing-Yi Wang and participants at the 2010 Emerging Markets Finance Conference (Tsinghua University) for helpful comments. Yuqing Fan, Anant Shukla, and Amit Agarwal provided excellent research assistance. Hoikwang Kim acknowledges the support of the Pension Research Council/Boettner Center for Pensions and Retirement Security at the University of Pennsylvania. All errors are our own.

Possible benefits include compensation for brokers who lower investor search costs as in Hortacsu and Syverson (2004), or "financial advice, customer service, and discounted access to complementary investment instruments" (Choi et al., 2009). Another explanation is that investors ignore fees, and thus competition amongst mutual fund providers does not reduce prices to competitive levels (Gabaix and Laibson (2006), Carlin (2009)). Identifying which explanation is correct has important implications for financial regulatory policy. Under the explanation that high fee funds offer other benefits, regulation will not improve welfare. Under the explanation that investors ignore fees, however, policies to improve disclosure and educate investors could have important effects on investor welfare.

To what extent can public policy hasten the rate of investor learning regarding shrouded fees? Recent experimental studies have varied the presentation of investment fees while holding all other fund characteristics constant to test whether making fees less shrouded changes fund choice, and both find little evidence to suggest that changing the framing of fees has large impacts on investor decisions. Beshears et al. (2009) conducts an experiment with Harvard staff to determine whether investors respond differentially to statutory fund prospectuses versus the SEC's "Summary Prospectus." The SEC intended the Summary Prospectus, which is much shorter than a standard prospectus, to make salient the characteristics of each fund including fees. Interestingly, Beshears et al. (2009) find that whether subjects are presented with the Statutory Prospectus or the Summary Prospectus has no economically or statistically significant effect on fund choices. They also find that receiving the Summary Prospectus does not change how subjects respond to sales loads. Choi et al. (2009) conduct a laboratory experiment to understand why investors do not minimize fees when choosing S&P 500 index funds. They also find that providing additional information on funds, such as a cheat sheet that summarizes fees or an explanation about what an index fund is, did not have a large effect on investors' choices.

This paper contributes to a small but growing literature that studies natural experiments of how mandatory unshrouding of fees affects investor choices. One important advantage of this literature is it allows us to observe not only consumer responses to unshrouding (as in the laboratory experiments above), but also how *firms* respond to greater disclosure requirements. Duarte and Hastings (2010) evaluates a change in government disclosure in

Mexico’s privatized social security system and finds strong evidence that firms creatively find ways to “undo” the effects of disclosure reform by altering their fee structures.¹ We also find evidence that firms respond to disclosure policy by altering products to essentially maintain lack of clarity in pricing.

We study two law changes imposed by the Securities and Exchange Board of India (SEBI), India’s financial market regulator (analogous to the SEC in the United States), to better understand how disclosure policies affect investor decision making. The first law change occurred on April 4, 2006. SEBI mandated that closed-ended funds could only charge “initial issue expenses” and that open-ended funds could only charge entry loads.² The only difference between initial issue expenses and entry loads was that initial issue expenses could be amortized. To illustrate what amortization means in this context, suppose an investor invested 100 rupees in a closed-end fund with a six percent amortized initial issue expense. Over the tenure of the closed-end fund (typically three years in the Indian context after which the fund would automatically convert to an open-ended fund), six rupees would be extracted from the net asset value of the fund. In practice, .0055 rupees would be extracted per day which is equal to six rupees divided by 1095 days (the number of days in three years). Throughout the paper we refer to the period before this law change, i.e. the period before April 4, 2006 as Regime 1.

Because initial issue expenses were to be taken out of the net asset value gradually, investors were unlikely to be able to distinguish changes in the net asset value from the decline in value associated with the initial issue expenses. In contrast, investors are more likely to be aware of entry loads because these are deducted in a lump sum fashion from the

¹Hastings et al. (2010) presents a structural model of the privatized social security market and finds that disallowing agents to sell privatized accounts would lead to a near halving of the costs of participation for Mexican citizens.

²Throughout this paper we use the term “closed-end funds” for a type of limited liquidity fund that became popular in the Indian market in the last 5 years. These closed-end funds are quite different from the closed-end funds typically studied in the finance literature as all of them did allow investors to retrieve their money at net-asset value at specific times throughout the year. Of the 21 closed-end funds we have liquidity period data on 5 offered daily redemption, 2 offered weekly redemption, 9 offered monthly redemption, 2 offered quarterly redemption, and 3 offered half-yearly redemption. The Indian closed-end funds were also not listed on secondary exchanges. This is in contrast to standard closed-end funds where funds can only be extracted by selling shares on the secondary market. Similar to standard closed-end funds, however, these funds did not allow any new money to enter the fund after the initial corpus was raised.

initial investment.³ Furthermore, mutual fund advertisements for closed-end funds typically advertised a zero entry load and only described the initial issue expenses in the later pages of the offer document. It is important to note that we test for whether initial issue expenses are more shrouded than entry loads; it is possible that even entry loads are shrouded as well.

The second law change occurred on January 31, 2008; throughout the paper we refer to the period between the first and second law changes as Regime 2. SEBI announced that any closed-end fund started after that date would no longer be allowed to charge the amortized initial issuance expenses; instead they would have to charge entry loads. We refer to the period after the second law change, i.e. the period after January 31, 2008 as Regime 3.⁴ We hypothesize that disallowing closed-end funds to charge the less salient initial issue expenses would reduce the incentive for mutual fund companies to create new closed-end funds. Because the law change did not forbid new closed-end funds from charging high entry loads, this hypothesis is not driven by a price-cap being imposed on closed-end funds, but only a change in the type of fee that could be charged.

Consistent with this hypothesis, we find that allowing closed-end funds to charge amortizable initial issue expenses led to a proliferation of closed-end funds in the market; 45 new closed-end funds were started during Regime 2, whereas only two closed-ended funds were started during Regime 1, and no closed-ended funds were started during Regime 3. The proportion of fund flow amounts to new closed versus open funds during Regime 2 was 43 percentage points higher compared to Regimes 1 and 3. Further, we find that, on average, closed-end funds charged 6 percent in initial issue expenses, whereas open-ended funds charged only 1.75 percent in entry loads. A fully rational theory of investor behavior is unlikely to explain this behavior because if investors rationally invested in closed-end funds during Regime 2 then they should also have rationally invested in closed-end funds during period 3 and paid high entry loads instead of initial issue expenses. The fact that no closed-ended funds were started after closed-end funds were forced to charge entry loads rather than amortizable initial issue expenses suggests that investors were not cognizant of the

³Our argument regarding the difference in salience between initial issue expenses and entry loads is similar to Barber et al. (2005) who contend operating expenses are less salient than entry loads.

⁴To summarize, Regime 1 is the period before April 4, 2006 before the first law change. Regime 2 is the period from April 4, 2006 through January 31, 2008 between the two law changes as Regime 2. Regime 3 refers to the period after the second law change up until the present.

high initial issue expenses they were paying; otherwise fund companies could have charged six percent entry loads and gotten some investors to pay for them during Regime 3.⁵ It appears that mutual fund companies realized that investors would not be willing to pay 6 percent entry loads for closed-end funds and thus stopped creating closed-end funds. We estimate investors paid an additional 4.25 percent in fees over this 22 month period. Closed end funds perform slightly worse in terms of raw or risk-adjusted returns, thus we find no evidence that investors received better performance for the higher fees that closed-end funds charged. If investors had directed their money towards open-ended funds instead of closed-ended funds during this period they would have saved approximately 500 million U.S. dollars in fees⁶.

We also examine alternative explanations for the rise and fall of closed-end funds over this period. We find no evidence that these law changes imposed a price ceiling on closed or open-ended funds. It is important to note that both initial issue expenses and entry loads had a price-cap of six percent during Regime 2. We discuss the alternative explanation that initial issue expenses were not shrouded, but that Indian investors have discount rates that make them prefer paying fees over time instead of as a one-time entry load. In order for this to explain the proliferation of closed-end funds during the period between these law changes investors would have to have discount rates of approximately 244 percent per year. Finally, we show that other theoretical determinants of the open versus closed form, as described in Stein (2005), did not change discretely around the natural experiment and thus are unlikely to explain the sudden emergence and disappearance of closed-ended funds.

An important advantage of the natural experiment we study here is that we are able to observe how firms respond to a regulation that attempts to make their fees more transparent. Duarte and Hastings (2010) also evaluates a real change in government disclosure in Mexico's

⁵A number of newspaper articles and policy reports written at this time noted the increase in popularity of closed-end funds after the imposition of Regime 2, and argued that fund companies did this with the intention of hiding fees. For examples, see the following articles: (1) "Should You Buy Closed-End Mutual Funds?" published in Rediff on December 1, 2006 (2) "The Closed-Ended Comeback" published in Money Today on November 16, 2006. (3) The Consultation Paper on Minimum Common Standards for Financial Advisers and Financial Education by India's Committee on Investor Awareness and Protection (The Committee on Investor Awareness and Protection, 2009).

⁶For comparison purposes, Choi et al. (2009) calculate that U.S. investors who invested in the lowest fee S&P 500 index fund versus other higher cost S&P 500 index funds would have saved \$206 million dollars in expenses.

privatized social security system and finds strong evidence that firms creatively find ways to “undo” the effects of disclosure reform by altering their fee structure. This paper is unique in that it evaluates an “unshrouding” policy and finds that the policy had a large effect in reducing the demand for the formerly shrouded product.⁷ Based on this evidence alone it is not possible to determine whether this policy was welfare improving, because some of the consumers who paid high shrouded fees for closed-end funds may have switched to non-mutual fund products with similarly high shrouded fees such as endowment life insurance policies. Nonetheless, this evidence does suggest that a broad based program of regulating shrouded fees could have large effects on consumer behavior as theorized by Gabaix and Laibson (2006).

One important caveat is we cannot extrapolate to longer time horizons to know whether investors would eventually learn about shrouded fees. To fully understand the importance of shrouded fees in a developed market such as the U.S. it is important to combine the type of evidence provided here with other studies that can observe the learning process of investors over a longer period of time. Nonetheless, we argue the 22 month period studied here where closed end funds proliferated provided a reasonable amount of time for investors to learn about the substantially higher fees, and yet it does not appear that closed-end funds dropped in popularity over this period of time.

The paper proceeds as follows. Section 2 presents background information on the Indian mutual fund industry. Section 3 describes the language and implementation of the law changes studied here. Section 4 describes the data sources used in the paper. Section 5 presents the empirical results. Section 6 discusses other important alternative explanations such as whether the law changes imposed any explicit price ceilings and other theoretical determinants of the closed versus open fund organizational form as suggested in Stein (2005). Section 7 concludes.

⁷Ausubel (1991) and Woodward (2003) study disclosure regulations for credit cards in the United States and find small effects.

2 The Indian Mutual Fund Industry

The first government-run mutual funds were established in India in 1963, but the sector was not opened to private firms until 1993. Indian mutual fund assets under management in 2009 were equal to approximately U.S. \$ 90 billion.⁸ Though only 1/100th the size of the U.S. mutual fund industry (which as of 2008 had U.S. \$ 9.6 trillion in assets),⁹ Indian assets under management have a real growth rate more than double that of the growth rate of assets under management in the United States (12 % average annual real growth in assets under management in the Indian mutual fund industry since 1997, versus 5.3% real average annual growth in the U.S.).¹⁰ Mutual funds comprised 3.7 percent of household assets in 2005-2006 and 7.8 percent in 2007-2008 (The Committee on Investor Awareness and Protection, 2009). There are approximately 10 million mutual fund investors in India, about one-fifth the number of investors in the United States (Halan, 2010).

As in the United States, a large portion of mutual fund sales comes through a network of thousands of mutual fund brokers throughout the country known as Individual Financial Advisors (IFAs) and distributors (Kamiyama, 2007).¹¹ IFAs and distributors typically sell funds to investors that live close to them. A retail investor in India would typically invest in a mutual fund by approaching a distributor and choosing a fund in which to invest. If the investor chose to purchase 10 shares of XYZ fund, the distributor would collect one payment from the investor that included the cost of the shares, the entry load, and any issue expenses due upon initial purchase. The distributor would transfer this full amount to the mutual fund company that issued the shares, and the mutual fund company would then pay a commission to the IFA/distributor for selling the shares. As of June 2006, 27 percent of sales of mutual funds came through IFAs, 30 percent came through Distributors, 12 percent came through direct sales, and 31 percent came through banks (Kamiyama, 2007). The Committee on

⁸The India Rupee / U.S. dollar exchange rate taken from finance.yahoo.com on Monday, October 26, 2009.

⁹These data come from the 2009 Investment Company Fact Book which is produced by the Investment Company Institute (the trade association of mutual funds and other asset management companies in the United States). We include mutual funds and closed-end funds for comparability with the Indian data.

¹⁰Growth rates of assets under management calculated from monthly reports of the Association Mutual Funds in India monthly reports.

¹¹Bergstresser et al. (2009) estimate that U.S. investors paid 15.2 billion dollars in distribution fees in 2002, which are not much less than the 23.8 billion dollars spent on management fees in that same year.

Investor Awareness and Protection (2009) reported that 72.2 percent of inflows into mutual funds came through agents. The number of IFAs and distributors is large; there are an estimated 40,000 IFAs in the country and 3000 distributors. Because IFAs and distributors are said to be compensated through entry loads and initial issue expenses, many industry followers believe that IFAs and distributors push investors into high fee funds to increase their incomes.

When new funds, either closed or open, are started in India there is a one to two month offer period where the fund collects an initial corpus of money for investment. For a closed-end fund, after this “offer” period is completed, no new money is accepted into the fund. In an open-end fund, there is a one-month window after the new period when no new money is accepted. After this one-month period is over, the open-end fund begins to accept new money for investment at the end of the day net-asset value (as in the United States). During the new offer period, the fund company spends substantial amounts on advertising the fund, and IFAs and distributors try to interest investors in the fund.

One important difference between the “closed” funds discussed in this paper and the closed-end funds described in the large literature on closed-end funds in developed countries is that closed-end funds in India over this period did not trade on a secondary market. The Indian closed-end funds allowed initial investors the ability to withdraw their money at net asset value, usually at a monthly frequency, but no new money could enter the fund after the initial offer period. Because of this limited liquidity feature provided to initial investors, mutual fund companies typically did not list their closed end funds on the stock-exchange. Furthermore, all of the closed-end funds studied here state in their initial prospectus that after three years they would automatically be converted into open-end funds.

3 Summary of Three Fund Pricing Regimes and Predictions

In this section, we describe the key mutual fund fee regulation changes that comprise the natural experiment. We refer to the period before April 4, 2006 as Regime 1, the period

from April 4, 2006 through January 31, 2008 as Regime 2, and the period after January 31, 2008 as Regime 3. In Regime 1 the baseline regulations of the mutual fund sector in India were set out in the document Securities and Exchange Board of India (2009). This document indicated that mutual funds could charge special fees during the new offer period provided that initial expenses of floating the scheme shall not exceed six percent of the initial resources raised under that scheme and such expenses shall be accounted in the books of account of the scheme as specified in the Tenth Schedule.”¹²

On April 4, 2006 SEBI issued a circular forcing closed-end funds to charge only initial issue expenses and not entry loads, and open-ended funds to charge only entry loads and zero initial issue expenses, beginning what we call Regime 2.¹⁵ The stated purpose of this policy was to increase transparency, but the regulator provided no specifics on their rationale for believing that this policy would improve transparency. It is important to note that Part (d) eliminated the ability of closed-end funds to amortize initial issue expenses in such a way as to harm longer term investors. As described above, during Regime 1, both open and closed end funds could allow investors who exited their funds early to avoid paying their full proportion of the initial issue expenses. During Regime 2, a typical closed-end fund would charge 6 percent as initial issue expenses and amortize them daily over the term of the closed end-fund (usually 3 years). Suppose again that a closed-end fund raised 1000 rupees by selling 100 shares and therefore had the right to collect .6 rupees in initial issue expenses per share. By amortizing the expenses, the closed-end fund would collect .2 rupees

¹²An important feature of Regime 1 was that funds could amortize the fees collected as initial issue expenses. Suppose a fund raised 1000 rupees during the new fund offer period and charged six percent as initial issue expenses. The fund company would then have the right to take 60 rupees out of the fund as initial issue expenses over the first three years of the fund. Note that this was true for both open and closed-ended funds, i.e. the initial issue expense percentage rate only applied to the amount of money raised during this initial offer period. It did not apply to money that later entered an open-ended fund after the initial offering period. Typically funds would take these initial issue expenses out of the fund spread over the first three years of the fund as a way to artificially inflate the net asset value that was reported to investors. During Regime 1, there was also an important re-distributional feature of the amortization policy. Suppose after 1 year an investor took 500 rupees out of the fund. In Regime 1, this investor would only pay 10 rupees in initial issue expenses.¹³ If a second investor purchased shares from that initial investor and waited two more years until the fund was automatically converted to an open-end fund he would have to pay the remaining 40 rupees in initial issue expenses. Thus the amortization policy in Regime 1 allowed mutual funds to charge initial issue fees in a way that made long-term investors cross-subsidize short-term investors.¹⁴ Nevertheless, for this paper, the key thing to note is that, in Regime 1, both closed-end and open-end funds were allowed to amortize in this manner. We show later that given this level playing field between how fees could be charged and transparency, the open-end organization form dominated the closed-end form.

¹⁵A web appendix contains the actual language of this law change.

per each year in expenses, for a total of .6 rupees per share for the life of the closed-end fund. If an investor withdrew 500 rupees from the fund in the first year, this law change states that this investor would still be responsible for paying the full amount of initial issue expenses (30 rupees) that were owed on the shares that they owned.

On January 31, 2008, the Indian stock market regulator SEBI announced that all closed-end mutual funds would no longer be allowed to charge up to 6 percent of money invested to cover issue expenses (SEBI Circular No. 11/115723/08). Closed-end funds would now have to call their initial expenses "entry loads" instead.

Table 1 summarizes the three regimes of open versus closed-end fee regulation. The numbers in each cell are the maximum fees that closed-end and open-end funds could charge to investors buying funds during the new offer period. In moving from Regime 1 to Regime 2, the key change was to force open-ended funds to collect initial fees only through entry loads, and to force closed-end funds to collect entry fees only through amortizable initial issue expenses. In moving from Regime 2 to Regime 3, the only change was to force closed-end funds to charge entry loads instead of amortizable initial issue expenses.

We wish to test whether the initial issue expenses were shrouded relative to entry fees. There are two reasons why entry-loads may be more transparent to investors than amortizable initial issue expenses. First, entry loads are deducted right at the time of the initial investment. When the investor receives his first statement, he will immediately realize that money has been taken out for the entry load. Because initial issue expenses were amortized over three years, the amounts removed for these costs are likely to have been hidden amongst market movements over time (Barber et al., 2005). This difference in the salience of fees after an investment is made can also have important effects on investors making their initial investments. For example, a first time investor is more likely to hear about entry loads than initial issue expenses from his friends who have invested because his friends have seen the immediate deduction of entry loads in their statements but have not noticed the small deductions of initial issue expenses. If initial issue expenses are more shrouded than entry loads we expect the following:

- Regime 1: Because both open-end and closed-end funds could shroud initial issue expenses in this period, we expect determinants orthogonal to the types of fees charged

to determine whether open versus closed-end funds are started.

- Regime 2: In this regime, closed-ended funds could charge the shrouded fees, whereas open-ended funds could not. Under the shrouding hypothesis, we expect the proportion of closed-ended funds issued to increase substantially during this period.
- Regime 3: In this regime, neither closed or open ended funds could charge the shrouded fees, so we expect the proportion of new funds started of this type to revert to levels observed during Regime 1.

4 Data

The Association of Mutual Funds in India (AMFI) issues monthly reports on mutual fund flows into nine major types of funds: (1) Income (2) Equity (3) Balanced (4) Liquid/Money Market (5) Gilt (Government Bonds) (6) Equity Linked Savings Schemes (ELSS) - Equity (7) Gold ETFs (8) Other ETFs (9) Fund of Funds Investing Overseas. Each monthly report includes the number of new open and closed funds started and the total assets raised for each type of these funds. In this paper we only focus on Equity, ELSS, and Balanced funds because these are the only classes of funds where retail investors make up a large proportion of asset holdings. ELSS funds are funds that have a mandatory three year lock-in period. Dividends on ELSS funds are not taxed and when the ELSS fund position is exited the investor pays long-term capital gains taxes. Balanced funds are funds that invest in both equities and debt. Approximately 65 percent of the assets under management in equity, ELSS, and Balanced funds come from retail investors, whereas only 4 percent of assets under management in income funds come from retail investors.¹⁶ This is primarily because many of these income funds are owned by corporations that use them for cash management purposes.¹⁷

Table 2 presents summary statistics on the data used to formally test the shrouding

¹⁶Statistics taken from Table 1 of the Assets Under Management and Folios - Category Wise - Aggregate - As On March 31, 2009 document available at <http://www.amfiindia.com/spages/AUMFolioData.pdf>.

¹⁷In 1999 tax rates for corporations on holding mutual funds were lowered below tax rates for directly holding securities, so corporations began using short term closed-end mutual funds for cash management purposes (Kamiyama, 2007).

hypothesis. Here we present the average monthly flows into closed and open end funds, by year, for three types of funds: (1) Equity, (2) ELSS, (3) Balanced. The numbers are in hundreds of millions of 2009 U.S. dollars.¹⁸ The last column presents the average monthly return on the Bombay Sensex stock index in each year, which we will use as a control variable. As no centralized database of mutual fund fees exists in the Indian mutual fund sector, we collected this data by first creating a list of all the mutual funds created since 1993 from the “Scheme Details” section of the Association of Mutual Funds of India website. For each of the equity funds issued we searched online for their offer documents and copied the available fee information from there; if the offer document was not available, information from a variety of websites was used to track the characteristics of new fund offers.¹⁹ We concentrate on funds that were started during Regimes 2 and 3 because the highest proportion of information for these funds is available on the internet. There were a total of 45 closed-end funds started during Regimes 2 and 3 and we were able to find information on initial issue expenses charged for 42 of these. There were a total of 53 open-end funds started during Regimes 2 and 3, and we were able to find the entry loads charged for 52 of them.

There is also an important difference in the way funds reported initial issue expenses versus entry loads. For entry loads, the offer documents and websites clearly state what the entry load charged will be. For closed-end funds, however, 20 of the funds provide data on the initial issue expenses. The remaining 22 funds state some variant of the statement “Initial Issue Expenses not exceeding 6% incurred by the Mutual Fund will be charged to the Scheme and will be amortized over a period of three years.” Thus, for these 22 funds, it is possible that they eventually charged less than six percent in initial issue expenses. Of course, if the firm intended to charge less than six percent it would seem in its interest to state that they would charge a lower initial expense to gain a competitive advantage.²⁰ For clarity, we report summary statistics of fee levels charged for both those that estimated their initial issue expenses, and those that just gave an upper-bound on expenses.

¹⁸We adjusted the raw data for inflation in India using the All Commodities Wholesale Price inflation rate taken from www.indiastat.com (Source: Ministry of Commerce & Industry, Govt. of India.) We then converted the 2009 rupees into 2009 U.S. dollars using the exchange rate of 46.235 rupees/dollar taken from finance.yahoo.in on November 17, 2009.

¹⁹These websites are typically blogs run by mutual fund distributors used to advertise new mutual funds.

²⁰Four out of the 42 closed-end funds we have data on estimated they would charge less than six percent in initial issue expenses.

5 Results

5.1 Illustrative Figures

Before presenting regression based evidence, we present graphs which illustrate the main results. Figure 1 plots the number of equity mutual funds started monthly over the period October 1999 through August 2009, comparing the open-end and closed-end form. The pattern closely matches the predictions of the shrouding hypothesis. In Regime 1, the part of the x-axis before the first dashed vertical bar, we see that the open-ended organizational form dominated amongst equity funds. In Regime 2, we see a relatively large number of closed-end funds being started. Before Regime 2 there were only two closed-end equity funds started, one in February of 2001 and one in January of 2001. The upper dashed horizontal bar indicates the end of Regime 2 and the beginning of Regime 3. The second law change produced a dramatic drop-off in the number of new closed-end funds started. All of the funds started in 2008 in this figure were able to charge the amortizable initial issue expenses because the opening date of their new period occurred before January 31, 2008.²¹ Figure 2 presents the net flows into all equity open and closed-ended mutual funds. The net flows figures corroborates the pattern in the starts data.

The hand-collected data on initial issue expenses and entry loads shows that closed-end funds estimated their initial issue expenses at an average of 5.84 percent, whereas open-ended funds charged an average of 1.75 percent in entry loads. Unfortunately we do not have access to data on the amount of flows into specific closed-end funds so we cannot calculate the average fee weighted by the amount of flows. However, the only fund with initial issue estimated expenses lower than 5.45 percent was the Standard Chartered Fixed Maturity Arbitrage Fund which collected approximately 16 million dollars and charged initial issue expenses of 2 percent. Given that closed-end funds raised approximately 7.6 billion dollars during Regime 2 we can be sure that a large portion of those inflows went into high

²¹In the case of one fund, the "Sundaram BNP Paribas Select Thematic Funds - Entertainment Opportunities" we found an initial offer document stating that the fund would be a closed end fund. However, the fund actually debuted as an open-ended fund on May 24, 2008. Interestingly, it appears that the fund company changed this specific fund from closed to open-ended when it was no longer possible to charge the amortized issue expenses.

expense funds.²² The remaining closed-end funds did not precisely indicate their initial issue expenses, instead stating they would charge up to 6 percent in initial issue expenses. Figure 3 plots the fee charged for all of the funds with data and shows that open-end funds charged between 0 and 3 percent entry loads during Regimes 2 and 3, with the majority of funds charging 2.25 percent. No closed-end fund estimated it would charge less than 6 percent in initial issue expenses.²³

If investors were truly willing to pay extra expenses for access to closed-end equity funds during Regime 2 then they would have been willing to pay extra to access closed-end funds during Regime 3. Yet based on the results here it appears that mutual fund investors would not have paid the higher “issue expenses” of closed-end funds once mutual fund companies were forced to disclose them as entry-loads. In other words, by re-framing those issue expenses as entry loads it appears that closed-end equity funds were forced to compete with open-ended equity funds, and in the investors’ eyes they were not a good enough product to warrant the extra expense.

5.2 Regression Evidence on Mutual Fund Starts and Flows

To identify the effect of the law change 1 and law change 2 we use a difference-in-difference approach. We test whether the number of closed-end funds started and the amount of flows into closed-end funds was statistically different during Regime 2 relative to fund starts and flows to open-end funds. We use the regression specification:

$$S_{it} = \beta_0 + \beta_1 R2_{it} * \text{Closed}_i + \gamma X_{it} + \epsilon_{it}$$

Each observation represents a type of fund $i \in \{\text{Closed, Open}\}$ in month*year t . S_{it} is the number of funds started or the amount of money (in 2009 millions US\$) of fund type

²²We can do a similar calculation to argue that the three funds (out of 45) that we do not have estimates of initial issue expenses for also attracted relatively small inflows. In particular, from the aggregated monthly data we know that the months when these funds ended their new offer periods their total inflows were 946 million dollars. Assuming all the flows during those months went into the three funds we do not have data for, this amount is still small relative to the total 7.6 billion that flowed into closed-end funds during Regime 2. We are currently trying to find information on the estimated expenses of these additional 3 funds.

²³For one of these funds, the Sahara R.E.A.L. fund, the document on the SEBI website stated the fund was an open-ended fund, but when the fund was actually started it was started as a closed-ended fund.

i in month*year t . For example in June 2007 two open-ended funds were started. X_{it} is a matrix of control variables including month-year time trend, one month and three month lagged returns of the Bombay Sensex index, a Regime 2 and Regime 3 Dummy, a closed-end fund dummy, and an interaction between the closed-end dummy variable and the Regime 3 dummy variable. Our main prediction is that $\beta_1 > 0$. If investors are not cognizant of the higher initial issue expenses charged by closed-end funds then we should expect mutual fund companies to start more closed-end funds during this period and for money to flow into them, and for this increase to be larger than the increase that occurs for open-ended funds during Regime 2.

Table 5 presents these results. Columns (1) and (2) focus on the number of funds started as the dependent variable. Column (1) includes all month*years available on the AMFI website for a total of 120 month*years for closed-end funds and 120 month*years for open-end funds (for a total sample size of 240). The time trend is statistically significant at the 5 percent level and shows that overall there was a large increase in the number of funds started per month over time. The coefficient on the one-month and three-month Sensex lagged returns are insignificant. The coefficients on the Regime 2 and Regime 3 dummies show that for open-ended funds there were significantly less funds started during Regime 2 and Regime 3.²⁴ The coefficients on the Closed dummy shows that overall closed-end funds are less likely to be started than open-ended funds.²⁵ Our main result is that the coefficient on the Regime2*Closed variable shows that during Regime 2 closed-end funds were significantly more likely to be started. In terms of magnitudes, the intercept term implies that throughout the sample period on average 1.9 new open-ended funds were started per month. Outside of Regime 2, the effect that conditional on other factors 2.01 more closed-end funds were started during Regime 2 is economically large relative to the fact on average 1.13 funds of each type were started per month (mean of the dependent variable). Column (2) restricts the sample to only include the periods 22 months before Regime 2 began and 20 months after Regime 2 ended. There are 64 observations of closed-end starts and flows (22 before

²⁴Note that this is conditional on the time-trend.

²⁵In the appendix we report generalized least squares results which allow for autocorrelation in the error terms within closed and open ended funds. We find that the standard errors are lower as allowing for autocorrelation appears to improve efficiency, which is possible under heteroskedasticity. See Cameron and Trivedi (2009) page 81 for more details.

Regime 2, 22 during Regime 2, and 20 after Regime 2²⁶). We report these results because using a shorter window around Regime 2 yields better comparison groups than including all of the observations in Column (1). The results in Column (2) are consistent with those in Column (1), with the only major difference being that using this tighter window leads to the three month lagged return being negatively correlated with new starts. Columns (3) and (4) estimate a Poisson model of the starts process. The results are again consistent with the results in Columns (1) and (2).

Columns (5) and (6) report the same specifications as Columns (1) and (2), however the dependent variable is the net amount of funds flowing into fund type i in month*year t . These results confirm that the amounts flowing into closed-end funds during Regime 2 were significantly higher than the commensurate increase in funds flowing to open-ended funds during Regime 2. In Column (5) the coefficient on the Regime2*Closed dummy is not statistically significant at the 10 percent level; however, the p-value is .309 which is somewhat close to the 10 percent significant level. In the appendix we replicate these results for net flows using generalized least squares to allow for autocorrelation of errors within fund type and we find the results are significant at the 5 percent level. When we restrict the sample to the shorter event window in Column (6) the coefficient on the Regime2*Closed variable becomes larger and significant at the 10 percent level. The results change strongly between Columns (5) and (6) because in Column (5) the comparison group includes months before 2006 when both open-end and closed-end funds took in substantially smaller amounts per month. Relative to the comparison group prior to 2005 both open-end and closed-end funds took in more funds during Regime 2.

²⁶We include all periods after Regime 2 that we have data for.

6 Alternative Explanations: Theoretical Determinants of Closed vs. Open Ended Fund Proportions

6.1 Price Ceilings

An alternative explanation is that the transition from Regime 1 to Regime 2 instituted a price ceiling on open-ended funds (therefore leading to more closed-ended funds), while the transition from Regime 2 to Regime 3 instituted a price-cap on closed-ended funds (leading to the demise of closed-ended funds).

We first discuss why the transition from Regime 1 to Regime 2 did not impose a lower price-cap on open-end funds versus closed-end funds. Regime 2 allowed open-end funds to charge up to a six percent entry load and allowed closed-end funds to charge up to six percent in initial issue expenses. The only meaningful difference between these two types of fees is that initial issue expenses could be amortized over three years, whereas entry loads were required to be collected up-front. Given that amortizing fees makes it possible to collect lower fees (in terms of present value), there is no reason to believe that open-end funds were prohibited from charging higher fees than closed-end funds. Thus the transition from Regime 1 to Regime 2 did not involve the imposition of lower price ceilings for open-ended funds. In the transition from Regime 2 to Regime 3, closed-end funds were forced to charge entry loads instead of initial issue expenses. Again, this change did not impose a price-cap on closed-ended funds because being allowed to charge six percent in entry loads (Regime 3) was at least as generous as charging six percent in initial issue expenses in Regime 2.

There is also no evidence to suggest that the price ceiling on operating expenses that closed versus open ended funds could charge changed around the same time that law changes studied here changed.

6.2 Demand for Amortization vs. Entry Loads

Another possible explanation for the growth in closed-ended funds over this period is that investors may have a strong preference to amortize their entry fees over a period of time. The only difference between between initial issue expenses where amortization is allowed and

entry loads where amortization is not allowed is that, under amortization, the present value of fees is lower because fees are paid in the future. If investors' discount rates were high enough, then forcing open-ended funds to charge entry loads instead of initial issue expenses could have made closed-end funds very attractive during Regime 2.

One way to determine whether this story is plausible is to calculate how high the discount rates of the people who purchased closed-end funds would have to have been to justify paying 6 percent fees over time versus 2.25 percent fees up front. Typically closed-end funds during Regime 2 were either three or five year terms. For a three year closed-end fund, we calculate that an individual would have to have a discount rate of approximately 224 percent per year to prefer a closed-end fund with initial issue expenses of six percent amortized over three years, versus an open-end fund with an entry load of 2.25 percent. For a five year closed-end fund, we calculate that an individual would have to have a discount rate of 163 percent per year to prefer a closed-end fund that had initial issue expenses of six percent versus an open-end fund that had an entry load of 2.25 percent.²⁷ The main reason discount rates would have to be so large is that the term of the closed-end funds offered was not long enough for any reasonable discount rate to make a difference in the present value of fees. Accordingly it seems extremely unlikely that rational discounting can explain why disallowing closed-end funds to charge initial issue expenses and forcing them to charge entry loads led to the demise of the equity closed-end fund market.

²⁷These calculations are done numerically using the present value of an annuity formula to calculate the present value of fees for 100 rupees invested in a closed-end fund equal to the 2.25 rupees an investor would pay as an entry load on an open-ended fund.

$$2.25 = \frac{\text{Total Closed End Initial Issue Expenses} (1 - (1 + i_d)^{-\{\text{Number of Trading Days Paid Over}\}})}{\text{Number of Trading Days Paid Over} \cdot i_d}$$

where for a three year closed-end fund the Number of trading Days is 750 (250 per year multiplied by the number of years), the Total Closed-End Initial Issue Expenses are six rupees, and i_d is the daily discount rate that makes the present value of closed-end fees equal to the 2.25 rupees paid on open-end funds. We solve for i_d for the three and five year closed-end fund case and then convert it to an annual discount rate.

6.3 Other Theoretical Determinants of Closed vs. Open Ended Funds

To organize our discussion of other possible explanations for the rise of importance of closed-end funds during Regime 2 we focus on the model presented in Stein (2005). Stein presents a theoretical model to explain the equilibrium distribution of closed-end versus open-ended funds. To begin, he notes that the key difference between closed and open ended funds is that open-ended funds must worry about client redemptions at all points in time. This makes it fundamentally more difficult for open-ended funds to pursue long-run arbitrage strategies. If an arbitrage position moves against an open-ended fund, in the short run, the fund will be forced to unwind the position if clients make short-run redemptions. A closed-end fund, however, has less obligations to make redemptions and so can maintain the long-run arbitrage position until it pays off. Stein (2005) focuses on the standard variant of closed-end funds where investors can only redeem their money by selling on a secondary market. In the Indian context, closed-end funds have limited liquidity because investors cannot redeem their money except for at specified redemption periods. Given this fundamental weakness of open-ended funds, Stein (2005) points out that the prevalence of open-ended funds in the United States is a puzzle.

A possible explanation for the rise in closed-end funds over the period we study could be an improvement in the ability of investors to monitor what their fund managers are doing. If monitoring improved during this period then investors would have an additional incentive to invest in closed-end funds to take advantage of longer run arbitrage strategies. There are two reasons why this is unlikely to explain the emergence of closed-end funds during Regime 2. Based on the record of regulations issued by SEBI there were no policy changes during this period that were instituted and then un-instituted during Regime 2. It also seems unlikely that investors somehow gained better monitoring technology on their own during Regime 2 and then somehow lost this monitoring technology during Regime 3. Second, the Indian closed-end funds offered substantial liquidity because they had pre-specified periods when investors could redeem at NAV. For the 22 (out of 45) closed-end funds where data was available 5 offered daily redemption, 2 offered weekly redemption, 9 offered monthly

redemption, 2 offered quarterly redemption, and 3 offered half-yearly redemption. Given that the majority of closed-end funds during Regime 2 had frequent redemption, it seems unlikely demands for limited liquidity explain the importance of closed-end funds during Regime 2.

6.4 Did Closed-End Fund Investors Get Higher Returns?

Another possible alternative explanation for the emergence of closed-end funds during Regime 2 is that the closed-end funds on the market during this period offered higher returns, and thus investors found it worthwhile to pay higher fees for these funds. In this section we calculate the returns earned by both closed and open ended funds offered during this period before entry and initial expense fees (but including operating expenses which are the same for all funds we study).

From the Association of Mutual Funds of India (AMFI) website we created a comprehensive list of all closed and open-ended equity mutual funds started after April 4, 2006. The AMFI website has online monthly reports that list new mutual fund schemes launched in each month. For each of these funds we collected information from the “Investors Zone” link on the AMFI website. This link allows the user to view all of the NAV data for each fund. There were a total of 125 funds started over this period. For 24 of these, no NAVs were provided on the AMFI website.²⁸ For an additional 4 funds, the NAV data was truncated, i.e. the NAV data was not consistently reported on the AMFI website. We include the returns on these four funds along with the 97 funds for which we have complete NAV data in our return calculations.

The net-asset values reported for open-end funds do not include the entry load paid by the investor. The amortization of fees for closed-end funds is built into the net asset values, so to obtain pre-fee returns we need to add back in the fees the investor is paying through the declining net asset value in a closed-end fund. Suppose a closed-end fund charged six percent in initial issue expenses and an investor purchased one unit at 10 rupees during the new fund

²⁸The fraction of closed-end funds not reporting data is equal to 24 percent. The fraction of open-ended funds not reporting data was equal to approximately 17 percent. Thus, the non-reporting of NAV on the AMFI website does not appear to be strongly related closed or open-ended status.

offer period. This investor would then owe the fund .06 rupees as initial issue expenses. This .06 rupees would be taken out of the assets of the fund in equal pieces over all of the trading days over the first three years of the fund. In the case where the investor withdrew the money before the end of the first three years, the balance of initial issue expenses owed to the fund company would be withdrawn. We assume that there were 750 trading days over the first three years of the closed-end fund. Thus, for each trading day $.06/750 = .0008$ rupees per day is added to the reported daily NAV of the closed-end funds. This adjusts the data so the returns we calculate do not include the effects of the initial issue expenses.

To control for aggregate market movements, we subtract the returns of the Bombay Sensex index from the raw calculated net returns over the period the particular fund existed. We find that, after adjusting for these aggregate returns, closed-end funds had an average monthly return of $-.0039$ compared to the average monthly return on open-end funds of $.0000$ (before fees). Controlling for market risk factors as in Fama and French (1993), we find closed-end funds did not outperform open-end funds in Regime 2 and afterwards. The calculated alpha from the CAPM and 3-factor model suggest closed-end funds provided respectively 76 and 89 basis points per month less than open-ended funds and these performance differences are statistically significant at the 95% confidence level.

Based on these calculations, it does not appear that closed-end funds offered higher returns commensurate with the greater fees they charged; in fact, we find that open-ended funds performed slightly better over this period. In addition, closed-end funds also offered less liquidity in that money could only be withdrawn at set intervals. This evidence suggests that closed-end fund investors did not receive higher returns commensurate with the substantially larger fees.

7 Conclusion

We present new evidence on the importance of shrouded fund fees using a natural experiment in the Indian mutual fund industry. When closed-end funds could charge amortized fees, which are plausibly more shrouded than entry loads, many closed-end funds were established in a short time-frame. Forcing closed-end funds to charge entry loads effectively

curtailed their growth. We calculate that Indian investors spent approximately 500 million dollars in fees due to this shrouding. In light of the recent experimental literature that finds many framing manipulations to be unsuccessful in changing investor fund choices, the "un-shrouding" reform studied here appears to have had large effects.

References

- Ausubel, L. (1991). The Failure of Competition in the Credit Card Market. *American Economic Review* 131, 50–81.
- Barber, B., T. Odean, and L. Zheng (2005). Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows. *Journal of Business* 78(6), 2095–2119.
- Bergstresser, D., J. Chalmers, and P. Tufano (2009). Assessing the Costs and Benefits of Brokers in the Mutual Fund Industry. *Review of Financial Studies* 22(10), 1–28.
- Beshears, J., J. Choi, D. Laibson, and B. Madrian (2009). How Does Simplified Disclosure Affect Individuals' Mutual Fund Choices. In D. Wise (Ed.), *Explorations in the Economics of Aging*.
- Cameron, C. and P. Trivedi (2009). *Microeconometrics Using Stata*. College Station, Texas: Stata Press.
- Carlin, B. (2009). Strategic Price Complexity in Retail Financial Markets. *Journal of Financial Economics* 91(3), 278–287.
- Choi, J., D. Laibson, and B. Madrian (2009). Why Does the Law of One Price Fail? An Experiment on Index Mutual Funds. *Review of Financial Studies* forthcoming.
- Duarte, F. and J. Hastings (2010). Fettered Consumers and Sophisticated Firms: Evidence from Mexico's Privatized Social Security Market. Working Paper.
- Gabaix, X. and D. Laibson (2006). Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets. *Quarterly Journal of Economics* 121(2), 505–540.

- Gruber, M. (1996). Another Puzzle: The Growth in Actively Managed Funds. *Journal of Finance* 51(3), 783–810.
- Halan, M. (2010). Mint 50: Mutual funds to invest in. *Livemint*.
- Hastings, J., A. Hortacsu, and C. Syverson (2010). Advertising and Competition in Privatized Social Security: The Case of Mexico. Working Paper.
- Hortacsu, A. and C. Syverson (2004). Product Differentiation, Search Costs, and Competition in the Mutual Fund Industry: A Case Study of S&P 500 Index Funds. *Quarterly Journal of Economics* 119(2), 403–456.
- Kamiyama, T. (2007). India’s Mutual Fund Industry. *Nomura Capital Markets Review* 10(4).
- Securities and Exchange Board of India (2009). Sebi (mutual funds) regulations, 1996. Available at <http://www.sebi.gov.in/>.
- Stein, J. (2005). Why are Most Funds Open End? Competition and the Limits of Arbitrage. *Quarterly Journal of Economics* 120(1), 247–272.
- The Committee on Investor Awareness and Protection (2009). Minimum Common Standards for Financial Advisers and Financial Education. Consultation Paper.
- Woodward, S. (2003). Consumer Confusion in the Mortgage Market. Working Paper.

Table 1: Three Regimes of Mutual Fund Pricing

This table shows the maximum allowable fees that could be charged by open and closed-ended funds across the three Regimes studied. The period before April 4, 2006 is Regime 1, the period from April 4, 2006 through January 31, 2008 is Regime 2, and the period after January 31, 2008 is Regime 3. Initial Issue expenses is a fee calculated as a percent of the initial investment withdrawn in small increments over the first three years of the fund's existence. These limits are derived from Securities and Exchange Board of India (2009).

| Type of Fund: | <u>Regime 1</u> | | <u>Regime 2</u> | | <u>Regime 3</u> | |
|----------------------------|-----------------|--------|-----------------|--------|-----------------|--------|
| | Open | Closed | Open | Closed | Open | Closed |
| Initial Issue Expenses (%) | 6 | 6 | 0 | 6 | 0 | 0 |
| Entry Loads (%) | 6 | 6 | 6 | 0 | 6 | 6 |
| Expense Ratios (%) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |

Table 2: Summary Statistics on Fund Flows to Equity Funds

Notes: The Columns labeled Closed and Open are the average amount, in millions 2009 U.S. Dollars, of monthly inflows to closed or open funds. Columns (1) and (2) represent equity funds, Columns (4) and (5) represent ELSS Funds, and Columns (7) and (8) represent Balanced Funds. ELSS funds are funds that have a mandatory three year lock-in period. Dividends on ELSS funds are not taxed and when the an ELSS fund position is exited the investor pays long-term capital gains taxes. Balanced funds are funds that invest in both equities and debt. Authoer's

| Year | <u>Equity Funds</u> | | <u>ELSS Funds</u> | | <u>Balanced Funds</u> | | Sensex Return |
|--------------------------|---------------------|-------------|-------------------|-------------|-----------------------|-------------|---------------|
| | Closed (1) | Open (2) | Closed (3) | Open (4) | Closed (5) | Open (6) | |
| 1999 | 0.0 | 15.9 | 0.0 | 0.6 | 0.0 | 67.9 | 0.038 |
| 2000 | 0.0 | 74.6 | 0.0 | 0.1 | 0.0 | 16.5 | -0.017 |
| 2001 | 1.3 | 0.7 | 0.0 | 0.0 | 0.0 | 0.6 | -0.019 |
| 2002 | 0.0 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.004 |
| 2003 | 0.0 | 12.2 | 0.0 | 0.0 | 0.0 | 2.6 | 0.047 |
| 2004 | 0.0 | 97.5 | 0.0 | 0.0 | 0.0 | 15.0 | 0.012 |
| 2005 | 0.0 | 527.0 | 0.0 | 16.3 | 0.1 | 0.0 | 0.034 |
| 2006 | 145.8 | 589.4 | 2.8 | 11.7 | 13.5 | 0.0 | 0.027 |
| 2007 | 280.2 | 275.8 | 8.2 | 5.1 | 12.1 | 0.0 | 0.019 |
| 2008 | 207.1 | 175.4 | 17.0 | 0.67 | 0.0 | 0.0 | -0.052 |
| 2009 | 0.0 | 100.0 | 2.3 | 0.1 | 0.6 | 0.0 | 0.070 |
| Average Across All Years | 57.7 | 170.6 | 2.8 | 3.1 | 2.4 | 9.3 | 0.011 |

Table 3: Effect of Closed-End Fund Shrouding of Fees on Fund Starts and Net Flows

This table presents regressions where the unit of observation is a month x type of fund combination. The dependent variable is either the number of new funds started or the amount of net flows to closed and open-ended funds. The Regime 2 dummy takes a value of 1 during the period April 2006 - January 2008 when closed end funds were allowed to charge initial issue expenses in place of entry loads. The Regime 3 dummy takes a value of 1 during the period February 2008 through September 2009. I argue that because initial issue expenses were allowed to amortized that they constituted a “shrouded” fee. The variable lagged relevant return is the one month lagged monthly return of the Sensex index, which is a value-weighted index of the 30 largest firms listed on the Bombay Stock Exchange. Columns (1) - (4) focus on the number of funds started as the dependent variable, with Columns (1) and (2) using an ordinary least squares model and columns (3) and (4) using a Poisson model for counts. Columns (5) and (6) focus on the amount of net flows (inflows minus redemptions) (2009 millions of USD\$). Columns (1),(3) and (5) include all month*years available on the AMFI website for a total of 120 month*years for closed-end funds and 120 month*years for open-end funds (for a total sample size of 240). Columns (2), (4) and (6) restrict the sample to the 22 months before Regime 2 and the 20 months after Regime 2 to provide a more similar comparison group to Regime 2. Robust standard errors in brackets. The Month-Year trend is a variable that takes the value of 477 in October of 1999 and increases by one unit for each month.

| Dep Var = | OLS-Starts | | Poisson-Starts | | Net Flows (Millions 2009 \$U.S.) | |
|----------------------------|---------------------|---------------------|---------------------|---------------------|----------------------------------|-----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Month-Year Trend | 0.03*** [0.01] | 0.10** [0.04] | 0.03*** [0.01] | 0.06*** [0.02] | 4.9*** [1.8] | 21.9* [13.0] |
| Sensex 1 Month Lag Return | -0.41 [1.66] | 0.09 [2.47] | -0.27 [1.35] | 0.32 [1.56] | -1492.3*** [525.8] | -2282.1*** [863.4] |
| Sensex 3 Month Lag Return | -0.87 [0.65] | -2.27** [0.98] | -0.91 [0.59] | -1.60** [0.67] | 401.5** [171.9] | 285.5 [340.3] |
| Regime 2 Dummy | -1.24** [0.62] | -3.72*** [1.16] | -1.25*** [0.37] | -1.95*** [0.54] | -115.9 [211.4] | -649.5 [433.4] |
| Regime 3 Dummy | -1.54** [0.68] | -5.62*** [1.97] | -1.78*** [0.48] | -3.14*** [0.89] | -353.3* [201.3] | -1267.5 [674.6] |
| Closed Dummy | -1.78*** [0.22] | -3.32*** [0.49] | -4.26*** [0.71] | -4.30*** [0.98] | -223.1*** [52.1] | -439.0*** [151.8] |
| Closed*Regime 2 | 2.01*** [0.70] | 3.55*** [0.81] | 4.37*** [0.78] | 4.42*** [1.03] | 221.2 [217.0] | 437.0* [251.6] |
| Closed*Regime 3 | -0.37 [0.40] | 1.17* [0.62] | -13.47*** [0.76] | -13.65*** [1.02] | -22.8 [122.1] | 193.1 [202.6] |
| Constant | -11.58*** [3.40] | -49.41** [20.60] | -14.64*** [3.72] | -30.94*** [9.96] | -2279.5** [905.3] | -11328.6 [6965.5] |
| Adjusted R-Squared | 0.30 | 0.35 | 0.38 | 0.36 | 0.1 | 0.2 |
| Observations | 240 | 128 | 240 | 128 | 240 | 128 |
| Mean of Dependent Variable | 1.13 | 1.59 | 1.13 | 1.59 | 150.4 | 240.0 |

* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 4: Performance Comparison of Closed-End and Open-End Funds

This tables shows that closed-end fund did not outperform open-end fund in regime 2 and afterwards. We calculate raw and market excess returns for both closed-end and open-end fund. In order to compare market risk-adjusted returns, we construct a multi-factor model as of Fama and French(1993). 6 month yield of India Treasury bill was used for risk-free rate and BSE Sensex Index was used as a proxy for wealth return. India market mimicking portfolios are formed in January of year t , 2004~2010. Size factor SMB (small minus big) was constructed using market capitalization of January, year t . Book-to-market factor HML (high minus low) was constructed using book-value of fiscal year ending in April, year $t - 1$. Market value of $t - 1$ was used to calculate the ratio of book value and market value. At every January, we divide India BSE listed companies into 2 size categories and 3 book-to-market ratio categories. Value-weighted returns of each categories are used to calculate size factor $SMB = \frac{1}{3} ((S/H + S/M + S/L) - (B/H + B/M + B/L))$ and book-to-market factor $HML = \frac{1}{2} ((H/B + H/S) - (L/B + L/S))$. 1-factor model is

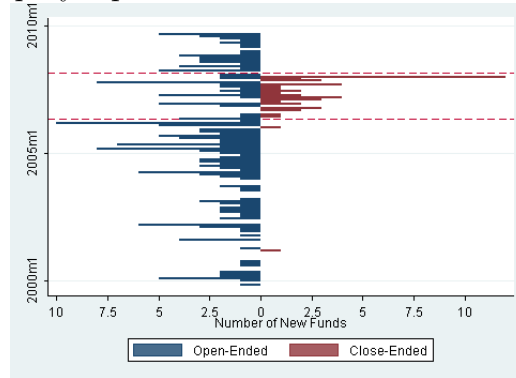
$$\text{portfolio excess return} = \alpha + \beta \times \text{market excess return}$$

and 3-factor model is

$$\text{portfolio excess return} = \alpha + \beta_1 \times \text{market excess return} + \beta_2 \times \text{SMB} + \beta_3 \times \text{HML}$$

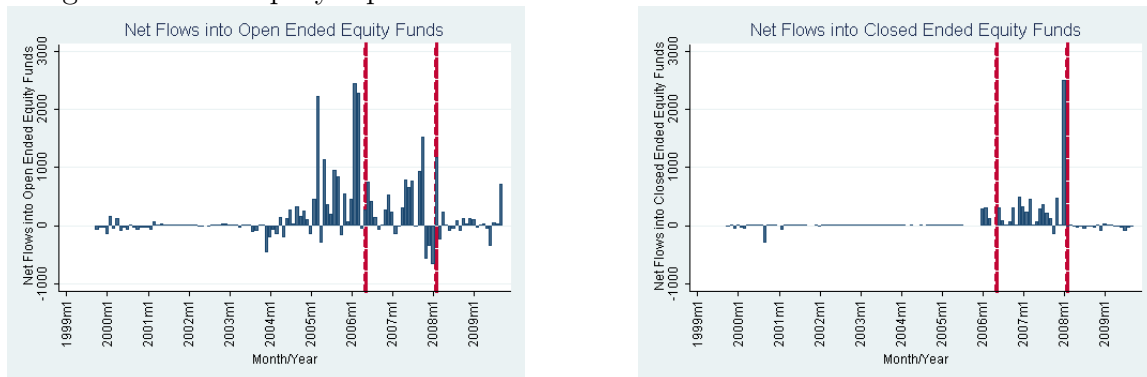
| | Closed-End Funds | Open-End Funds | Difference | p-value |
|-----------------------------|------------------|----------------|------------|---------|
| Monthly Raw Returns | 0.0053 | 0.0117 | -0.0064 | 0.0800 |
| Monthly BSE Adjusted Return | -0.0039 | 0.0000 | -0.0039 | 0.2369 |
| 1-Factor Alpha | -0.0048 | 0.0028 | -0.0076 | 0.0100 |
| 3-Factor Alpha | -0.0077 | 0.0012 | -0.0089 | 0.0030 |

Figure 1: Equity Open-Ended and Closed-Ended Fund Starts



This figure plots the number of new equity open-ended and closed-ended mutual funds started, per month, in the Indian mutual fund market from October 1999 through September 2009. The bars on the left represented the number of open-ended funds and the bars on the right represent closed-ended funds. The lower dashed vertical line indicates the end of Regime 1 and the beginning of Regime 2 (May 2006). The upper most dashed vertical line indicates the end of Regime 2 and the beginning of Regime 3 (February, 2008). The figure shows the emergence and disappearance of closed-ended funds during Regime 2.

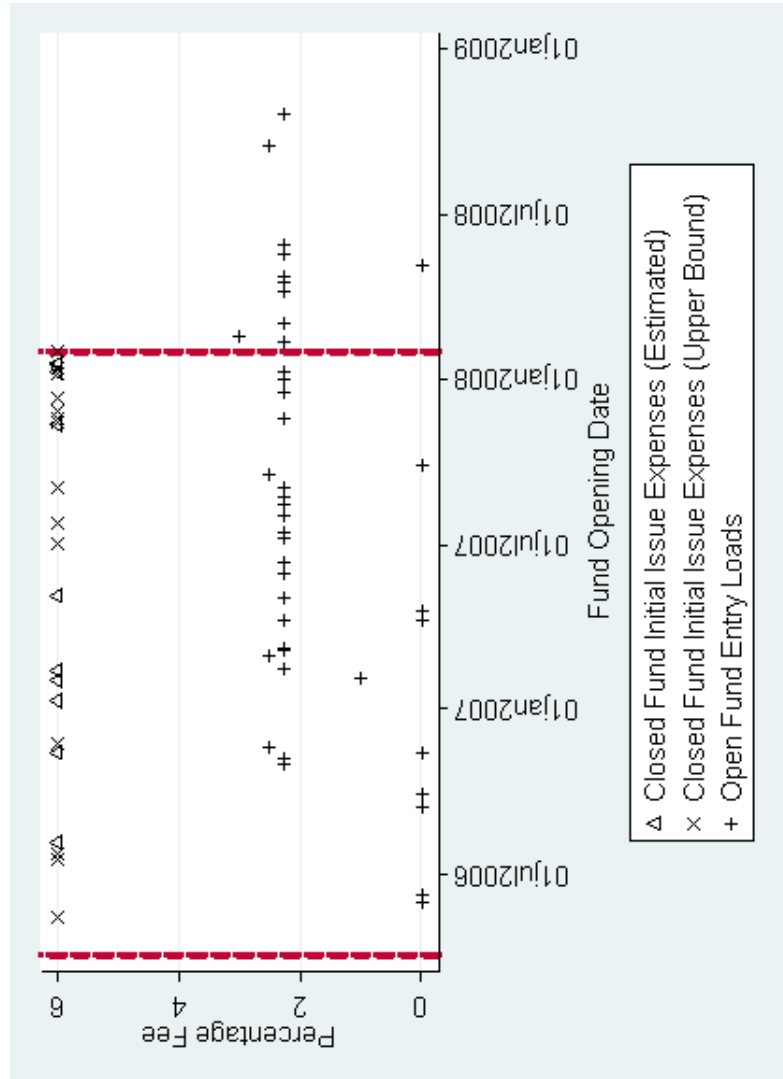
Figure 2: New Equity Open-Ended Fund and Closed-Ended Amount Net Flows



The left figure plots the amount of net flows to equity open-ended mutual funds, per month, in the Indian mutual fund market from October 1999 through September 2009. For open funds net flows are calculated as the of flows into new open-ended funds and existing open-ended funds minus outflows from existing open-ended funds. The right figure plots the amount of net flows to equity closed-ended mutual funds, per month, in the Indian mutual fund market from October 1999 through September 2009. For closed-ended funds the amount of net flows are calculated as the flows into new closed-ended funds plus flows into existing closed-ended funds minus flows out of closed-ended funds. The amounts are reported in 2009 millions of U.S. dollars. The left most dashed vertical line indicates the end of Regime 1 and the beginning of Regime 2 (May 2006).

Figure 3: Fees Charged by New Equity Funds Started During Regimes 2 and 3

This figure plots the level of fees charged to investors who made investments in newly started mutual funds during the fund's new offer period during Regimes 2 and 3. The triangles are the initial issue expenses charged by closed-end funds that explicitly estimated these expenses in their offer documents. The X's are the upper bound on initial issue expenses that some closed-end funds reported in their offer documents. The +s are the entry loads that open-ended funds stated they would charge new investors during their new fund offer period. The left most dashed vertical line indicates the end of Regime 1 and the beginning of Regime 2 (May 2006). The right most vertical line indicates the end of Regime 2 and the beginning of Regime 3 (February, 2008). Data are taken from offer documents of individual new fund offers.



APPENDIX: NOT FOR PUBLICATION

A Text of Fee Reforms

The relevant part of the circular read defining the transition from Regime 1 to Regime 2 stated:

I. Rationalisation of Initial Issue Expenses

- a. The initial issue expenses will be permitted for closed-ended schemes only.
- b. Open ended scheme should meet the sales, marketing and other such expenses connected with sales and distribution of schemes from the entry load and not through initial issue expenses.
- c. Since closed-ended schemes are allowed to charge initial issue expenses, they shall not charge entry load.
- d. In close-ended schemes where initial issue expenses are amortised, for an investor exiting the scheme before amortisation is completed, AMC [Asset Management Company] shall redeem the units only after recovering the balance proportionate unamortised issue expenses.
- e. Conversion of a closed-ended scheme or interval scheme to open-ended scheme/ or issuance of new units should be done only after the balance unamortised amount has been fully recovered from the scheme.

The SEBI announcement that caused the change from Regime 2 to Regime 3 stated:

Currently closed-ended schemes are permitted to charge initial issue expenses and not charge entry load. In order to bring more transparency and clarity to the investors in terms of the expenses charged to them in closed-ended schemes, SEBI Board in a recent meeting decided as under:

- (1) Henceforth, there will be no provision of charging initial issue expense and amortization of the same.

(2) All mutual fund schemes shall now meet sales, marketing and other expenses connected with sales and distribution schemes from the entry load.

This circular would be applicable to all mutual fund schemes launched after the date of the circular.

B CAPM Return Calculations

In this appendix, we explain briefly the procedure of constructing the Indian stock market mimicking portfolio as in Fama and French (1992) and Fama and French (1993).

We use nonfinancial firms listed on the Indian Bombay Stock Exchange(BSE) from FactSet Research Systems Inc.²⁹ Data for stock price, book-value and shares outstanding were retrieved for April 2006 through February 2010. We exclude financial firms from the analysis because leverage for nonfinancial firms may imply a different corporate situation from that of financial firms. For constructing the size factor (*SMB*) and book-to-market ratio factor (*HML*) in India stock market, we follow closely Fama and French (1992, 1993)'s procedure for market-mimicking portfolio construction.

Market-equity (*ME*) is used to measure a firm's size, which is calculated as stock price multiplied by shares outstanding. For assessing a firm's size, we use market-equity at the end of January at year t . In order to ensure accounting information is reflected in stock price, we match accounting data for fiscal year that ends in calendar year $t - 1$ with stock price data for calendar year t . To compute book-to-market ratio, we use firm's market-equity at the end of January at year $t - 1$.

At every January, we sort firms into two size categories (Big and Small) and 3 book-to-market categories (High, Median, Low) according to its market equity and book-to-market ratio. Median and 30% /70% percentile are used as break points for size sorting and book-to-market ratio sorting. After assigning one of six categories (B/L, B/M, B/H, S/L, S/M, S/H) to every firm, we calculate monthly return for each firm in each category. Then we calculate value-weighted return of firms' return at each category. Size factor *SMB* is calculated as a

²⁹FactSet covers 97% of the total Indian market capitalization as of June 2009.

weighted sum of small companies' return minus big companies' return.

$$SMB = \frac{1}{3}[(S/L + S/M + S/H) - (B/L + B/M + B/H)]$$

Book-to-market ratio *HML* is calculated as a weighted sum of high book-to-market companies' return minus low book-to-market companies' return.

$$HML = \frac{1}{2}[(H/S + H/B) - (L/S + L/B)]$$

Note that the frequency of return data is monthly but a company's category may change annually each January.

Table 5: Effect of Closed-End Fund Shrouding of Fees on Fund Starts and Net Flows - Generalized Least Squares

This table presents regressions where the unit of observation is a month x type of fund combination. The dependent variable is either the number of new funds started or the amount of net flows to closed and open-ended funds. The Regime 2 dummy takes a value of 1 during the period April 2006 - January 2008 when closed end funds were allowed to charge initial issue expenses in place of entry loads. The Regime 3 dummy takes a value of 1 during the period February 2008 through September 2009. I argue that because initial issue expenses were allowed to amortized that they constituted a “shrouded” fee. The variable lagged relevant return is the one month lagged monthly return of the Sensex index, which is a value-weighted index of the 30 largest firms listed on the Bombay Stock Exchange. Columns (1) and (2) focus on the number of funds started as the dependent variable. Columns (3) and (4) focus on the amount of net flows (inflows minus redemptions) (2009 millions of USD\$). Columns (1) and (3) include all month*years available on the AMFI website for a total of 120 month*years for closed-end funds and 120 month*years for open-end funds (for a total sample size of 240). Columns (2) and (4) restrict the sample to the 22 months before Regime 2 and the 20 months after Regime 2 to provide a more similar comparison group to Regime 2. Robust standard errors in brackets. The Month-Year trend is a variable that takes the value of 477 in October of 1999 and increases by one unit for each month. The estimation method is generalized least squares (GLS) with the potential first order auto-regressive errors. The GLS estimator does not produce a useful R-squared statistic, thus it is omitted.

| Dep Var = | GLS-Starts | | GLS - Net Flows (Millions 2009 \$U.S.) | |
|----------------------------|--------------------|----------------------|--|-------------------------|
| | (1) | (2) | (3) | (4) |
| Month-Year Trend | 0.02*** [0.01] | 0.10** [0.02] | 4.1*** [1.3] | 23.4*** [6.9] |
| Sensex 1 Month Lag Return | -1.13 [1.38] | -1.20 [2.09] | -1069.7*** [367.0] | -1697.4*** [590.9] |
| Sensex 3 Month Lag Return | -0.75 [0.77] | -2.04* [1.08] | 144.6 [194.1] | -51.3 [309.7] |
| Regime 2 Dummy | -0.95* [0.54] | -3.72*** [0.77] | -74.0 [141.4] | -675.0*** [248.8] |
| Regime 3 Dummy | -1.05* [0.63] | -5.66*** [1.21] | -308.3* [162.6] | -1344.3*** [367.7] |
| Closed Dummy | -1.79*** [0.26] | -3.31*** [0.48] | -223.6*** [67.5] | -438.6*** [157.4] |
| Closed*Regime 2 | 2.10*** [0.56] | 3.51*** [0.68] | 226.0 [143.8] | 435.5* [222.6] |
| Closed*Regime 3 | -0.43 [0.58] | 1.18* [0.69] | -24.5 [149.3] | 193.3 [228.0] |
| Constant | -8.01*** [2.81] | -49.47*** [12.93] | -1904.3*** [686.7] | -12143.7*** [3742.8] |
| Observations | 240 | 128 | 240 | 128 |
| Mean of Dependent Variable | 1.13 | 1.59 | 150.4 | 240.0 |

* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.