Mutual Fund Regulation in India–Assessing its Benefits

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Abstract

This paper attempts to empirically verify the benefit of the Securities and Exchange Board of India (SEBI) mutual fund regulation in India. By comparing the performance of funds governed by the stricter SEBI regulations with that of funds governed by the weaker Unit Trust of India (UTI) Act regulations, on average, the SEBI funds outperformed the UTI funds over time. Mutual fund portfolio disclosure requirements and corporate governance structures are attributed to SEBI superior performance.

I. Introduction

The mutual fund[1] industry in India has witnessed rapid growth since its "liberalization" in 1993. Prior to 1993, only public sector banks or insurance companies, along with the Unit Trust of India (UTI) were allowed to manage funds. The entry of private fund managers, both Indian and foreign, initiated a period of substantial growth in the assets managed by the fund industry. With 44.7 million investors in mutual funds,[2] the collec-

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1. Mutual funds are financial intermediaries that pool together funds of various investors and invest the same in financial securities. The benefits of investing through a fund include lower costs and a superior portfolio. The fund charges a management fee in return for its services. *See* INVESTOPEDIA, MUTUAL FUND BASICS TUTORIAL 2-3 (2006), http://www.investopedia.com/university/mutualfunds/.
2. UTI, MUTUAL FUNDS IN INDIA: CHALLENGES, OPPORTUNITIES, AND STRATEGIC PERSPECTIVES, 13 (1997).

tive assets under management at the end of 1993 totalled Rs.470 billion, with UTI managing the largest portion, or Rs.390 billion assets.[3] By February 2009, the asset size of investments in mutual funds had grown to around five trillion rupees.[4] Given the substantial amount of assets currently under management, and the fact that tens of millions of families[5] are now saving through this strategy, the importance of assessing the impact of regulatory constraints on the performance of mutual funds is crucial.

II.   Background

Mutual funds are regulated to various degrees across the globe. Regulation is required to balance out market failures that arise primarily as a result of information asymmetry. Compared to the average investor, fund managers possess superior information with respect to the active working of funds and their portfolio dynamics. Such information asymmetry can encourage fund managers to behave opportunistically, and cause a misalignment of interests between investors and fund managers. The typical investor seeks to maximize his risk-weighted returns while the fund manager seeks to maximize the portfolio management fees tied to asset size. Investment inflow to mutual funds theoretically should depend on performance aside from a host of other factors such as marketing expenses, entry and exit load, management fees, fund style, overall stock market sentiment, and economic growth. Research by Martin Gruber indicates that fund investors in the United States rely heavily on past performance of funds when making investment decisions.[6] Surprisingly, while better performing funds attracted increasing investment inflows, weaker funds did not suffer corresponding outflows of investment money.[7] Hence, there seems to be an asymmetry in the influence of performance on fund investment inflow and outflow. Gruber attributes the tendency of investors to maintain positions with losing funds to the influence of advertisements and broker advice.[8] As a result of such behavior, a fund manager has an incentive to spend more on marketing to minimize the impact of poor performance. Somashekar discovered a similar tendency amongst Indian investors who maintained investments with poor performing Indian mutual funds.[9] The marketing expenses of such funds are deducted from total returns, and thus, the "investor is paying to be convinced into staying with a poor performing fund."[10]

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3. *Id.*

4. ASSOCIATION OF MUTUAL FUNDS IN INDIA (AMFI), MUTUAL FUND DATA FOR THE MONTH–FEBRUARY 2009 (2009), *available at* http://www.amfiindia.com/spages/amfeb2009repo.pdf.

5. The most comprehensive survey of household investment was last done in 1999 by the Securities and Exchange Board of India (SEBI) and the National Council for Applied Economic Research (NCAER). This survey revealed that almost nine percent of Indian households or 15 million families (or 23 million individuals) had invested in mutual funds. One can safely assume that this figure has since increased substantially given increased awareness and growth in mutual funds assets. *See* BUSINESS LINE'S INVESTMENT WORLD, THRUST ON RISK CONTAINMENT (2000), http://www.thehindubusinessline.com/businessline/iw/2000/10/29/stories/0829h019.htm.

6. *See* Martin J. Gruber, *Another Puzzle: The Growth in Actively Managed Mutual Funds*, 51 J. FIN. 783 (1996), *available at* http://www.seligson.fi/resource/gruber1996.pdf.

7. *Id.*

8. *Id.*

9. T. S. Somashekar, *True Economies or False Economies: Do Indian Mutual Funds Compete Under the Shadow of Regulatory Ceilings?*, 15 ICFAI J. APPLIED FIN. 20 (2009).

10. *Id.*

An increase in assets under management also potentially causes problems for existing investors, such as a negative impact on returns, as asset size increases. For instance, a study by Chen et al, after accounting for various benchmarks, found that returns declined with lagged fund size for the period 1962 to 1999 in the United States.[11] Similarly, Somashekar observed that larger Indian funds tend to underperform during bare phases of the stock market.[12] Although increases in asset size may negatively impact returns, the fund manager may allow growth in assets under management in order to collect higher fees.

Chevalier and Ellison point out that because mutual fund inflows depend on past performance, an underperforming fund manager might have an incentive to take higher risks toward the end of the year in order to inflate performance results.[13] Furthermore, such an ex-post alteration in risk levels of the portfolio may not be in accordance with the risk appetite of the investor, or the levels agreed to in the investment prospectus. This type of post-contractual opportunism can compromise the interests of the investors, and expose them to poor portfolio selectivity and higher portfolio risks than proposed in the offer document. Additionally, there are other organizational or operational risks as a result of human errors or fraud.

The objective of the regulator is to overcome such market failures by ensuring ideal conditions such as those found in competitive markets. There are, however, both direct and indirect compliance costs associated with such regulations that may lead to a negative impact on performance. For instance, most regulatory regimes emphasize proper corporate governance structure and transparency to reduce investor hazards. Transparency is achieved primarily through periodic disclosure of portfolio expenditure and performance. While disclosure helps to avoid moral hazards in investment decisions, mandating excessively frequent disclosures can have a negative impact on the returns of the fund in question. A study by Myers et al. shows that it is possible for competitors to mimic the portfolios of actively managed mutual funds and earn similar or even superior returns after expenses are taken out.[14] This form of competition could lead to copycat funds free riding on the research efforts of the original fund, thereby diluting its performance. Regulations may also impose constraints on investments to avoid conflicts of interest. Such constraints can increase costs and reduce the flexibility of the fund manager to react to market changes.

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11. The main reasons for this are found to be investments in small illiquid stocks and also organizational diseconomies. *See* J. Chen et al., *Does Fund Size Erode Mutual Fund Performance?, The Role of Liquidity and Organization,* 94 AM. ECON. REV. 5:(2004), at 1276, *available at* http://www.atypon-link.com/AEAP/doi/pdf/10.1257/0002828043052277.

12. After accounting for all other factors larger funds seemed to have done better only because of a larger number of bullish phases of the market. With increasing asset size a few funds voluntarily restricted their asset size. This was because they perceived limited investment opportunities and increased risk of adverse market impact of their transactions. *See* T.S. Somashekar, *Fund Size and Fund Returns: An Empirical Study of Indian Mutual Funds,* 56 INDIAN ECON. J. 102 (2008).

13. A detailed study of such behavior can be found in Judith Chevalier & Glenn Ellison, *Risk Taking by Mutual Funds as a Response to Incentives,* 105 J. POL. ECON. 1167 (1997), *available at* http://www.journals.uchicago.edu/doi/pdf/10.1086/516389.

14. *See* Mary Margaret Myers et al., *Copycat Funds: Information Disclosure Regulation and the Returns to Active Management in the Mutual Fund Industry,* (MIT Dept. of Econ., Working Paper No. 02-04, October 2001), *available at* http://papers.ssrn.com/paper.taf?abstract_id=293617.

It is difficult for a regulator to achieve the correct degree of control, and thus the dangers of under- or over-regulating are possible. Under-regulation can expose the investor to unexpected risks, while over-regulation would expose the investor to lower returns. Therefore, it is crucial that a regulatory regime get its regulations right with minimal margins of error.

This paper attempts to examine whether regulations have imposed more costs than benefits, and therefore compromised returns. Such a process is fraught with the difficulty of engaging in counterfactual questions. One is posed with the problem of understanding what the possible performance would have been in the absence of regulations. But fortunately, the situation eases up as we have a comparative perspective possible. During the decade between 1993 and 2003, India had two alternate regulatory regimes for mutual funds.[15] The UTI and its funds came under the regulations of UTI Act of 1963, and all other mutual funds came under SEBI (Mutual Funds) Regulations.[16] SEBI regulations were definitely more constraining than the UTI regulations. Hence, we have a set of funds with stronger regulations and another with weaker regulations. The performance of these two sets of funds is compared after accounting for other characteristics such as investment style[17] and size of assets managed.

In a competitive market, funds cannot exist if they consistently underperform. Therefore, funds ordinarily strive to ensure that they deliver returns that are comparable to their peers. In the case of the UTI, because it is a public sector mutual fund with supposed government backing, one could argue that the incentive to perform would probably not be there. But one fails to see the point that the UTI had become a very popular investment mechanism for millions of investors, and the government could afford to see it underperform only to face political risks. In fact, when the most popular UTI fund, Unit Scheme-64 (US-64), began to face performance issues during the 1990s, they dug deep into their accumulated reserves to deliver good returns to their investors, despite not being an assured returns scheme.[18] Such was the pressure to ensure that investors were not disappointed. Therefore, it would be flippant to assume that the public sector fund house had no incentive to perform. At the same time, though, the organizational aspirations do not necessarily have to be realized due to the potential moral hazards. Being under lesser

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15. In January 2003, UTI was split into two fund houses. All assured return schemes and the US-64 were retained with the UTI and the rest of the schemes were transferred to a new fund called UTI Mutual Fund Pvt.Ltd. The latter came under SEBI Regulations. The coexistence of two separate regulatory regimes came to an end with this split.

16. These regulations were substantially amended in 1996 and periodically since then. *See* Securities and Exchange Board of India, Regulations, http://www.sebi.gov.in/Index.jsp?contentDisp=Department& dep_id=4 (last visited Dec. 23, 2009).

17. A fund could choose to invest in stocks on the basis of the size its market capitalization (large , mid or small), or its valuation in the stock market (depending on the price-earnings ratio or book value)or a combination of these. This leads to nine possible styles of investment. The investment style of a fund has been found to be important in explaining performance.

18. The concept of "assured return" schemes is strange for mutual funds. It was popular during the early 1990s before SEBI regulations came into effect. SEBI regulations of 1996 called for such schemes to guarantee both the capital and the returns. Many funds that assured returns ran into rough weather. For example, Canstar fund of Canbank Mutual Fund (now Canrobeco Mutual Fund) and GIC Big Value Fund of the General Insurance Company (GIC) Mutual Fund could not deliver the promised returns. For more on this, *see* Securities and Exchange Board of India Annual Report, 1996-97, *available at* http://www.sebi.gov.in/annualreport/9697/report9697.html.

constraints and weaker disclosure norms, the temptation of getting away with hazardous behavior is strong. The primary means of doing this could be through choice of investments based on ulterior motives rather than investments based on returns. This means poor stock selectivity compared to funds under stronger SEBI regulations. In the next part of the paper, the regulatory differences are discussed.

III.   Comparison of the Regulatory Structure of SEBI (Mutual Funds) Regulations and UTI Act (1963)

UTI was created by an act of the Union government of India, and hence, is a Union government undertaking. It came into being on February 1, 1964 by virtue of the UTI Act of 1963. The objective of the fund was to promote savings and investment by Indian households through participation in the securities market. The initial capital of the UTI was 50 million Rupees, contributed by the Reserve Bank of India (RBI), the State Bank of India (SBI), the Life Insurance Corporation of India (LIC), and other scheduled banks and financial institutions. In 1975, the Industrial Development Bank of India (IDBI) took over the RBI stake as well as the rights and responsibilities.[19] In 1964, it launched its first "scheme," or fund: the US-64, which was intended to be an open-ended, non-assured income fund with a balanced portfolio of equity and debt.

In 1993, a three-member committee with N. Vaghul as the Chairman examined the structure of mutual fund regulations. It recommended that all the existing schemes of UTI be divided into two categories: (1) mutual fund type schemes and (2) non-mutual fund type schemes. All mutual fund type schemes were to have an asset management company and follow SEBI Regulations. Following these recommendations, UTI placed all new schemes launched after July 1994 under SEBI Regulations.

The regulatory structure of UTI can be discussed in terms of its organizational structure, its investment constraints, and its disclosure norms. In terms of its organizational structure, there was a combination of all the roles: the sponsor, the manager, and the trustee in one body. The board of trustees was entrusted with the responsibility of superintendence, direction, and management of the affairs of the UTI. Each of the trustees was appointed by the sponsors themselves with the IDBI, by virtue of being the largest stakeholder, having the largest number of trustees at four. The RBI appointed one, and the IDBI appointed the chairman of UTI in consultation with the Union government of India. This meant that there was no arms-length relationship between the sponsor, the trustee, and the fund manager. The corporate governance structure did not do much to discourage opportunistic behavior.

UTI's investment objectives allowed it to borrow to meet dividend repayment obligations with a limit of ten percent of the fund's net asset value (NAV). It could also act like a lending agency, and lend to corporations and cooperative societies engaged in industrial activities. No UTI schemes were allowed to invest more than five percent of the NAV in the equity of a specific company, and not more than fifteen percent in the securities of a company. UTI could also invest in the securities of an unlisted, but soon to be listed,

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19. *See* MALEGAM COMMITTEE REPORT (2001), *available at* www.capitalmarket.com/mutual/utireport.htm.

company to the extent of twenty percent of its NAV. New company investments can go up to ten percent of the securities issued, or thirty percent of the aggregate assets.

In terms of disclosure norms, UTI had to state objectives clearly in the offer document and reveal scheme performance once a year. But most important, UTI had no obligation to reveal its portfolio. Neither were there any constraints on expense ratios. However, UTI charged no management fees and operated largely on a non-profit basis. None of UTI's funds were required to report NAV on a regular basis. This non-disclosure meant that investors were completely in the dark regarding performance for substantial periods of time, often for six months at a time.

Hence, UTI had neither the corporate governance structure nor the transparency in terms of portfolio disclosure to ensure that moral hazards would be contained. It seemed a perfect recipe for opportunistic activities through dubious investments. The Parekh committee report[20] points out how the portfolio structure of US-64 was substantially altered to become more equity-oriented in 1998 compared to 1986 without informing the investing public. Faced with decreasing returns from debt, UTI had no option but to turn to equity for better returns. The US-64 sought to maintain returns, and had been dipping into its reserves to continue paying dividends unrelated to performance. Trustees had allowed the situation to deteriorate when they were to be the protectors of the investors' interest. The Parekh committee believed that the dominance of the public sector sponsor-nominated trustees allowed the government to abuse the scheme, and use it to support the government's disinvestment of public sector undertakings. The committee found that investment decisions were too concentrated in the hands of the top management, and that there was no independent fund management team.

While these observations were general to UTI, the main focus was on the US-64. These distortions can be attributed primarily to the lack of proper corporate governance structures and also lack of transparency. Investments were made with little regard for generating best returns.

The SEBI (Mutual Fund) Regulations of 1993 replaced the guidelines issued in 1990 by the government of India. These in turn were replaced by a comprehensive set of regulations in 1996. These regulations laid out the corporate governance structure, the investment constraints, expense caps, and disclosure requirements. The regulations have undergone continuous revisions as and when weaknesses were seen.

A person or group of persons (sponsors) interested in setting up a fund has to apply to the SEBI. The latter, in turn, assesses the credibility of the sponsors and decides on the registration after certain minimum conditions are fulfilled. The mutual fund itself is to be constituted in the form of a trust (Indian Trust Act) to be executed by the trustees in favor of the investors. The trustees themselves are appointed by the mutual fund, and two-thirds of them are to be independent and not associated with the sponsor in any manner. The trustee members are to be people of established integrity. The trustee or the sponsor then appoints the AMC. The AMC itself must have a proven track record and a reputation for fairness. The trustees ensure that the AMC functions in accordance with the

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20. The Deepak Parekh committee was set up in the wake of the crises that faced the US-64 in 1997-98. The committee recommended that independent trustees be appointed and that each fund should have a separate fund manager. For a detailed commentary on the happenings, *see Cleaning up the Mess*, HINDU, Jan. 10, 2002, http://www.hindu.com/thehindu/biz/2002/01/10/stories/2002011000290100.htm.

interests of the investors, and within the framework of the regulations. Thus, SEBI's regulations create a corporate governance structure with three distinct arms, and further guidelines ensure arms-length transactions between the three.

Funds investment regulations are contained in SEBI regulations schedule VII. Some of the more important regulations are indicated below:

1. No mutual fund, under all its schemes, should own more than ten percent of any company's paid up capital carrying voting rights.

2. Inter-scheme transfers of securities within a fund house are to be done at market prices and on a spot settlement basis.

3. The initial issue expenses with respect to any scheme may not exceed six percent of the funds raised under that scheme.

4. No short sales are permitted.

5. No investments in securities of unlisted companies that are associated with or part of the sponsor group of companies.

6. No mutual fund scheme shall invest more than ten percent of its NAV in the equity shares or equity related instruments of any company. This limit is exempted for investments in index fund or sector or industry specific scheme.[21]

These are some of the investment restrictions, and they are comparable in some ways with those of the UTI, except that there were no specific inter-scheme/fund transaction regulations for the latter. The issue of sponsor-related companies was also not addressed by the UTI regulations.

In order to contain the expenses that could be charged to the investors, SEBI decided to go in for direct control.[22] These control measures, contained in Chapter VII of the SEBI (Mutual Fund) Regulations, are briefly outlined below:

II. The Asset Management Company is allowed to charge investment and advisory fees limited to:

(i) One and a quarter of one percent of the weekly average net assets outstanding in each accounting year for the scheme concerned, as long as the net assets do not exceed Rs.1000 million, and

(ii) One percent of the excess amount over Rs.1000 million, where net assets so calculated exceed Rs.1000 million.[23]

For schemes launched on a no-load basis, the asset management company is allowed an additional management fee not exceeding one percent of the weekly average net assets outstanding in each financial year. The AMC is also allowed to charge initial issue expenses and recurring expenses.[24]

Besides spelling out the various costs that could be included in the overall operating expenses, which included the advisory or management fee, SEBI also placed a cap on

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21. Securities and Exchange Board of India (Mutual Fund) Regulations, ch. VII (1996), *available at* http://www.appuonline.com/mf/knowledge/regulation-1996.html.

22. *Id.*

23. *Id.*

24. These expenses included marketing and selling expenses (including agent's commission), brokerage and transaction cost, registrar services for transfer of units sold or redeemed, fees and expenses of trustees, audit fees, custodian fees, costs related to investor communication, cost of providing account statements, dividend/redemption cheques, warrants, and finally insurance premium paid by the fund. *See id.*

same. The operating expense ratio (ER) as a percent of assets managed is capped in the following manner:

  (i) On the first Rs.1000 million of the average weekly net assets 2.5%

  (ii) On the next Rs.3000 million of the average weekly net assets 2.25%

  (iii) On the next Rs.3000 million of the average weekly net assets 2.0%

  (iv) On the balance on the assets 1.75%.[25]

For debt funds, such recurring expenses are to be "lesser by at least 0.25% of the weekly average net assets outstanding in each financial year."[26] What is notable is that the management fee is tied to the asset size. This could be construed as indirectly related to performance, as the asset size of an open-ended fund also depends on the relative return generated. But it is a "weak form" of performance fee. It assumes that fund flow depends on fund performance. This may not be entirely true, as discussed earlier.

Mutual funds are allowed "load" funds, "no-load" funds, or a mixture of them.[27] For open-ended schemes floated on a "load" basis, the initial issue expenses can be amortized over a period not exceeding five years. But if any issue expenses are incurred during the life of open-ended schemes, they cannot be amortized. If the fund has no entry load, then the AMC is permitted to charge an additional fee not exceeding one percent of the NAV.

SEBI has also gradually strengthened the disclosure rules for funds.[28] These obligations require semi-annual portfolio and accounts disclosures in a widely circulated English Daily within one month of the half-year ending.[29]

Overall, SEBI regulations have tried a mix of better corporate governance structure, information flow, direct controls over expenses, and fees to ensure that the investor is given a fair deal. These two regulatory regimes are compared in Table 1 given below.

The above differences in regulations lead us to two conclusions. First, UTI investors have greater risks arising out of principal-agent problems. The chances of poor portfolio selectivity, and consequently, poorer returns are greater when compared to funds regulated by SEBI regulations. But at the same time, UTI is a non-profit, public-sector entity with no management fees charged. Expenses were also possibly lower due to economies of scale. These lower expenses could make up for the slack in performance when the NAV is considered. Further, in the case of funds regulated by SEBI, there could be a greater assurance in terms of portfolio selectivity but such could come at a certain cost. The cost of regulations is both direct and indirect. The direct costs are the compliance costs, which include costs of the trustee board, shareholder intimations, disclosure costs (personnel, printing, and mailing) and SEBI fees.[30] The second type of cost is indirect and often ignored. They involve the possibly negative effect of regulatory constraints such as invest-

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25. *Id.*

26. *Id.*

27. The schedule X of SEBI (Mutual Fund) Regulations deals with expenses of funds with and without entry and exit loads.

28. *See* Securities and Exchange Board of India, *supra* note 21.

29. *Id.*

30. In a survey, Payal Malik finds that the present SEBI regulations are perceived to be of the high cost-high benefit type by Mutual Fund managers. She estimates the compliance costs to be an average of 5.35% of the overall operating expenses of the AMC's. It is comparable to the United States but much higher compared to similar markets such as Thailand. *See* Payal Malik, *Compliance Cost of Financial Regulation*, 39 ECON. & POL. WKLY. 28, 3083 (2004).

Table 1-Differences in the Regulatory Systems

Regulatory requirements	UTI Act	SEBI Regulations	Implications if Followed
Three tier structure of corporate governance Including the sponsor, Asset Management Company and the Trustee	No	yes	Improves due diligence and reduces moral hazards.
Ceilings on management fees and operating costs.	No management fees and cost ceiling.	yes	Can forcibly reduce costs and especially useful if market lacks competition.
Investment constraints on investment in a particular company	Limits mentioned but lack internal checks to ensure it is followed.	Limited to 5% maximum for a specific company and not permitted to keep cash holdings beyond 15 days.	Can reduce moral Hazards and ensure better portfolio selectivity and returns.
Borrowing and lending constraints.	Could borrow and lend.	Limited borrowing permitted.	Can be a problem in case of heavy redemptions causing sales at low prices.
Disclosure norms.	No obligation to disclose portfolio.	Specific company holdings disclosed Initially annually and later semiannually.	Disclosure of holdings reduces moral hazards but can lead to imitating behavior if more frequent.

ment limits and portfolio disclosures. Investment limits reduce flexibility with respect to profitability investments. It forces a certain minimum amount of diversification on a fund. For instance, a diversified equity fund has to invest in a minimum of ten securities whereas no equity investment in a single company can cross ten percent of the assets. This might sound reasonable enough, but it acts as a restraint even if a deviation is profitable for the fund's investors. This minimum has to be maintained even if security price changes alter their percent composition in the portfolio. This requires constant churning of the portfolio, and hence, additional trading costs. The disclosure of the portfolio also has a cost in that it allows traders to "front-run" the fund.[31] This means that traders or other investors can predict fund behavior through fund flow, and inflate the price of securities that the fund intends to buy while deflating the price of those that the fund intends to sell. This reduces the realizable returns of the fund. It can also be termed as outsiders "free-riding" on the research of the fund.

Therefore, what we see is that while the stronger SEBI regulations are beneficial in terms of investor security, they also comes with possible costs. Does this regulatory system deliver better in comparison to the weaker regulations of UTI? This is the question that we seek to answer. In the next section, the empirical framework is described.

IV.   Empirical Framework

In order to compare the performance of the funds, we must first calculate the monthly returns. This calculation should be done for a minimum of sixty months to ensure a valid risk-return analysis. Monthly returns are computed using the following formula:

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31. *See* Russ Wermers, *The Potential Effects of More Frequent Portfolio Disclosure on Mutual Fund Performance*, 7 INVESTMENT COMPANY PERSP. (2001), http://www.ici.org/pdf/per07-03.pdf.

$$returns = \frac{NAV_T - NAV_{t-1}}{NAV_{t-1}} \tag{1}$$

NAV_{t-1} represents the month end NAV, and NAV_{t-1} represents the month beginning NAV. The monthly returns are then used to compute various risk-return ratios which are given below.

Sharpe Ratio[32]

$$(R_p - R_f)/\sigma_p \tag{2}$$

R_P is the average fund return. R_F is the risk-free return. The risk-free return here is taken as the bank interest on one-year term deposits. During this period, the general public did not have access to treasury bills, and public sector banks were considered risk-free. σ_p is the standard deviation of the portfolio. The results of this calculation will help us understand the risk-return performance of various funds.

Information Ratio (IR)[33]

$$(R_p - R_m)/\sigma_{er} \tag{3}$$

R_m is the return on the benchmark – in this case, the BSE-sensex,[34] and σ_{er} is the standard deviation of the excess return or returns of the portfolio in excess of the market. This ratio focuses on the risk-return generated by the manager's ability to use information to deviate from the benchmark – the higher the better. The standard IR measure, however, runs into problems if there are negative excess returns. Hence, an alternate measure called the "Modified Information Ratio" (MIR) is also used:

$$MIR = \frac{(R_P - R_m)}{\sigma_{er}^{\left(\frac{er}{|er|}\right)}} \tag{4}$$

The only change is that the denominator, the standard deviation of the excess returns, is modified by adding an exponent. The exponent is the excess return divided by the absolute value of the excess return. When the excess return is positive, the standard IR and MIR are the same. When the excess return is negative, the IR and MIR can be very different.

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32. This was first proposed by Sharpe in 1966 and remains among the most popular measures despite the creation of several more recent risk-reward measures. A detailed discussion of this measure can be found in William F. Sharpe, *Mutual Fund Performance*, 39 J. Bus. 119 (1966), *available at* http://www.jstor.org/stable/pdfplus/2325404.pdf; William F. Sharpe, *Adjusting for Risk in Portfolio Performance Measurement*, 1 J. PORTFO-LIO MGMT. 29 (1975).

33. For a good discussion of the information ratio, *see* Thomas Goodwin, *The Information Ratio*, 54 FIN. ANALYSTS J. 4, 34 (1998), *available at* http://www.jstor.org/stable/pdfplus/4480091.pdf.

34. This benchmark was chosen because it was one of the most popular reference index that funds themselves had opted to be compared against.

Jensen's Alpha[35]

$$(r_p - r_f) = \alpha_p + \beta_p (r_m - r_f) + e \qquad (5)$$

Equation 5 helps us arrive at the Jensen alpha. The β_P gives the systematic risk,[36] and α_P (alpha) represents the fund manager's superior stock-picking capability. A positive alpha indicates a fund manager's superior stock-picking talent. This regression is run once for SEBI regulated funds together, and once again for UTI funds together in a panel data format. This double run helps to arrive at the differences in the average alpha for funds under SEBI regulation and funds under the 1963 UTI regulations. Any existence of opportunistic behavior should result in an inferior average alpha for UTI funds. The following equation gives the panel format of the regression:

$$(r_{it} - r_f) = \alpha_i + \beta_i (r_{mt} - r_f) + e_{it} \qquad (6)$$

The above equation helps capture the average alpha, or stock-picking skills of UTI funds as compared to the average of the rest. If there were opportunistic behavior in stock picking, the average alpha for the UTI funds should be low, possibly even negative. But because UTI does not charge a management fee, the comparisons might be slightly distorted in its favor. To neutralize this difference, a minimum management fee of one percent per annum is added to the returns of the private funds. This fee is actually less than the 1.25% allowed by SEBI for the first Rs.1000 million in assets. Thus, for monthly returns this works out to be an additional one-twelfth of a percent. This will give an even clearer picture of comparison when evaluated against the same regression results for the SEBI regulated funds.

Equation 6 can also be termed as the single factor Capital Asset Pricing Model (CAPM). Equation 6 is called CAPM because it uses the single factor of market movement to capture risk. This approach was developed by the combined contributions of Sharpe, Linter, and Black.[37] The single factor model, however, has been challenged. Therefore, multiple factor models have since been developed to better clarify the various factors that explain the movement of the mutual fund portfolio returns. Among these multiple factor models are the Fama-French three-factor model, and Carhart's four-factor

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35. This is named after Michael C. Jensen who was the first to use this method to assess a fund manager's ability to beat the market through superior stock selection skills. It also gives the risk-adjusted returns. For more information, *see* Michael C. Jensen, *The Performance of Mutual Funds in the Period 1945-1964*, 23 J. FIN. 389 (1968), *available at* http://www.jstor.org/stable/pdfplus/2325404.pdf.

36. The beta or systematic risk is the risk of the portfolio in comparison to the index. For instance, if beta = 1 then the portfolio has the same risk/volatility as the index. If beta >1, it carries greater risk than the index and, as such, its returns must be similarly higher to justify such risks. If beta<1, then its risk is less than the index.

37. *See* William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425 (1964), *available at* http://www.jstor.org/stable/pdfplus/2977928.pdf; *see also* Fisher Black, *Capital Market Equilibrium with Restricted Borrowing*, 45 J. BUS. 444 (1972), *available at* http://www.jstor.org/stable/pdfplus/2351499.pdf; John Lintner, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets*, 47 REV. ECON. STAT. 13 (1965), *available at* http://www.jstor.org/stable/pdfplus/1924119.pdf.

model.[38] These additional risk factors are able to better explain the overall movement in portfolio returns, as well as to help isolate the "true" alpha. But the single factor model is used here for two reasons. First, the additional factors, outlined by Fama–French, are also, in some sense, skill factors. For instance, an investment manager must have the ability to foresee the other factors that could contribute to returns, albeit with a higher risk. Hence, the single factor alpha, while not measuring stock selectivity skills alone, still measures a set of skills. Second, even if the alpha has been overstated due to non-inclusion of other factors, it has been done for both sets of funds, which share a similar investment approach. As a result, it would have little impact on the objective at hand.

A sample of ten open-end diversified equity funds with growth objectives has been selected. The selected funds were of similar investment styles during the period of study, and hence investment style diversities are eliminated.[39] The period of the study is from May, 1995 to October, 2000. It gives us sixty-six monthly returns for each fund, which is sufficient for risk-weighted returns comparison. The time period was selected to give us a comparison of the funds' performance during the existence of the two different regulatory structures.

The criteria for the selection of funds were that the SEBI regulated funds needed to have started before 1996, and the UTI funds should have existed prior to 1994. This is because all UTI funds started after 1994 were "voluntarily" brought under SEBI regulations. Hence, these funds have been excluded because they would not serve the purpose of comparing the impact of the different regulations. Further, the term "voluntary" is a vague concept with no definite obligations, placing such funds neither under SEBI nor under UTI regulations with much definiteness. It was also imperative that the funds selected be similar in terms of investment objective. The selected funds all focus on a diversified equity portfolio with a growth objective. The sample size is limited, however, because data availability in a continual manner was a serious constraint. Most funds also reported their NAV on a weekly basis, which made issues more complicated because the NAVs used for monthly return calculations had to match up in terms of dates. The NAV

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38. *See* Eugene F. Fama & Kenneth R. French, *The Cross-Section of Expected Stock Returns*, 47 J. Fin. 427 (1992), *available at* http://www.jstor.org/stable/pdfplus/2329112.pdf; Eugene F. Fama & Kenneth R. French, *Common Risk Factors in the Returns on Stocks and Bonds*, 33 J. Fin. Econ. 3 (1993), *available at* http://www.nes. ru/~agoriaev/Papers/Fama-French%205%20factors%20for%20stocks%20and%20vonds%20JFE93.pdf. Fama and French included additional factors such as Small-Minus-Big (in terms of market capitalization) stock returns and high–minus-low (in terms of book-to-price ratio) stock returns. They added these factors as they found that the historic returns of small cap stocks and value stocks exceeded that of larger cap stocks and growth stocks respectively. To the Fama–French three factor model Carhart added a fourth explanatory factor, the momentum factor. *See* Mark M. Carhart, *On Persistence in Mutual Fund Performance*, 52 J. Fin. 57 (1997), *available at* http://www.jstor.org/stable/pdfplus/2329556.pdf. For a simple perspective of CAPM and the Fama–French Three Factor model, *see* Kent L. Womack & Ying NMI1 Zhang, *Understanding Risk and Return, the CAPM, and the Fama-French Three-Factor Model*, 03-111 Tuck Sch. Bus. 1 (2003), http://papers. ssrn.com/sol3/Delivery.cfm/SSRN_ID481881_code031219100.pdf?abstractid=481881&mirid=1.

39. By using a homogenous set of funds with no difference in style, the stock picking talent is the only variable, and thus, can be observed. For an in-depth analysis of fund style and stock picking skill measurement, independent of style, *see* Louis K. C. Chan et al., *On Mutual Fund Investment Styles*, 15 Rev. Fin. Stud. 1407 (2002), *available at* http://www.jstor.org/stable/pdfplus/1262659.pdf.

data has been sourced from the UTI, the database NAV India,[40] and individual fund house websites. The sample is illustrated in Table 2.

The sample contains three funds from UTI, three from HDFC taken over by Zurich, three from Franklin Templeton taken over from Pioneer ITI Mutual Fund, and one from JM Fund House. In total, we have selected ten funds from four different fund houses.

The flagship fund of UTI, US-64, was consciously excluded from this sample. This fund, an income fund, was the subject of intense controversy when it collapsed in the late 1990s. It provides probably the best example of potential moral hazards that arise from poor transparency or poor information disclosure. But at the same time, this fund was also the most abused by the government, as it was used to induce deliberate interventions in the market as well as to support government public sector disinvestments. Therefore, the sample does not incorporate US-64 because it is not a pure equity fund, and its portfolio distortions have been manipulated due to governmental coercion.

Table 2-Sample of Funds

Fund	Fund House	Inception
Master Gain	UTI	April 1992
Master Growth	UTI	February 1993
Master Plus	UTI	December 1991
HDFC Prudence*	HDFC	February, 1994
HDFC Capital Builder*	HDFC	January 1994
HDFC Equity*	HDFC	December 1994
Franklin Blue Chip**	Franklin Templeton	November 1993
Franklin Prima**	Franklin Templeton	November 1993
Franklin Prima Plus**	Franklin Templeton	September 1994
JM Equity	JM	December 1994

SOURCE: Association of Mutual Funds India (2009).
All these funds were initially a part of 20th Century Asset Management Company taken over by Zurich India Mutual Fund. Zurich India was itself taken over by HDFC Mutual Fund in 2003
**These funds were taken over from Pioneer ITI Mutual Fund by Franklin Templeton mutual fund in 2002.
Data for UTI is sourced from UTI. Data for Franklin Templeton funds is sourced from the Funds website and for other funds data is from NAV India data base.

V.   Results and Analysis

First, the performance of funds in terms of the Sharpe ratio, Information ratio, and Jensen's alpha are used to rank the funds. These results are given in Table 3 with explanations following.

Among the funds, we see that two of the UTI funds have negative Sharpe ratios, which indicates that the return per unit of risk, defined as standard deviation of the fund returns, is negative. Two other private sector funds, regulated by SEBI, also demonstrate negative

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40. ASSOCIATION OF MUTUAL FUNDS INDIA (2009), http://www.amfiindia.com/. The database NAV India is a mutual funds specific database and a venture of Capital Market Limited.

Sharpe ratios. These four funds with negative Sharpe ratios also have a lower ranking than the index. This proves that a passive investment in the index would have delivered superior returns.

Table 3-Sharpe Ratio Rankings for Sampled Funds

Rank	Fund Name	$\overline{(r_p - r_f)}$	σ_p	Sharpe Ratio
1	Franklin Prima plus	1.06	9.12	0.12
2	Franklin Blue Chip	0.96	8.59	0.11
3	HDFC Equity	0.79	8.22	0.09
4	HDFC Prudence	0.39	4.9	0.08
5	Master plus	0.14	7.53	0.02
6	Franklin Prima	0.17	10.62	0.02
7	**Index**	**-0.01**	**8.64**	**-0.001**
8	Master growth	-0.1	8.09	-0.01
9	JM equity	-0.14	9.34	-0.02
10	HDFC capital builder	-0.15	7.52	-0.02
11	Master gain	-0.43	7.66	-0.06

While all of the other private sector funds have demonstrated positive returns per unit of risk, one from the UTI stable fund and the Master Plus fund joins them. The Master Plus fund has a rank of 5 with a very small Sharpe ratio of 0.02. Nothing extremely positive can be said about UTI funds in terms of this measure. When giving these ranks one also has to keep in mind that UTI had substantially lower expense ratios (ER) when compared to the other funds. This mean that the deductions from the unit asset value in terms of expenses was smaller when compared to the other funds. The ER of UTI is lower for two additional reasons: first, it could be due to possible economies of scale that it enjoyed because it was substantially larger than all other funds, second, UTI did not charge management fees, in contrast to the 1.25-1% charged by other funds. In fact, UTI cross-subsidized the expenses of some domestic funds, such as US-64, through the earnings and fees generated by other funds meant for foreign investors. It is important to note, however, that the hypothesis that UTI enjoyed economies of scale remains untested. However, it is certain that UTI did not charge management fees, which indeed gave it an advantage because it had lower costs when it came to deducting expenses. As a result, the performance of UTI funds appears all the more unimpressive.

Table 4 illustrates the IR and MIR rankings. Because IR gives the returns of a fund as compared to a benchmark (excess return) per unit of tracking error, or the standard deviation of the excess return, it differs from the Sharpe ratio which gives returns in excess of the risk-free return divided by the portfolio returns' standard deviation. The MIR is also calculated to avoid errors that might creep in due to negative excess return.

The rankings of funds in terms of IR are the same as that for the Sharpe ratio. But once we factor in the MIR, the rankings change for the funds with negative excess returns,

although overall it is the same story for UTI funds. The IR or the MIR give us the return for the risk taken by the fund manager for deviating from the market risk, or it could be the risk-return for only the fund manager's selectivity skills and not actually for the returns due the general market movement. In this case, Master Plus is the only UTI fund to show a positive return based on the fund manager's selectivity skills, though it is a very small 0.02 return. The other two UTI funds show negative returns for deviating from the market. Two other private sector funds also show a negative MIR. A fund house like UTI should demonstrate better selectivity skills given its considerable experience in the Indian markets. But it is instead the newcomer private funds that have performed better. It is difficult to accept that UTI's results come as a consequence of inferior management. Thus, this only raises more doubts as to whether it is a lack of transparency that is leading to stock selection that is not based on maximizing returns.

Table 4-Information Ratio (IR) Rankings for Sample Funds

Rank	Name	R_{er}	σ_{er}	IR	MIR
1	Franklin Prima plus	1.07	9.12	0.12	0.12
2	Franklin Blue Chip	0.97	8.59	0.11	0.11
3	HDFC Equity	0.8	8.22	0.09	0.09
4	HDFC Prudence	0.4	4.9	0.08	0.08
5	Master plus	0.15	7.53	0.02	0.02
6	Franklin Prima	0.18	10.62	0.02	0.02
7	Master gain	-0.43	7.66	-0.05	-27.99
8	HDFC capital builder	-0.14	7.52	-0.02	-33.40
9	Master growth	-0.09	8.09	-0.01	-36.18
10	JM equity	-0.13	9.34	-0.02	-41.66

The next step involves computing the average Jensen alpha for the two sets of funds separately, using Equation 6 for each. A random effects model is used for the SEBI regulated funds, and an OLS model is used for the UTI funds[41]. Table 5 demonstrates the results for funds regulated by SEBI.

Table 5-Average Jensen Alpha for Funds Regulated by SEBI

Variable	Coefficient	Std-error	t-statistic	Probability
C	0.45	0.27	1.60	0.10
β	0.71	0.03	21.8	0.00

Adjusted R-squared 0.52

Table 5 shows a positive alpha of 0.45, which is significant at the ten percent levels. This means that SEBI regulated funds demonstrate, on average, positive stock selection

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41. The poolabilty test and Hausman specification test have been excluded for brevity.

skills. The beta, which is 0.71, shows the degree to which the returns can be explained by the chosen benchmark. The fact that it is less than one indicates a level of risk less than that of the index. Their deviation from the index, through alternate stock composition, shows positive rewards. In a competitive market, funds are constrained to spend money on research to identify stocks that could deliver better returns than the index. Such performance is rewarded by investors through further inflows of money/investments into the open-end equity fund. In turn, enhancing the managed assets provides an incentive for the fund manager because the management fee is fixed at one percent. Thus, the higher the assets, the larger the absolute fee. Though there was no use of performance-based fees during this period, the fact that absolute fees were linked to asset size, and the fact that there was no indexing of the fees in any manner to inflation, offers a strong incentive to enhance performance. The manager's interests are, therefore, intertwined with that of the investors'. This is affirmed by the average positive alpha.

Table 6-Average Jensen Alpha for UTI Funds

Variable	Coefficient	Std-error	t-statistic	Probability
C	-0.12	0.35	-0.36	0.72
β	0.71	0.04	17.49	0.00

Adjusted R-squared 0.62

Table 6 depicts the results for UTI funds. The hypothesis of inferior stock selectivity is proven true by an average alpha that is negative (as expected) and not significant. The low significance could also be due to the small sample, however. But even with a small sample size, we have no significant stock selectivity skills demonstrated. The average beta of 0.71 shows that the UTI funds did not share the same risk as the index, but their deviation from the index composition was not met with any reward. This leads us to the issue of a possible clash of interests and opportunistic behavior. It could be argued that this lack of stock selection skills was due to purely bad decisions made in good faith, or an inefficient fund manager. If this were the case, then one could have expected a change in fund managers. While UTI had no specific manager, it continued despite the fund's poor performance. Such poor selectivity on the basis of good faith is hard to accept from an institution as experienced as UTI. We would instead prefer to conclude that the difference in alpha is simply due to choice of portfolio – a portfolio that the fund chose not to disclose based on significant "self-interest" rather than "investor-interest." Although the difference in the alpha of 0.45 may contain some element of misjudgment, it is too large to be a complete result of it.

The comparison so far has been between UTI funds, which charged no management fee, and the SEBI-regulated funds that were allowed to charge management fees between 1 and 1.25% of AUM.[42] Therefore, our comparison so far would tend to favor the UTI funds. The NAV of SEBI-regulated funds would be less because of the management fee, whereas UTI funds operated on a non-profit motive. In fact, the US-64 was cross-subsidized by income earned and floated from foreign investors. This being the case, we think

42. See Jenson, supra note 35.

it might be pertinent to add the management fee to the return of the other funds and compare the results again. But this approach involves certain difficulties. Data on actual management fees charged was not available for these funds. The only alternative then was to use the average for the industry. The Mutual Fund Yearbook gives us aggregate data with respect to expense categories and asset size for pure equity funds.[43] From this, it was possible to calculate the average percent of management fees charged by the SEBI regulated pure equity funds. Table 7 gives these numbers.

Table 7-Average Assets and Management Fees of a Pure Equity Funds

	1996	1997	1998	1999	2000
Assets Size (Rs.Millions)	496883	394899	395019	487253	91108
Management Fee (Rs.Millions)	5783	4639	4353	3985	6724
Management Fee (% of assets)	1.14	1.17	1.09	0.8	0.74

From the above table we see an average management fee of 0.97, or about one percent of the assets. This amount is then divided by twelve to get monthly expenses, and the result is added to each of the monthly returns of the private funds. Using these returns, regression 6 is computed again.

Table 8-Average Jensen Alpha (with average management fee included) for SEBI Regulated Funds

Variable	Coefficient	Std-error	t-statistic	Probability
C	0.53	0.26	1.9	0.05
β	0.71	0.03	21.79	0.00

Adjusted squared 0.62

Table 8 shows the new results for private, SEBI-regulated funds with the management fee added back in to returns. As a result, we get a higher alpha of 0.53, which is also more significant now at the five percent levels. These results help to further consolidate the hypothesis that SEBI-regulated funds had a better incentive to ensure due diligence in portfolio selection and thus, to performed better.

VI. Conclusion

In order to assess the benefits of regulation, the performance of funds under different regulatory intensities was compared. On average, funds that came under the more con-

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43. The Mutual Fund Yearbook is a joint publication of Association of Mutual Funds of India (AMFI) and UTI Institute for Capital Markets (UTIICM). It contains aggregative data pertaining to assets, income and, expenditure of different categories of funds.

straining regulations of SEBI showed much better stock selectivity. This superior performance can be attributed to a combination of better regulations and fund management. While it cannot be said conclusively that the performance resulted entirely from transparency and prevention of opportunistic behavior, there is strong evidence to support that it was a significant factor. Better disclosure norms and corporate governance structures have, on average, ensured more benefits than costs.