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A COMPREHENSIVE LONG-TERM PERFORMANCE ANALYSIS OF LOAD VS. NO-LOAD MUTUAL FUNDS

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Abstract

The debate between no-load and load funds has continued and has become more complicated because of the innovative packaging by mutual fund managers. The purpose of this research is to analyze whether load funds earn a consistently higher rate of return on a long-term basis when compared to no-load funds. This research evaluates the returns of equity load and no-load funds by analyzing the descriptive statistics of a large sample (8,100) of load and no-load funds. Results, summary statistics, and conclusions are drawn from the samples analyzed.

INTRODUCTION AND PURPOSE

Over the past decade, mutual funds have increasingly become the investor's vehicle of choice for long-term investing. There are over 10,000 funds that were available for purchase as of mid-1998. Much of the increased dollars invested in mutual funds has come as a result of employer/ government sponsored retirement plans.

Given the widespread interest in mutual funds, it is the intent of this researcher to analyze and evaluate the differences in returns for load versus no-load funds from 1983 to 1997.

The debate between no-load and load funds has continued and becomes more complicated because of the innovative packaging by the fund managers. Fees charged to incoming shareholders may consist of any combination of the following: sales charges (loads), redemption fees, annual 12B-1 fees, and management fees. A redemption fee is charged when a shareholder exits the fund. The 12B-1 fee is a percentage of the fund's assets, which can be as high as 1.25 percent to cover sales and marketing costs. Any fund with a 12B-1 fee over .25 percent cannot be considered a no-load fund. All mutual funds charge a management fee, known as the expense ratio, with the majority of expense ratios in the range of .5 percent to 2.5 percent. Given the broad range of fees that are charged, investors are faced with the task of sorting through a myriad of data in order to make sound investment decisions.

When a front-end load is charged, the load is paid up front reducing the net dollars invested on the investor's behalf. For example, an investment of $10,000 in two comparable funds (6% load and no-load), returning 10 percent per year would result in an ending value for the load fund of $24,769 while the no-load fund would achieve a $27,070 ending value. The no-load fund would earn an additional $2,301 more than the loaded fund. Therefore, in order to be competitive, the loaded fund must either earn a higher rate of return or compensate the investor in some other way. It is argued by the management of load-fund companies that the load pays for financial planning and investment advice, and results in higher returns. It is argued, therefore, these additional services justify the various loaded charges. If the compensation that investors receive for paying a load is in the form of higher long-term returns, the total value of the investment should reflect superior returns.

The purpose of this research is to analyze whether load funds earn a consistently higher rate of return on a long-term basis than do no-load funds. This research evaluates the returns of equity load and no-load funds by analyzing the descriptive statistics of a sample of load and no-load funds via Z-tests. The returns found in the Morningstar database of mutual funds are used in the data analysis for comparative purposes. Results, summary statistics, and conclusions are then drawn from the samples analyzed (over 8,100 funds are analyzed).

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REVIEW OF THE LITERATURE

Extensive research on mutual fund performance has been conducted for over 30 years. This research has focused on such topics as evaluating a fund manager's predictive ability, market timing and selectivity, the relationship of asset size to performance, and the relationship of mutual fund management fees, loads, and turnover rates and the affect on overall return.

One of the first studies done on mutual fund performance was a study conducted by Friend, et al. [1962]. He analyzed the entire mutual fund industry and reported his findings to the SEC. The study included the evaluation of the effect of management fees and sales charges on performance during the period from January 1953 to September 1958. This study concluded that there was no significant relationship between management fees and performance.

Other early studies on mutual funds included the several works of Jensen [1968], Sharpe [1966], and Treynor [1965] who used the capital asset pricing model to compare risk-adjusted fund returns with that of a market portfolio. The findings of Sharpe and Jensen demonstrated that mutual funds under perform market indexes and suggest that the returns were not sufficient to compensate investors for the diverse mutual fund charges. Sharpe also found that funds with lower expense ratios provided better net returns than funds with high expense ratios. Therefore, Sharpe concluded that investors were not be compensated for the loaded fees.

In another study, Veit, et al. [1988] analyzed the load vs. no-load issue in relation to the investment horizon. They hypothesized that there is an investor's indifference period. That is, assuming that there is no significant difference in risk-adjusted gross return performance between load and no-load funds and that annual expenses are greater for no-load funds than load funds, a point is reached in which the returns for a no-load and load funds are the same. Further, given an expanded investment horizon, it was hypothesized that the overall performance of the load fund investor would surpass that of the no-load investor. The results of this study indicate that there is no statistical difference in the magnitude of the expense ratio between load and no-load funds, with no-loads having a higher average expense ratio. However, the difference in average net returns was not statistically significant.

Ippolito [1989] focused on evaluating the overall mutual fund industry and how the performance of a random selection of mutual funds compared to an index fund. Ippolito also considered turnover rates. The data in this study consisted of 143 mutual funds during the period of 1965-1984. The results of this study indicate that mutual funds with higher turnovers, fees, and expenses earn rates of return sufficiently high to offset the higher charges. These results were consistent with the notion that mutual funds are efficient in their trading and information-gathering activities.

Chen, et al. [1992] performed a cross-sectional analysis focusing on security selection and market timing abilities of mutual fund managers. This study also included an analysis of the relationship of load vs. no-load status to overall performance. They found that there was no difference between load and no-load funds when selectivity is considered. Funds with load charges performed no better than those with no-load charges from the period January 1972 to March 1984. Consequently, investors in load funds did worse than those in no-load funds for the given time period.

Elton, et al. [1993] found different results from Ippolito [1989] and had similar findings to the early studies of Sharpe and Jensen. Elton, et al. studied the informational efficiency of mutual fund performance during the period 1965 to 1984, the same period as Ippolito's study. Their primary findings suggest that returns are sensitive to their measurement if the performance variable is chosen. Elton, et al. attributes the difference in results as to whether the mutual funds hold assets in S&P equities vs. non-S&P equities and bonds. This study indicates that Ippolito's results are due to the relative performance of the various alternative classes of securities, such as the non-S&P stocks, rather than the superior selection ability of the fund manager.

Grinblatt and Titman [1994] conducted a study that analyzed the performance evaluation techniques and the determinants of mutual fund performance, including the effect of the load status on performance. Their data consisted of 279 mutual funds between 1974 and 1984. Their findings suggest that there is no statistically significant relationship between performance and expense ratios and net asset values, but there is a statistically significant relationship between performance and both management fees and loads.

Drom and Walker [1994] reviewed international mutual funds by using a pooled cross-sectional/time series regression model to determine whether load/no-load status, asset size, expense ratios, and turnover rate were related to unadjusted and risk-adjusted returns. They found no performance difference between no-load and load funds when using unadjusted and risk-adjusted returns. In fact, performance was not related to asset size, expense ratio, turnover, or load status. Their conclusion is that there is no reward for paying a load fee when investing in mutual funds. They assert that mutual funds in the aggregate, whether load or no-load, earn comparable returns. Their analysis does not support the common marketing argument that load funds result in incentives for better investment performance.

Volkman and Wohar [1995] examined the relation to size, goal, load, and management fees on the performance of mutual funds as well as the relation between past and future fund performance. Their results also suggest than an investor is not rewarded for paying the higher fee of a load fund. They also conclude that high management fees result in negative persistent fund performance and that low management fees result in high persistent fund performance.

Droms and Walker [1996] completed a detailed analysis of the load/no-load controversy in 1996. They reviewed asset size, turnover rate, expense ratio, and the primary objective of the fund in relation to overall performance. This research included 151 mutual funds over a period of 20 years (from 1971 to 1990). The authors conclude that there was no statistically significant relationship between a funds overall performance and its load status. They conclude that there is no reward for paying a load fee when investing in mutual funds.

Finally, Hooks' [1996] analyzed the relationship between the sales charges, annual expenses, and returns. Hooks hypothesis was that load funds tend to have lower annual management fees and, thus, outperform the higher fee no-load funds. Hooks evaluated a three-year, short-term time horizon and a 15-year cumulative average annual return for 1,012 equity funds as of 1993. The funds were divided into sub-samples of load and no-load. The results of the study indicate that in the short term for similar expense levels, no-load funds are preferred because load funds do not outperform no-load funds to compensate the investor for paying this commission.

In summary, the majority of the empirical research has demonstrated that there is no performance difference between load and no-load mutual fund performance. Since the majority of the studies did not find a relationship between sales charges and performance, these findings would suggest that either the investor is compensated by some other means, perhaps through investment and/or financial planning advice, or they simply are not compensated at all.

DATA AND METHODOLOGY

The data used in this study are 10-year summary data from the Morningstar database. The data covers the period from 1984 through 1997. The performance of the funds was evaluated over a long-term period to reduce any bias from short-term fluctuations. For each of the years, the 12-month total returns, 5-year average annualized return, and the 10-year average annualized return were used as a basis for comparison. Table 1 provides the number of observations for the sample sizes used for the various time periods analyzed.

TABLE 1
Sample Size of Mutual Funds Used To Calculate Returns

	1 Year Return No-Load	1 Year Return Load	5 Year Return No-Load	5 Year Return Load	10 Year Return No-Load	10 Year Return Load
1993	646	912	362	566	165	253
1994	922	1191	411	572	194	285
1995	1102	1331	452	598	233	318
1996	2833	4370	1030	1390	493	664
1997	3297	4830	1352	1716	603	829

Morningstar's calculation of 12-month total return is computed each month by taking the change in monthly net asset value, reinvesting all income and capital gains distributions during that month, and dividing this value by the starting net asset value. The total returns are not adjusted for sales charges such as the front end load fees or deferred charges such as redemption fees. The total returns are adjusted for management, administrative, 12B-1 fees, and other costs that are deducted from the funds total assets. The total returns for 5 and 10 years are expressed as average annualized returns.

The data for 1997 was also further categorized by investment objective to determine any performance difference by objective. The six investment objective categories are: Balanced, Growth, Income, International, Specialty, and

Small Company. In addition, the data for 1997 was further analyzed by reviewing the mutual fund's beta and alpha values as well as the 12-month total return, 5-year average annualized total return, and the 10-year average annualized return. Morningstar's beta measures how much a fund's excess return varies in proportion to changes in the excess returns of the S & P 500. Morningstar's alpha measures the difference of a fund's actual excess return from its expected return. A positive alpha indicates that a fund's return was greater than the return estimated from the fund's beta.

Mutual funds are categorized into load and no-load classifications based on any front-end fees or deferred fees assessed. The samples were then compared to each other to determine significant statistical differences.

The statistical means and standard deviations for both load and no-load samples were tested using the Z test.

TABLE 2
Sample Size of Mutual Funds By Investment Objective For 1997

	1 Year Return No-Load	1 Year Return Load	5 Year Return No-Load	5 Year Return Load	10 Year Return No-Load	10 Year Return Load	Alpha No-Load	Alpha Load	Beta No-Load	Beta Load
All Funds	3297	4830	1352	1716	603	829	2299	3582	2299	3582
Balanced	633	692	268	243	120	130	441	493	441	493
Growth	631	726	238	232	130	133	394	450	394	450
Income	1165	2193	553	888	244	414	923	1825	923	1825
International	485	711	149	183	36	60	304	465	304	465
Small Company	273	230	106	59	49	25	175	149	175	149
Specialty	110	278	38	111	24	67	62	200	62	200

EMPIRICAL RESULTS AND FINDINGS

The results of the analysis indicate significant short-term fluctuations in performance (see Table 3). However, as the time period increases, the variability flattens and the short-term fluctuation are minimized. In 1993, the mean performance of load funds was higher for the 12- month, 5-year, 10-year returns than no-load funds. However, the difference was only statistically significant for the 12-month category (see Table 4). Interestingly, this trend changed in later years. In 1996 and 1997, the mean performance of no-load funds was higher for the 12- month, 5 year, and 10 year categories. In addition, these differences were statistically significant for 12 months and 5 years for both 1996 and 1997. At a 95 percent confidence level, the no-load funds outperformed load funds mostly in the later time frames. That is, 1996 and 1997 indicate significant statistical differences in the performance of no-load, over load funds. The only time loaded funds outperformed no-load funds in a statistically significant manner was for the 1-year period ended in 1993. All other statistical values indicate no significant difference or a strong difference in favor of no-load outperforming load funds.

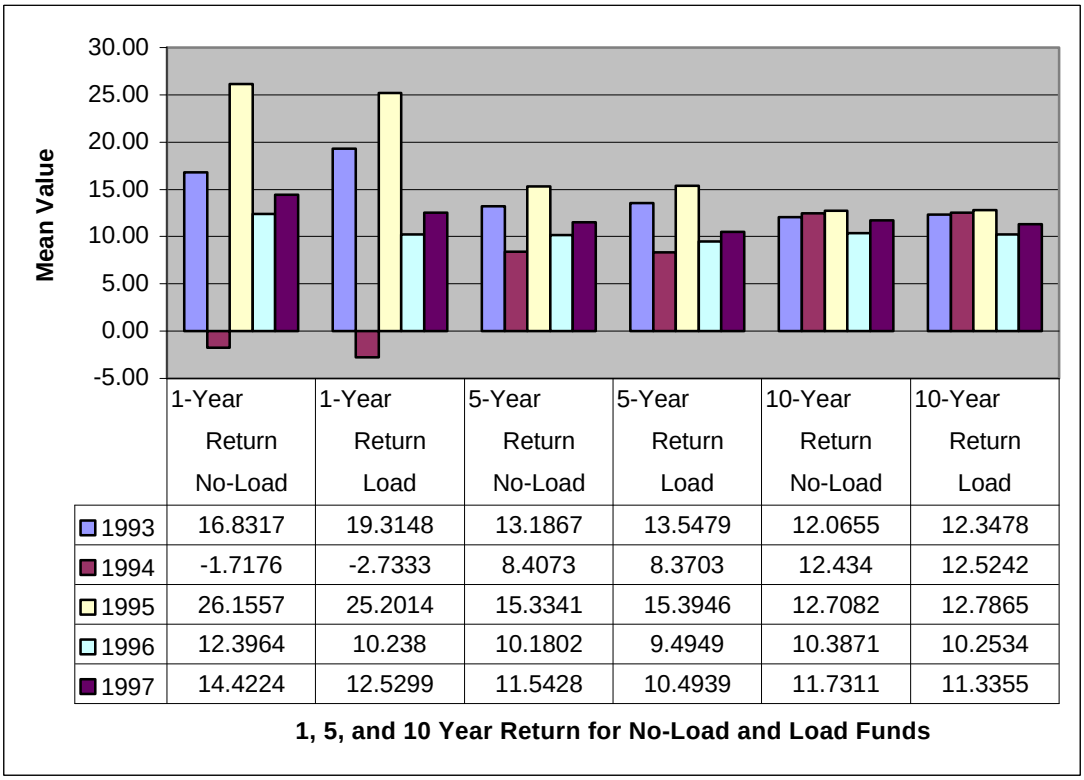
In addition to examining the return data for the load vs. no-load categories, beta values were also examined to determine whether one group had a statistically higher risk than the other group. The mean beta values are shown in Table 5. No-load funds had a higher mean beta in 1993 and 1994, while load funds had higher betas in 1995, 1996, and 1997. However, only 1996 and 1997 had statistically significant differences and these differences suggest that the no-load category was less risky.

PERFORMANCE VS. INVESTMENT OBJECTIVE

The load and no-load fund samples for the latest year (1997) were further divided into subcategories by investment objective. The load and no-load fund samples within an investment objective were compared against each other to determine whether there is any performance difference by investment objective. The statistical mean of unadjusted returns by objective appears in Table 7. Similar to the statistical means in Table 3, the results indicate short-term fluctuations in performance, but as the time period moves from 1 year to 10 years, the performance

flattens and short-term fluctuations lessened. A cursory look at the statistical mean shows that the Specialty no-load funds significantly underperformed the Specialty load funds. In addition, Growth funds and Small Company funds outperformed Income funds as one would expect.

TABLE 3
Returns for Load and No-Load Mutual Funds



	1-Year Return No-Load	1-Year Return Load	5-Year Return No-Load	5-Year Return Load	10-Year Return No-Load	10-Year Return Load
1993	16.8317	19.3148	13.1867	13.5479	12.0655	12.3478
1994	-1.7176	-2.7333	8.4073	8.3703	12.434	12.5242
1995	26.1557	25.2014	15.3341	15.3946	12.7082	12.7865
1996	12.3964	10.238	10.1802	9.4949	10.3871	10.2534
1997	14.4224	12.5299	11.5428	10.4939	11.7311	11.3355

Two sample Z tests were performed to determine the statistical significance of the difference in performance by investment objective. The results are shown in Table 8. A negative Z value indicates that no-load funds performed worse than load funds and a positive Z-value indicates that no-load funds performed better than load funds.

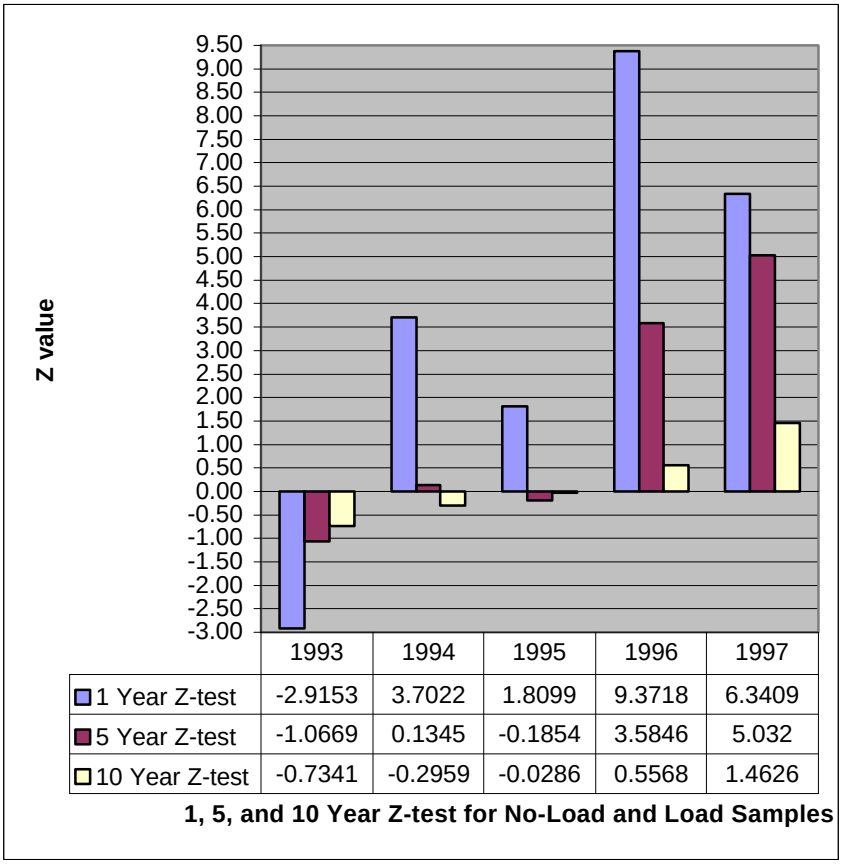
In the Balanced funds category, no-load funds statistically outperformed load funds in the 1 and 5-year return categories. There was no statistical difference in the 10-year return category for Balance funds. In the Growth funds category, no-load funds outperformed load funds in the 5-year return category. There was no statistical difference in the 1- and 10-year return categories.

In the Income funds category, no-load funds underperformed load funds statistically in the 5 and 10-year return category. In the International category, no-load funds performed better than load funds in the 1-year return category. However, the differences were not statistically significant at the 95 percent level.

In the Small Company category, no-load funds statistically outperformed load funds in the 1-year return category, but there was no statistical difference in performance in the 5- and 10-year return categories. In the Specialty funds category, no-load funds statistically underperformed load funds in the 5- and 10-year category at the 95 percent confidence level and in the 1-year category at the 90 percent confidence level.

The beta values of the no-load and load samples (by objective) were examined to determine whether one group had higher risks. The mean beta values are listed in Table 9. The alpha values of the no-load and load samples (by objective) were also examined to determine whether risk had any effect on performance. The mean alpha values are also listed in Table 9. Beta values were used in the calculation of the alpha values to obtain risk-adjusted performance measure.

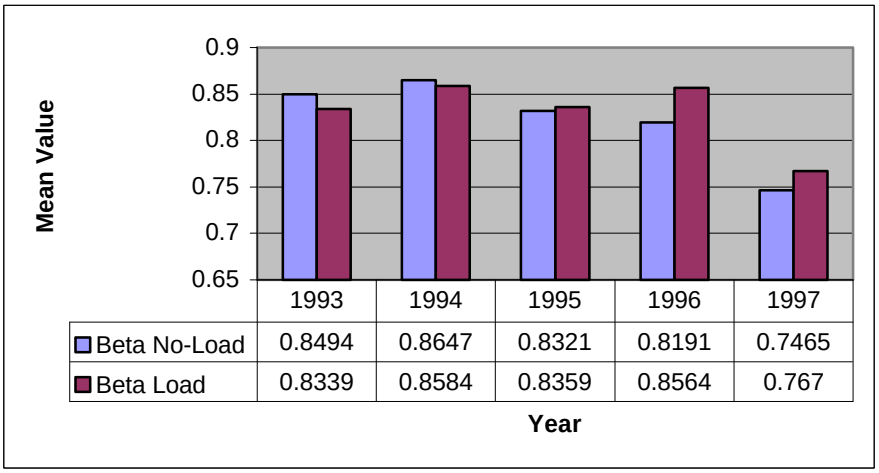
TABLE 4
Z-Test for No-Load and Load Samples



	1993	1994	1995	1996	1997
1 Year Z-test	-2.9153	3.7022	1.8099	9.3718	6.3409
5 Year Z-test	-1.0669	0.1345	-0.1854	3.5846	5.032
10 Year Z-test	-0.7341	-0.2959	-0.0286	0.5568	1.4626

1, 5, and 10 Year Z-test for No-Load and Load Samples

TABLE 5
Beta Statistical Mean



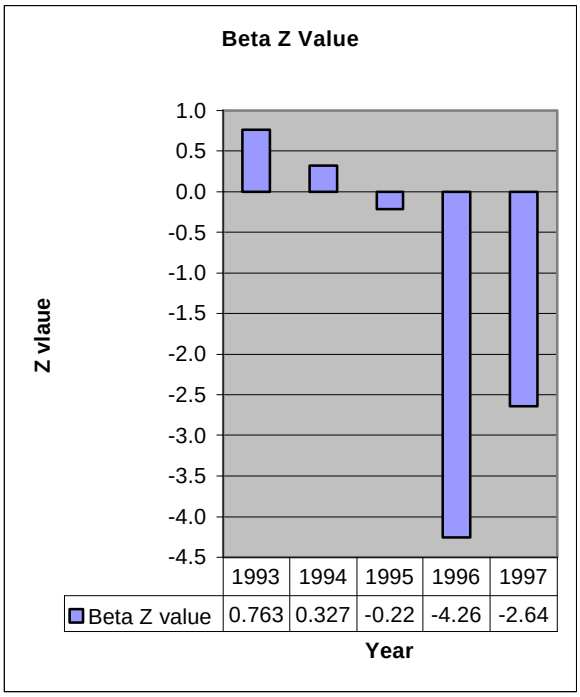
	1993	1994	1995	1996	1997
Beta No-Load	0.8494	0.8647	0.8321	0.8191	0.7465
Beta Load	0.8339	0.8584	0.8359	0.8564	0.767

Year

Mean beta and alpha values were calculated for all funds. The no-load funds had a higher mean alpha value but no-load funds had a lower mean beta value. This would suggest that no-load funds outperformed load funds with a lower degree of risk. In all fund categories except the Balanced category, no-load funds had a lower mean beta than load funds.

Two sample Z-tests were performed to determine the statistical significance of the difference in beta and alpha values by investment objective. The results of this analysis are shown in Table 10. A negative Z-value for alpha means indicates that no-load funds performed worse than load funds on a risk-adjusted basis, and a positive Z-value for alpha means indicates that no-load funds were more risky than load funds. For all funds, no-load funds statistically outperformed load funds on a risk-adjusted basis. In the Balanced, Growth, and Small Company categories, no-load funds statistically outperformed load funds on a risk-adjusted basis at the 95 percent confidence level. In the International category, no-load funds statistically outperformed load funds at the 90 percent confidence level. In the Small Company and International categories, no-load beta values were statistically lower than load funds at the 95 percent confidence level.

TABLE 6
Beta Z-Test



In the Income and Specialty categories, no-load funds performed worse than load funds, but no-load funds had a lower beta value which is statistically significant at the 95 percent confidence level for Specialty funds and at the 90 percent confidence level for Income funds.

SUMMARY AND CONCLUSIONS

Samples of no-load and load funds were compared to one another to determine whether there is any difference in performance between no-load and load funds. Twelve-month, 5-year, and 10-year returns were evaluated during the period 1993 through 1997. In addition, beta values were also evaluated for each year. The difference between the samples of no-load and load funds were tested with the two-sample mean Z-test to determine the statistical significance. The data for 1977 was further categorized by six investment objectives, and the two-sample Z-test also was run to determine any statistical significance. In addition, alpha and beta values were evaluated for each of the investment objectives to determine any statistical difference in risk and risk-adjusted performance between the no-load and load samples.

The results of the statistical tests indicate the following: first, in the shorter time (12-month and 5-year return) categories, no-load funds under performed load funds in the later years.

Second, in the long-term (10-year return) category, there was no statistical difference in performance at the 95 percent confidence level. However, in 1997 no-load funds outperformed load funds at the 90 percent confidence level.

Third, in the earlier time periods, there was no statistical difference in beta values between no-load and load funds. However, in later years, no-load funds statistically had a lower beta value than load funds.

Fourth, though no-load funds outperformed load funds in 1997 the data indicates some variances in performance by investment objective. In the Income and Specialty categories, no-load funds underperformed load funds on an unadjusted basis. However, no-load funds statistically had a lower beta value (Specialty funds at the 95 percent level and Income funds at the 90 percent confidence level). No-loads out performed load funds in the Balanced, Growth, and Small Company categories. There was no statistical difference in performance in the International category.

Finally, in general, given a risk-adjusted basis by investment category, no-load funds performed better than load funds. Also, load funds outperformed no-load funds on a risk-adjusted basis only in the Income category.

TABLE 7
Statistical Mean by Investment Objective for 1997

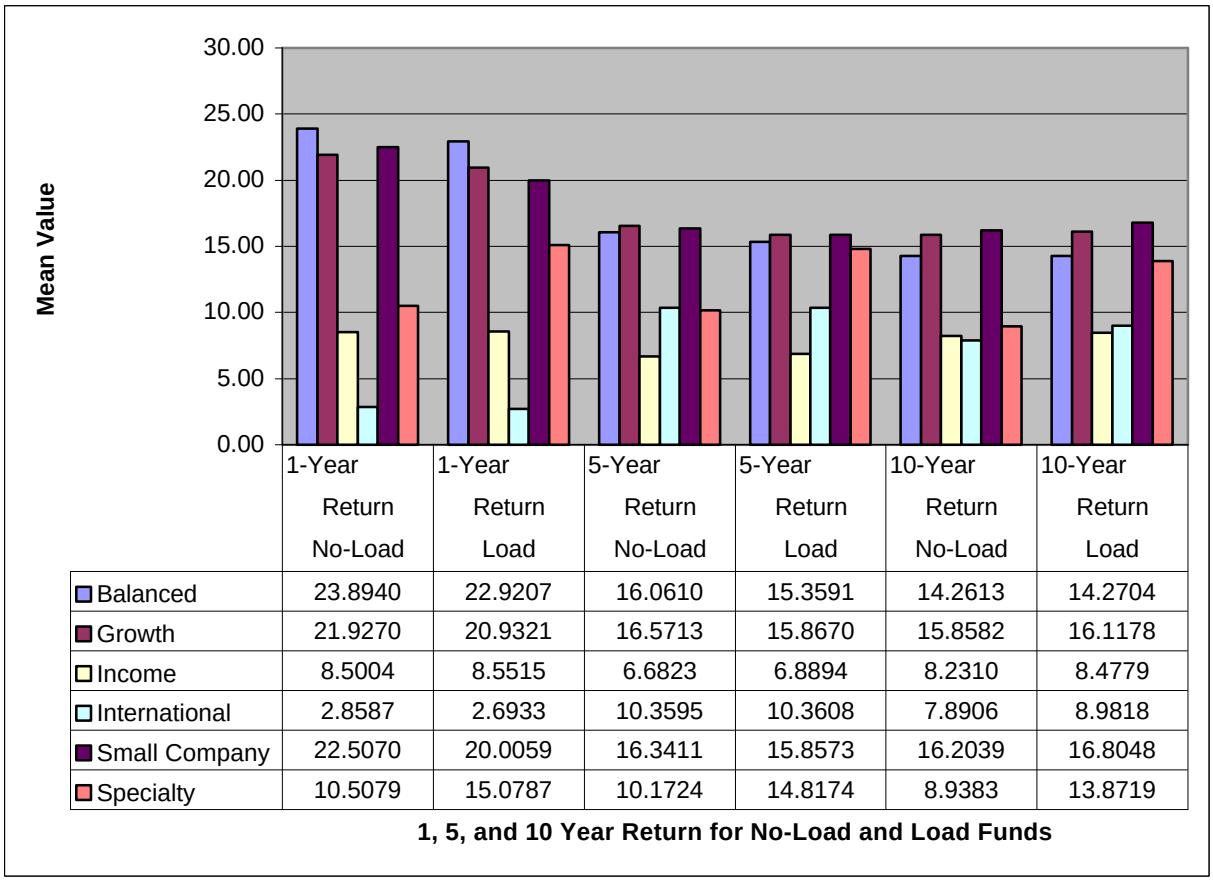


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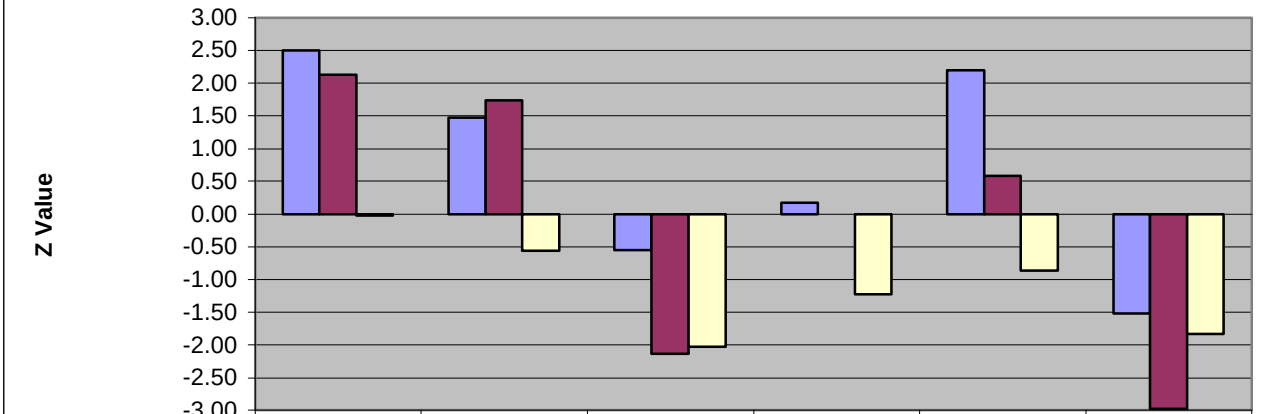
TABLE 8
Z-Test by Investment Objective



	Balanced	Growth	Income	Internat'l	Small Company	Specialty
1 Year Z-test	2.5063	1.4742	-0.5525	0.1736	2.2022	-1.5231
5 Year Z-test	2.1307	1.7378	-2.1365	-0.0020	0.5846	-2.9854
10 Year Z-test	-0.0217	-0.5619	-2.0276	-1.2263	-0.8618	-1.8345

Objective

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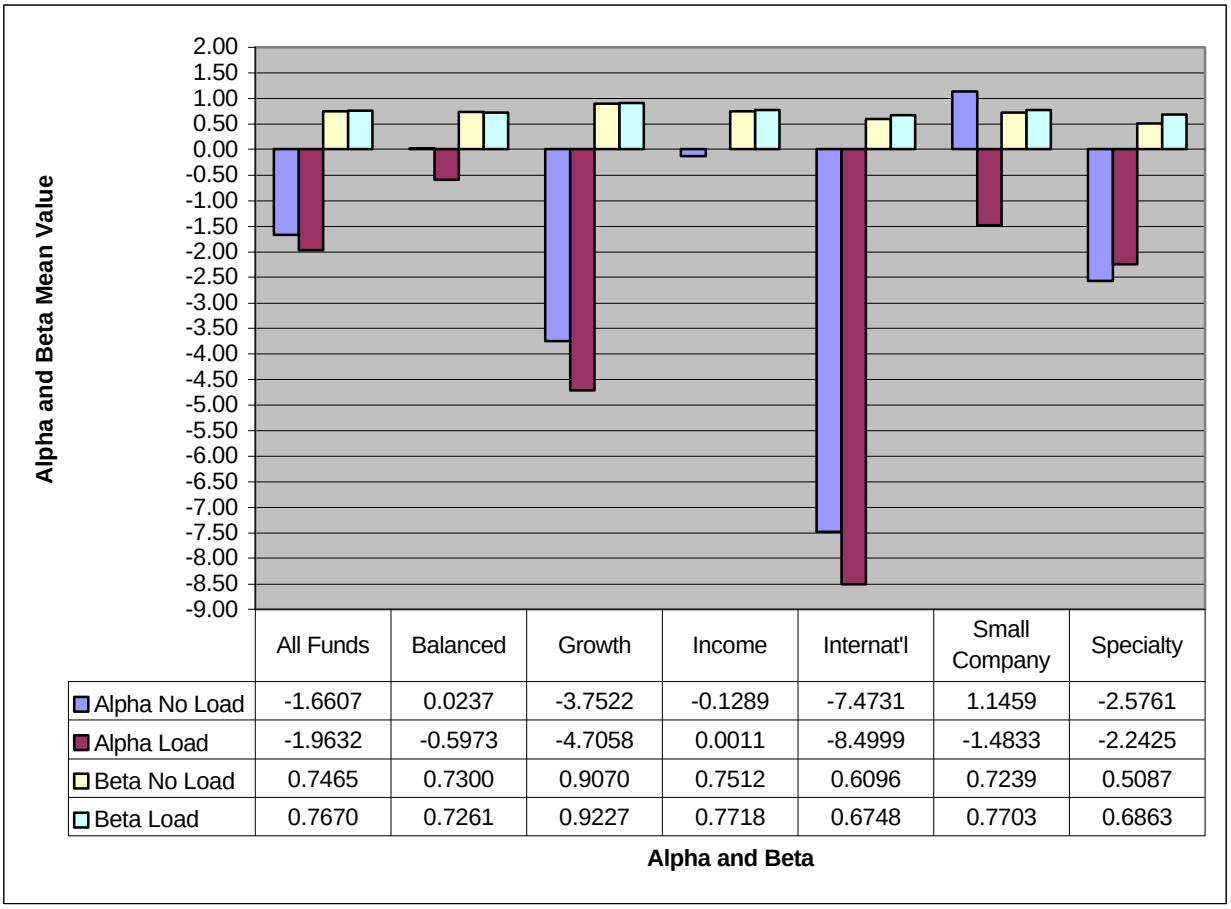
TABLE 9
Alpha and Beta Statistical Mean by Investment Objective



	All Funds	Balanced	Growth	Income	Internat'l	Small Company	Specialty
Alpha No Load	-1.6607	0.0237	-3.7522	-0.1289	-7.4731	1.1459	-2.5761
Alpha Load	-1.9632	-0.5973	-4.7058	0.0011	-8.4999	-1.4833	-2.2425
Beta No Load	0.7465	0.7300	0.9070	0.7512	0.6096	0.7239	0.5087
Beta Load	0.7670	0.7261	0.9227	0.7718	0.6748	0.7703	0.6863

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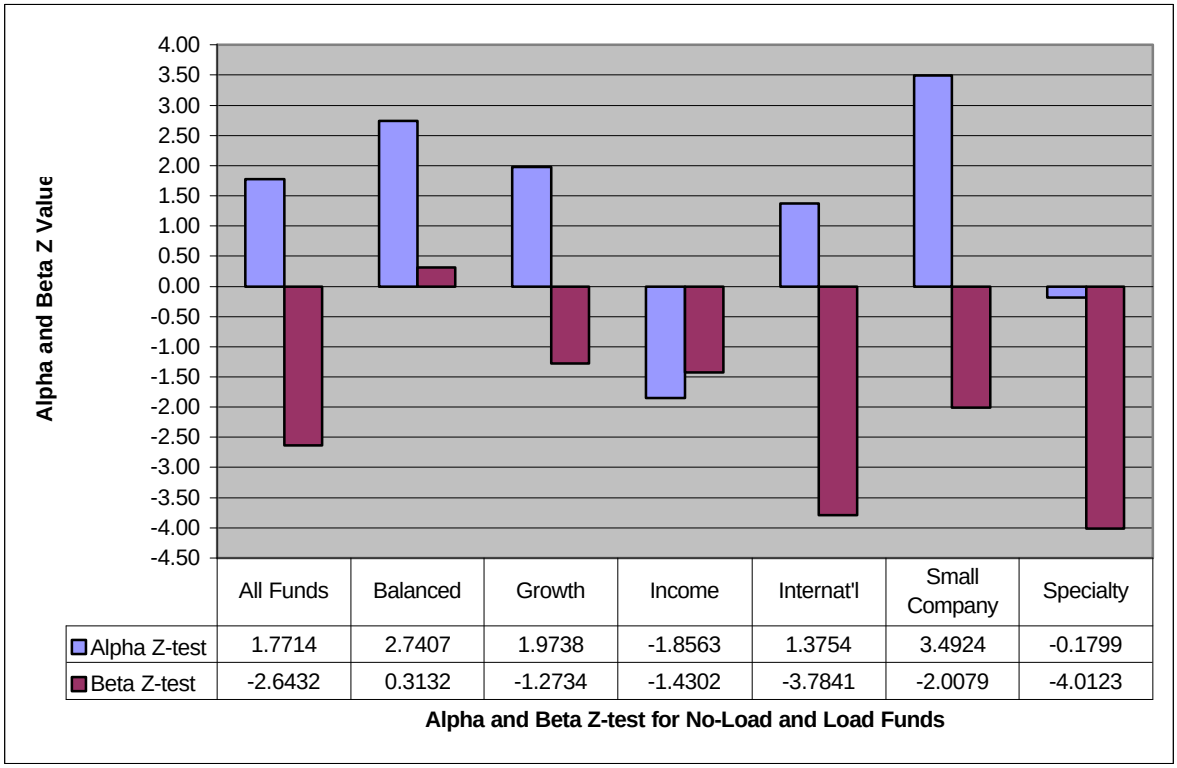
TABLE 10
Alpha and Beta Z-Test for No-Load and Load Funds



	All Funds	Balanced	Growth	Income	Internat'l	Small Company	Specialty
Alpha Z-test	1.7714	2.7407	1.9738	-1.8563	1.3754	3.4924	-0.1799
Beta Z-test	-2.6432	0.3132	-1.2734	-1.4302	-3.7841	-2.0079	-4.0123