Investing in Fortune's 100 Best Companies to Work for in America

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Abstract

Each year, since 1998, Fortune magazine has published a list of firms deemed the "100 Best Companies to Work for in America" based on their superior employer-employee relations. This relationship represents an intangible asset that may significantly influence future firm performance. We investigate whether investment strategies that invest in the 100 Best are able to outperform the market. The results indicate that portfolios, consisting of firms on the list, offer higher risk adjusted returns than the S&P 500 over the period 1998-2005.

Keywords: Employee satisfaction, Intangible assets, Abnormal returns

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1. Introduction

Individuals have long sought after the Holy Grail of investing, which is a strategy to identify firms that offer higher risk adjusted stock returns than a market portfolio. Fundamental analysts make their living on the belief that such a feat is possible. The idea is that by carefully evaluating a firm's financial statements one is able to determine the value of the firm and thus predict the future performance of the firm's stock. Many believe attempts to find the Grail is but a fool's errand as market efficiency precludes the existence of such strategies. Strategies that do come to light are skeptically referred to as anomalies. Examples of popular "anomalies" outlined by Malkiel (1999) include investing in firms that are small (Banz, 1981; Fama & French, 1992), have low PE ratios (Basu, 1977), have high dividend yields, and have low price to assets ratios.

One such strategy is known as the "Dogs of the Dow" (DOD). This strategy involves investing annually in an equally weighted portfolio of the ten stocks on the Dow Jones Industrial Average with the highest dividend yield. The simplicity of the strategy, along with widespread documentation (O'Higgens & Downes, 1991; Knowles & Petty,

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1992; Gardner & Gardner, 1996) of its superior returns, led to its popularity in the early 1990s. Skeptics remained despite over 20 billion dollars worth of investment in mutual funds that followed the DOD strategy. McQueen, Shields, and Thorley (1997) found the DOD beat the DJIA by 3.06% on average from 1946-1995, but the higher returns were not enough to cover the higher transactions costs and taxes associated with the strategy. Hirschey (2000) concluded similarly, adding that higher returns from the DOD were largely a thing of the past, as returns from the DOD were less than the DJIA by 2.13% between 1990 and 1998. These findings demonstrate investment anomalies that appear may disappear without warning and may never have existed when one accounts for transactions costs and risk.

Strategies like the Dogs of the Dow believe firms are undervalued as evident by financial ratios, such as the dividend yield. Investing in firms that are currently out of favor offers the benefit of higher returns when they bounce back into favor. Another potential source of undervalue are firms whose intangible assets are unrecognized by the market in their stock prices. Intangible assets do not appear on balance sheets and are at best difficult to measure. Employer-employee relations are an example of an intangible asset to the firm which may significantly contribute to a firm's performance in the future. Knowledge of a firm's relations with their employees is limited, thus Fortune's annual publication of the "100 Best Companies to Work for in America," hereafter 100 Best, is likely to reveal those firms with superior employer-employee relations. Firms, which one might expect also offer higher future returns relative to the market. To evaluate this theory we consider investment strategies that invest in portfolios of the firms named to the 100 Best.

One strategy examined consists of a buy and hold portfolio, where firms named to the 100 Best are bought and then held throughout the sample period. The other strategy follows an active portfolio, which is rebalanced each year to account for changes in the firms named to the 100 Best. The results show that buy and hold and active portfolios both outperform the S&P 500 in each of the multi-year periods examined and seven of eight annual periods. For example, annual returns of the buy and hold portfolio averaged 11% more than the S&P 500 over the period 1998-2005. Standard measures of portfolio evaluation also suggest that our portfolios of the 100 Best outperform the market when accounting for their higher risk.

2. Employee Satisfaction and Firm Performance

A number of studies in human resource management have examined the relationship between employee satisfaction and firm performance to determine whether happy workers make better workers. The common belief is that good employer-employee relations are an intangible asset of the firm that fundamentally influence firm performance via improved productivity, customer satisfaction, and reduced employee turnover. Despite this belief, most empirical work suggests there is only a weak (Iaffaldano & Muchinsky, 1985) to moderate (Judge, Thoresen, Bono, & Patton, 2001) relationship between an employee's satisfaction and their own job performance.[1]

Ostroff (1992) argues the relation between job satisfaction and performance may be stronger at the organizational level, where outcomes depend on interaction among employees. This recognizes that organizational performance reflects more than the sum of the individual parts. Employees that are satisfied may not themselves be more

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[1] Iaffaldano and Muchinsky (1985) find the correlation between job satisfaction and job performance is .17, whereas Judge, Thoresen, Bono, and Patton (2001) find the corrected result is .30.

productive, but instead contribute to the productivity of their coworkers. Evidence of

such behavior is seen from satisfied workers who are found to be more likely to help

others within organizations (Puffer, 1987; Organ & Ryan,1995). Harter, Schmidt, and

Hayes (2002) find using meta-analysis that the correlation between employee satisfaction

and a composite measure of performance (r = .37) is in fact stronger at the organizational

level.

Several organization level studies (Ostroff, 1992; Ryan, Schmit, & Johnson, 1996;

Koys, 2001; Gelade & Ivery, 2003) have found that employee satisfaction is related to

customer satisfaction, employee retention, and performance. For example, Ostroff (1992)

examines 298 schools and finds that teacher satisfaction influences student satisfaction,

student performance (e.g. achievement scores, attendance, vandalism), and teacher

retention when controlling for school characteristics. Ryan, Schmit, and Johnson (1996)

examine this relationship further in a firm setting, which includes 142 auto sales finance

branches. They similarly find that employees' attitudes are associated with customer

satisfaction and employee turnover, while the relation is weak in the opposite direction.

Of the 10 measures of branch performance they examine, only the 60 day delinquency

rate is found to be related to employees' attitudes. Employee attitudes do not influence

firm performance alone, as employee behavior is also important (Koys, 2001).

Employees that work well with others and who care about the well being of the

organization are better able and more interested in helping coworkers and customers,

which contributes to more satisfied customers and improved firm performance. Behavior

of this type is referred to as organizational citizenship (Organ, 1988). Controlling for

measures of employee satisfaction, organizational citizenship behavior, and turnover,

Koys (2001) finds that organizational citizenship behavior has a positive and significant effect on the profitability of firms in a restaurant chain.

Management of employer-employee relations influences business outcomes, such as employee turnover and productivity, which also influence a firm's market value (Huselid, 1995). Determining which firms excel in human resource management is a difficult task. In Huselid's (1995) case, he conducted a survey of senior human resource professionals at 3452 publicly traded firms, with 968 submitting responses. Firms themselves often conduct studies of their own practices, but rarely make public the results of their findings. One very public source of this information is Fortune magazine's annual publishing of their "Best Companies to Work for in America" list. Each year, since 1998, Fortune has published a list of the 100 firms that are deemed to be the best places to work based on their employer-employee relations.

The list is determined by the Great Place to Work Institute (Levering & Moskowitz, 2006), which examine five dimensions of employer-employee relations, including credibility (e.g., values, internal communication), respect to employees (e.g., training, recognition programs), fairness (e.g., equity in pay, diversity), pride (e.g., social impact of products and services, philanthropy), and camaraderie (e.g. celebrations).[2] To be considered for the list, firms must have been in operation at least seven years and at least 1000 full-time and part-time employees. Firms must also be willing to administer a survey of employees and complete a management questionnaire. The employee survey is given to at least 400 randomly selected employees and consists of 57 positively worded statements that cover each of the five dimensions. The management questionnaire

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[2] For more information on the criteria used and a list of the companies named to the list since 1998 visit www.greatplacetowork.com/best

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evaluates a firm's culture, where firms provide basic information on the demographics of employees, firm financial information, and benefits/perks offered employees. Management is also asked to answer several open ended questions that allow the firm to discuss how their practices contribute to the five dimensions of good employer-employee relations. The employee surveys and management questionnaire are then used for ranking purposes, with two-thirds of the ranking based on employees' responses and one-third on a review of management's policies. In 2006, 466 firms completed the process and were considered for naming to the list (Levering & Moskowitz, 2006).[3]

Firms named to this list have been found to outperform other firms as evident in comparisons of financial ratios (Lau & May, 1998; Fulmer, Gerhart, & Scott, 2003), market values (Ballou, Goodwin, &Toppe Shortridge, 2003), and cumulative returns (Ballou et al., 2003; Filbeck & Preece, 2003; Fulmer et al., 2003; Boyle, 2006). Lau and May (1998) showed using a 1994 version of the list, which was published by Levering and Moskowitz (1994) prior to Fortune, that publicly traded firms on the list had statistically significant higher sales growth, asset growth, and return on assets relative to the S&P 100 over the five year period 1990-1994. Fulmer et al. (2003) find similar results using the 1998 list. For each year between 1995 and 2000 the 100 Best had a higher median return on assets and market to book ratio than a set of firms matched with the 100 Best on the basis of industry, size, and operating performance. In both cases these results were statistically significant in the later four periods. Superior employer-employee relations also contribute to higher market values. Regression analysis by Ballou et al. (2003) of firms publicly traded on the 1998-2001 lists and a matched sample

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[3] Presumably firms that believe they have outstanding human resources management complete the process. Unfortunately, Fortune and Great Places to Work do not reveal the firms considered, but not named to the list.

finds that firms named to the list have significantly higher market values, when controlling for book values, earnings, R&D expenditures, sales, and assets.

The 100 Best have shown promise as part of an investment strategy.[4] If one had purchased an equally weighted portfolio of stocks, when they were named to the 1998 list in January and held it through December 1999, one would have earned a cumulative return of 68% relative to 13% for a matched sample of firms (Ballou et al., 2003). Fulmer et al. (2003) confirm that the 1998 100 Best offer higher cumulative returns relative to both a separate set of matched firms and the market for the holding periods 1995-1997, 1998-2000, and 1995-2000. Filbeck and Preece (2003) go one step further and account for risk in their comparison of returns on a buy and hold portfolio of firms on the 1998 list. They find that the Sharpe measure of reward to volatility is higher for the 1998 100 Best than their matched sample for ten of the thirteen years between 1987-1999 and for all ten of the five year holding periods during this time. Similar results were found with respect to Jenson's alpha measure.

A limitation of these studies is that the holding periods examined include returns from years prior to being named to the list and returns only for a short period thereafter. Of concern to investors is whether higher returns will continue into the future and if subsequent years of the 100 Best list are also associated with higher returns. Otherwise, the results may simply be an anomaly and not a strategy that consistently outperforms the market. Towards this end we extend the sample period of the previously examined buy and hold strategy using the 1998 list to 2005 and also examine returns from buy and hold strategies using subsequent 100 Best lists. An actively managed portfolio though may

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[4] Anderson and Smith (2006) similarly find that firms named to Fortune's "Most Admired" list significantly outperform the S&P 500.

offer even higher returns. Filbeck and Preece (2003) and Fulmer et al. (2003) both find only in the year being named to the list and not after, firms offer statistically significant higher annual returns than a matched sample. Therefore we also examine the returns to an active strategy that holds a portfolio of firms that changes as the list is updated each year.

3. Evaluating Portfolio Performance

The two investment strategies that we consider, invest in portfolios of firms named to Fortune's 100 Best. The buy and hold strategy buys at the beginning of the sample period an equally weighted portfolio of the publicly traded firms named to that year's list and holds these firms throughout the sample period. The active strategy buys the firms named to the list and then rebalances at the beginning of each year to account for changes in the list and to maintain an equal weight in each of the firms. Fortune magazine typically publishes their 100 Best list in a January issue, with an exception occurring in 2002 when it was published in February. Issues of Fortune though arrive in subscribers' homes two to three weeks prior to their actual publication date. Table 1 provides the publication dates of the 100 Best and when the list was scheduled to arrive in homes.[5] The 1998-2001 and 2003 100 Best lists arrived in homes in December, while the 2002, 2003, and 2005 lists arrived in January. In the analysis that follows, the sample period starts at the beginning of the month following when the issue arrives.[6] Rebalancing of the active strategy also subsequently takes place at the beginning of the month following arrival.

[Insert Table 1 about here]

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[5] The edit calendar was obtained from the publishers of Fortune magazine.
[6] This assumption is necessary because monthly holding period returns are used.

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Annual comparisons of the firms named to the 100 Best with those of the S&P 500 reveal that the 100 Best are not out of favor by the market. The median price/book and price/earnings ratios are higher for the 100 Best in each of the eight years during 1998-2005, while their market value is higher in six. Data obtained from Compustat appear in Table 2, which provides annual median values of several accounting measures for the various 100 Best lists and S&P 500. The 100 Best are also characterized as having fewer assets and lower dividend yields in each period relative to the S&P 500. We use the nonparametric Mann-Whitney-Wilcoxon (MWW) test to determine whether the accounting measures for the 100 Best and S&P 500 are identical. The benefit of using the MWW test over a T-test is that it does not require the assumption that both populations are normally distributed, which has been found to be problematic when using accounting ratios (Deakin, 1976; Frecka & Hopwood, 1983). The results of the MWW test indicate for the majority of periods that the price/book and price/earnings ratios of the 100 Best are significantly (p-value < .05) higher than the S&P 500, while dividend yields are significantly lower. Firms named to the 100 Best are not "dogs" relative to the S&P 500, but they still may be undervalued and able to bite by offering higher returns.

[Insert Table 2 about here]

To evaluate the performance of each of the strategies, we calculate the arithmetic average of monthly portfolio returns over various sample periods. Monthly holding period returns are obtained for each of the firms and the S&P 500 from the Center for Research in Security Prices (CRSP), where dividends are reinvested at the end of the month they are paid. Average monthly returns for the two strategies and the market appear in Table 3. It should be noted, as the sample period changes, the firms included in

the buy and hold strategy also change. Firms named to the 1998 100 Best are followed in the 1998-2005 sample period, while firms named to the 1999 100 Best are followed in the 1999-2005 sample period and so on. Comparing returns, one sees that both strategies outperform the market in each of the seven multi-year periods. From 1998-2005 the buy and hold and active strategies earned an average monthly return of 1.28% and 1.27% respectively, whereas the S&P 500 earned .37%. On an annual basis (without compounding) the difference amounts to nearly 11%. One can see by comparing portfolio returns that the buy and hold strategy outperforms the active strategy in six of the seven multi-year periods. Table 3 also provides average monthly returns for annual periods between 1998 and 2005 for the active strategy, the eight 100 Best lists, and the S&P 500. In 1998 average monthly returns are higher for the S&P 500 than the 1998 100 Best. With this lone exception, each of the other 100 Best portfolios outperforms the S&P 500 prior to being named to the list as well as after for each period.[7]

[Insert Table 3 about here]

The higher returns from the strategies that invest in the 100 Best may be accompanied with higher risk. Sigma and beta are two common measures of risk. Sigma measures overall risk and is calculated as the standard deviation of portfolio returns. Beta is a measure of systematic risk, which is the slope coefficient found from regressing excess returns of the portfolio $(r_p - r_f)$ on the excess returns of the market $(r_m - r_f)$. Market returns are represented by returns on the S&P 500 and the risk free rate is calculated for each month using the 90-day T-bill rate of the corresponding month and the formula $r_f = (1 + \text{T-bill rate})^{1/12}$. Table 4 summarizes excess returns, sigma, and beta

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[7] For this reason and our use of monthly holding periods we did not search for an announcement effect. Future research will consider this effect.

for each of the strategies and market over various periods. Portfolios of firms of the 100 Best are more risky than the market, as evident by both risk measures and each sample period. To account for the higher risk in our comparisons of portfolio returns, we calculate several standard risk adjusted performance measures (Bodie, Kane, & Marcus, 2002), which are reported in Table 5.

[Insert Table 4 about here]

[Insert Table 5 about here]

Different performance measures are used for different purposes and can rank portfolios differently. The Sharpe (1966) ratio divides the average excess return over the period by the standard deviation of returns. Controlling for overall volatility, the Sharpe ratio is an appropriate performance measure to use when a portfolio consists of an investor's entire risky investment. Treynor's (1965) measure on the other hand measures excess returns per unit of systematic risk, which is the risk that cannot be diversified away by holding a well diversified portfolio. Investors who combine their risky portfolio with other portfolios care more about their reward relative to the risk that cannot be diversified away in their combined portfolio, which is captured by the portfolio's beta. Another alternative is to use alpha, Jensen's (1968) measure of the average return above that predicted by the CAPM model. A positive alpha indicates a portfolio offers returns superior to the market. Increasing in popularity is the M^2 measure (Modigliani & Modigliani, 1997), which similar to the Sharpe ratio controls for total volatility but differs in interpretation. M^2 combines a risky portfolio with the risk free asset to match the total volatility of the market. M^2 represents the return on the combined portfolio above that of the market, where each has the same volatility.

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Table 5 reveals that both of our portfolios of the 100 Best outperform the market based on each of the risk adjusted performance measures and sample periods. For example, the M^2 measure shows that between 1998-2005 the buy and hold strategy offered an annual average return (without compounding) of 12*.82 = 9.84% above the market for the same level of risk and the active strategy was 8.2% above. Comparing the two portfolio's performance measures, the buy and hold strategy outperforms the active strategy in periods beginning in 1998, 1999, 2003, and 2004, but underperforms by most measures in the periods beginning in the bear market years of 2000-2002.

Despite offering slightly higher returns in several periods, a disadvantage of the active strategy relative to the buy and hold strategy is that it involves more transactions.[8] Turnover occurs as shares of firms added to the list each year are purchased, while those dropped are sold. Additional transactions are required to maintain an equal weight in each of the firms held. Transactions costs are explicit as in the case of commissions, which are paid to brokers to purchase and sell shares, and implicit in the form of the bid-ask spread, which is the difference between what shares can be simultaneously bought and sold for. Stoll (1995) estimates that commissions in 1992 averaged .24% of a trade's market value, while Keim and Madhaven (1998) found a slightly lower .20%. With respect to the size of the bid-ask spread, Loeb (1983) finds it can range between .52% for large capitalization firms to 6.55% for small capitalization firms on a round trip transaction. The effective bid-ask spread tends to be even smaller (Roll, 1984) as trades often take place inside quoted prices. For the 100 Best we would expect bid-ask spreads close to .5% given their large market values (e.g. Table 2). Below we use 1% of the

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[8] Another disadvantage is that taxes are not deferred to the end of the sample period as shares are sold each year.

portfolio's value for the round trip transactions cost, where .5% is from buy and sell commissions and .5% is in the bid-ask spread.

The actual turnover of firms named to the 100 Best list averaged 26% per year for the period 1998-2006. Thus .26 % of the active portfolio's value is lost annually due to turnover. Determining the amount of rebalancing needed to maintain equal weights in the firms carried over is more difficult. Shares need to be added for firms with returns less than the portfolio average, while shares need to be sold for those above. For simplicity it is assumed here that 1% of the active portfolio's return is lost annually (.0833 % monthly) due to additional transactions costs. Accounting for transactions costs, the active strategy continues to outperform the market in each of the periods, but only manages to outperform the buy and hold strategy for each of the four measures in the 2002-2005 period. Table 6 provides the transactions cost adjusted performance measures for the active strategy. According to most performance measures and sample periods, it appears that the best strategy is a buy and hold strategy that invests in the 100 Best.

[Insert Table 6 about here]

Small investors may find it difficult to invest in the 50 or so publicly traded firms named the 100 Best and may wish to invest in a smaller subset of firms. Furthermore investing in a smaller subset of firms with the highest employer – employee relations may outperform the overall list. With this in mind, we compare the performance of the entire 100 Best with several subsets that include the highest ranking firm, top 5, top 10, and top 25. Increasing the number of firms in the portfolio increases diversification and reduces the total variability of portfolio returns. Risk adjusted returns tend to increase

with the number of firms in the portfolio. Table 7 compares portfolio performance across the subsets of the 100 Best for the buy and hold and active strategies.

[Insert Table 7 about here]

A buy and hold strategy seems to favor a portfolio consisting of the entire list. The Sharpe and M^2 measures, which rank firms similarly, are highest for the entire list in seven of eight periods. Treynor's measure is highest for the entire list in five periods and Jensen's alpha for three. For each of the eight periods, the majority of performance measures favor the entire list in five instances and the top 1, top 10, and top 25 in one instance each. The performance of the active strategy differs in that it tends to favor a subset of the entire list consisting of the top 25 firms. The top 25 outperforms the entire list and other subsets in six of eight periods for the Sharpe and M^2 measures, four periods for Treynor's measure, and four for Jensen's alpha. Under an active strategy, the entire list only outperforms the subsets in the 2002-2005 period according to Sharpe's measure. Comparing the returns from a buy and hold strategy that invests in the entire 100 Best with the those of an active strategy that invests in the top 25, one sees that the active strategy outperforms in three periods (1999-2005, 2000-2005, 2001-2005) and underperforms in four (1998-2005, 2002-2005, 2003-2005, 2004-2005).[9]

An active strategy appears to be best for investors that choose to invest in a subset of the 100 Best. In every period examined at least one of the active strategy's subset portfolios outperforms that of the comparable buy and hold strategy. For periods beginning 2001-2003 the active strategy is superior for each of the four subsets of portfolios. The active strategy also outperforms for three subsets between 2000-2005, two subsets for 1999-2005 and 2004-2005, and one for 1998-2005. It appears that

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[9] For 2005 the buy and hold and active strategies are the same.

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investors that choose not to invest in the entire 100 Best list fare better under an active strategy, but are best served by a portfolio that consists of the top 25.

4. Conclusion

Many wonder as to the tangible benefits of good employer-employee relations. Do happy workers generate higher returns, or on the contrary do employee expectations of higher future returns generate happy workers. Whatever the causal link may be, it appears that investors can benefit from adding to their portfolios the firms named to Fortune's 100 Best Companies to Work for in America.

The 100 Best are special in that they have higher price/book ratios than firms of the S&P 500 and also offer higher risk adjusted returns. The Sharpe, Treynor, Jensen, and M2 measures of portfolio performance indicated that the buy and hold and active strategies, which invest in the 100 Best, outperformed the S&P 500 for each of the sample periods examined. Accounting for the additional transactions costs associated with the active strategy, the buy and hold strategy outperformed the active strategy in six of the seven periods examined. Analysis of portfolios consisting of subsets of the list revealed that investing in the top 25 firms outperformed investing in the entire list in five of seven periods for the active strategy. This strategy, actively investing in the top 25, we found outperformed the buy and hold strategy in three periods, underperformed in four.

Despite the 100 Best outperforming the S&P 500 in all seven multi-year periods and seven of eight annual periods (excluding 1998), what matters most to investors are future realized returns. Past history has taught us that when superior returns are believed to be found they often disappear without warning. While cautious, the results here

suggest being named one of the 100 Best is an indictor of superior firm performance.

Only in time will we know whether Fortune's 100 Best consistently beat the market or

are mere anomalies.

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Table 1: Fortune Edit Calendar, 1998-2005

100 Best	Publication Date	Subscription Received
1998	1/12	12/22
1999	1/11	12/22
2000	1/10	12/21
2001	1/8	12/19
2002	2/4	1/22
2003	1/20	1/7
2004	1/12	12/30
2005	1/24	1/11

Table 2: Comparison of Median Financials for the 100 Best and S&P 500, 1998-2005

	Price/Book			Assets (Millions $)			Price/Earnings		
	100 Best	S&P 500	p-value	100 Best	S&P 500	p-value	100 Best	S&P 500	p-value
1998	3.98	3.09	<.01	4,201	7,175	<.01	22.56	21.54	0.45
1999	4.55	3.17	<.01	5,661	8,062	0.02	27.48	22.87	0.04
2000	5.62	3.07	<.01	8,237	9,004	0.60	26.76	20.40	0.09
2001	4.76	3.20	0.03	9,791	9,825	0.23	26.97	21.75	0.04
2002	3.53	2.79	0.08	8,203	10,252	0.22	26.90	25.78	0.36
2003	4.07	2.18	<.01	8,177	10,462	0.28	24.76	17.29	<.01
2004	3.74	2.77	<.01	5,714	10,758	0.06	22.33	21.18	0.34
2005	4.33	2.68	<.01	5,228	11,524	<.01	23.26	19.31	<.01

	Market Value (Millions $)			Dividend Yield					
	100 Best	S&P 500	p-value	100 Best	S&P 500	p-value			
1998	6,023	6,963	0.42	0.89	1.45	0.80			
1999	8,954	7,381	0.83	0.14	1.38	0.89			
2000	11,723	7,698	0.07	0.14	1.14	<.01			
2001	13,077	8,600	0.71	0.20	1.08	<.01			
2002	9,307	8,157	0.74	0.36	1.24	<.01			
2003	10,670	6,794	0.04	0.52	1.11	<.01			
2004	10,165	8,836	0.86	0.67	1.08	<.01			
2005	10,027	10,197	0.82	0.73	1.08	<.01			

Note: P-values are from the Mann-Whitney-Wilcoxon test for identical populations.

Table 3: Average Monthly Returns, 1998-2005

Multi-Year Period

	Period	Buy/Hold	Active	S&P 500
1998 Best	1/98-12/05	1.28%	1.27%	0.37%
1999 Best	1/99-12/05	1.24%	1.14%	0.11%
2000 Best	1/00-12/05	0.84%	0.83%	-0.13%
2001 Best	1/01-12/05	0.76%	0.75%	0.00%
2002 Best	2/02-12/05	0.94%	1.02%	0.29%
2003 Best	2/03-12/05	1.96%	1.91%	1.12%
2004 Best	1/04-12/05	1.23%	1.04%	0.51%

Annual Period

Period	1998 Best	1999 Best	2000 Best	2001 Best	2002 Best	2003 Best	2004 Best	2005 Best	Active	S&P 500
1/98-12/98	2.17%	2.86%	3.51%	3.66%	3.64%	3.28%	2.98%	3.10%	2.17%	2.18%
1/99-12/99	2.07%	3.00%	3.77%	3.88%	3.47%	3.40%	3.64%	3.75%	3.00%	1.56%
1/00-12/00	1.55%	0.88%	1.22%	2.56%	2.26%	2.52%	2.73%	2.39%	1.22%	-0.78%
1/01-1/02	0.56%	0.69%	-0.25%	-0.25%	-0.05%	0.07%	0.84%	0.78%	-0.25%	-1.05%
2/02-1/03	-1.27%	-1.57%	-1.48%	-1.78%	-1.57%	-1.54%	-1.29%	-0.70%	-1.57%	-2.13%
2/03-12/03	3.37%	3.84%	3.56%	3.85%	3.67%	3.82%	3.69%	3.55%	3.82%	2.45%
1/04-1/05	1.04%	1.09%	0.99%	0.80%	0.75%	1.04%	1.00%	1.32%	1.00%	0.49%
2/05-12/05	0.96%	1.05%	1.31%	1.59%	1.15%	1.19%	1.51%	1.08%	1.08%	0.52%

Table 4: Average Monthly Excess Returns and Risk, 1998-2005

| | 1998-2005 | | | 1999-2005 | | | 2000-2005 | | | 2001-2005 | | |
	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500
Excess Return	1.02%	1.00%	0.11%	1.00%	0.89%	-0.13%	0.61%	0.60%	-0.35%	0.59%	0.57%	-0.17%
Std. Dev.	5.07%	5.84%	4.61%	5.88%	5.61%	4.34%	6.07%	5.73%	4.41%	6.12%	5.70%	4.31%
Beta	1.02	1.19	1.00	1.25	1.21	1.00	1.29	1.22	1.00	1.34	1.24	1.00

| | 2002-2005 | | | 2003-2005 | | | 2004-2005 | | | 2005 | | |
	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500
Excess Return	0.79%	0.87%	0.14%	1.80%	1.75%	0.96%	1.04%	0.84%	0.31%	0.81%	0.81%	0.25%
Std. Dev.	4.52%	4.56%	3.94%	3.42%	3.43%	2.61%	3.06%	2.96%	2.14%	2.96%	2.96%	2.17%
Beta	1.09	1.10	1.00	1.22	1.22	1.00	1.34	1.29	1.00	1.26	1.26	1.00

Table 5: Meaures of Portfolio Performance, 1998-2005

| | 1998-2005 | | | 1999-2005 | | | 2000-2005 | | | 2001-2005 | | |
	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500
Sharpe	0.2007	0.1717	0.0231	0.1699	0.1587	-0.0309	0.1012	0.1054	-0.0800	0.0960	0.1009	-0.0402
Treynor	0.9983	0.8433	0.1067	0.8005	0.7362	-0.1338	0.4746	0.4960	-0.3524	0.4386	0.4622	-0.1733
Alpha	0.91%	0.88%		1.17%	1.05%		1.07%	1.03%		0.82%	0.79%	
M2	0.82%	0.69%		0.87%	0.82%		0.80%	0.81%		0.59%	0.61%	

| | 2002-2005 | | | 2003-2005 | | | 2004-2005 | | | 2005 | | |
	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500	Buy/Hold	Active	S&P 500
Sharpe	0.1740	0.1913	0.0347	0.5251	0.5103	0.3666	0.3388	0.2843	0.1441	0.2724	0.2724	0.1138
Treynor	0.7237	0.7941	0.1366	1.4697	1.4380	0.9561	0.7740	0.6532	0.3077	0.6392	0.6392	0.2474
Alpha	0.64%	0.72%		0.63%	0.59%		0.63%	0.45%		0.49%	0.49%	
M2	0.55%	0.62%		0.41%	0.37%		0.42%	0.30%		0.34%	0.34%	

Table 6: Active Portfolio's Performance after Transactions Costs, 1998-2005

	1998-2005	1999-2005	2000-2005	2001-2005	2002-2005	2003-2005	2004-2005
Sharpe	0.1574	0.1439	0.0909	0.0862	0.1730	0.4861	0.2562
Treynor	0.7732	0.6674	0.4276	0.3953	0.7183	1.3697	0.5886
Alpha	0.79%	0.97%	0.95%	0.71%	0.64%	0.50%	0.36%
M2	0.62%	0.76%	0.75%	0.55%	0.63%	0.39%	0.24%

Table 7: Subset Portfolio Performance, 1998-2005

	Buy/Hold					Active				
1998-2005	T1	T5	T10	T25	100 Best	T1	T5	T10	T25	100 Best
Sharpe	0.1100	0.1076	0.1699	0.1986	0.2007	0.0794	0.1208	0.1409	0.1827	0.1574
Treynor	1.1310	0.6002	0.8920	0.9977	0.9983	0.7546	0.6790	0.7306	0.9185	0.7732
Alpha	0.92%	0.52%	0.86%	0.95%	0.91%	0.77%	0.78%	0.83%	1.04%	0.79%
M2	0.40%	0.39%	0.68%	0.81%	0.82%	0.26%	0.45%	0.54%	0.74%	0.62%
1999-2005										
Sharpe	0.0489	0.1294	0.1338	0.1724	0.1699	0.0554	0.0857	0.1067	0.1744	0.1439
Treynor	0.5125	0.7746	0.6753	0.8140	0.8005	0.5308	0.4565	0.5298	0.8292	0.6674
Alpha	0.45%	0.78%	0.90%	1.25%	1.17%	0.80%	0.84%	0.89%	1.26%	0.97%
M2	0.35%	0.69%	0.71%	0.88%	0.87%	0.37%	0.51%	0.60%	0.89%	0.76%
2000-2005										
Sharpe	0.0861	0.0306	0.0370	0.0830	0.1012	0.0839	0.0860	0.0725	0.1175	0.0909
Treynor	0.9674	0.1602	0.1839	0.4007	0.4746	0.7859	0.4527	0.3627	0.5649	0.4276
Alpha	1.09%	0.74%	0.66%	0.90%	1.07%	1.47%	1.21%	0.99%	1.22%	0.95%
M2	0.73%	0.49%	0.52%	0.72%	0.80%	0.72%	0.73%	0.67%	0.87%	0.75%
2001-2005										
Sharpe	-0.0391	0.0118	0.0388	0.0944	0.0960	-0.0019	0.0534	0.0757	0.1055	0.0862
Treynor	-0.2389	0.0592	0.1883	0.4384	0.4386	-0.0136	0.2684	0.3695	0.4885	0.3953
Alpha	-0.15%	0.34%	0.57%	0.83%	0.82%	0.27%	0.68%	0.76%	0.92%	0.71%
M2	0.00%	0.22%	0.34%	0.58%	0.59%	0.17%	0.40%	0.50%	0.63%	0.55%
2002-2005										
Sharpe	0.0343	0.0560	0.1056	0.1407	0.1740	0.0977	0.0951	0.1296	0.1607	0.1730
Treynor	0.2335	0.2663	0.4680	0.6055	0.7237	0.7787	0.4596	0.5698	0.6881	0.7183
Alpha	0.09%	0.19%	0.39%	0.61%	0.64%	0.65%	0.44%	0.49%	0.72%	0.64%
M2	0.00%	0.08%	0.28%	0.42%	0.55%	0.33%	0.32%	0.46%	0.58%	0.63%
2003-2005										
Sharpe	0.1056	0.3056	0.3107	0.4298	0.5251	0.2444	0.3994	0.4665	0.4795	0.4861
Treynor	0.4916	1.1786	1.0441	1.2476	1.4697	1.5173	1.6608	1.5166	1.4006	1.3697
Alpha	-0.96%	0.25%	0.09%	0.43%	0.63%	0.73%	0.70%	0.55%	0.62%	0.50%
M2	-0.68%	-0.16%	-0.15%	0.16%	0.41%	-0.24%	0.17%	0.34%	0.38%	0.39%
2004-2005										
Sharpe	-0.0062	0.0819	0.1395	0.3067	0.3388	-0.0284	0.1849	0.2275	0.2693	0.2562
Treynor	-0.0431	0.2310	0.3664	0.7357	0.7740	-0.1567	0.6076	0.5927	0.6523	0.5886
Alpha	-0.24%	-0.11%	0.07%	0.58%	0.63%	-0.46%	0.35%	0.35%	0.47%	0.36%
M2	-0.32%	-0.13%	-0.01%	0.35%	0.42%	-0.37%	0.09%	0.18%	0.27%	0.24%
2005										
Sharpe	-0.1215	0.2909	0.4626	0.2708	0.2724					
Treynor	-0.5038	1.0138	1.2371	0.6769	0.6392					
Alpha	-0.96%	0.73%	1.14%	0.54%	0.49%					
M2	-0.51%	0.39%	0.76%	0.34%	0.34%					

Table 8: P-values from Comparing Sharpe and Treynor Ratios for the 100 Best and S&P 500, 1998-2005

	Sharpe Ratio		Treynor Ratio	
	Buy/Hold	Active	Buy/Hold	Active
T1	0.50	0.20	0.24	0.24
T5	0.20	0.08	0.06	0.02
T10	0.02	0.02	<.01	<.01
T25	<.01	<.01	<.01	0.01
100 Best	<.01	<.01	0.01	0.02

Note: P-values are from the Wilcoxon Signed-Rank Test