

Ethical Investment Constraints And Fund Performance

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Abstract

This study evaluates the risk-adjusted performance of two author-defined categories of socially responsible mutual funds during the period of September 1999 to September 2004, using objective statistical measures grounded in modern portfolio theory. A socially responsible mutual fund is defined as one which employs "social screens" in stock selection. In this study, one category favors politically progressive, secular criteria and the second favors conservative religious values. The main objective of this study is to provide empirical documentation on the risk-adjusted returns of these mutual funds, to stimulate interest in further study of the political aspects of the screens that underlie them. This is one of the first, if not the first, academic studies to delineate socially responsible funds into such categories. The study results based on 30 funds indicate that funds favoring politically progressive secular criteria outperform the S&P 500 Index during the study period, while funds favoring conservative religious views overall do not outperform the S&P 500 Index.

Introduction

The concept of "socially responsible investing" (hereafter termed SR, or SRI) has been gaining ground in recent years. Originating back to the turn of the century, it is premised on the idea that one should invest only in the securities of companies which exercise "social responsibility," as defined by various moral or political value systems. This process is termed a "screen," which keeps companies that do not meet specified criteria out of a portfolio; a strategy most often employed by mutual funds. The active management and attractiveness to smaller investors offered by mutual funds have gone far in "democratizing" the investment field. And with this popularity, much discussion has ensued about what, if any, impact the strategy of social screening would have on investment performance.

By definition, SRI is controversial, just as the philosophies that underlie the concept are controversial. In today's polarized political climate, it might be an interesting exercise to sort out various screens employed by SR mutual funds by ideology.

Several prior studies have reached mixed conclusions in comparing SRI fund strategies against strategies without screens. This paper will attempt to measure differences in investment returns between portfolios employing 1) a conventional SRI screen based on politically progressive ideology which is typically antiwar, pro-labor, environmentalist, and friendly to the

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rights of women and minorities, and 2) screens based on (mostly conservative) religious values such as opposition to alcohol, gambling, pornography, abortion, and other “anti-family” concerns. A secondary comparison will be made between religion-based strategies, one of which includes funds managed with both Christian-based and Islamic-based screens, and one that is Christian-based only. The S&P 500 Index is used as the benchmark for comparison.

Review of Literature and Brief History of SRI

The concept of “screening” investments is far older than that of modern mutual funds, dating back to the 1700’s, when American Quakers shunned investment in companies associated with “sins” like alcohol, tobacco, gambling, or the slave trade. The first such screened fund, the Pioneer Fund, came about in 1928, only four years after the founding of the first mutual fund as the term is understood today. But it was not until 1968 that the SR funds took on an overtly political flavor. A young securities analyst, Alice Tepper Marlin, was asked by a pension fund to assemble a “peace portfolio” of companies with only marginal or no association with arming American troops in Vietnam. Word of her prepared report sparked interest from a Methodist group that launched the Pax World Fund in 1971, which still operates today (Entine 2003).

Through the 1970’s the trends of consumer activism a la Ralph Nader, and similar causes like feminism, gay rights, animal rights, opposition to nuclear power and the war in Vietnam effectively united with the older screens of the religious right as the foundation for modern SRI. The catalyst that struck the largest nerve among newly affluent, left-of-center baby boomers was a screen against companies doing business in then-apartheid South Africa. In the 1980’s the number of SR mutual funds increased from six to thirty-two by 1990 (Hamilton 1993).

The bull market that continued into the 1990’s lifted the SR funds to greater heights and numbers, though definitions of SRI vary. According to one article, SR mutual funds amassed assets of \$12 billion in sixty seven separate funds by the peak of the bull market in 2000 (Edwards 2003). But the Social Investment Forum, the recognized authority on all forms of SRI and keeper of the Socially Responsible Index, pegged the figure at \$136 billion in 2001 in 200 separate funds, obviously a more inclusive figure. The group also observed that while the mutual fund universe as a whole was hemorrhaging cash in the bear market year of 2002, SR mutual funds gained assets to the tune of \$1.5 billion over this period (SIF 2003).

Investment research evidence indicates that mutual fund returns tightly trail the most popular common stock index, the S&P 500. In fact, in any given year, nearly nine in ten managed funds fail to outperform this Index. If SR funds are in ascendancy in this field, what have they to show in the way of performance? Results of academic studies are mixed to slightly favorable, with most favorable findings predating the market downturn of 2000 to 2002 (Entine 2003). As examples, Grossman and Sharpe (Grossman 1986) found that a risk-adjusted portfolio free of South Africa-based investments beat the NYSE average by a negligible 0.187 percent annually. Hamilton found an underperformance of 0.76 percent annually through 1990 using seventeen SR funds measured against 170 conventional mutual funds from the Lipper database, though one might quibble with the differing beginning years used in their time periods (Hamilton, Hofe and Statman 1993).

John Guerard states that “socially responsible investing” might produce higher risk-adjusted portfolio returns than merely using all available stocks in the equity universe, yet cites only prior studies that are inconclusive (Guerard 1997). To second him, Peter Camejo, the independent running mate in Ralph Nader’s 2004 Presidential bid authored a book in 2002 titled, “The SRI Advantage” (Wheat 2002). Waddock and Graves found that the 249 S&P 500 firms included in the SR-oriented Domini Social Index outperformed the 251 firms excluded from it on a three, five, and ten-year basis, but these results are not adjusted for risk (Waddock and Graves 1998).

The study by Edwards and Samant, which serves as the model for the research conducted in this paper, found no statistically significant difference in risk-adjusted returns of its sample of SR funds in comparison to the S&P 500 Index (Edwards and Samant 2003). Dr. Samant even joked in personal conversation that his paper ought to include a suggestion to “sell short” such funds (Samant 2004).

Taken together, the murky conclusion from the existing body of work on this subject is simply to state that the impact of SRI on investment performance is very much an unanswered question. What this study will attempt to do is examine separately two, in this author’s opinion, notably different categories of SRI screens employed by SR funds. The political divisions of the secular left (SL) and the religious right (RR) that were papered over during the nascence of SRI are certain to reassert themselves in today’s politically charged climate. Discovering if the political philosophy of SR screening has a significant correlation with investment performance will be, at least, a curious exercise.

Data

Unlike existing works that focus singly on the use of SR screens versus investments that do not screen, the present study tries to distinguish among SR funds as Secular Left (SL) and Religious Right (RR) funds, based on their screens. There is significant overlap between the SL and RR screens: both regularly screen alcohol, tobacco, and gambling. The Aquinas (RR) fund family restricts investment in weapons, just like the father of the modern SL fund, Pax World Fund, which was launched by Christians opposing the Vietnam war. Yet almost no SL-oriented fund screens abortion, pornography, or questions of homosexuality (SIF 2004). One of the largest SL fund families, Calvert, employs no “moral screens,” as defined by one of their sales representatives. Individual screens for the SR funds in the study are identified in Table I.

However, these complexities are little different from methodological flaws in simply comparing screened and unscreened funds. Critics point out that most studies purporting to show statistically significant differences in performance leave important factors uncontrolled for. For example, sector weightings in the funds or indexes used can greatly influence performance if the time period is one in which one sector’s performance diverged from the rest of the market. Entine contends much of the higher returns of SR funds in the bull market of the late 1990’s were due to their overweighting in technology stocks. Did tech stocks perform *because* their firms were SR, or did great management and an economic climate hospitable to their field give them the luxury of being SR? Which came first, the chicken or the egg? (Entine 2003).

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In a subject as complex and multifaceted as investments, it is nearly impossible to conduct a “perfect” study. With this shortcoming in mind, the Edwards and Samant study of 2003 served as the model. A five-year time period was chosen due to the dearth of RR-oriented funds with long histories; only nine met the search criteria on the Morningstar database. Four were based on Catholic values, two on evangelical Christian values, one on Mennonite Christian values, and two on Islamic values. (None of any duration were found based on Judaism.)

For the SL funds, twenty-one which met criteria for a minimum five-year history and membership in the Social Investment Forum were chosen (SIF 2004). Bond funds and balanced funds perform largely in response to moves in interest rates rather than to superior management or financial performance of the issuing companies. Even among sub par, “junk” rated firms, less than 3 percent of bonds ever default. To keep comparisons relevant, funds with large bond positions were excluded, leaving all funds predominantly domestic equity.

Once individual funds of each category were selected, they were combined into three separate portfolios: one composed of the twenty-one SL funds, or the Secular Left Portfolio, one composed of the nine RR funds, or the Religious Right Portfolio, and, as an added exercise, one which excludes the Islamic RR funds leaving a totally Christian-oriented portfolio. Each portfolio will begin the time period with equal portions of the individual funds, but will not be rebalanced; shares will end in whatever proportions their performance has taken them.

Methodology

The time period chosen of September 30, 1999 to September 30, 2004 yields a five-year observation period. On a quarterly basis it gives twenty data points. *Mean returns* are calculated by averaging total returns for all twenty quarters. *Mean excess returns* are calculated by subtracting “risk-free” returns, the average yield on a 90-day Treasury bill for this period, or 0.72 percent per quarter. *Total risk* is measured by quarterly standard deviation of returns. *Systematic risk* is estimated by beta, calculated by regressing the fund’s rate of return on the rate of return on the S&P 500 Index. The S&P 500 Index is used, as it is the most commonly used benchmark in finance research.

The measures compiled are well-known in Modern Portfolio Theory (MPT). The Sharpe Ratio estimates returns for a given time period adjusted for risk, with risk expressed as volatility of returns, or standard deviation, of the portfolio, and the risk-free rate of return the yield on 90-day Treasuries (CFP 2003):

$$S_i = \frac{\text{Total portfolio return} - \text{Risk-free rate of return}}{\text{Portfolio standard deviation}}$$

An alternate measure of risk-adjusted returns is the Treynor Ratio, which uses beta as a proxy for risk (CFP 2003):

$$T_i = \frac{\text{Total portfolio return} - \text{Risk-free rate of return}}{\text{Portfolio beta}}$$

Jensen's Alpha is an outgrowth of the Capital Asset Pricing Model (Edwards & Samant 2003). It incorporates the portfolio's actual return, the portfolio's beta, the risk-free rate of return, and the market's return (CFP 2003):

$$J_i = R_p - [R_f + B_p(R_m - R_f)]$$

R_p = Portfolio's actual return
 R_f = Risk-free rate of return
 B_p = Portfolio beta
 R_m = Market return

Another, more recent measure employed by Edwards and Samant is the 1997 concept of the legend in the field of finance, Franco Modigliani, and his granddaughter, Leah. It is termed *M squared*, and its purpose is to express risk-adjusted performance in simple percentages rather than abstract mathematical ratios, which is more easily understood by the average investor (Edwards & Samant 2003):

$$M_p^2 = \frac{(R_p - R_f) * S_m}{S_p} + R_f$$

R_p = Portfolio's actual return
 R_f = Risk-free rate of return
 S_p = Portfolio standard deviation
 S_m = Market standard deviation

Results

The results are shown in Tables IIA and IIB. In these Tables, the fund returns include reinvestment of dividends and are net of expense ratios, given in the last column. The funds are listed in descending order of their quarterly returns. Table IIA shows the results for the SL funds and their portfolio. Table IIB shows the results for the RR funds and their portfolio as well as the Christian portfolio. It is seen from Table IIA that eighteen of the twenty-one SL funds outperformed the S&P 500 Index during the study period. Out of these, nine had statistically significant (at the 0.05 level) positive Jensen's alpha. Winslow Green Growth Fund managed a quarterly mean return of 6.87 percent compared to the S&P 500 Index's 0.08 percent. Out of the three SL funds, which underperformed the S&P 500 Index, two had statistically significant (at the 0.05 level) negative Jensen's alpha, one of them being a stalwart of SRI world, the Domini Social Equity Fund. The highest risk expressed both by quarterly standard deviation and beta was likewise found in Winslow Green Growth Fund, with 28.62% standard deviation versus just 9.59% for the S&P 500 Index, and beta of 2.39 versus 1, respectively. It also had the highest and statistically significant (0.05 level) positive Jensen's alpha of 7.68.

Sharpe Ratios and the benchmark-dependent ratios of Treynor, Jensen's alpha, and beta are given as well. The highest measures of Sharpe and the new M squared go to Bridgeway Ultra Small Company Tax Advantage Fund, with 0.26 and 5.16, respectively. It also has a high positive (6.21) and statistically significant (0.05 level) Jensen's alpha. The highest Treynor Ratio was achieved by the Ariel Fund, at 6.79. The lowest Treynor and Sharpe Ratios both go to Domini Social Equity and the Security Social Awareness Fund.

Perhaps, most notably, the Secular Left Portfolio of all the twenty-one SL funds also outperformed the S&P 500 Index. It had a statistically significant (at the 0.05 level) positive Jensen's alpha. It had a Treynor Ratio of 1.19, and an M squared of 1.87.

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The RR funds stack up somewhat differently, as seen from Table IIB. While seven of the nine RR funds outperformed the S&P 500 Index, only one, the Timothy Plan Small Cap Value fund, had a statistically significant (at the 0.05 level) positive Jensen's alpha. This fund also gets the top spot for risk-adjusted M squared and Jensen's alpha, 2.7 and 2.92, respectively. Interestingly, the worst performer was its fellow evangelical, the Noah Fund, underperforming with a quarterly mean return of -1.27 percent, but with a negative Jensen's alpha not statistically significant (at the 0.05 level). The highest quarterly standard deviation was in Amana Growth Fund at 18.19; the lowest in MMA Praxis at 7.11.

The Religious Right Portfolio of all the nine RR funds outperformed the S&P 500 Index with a mean quarterly return of 0.63 percent versus 0.08 percent for the Index. Its M squared is 0.63, and the strategy actually produces negative Sharpe and Treynor Ratios of -0.01 and -0.09, respectively. However, Jensen's alpha for this portfolio (0.54) is not statistically significant at the 0.05 level. All this suggests *an investment performance with an RR screened portfolio higher than the S&P 500, but not a statistically significant one.*

The third portfolio, one that uses only funds of a Christian orientation, excluding the two Amana funds with Islamic screens, would appear only to depress performance. It produces a quarterly mean return of 0.33 percent, versus 0.08 percent of the S&P 500 Index, and negative Sharpe and Treynor Ratios of -0.04 and -0.4, respectively. M squared is just positive at 0.33. This portfolio's positive Jensen's alpha (0.23) is not statistically significant at the 0.05 level.

Discussion

In what ways do the results of this study tend to confirm the current views of SRI, and in what ways do they challenge them? As mentioned, a common criticism of SRI advocates who tout positive performance in recent studies is the overly simplistic test of controlling for screens and a lack thereof, risk as measured by standard deviation or beta, and very little else. Entine points out that an obvious explanation for favorable performance in SR funds is sector composition. Most studies compare performance in periods no more recent than 2000, very close to the market peak in March of that year, which was driven in large part by technology and financial stocks. In his article dated September of 2003, Entine notes that a common SRI benchmark, the Domini Social Index (DSI) was overweighted in both the financial and technology sectors compared to the S&P 500 Index: 25 percent for the DSI versus 20.5 percent for the S&P 500 in the financial sector, and 18.75 percent for the DSI versus only 14.3 percent for the S&P 500 in the technology sector

The argument would suggest an explanation for SR overperformance through 2000, but not through the period covered in this study, a period that saw technology take the hardest fall. Also, using data from Yahoo! Finance, the calculated sector weightings of the Secular Left (SL) Portfolio are in fact underweight in technology (hardware and software) relative to the S&P 500, at 12.6 percent to 15.4 percent (Table III). Sector compositions of indices and funds obviously change over time, suggesting that SR funds may have placed their sector bets and cashed in their chips at just the right time.

Entine's other main criticism of SRI performance is on arbitrary time periods, with most studies of the past twenty years covering the general bullish market of that same period until

2000. Entine is correct that no rationale is offered for using the time period (Entine 2003) but there happens to be little else to use, as SR funds came of age so recently. In any case, this study suggests favorable SR performance during one of the most adverse periods in the market since the 1930's, the period of the bursting of the tech bubble in late 2000.

There is little available information, outside of investment companies, on the performance of RR screened mutual funds. Not much, if any, research has been done on them as a stand-alone subject, and there are simply not many funds or indices overtly *favoring* pornography or the "gay lifestyle" against which to test an RR strategy. To this author's knowledge, this study is the first attempt at gauging their returns, establishing them as average or just slightly below.

What is noteworthy is the rationale for excluding conventional banks from Islamic-oriented funds: it is considered a sin – "usury," it is termed - among Muslims to charge interest on borrowed money (Islamic 1995). Instead, Islamic banks become actual partners in the businesses they decide to loan to, effectively treating each loan as a miniature stock offering. This has the effect of depressing the presence of financial stocks in the Religious Portfolio relatively to the Christian and Socially Responsible portfolios, as well as to the S&P 500 Index.

Conclusion

This study investigates the risk-adjusted return performance of two author-defined socially responsible mutual funds-the Secular Left (21) and Religious Right (9) funds. Using quarterly returns with dividends reinvested and net of expenses, the study finds that during the study period from September 30, 1999 to September 30, 2004 eighteen of the twenty-one Secular Left funds (over eighty-five percent) outperform the S&P 500 Index on a risk-adjusted basis. Of these eighteen, nine had positive Jensen's alpha, statistically significant at the 0.05 level. Only three of the Secular Left funds underperformed the S&P 500, with only one having a negative Jensen's alpha, statistically significant at the 0.05 level. The Secular Left Portfolio of all the twenty-one SL funds outperformed the S&P 500 Index during the study period, with a positive Jensen's alpha, statistically significant at the 0.05 level. The study also finds that seven of the Religious Right funds (about seventy-seven percent) outperformed the S&P 500 Index, with only one having a positive Jensen's alpha, statistically significant at the 0.05 level. The Religious Right Portfolio of all the nine RR funds outperformed the S&P 500 Index, even though its positive Jensen's alpha is not statistically significant at the 0.05 level. The Christian portfolio of all the seven RR funds with Christian orientation also modestly outperformed the S&P 500 Index, with a positive Jensen's alpha that is not statistically significant at the 0.05 level. Unlike earlier studies on Socially Responsible funds involving twenty years of generally bullish stock market, the current study also includes the bear market from 2000 to 2003, after the crash of technology stocks. The performance of the Secular Left funds and their portfolio also seem to outperform the Religious Right funds and their portfolio as well as the Christian portfolio. Since there were only nine funds in the Religious Right category, it may be of interest for future researchers to use a larger number of Religious Right funds, only they are not too many in number! Excessive weighting in the technology sector does not seem to be the reason for the better performance of the SL portfolio, as it is found to be underweighted during the study period in this sector compared to the S&P 500 Index.

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Table I. Screens Used by Socially Responsible Mutual Funds

| Fund Name | Alc | Tob | Gam | Abo | Por | Wea | Ani | Pro | Env | Hum | Lab | Emp | Col | CoR |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ariel Appreciate (CAAPX) | | * | | | | * | | | * | | | * | | |
| Ariel Fund (AFGFX) | | * | | | | * | | | * | | | * | | |
| Bridgeway Aggressive Growth Portfolio (BRAGX) | | * | | | | * | | | | | | | | |
| Bridgeway Ultra Small Company Tax Advantage(BR | | * | | | | * | | | | | | | | |
| Calvert Capital Accumulation A (CCAFX) | * | * | * | | | * | * | * | * | * | * | * | * | * |
| Calvert New Vision Small Cap A (CNVAX) | * | * | * | | | * | * | * | * | * | * | * | * | * |
| Citizens Emerging Growth A (CGRDX) | * | * | * | | | * | * | * | * | * | * | * | | * |
| Neuberger Berman Socially Resp Inv (NRSRX) | * | * | * | | | * | | * | * | * | * | * | | * |
| New Alternatives (NALFX) | * | * | * | | | * | * | * | | | | * | * | |
| Pamassus Fund (PARNX) | * | * | * | | | * | * | * | * | * | * | * | * | * |
| Pax World Growth (PXWGX) | * | * | * | | | * | * | * | * | * | * | * | * | * |
| Security Social Awareness A (SWAAX) | * | * | * | | | * | | | * | | | * | | * |
| Sierra Club Stock Fund (SCFSX) | | * | | | | * | * | | * | * | * | * | | * |
| Smith Barney Social Awareness Fund A (SSIAX) | | * | | | | * | | * | * | | | * | | |
| The Flex Fund's Total Return Utility (FLRUX) | * | * | * | | | * | * | * | * | | * | * | * | |
| Walden Social Equity Fund (WSEEX) | * | * | | | | * | * | * | * | * | * | * | * | * |
| Winslow Green Growth Fund (WGGFX) | | | | | | | | | * | | | | | |
| Women's Equity (FEMMX) | * | * | | | | * | * | * | * | * | * | * | | |
| American Trust Allegiance (ATAFX) | * | * | * | | | * | | * | * | * | * | * | | |
| Domini Social Equity A (DSEEX) | * | * | * | | | * | | * | * | * | * | * | | * |
| Parnassus Equity Income (PRBLX) | * | * | * | | | * | * | * | * | * | * | * | * | * |
| Aquinas Growth (AQEGX) | | * | | * | * | * | | * | * | * | * | * | * | * |
| Aquinas Small Cap (AQLX) | | * | | * | * | * | | * | * | * | * | * | * | * |
| Aquinas Value (AQELX) | | * | | * | * | * | | * | * | * | * | * | * | * |
| Noah Fund (NOAHX) | * | * | * | * | * | | | | | | | | | |
| Catholic Equity (CTHQX) | * | * | * | * | * | | | | | * | | * | | |
| Timothy Sm Cap Val (TPLNX) | * | * | * | * | * | | | | | | | | | |
| MMA Praxis (MMPAX) | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Amana Growth Fund (AMAGX) | * | | * | * | | | | | | | | | | |
| Amana Income Fund (AMANX) | * | | * | * | | | | | | | | | | |

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Table II A. 5 Yr Performance of SL Mutual Funds on Quarterly Basis (09/30/1999-09/30/2004)

| Fund/Portfolio Name | Quarterly Mean Return (%) | Quarterly Std Dev (%) | Sharpe Ratio | Correlation Coefficient w/S&P500 | Beta | R Squared | M Squared | Jensen's Alpha | Treynor Ratio | Expense Ratio (%) (Annual) |
|---|---------------------------|-----------------------|--------------|----------------------------------|------|-----------|-----------|------------------------|---------------|----------------------------|
| Secular Left Portfolio | 1.99 | 10.62 | 0.12 | 0.96 | 1.06 | 0.93 | 1.87 | <u>1.94</u> 2.97* | 1.19 | 1.4 |
| Winslow Green Growth Fund (WGGFX) | 6.87 | 28.62 | 0.21 | 0.80 | 2.39 | 0.64 | 2.78 | <u>7.68</u> 1.96* | 2.58 | 1.49 |
| Bridgeway Ultra Small Company Tax Advantage (BRSIX) | 6.23 | 11.90 | 0.46 | 0.88 | 1.09 | 0.77 | 5.16 | <u>6.21</u> 4.94* | 5.05 | 0.65 |
| Bridgeway Aggressive Growth Portfolio (BRAGX) | 5.11 | 19.43 | 0.23 | 0.78 | 1.58 | 0.61 | 2.89 | <u>5.40</u> 1.97* | 2.78 | 1.62 |
| Ariel Fund (ARGFX) | 3.76 | 7.67 | 0.40 | 0.56 | 0.45 | 0.32 | 4.52 | <u>3.33</u> 2.37* | 6.79 | 1.07 |
| Ariel Appreciation (CAAPX) | 3.05 | 9.00 | 0.26 | 0.73 | 0.69 | 0.53 | 3.20 | <u>2.77</u> 3.40* | 3.40 | 1.16 |
| Calvert New Vision Small Cap A (CNVAX) | 2.96 | 12.38 | 0.18 | 0.89 | 1.15 | 0.79 | 2.46 | <u>2.98</u> 2.31* | 1.95 | 1.74 |
| Parnassus Equity Income (PRBIX) | 2.11 | 6.78 | 0.21 | 0.87 | 0.62 | 0.77 | 2.69 | <u>1.78</u> 2.46* | 2.26 | 1.06 |
| New Alternatives (NALFX) | 1.87 | 14.47 | 0.08 | 0.63 | 0.95 | 0.4 | 1.48 | <u>1.76</u> 1.21 | 1.21 | 1.25 |
| Parnassus Fund (PARNX) | 1.72 | 13.53 | 0.07 | 0.79 | 1.11 | 0.62 | 1.43 | <u>1.71</u> 0.91 | 0.90 | 1.01 |
| Neuberger Berman Socially Resp Inv (NBSRX) | 1.31 | 8.21 | 0.07 | 0.93 | 0.80 | 0.86 | 1.41 | <u>1.10</u> 1.59 | 0.74 | 0.95 |
| Women's Equity (EEMMX) | 1.15 | 7.53 | 0.06 | 0.97 | 0.76 | 0.93 | 1.27 | <u>0.92</u> 2.11* | 0.56 | 1.79 |
| Walden Social Equity Fund (WSEFX) | 1.05 | 7.44 | 0.04 | 0.95 | 0.74 | 0.91 | 1.15 | <u>0.80</u> 1.60 | 0.45 | 1.12 |
| Calver Capital Accumulation A (CCAEX) | 0.86 | 12.69 | 0.01 | 0.92 | 1.22 | 0.85 | 0.83 | <u>0.92</u> 0.81 | 0.11 | 1.71 |
| Citizens Emerging Growth A (CGRDX) | 0.63 | 16.92 | -0.01 | 0.85 | 1.50 | 0.73 | 0.67 | <u>0.87</u> 0.43 | -0.06 | 1.60 |
| Sierra Club Stock Fund (SCFSX) | 0.36 | 10.21 | -0.04 | 0.98 | 1.04 | 0.97 | 0.38 | <u>0.31</u> 0.76 | -0.35 | 1.59 |
| Smith Barney Social Awareness Fund A (SSIAX) | 0.32 | 6.48 | -0.06 | 0.96 | 0.65 | 0.92 | 0.13 | <u>0.02</u> 0.05 | -0.62 | 1.10 |
| The Flex Fund's Total Return Utility (FLRUX) | 0.25 | 9.53 | -0.05 | 0.73 | 0.73 | 0.53 | 0.25 | <u>0.01</u> 0.00 | -0.65 | 2.18 |
| American Trust Allegiance (ATAFX) | 0.19 | 13.67 | -0.04 | 0.87 | 1.24 | 0.76 | 0.35 | <u>0.26</u> 0.17 | -0.43 | 1.89 |
| Pax World Growth (PXWGX) | -0.06 | 10.00 | -0.08 | 0.86 | 0.90 | 0.73 | -0.03 | <u>-0.21</u> -0.17 | -0.87 | 1.77 |
| Domini Social Awareness A (SWAAX) | -0.56 | 9.24 | -0.14 | 0.99 | 0.95 | 0.98 | -0.61 | <u>-0.06</u> -2.06* | -1.34 | 1.19 |
| Security Social Awareness A (SWAAX) | -0.67 | 9.14 | -0.15 | 0.98 | 0.93 | 0.97 | -0.74 | <u>0.79</u> 2.11* | -1.49 | 1.46 |
| S&P 500 Index | 0.08 | 9.59 | -0.07 | 1.00 | 1.00 | 1.00 | 0.08 | 0.00 | N/A | N/A |
| US 90 Day Treasury Bill | 0.72 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Note: t values are given under the values of Jensen's Alpha. * indicates significant at 0.05 level.

Table II B. 5Yr Performance of RR Mutual Funds on Quarterly Basis (09/30/1999-09/30/2004)

| Fund/Portfolio Name | Quarterly Mean Return (%) | Quarterly Std Dev (%) | Sharpe Ratio | Correlation Coefficient w/S&P500 | Beta | R Squared | M Squared | Jensen's Alpha | Treynor Ratio | Expense Ratio (%) (Annual) |
|----------------------------|---------------------------|-----------------------|--------------|----------------------------------|------|-----------|-----------|-----------------------|---------------|----------------------------|
| Religious Right Portfolio | 0.63 | 9.68 | -0.01 | 0.98 | 0.99 | 0.97 | 0.63 | <u>0.54</u> 1.42 | -0.09 | 1.66 |
| Timothy Sm Cap Val (TPLNX) | 2.98 | 10.96 | 0.21 | 0.90 | 1.03 | 0.8 | 2.70 | <u>2.92</u> 2.67* | 2.20 | 1.56 |
| Amana Growth Fund (AMAGX) | 2.58 | 18.19 | 0.10 | 0.83 | 1.57 | 0.69 | 1.70 | <u>2.86</u> 1.26 | 1.18 | 1.40 |
| Amana Income Fund (AMANX) | 1.02 | 7.70 | 0.04 | 0.89 | 0.71 | 0.8 | 1.09 | <u>0.76</u> 0.98 | 0.42 | 1.40 |
| Aquinas Value (AQEIX) | 0.31 | 8.07 | -0.05 | 0.88 | 0.74 | 0.77 | 0.23 | <u>0.06</u> 0.07 | -0.55 | 1.49 |
| Aquinas Growth (AQEGX) | 0.27 | 10.15 | -0.04 | 0.93 | 0.98 | 0.86 | 0.29 | <u>0.18</u> 0.21 | -0.46 | 1.46 |
| Catholic Equity (CTHGX) | 0.19 | 9.33 | -0.06 | 0.99 | 0.96 | 0.99 | 0.18 | <u>0.08</u> 0.37 | -0.55 | 1.94 |
| MMA Praxis (MMPAX) | 0.09 | 7.11 | 0.11 | 0.95 | 0.70 | 0.91 | -0.37 | <u>-0.36</u> -0.76 | -1.15 | 1.74 |
| Aquinas Small Cap (AQLX) | -0.70 | 9.87 | -0.14 | 0.90 | 0.93 | 0.81 | -0.66 | <u>-0.83</u> -0.85 | -1.53 | 2.32 |
| Noah Fund (NOAHX) | -1.26 | 12.80 | -0.15 | 0.90 | 1.20 | 0.81 | 0.76 | <u>-1.21</u> -0.96 | -1.65 | 1.63 |
| Christian Portfolio | 0.34 | 9.25 | -0.04 | 0.98 | 0.95 | 0.96 | 0.33 | <u>0.23</u> 0.54 | -0.40 | 1.58 |
| S&P 500 Index | 0.08 | 9.59 | -0.07 | 1.00 | 1.00 | 1.00 | 0.08 | 0.00 | -0.64 | N/A |
| US 90 Day Treasury Bil | 0.72 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Note: t values are given under the values of Jensen's Alpha. * indicates significant at 0.05 level.

Table III. Portfolio Sector Weightings in percentage

| Sectors | Secular Left Portfolio | Religious Right Portfolio | Christian | S&P 500 Index |
|----------------------|------------------------|---------------------------|-----------|---------------|
| Utilities | 4.53 | 3.44 | 1.10 | 2.66 |
| Business services | 9.52 | 9.01 | 8.82 | 3.92 |
| Financials | 17.98 | 14.48 | 18.62 | 20.3 |
| Telecommunications | 2.76 | 2.96 | 1.54 | 3.42 |
| Media | 4.56 | 2.67 | 2.53 | 3.86 |
| Consumer goods | 7.45 | 6.59 | 6.54 | 9.65 |
| Energy | 4.46 | 7.47 | 5.71 | 6.52 |
| Hardware | 8.27 | 10.13 | 9.47 | 10.82 |
| Health | 15.17 | 14.1 | 13.44 | 13.33 |
| Software | 4.35 | 4.38 | 4.62 | 4.55 |
| Consumer services | 10.00 | 10.53 | 12.98 | 8.76 |
| Industrial materials | 10.96 | 14.25 | 14.61 | 12.2 |