The wages of social responsibility

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Abstract

Typical socially responsible investors tilt their portfolios toward stocks of companies with high scores on social responsibility characteristics such as community, employee relations and the environment. We analyze returns during 1992-2007 of stocks rated on social responsibility by KLD and find that this tilt gave socially responsible investors a return advantage relative to conventional investors. However, typical socially responsible investors also shun stocks of companies associated with tobacco, alcohol, gambling, firearms, military, and nuclear operations. We find that such shunning brought to socially responsible investors a return disadvantage relative to conventional investors. The return advantage of tilts toward stocks of companies with high social responsibility scores is largely offset by the return disadvantage that comes from the exclusion of stocks of 'shunned' companies. The return of the DS 400 Index of socially responsible companies was approximately equal to the return of the S&P 500 Index of conventional companies.

Socially responsible investors can do both well and good by adopting the best-in-class method in the construction of their portfolios. That method calls for tilts toward stocks of companies with high scores on social responsibility characteristics, but refrains from calls to shun the stock of any company, even one that produces tobacco.

The wages of social responsibility

Socially responsible investments have attracted much money, many investors, and many studies. We have studies of socially responsible mutual funds, socially responsible indexes, "sin" stocks, stocks with good and bad environmental records, and stocks with good and bad employee relations. But some parts of our knowledge are inconsistent with other parts and some gaps in our knowledge remain.

The Social Investment Forum (2005), a national nonprofit organization promoting the concept, practice, and growth of socially responsible investing, describes socially responsible investing as "an investment process that considers the social and environmental consequences of investments, both positive and negative, within the context of rigorous financial analysis."

Screening is the most prevalent form of socially responsible investing followed by shareholder advocacy and community investing, accounting for 68 percent of the money in socially responsible mutual funds in 2005. Negative screening excludes or reduces the portfolio weights of companies with weak environmental, social, or governance records, and positive screening includes or increases the portfolio weights of companies with strong records.

Negative screens that exclude tobacco companies were the most popular screens among socially responsible mutual funds in 2005, followed by screens that exclude companies associated with alcohol, gambling, and weapons. Negative and positive screens related to community relations come next in popularity, followed by screens related to the environment, labor relations, products and services, and equal employment.

Studies of the performance of mutual funds by Hamilton, Jo and Statman (1993), Goldreyer and Diltz (1999), Statman (2000) and Bauer, Koedijk and Otten (2005) show no statistically significant difference between the returns of socially responsible mutual funds and

those of conventional funds. While useful, these studies teach us little about the relative returns of stocks of socially responsible companies since managerial skills and expenses create gaps between the returns of stocks and the returns of mutual funds that contain these stocks, and these gaps vary from fund to fund. We learn more about the relationship between the returns of stocks of socially responsible companies and the returns of stocks of conventional companies by comparing indexes of stocks of socially responsible companies to indexes of stocks of conventional companies since such comparisons are not confounded by skills and expenses.

Statman (2006) compared the returns of socially responsible indexes and found no statistically significant differences between their returns and the return of the S&P 500 Index of conventional companies. Comparisons of the returns of indexes are free of the confounding effects of managerial skills and expenses that plague comparisons of the returns of mutual funds, but such comparisons do not provide a clear picture of differences between the returns of socially responsible stocks and conventional stocks since there is much overlap between the list of stocks in socially responsible indexes and conventional indexes. For example, differences between the returns of the DS 400 Index and the S&P 500 Index likely understate differences between the returns of stocks of socially responsible companies and stocks of conventional companies because the two indexes share approximately 250 companies.

Moreover, social responsibility criteria vary among indexes and so do their relative weights. The Calvert Index assigns relatively high weight to corporate governance while the DS 400 Index assigns relatively high weight to the environment. The DS 400 Index excludes companies with any interests in nuclear power plants while the Calvert Index excludes such companies only if their interests are substantial. And while the DS400, Calvert and Citizens indexes exclude all tobacco companies, The Dow Jones Sustainability Index (DJSI) does not.

The DJSI applies best-in-class selection rules in the selection of companies from all industries, including companies in the tobacco, gambling, and alcohol industries.

The goal of this study is to close the gap of knowledge about returns associated with characteristics of social responsibility, such as diversity and employee relations. We find that stocks of companies with high ratings on social responsibility characteristics outperformed companies with low ratings. However we also find that 'shunned' stocks outperformed stocks in other industries. 'Shunned' stocks are defined more broadly than 'sin' stocks as stocks of companies in the alcohol, tobacco, gambling, firearms, military, and nuclear industries. The two effects largely balance out, such that socially responsible indexes have returns that are approximately equal to those of conventional indexes.

Hypotheses about stock returns

There are three alternative hypotheses about the relative returns of the stocks of socially responsible companies and conventional companies. The first hypothesis is the "doing good but not well" hypothesis where the expected returns of socially responsible stocks are lower than the expected returns of conventional stocks. This hypothesis might be true if the benefits of company actions that tilt it toward social responsibility fall short of the costs and investors, on average, know that. For instance, Abowd (1989) found that increases in employee pay increase the costs borne by a company without increasing the benefits to shareholders. So employee gains come at the expense of shareholders' returns. Jensen and Meckling (1976) and Bertrand and Mullainathan (2003) argued that managers might prefer to submit to employee demands for higher pay because higher pay fosters a more pleasant working environment for themselves, even though the money comes from the pockets of shareholders who gain nothing from it. Barnea and Rubin (2006) argued that company insiders, such as managers, are willing to engage in socially

responsible actions whose costs exceed the benefits to shareholders because they reap private benefits, such as awards and other expressions of appreciation, from those promoting social responsibility. The excess of costs over benefits is reflected in low returns to shareholders. Barnea and Rubin found empirical support for their argument in evidence that insiders in companies that rank relatively high on social responsibility hold relatively small portions of their company shares, so they bear relatively little of the cost of accolades they receive for their socially responsible actions.

Barnea and Rubin described a scenario where ordinary shareholders are shortchanged by their companies' socially responsible actions. But shareholders might not be shortchanged. Instead, socially responsible investors might be willing to sacrifice returns for social responsibility. Consider stocks of 'sin' companies associated with alcohol, tobacco and gambling. The activities of such companies violate social norm and some socially responsible investors avoid them even if they yield higher returns than stocks in other industries. Indeed, Heinkel, Kraus, and Zechner (2001) developed an equilibrium model where socially responsible investors refrain from investing in stocks of 'sin' companies, keeping low the prices of the stocks of sin companies and driving higher their expected returns. The findings of Hong and Kacperczyk (2007) are consistent with the Heinkel et al model. They found that the realized returns of 'sin' stocks were higher than the returns of other stocks.

The second hypothesis is the "doing good while doing well" hypothesis where the expected returns of socially responsible stocks are higher than those of conventional stocks. This is possible if managers and investors consistently underestimate the benefits of being socially responsible or overestimate its costs. Edmans (2008) noted that managers might act as if they underestimate the value of intangible capital, such as employee satisfaction, because its cost is

immediately obvious in reductions in current earnings, while its benefits are less obvious and lie in the future. This is consistent with the finding of Lev, Sarath and Sougiannis (2004) that investors focus on reported profitability measures and underestimate the benefits of R&D expenditures which are expensed immediately but enhance measured profitability only years later. Managerial myopia has been documented by Mas (2007) who found that labor unrest at Caterpillar reduced product quality and it has been formalized in models by Narayanan (1985) and Stein (1988, 1989) and in a survey by Graham, Harvey, and Rajgopal (2005). Edman's provided evidence consistent with managerial myopia and the "doing good while doing well" hypothesis in a study that showed that stocks of companies with highly satisfied employees earned higher returns than other stocks. Derwall et al. (2005) provided evidence consistent with managerial myopia and the "doing good while doing well" hypothesis in a study that showed that stocks of companies with good environmental records earned high returns than other stocks. Kempf and Osthoff (2007) found that stocks of companies that ranked high overall on community, diversity, employee relations, environment, human rights and products did better than stocks that ranked low.

The third and last hypothesis is the "no effect" hypothesis where expected returns of socially responsible stocks are equal to the expected returns of conventional stocks. The "no effect" hypothesis might be true if company actions that tilt it toward social responsibility are costless, such as when actions amount to no more than words. The "no effect" hypothesis might also be true when costly company actions, such as better employee relations, increase benefits by as much as they increase costs, such that company profitability is not affected. This can happen, for instance, when the extra costs of higher employee pay are equal to the extra productivity benefits of more satisfied employees. The "no effect" hypothesis might be true even if, in fact,

the increase in costs exceeds the increase in benefits, as long as investors, on average, continue to overestimate the benefits of social responsibility actions or underestimate their costs. Such overestimation of benefits or underestimation of costs might come, for instance, from 'rosy scenarios' in the minds of socially responsible investors who are overly optimistic about the positive effects of employee satisfaction on employee productivity. Last, the "no effect" hypothesis might be true if aspects of social responsibility which are consistent with the "doing good while doing well" hypothesis are counterbalanced by other aspects which are consistent with the "doing good but not well" hypothesis. This is indeed what we find. We find that stocks of companies with good records on employee relations and similar social responsibility criteria have earned higher returns than stocks of companies with poor records. This is consistent with the "doing good while doing well" hypothesis. But we also find that stocks of 'shunned' companies, including those of companies associated with alcohol, tobacco and gambling, earned higher returns than stocks of companies in other industries. This is consistent with the "doing good but not well" hypothesis. The two effects counterbalance each other such that the "no effect" hypothesis prevails.

Data

KLD Research and Analysis, Inc., a company that produces social investment research, rates companies on strengths and concerns in the following list of characteristics:

• Corporate Governance (e.g., limited compensation to executives and members of the board, lack of tax disputes)

• Community (e.g., generous giving, support for housing)

• Diversity (e.g., promotion of women and minorities, outstanding family benefits)

• Employee Relations (e.g., strong union relations, cash profit sharing)

• Environment (e.g. pollution prevention, recycling)

• Human Rights (e.g., labor rights in outsourcing, no operations in Burma)

• Products (e.g., product quality and safety, provision of products for the economically disadvantaged)

We provide details of indicators of community strengths and concerns as an example in Appendix A.

The staff of KLD analyzes information relevant to each strength and concern. It assigns a score of "1" when a company demonstrates strength on an indicator on the list (e.g., charitable giving) and zero if it does not. Similarly, it assigns a score of "1"when a company's record raises concern on an indicator on the list (e.g., investment controversies) and zero otherwise. The score of a company on a given characteristic is the difference between the number of its strength indicators and the number of its concern indicators.

The scores of companies in the DS 400 Index of socially responsible companies were generally better than those in the S&P 500 Index of conventional companies. Scores at the end of 2006 ranged from the –9 low of Wal-Mart which is included in the S&P 500 Index but excluded from the DS 400 Index, to the +12 high of Hewlett-Packard which is included in both the DS 400 Index and the S&P 500 Index. The mean score of the DS 400 Index companies was 0.65, higher than the -1.55 mean score of the S&P 500 Index companies.

Investors are likely to continue to debate which characteristics make a company socially responsible, but the distribution of the KLD scores of the companies in the S&P 500 Index and the DS 400 Index, presented in Figure 1, highlights the observation that companies are arrayed in a range; no company is perfectly socially responsible or irresponsible. Moreover, companies with the same overall KLD score differ in their characteristics scores. Table 1 shows, for example,

that Sunoco, a company with a low overall score, scored higher on human rights than Hewlett-Packard, a company with a high overall score. Similarly, Green Mountain Coffee Roasters, a company with an overall score almost identical to that of Hewlett-Packard, outpaced Hewlett-Packard on corporate governance and human rights but lagged it on employee relations, community and diversity.

KLD's database begins in 1991 and contains end-of-year scores of companies. The 1991 database includes approximately 650 companies, comprising the Domini 400 Social Index and S&P 500 Index. In 2001 KLD expanded its coverage to include all companies in the Russell 1000 Index and in 2003 KLD expanded its coverage further to include all the companies in the Russell 3000 Index. Our sample includes scores between 1991 and 2006.

The primary identifying information for a company in the KLD database is the company's historical ticker and CUSIP[1]. When ticker information is not available, we use historical CUSIP. When a firm has several stocks, we select the one with the largest market capitalization. For each company each year we calculate the company's score in each of the seven characteristics of social responsibility (community, diversity, employee relations, environment, products, human rights, and governance) as the difference between the number of strength indicators and the number of concern indicators.

Table 2 provides a summary of the KLD data as of the end of 2006. KLD's list includes 2,955 companies. Among them are 220 with a positive community score, implying that the number of community strength indicators exceeds the number of concern indicators. Similarly, there are 184 companies with a negative community score. Among the companies are 2,519

[1] Due to a lag between the point when KLD receives the corporate action information and when it "published" KLD STATS, there exist cases when ticker and cusip information as of the end of calendar year is stale. We manually corrected those cases to ensure the appropriate linking with CRSP.

which had zero strength indicators and zero concern indicators. We refer to them as 'no-indicators-zero' companies. There are also 32 companies with an equal number, other than zero, of strength and concern indicators. We refer to them as 'canceling-indicators-zero' companies.

The number of strength and concern indicators varies by characteristic. For example, the diversity characteristic has seven strength indicators but only two concern indicators, while the environment characteristic has five concern indicators but only three strength indicators. As a consequence, the mean community score of companies is higher than the mean environment score, 0.28 and -0.81 respectively.

Among the 2,955 companies are 198 companies 'shunned' because of an association with tobacco, alcohol, gambling, firearms, military or nuclear operations. They include some companies which are members of the S&P 500 Index but not the DS400 Index. Anheuser-Busch is faulted for association with alcohol and gambling, General Electric is faulted for association with military and nuclear operations, and Altria is faulted for association with tobacco and alcohol. But some companies are in the DS 400 despite associations with shunned operations. They include Coca Cola and Starbucks which are faulted for association with alcohol, and Harley-Davidson which is faulted for association with gambling.

Our classification of 'shunned' companies is broader than the classification of 'sin' companies by Hong and Kacperczyk and the classification methodology is different. Hong and Kacperczyk focused on the "Triumvirate of Sin," composed of alcohol, tobacco and gaming companies, although they checked for robustness by including gun companies. However, they excluded the broader category of defense companies "because it is not clear that defense is considered sin by many Americans." (p. 11). Our classification of shunned companies follows KLD and includes not only companies associated with defense or military operations but also

companies associated with nuclear operations. Moreover, while Hong and Kacperczyk followed the Fama and French (1997) classification, we followed the KLD classification. Shunned companies are those that KLD classifies as associated with one or more of tobacco, alcohol, gambling, firearms, military or nuclear operations.

Performance benchmarks

Measures of performance vary by performance benchmarks. For example, a positive alpha of small-cap stocks or stocks of companies rated high on environmental responsibility might indicate superior performance or a flawed performance benchmark. We consider three performance benchmarks, the CAPM where the 'market factor' is the only factor and risk is measured by beta, the three-factor benchmark of Fama and French (1992) where the 'small minus big' market capitalization and the 'value minus growth' factors are added to the market factor, and the four-factor benchmark of Carhart (1997) which adds 'momentum' as the fourth factor. Industry classification might affect measures of performance beyond the affect of the four factors and we control for it in our 'best-in-class' methodology.

While the three and four-factor benchmarks have become the common standard by which performance is measured, their rationale is under debate. Fama and French (1992) argued that stocks of small value companies have higher objective risk than stocks large growth companies, but much of the evidence is inconsistent with their argument. For example, Lakonishok et al (1994) found that value stocks outperformed growth stocks in three out of four recessions during 1963-1990, inconsistent with the view that value stock are riskier. Similarly, Skinner and Sloan (2002) found that the relatively high returns of value stocks are not due to their higher risk. Rather, they are due to large declines in the prices of growth stocks in response to negative earnings surprises.

Statman, Fisher and Anginer (2008) argued that the three and four-factor benchmarks are indeed useful performance benchmarks but the factors of small-large, value-growth and momentum proxy for 'affect.' Affect is the feeling of 'goodness' or 'badness,' a feeling that occurs rapidly and automatically, often without consciousness, and the affect heuristic has been described by Slovic, Finucane, Peters, and MacGregor (2002). Statman et al used the Fortune surveys of company reputation to classify companies into an 'admired' group of companies with high reputation and positive affect, and companies with low reputation and negative affect. They found that companies with negative affect tend to be small value companies with low momentum. Statman et al argued that the negative affect of small value companies with low momentum is associated with high subjective risk of stocks, and that subjective risk augments the objective risk measured by beta. Subjective risk, like objective risk, is compensated by higher expected returns.

Performance of socially responsible portfolios

We form portfolios at the end of each year, based on KLD scores. Each year we exclude from analysis the group of companies that have no indicators of strength and no indicators of concern that year because this group likely includes companies that were not examined by KLD even if they are on its list. By the nature of industries, companies in some industries have lower scores on average than companies in other industries. For example, the mean environmental score of companies in the relatively 'dirty' oil industry in 2006 was -2.01 while the mean environmental score of relatively 'clean' retail industry was 0.21.[2] Therefore, we classify companies by 'best-in-class' industry-adjusted scores. We calculate best-in-class scores of companies in each characteristic each year as the difference between their score and the mean

[2] We use the 20 industry SIC-based classification of Grinblatt and Moskowitz (1999).

score of all companies in their industry that year. Our methodology is different from that of Kempf and Osthoff who included companies with no indicators of strength and no indicators of concerns. Companies with no indicators of strengths or concerns constitute the majority of companies. Rankings that do not exclude such companies are likely to place some of them in the high group and some in the low group, depending on the mean score of their industries. But such placements are devoid of substance.

We examine whether stocks of companies with high best-in-class scores outperformed stocks with low best-in-class scores in each characteristic and use the environment characteristic as an example. We begin by ranking all companies by their best-in-class environment scores as of the end of 1991. Next, we divide companies into three groups, each with the approximately the same number of companies. We calculate the returns in each month of 1992 of an equally-weighted portfolio that is long in the stocks of the companies in the top-third group by the environment characteristic and short on the stocks of the companies in the bottom third group. We will refer to this portfolio as the 'top-bottom' environment portfolio. We reconstitute that portfolio at the end of each subsequent year and record its returns in the months of the following year. Our returns data extend through the end of September 2007.

We present excess returns by each of three performance benchmarks: the CAPM benchmark and the three and four-factor benchmarks. Also, we present information about statistical significance by p-values rather than classify statistical significance into the usual p-value groups of 0.01, 0.05, and 0.10. P-values are the probabilities that we would conclude that excess returns depart from zero when, in truth, they equal zero. In their textbook *Introductory Statistics for Business and Economics*, Wonnacott and Wonnacott (1990) wrote: "Applied statisticians increasingly prefer *p*-values to classical testing because classical tests involve setting

α arbitrarily (usually at 5%). Rather than introduce such an arbitrary element, it is often preferable just to quote the *p*-value, leaving readers to pass their own judgment on [the hypothesis] (p. 302)

We find, in general, that stocks of companies with high social responsibility scores yielded higher returns than stocks of companies with low scores. We present these results in Table 3. Excess returns in equally weighted top-bottom portfolios by the three or four-factor benchmarks are positive and statistically significant at the common 0.01, 0.05, or 0.10 p-values for the community, employee relations and environment characteristics but not for the diversity and products characteristics. Excess returns in the human rights and governance characteristics are negative, but their p-values are much higher than common statistically significant p-values.

Evidence elsewhere on the relation between corporate governance and stock returns is conflicting. Gompers et al (2003) found that strong governance brings high stock returns, consistent with the "doing good while doing well" hypothesis, but Core et al. (2006) found no such relationship, consistent with the "no effect" hypothesis. Core et al attribute Gompers et al.'s findings to the particular period they studied and to correlation between their measure of governance and other factors, such as risk. We find no statistically significant relation between governance and stock returns, consistent with Core et al and the "no effect" hypothesis. We also find no statistically significant relation between the KLD measure of governance and that of Gompers et al.

P-values of excess returns by the CAPM benchmark are considerably higher than common statistically significance p-values for all characteristics other than employee relations where the p-value is 0.04. The CAPM does not account for the effects of small-large, value-growth and momentum tilts and these tilts explain differences in the inference from the three and four-factor

benchmarks and the inference from the CAPM benchmark. Companies that rank high by community, employee relations, environment and products tend to be growth companies while those that rank high by diversity, human rights, and governance tend to be value companies. Companies that rank high on community, employee relations and diversity tend to be relatively large while those that rank high on environment, products, human rights and governance tend to be small. Companies that rank high on all social responsibility characteristics tend to tilt toward high momentum but such tilts are far from statistical significance.

The annualized excess returns of the community portfolio are 4.26 percent with a 0.01 p-value by the three-factor benchmark and 3.96 percent with a 0.02 p-value by the four-factor benchmark. Corresponding excess returns and p-values in the employee-relations portfolio are 4.43 percent with a 0.00 p-value by the three-factor benchmark and 3.73 percent with a 0.02 p-value by the four-factor benchmark. In the environment portfolio they are 2.69 percent with a 0.06 p-value by the three-factor benchmark and 2.47 percent with a 0.11 p-value by the four-factor benchmark. In the products portfolio they are 2.05 percent with a 0.17 p-value by the three-factor benchmark and 2.02 percent with a 0.18 p-value by the four-factor benchmark. And in the diversity portfolio they are 1.00 percent with a 0.51 p-value by the three-factor benchmark and 0.34 percent with a 0.84 p-value by the four-factor benchmark. The excess returns of the human rights portfolio are a negative 2.99 percent with a 0.40 p-value by the three-factor benchmark and a negative 2.57 percent with a 0.51 p-value by the four-factor benchmark. The excess returns of the governance portfolio are a negative 2.00 percent with a 0.48 p-value by the three-factor benchmark, and a negative 2.65 percent with a 0.34 p-value by the four-factor benchmark.

The generally higher returns of stocks of companies with high social responsibility scores are especially evident in a long-short portfolio of companies that are 'top-overall' and 'bottom-overall,' presented in Table 4. We define a top-overall company as one that is in the top third of companies by two or more social responsibility characteristics and not in the bottom third by any characteristic. Similarly, we define a bottom-overall company as one that is in the bottom third of companies by two or more social responsibility characteristics and not in the top third by any characteristic. We exclude governance because it was added to the KLD list only in 2002.

The annualized excess return of this 'top-overall minus bottom-overall' portfolio is 6.12 percent with a 0.00 p-value by the three-factor benchmark, 5.54 percent with a 0.00 p-value by the four-factor benchmark, and 3.18 percent with a 0.08 p-value by the CAPM benchmark. The portfolio is tilted toward growth stocks and stocks with high momentum. The sign of the coefficient of the value-growth factor in the four-factor benchmark is negative with a 0.00 p-value, and the sign of the coefficient of the momentum factor is positive with a 0.11 p-value. But there is no significant tilt toward large or small-cap stocks. The coefficient of the small-large factor is negative but its p-value is 0.65.

Hong and Kacperczyk found that stocks of companies in 'sin' industries had higher returns than stocks of companies in other industries during 1980-2003. Sin industries include tobacco, alcohol and gambling. Specifically, they found that an equally-weighted long-short portfolio of sin company stocks and other company stocks had positive and statistically significant returns. Many socially responsible investors shun stocks of companies associated with alcohol, tobacco, or gambling, but many also shun stocks of companies associated with firearms, military or nuclear operations. We refer to companies in these six groups as "shunned" companies and refer to companies outside these groups as "accepted" companies. We find results similar to those of

Hong and Kacperczyk. We constructed a long-short portfolio of stocks of 'accepted' and 'shunned' companies at the end of 1991, reconstituted it at the end of each subsequent year and recorded its monthly returns through the end of September 2007. Our results are in Table 4. We find that the 'accepted minus shunned' portfolio had a negative 2.62 percent annualized excess return with 0.07 p-value by the three-factor benchmark, a negative 2.27 percent annualized return with a 0.13 p-value by the four-factor benchmark, and a negative 3.34 percent annualized return with a 0.02 p-value by the CAPM benchmark. The portfolio is tilted toward small growth stocks. The sign of the coefficient of the value-growth factor in the four-factor benchmark is negative with a 0.06 p-value, and the sign of the coefficient of the small-large factor is positive with a 0.13 p-value. But there is not much tilt toward momentum stocks or away from them. The coefficient of the momentum factor is negative but its p-value is 0.45.

The effect on returns of the 'positive screen' of tilting toward stocks of companies with high scores on social responsibility characteristics offsets somewhat the effect on returns of the 'negative screen' of excluding stocks of 'shunned' companies. We see that offset in the performance of a portfolio long in the socially responsible DS 400 Index and short in the S&P 500 Index, also presented in Table 4. That portfolio has a positive excess return by each of the three benchmarks, indicating that the tilt toward stocks of companies with high scores on social responsibility characteristics increases the return of the DS 400 Index relative to the return of the S&P 500 Index by more than the exclusion of 'shunned' companies from the DS 400 Index decreases it. But the excess returns of the DS400-S&P 500 long-short portfolio have smaller magnitudes than the excess returns of the top-overall minus bottom-overall portfolio or the accepted minus shunned portfolio. The annualized excess return of the DS400-S&P 500 long-short portfolio is 1.32 percent with a 0.11 p-value by the three-factor benchmark, 1.20 percent

with a 0.15 p-value by the four-factor benchmark, and 0.36 percent with a 0.52 p-value by the CAPM benchmark.

We checked for the robustness of excess returns and p-values by dividing the overall January 1992-September 2007 period into two sub-periods, one extending from January 1992 through December 1999 and the other extending from January 2000 through September 2007. We present in Table 5 excess returns of equally-weighted long-short portfolios by characteristics. We see generally that excess returns remain positive during the two sub-periods, although p-values during the sub-periods are generally lower than p-values during the overall period. The major exceptions are the diversity characteristic where the signs of excess returns are positive during the first sub-period but negative during the second sub-period and the human rights characteristic where the signs of excess returns are positive in the first sub-period but negative in the second sub-period.

We present in Table 6 the excess returns during the two sub-periods of equally-weighted 'top-overall minus bottom-overall' portfolios, and 'accepted minus shunned' portfolios. We also present excess returns during the two sub-periods of the 'DS400 minus S&P 500' portfolio where both indexes are value-weighted. The signs of excess returns are stable during the overall period and sub-periods, positive for the 'top-overall minus bottom-overall' and the 'DS 400 minus S&P 500' portfolios and negative for the 'accepted minus shunned' portfolios. The only exception is a negative excess return for the 'DS 400 minus S&P 500' portfolio by the CAPM benchmark during the second sub-period.

Management of socially responsible portfolios

Our findings indicate that portfolio managers who want to construct high-performing socially responsible portfolios should construct best-in-class portfolios tilted toward stocks with

high social responsibility ratings. However, practical portfolios deviate from the portfolios we analyzed in several ways. First, practical portfolios are likely to be value weighted or close to value weighted while the portfolios we analyzed are equally weighted. Second, practical portfolios deviate from the portfolios we analyzed because managers want portfolios with a high likelihood of positive excess returns, but they usually do not insist that such likelihood be higher than common statistical significance levels of 95 percent or even 90 percent. A 60-percent likelihood of positive excess returns is good, a 70-percent likelihood is better, and a 95-percent likelihood is even better. Third, practical portfolio managers want to assure themselves that excess returns are robust, not due to positive excess returns during the first half of an overall period and negative excess returns during the second half.

We find, as presented in Tables 5 and 6, that the excess returns of value-weighted portfolios are generally lower than the excess returns of equally-weighted portfolios and their p-values indicate lower statistical significance. The two major exceptions are the human rights and governance portfolios where returns excess returns are negative in equally-weighted portfolios but positive in value weighted portfolios. While the of the excess return of the 'top overall minus bottom overall' equally-weighted portfolio is 6.12 percent with a 0.00 p-value by the three-factor benchmark, while the corresponding numbers in the value-weighted portfolio are 2.76 percent with a 0.32 p-value. Excess returns by the four-factor benchmark follow the pattern of excess returns by the three-factor benchmark, but the pattern is different by the CAPM benchmark. The excess return is positive by the CAPM benchmark in the equally-weighted 'top-overall minus bottom-overall' portfolio, but it is *negative* in the value-weighted portfolio.

The annualized excess return of the 'accepted minus shunned' equally-weighted portfolio is a negative 2.62 percent with a 0.07 p-value by the three-factor benchmark, while the

corresponding numbers in the value-weighted portfolio are a negative 2.02 percent with a 0.31 p-value. This pattern holds for the four-factor and CAPM benchmarks. We note that Hong and Kacperczyk provided an analysis of an equally-weighted long-short 'accepted minus sin' portfolio, but they did not provide an analysis of the corresponding value-weighted portfolio.

Some of the difference in the statistical significance of the excess returns between equally-weighted and value-weighted portfolios is due to the higher standard deviation of the returns of value-weighted portfolios. In effect, value-weighted portfolios are less diversified than equally-weighted portfolios. For example, the annualized standard deviation of the value-weighted 'top overall minus bottom overall' portfolio is 12.18 percent, while the annualized standard deviation of the equally-weighted 'top overall minus bottom overall' portfolio is 6.98 percent.

We checked for the robustness of excess returns and p-values by dividing the overall January 1992-September 2007 period into two sub-periods, one extending from January 1992 through December 1999 and the other extending from January 2000 through September 2007. We present in Table 6 excess returns of equally-weighted and value-weighted 'top-overall minus bottom-overall' portfolios and 'accepted minus shunned' portfolios. We also present excess returns of the 'DS400 minus S&P 500' portfolio where both indexes are value-weighted. The signs of excess returns are stable during the overall period and sub-periods, positive for the 'top-overall minus bottom-overall' and the 'DS 400 minus S&P 500' portfolios and negative for the 'accepted minus shunned' portfolios. The only exceptions are the value-weighted 'top-overall minus bottom-overall' portfolios and the 'DS 400 minus S&P 500' portfolios by the CAPM benchmark. The 'top-overall minus bottom-overall' portfolio has a negative excess return by the CAPM benchmark during the overall period and during the 2000-2007 period, but a positive

excess return during the 1992-1999 period. The 'DS 400 minus S&P 500' portfolio has a negative excess return by the CAPM benchmark during the 2000-2007 period but positive excess returns during the 1992-2000 period and during the overall period.

In sum, the results indicate that excess returns in value-weighted portfolios are lower and less reliable than excess returns in the equally-weighted portfolio. However, excess returns and p-values of value-weighted portfolios continue to favor best-in-class portfolios tilted toward stocks with high social responsibility ratings.

Conclusion

Typical socially responsible portfolios, such as the DS 400 Index, are tilted toward stocks of companies with high scores on social responsibility characteristics such as community, employee relations and the environment. We analyze returns during 1992-2007 of stocks rated on social responsibility by KLD and find that this tilt gave socially responsible portfolios a return advantage relative to conventional portfolios. This finding is consistent with the "doing good while doing well" hypothesis where the expected returns of stocks of socially responsible companies are higher than those of conventional companies.

However, typical socially responsible portfolios also shun stocks of companies associated with tobacco, alcohol, gambling, firearms, military, and nuclear operations. We find that such shunning brings to socially responsible portfolios a return disadvantage relative to conventional portfolios. This finding is consistent with the "doing good but not well" hypothesis where the expected returns of socially responsible stocks are lower than the expected returns of conventional stocks.

The return advantage that comes to socially responsible portfolios from the tilt toward stocks of companies with high scores on social responsibility characteristics is largely offset by

the return disadvantage that comes to them by the exclusion of stocks of 'shunned' companies. The net effect is consistent with the "no effect" hypothesis where expected returns of socially responsible stocks are approximately equal to the expected returns of conventional stocks. This is consistent with a world where the social responsibility feature of stocks has no effect on returns. But it is also consistent with the world we find, where return advantages of some social responsibility criteria are offset by return disadvantages of other social criteria.

Socially responsible investors can do both well and good by adopting the best-in-class method for the construction of their portfolios. That method calls for tilts toward stocks of companies with high scores on social responsibility characteristics, such as community, employee relations and the environment, but refrains from calls to shun the stocks of any company, even one that produces tobacco.

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Appendix A – Community strengths and concerns

KLD's list of indicators of community strengths includes:

Charitable Giving. The company has consistently given over 1.5% of trailing three-year net earnings before taxes to charity, or has otherwise been notably generous in its giving.

Innovative Giving. The company has a notably innovative giving program that supports nonprofit organizations, particularly those promoting self-sufficiency among the economically disadvantaged.

Non-US Charitable Giving. The company has made a substantial effort to make charitable contributions abroad, as well as in the U.S. To qualify, a company must make at least 20% of its giving, or have taken notably innovative initiatives in its giving program, outside the U.S.

Support for Housing. The company is a prominent participant in public/private partnerships that support housing initiatives for the economically disadvantaged, *e.g.*, the National Equity Fund or the Enterprise Foundation.

Support for Education. The company has either been notably innovative in its support for primary or secondary school education, particularly for those programs that benefit the economically disadvantaged, or the company has prominently supported job-training programs for youth.

Indigenous Peoples Relations. The company has established relations with indigenous peoples in the areas of its proposed or current operations that respect the sovereignty, land, culture, human rights, and intellectual property of the indigenous peoples.

Volunteer Programs. The company has an exceptionally strong volunteer program.

Other Strength. The company has either an exceptionally strong in-kind giving program or engages in other notably positive community activities.

KLD's list of indicators of community concerns includes:

Investment Controversies. The company is a financial institution whose lending or investment practices have led to controversies, particularly ones related to the Community Reinvestment Act.

Negative Economic Impact. The company's actions have resulted in major controversies concerning its economic impact on the community. These controversies can include issues related to environmental contamination, water rights disputes, plant closings, "put-or-pay" contracts with trash incinerators, or other company actions that adversely affect the quality of life, tax base, or property values in the community.

Indigenous Peoples Relations. The company has been involved in serious controversies with indigenous peoples that indicate the company has not respected the sovereignty, land, culture, human rights, and intellectual property of indigenous peoples.

Tax Disputes. The company has recently been involved in major tax disputes involving Federal, state, local or non-U.S. government authorities, or is involved in controversies over its tax obligations to the community.

Other Concern. The company is involved with a controversy that has mobilized community opposition, or is engaged in other noteworthy community controversies.

Figure 1: Distribution of social scores of companies in the DS 400 Index and the S&P 500 Index: December 31, 2006

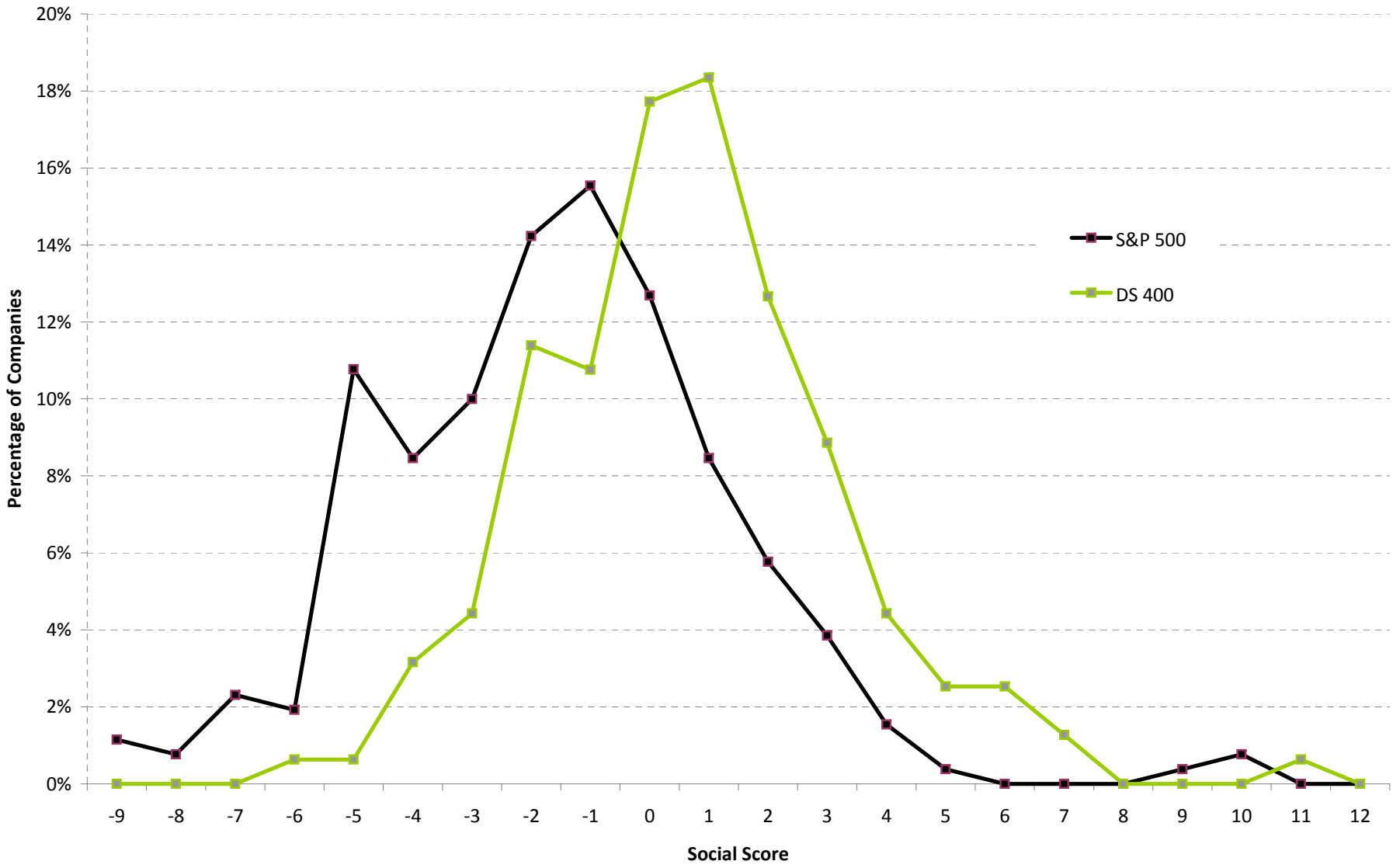

Table 1: Social characteristics score of companies in the S&P 500 and DS 400 Indexes with high and low overall scores: December 31, 2006.

Social Characteristic	Wal-Mart Stores	Anadarko Petroleum Corp.	Goodyear Tire & Rubber Company	Sunoco, Inc.	Hewlett Packard Co.	IBM	Green Mountain Coffee Roasters	Xerox Corp.
	(S&P 500)	(S&P 500, DS 400)	(S&P 500)	(S&P 500, DS 400)	(S&P 500, DS 400)	(S&P 500)	(DS 400)	(S&P 500, DS 400)
Community	-1	-1	-1	-1	4	3	3	1
Corporate Governance	-2	-1	-1	0	-2	-2	1	0
Diversity	2	0	-1	0	6	6	3	6
Employee Relations	-3	-1	-2	-1	4	2	2	-2
Environment	-1	-2	-1	-4	1	1	2	3
Human Rights	-1	-1	0	0	-1	-1	0	0
Product	-3	-1	-1	0	0	1	0	1
Overall score	-9	-7	-7	-6	12	10	11	9

Table 2: Classification of companies in the KLD data: December 20, 2006.

	Number of companies				Strength and concern indicators for each characteristic		
KLD Characteristic	Net negative [1]	Net positive[2]	Canceling-Indicators Zero[3]	No- Indicators Zero[4]	Number of strength indicators	Number of concern indicators	Mean score of companies[7]
Community	184	220	32	2,519	5	3	0.29
Diversity	1,046	967	98	844	7	2	0.28
Employee Relations	1,024	299	156	1,476	4	4	-0.57
Environment	333	97	33	2,492	3	5	-0.81
Product	451	76	22	2,406	3	4	-0.96
Shunned[5]			198				
Accepted[6]			2,757				

[1]Companies with more concern than strength indicators

[2]Companies with more strength than concern indicators

[3]Companies with an equal number, other than zero, of strength and concern indicators

[4]Companies with zero strength indicators and zero concern indicators

[5]Companies with one or more indicators of association with tobacco, alcohol, gambling, firearms, military or nuclear operations

[6]Companies with no indicators of association with tobacco, alcohol, gambling, firearms, military or nuclear operations

[7]The mean score excludes companies with "no-indicators zero"

Table 3: The performance of equally-weighted top-bottom portfolios by social responsibility characteristics: January 1992-September 2007[1]

Performance benchmark	Annualized Excess Returns	Market Factor	Small-Large Factor	Value-Growth Factor	Momentum Factor	Adj. R-sq
Community						
CAPM	1.43%	-0.04				
	(0.38)	(0.30)				0.00
Three-factor	4.26%	-0.15	-0.09	-0.29		
	(0.01)	(0.00)	(0.02)	(0.00)		0.18
Four-factor	3.96%	-0.15	-0.10	-0.29	0.02	
	(0.02)	(0.00)	(0.01)	(0.00)	(0.40)	0.18
Employee Relations						
CAPM	3.00%	-0.06				
	(0.04)	(0.16)				0.14
Three-factor	4.43%	-0.12	-0.02	-0.15		
	(0.00)	(0.00)	(0.60)	(0.01)		0.07
Four-factor	3.73%	-0.10	-0.03	-0.14	0.06	
	(0.02)	(0.00)	(0.00)	(0.01)	(0.14)	0.09
Diversity						
CAPM	-0.05%	-0.03				
	(0.98)	(0.30)				0.00
Three-factor	1.00%	-0.03	-0.22	0.09		
	(0.51)	(0.39)	(0.00)	(0.09)		0.17
Four-factor	0.34%	0.01	-0.23	0.08	0.05	
	(0.84)	(0.74)	(0.00)	(0.00)	(0.25)	0.19
Environment						
CAPM	0.42%	0.002				
	(0.81)	(0.97)				-0.01
Three-factor	2.69%	-0.14	0.14	-0.25		
	(0.06)	(-0.00)	(0.00)	(0.00)		0.31
Four-factor	2.47%	-0.13	0.14	-0.25	0.02	
	(0.11)	(0.00)	(0.00)	(0.00)	(0.64)	0.31
Products						
CAPM	-0.35%	0.09				
	(0.86)	(0.06)				0.02
Three-factor	2.05%	-0.06	0.17	-0.27		
	(0.17)	(0.13)	(0.00)	(0.00)		0.36
Four-factor	2.02%	-0.06	0.17	-0.27	0.00	
	(0.18)	(0.13)	(0.00)	(0.00)	(0.90)	0.36
Human Rights						
CAPM	-1.50%	0.01				
	(0.69)	(0.89)				-0.010
Three-factor	-2.99%	0.04	0.25	0.16		
	(0.40)	(0.69)	(0.01)	(0.21)		0.04
Four-factor	-2.57%	0.02	0.26	0.16	-0.03	
	(0.51)	(0.81)	(0.01)	(0.23)	(0.73)	0.04
Governance[2]						
CAPM	-0.76%	-0.12				
	(0.77)	(0.08)				0.04
Three-factor	-2.00%	-0.17	0.29	0.06		
	(0.48)	(0.03)	(0.00)	(0.62)		0.20
Four-factor	-2.65%	-0.09	0.26	0.02	0.12	
	(0.34)	(0.25)	(0.00)	(0.90)	(0.90)	0.24

[1]Portfolios are long in stocks of companies in the top third of companies by characteristic and short in stocks of companies in the bottom third.

[2]KLD added the governance characteristic only in 2002

p-values of statistical significance are in parentheses

Table 4: The performance of equally-weighted portfolios by top-overall minus bottom-overall, accepted minus shunned, and DS 400 Index minus S&P 500 Index: January 1992-September 2007[1]

Performance Benchmark	Annualized Excess Returns	Market Factor	Small-Large Factor	Value-Growth Factor	Momentum Factor	Adj. R-sq
			Top-overall minus Bottom-overall			
CAPM	3.18%	-0.01				-0.01
	(0.08)	(0.84)				
Three-factor	6.12%	-0.14	-0.02	-0.31		0.19
	(0.00)	(0.00)	(0.78)	(0.00)		
Four-factor	5.54%	-0.13	-0.03	-0.30	0.05	0.19
	(0.00)	(0.00)	(0.65)	(0.00)	(0.11)	
			Accepted minus Shunned			
CAPM	-3.34%	0.1583				0.13
	(0.02)	(0.00)				
Three-factor	-2.62%	0.1090	0.07	-0.08		0.19
	(0.07)	(0.01)	(0.15)	(0.07)		
Four-factor	-2.27%	0.0996	0.07	-0.09	-0.03	0.19
	(0.13)	(0.02)	(0.13)	(0.06)	(0.45)	
			DS 400 Index minus S&P 500 Index			
CAPM	0.48%	0.0370				0.02
	(0.52)	(0.01)				
Three-factor	1.32%	-0.0002	0.00	-0.09		0.09
	(0.11)	(0.99)	(0.97)	(0.00)		
Four-factor	1.20%	0.0030	0.00	-0.08	0.01	0.09
	(0.15)	(0.87)	(0.95)	(0.00)	(0.49)	

[1]The DS 400 Index and S&P 500 Index are Value Weighted

A top overall company is one that is in the top third of companies by two or more social responsibility characteristics and not in the bottom third by any characteristic. The social characteristics are community, employee realtions, diversity, environments and products.

A bottom overall company is one that is in the bottom third of companies by two of more social responsibility characteristics and not in the top third by any characteristic

Portfolios are long in stocks of top-overall companies and short in stocks of bottom-overall companies.

Shunned companies are companies associated with alcohol, tobacco, gambling, firearms, military or nuclear operations. Accepted companies are all other companies.

Portfolios are long in stocks of accepted companies and short in stocks of shunned companies.

p-values of statistical significance are in parentheses.

Table 5: The performance of top-bottom portfolios by social responsibility characteristics: January 1992-September 2007 and subperiods January 1992-2000 and January 2001-September 2007[1]

Performance Benchmark	Annualized excess returns and p-values for equally weighted portolios			Annualized excess returns and p-values for value-weighted portfolios		
	1992-2007	**1992-1999**	**2000-2007**	**1992-2007**	**1992-1999**	**2000-2007**
		Community			Community	
CAPM	1.43%	2.52%	1.20%	-0.68%	1.56%	-2.40%
	(0.38)	(0.25)	(0.62)	(0.72)	(0.52)	(0.43)
Three-factor	0.00%	4.08%	4.92%	1.70%	2.52%	1.44%
	(0.01)	(0.05)	(0.05)	(0.38)	(0.30)	(0.65)
Four-factor	3.00%	4.08%	4.80%	2.66%	3.84%	1.68%
	(0.02)	(0.08)	(0.05)	(0.17)	(0.16)	(0.61)
		Employee Relations			Employee Relations	
CAPM	3.00%	4.08%	1.56%	-0.92%	5.40%	-5.64%
	(0.04)	(0.02)	(0.49)	(0.73)	(0.09)	(0.16)
Three-factor	4.43%	5.04%	3.84%	4.20%	8.88%	1.20%
	(0.00)	(0.01)	(0.11)	(0.09)	(0.00)	(0.74)
Four-factor	3.73%	3.96%	3.72%	4.62%	0.46%	1.44%
	(0.02)	(0.04)	(0.13)	(0.06)	(0.07)	(0.70)
		Diversity			Diversity	
CAPM	-0.05%	2.64%	-3.00%	0.02%	3.24%	-3.60%
	(0.98)	(0.24)	(0.16)	(0.99)	(0.13)	(0.21)
Three-factor	1.00%	2.88%	-1.08%	2.41%	2.52%	2.40%
	(0.51)	(0.16)	(0.63)	(0.15)	(0.22)	(0.31)
Four-factor	0.34%	2.52%	-1.20%	2.77%	3.48%	2.52%
	(0.84)	(0.28)	(0.58)	(0.11)	(0.13)	(0.31)
		Environment			Environment	
CAPM	0.42%	0.36%	0.48%	-1.61%	0.96%	-3.48%
	(0.81)	(0.87)	(0.85)	(0.57)	(0.77)	(0.43)
Three-factor	2.69%	2.16%	2.88%	1.15%	2.64%	-0.96%
	(0.06)	(0.28)	(0.20)	(0.67)	(0.43)	(0.80)
Four-factor	2.47%	1.92%	2.88%	2.06%	2.88%	-0.72%
	(0.11)	(0.33)	(0.21)	(0.42)	(0.43)	(0.84)
		Products			Products	
CAPM	-0.35%	-1.20%	1.44%	-4.39%	-4.44%	-2.88%
	(0.86)	(0.65)	(0.61)	(0.09)	(0.20)	(0.42)
Three-factor	2.05%	1.68%	3.24%	-2.00%	-1.32%	-1.20%
	(0.17)	(0.42)	(0.14)	(0.39)	(0.66)	(0.71)
Four-factor	2.02%	1.92%	3.24%	-1.26%	0.24%	-0.10%
	(0.18)	(0.39)	(0.14)	(0.57)	(0.93)	(0.72)
		Human Rights			Human Rights	
CAPM	-1.50%	3.07%	-7.30%	7.24%	11.86%	1.40%
	(0.69)	(0.61)	(0.03)	(0.14)	(0.15)	(0.72)
Three-factor	-2.99%	1.96%	-7.89%	7.33%	14.20%	-0.54%
	(0.40)	(0.74)	(0.02)	(0.15)	(0.09)	(0.88)
Four-factor	-2.57%	2.34%	-7.86%	4.93%	9.34%	0.22%
	(0.51)	(0.72)	(0.03)	(0.29)	(0.22)	(0.95)
		Governance[2]			Governance[2]	
CAPM	-0.76%			0.56%		
	(0.77)			(0.84)		
Three-factor	-2.00%			1.56%		
	(0.48)			(0.63)		
Four-factor	-2.65%			0.95%		
	(0.34)			(0.77)		

[1]Portfolios are long in stocks of companies in the top third by each characteristic and short in stocks of companies in the bottom third.

[2]KLD added the Goverance characteristic only in 2002.

p-values of statistical significance are in parentheses

Table 6: The performance of portfolios by top-overall minus bottom-overall and by accepted minus shunned: January 1992-September 2007 and subperiods January 1992 - December 2000 and January 2001 - September 2007

Performance Benchmark	Annualized Excess Returns and Associated p-values in Equally Weighted Portfolios			Annualized Excess Returns and Associated p-values in Value Weighted Portfolios		
	1992-2007	**1992-1999**	**2000-2007**	**1992-2007**	**1992-1999**	**2000-2007**
	Top-overall minus bottom-overall			**Top-overall minus bottom-overall**		
CAPM	3.18%	5.29%	1.57%	-2.68%	2.58%	-5.22%
	(0.08)	(0.02)	(0.55)	(0.38)	(0.40)	(0.27)
Three-factor	6.12%	7.56%	5.74%	2.76%	5.90%	2.82%
	(0.00)	(0.00)	(0.02)	(0.32)	(0.04)	(0.50)
Four-factor	5.54%	5.87%	5.63%	4.99%	5.98%	3.20%
	(0.00)	(0.00)	(0.02)	(0.05)	(0.05)	(0.40)
	Accepted minus Shunned			**Accepted minus Shunned**		
CAPM	-3.34%	-3.13%	-3.43%	-1.63%	-2.26%	-2.17%
	(0.02)	(0.10)	(0.12)	(0.41)	(0.33)	(0.48)
Three-factor	-2.62%	-2.33%	-3.24%	-2.02%	-1.79%	-4.56%
	(0.07)	(0.22)	(0.18)	(0.31)	(0.45)	(0.15)
Four-factor	-2.27%	-2.04%	-3.14%	-2.56%	-1.74%	-4.58%
	(0.13)	(0.28)	(0.19)	(0.18)	(0.49)	(0.14)
				DS400 Index minus S&P 500 Index		
CAPM				0.48%	1.20%	-0.24%
				(0.52)	(0.22)	(0.87)
Three-factor				1.32%	1.92%	0.48%
				(0.11)	(0.03)	(0.74)
Four-factor				1.20%	1.20%	0.48%
				(0.15)	(0.19)	(0.73)

A top overall company is one that is in the top third of companies by two or more social responsibility characteristics and not in the bottom third by any characteristic. The social characteristics are community, employee realtions, diversity, environments and products.

A bottom overall company is one that is in the bottom third of companies by two of more social responsibility characteristics and not in the top third by any characteristic

Portfolios are long in stocks of top-overall companies and short in stocks of bottom-overall companies.

Shunned companies are companies associated with alcohol, tobacco, gambling, firearms, military or nuclear operations. Accepted companies are all other companies.

Portfolios are long in stocks of accepted companies and short in stocks of shunned companies.

p-values of statistical significance are in parentheses.