

Socially Responsible Investments: Costs and Benefits for University Endowment Funds*

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ABSTRACT

We find that university endowment funds experience 6% higher donations following the adoption of socially responsible investment (SRI) policies, providing strong evidence that SRI policies influence capital flows to universities. These effects are primarily driven by donors who derive more nonpecuniary utility from SRI objectives. However, SRI funds have greater management costs and portfolio return volatility than other funds and do not experience higher asset growth rates (donations plus investment income). Finally, SRI policies are associated with other university benefits, including enhancements to the fund's risk management practices, more student applications, and more funding for faculty research in sustainability science.

Keywords: Endowments, social responsibility, charitable donations, fund performance
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1. Introduction

Many investors realize nonpecuniary benefits from investing in a socially responsible manner and are willing to sacrifice financial returns from doing so. The asset management industry caters to these preferences by offering products that adopt socially responsible investment (SRI) policies in their asset allocation decisions.¹ In this paper, we investigate the determinants and consequences of SRI policy adoption by university endowments. The pursuit of SRI involves an important tradeoff well-reflected in the microcosm of university endowments. On the one hand, endowment income is a crucial source of funding for university operations. Constraints on the activities of endowment managers, like fossil fuel divestment, could hamper investment performance and jeopardize funding. Thus, universities may be less inclined to pursue SRI if doing so leads to underperformance in the long run. On the other hand, if stakeholders derive benefits from SRI, then in a Coasean framework capital will shift toward managers of SRI portfolios even when these investments underperform. In our university setting, this is reflected in the charitable giving of university stakeholders that support its social mission. SRI policies may also be part of a broader university effort to pursue social objectives, to enhance its competitive position in the marketplace for student recruitment and research funding. In other words, nonendowment sources of cash flow and other university benefits could represent a compensating differential for SRI-related drags on investment performance.

In this context, we examine the following research questions: First, what determines a university's decision to adopt SRI policies in its endowment fund? Are SRI policies more

¹ US SIF: The Forum for Sustainable and Responsible Investment, an organization which promotes SRI investment practices, estimates that the market size of investors considering these criteria has reached \$8.72 trillion in 2016, an increase by 33% since 2014.

likely among universities that face greater pressure from “socially conscious” stakeholders, and when universities depend more on donation-related revenues to fund operations? Second, do universities capture benefits from implementing SRI policies in the form of charitable giving, especially from donors that are more supportive of issues related to social responsibility? Third, does the adoption of such policies negatively impact endowment performance, as reflected in a higher management costs and return volatility, and worse benchmark-adjusted returns? Finally, is the adoption of SRI policies associated with other benefits for the university, such as enhanced risk management practices by the endowment, greater research funding, and increased student applications?

We address these questions using a sample of 1,004 university endowments from the National Association of College and University Business Officers (NACUBO) surveys over 2009-2017. The NACUBO data provide information about endowment performance and investment policies, including whether the endowment adopts SRI policies. In our sample, the percentage of endowments adopting SRI policies grows over time, from 30% in 2009 to 46% in 2017 (Panel A of Figure 1), with SRI endowment assets totaling \$224 billion in 2017. This is broadly consistent with the rapid growth in SRI documented in the mutual fund sector (Bialkowski and Starks, 2016). SRI policies are also more common among endowments that face pressure from university stakeholders (e.g., students, alumni, faculty) to pursue such policies and when charitable giving contributes a larger amount to the university budget. This evidence is consistent with universities adopting SRI policies to align themselves more closely with potential donors, and when they are more dependent on donations to fund operations.

Do universities benefit, in the form of greater donations, from adopting SRI policies? Figure 2 reports the donations received by universities around SRI policy adoption events for 145 endowments that switch from non-SRI to SRI status. It shows that universities experience cumulative abnormal donations of 6% of endowment assets over the four years following the adoption event (Panel A). Furthermore, these effects are driven by “socially conscious” donors that plausibly derive more nonpecuniary utility from SRI activities, as measured by whether donors derive their wealth from industries other than oil, energy, chemical, mineral exploration, gambling, and defense contracting (Panel C); in contrast, post-event abnormal donations from so-called “oil and vice” donors are not significant (Panel B). Our results are similar when we 1) define “socially conscious” donors based on whether they live in states that are ranked highly on measures of corporate social responsibility (i.e., where potential donors are perceived as having a strong social mission), and 2) a multiple regression framework that controls for other potential covariates with donations. Overall, we provide strong evidence that university stakeholders value responsible investing as measured by their charitable giving.

We then examine whether endowments’ asset allocation decisions align with their stated SRI policies. Using endowments’ portfolio returns to estimate portfolio exposures to oil and vice-related industries, we find that such exposures are significantly lower among SRI endowments. In terms of magnitudes, SRI endowments’ “oil betas” are 50% lower than those of non-SRI endowments. Second, we return to our event study framework and ask whether a change in SRI status coincides with changes in asset allocation. To do so, we use cosine similarity to compare endowments’ long-term, steady-state, asset allocation weights (i.e., “policy portfolio”) as reported in the NACUBO surveys, before and after

changing SRI status. We find that an endowment's policy portfolios, before and after changing SRI status, are significantly less similar, as compared to an otherwise comparable endowment that did not change status. Together, this suggests that stated SRI policies reflect meaningful differences in investment practices and are not merely cheap talk.

Do endowment managers that invest in a socially responsible manner experience worse investment performance? While it is difficult to make definitive statements using only nine years of data, our available evidence suggests that universities pursuing greater social responsibility in their endowment do so at the expense of investment performance. SRI endowments have significantly higher management costs and return volatility; benchmark-adjusted returns are also lower, but insignificantly so (coef. = -0.53% per year; t -statistic = 0.55). Together, this evidence is consistent with SRI constraints resulting in mildly lower performance due to a narrower fund universe.² Interestingly, when we measure the net financial benefits of SRI policies using endowment asset growth – i.e., donations plus investment income – we find no significant relation between SRI and benchmark-adjusted asset growth. This is consistent with university endowments adopting the set of constraints necessary to produce an optimal contract with their stakeholders: universities facing greater stakeholder pressure to adopt SRI policies choose to constrain their endowment managers in anticipation of greater donations from socially conscious

² See, e.g., Geczy, Stambaugh, and Levin (2005) and Fitzgibbons, Pedersen, and Pomorski (2020). Cornell (2015) and Bessembinder (2016) conclude that endowments' divestments from fossil fuels are associated with a return shortfall of 0.31% per year and long-run divestment costs between 2-12% of an endowment's assets. Hong and Kacperczyk (2009) show that investing in "sin" stocks is profitable. For contrasting evidence see Kempf and Osthoff (2007), Statman and Glushkov (2009) and Edmans (2011), and Bansal, Wu and Yaron (2019).

donors, while other universities focus on investment performance and do not constrain their endowment managers.

Lastly, we find that SRI policies are associated with other benefits for the university. First, SRI endowments are more likely to employ sophisticated risk management methods, including risk limits and guidelines, stress tests, and/or scenario analysis. This suggests that endowment managers enhance their risk management practices in anticipation of SRI-related compliance costs and/or greater return volatility. Second, SRI policies result in greater student applications among smaller universities, consistent with universities pursuing SRI policies as a branding strategy to attract students in the competitive academic marketplace. Third, after an endowment adopts an SRI policy, university faculty are awarded higher amounts of National Science Foundation (NSF) funding, especially for research projects related to sustainability science, on the order of \$1.069 million per year. This suggests that SRI policy adoption reflects a broader effort by the university, including a greater emphasis on faculty research in sustainability science, to align itself with socially conscious donors. Finally, SRI endowments offer a higher level of support to their institutions, as their payout rates are higher than their non-SRI counterparts, even after we control for the degree to which an endowment supports its university budget. SRI adoption, therefore, appears to make endowment boards more generous.³

Existing evidence shows that investors direct more of their capital to mutual funds with SRI objectives and/or ranked highly on sustainability issues (Bialkowski and Starks,

³ Brown et al. (2014) find that endowments engage in “endowment hoarding” whereby they actively reduce payouts following negative financial shocks.

2016; Hartzmark and Sussman, 2019) and willingly accept lower financial returns on so-called “impact investments” in venture firms (Barber, Morse, and Yasuda, 2021). We build on this work and show that university stakeholders also value social objectives as indicated by their greater donations to endowments that adopt SRI policies.⁴ To our knowledge, our paper is the first to show a relation between SRI and donations to universities.

Our paper also contributes to the literature on why firms engage in socially responsible investing. For example, Hart and Zingales (2017) argue that firms should align policies with the preferences of their investors. Consistent with this idea, we find that university endowments tend to adopt SRI policies when they face pressure from stakeholders to do so.

Starks, Venkat, and Zhu (2018) argue that preferences for responsible investing are stronger among longer-horizon investors.⁵ Since university trustees must safeguard equity among many generations of stakeholders (Tobin, 1974), our setting allows us to focus on the SRI preferences of longer-horizon investors. As we show, SRI policies are associated with higher donations and other benefits, such as enhanced risk management practices, federal research funding for sustainability science, and student applications, that could produce university and societal benefits over a longer-term.

Prior work considers endowments as integrated parts of universities’ overall objectives. Merton (1993) argues non-endowment income, like donations, are implicit investments in traded assets that could impact the endowment’s investment policy; for

⁴ See, also, Pástor, Stambaugh and Taylor (2020), Geczy et al. (2020), Liang, Sun, and Teo (2020), Riedl and Smeets (2017), Bauer, Ruof, and Smeets (2019), Døskeland and Pedersen (2016).

⁵ See, e.g., Bénabou and Tirole (2010), Starks, Venkat, and Zhu (2018), Albuquerque, Koskinen, and Zhang (2019), and Ferrell, Liang and Renneboog (2016). Other related studies include Baron (2008) and Eccles, Ioannou, and Serafeim (2014).

example, if donations are positively related to stock market performance, then the endowment should allocate less of its portfolio to (and possibly short) equity securities. Interestingly, we find that endowments allocate less (not more) to the oil and vice sectors when universities are likely to have more socially conscious donors and, hence, have a lower implicit investment in such sectors. Gilbert and Hrdlicka (2015) show that, when donations are risky, a university has an incentive to hold endowments as a precautionary savings buffer to support and expand its capital stock which produces “social dividends.” We highlight a potential feedback from endowment policy to a university’s donations and production of social dividends: by adopting SRI policies, an endowment promotes charitable giving, student applications, and research in sustainable science.⁶

2. Background

The investment policies of an endowment fund typically follow the recommendations of an investment committee serving in an advisory capacity to the university’s board of trustees. The committee’s decision to recommend SRI policies – loosely used in the context to include corporate social responsibility (CSR), environmental, social and governance (ESG), or impact investing – may depend on the university’s mission and tastes of the committee’s members, but also on stakeholder pressure to adopt such policies. Such pressure can arise from students, faculty, alumni, corporate recruiters, and other potential donors. By promising to adhere to responsible investment practices in its endowment, therefore, a university can align itself more closely with potential donors

⁶ Cejnek, Franz, and Stoughton (2017) study endowment spending and asset allocation policies when there is a feedback between donations and endowment performance. Earlier studies of endowments’ investment policies include Tobin (1974), Black (1976), and Constantinides (1993). Empirical studies include Brown et al. (2014), Dimmock (2012), and Brown, Garlappi, and Tiu (2010). Roth Tran (2019) argues that a foundation should increase its investment in objectionable firms to create a hedge around its social mission.

and secure an important nonendowment source of revenue.⁷ This consideration would be especially important for universities that depend more on donations to fund operations, and when donors are more likely to value socially responsible investment.

On the other hand, adopting SRI policies imposes restrictions on portfolio holdings, as certain investments with poor CSR/ESG records are excluded. This could result in a significantly higher portfolio return volatility due to diversification losses, greater management costs (e.g., Cornell, 2015; Bessembinder, 2016), and an inability to capitalize on information about stock fundamentals. For example, SRI policies likely prohibit investment in so-called “sin” stocks, which tend to outperform (Hong and Kacperczyk, 2009; Bolton and Kacperczyk, 2020). These costs are especially important for universities that depend more on endowment income to fund university operations. Therefore, we would expect SRI policies to be less common among universities deriving a larger proportion of their budget from endowment income.⁸ On balance, since SRI policies entail both benefits (in the form of donations) and costs (in the form adverse effects on performance), they may have no impact on a university’s overall funding, as measured by endowment asset growth (donations plus investment income). We view this outcome as being consistent with endowment funds adopting the set of investment constraints necessary to produce an optimal contract with their stakeholders.

⁷ See, e.g., “No divestment, no donations, some alums say,” Swarthmore Phoenix, April 9, 2015; “Stanford seniors say get out of fossil fuels or no donations,” San Jose Mercury News, February 18, 2016; and “NC State Built a ‘Responsible’ Fund That’s Outperforming Its Main Portfolio,” Bloomberg Markets, June 4, 2018.

⁸ It is conceivable that adopting SRI policies could yield some performance benefits. For example, investments with higher ESG scores could have lower risk (Hoepner et al., 2018; Jagannathan, Ravikumar, and Sammon, 2017).

Finally, the adoption of SRI policies could be associated with other benefits to the university. For example, endowment managers subject to policy constraints may be inclined to improve their risk management policies to ensure that they do not invest in certain sectors, or in anticipation of greater portfolio volatility resulting from lower diversification. SRI policies may also be part of a broader effort by the university to show its stakeholders, including students and faculty, that it is committed to a strong social mission. In this case, the adoption of SRI policies by a university's endowment could coincide with a greater number of student applications and a greater emphasis on faculty research in sustainability science.⁹

3. Data and summary statistics

In this section, we first describe the main databases used in our analysis. We then explain and summarize the constructed sample.

3.1. Databases

We use several databases in our analysis. First, the National Association of College and University Business Officers's (NACUBO) database of North American endowments and foundations contains information on the investment management activities of endowments and the universities these endowments serve. The data are self-reported and collected from annual surveys. To address survivorship bias, we include institutions that ceased participating in the survey (Brown, Goetzmann, Ibbotson, and Ross, 1992). We also use data in the year in which they are collected and do not backfill or re-write any

⁹ For example, the College Hopes & Worries Survey by Princeton Review find that, since 2008, over 60% of respondents said information about colleges' commitment to environmental issues would influence their application decisions, and that this percentage has an upward trend over our sample period.

observations. Our sample period runs from 2009 to 2017. It begins in 2009 when NACUBO began querying survey respondents about their responsible investment practices, in the “Social Investing Criteria” section of its questionnaire. We construct an indicator variable (*SRI*) that equals one if the endowment undertakes any activities related to SRI as indicated in the Social Investing Criteria section, and zero otherwise. However, our main results are similar when we use an alternative measure that accounts for the scope/intensity of socially responsible investing, rather than a dummy variable *SRI* indicating the presence of any SRI policy (see Table 9).¹⁰

Second, we use data from the MSCI ESG Stats Database to construct a state-level measure of the strength of corporate social responsibility (CSR Index), in the spirit of Lins, Servaes, and Tamayo (2017). To construct this index, we use information on firm-level CSR ratings along five CSR categories: community, diversity, employee relations, environmental, and human rights. For each firm-year-category, we divide the ratings score by the maximum rating score across firms and sum the scaled ratings scores over the five categories. The overall scaled score of a firm thus ranges from zero to five. We then compute the CSR index value of a state as the market capitalization-weighted overall scaled scores of firms within the state.

Third, we use donations data from The Chronicle of Philanthropy’s database of large charitable gifts of at least \$1 million (TCOP). The unit of observation is an individual gift and provides information on the gift’s date, dollar amount, and recipient, as well as the donor’s name, location, and source of wealth. The donor information allows us to identify

¹⁰ All variables are defined in Appendix A; Table A2 has further details on the construction of *SRI*.

donors that are plausibly more “socially-conscious,” e.g., whether the donor lives in a high CSR state or derives their wealth from industries other than oil or vice.¹¹

Fourth, we use the National Science Foundation (NSF) awards database to compute the dollar amount of research grants awarded to faculty at each university in our sample. We match the list of university names that receive at least one NSF award with the list of university names from NACUBO. For each organization, we aggregate the dollar amount of NSF awards by the calendar quarter of the award date, and compute award amounts separately depending on whether the award corresponds to a research proposal related to sustainability science or not. Appendix B provides a detailed description of these variables.

Fifth, we use returns on benchmark indexes to compute performance measures based on endowments’ stated asset class benchmarks or, policy portfolios. These indexes include the Russell 3000 as a benchmark for US equity, MSCI All Country World Index Ex-US for international equity, Barclays US Aggregate Bond Index for fixed income, Ncreif Property Index for real estate, Cambridge Associates US Venture Capital Index for venture capital, Cambridge Associates US Private Equity Index for private equity, Bloomberg commodity index for energy and natural resources, HFRI Fund of Funds Composite Index for hedge funds, and one-month Treasury bill rate for cash. These choices are standard and follow earlier endowment studies (e.g., Barber and Wang, 2013; Garlappi, Brown and Tiu, 2010). We use the Fama and French Oil industry index and the USA Mutuals Vitium Global Fund index of vice stocks to examine differences in endowments’

¹¹ An alternative donations database is the Voluntary Support of Education (VSE) dataset produced by the Council for Aid to Education (used by Brown, Dimmock and Weisbenner, 2015). We focus on the Chronicle of Philanthropy dataset because it includes information about the donor’s source of wealth.

exposure to the oil and vice sectors, and use the value-weighted return on all NYSE, AMEX, and NASDAQ stocks as an additional equity benchmark.

Finally, we search newspaper articles and university press releases in the Nexis Uni database to identify announcement dates corresponding to a university's decision to have its endowment divest from fossil fuels. Specifically, we search the Nexis Uni database using the following keywords: 1) "university" and "endowment" and "socially responsible"; 2) "university" and "endowment" and "ESG"; 3) "university" and "endowment" and "SRI"; 4) "university" and "endowment" and "divest". This search yields 5,548 articles, of which 445 articles relate to fossil fuel divestment. We also obtain data on student applications from the Integrated Postsecondary Education System (IPEDS). These data are used to analyze the impact of SRI policies on student recruitment to the university affiliated with an endowment. Finally, we ascertain a university's religious affiliation from its website.

3.2. Validation exercise and summary statistics

To help validate *SRI* as a measure of socially responsible investing among endowments, we check whether changes in an endowment's *SRI* value coincides with actual press releases by the university of an increase in socially responsible investing. During our 2009-2017 sample period, fossil fuel divestment is the most popular issue related to socially responsible investment by university endowment funds. Therefore, if the NACUBO-based *SRI* is a relevant measure of socially responsible investing, then it should correlate with university announcements related to the divestment from fossil fuels. Panel B of Figure 1 plots the change in the number of endowments with *SRI* values of one (dashed line) and the number of divestment announcements collected from our news search

database (solid line). The sample correlation is 40%, and both graphs show a spike between 2013 and 2014 – a period of high-profile divestment announcements by Rockefeller Brothers Fund and Stanford University.¹² We conclude that *SRI* is a relevant measure of socially responsible investing by endowment funds over our sample period.

Table 1 reports summary statistics of key variables for the full sample and subsamples based on *SRI*. The unit of observation is fund-year. *SRI* has a sample mean of 38% and is positively related to *Stakeholder pressure*. The average number of stakeholder groups pressuring for SRI policies is 1.09 higher for SRI funds compared to other funds (*t*-statistic = 9.65). The sample mean of *Donation contribution* is 3.56% and higher among SRI funds. Specifically, donations represent a 0.56% higher percentage of university budgets compared to non-SRI funds (*t*-statistic = 2.49). These univariate relations provide initial evidence that SRI policies are common among universities that are donation-dependent and face greater stakeholder pressure to adopt such policies.

4. Analysis and results

We now present our main analysis on the determinants of SRI policies and whether such policies affect university donations and endowment performance. We also examine whether SRI policies are related to other benefits for the university.

4.1. Which endowments adopt SRI policies?

We estimate marginal effects from logistic regressions where the dependent variable is the value of *SRI* for fund *i* in year *y*. The key independent variables are measured

¹² See, e.g., “Stanford’s Divestment From Coal Could Be a Game-Changer,” May 7, 2014, *The Chronicle of Higher Education*.

at the end of year $y-1$ and include *Stakeholder pressure*, *CSR index*, and *Religious affiliation dummy*, *Donations contribution*, and *Budget contribution*. The first three variables measure the extent to which the university's stakeholders have social objectives; the last two capture the university's dependence on donations and investment income to fund operations. Results are reported for the full sample period (Column 1) and the 2014-2017 subperiod (Columns 2 and 3) where we have data on *Stakeholder pressure*.¹³ Each specification includes lagged values of the natural logarithm of total endowment assets and additional control variables (not tabulated), including *Allocation to U.S. Equity*, *Allocation to Alternatives*, *Spending rate*, *FTE staff*, *Log (FTE students)*, *Total costs*, *Raw return*, *Public school dummy*, and fixed effects for Carnegie classification, state partisan composition, and year.

The results are reported in Table 2. SRI policies are more common among universities that face greater pressure from stakeholders (e.g., student, faculty, alumni) to adopt such policies, are church-affiliated (as in Smith and Smith, 2016), and located in high-CSR environments. In terms of magnitudes, the coefficient on *Stakeholder pressure* is the largest: an increase in the pressure variable by a standard deviation increases the probability of SRI policy adoption by 11.92%. Note that the positive and significant relation between *SRI* and *CSR index* goes beyond the political inclination of the state because we control for state partisan effects.¹⁴ We also find a significantly positive relation between SRI policy adoption and donation-dependence; a one standard deviation increase

¹³ The variable *Stakeholder pressure* is only available in the second half of our sample when NACUBO began collecting responses from endowments on their interactions with university stakeholders.

¹⁴ State partisan composition variables are dummy variables for whether the state is Democratic, Republican, or Split/Nonpartisan. As expected, we find that SRI is more likely among universities in Democratic states and less likely in Republican states. Empirical evidence linking corporate social responsibility and the local environment is also reported by Liang and Renneboog (2017).

in *Donation contribution* is associated with a 2-3% higher likelihood of *SRI*. The negative coefficient on *Budget contribution* indicates that universities relying less on investment income are more likely to adopt *SRI* policies; however, the estimate is not significant. Overall, the evidence supports our univariate findings from Table 1 that universities adopt *SRI* policies to align with the interests of their stakeholders, and when universities depend more on donations (and less on investment income) to fund operations.¹⁵

4.2. Do *SRI* policies impact university donations?

We implement two tests to study whether *SRI* policies impact charitable donations. First, we run the following pooled regression of donations:

$$Donations_{i,y} = \alpha + \beta \times SRI_{i,y-1} + Controls + \varepsilon_{i,y} \quad (1)$$

where *Donations* is the natural logarithm of the donations received by the university, scaled by total endowment assets (in basis points). The unit of observation is endowment-year and standard errors are clustered at the year level. Control variables include lagged values of *Raw return*, *Volatility*, *Allocation to U.S. Equity*, *Allocation to Alternatives*, *Spending rate*, *Budget contribution*, *Donation contribution*, *FTE Staff*, *Log (FTE students)*, and *Religious affiliation dummy*, and fixed effects for public school, Carnegie classification, year, and state. A finding that $\beta > 0$ would indicate that endowments adopting *SRI* policies are associated with greater subsequent donations received by the university.

Table 3 presents the regression results. Our simple regression results in Column (1) show a positive and significant coefficient on *SRI* (coef. = 0.222; *t*-statistic = 2.57). This

¹⁵ We also checked whether *SRI* policies are more common among universities that change their president over our sample period and did not find a significant relation (not tabulated).

means that the donations variable (dollar donations scaled by endowment assets) is about 20-25% larger among universities that implement SRI policies in their endowments as compared to non-SRI universities. Column (2) shows that this relation survives after including the control variables (coef. = 0.127; t -statistic = 2.43). The remaining columns show the results from splitting *Donations* by donor type. We expect the positive relation between *SRI* and charitable giving to be mainly driven by donors that source their wealth outside the oil and vice industries and donors that live in states ranking highly on CSR, because those donors are plausibly more interested in responsible investing. This is exactly what we find. SRI predicts significantly greater gifts from non-oil-and-vice donors (coef. = 0.115; t -statistic = 2.63) and High CSR donors (coef. = 0.115; t -statistic = 2.05); in contrast, no significant relation is found between SRI and charitable giving from oil and vice donors or Low CSR donors. Overall, our evidence shows that SRI policies attract charitable donations to the university (i.e., $\beta > 0$), especially from donors that care more about responsible investing.

Our second test is an event study of donations around changes in endowments' SRI policies. The event is defined as the first year that an endowment fund's *SRI* variable changes from zero to one (event year $T=0$). There are 145 such events in our sample. For each treatment fund, we identify five control funds by matching on total assets, spending rate, budget contribution, and donations at $T-2$. We calculate the sample mean of annual donations during the pre-event window ($T-4$ to $T-2$) and the event window ($T-1$ to $T+4$). Our event window captures the possibility that donations following the endowment's pledge to become SRI arrive slowly over a longer period. The outcome variable is donations as a percentage of endowment assets.

Table 4 shows the event study results. Funds adopting SRI policies (treatment) attract 0.64% per year higher donations (t -statistic = 2.32) over the period covering one year before and four years after the policy change. During the pre-event window, no significant difference in donations is found (coef. = -0.09% ; t -statistic = -0.36). The difference-in-differences, 0.73% per year, is significant at the 10% level (t -statistic = 1.91). The next set of columns show the results by donor type. The effects are driven by donations from non-oil-and-vice donors and donors that live in High CSR states.¹⁶ We trace out the response of donations to policy adoption in Figure 2. Cumulative abnormal donations are insignificant and nearly zero during the pre-event window, turn positive on the event year ($T=0$), and are 6% of endowment assets and significant by the end of the event window ($T=4$). The final two columns of Table 4 show results from a final split based on university locale. SRI policy adoption results in significantly higher donations for High CSR universities (coef. = 0.82% ; t -statistic = 2.12), but not for the Low CSR group. This indicates that universities are rewarded more (in terms of more charitable giving) for SRI when nearby firms rank highly on corporate social responsibility. Overall, the evidence corroborates our regression results in Table 3 indicating that the adoption of SRI policies attracts donations to the university, especially from socially conscious donors.

4.3. Socially responsible investments and asset class exposures

Do endowments that profess greater social responsibility allocate less of their capital to investments with low social responsibility scores, or are stated SRI policies just cheap talk? While detailed holdings data are not available for endowments, we use an

¹⁶ For the subsample of donations from oil and vice donors, we match based on mean values from $T-4$ to $T-2$ (not just at $T-2$) to identify a sufficiently large number of control funds.

endowment's portfolio returns to estimate its exposures to broad asset classes, including two indices representative of industries viewed as the antithesis of social responsibility.¹⁷

We estimate the following regression of quarterly endowment returns:

$$R_{i,q} = \alpha_i + \beta_{i,q-1}^{OIL} \times ROIL_q + \beta_{i,q-1}^{VICE} \times RVICE_q + \beta_{i,q-1}^{MKT} \times RMKT_q + \varepsilon_{i,q}, \quad (2a)$$

$$\beta_{i,q-1}^j = \beta_0^j + \beta_1^j \times SRI_{i,q-1}, \quad j \in \{OIL, VICE, MKT\} \quad (2b)$$

where $R_{i,q}$ is the excess return of endowment i during quarter q , α_i denote endowment fixed effects, and $ROIL$, $RVICE$, and $RMKT$ are the excess returns on the Fama and French Oil industry index, USA Mutuals Vitium Global Fund index of vice stocks,¹⁸ and the Fama and French equity market portfolio, respectively. Excess returns are raw returns minus the 30-day U.S. Treasury Bill yield. Equation (2b) allows for an endowment's factor betas to depend on its SRI policy. A finding $\beta_1^{OIL} < 0$ and $\beta_1^{VICE} < 0$ would indicate that SRI policies are associated with lower exposures to oil and vice industries. We include $RMKT$ to control for time variation in the weight of oil and vice assets in the market portfolio.¹⁹ The estimation period starts in 2012 (rather than 2009) because quarterly endowment returns are only available starting in 2012.

Panel A of Table 5 shows that the coefficients on both interaction terms are negative and significant. For example, according to Column (4), the oil beta of SRI endowments is 0.013 lower, representing a roughly 50% reduction from the oil exposure of non-SRI funds. Adding market controls renders the difference in vice exposure insignificant, but the

¹⁷ Endowments are generally not required to publicly disclose their portfolio holdings and very few file Form 13F with the SEC. Our returns-based approach is in the same spirit of Sharpe style analysis to infer asset allocation from factor exposures.

¹⁸ We have experimented with other Oil and Vice indices and the results are similar.

¹⁹ We thank Christopher Hrdlicka for this suggestion.

significantly lower oil exposure among SRI funds remains. Overall, the results indicate that stated SRI policies are not purely empty talk; SRI endowments tend to allocate less capital to the oil sector.

Another approach is to look for changes in the endowment's stated portfolio weights, before and after they adopt SRI policies. For example, an SRI endowment may shift more of its capital from public to private equity (PE) if PE is viewed as a "cleaner" asset class (see, e.g., Bellon, 2020). To test, we return to our event-study setting and focus on the 145 endowments that switch from non-SRI to SRI status. We measure the change in asset allocation as the cosine similarity between the vector of policy portfolio weights at pre-event time T-2 (before the switch) and each year during the event window. We match each treatment endowment with five control endowments that do not switch, have similar asset allocation at time T-2, and similar pre-event window cosine similarity. We then take a differences-in-differences approach and compare the pre/post-switch cosine similarity of SRI endowments with that of the control set.

The results are presented in Panel B of Table 5. The pre-event window numbers are averages of the two cosine similarity values from comparing the policy portfolio weights at T-2 with those in years T-3 and T-4; the event window numbers are averages of the six cosine similarity values from comparing the policy portfolio weights at T-2 with those in years T-1 through T+4. We find that changes in asset allocation (measured by a lower event window cosine similarity) are greater among treatment funds, especially those located in high CSR states. This is consistent with endowments taking meaningful steps to align with recently adopted SRI policies. While it is possible that endowments are changing

their allocation to obfuscate non-SRI activities, this is unlikely given our findings from Panel A that SRI endowments have a lower portfolio exposure to oil and vice sectors.

4.4. Do SRI policies predict worse investment performance?

We examine whether SRI policies are associated with adverse portfolio performance using the following regression:

$$Performance_{i,y} = \alpha + \beta \times SRI_{i,y-1} + Controls + \varepsilon_{i,y}, \quad (3)$$

where $Performance_{i,y}$ is a measure of endowment i 's performance over year y , and is based on either management costs, portfolio returns, or asset growth. Each estimation is a pooled regression using fund-year observations. Control variables include lagged values *Raw return*, *Spending rate*, *Budget contribution*, *FTE staff*, *Log (FTE students)*, and *Religious affiliation dummy*. *Public school dummy*, *Carnegie classification dummy*, year fixed effects, and state fixed effects. Some specifications also include *RMKT* and its interaction with lagged *SRI* as additional controls.

Columns (1)-(3) of Table 6 show results that are consistent with Riedl and Smeets' (2017) finding that socially responsible investors pay higher management fees. Column (1) indicates that SRI endowments have 7.742 basis points per year higher costs than non-SRI endowments (t -statistic = 4.12). Columns (2) and (3) show that this result is driven by the component of total management costs related to management fees paid to external fund managers (coef. = 9.037; t -statistic = 7.85); in contrast, *SRI* is not associated with other cost components (e.g., staff fees, consulting fees). The higher costs of SRI endowments are consistent with investment managers undertaking a degree of active management to maintain compliance with policy goals (e.g., Cornell, 2015; Bessembinder, 2016).

We now examine three performance measures based on portfolio returns: *Volatility* is the return volatility of the fund’s policy portfolio (using current portfolio weights and the long-term covariance matrix for asset class returns); *Return* is the endowment’s raw return; and *Adjusted return* is the endowment’s raw return after adjusting for the fund’s policy portfolio and its exposure to oil and vice factors. We adjust for oil and vice exposures using a two-stage process. First, we estimate time-series regressions of endowment fund returns on oil and vice factors as in Eq. (2) *for each fund* (rather than a single pooled estimation using all funds) and using *annual* (rather than quarterly) fund returns.²⁰ This allows us to estimate fund-level exposures to oil and vice indexes. Second, we define *Adjusted return* as the endowment’s raw return minus its 1) policy portfolio return and 2) oil and vice factor return using its estimated oil and vice betas (i.e., $\beta_{i,y-1}^{OIL} \times ROIL_y + \beta_{i,y-1}^{VICE} \times RVICE_y$). Fund returns are net of management costs. The unit of observation is fund-year and standard errors are clustered by year.

The results are presented in Columns (4)-(8) of Table 6. SRI endowments are associated with higher return volatility of about 10 basis points per year (t -statistic = 4.22), suggesting that SRI policies constrain the endowment’s investment opportunity set and result in a loss of diversification benefits. SRI polices predict higher annual returns on an unadjusted basis (coef. = 0.079%), but lower returns after adjusting returns for oil and vice and policy portfolio return benchmarks (coef. = -0.525%). The difference is due to SRI funds having a lower exposure to oil (Table 5) during a period of falling oil prices; hence, adjusting for a lower exposure to the oil sector makes SRI endowments look worse

²⁰ We exclude $RMKT_q$ and its interaction with $SRI_{i,q-1}$ from these fund-level regressions to preserve degrees of freedom, but include these variables in the pooled regressions of Eq. (3).

compared to peers.²¹ While we cannot draw strong conclusions given our short sample period and the insignificant difference in adjusted returns (t -statistic = -0.55), our evidence is more consistent with SRI policies imposing a drag on investment performance.

Universities that adopt SRI policies attract more donations (Tables 3 and 4) but their endowments do not experience better performance and appear to do worse (Table 6). Therefore, to gauge the net financial benefits from adopting SRI policies, we use endowment asset growth (donations plus investment returns), both raw and adjusted for risk. Adjusted asset growth is calculated using a two-step procedure following our calculation of adjusted returns. First, we estimate fund-level time-series regressions for each fund using Eq. (2) where the dependent variable is annual asset growth (not return). This allows us to estimate fund-level factor exposures of endowment asset growth to oil and vice indexes. Second, we calculate adjusted asset growth as raw asset growth minus its oil and vice factor-based growth (estimated from its oil and vice betas). The unit of observation is fund-year.

The results are presented in Table 6. Column (7) shows that SRI policies predict significantly higher asset growth of 24.217 basis points per year (t -statistic = 1.81). However, as apparent from Column (8), this result is sharply reversed after we control for oil and vice exposures. We do not find a significant relation between SRI and adjusted asset growth; if anything, SRI endowments decline in size by 18.157 basis points (t -statistic = -0.35). The absence of discernible differences in net benefits (as measured by asset growth) is not surprising if SRI policy adoption reflects the equilibrium outcome of an

²¹ It is unlikely that the lower exposure to oil and vice of SRI funds is due to managers' ability to anticipate the dramatic oil price decline given the lack of market timing ability among endowment managers (Brown, Garlappi, and Tiu, 2010) and our evidence that SRI policies are mainly driven by stakeholder pressure.

optimal contracting problem. Given that SRI policies entail both benefits and costs, such policies are more appropriate for universities that depend more on donations and where social responsibility matters more for its stakeholders.

4.5. Are SRI policies associated with other university benefits?

We now examine whether SRI policy adoption by university endowments is associated with other benefits to the university.

4.5.1. Risk management practices

One potential benefit associated with SRI policies is a greater use of risk management techniques by endowment managers, to help comply with SRI policies that exclude certain portfolio investments and to deal with greater volatility resulting from a less diversified portfolio. SRI policies may also reflect greater risk aversion of endowment managers and, hence, desire for better risk management procedures.²² We examine this using pooled logistic regressions where the dependent variable is *Risk management practices* – an indicator variable equal to one if the endowment employs either risk limits and guidelines, stress tests, or scenario tests. The key independent variable is an endowment's *SRI* at the end of the prior year. The unit of observation is fund-year. Column (1) of Table 7 shows that *SRI* indeed predicts a 3.82% greater likelihood of risk management practices, and this result is significant (p -value less than 0.01).

We also use our event study approach to compare *Risk management practices* before and after an endowment adopts SRI policies. Panel A of Table 8 shows that funds

²² Hoepner et al. (2018) argue that reducing the risks related to ESG factors (such as the Deepwater Horizon oil spill) is a major driver of shareholder engagement with firms on ESG issues.

adopting SRI policies are more likely to employ risk limits or stress tests as compared to a matched sample of non-adopters with similar *Total assets* and *Volatility*. Column (1) shows that *Risk management practices* during the event period has a higher mean among treatment endowments as compared to the control group (84.5% vs. 76.4%, t -statistic = 4.36). In contrast, before adoption, *Risk management practices* is not significantly different across groups. Difference-in-differences are also significant (coef. = 8.10%; t -statistic = 1.67). The effects are strongest among universities located in High CSR states, where managers are more likely to comply with SRI policies due to greater scrutiny by university stakeholders and/or a stronger personal support for SRI policies.²³

4.5.2. NSF research funding

An endowment's adoption of SRI policies may be part of a broader push by the university to achieve social objectives. These efforts may include a greater focus on sustainable science, resulting in greater research funding in support of these objectives. To test this hypothesis, we run regressions in which the dependent variable is the annual amount of NSF research grants awarded to university faculty. The estimation is a pooled regression using fund-year observations. The results are reported in Columns (2)-(4) of Table 7. SRI policies predict higher NSF grant awards of \$1 million per year (t -statistic = 2.10), or, 22% of the sample mean. When we split awards based on research type, we see that *SRI* is associated with 27% (=0.30/1.11) increase of the sample mean for sustainability awards versus a 21% (=0.70/3.36) increase for other awards. Our results are similar when

²³ See Baldauf, Garlappi, and Yannelis (2020) for evidence that people with different beliefs about climate change sort into different neighborhoods.

we use number of awards (instead of dollars) or number of principal investigators as our dependent variable.

Panel B of Table 8 shows the results from our event study of new adopters of SRI policies. Columns (1)-(3) show that the adoption of SRI policies result in significantly higher NSF grant awards over the event window compared to control schools, in the amount of \$2.047 million per year for all awards, and \$1.422 million for sustainability science awards. The difference-in-difference estimate is significant for sustainability awards (coef. = \$1.069 million; t -statistic = 2.06), but not for others. The remaining results are based on whether the university is in a high or low CSR state. The positive relation between SRI policies and research funding is only significant for sustainability science awards and schools in high CSR states.

4.5.3. *Student applications*

Universities may use SRI policies as a “branding investment” to enhance the school’s position in the competitive marketplace for student recruitment (Smith and Smith, 2016). Therefore, we hypothesize that *SRI* predicts greater student applications. Column (5) of Table 7 shows pooled regression results where the dependent variable is the number of student applications (in thousands) per year. We find that *SRI* is associated with 463 more applications over the next year (t -statistic = 1.93). We further split the sample based on whether endowments are in the bottom (Small) or top (Large) terciles of assets as larger endowments are likely to represent elite schools where student demand is less affected by marketing strategies. Consistent with this view, the results in Columns (6) and (7) show that the relation between *SRI* and applications is significant only for small endowments.

Panel B of Table 8 shows event study results for the small endowment sample. Our difference-in-differences estimate for the full event window is positive, but insignificant. However, student applications may react to university changes with a delay as evidenced by prior studies linking athletic events with student applications (e.g., Clotfelter, 2019). The lag can be substantial; prior studies of the link between athletic performance and applications uses lags up to ten years.²⁴ We therefore split our event period into narrower windows that focus more on the latter part of the event period. Consistent with a delayed response of student interest to SRI policy change, student applications of treatment universities grow monotonically over event time. For example, over the two to four years following SRI policy adoption, the difference-in-differences in average student applications is 2,652 applications per year (t -statistic = 1.86). Overall, this evidence gives some support to the idea that SRI policies can promote a competitive advantage in attracting students, at least for universities with small endowments.

4.5.4. Payout rates

As we documented that adopting SRI policies results in attracting more student applications, in this section we investigate whether the endowment increases the relative size of its support for the university and incoming students in the form of a higher payout rate. Panel A of Table 9 presents the results of a regression analysis in which an endowment's payout rate during year $y+1$ is regressed on an indicator variable that equals one if the endowment reports having an SRI policy at year y . We find that the average SRI endowment pays, *ceteris paribus*, 8.5 basis points more of their assets under management

²⁴ See, for example, the seminal paper of McCormick and Tinsley (1987) and the subsequent analyses of Bremmer and Kesselring (1993), Tucker and Amato (1993) or Mixon (1995).

to their affiliated institutions (t -statistic = 2.51). Importantly, this result continues to hold even after we control for the endowment's budget contribution.

The results of Panel A are corroborated by the event study results in Panel B of Table 9. We match endowments based on size and payout rates and analyze differences in payout ratios between the treatment and control samples, pre and post adoption of SRI policies. The payout difference is insignificant in the pre-event window; if anything, treated endowments pay 8.26 basis points *less* on average than control endowments. In the post event window, however, the endowments that adopted SRI policies paid 13.04 basis points more than those without such policies (t -statistic = 1.98). The difference-in-differences is 21.30 and statistically significant (t -statistic = 2.17). This suggests that endowments that adopt SRI policies increase the level of support they offer to their institutions, relative to the size of their assets.

5. Robustness checks

In this section, we perform a variety of robustness tests to ascertain the strength of our main results.

5.1. Alternative measure of SRI

A potential concern is that *SRI* only captures whether the endowment adopts policies related to socially responsible investing or not, rather than the scope or intensity of such policies. To address this, we repeat our main regression analyses using an alternative SRI measure (*SRI**) that counts the number of responsible investment practices adopted by the endowment. These practices are either 1) whether to exclude or screen out

investments to better align the endowment's portfolio with the institution's mission (screening); 2) whether to vote proxies consistent with responsible investing criteria (engaging), and/or 3) whether to include investments that rank higher on environmental, social, and governance (ESG) criteria and further the institution's mission (impact investing).²⁵ Panel A of Table 10 shows that the pairwise correlation between SRI^* and SRI is 0.87; however, whereas SRI is a dummy variable that equals one if the endowment adopts any of the three responsible investing practices, SRI^* ranges from zero to three and is a measure of SRI intensity and scope.

Panel B2 of Table 10 shows the results from a linear regression of SRI^* on university characteristics. We find that stakeholder pressure to adopt SRI policies and financial dependence on donations are positively related to SRI^* . For example, an increase in *Stakeholder pressure* of one standard deviation is associated with a 0.22 increase in SRI^* , or, about a quarter of one standard deviation. This evidence confirms our Table 2 findings from logistic regressions of SRI .

Panel C2 of Table 10 shows the results from the donations regressions in Table 3 after replacing SRI with SRI^* . We see that the scope and intensity of an endowment's SRI policies are positive predictors of donations, and especially among donors that source their wealth from outside oil and vice industries, and donors that live in states that rank highly on corporate social responsibility. These findings confirm our Table 3 results that endowments adopting *any* such policy garner higher donations.²⁶

²⁵ The construction of the SRI^* measure, specifically how the practices 1-3 are reflected in the NACUBO survey questions between 2009 and 2017, is detailed in Appendix A.

²⁶ The event study analysis of Tables 4 and 8 using SRI is equivalent to one using a similar treatment based on SRI^* because $SRI^* > 0$ if and only if $SRI > 0$.

Finally, Panels D-F of Table 10 show the results from regressions in Tables 5, 6, and 7 with *SRI** instead of *SRI*. The evidence, again, shows that SRI policies are 1) negatively related to the endowment's portfolio exposure to oil and vice asset classes; 2) positively related to the endowment's management costs and portfolio volatility, but negatively related to adjusted returns and adjusted asset growth; and 3) positively related to the sophistication of the endowment's risk management program, NSF research grant awards, and student applications. The main difference from our main results using *SRI* are that the negative relation between SRI policies and adjusted asset growth is significant while the positive relation with student applications is not. On balance, however, the results from using *SRI** support our main findings using *SRI* on the determinants of SRI policies and the relation between such policies and donations, endowment performance, and other benefits for the university.

5.2. Using NACUBO data on donations

Our main donations variable is based on The Chronicle of Philanthropy's database on large gifts (greater than \$1 million) received by the university. These data allow us to identify donor characteristics (e.g., source of wealth, where donor lives) that we utilize in our analyses. However, endowments report aggregate donations (both small and large gifts) that they receive each year to the NACUBO database, but without identifying information about the donors. As shown in Panel A of Table 10, the pairwise correlation between the two donations variables is 0.27. For robustness, therefore, we repeat our All donations regression (Column (2) of Table 3) using the NACUBO donations variable. The results are reported in Panel C1 and show that both *SRI* and *SRI** are significant predictors of higher donations in the subsequent year. The coefficient on *SRI* is close to that in Table

3 (0.107 vs. 0.127), and the coefficient on *SRI** is more significant compared to that in the adjacent column using TCOP data (*t*-statistic equals 3.19 vs. 1.73). Overall, our finding that SRI predicts greater donations is robust to both an alternative source of donations data and an alternative measure of SRI.

5.3. SRI determinants: cross-sectional regressions

We repeat our analysis on the determinants of SRI policies using a cross-sectional regression that uses just one observation per endowment, rather than a panel of endowment-year observations. This is to address concerns that some of our explanatory variables, like religious affiliation, do not vary over time or are highly persistent. We obtain a single observation of each variable for an endowment by taking its average across yearly observations. The results are reported in Panel B1 of Table 10 and confirm our Table 2 results that SRI policies are more likely among universities face more pressure from stakeholders to adopt such policies, and universities that depend more on donations.

6. Concluding remarks

We find a growing and persistent trend of SRI policy adoption among university endowment funds over 2009-2017. SRI policies are more common among universities that face greater pressure from university stakeholders to incorporate SRI practices, rely more on donations to fund operations, and are in geographical areas with greater corporate social responsibility. In turn, SRI policies are associated with significantly higher charitable donations to the university, especially from donors that derive their wealth outside oil and vice industries and, therefore, donors that plausibly derive higher utility from socially responsible and sustainable investment. We also find that stated SRI policies are not merely

cheap talk but reflect meaningful differences in asset allocation decisions. Consequently, these policies predict greater management costs and return volatility, and are not significant drivers of overall endowment growth (donations plus investment income).

Our evidence supports the view that universities face diverse groups of stakeholders, and therefore different universities serve society best by adopting different objectives. Universities facing pressure to adopt SRI policies can realize substantial benefits (in the form of donations) from doing so, and such nonendowment revenues act as a compensating differential for SRI-related drags on endowment performance. In contrast, universities that do not have as strong of a social mission and rely less on donations face a smaller reward and greater opportunity cost from imposing investment constraints on endowment managers. Whether the other benefits of SRI policies that we document – risk management improvements, faculty research support, and student interest – translate into long-term economic benefits for the university is an interesting topic for future work.

References

Albuquerque, Rui, Yrjo Koskinen, and Chendi Zhang, 2019, Corporate social responsibility and firm risk: Theory and empirical evidence, *Management Science* 65, 4451 – 4469.

Baldauf, Markus, Lorenzo Garlappi, and Constantine Yannelis, 2020, Does climate change affect real estate prices? Only if you believe in it, *Review of Financial Studies* 33, 1256-1295.

Bansal, Ravi, Di Andrew Wu, and Amir Yaron, 2019, Is socially responsible investing a luxury good?, *working paper* Available at SSRN: <https://ssrn.com/abstract=3259209>.

Barber, Brad M., Adair Morse, and Ayako Yasuda, 2021, Impact investing, *Journal of Financial Economics* 139, 162-185.

Barber, Brad M., and G. Wang, 2013, Do (some) university endowments earn alpha?, *Financial Analysts Journal* 69, 26-44.

Baron, David P., 2008, Managerial contracting and corporate social responsibility, *Journal of Public Economics* 92, 268-288.

Bauer, Rob, Tobias Ruof, and Paul Smeets, 2019, Get real! Individuals prefer more sustainable investments, *working paper* Available at SSRN: <https://ssrn.com/abstract=3287430>.

Bellon, Aymeric, 2020, Does private equity ownership make firms cleaner? The role of environmental liability risks, *working paper* Available at SSRN: <https://ssrn.com/abstract=3604360>.

Bénabou, Roland, and Jean Tirole, 2010, Individual and corporate social responsibility, *Economica* 77, 1-19.

Bessembinder, Hendrik, 2016, Frictional costs of fossil fuel divestment, *working paper* Available at SSRN: <https://ssrn.com/abstract=2789878>.

Bettencourt, Luís MA, and Jasleen Kaur, 2011, Evolution and structure of sustainability science, *Proceedings of the National Academy of Sciences* 108, 19540 – 19545.

Bialkowski, Jędrzej, and Laura T. Starks, 2016, Sri funds: Investor demand, exogenous shocks and ESG profiles, *working paper* UC Research Repository.

Black, Fischer, 1976, The investment policy spectrum: individuals, endowment funds and pension funds, *Financial Analysts Journal* 32, 23-31.

Bolton, Patrick, and Marcin T. Kacperczyk, 2020, Carbon premium around the world, *working paper* Available at SSRN: <https://ssrn.com/abstract=3550233>.

- Bremmer, Dale S., and Randall G. Kesselring, 1993, The advertising effect of university athletic success: A reappraisal of the evidence, *Quarterly Review of Economics and Finance* 33, 409-21.
- Brown, Jeffrey R., Stephen G. Dimmock, Jun-Koo Kang, and Scott J. Weisbenner, 2014, How university endowments respond to financial market shocks: Evidence and implications, *American Economic Review* 104, 931-62.
- Brown, Jeffrey R., Stephen G. Dimmock, and Scott J. Weisbenner, 2015, The supply of and demand for charitable donations to higher education, in *How the Financial Crisis and Great Recession Affected Higher Education* (J. Brown and C. Hoxby, eds.), Cambridge, MA; NBER.
- Brown, Keith C., Lorenzo Garlappi, and Cristian I. Tiu, 2010, Asset allocation and portfolio performance: Evidence from university endowment funds, *Journal of Financial Markets* 13, 268-294.
- Brown, Stephen J., William Goetzmann, Roger G. Ibbotson, and Stephen A. Ross, 1992, Survivorship bias in performance studies, *The Review of Financial Studies* 5, 553-580.
- Cejnek, George., Richard Franz, and Neal Stoughton, 2017, An integrated model of university endowments, *working paper* Available at SSRN: <https://ssrn.com/abstract=2348048>.
- Clotfelter, Charles T., 2019, *Big-time sports in American universities*, Cambridge University Press.
- Constantinides, George, 1993, Comment on: Optimal investment strategies for university endowment funds, *Studies of Supply and Demand in Higher Education*, Edited by Charles T. Clotfelter and Michael Rothschild, University of Chicago Press, Chicago, IL.
- Cornell, Bradford, 2015, The divestment penalty: Estimating the costs of fossil fuel divestment to select university endowments, *working paper* Available at SSRN: <https://ssrn.com/abstract=2655603>.
- Dimmock, Stephen G, 2012, Background risk and university endowment funds, *Review of economics and statistics* 94, 789-799.
- Døskeland, Trond, and Lars J. T. Pedersen, 2016, Investing with brain or heart? A field experiment on responsible investment, *Management Science* 62, 1632-1644.
- Eccles, Robert G., Ioannis Ioannou, and George Serafeim, 2014, The impact of corporate sustainability on organizational processes and performance, *Management Science* 60, 2835-2857.
- Edmans, Alex, 2011, Does the stock market fully value intangibles? Employee satisfaction and equity prices, *Journal of Financial Economics* 101, 621-640.

Ferrell, Allen, Hao Liang, and Luc Renneboog, 2016, Socially responsible firms, *Journal of financial economics* 122, 585-606.

Geczy, Christopher, Robert F. Stambaugh, and David Levin, 2005, Investing in socially responsible mutual funds, *working paper* Available at SSRN: <https://ssrn.com/abstract=416380>.

Geczy, Christopher, Jessica Jeffers, David K. Musto, and Anne M. Tucker, 2020, Contracts with (Social) Benefits: The Implementation of Impact Investing., *Journal of Financial Economics*, forthcoming.

Gilbert, Thomas and Christopher Hrdlicka, 2015, Why are university endowments large and risky?, *The Review of Financial Studies* 28, 2643–2686.

Hart, Oliver and Luigi Zingales, 2017, Companies should maximize shareholder welfare not market value, *working paper* Available at SSRN: <https://ssrn.com/abstract=3004794>.

Hartzmark, Samuel M., and Abigail B. Sussman, 2019, Do investors value sustainability? A natural experiment examining ranking and fund flows, *The Journal of Finance* 74, 2789 – 2837.

Hoepner, Andreas G., Ioannis Oikonomou, Zacharias Sautner, Laura T. Starks, and Xiaoyan Zhou, 2018, ESG shareholder engagement and downside risk, *working paper* Available at SSRN: <https://ssrn.com/abstract=2874252>.

Hong, Harrison, and Marcin Kacperczyk, 2009, The price of sin: The effects of social norms on markets, *Journal of Financial Economics* 93, 15-36.

Jagannathan, Ravi, Ashwin Ravikumar, and Marco Sammon, 2017, Environmental, social, and governance criteria: why investors are paying attention, NBER working paper No. w24063.

Kempf, Alexander, and Peer Osthoff, 2007, The effect of socially responsible investing on portfolio performance, *European Financial Management* 13, 908-922.

Liang, Hao, and Luc Renneboog, 2017, On the foundations of corporate social responsibility, *The Journal of Finance* 72, 853-910.

Lins, Karl V., Henri Servaes, and Ane Tamayo, 2017, Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis, *The Journal of Finance* 72, 1785-1824.

Liang, Hao, Lin Sun, and Melvyn Teo, 2020, Greenwashing, *working paper* Available at SSRN: <https://ssrn.com/abstract=3610627>.

McCormick, Robert E., and Maurice Tinsley, 1987, Athletics versus academics? Evidence from SAT scores, *Journal of Political Economy* 95, 1103-1116.

Merton, Robert C., 1993, Optimal investment strategies for university endowment funds, *Studies of supply and demand in higher education*, University of Chicago Press, 211-242.

- Mixon Jr, Franklin G., 1995, Athletics versus academics? Rejoining the evidence from SAT scores, *Education Economics* 3, 277-83.
- Pástor, Ľuboš, Robert E. Stambaugh and Lucian A. Taylor, 2020, Sustainable Investing in Equilibrium, *Journal of Financial Economics*, forthcoming.
- Pedersen, Lasse Heje, Shaun Fitzgibbons, and Lukasz Pomorski. 2020, Responsible investing: The ESG-efficient frontier, *Journal of Financial Economics*, forthcoming.
- Riedl, Arno, and Paul Smeets, 2017, Why do investors hold socially responsible mutual funds?, *The Journal of Finance* 72, 2505-2550.
- Roth Tran, Brigitte, 2019, Divest, disregard, or double down? philanthropic endowment investments in objectionable firms, *American Economic Review: Insights* 1, 241-256.
- Smith, Janet Kiholm, and Richard L. Smith, 2016, Socially responsible investing by universities and colleges, *Financial Management* 45, 877-922.
- Statman, Meir, and Denys Glushkov, 2009, The wages of social responsibility, *Financial Analysts Journal* 65, 33-46.
- Starks, Laura T., Parth Venkat, and Qifei Zhu, 2018, Corporate ESG profiles and investor horizons, *working paper* Available at SSRN: <https://ssrn.com/abstract=3049943>.
- Tobin, James, 1974, What is permanent endowment income?, *American Economic Review* 64, 427-432.
- Tucker III, Irvin B., and Louis Amato, 1993, Does big-time success in football or basketball affect SAT scores?, *Economics of Education Review* 12, 177-81.

Appendix A

Table A1: Description of variables

The table presents the definition and data source for each variable in our study.

Name	Definition	Source
<i>Adjusted asset growth</i>	Asset growth adjusted for oil and vice exposures	NACUBO
<i>Adjusted return</i>	Difference between the endowment's raw return after fees and its policy portfolio return, adjusted for oil and vice exposures	NACUBO
<i>Allocation to Alternatives</i>	Percentage of the endowment portfolio invested in Alternatives	NACUBO
<i>Allocation to U.S. Equity</i>	Percentage of the endowment portfolio invested in U.S. Equity	NACUBO
<i>Applications</i>	Total number of student applicants	IPEDS
<i>Applications, large funds</i>	Total number of student applicants received by universities whose endowments are in the top size tercile	IPEDS
<i>Applications, small funds</i>	Total number of student applicants received by universities whose endowments are in the bottom size tercile	IPEDS
<i>Asset growth</i>	Sum of appreciation, investment income, donations, and other additions	NACUBO
<i>Budget contribution</i>	Fraction of the university budget represented by the endowment payout	NACUBO
<i>Carnegie classification</i>	Categorical variable that indicates an university's Carnegie classification	NACUBO
<i>CSR index</i>	State-level value-weighted strengths from the following five ESG categories: community, diversity, employee relations, environmental, and human rights	MSCI ESG Stats
<i>Donation contribution</i>	Contribution to the university budget represented by direct gifts to the university	NACUBO
<i>Donations</i>	Amount of donations with a minimum size of \$1 million received by the university	The Chronicle of Philanthropy

(Table A1 – cont'd)

Name	Definition	Source
<i>Donations, High CSR donors</i>	Amount of donations with a minimum size of \$1 million made to the university from donors who live in states where the <i>CSR index</i> is above the median	The Chronicle of Philanthropy
<i>Donations, Low CSR donors</i>	Amount of donations with a minimum size of \$1 million made to the university from donors who live in states where the <i>CSR index</i> is below the median	The Chronicle of Philanthropy
<i>Donations, Oil and vice donors</i>	Amount of donations with a minimum size of \$1 million made to the university from donors whose sources of wealth are either chemicals, energy, mineral exploration, oil, casinos, lottery, or defense contracting	The Chronicle of Philanthropy
<i>Donations, Other donors</i>	Amount of donations with a minimum size of \$1 million made to the university from donors whose sources of wealth are not chemicals, energy, mineral exploration, oil, casinos, lottery, or defense contracting	The Chronicle of Philanthropy
<i>FTE staff</i>	Number of full-time employees of the endowment	NACUBO
<i>FTE students</i>	Full-time equivalent of number of students enrolled (1 part-time student = 1/3 full-time student)	NACUBO
<i>Grants</i>	Total amount of federal, state, local or institutional grant aid awarded to full-time first-time undergraduates	IPEDS
<i>Management fees</i>	Asset management fees and mutual fund expenses	NACUBO
<i>NACUBO donations</i>	Total annual donations received by the endowment as reported in the NACUBO survey.	NACUBO
<i>NSF grant awards</i>	Aggregate dollar amount of NSF grants awarded to university faculty affiliated with the endowment	National Science Foundation
<i>NSF grant awards, other</i>	Aggregate dollar amount of NSF grants not related to sustainability that are awarded to faculty at the university affiliated with the endowment	National Science Foundation

(Table A1 – cont'd)

Name	Definition	Source
<i>NSF grant awards, sustainability</i>	Aggregate dollar amount of NSF grants related to sustainability that are awarded to faculty at the university affiliated with the endowment	National Science Foundation
<i>Other costs</i>	Fees and expenses of managing the endowment that include incentive fees, consultant fees, direct expenses, staff salary, and other uncategorized fees	NACUBO
<i>Professors at all ranks</i>	Number of faculty members with the academic title of Professor, Associate Professor, or Assistant Professor	IPEDS
<i>Public school</i>	Indicator variable equal to one if the endowment is affiliated with a public university	Hand-collected
<i>Raw return</i>	Annual return of the endowment after fees	NACUBO
<i>Religious affiliation dummy</i>	Indicator variable equal to one if the university is or was affiliated with a religious group	Hand-collected
<i>Risk management practices</i>	Indicator variable equal to one if the endowment employs risk limits and guidelines, stress tests, scenario tests, or all above	NACUBO
<i>RMKT</i>	Excess returns on the value-weighted index of all NYSE, AMEX, and NASDAQ stocks	Kenneth R. French Data Library
<i>ROIL</i>	Excess returns of Fama and French oil industry portfolio	Kenneth R. French Data Library
<i>RVICE</i>	Excess returns of the USA Mutuals Vitium Global Fund	Yahoo Finance
<i>Spending rate</i>	Amount of endowment spending divided by the overall endowment value	NACUBO
<i>SRI</i>	Indicator variable equal to one if the endowment undertakes any activities related to SRI as indicated in the Social Investing Criteria section.	NACUBO

(Table A1 – cont'd)

Name	Definition	Source
<i>SRI*</i>	Alternative measure of socially responsible investment policies of the endowment. It is the sum of three indicator variables for whether the endowment's socially responsible investment policy entails screening, engaging, and/or impact investing.	NACUBO
<i>Stakeholder pressure</i>	Number of different groups of stakeholders that make requests on SRI considerations	NACUBO
<i>State partisan composition</i>	Categorical variable that indicates the party control of state legislatures and government	National Conference of State Legislatures
<i>Total assets</i>	Total endowment assets	NACUBO
<i>Total management costs</i>	Total costs of managing the endowment	NACUBO
<i>Volatility</i>	Annualized volatility of the endowment's policy portfolio	NACUBO

Table A2: Using NACUBO Data to Construct *SRI* and *SRI**

The table shows questions from the Social Investing Criteria section of the NACUBO survey used to construct our key variables (*SRI* and *SRI**) related to the SRI policies of university endowments. First column shows the survey question; second column shows the responses to the question that we classify as indicating a SRI policy; third column shows our classification of the type of SRI policy related to the question. *SRI* is an indicator variable that equals one if an endowment indicates an SRI policy in at least one of the questions listed. *SRI** is the sum of three indicator variables for whether the endowment indicates an SRI policy related to screening, impact investing, and engaging. Panels A, B, and C show the questions used to generate the SRI variables in 2009-2010, 2011-2013, and 2014-2017, respectively, given changes to the NACUBO survey over our sample period.

Question from NACUBO survey	Response(s) indicating SRI policy	Type of SRI policy
<i>Panel A: Survey years 2009-2010</i>		
Do you have any social investing screening requirements for your portfolio?	'YES' or 'Not part of basic investment philosophy but will screen when required by donor'.	Screening
Do you screen all or part of the portfolio?	'ALL' or 'PART'.	Screening
What steps do you take with regard to commingled funds (i.e. mutual funds, funds of funds, etc.)?	'2. Screen where possible', '3. Only hire managers who provide portfolio transparency', '5. Request a separate account', or '6. Other: SPECIFY BELOW' [with a description that indicates some SRI practices.]	Screening
Does sustainability influence decision making for your investments?	'YES'.	Impact Investing
Do you accept a percentage of underperformance in order to pursue your SRI goals?	'YES'.	Screening
Do you vote your proxies consistent with your SRI screening criteria?	'YES'.	Engaging
<i>Panel B: Survey years 2011-2013</i>		
Which of the following Environmental, Social and/or Governance (E/S/G) criteria does your institution use in investing in any assets?	If the institution uses at least one E/S/G criteria.	Screening
For each of the [responsible] investment practices listed in the following table, please indicate the percentage of your institution's total portfolio that uses specific investment practice.	If any percentage is greater than zero.	Screening
Do you and your portfolio managers vote your proxies consistent with your E/S/G criteria?	'YES'.	Engaging
Do your portfolio managers integrate E/S/G criteria in security selection?	'YES'.	Impact Investing

(Table A2 – cont'd)

Question from NACUBO survey	Response(s) indicating SRI policy	Type of SRI policy
Were those essential criteria you considered in hiring those manager(s)?	'YES'.	Screening
Is consideration of E/S/G aspects a formal policy of the institution or at the discretion of the manager?	'POLICY' or 'DISCRETION'.	Screening
<i>Panel C: Survey years 2014-2017</i>		
Do your institution's investment policies or guidelines currently require or permit you or your managers, when investing your endowment, to:		
Seek to include investments that rank higher on Environmental, Social and Governance (ESG) criteria in the expectation that they should have a materially positive effect on investment performance over the long term?	'YES'.	Impact Investing
Exclude or screen out certain types of undesirable investments because they are inconsistent with your institution's mission?	'YES'.	Screening
Allocate a portion of the endowment to investments that further your institution's mission?	'YES'.	Impact Investing
Are you considering changing your institution's investment policy in order to seek investments that rank higher on Environmental, Social and Governance (ESG) criteria?	'YES'.	Screening
Do your portfolio managers integrate the following in security selection:		
Inclusion of investments that rank higher on Environmental, Social and Governance (ESG) criteria?	'YES'.	Impact Investing
Exclusion or screening out of certain types of undesirable investments that are inconsistent with your institution's mission?	'YES'.	Screening
Do you and your portfolio managers vote your proxies consistent with:		
Your ESG Policy?	'YES'.	Engaging
Your SRI Policy?	'YES'.	Engaging
Other responsible investing criteria?	'YES'.	Engaging
Were these essential criteria in hiring the manager(s)?	'YES'.	Screening

Appendix B

Construction of variables from the NSF Awards database

Starting from the National Science Foundation (NSF) Awards Advanced Search database (<https://www.nsf.gov/awardsearch/advancedSearch.jsp>), we download all Active Awards and Expired Awards as .csv files over the period 2000-2020, as of January 25, 2020. This is achieved by entering the period “2000-2020” into the “Original Award Date” field of the search query.

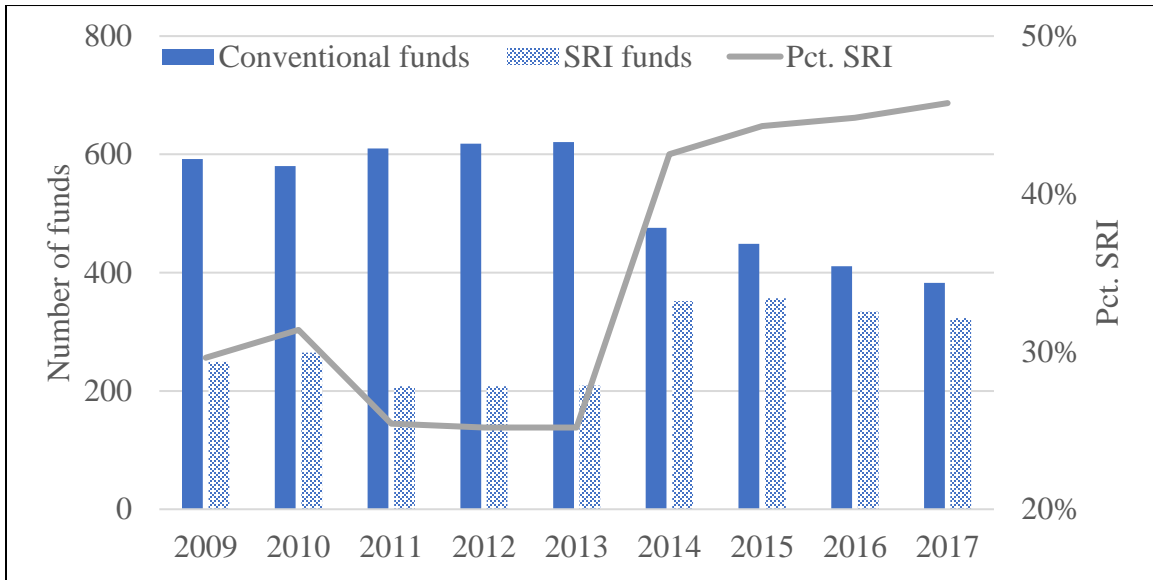
Next, from the raw NSF data files, we create a list of unique names of all NSF organizations that receive at least one award over the sample period. We then manually match this list of organization names with the list of university names corresponding to the endowment funds in our NACUBO sample. That way, we can identify all NSF awards, if any, with each endowment in our sample.

We then return to the raw NSF data files and create a dummy variable that equals one if the NSF award is related to sustainability science. We identify sustainability science awards based on a textual analysis of the “Title” and “Abstract” of each NSF award proposal. Specifically, an award is a sustainability award if the title or abstract contains a bigram (consecutive two-word combinations, obtained after frequent stop words and punctuation and extra white spaces are removed) that is included in a bigram word cloud from the sustainability science literature (specifically, we use Fig S3 of Bettencourt and Kaur, 2011).

Finally, we aggregate the dollar amount of awards by endowment-quarter, where quarter is the calendar quarter of the original award date. The dollar amount is taken from the “Awarded amount to date” field in the NSF database. We also compute aggregate award amounts by award subgroups, based on whether the award is related to sustainability science or not.

Before aggregating the raw NSF award data, we drop any observation with a missing value for either the title, abstract, organization, principal investigator, or Awarded amount to date fields. We also drop a few observations for which the Awarded amount to date variable is equal to zero.

Panel A: Number of endowment funds based on SRI



Panel B: Changes in SRI and fossil fuel divestment announcements

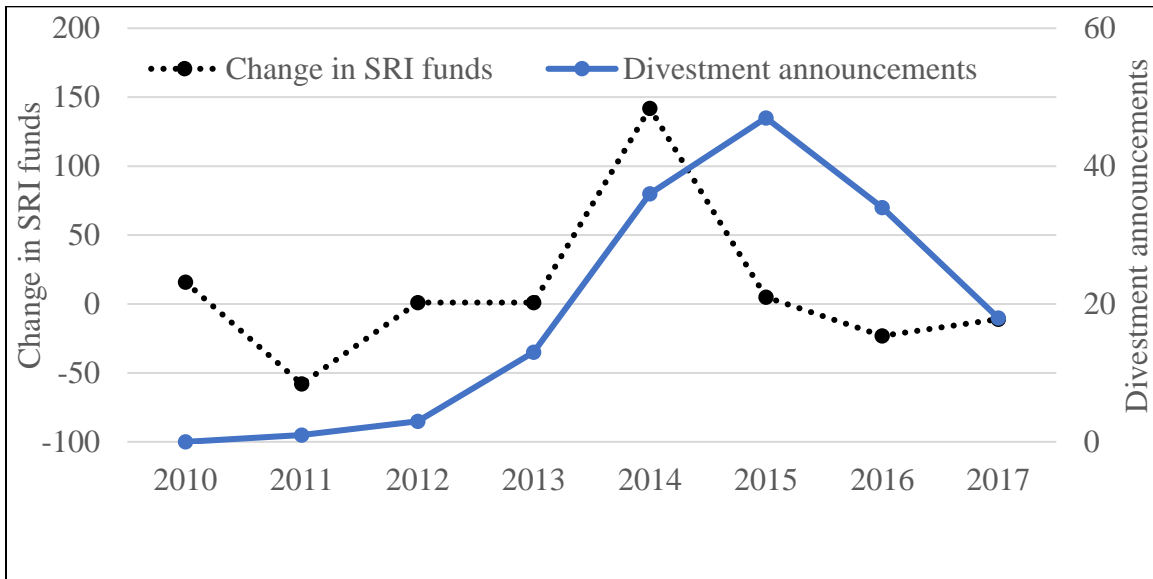
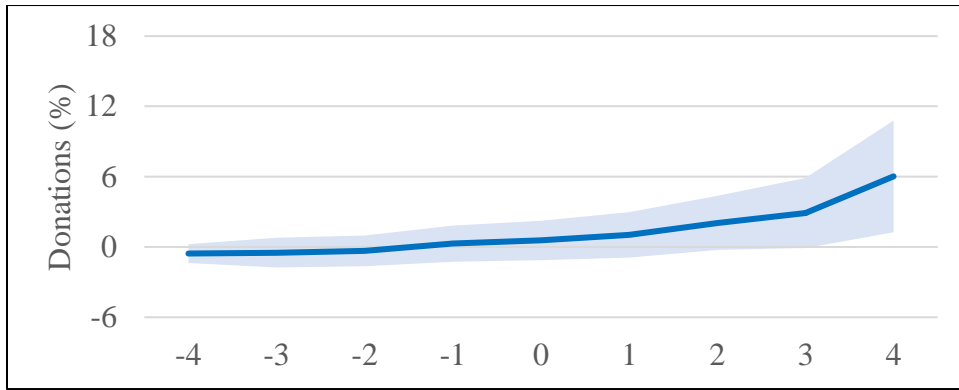
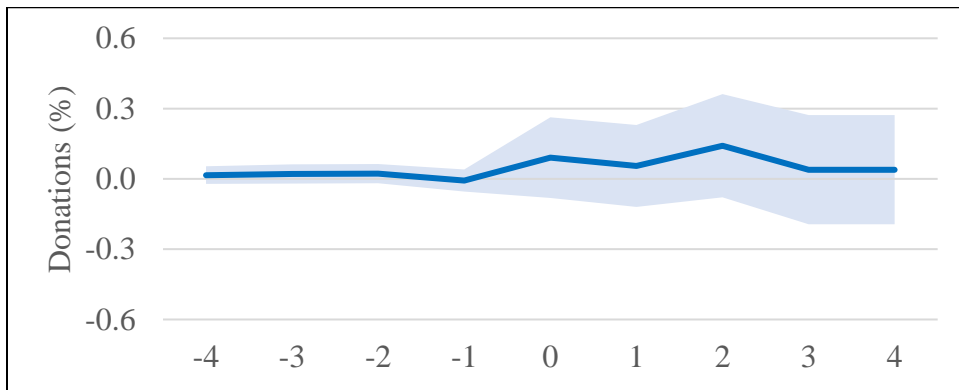


Figure 1. Adoption of SRI policies by university endowments. Panel A plots the number of SRI (dotted bars) and non-SRI (Conventional; solid bars) endowment funds over 2009-2017, as well as the proportion of SRI funds (solid line). Panel B plots the change in the number of SRI funds (dotted line) and the number of endowment funds announcing either a partial or full divestment from fossil fuels (solid line). Data on fossil fuel divestment announcements are collected from news articles. All other data are from NACUBO.

Panel A: All donations



Panel B: Donations from oil and vice donors



Panel C: Donations from other donors

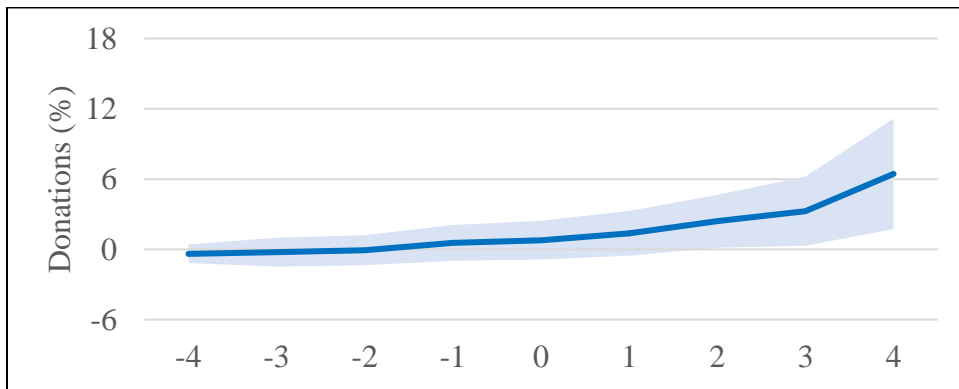


Figure 2. Cumulative abnormal donations around SRI policy adoptions. Abnormal donations (scaled by lagged endowment assets) accumulated from annual donations four years before and four years after adopting an SRI policy as indicated by *SRI*. Abnormal donations are computed relative to the average donations of peer universities that do not adopt SRI policies. Shaded areas are 90% confidence bands. Plots correspond to donations from all donors (Panel A), donors whose sources of wealth are either chemicals, energy, mineral exploration, oil, casinos, lottery, and defense contracting (Panel B) or from all other sources (Panel C). Donations data are from The Chronicle of Philanthropy.

Table 1: Summary Statistics

The table summarizes key variables of the sample and the difference in sample means (Diff.) of endowment years that adopt socially responsible investment practices (*SRI*=1) and those that do not (*SRI*=0). All variables are defined in the Appendix.

Variable	Obs.	Mean	St. Dev.	Median	Diff.	t(Diff.)
<i>SRI</i>	3,473	0.38	0.49	0.00	--	--
<i>Stakeholder pressure</i>	1,906	1.07	2.38	0.00	1.09	(9.65)
<i>Total assets</i>	3,470	344.88	818.73	113.76	89.36	(2.94)
<i>Budget contribution</i>	3,394	9.02	14.94	3.83	0.07	(0.13)
<i>Donation contribution</i>	3,354	3.56	5.94	2.26	0.56	(2.49)
<i>Religious affiliation dummy</i>	3,473	0.55	0.50	1.00	0.15	(8.71)
<i>CSR index</i>	3,473	0.23	0.11	0.22	0.00	(-0.72)
<i>Total management costs</i>	3,391	67.33	51.17	53.20	4.96	(2.76)
<i>Management fees</i>	3,046	41.06	36.81	32.99	6.57	(4.75)
<i>Other costs</i>	3,003	27.07	34.44	15.94	-1.34	(-1.06)
<i>Asset growth</i>	3,361	32.26	93.62	9.02	11.35	(3.07)
<i>Raw return</i>	3,399	8.21	8.05	10.40	-0.47	(-1.67)
<i>Volatility</i>	3,473	9.38	1.57	9.51	0.17	(3.05)
<i>Donations</i>	3,473	3.69	19.12	0.00	2.24	(3.03)
<i>Donations, Oil and vice donors</i>	3,473	0.13	1.90	0.00	-0.04	(-0.70)
<i>Donations, Other donors</i>	3,473	3.55	18.80	0.00	2.28	(3.13)
<i>Donations, High CSR donors</i>	3,473	3.01	17.86	0.00	2.20	(3.18)
<i>Donations, Low CSR donors</i>	3,473	0.67	5.38	0.00	0.04	(0.21)
<i>Risk management practices</i>	2,355	0.77	0.42	1.00	0.08	(4.68)
<i>Applications</i>	3,160	8.65	12.44	4.85	1.52	(2.97)
<i>Applications, small funds</i>	874	4.79	6.06	2.98	0.49	(1.10)
<i>Applications, large funds</i>	1,046	15.00	17.57	9.58	1.56	(1.35)
<i>NSF grant awards</i>	3,473	4.47	17.85	0.00	1.99	(2.79)
<i>NSF grant awards, sustainability</i>	3,473	1.11	4.76	0.00	0.36	(1.96)
<i>NSF grant awards, other</i>	3,473	3.36	14.08	0.00	1.63	(2.90)

Table 2: Determinants of SRI

The table presents marginal effects from logistic regressions of the indicator variable *SRI* indicating an endowment's standing with respect to socially responsible investments on characteristics of the endowment and the university. Each estimation is a pooled regression using fund-year observations. Other control variables (not tabulated) include lagged values of *Allocation to U.S. Equity*, *Allocation to Alternatives*, *Spending rate*, *FTE staff*, *Log (FTE students)*, *Total management costs*, and *Raw return*. *Public school dummy*, Carnegie classification dummies, state partisan composition dummies, and year fixed effects are also included. All variables are defined in the Appendix and (except dummies) are standardized to have a mean of zero and a standard deviation of one. Results are reported for the full sample period and the 2014-2017 sub-periods when *Stakeholder pressure* data are available. Standard errors are clustered at the year level. Wald Chi-squared statistics are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Marginal effects from logistic regressions of $SRI_{i,y}$			
	2009-2017	2014-2017	
	(1)	(2)	(3)
<i>Stakeholder pressure</i> _{<i>i,y-1</i>}	--	--	11.924% ***
	--	--	(59.21)
<i>CSR index</i> _{<i>i,y-1</i>}	2.942% ***	2.692% ***	2.572% ***
	(15.88)	(8.12)	(6.82)
<i>Religious affiliation dummy</i> _{<i>i,y-1</i>}	8.257% ***	8.353% ***	8.343% ***
	(55.35)	(19.43)	(21.43)
<i>Donation contribution</i> _{<i>i,y-1</i>}	2.101% ***	3.254% **	3.276% **
	(6.71)	(5.29)	(5.62)
<i>Budget contribution</i> _{<i>i,y-1</i>}	-1.296%	-1.048%	-1.039%
	(1.93)	(0.60)	(0.54)
<i>Log (Total assets)</i> _{<i>i,y-1</i>}	4.554% ***	2.960%	1.443%
	(8.34)	(1.26)	(0.24)
Other controls?	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes
Pseudo R-squared	7.06%	4.81%	8.04%
Observations	3,473	1,427	1,427

Table 3: Donations Regressions

The table shows regression results of donations received by the university. Each estimation is a pooled regression using fund-year observations. The dependent variable is the natural logarithm of one plus the ratio of donations received by university i during year y and endowment assets of university i at the end of the year $y-1$ (in basis points). Data on donations are from The Chronicle of Philanthropy. Results are reported for donations from all donors, donations from donors whose sources of wealth are either chemicals, energy, mineral exploration, oil, casinos, lottery, and defense contracting (Oil and vice) or from all other sources (Other donors), and donations from donors that live in states where the corporate social responsibility index is below (Low CSR) or above (High CSR) the median. Other control variables (not tabulated) include lagged values of *Raw return*, *Volatility*, *Allocation to U.S. Equity*, *Allocation to Alternatives*, *Spending rate*, *Budget contribution*, *Donation contribution*, *FTE staff*, and *Log (FTE students)*, as well as *Religious affiliation dummy*, *Public school dummy*, Carnegie classification dummies, year fixed effects, and state fixed effects. All variables are defined in the Appendix. Standard errors are clustered at the year level. t -statistics are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Pooled regressions of $\text{Log}(1 + \text{Donations ratio}_{i,y})$						
	All donations		Donor source of wealth		Where donor lives	
	(1)	(2)	Oil and vice (3)	Other (4)	Low CSR (5)	High CSR (6)
$SRI_{i,y-1}$	0.222** (2.57)	0.127** (2.43)	0.026 (0.99)	0.115*** (2.63)	-0.07 (-0.21)	0.115** (2.05)
$\text{Log}(\text{Total assets}_{i,y-1})$	--	0.287*** (6.82)	0.050*** (4.70)	0.279*** (6.27)	0.125*** (3.44)	0.213*** (4.15)
Other controls?	No	Yes	Yes	Yes	Yes	Yes
Year fixed effects?	No	Yes	Yes	Yes	Yes	Yes
State fixed effects?	No	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.18%	11.95%	6.36%	11.49%	8.57%	11.00%
Observations	3,326	3,326	3,326	3,326	3,326	3,326

Table 4: Event study of university donations

The table reports average yearly donations following the adoption of SRI policies by university endowments. Donations are scaled by total endowment assets and reported in basis points. Data on donations are from The Chronicle of Philanthropy. The event year (T) is the first year that a fund's SRI dummy switches from zero to one. There are 145 such funds in our sample. For each treatment fund and outcome variable, the control observation is the average outcome variable of five matched funds with similar *Total assets*, and outcome variable as of T-2 (for the oil donor subsample, we match the outcome variable from T-4 to T-2). Results are reported for donations from all donors, donors whose sources of wealth are either chemicals, energy, mineral exploration, or oil, casinos, lottery, and defense contracting (Oil and vice) or from all other sources (Other donors), and donors and universities located in states where the corporate social responsibility index is below (Low CSR) or above (High CSR) the median. All variables are defined in the Appendix. *t*-statistics are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	All donations (1)	Donor source of wealth		Where donor lives		Where university is	
		Oil and vice (2)	Other (3)	Low CSR (4)	High CSR (5)	Low CSR (6)	High CSR (7)
Pre-event window (T-4 to T-2)							
Treatment	127.165	1.275	125.982	42.734	84.432	124.375	128.130
Control	136.415	0.540	126.738	43.419	93.487	109.717	111.166
Difference	-9.250 (-0.36)	0.735 (0.89)	-0.756 (-0.03)	-0.685 (-0.04)	-9.055 (-0.42)	14.658 (0.39)	16.964 (0.59)
Event window (T-1 to T+4)							
Treatment	182.652	4.842	178.130	57.184	125.468	155.139	192.362
Control	118.757	3.684	112.708	24.246	82.260	154.961	93.805
Difference	63.895** (2.32)	1.158 (0.38)	65.423** (2.41)	32.938* (1.78)	43.208** (2.24)	0.178 (0.00)	98.557*** (3.00)
Difference in differences	73.145* (1.91)	0.423 (0.17)	66.178* (1.79)	33.623 (1.44)	52.263* (1.69)	-14.480 (-0.24)	81.593** (2.12)

(Table 5 – cont'd)

Panel B: Changes in asset allocation (cosine similarity)			
	All	Where university is	
		Low CSR	High CSR
	(1)	(2)	(3)
Pre-event window (T-4 to T-2)			
Treatment	0.982	0.981	0.982
Control	0.978	0.984	0.981
Difference	0.004	-0.003	0.001
	(1.36)	(-0.52)	(0.25)
Event window (T-1 to T+4)			
Treatment	0.953	0.960	0.951
Control	0.968	0.971	0.968
Difference	-0.015***	-0.011*	-0.017***
	(-3.84)	(-1.76)	(-3.66)
Difference in differences	-0.019***	-0.009	-0.018***
	(-4.84)	(-1.37)	(-4.09)

Table 6: SRI and Endowment Performance

Table shows estimated coefficients from pooled fund-year regressions. The dependent variables in columns (1)-(3) are total management costs, management fees, and other costs. The dependent variables in columns (4)-(6) are fund return volatility, raw return, and adjusted return. The dependent variables in columns (7) and (8) are raw and adjusted endowment asset growth, respectively. All dependent variables correspond to year y and are measured in basis points per year. The key explanatory variables are total assets at the end of year $y-1$ and indicator variable (SRI) indicating the endowment's standing with respect to socially responsible investments at the end of year $y-1$. Other control variables (not tabulated) include lagged values of *Raw return*, *Volatility*, *Allocation to U.S. Equity*, *Allocation to Alternatives*, *Spending rate*, *Budget contribution*, *Donation contribution*, *FTE staff*, *Log (FTE students)*, and *Religious affiliation dummy*. *Public school dummy*, Carnegie classification dummies, year fixed effects, and state fixed effects are included. All variables are defined in the Appendix. Standard errors are clustered at the year level. t -statistics are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Management costs			Portfolio returns			Asset growth	
	Total management costs	Management Fees	Other costs	Volatility	Return	Adjusted return	Asset growth	Adjusted asset growth
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$SRI_{i,y-1}$	7.742*** (4.12)	9.037*** (7.85)	-0.634 (-0.57)	10.086*** (4.22)	7.925 (0.99)	-52.500 (-0.55)	24.217* (1.81)	-18.157 (-0.35)
$\text{Log}(\text{Total assets}_{i,y-1})$	0.151 (0.17)	4.739*** (8.20)	-3.695*** (-7.94)	26.131*** (7.42)	30.884*** (2.75)	38.015** (2.12)	-70.343*** (-5.11)	-6.195 (-0.38)
$RMKT_y$	--	--	--	--	--	0.205*** (14.44)	--	0.719*** (29.31)
$RMKT_y \times SRI_{i,y-1}$	--	--	--	--	--	-0.006 (-0.17)	--	-0.002 (-0.08)
Other controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	14.81%	13.45%	10.71%	32.38%	91.89%	21.73%	69.27%	34.93%
Observations	3,326	2,943	2,943	3,326	3,326	2,328	3,226	2,272

Table 7: Other university benefits: Risk management practices, faculty research, and student applications

The table presents results of tests of the relationship between the implementation of SRI by the endowment and other university benefits such as risk management practices of the endowment (Column 1), NSF grant awards (Columns 2-4), and student applications (Columns 5-7). Column (1) presents marginal effects from a logistic regression of an indicator variable that is equal to one if the endowment employs risk limits and guidelines, stress tests, or scenario tests. Columns (2)-(4) present coefficients from regressions of NSF grant awards. Columns (5)-(7) present coefficients from regressions of student applications. Each estimation is a pooled regression using fund-year observations. The key indicator variables are total assets and SRI dummy at the end of year $y-1$. Control variables (not tabulated) include lagged values of *Raw return*, *Volatility*, *Allocation to U.S. Equity*, *Allocation to Alternatives*, *Spending rate*, *Budget contribution*, *Donation contribution*, *FTE staff*, and *Log (FTE students)*, dummy variables for religious affiliation, public school, and Carnegie classification, and year and state fixed effects. Wald Chi-squared statistics are reported in parentheses in Column (1). t -statistics are reported in parentheses in Columns (2)-(7). *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Risk management practices	NSF grant awards (\$mil.)			Applications (thousands)		
		All awards	Sustainability awards	Other awards	All funds	Small funds	Large funds
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$SRI_{i,y-1}$	3.820%*** (17.56)	0.997** (2.10)	0.298*** (2.69)	0.699* (1.73)	0.463* (1.93)	0.665* (1.70)	-0.102 (-0.10)
$\text{Log}(\text{Total assets}_{i,y-1})$	3.080% (2.34)	-0.373 (-1.03)	-0.092 (-0.66)	-0.281 (-1.16)	1.217** (2.20)	1.907*** (6.95)	3.179 (1.55)
Other controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	12.09%	60.81%	52.67%	57.33%	58.46%	68.15%	61.18%
Observations	2,293	3,814	3,814	3,814	3,393	913	1,193

Table 8: Event Studies: Risk management, faculty research, and applications

The table presents results from event studies of non-pecuniary benefits following SRI policy adoption. The outcome variable is a dummy for whether the fund employs sophisticated risk management practices (Panel A), the amount of NSF grants awarded to faculty at the university affiliated with the endowment (\$ millions, Panel B), and the number of student applications to the university affiliated with the endowment (thousands, Panel C). The event year (T=0) is the first year that a fund's *SRI* dummy switches from zero to one. There are 145 such funds in our sample. In Panel A, for each treatment fund and outcome variable, the control observation is the average outcome of five matched funds with similar *Total assets* at T-2 and *Volatility* from T-2 to T-4. Results are shown for subsamples of endowments located in states where *CSR index* is below (Low CSR) or above (High CSR) the median, and we use the same procedure to identify control funds within CSR groups. In Panel B, for each treatment fund and outcome variable, we construct a control observation as the average outcome variable of five matched funds with similar *Total assets* at T-2, *Professors at all ranks* at T-2, and the amount of NSF grants corresponding to sustainability research proposals from T-2 to T-4. Results are shown separately for all grants, grants corresponding to sustainability research proposals, and grants for other research proposals. Panel C results are reported for endowments funds with *Total assets* in the bottom (Small funds) tercile. In Panel C, for each treatment fund and outcome variable, we construct a control observation as the average outcome variable of five matched funds with similar *Total assets* at T-2 and *Applications* from T-2 to T-4. The pre-event window is fixed at [T-4 : T-2]. Bottom two rows report difference-in-differences between event and pre-event windows. *t*-statistics are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Risk management practices			
	All	Where university is	
	(1)	Low CSR	High CSR
		(2)	(3)
Pre-event window (T-4 to T-2)			
Treatment	0.643	0.811	0.564
Control	0.643	0.703	0.626
Difference	0.000	0.108	-0.062
	(0.00)	(1.47)	(-1.00)
Event window (T-1 to T+4)			
Treatment	0.845	0.833	0.848
Control	0.764	0.817	0.710
Difference	0.081***	0.017	0.138***
	(4.36)	(0.43)	(6.45)
Difference in differences	0.081*	-0.092	0.200***
	(1.67)	(-1.10)	(3.27)

(Table 8 – cont'd)

Panel B: NSF grant awards (\$ millions)				Where university is					
				Low CSR			High CSR		
	All awards	Sustainability awards	Other awards	All awards	Sustainability awards	Other awards	All awards	Sustainability awards	Other awards
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pre-event window (T-4 to T-2)									
Treatment	6.975	1.734	5.241	5.548	1.845	3.703	7.457	1.696	5.761
Control	7.183	1.381	5.802	6.360	1.259	5.101	7.000	1.319	5.681
Difference	-0.208	0.353	-0.560	-0.812	0.586	-1.398	0.458	0.378	0.080
	(-0.21)	(1.31)	(-0.72)	(-0.45)	(0.83)	(-1.06)	(0.40)	(1.40)	(0.09)
Event window (T-1 to T+4)									
Treatment	8.725	2.939	5.786	5.607	1.651	3.955	9.658	3.324	6.334
Control	6.678	1.517	5.161	5.227	1.305	3.923	6.727	1.471	5.256
Difference	2.047*	1.422*	0.625	0.379	0.347	0.032	2.931*	1.853*	1.078
	(1.67)	(1.74)	(0.90)	(0.25)	(0.76)	(0.03)	(1.93)	(1.77)	(1.32)
Difference in differences	2.255	1.069**	1.186	1.191	-0.239	1.430	2.474	1.475**	0.998
	(1.49)	(2.06)	(0.97)	(0.43)	(-0.35)	(0.61)	(1.46)	(2.29)	(0.77)

(Table 8 – cont'd)

Panel C: Student applications to small endowment universities						
	Pre-event window	Event window				
	(T-4 to T-2)	(T-1 to T+4)	(T to T+4)	(T+1 to T+4)	(T+2 to T+4)	(T+3 to T+4)
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	6.145	7.759	8.175	9.017	10.298	10.749
Control	5.901	6.635	6.823	7.092	7.402	7.259
Difference	0.244	1.124	1.352	1.925	2.895	3.490
	(0.39)	(1.40)	(1.35)	(1.36)	(1.39)	(0.98)
Difference in differences	--	0.880	1.108	1.681	2.652*	3.246
	--	(0.94)	(1.09)	(1.43)	(1.86)	(1.60)

Table 9: SRI and Payout Rates

The table presents the results of tests of the relationship between the implementation of SRIs and the payout rate of the endowment (in basis points). Panel A presents results from a regression of the payout rate on an indicator variable that is equal to one if the endowment adopted SRI policies, along with control variables. Control variables (not tabulated) include Raw return, Volatility, Allocation to U.S. Equity, Allocation to Alternatives, Budget contribution, Donation contribution, FTE staff, Log (FTE students), Religious affiliation, Grants, and Student loan. Public school, Carnegie classification, year fixed effects, and state fixed effects are included. Spending rates are winsorized at a 1%/99%. Panel B reports event study results. The event year (T) is defined as the first year that the indicator variable "SRI" of an endowment switches from zero to one. For each treatment fund and outcome variable, we construct a control observation as the average outcome variable of five matched funds with similar Total assets Spending Rates at T-2, and the pre-event window is fixed at [T-4 : T-2]. Bottom two rows report difference-in-differences between event and pre-event windows. *t*-statistics are reported in parentheses.

Panel A: Regression of spending rate		
		(1)
SRI		8.50 (2.51)
Log (Total assets)		23.97 (7.48)
Other controls?		Yes
Year fixed effects		Yes
State fixed effects		Yes
Adj. R-squared		0.21
Obs.		3,316
Panel B: Event study of spending rates		
	Pre-event window	Event window
	(T-4 to T-2)	(T-1 to T+4)
	(1)	(2)
Treatment	429.25	437.87
Control	438.20	424.83
Difference	-8.26	13.04
t-statistic	(-1.01)	(-1.98)
Difference in differences	--	21.30
t-statistic	--	(2.17)

Table 10: Robustness checks of main results

This table reports robustness checks of our main results. Panel A summarizes alternative measures for donations (NACUBO donations) and the endowment's socially responsible investment policy (*SRI**). NACUBO donations are total annual donations (in \$ millions) received by the endowment as reported by endowments in the NACUBO survey. *SRI** is the sum of three indicator variables for whether the endowment's socially responsible investment policy entails screening, engaging, and/or impact investing. For example, the *SRI** value for an endowment that implements all three policies has the maximum value of three; an endowment that adopts neither of the three policies has an *SRI** value of zero. Panel B presents the results from two alternative specifications of Table 2. Panel B1 is a fund-level, OLS cross-sectional regression (instead of a fund-year panel logistic regression) in which the dependent variable is the fund's average value of *SRI* over the sample period. The independent variables in this regression are also fund-level averages. Panel B2 is a fund-year panel OLS regression where the dependent variable is *SRI** (instead of *SRI*). Panel C presents the results from two alternative specifications of Table 3. Panel C1 shows the All Donations results from Table 3 using NACUBO donations (instead of The Chronicle of Philanthropy donations). Panel C2 repeats Table 3 using *SRI** (instead of *SRI*). Panels D-F repeat Tables 5-7, respectively, using *SRI** (instead of *SRI*). *t*-statistics are reported in parentheses, while Wald Chi-squared statistics are reported in parentheses in Column (1), Panel F. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Summary statistics for alternative SRI measure (*SRI**)

Variable	Obs.	Mean	St. Dev.	Median	Diff.	t(Diff.)	Correlations with TCOP Donations	Correlation with <i>SRI</i>
<i>NACUBO donations</i>	3472	6.61	13.99	2.36	2.15	(4.06)	0.27	--
<i>SRI*</i>	3473	0.65	0.96	0.00	--	--	--	0.87

(Table 10 – cont'd)

Panel B: Determinants of SRI (as in Table 2) using a single, cross-sectional regression, and using alternative measure *SRI**

	Panel B1: Cross-sectional regression using a fund's average <i>SRI</i> as the dependent variable			Panel B2: Panel regressions using <i>SRI*</i> as the dependent variable		
	2009-2017	2014-2017		2009-2017	2014-2017	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Stakeholder pressure</i> _{<i>i,y-1</i>}	--	--	0.118*** (6.37)	--	--	0.220*** (17.21)
<i>CSR index</i> _{<i>i,y-1</i>}	0.030* (1.83)	0.041** (2.00)	0.045** (2.21)	0.053*** (4.97)	0.046*** (4.45)	0.043*** (5.94)
<i>Religious affiliation dummy</i> _{<i>i,y-1</i>}	0.090*** (4.38)	0.086*** (3.23)	0.085*** (3.31)	0.181*** (11.19)	0.176*** (5.82)	0.177*** (5.44)
<i>Donation contribution</i> _{<i>i,y-1</i>}	0.006 (0.39)	0.038** (2.01)	0.039** (2.15)	0.054*** (3.09)	0.066*** (2.89)	0.068*** (3.54)
<i>Budget contribution</i> _{<i>i,y-1</i>}	-0.012 (-0.69)	-0.027 (-1.32)	-0.027 (-1.39)	-0.020* (-1.95)	-0.008 (-0.31)	-0.010 (-0.40)
<i>Log (Total assets)</i> _{<i>i,y-1</i>}	0.034 (1.17)	0.034 (0.93)	0.022 (0.63)	0.073*** (2.95)	0.011 (0.45)	-0.013 (-0.51)
Other controls?	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects?	No	No	No	Yes	Yes	Yes
Adjusted R-squared	5.83%	4.80%	10.35%	8.46%	5.93%	10.16%
Observations	708	566	566	3,473	1,427	1,427

(Table 10 – cont'd)

Panel E: SRI and endowment performance (as in Table 6) regressions using SRI^*								
	Management costs			Portfolio returns			Asset growth	
	Total management costs	Management Fees	Other costs	Volatility	Return	Adjusted return	Asset growth	Adjusted asset growth
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$SRI^*_{i,y-1}$	3.835*** (4.37)	4.367*** (9.85)	-0.410 (-0.65)	5.479*** (2.61)	9.162** (2.11)	-52.081* (-1.84)	12.630 (1.56)	-44.502*** (-2.69)
$\log(Total\ assets_{i,y-1})$	0.201 (0.23)	4.862*** (8.42)	-3.701*** (-7.73)	26.164*** (7.33)	30.722*** (2.76)	28.699 (1.47)	-70.203*** (-5.08)	-26.442 (-1.64)
$RMKT_y$	--	--	--	--	--	0.189*** (26.42)	--	0.695*** (31.84)
$RMKT_y \times SRI^*_{i,y-1}$	--	--	--	--	--	-0.010 (-0.49)	--	-0.011 (-0.54)
Other controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	14.79%	13.32%	10.72%	32.40%	91.89%	21.54%	69.27%	32.35%
Observations	3,326	2,943	2,943	3,326	3,326	2,328	3,226	2,272

(Table 10 – cont'd)

Panel F: Other university benefits (as in Table 7) using <i>SRI</i> *							
	Risk management practices	NSF grant awards (\$mil.)			Applications (thousands)		
		All awards	Sustainability awards	Other awards	All funds	Small funds	Large funds
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>SRI</i> * _{<i>i,y-1</i>}	3.176%*** (11.05)	0.350** (2.26)	0.141** (2.11)	0.209* (1.92)	0.132 (1.64)	0.098 (0.80)	-0.384 (-1.58)
<i>Log (Total assets</i> _{<i>i,y-1</i>})	3.168% (2.31)	-0.367 (-1.01)	-0.091 (-0.65)	-0.276 (-1.15)	1.225** (2.24)	1.943*** (6.97)	3.233 (1.61)
Other controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	11.88%	60.78%	52.66%	57.30%	58.44%	67.91%	66.66%
Observations	3,326	3,814	3,814	3,814	3,393	913	1,193