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

George O. Aragon
Arizona State University

Yuxiang Jiang
Southwestern University of Finance and Economics

Juha Joenväärä
Aalto University

Cristian Ioan Tiu
University at Buffalo

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ABSTRACT

We analyze a comprehensive database detailing the socially responsible investment (SRI) policies of college and university endowments funds. We find that SRI policies are more common among funds that interact with many stakeholders (e.g., students, alumni), and among universities that rely more on donor-related revenues and less on endowment-related revenues. SRI policies are associated with greater charitable donations for the university, especially from donors outside the energy, gambling, and tobacco industries. However, SRI policies also predict greater fund management costs and return volatility. Overall, SRI policies attract donations to the university but impose a drag on fund performance.

Keywords: Endowments, socially responsible investing, charitable donations
JEL Codes: G13, G14

* George Aragon: Department of Finance, Arizona State University, Tempe, AZ, U.S.A. Tel: +1 (480) 965-5810. Email: george.aragon@asu.edu. Yuxiang Jiang: Southwestern University of Finance and Economics, Chengdu, Sichuan, China. Email: yuxiangj@swufe.edu.cn. Juha Joenväärä: Aalto University, Espoo, Finland. Email: juha.joenvaara@aalto.fi. Cristian Ioan Tiu: Department of Finance, University at Buffalo, Buffalo, NY, U.S.A. Tel: +1 (716) 645-3299. Email: ctiu@buffalo.edu. We thank Hendrik Bessembinder, Gregg Fisher, Michael Kahn, Matti Keloharju, Amy O'Brien, Ken Reed, Dave Richardson, Ed Schneider, Lindy Sherwood, Dan Sperrazza, Scott Warman, Russ Wermers and participants in the Socially Responsible Investment panel at the 2019 NACUBO Endowment Debt Management Forum, Aalto University, and University of Maryland for constructive comments that helped improve this paper. We thank John Griswold, Bill Jarvis and Ken Redd for continued help with the NACUBO data. This research is supported by a grant from TIAA Institute.

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1. Introduction

There is growing evidence that investors realize nonpecuniary benefits from investing in a socially responsible manner and are willing to sacrifice financial returns from doing so. Several asset managers cater to these preferences by offering products that adopt socially responsible investment (SRI) policies in their capital allocation decisions.[1] In this paper, we investigate the determinants and consequences of SRI policy adoption by university endowments. Our endowment setting presents an ideal testing laboratory where investments are designed to have an infinite horizon and where stakeholders not passive but actively drive social responsibility efforts.

The adoption of SRI policies involves an important tradeoff well reflected in the microcosm of university endowments. On the one hand, investment income is a crucial source of funding for university operations. Imposing constraints on the activities of endowment managers, like fossil fuel divestment, could hamper investment performance and jeopardize university funding. Thus, universities relying more on investment income 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 growth of revenues from non-investment sources, like gifts and donations. In other words, charitable giving from a

[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.

university's stakeholders (e.g., alumni, charities) in support of its social mission 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 decision to adopt SRI policies in its endowment fund? For example, are SRI policies more likely among universities that rely less on investment income and pursue religious and social issues as part of a broader university mission? Second, do universities capture any benefits from implementing SRI policies – specifically, does an endowment's commitment to greater SRI attract greater gifts and donations to the university, especially from donors that are more supportive of issues related to social responsibility and sustainability? Finally, does the adoption of such policies negatively impact endowment performance, such as greater management costs and lower alpha?

We address these questions using a large sample of 1,012 university endowments which completed the National Association of College and University Business Officers (NACUBO) surveys over 2009-2017. Our sample includes several key characteristics related to endowment performance and investment policies, including the extent to which endowment managers follow SRI policies as well as whether various stakeholders require that these policies are adopted. In addition, we use the Chronicle of Philanthropy's gift-level database containing large charitable gifts (i.e., $1 million or more) from individuals to universities over the same period. This database includes the identities of individual gift donors and their sources of wealth.

Our analysis reveals several new empirical findings. We show that the percentage of endowments adopting SRI policies grows over our sample period, from 30% in 2009 to 46% in 2017 (Figure 1). This is economically large in dollar terms as SRI endowment

assets totaled $224 billion in 2017. The prevalence of SRI is also highlighted by the fact that well under 10% of the boards of endowments pressured to adopt SRI policies refuse to consider it. This evidence is broadly consistent with the rapid growth in SRI documented in the mutual fund sector (Bialkowski and Starks, 2016).

Next, we examine the decision of endowments to adopt SRI policies. We posit that SRI policies are more common among endowments that face greater pressure from university stakeholders (students, alumni) to pursue such policies. Also, given the potential drag of investment constraints on financial performance, we would expect SRI policies to be less frequent among universities that depend more on investment income to fund university operations. Our empirical findings support both hypotheses. For example, a one standard deviation increase in our stakeholder pressure variable is associated with a 13.1% increase in SRI adoption rates (p-value = 0.00), while a one standard deviation increase in the contribution of endowment income to the university budget is associated with a 2.5% decline in the likelihood of SRI adoption rates (p-value = 0.05).[2]

How do universities benefit from greater social responsibility? We argue that SRI policies attract substantial financial support to the university in the form of gifts and donations. Consistent with this hypothesis, we find a positive relation between donations and SRI policies. Specifically, donations are 33.3% per year higher among universities that incorporate SRI policies into their endowments. Using the more granular data from the Chronicle of Philanthropy, we further show that the greater donations associated with SRI stem mainly from donors that derive their wealth from outside the oil, energy, tobacco, and

[2] Our measure of stakeholder pressure is based on the number of different groups of stakeholders that request the endowment to incorporate SRI consideration into their investment decisions. We also confirm Smith and Smith's (2016) finding that SRI policies are more common among universities with a religious affiliation.

gambling industries and, therefore, more in line with SRI policies. This helps validate our conjecture that SRI policies allow universities to attract donations from stakeholders that value social responsibility and sustainable investing.

Are SRI policies merely cheap talk and, therefore, such policies do not actually impose any constraint on the investment decisions of the endowment? We address this by comparing the asset class exposures inferred from endowment returns. We find that stated SRI policies are indeed associated with a lower exposure of endowment returns to the returns on indexes that track stocks within the oil, fossil fuel, and vice sectors. Also, we do not find any evidence that SRI endowments use more opaque investments (e.g., investing in private equity or hedge funds) to sidestep their policy constraints. Together, this shows that stated SRI policies have a meaningful impact on investment decisions and are not merely cheap talk.

We then turn to the impact of SRI policies on investment performance. Investment constraints imposed by SRI policies could adversely impact performance due to greater management costs and diversification losses associated with divestment from market sectors that conflict with SRI objectives. Consistent with this hypothesis, we find that SRI policies indeed predict significantly higher management costs of 9.7 basis points per year. This is economically important given that the average management cost is 41.2 basis points. Furthermore, we find some evidence that SRI policies are associated with greater return volatility and lower net-of-fees alpha. Overall, our findings suggest that universities pursuing greater social responsibility in their endowment investments do so at the expense of financial returns.

Our findings show that SRI policies attract greater donations, but also impose a drag on investment performance. Therefore, in our final analysis, we examine total additions to endowment assets – i.e., net returns plus donations – to measure the net benefits of SRI policies. We find some evidence of a positive relation between SRI and total additions; however, the statistical significance is weak. The absence of a strong relation between SRI and total additions is consistent with university endowments adopting the set of constraints necessary to produce an optimal contract with their stakeholders. Universities that are more reliant on donations choose to constrain their endowment fund via SRI policies to attract donations from SRI-oriented donors; on the other hand, universities that are more reliant on endowment income focus more on investment performance and choose not to adopt costly constrains on their investment managers.

Our paper contributes to the literature showing that investors consider social responsibility and sustainability issues in their asset allocation decisions. For example, mutual fund investors allocate more capital to funds with higher sustainability rankings (Hartzmark and Sussman, 2018) and funds with SRI objectives (Bialkowski and Starks, 2016). Venture capital investors also accept lower returns from so-called "impact" funds dedicated to intentional generation of social or environmental impact alongside a financial return (Barber, Morse, and Yasuda, 2018).[3] Our results show that, besides mutual fund and venture fund investors, university donors also value social objectives as indicated by greater donations allocated to universities that adopt SRI policies in their endowments.

[3] Wealth considerations could still be more important than SRI considerations (see, e.g., Døskeland and Pedersen, 2016).

Prior studies point to an interaction between the investment horizon and the adoption of SRI policies. Barber, Morse and Yasuda (2016) note that a long horizon social planner likely needs to address environmental and social problems, while Bénabou and Tirole (2010) argue that corporate social responsibility (CSR) helps firms focus on the long run and avoid myopic decision-making. Starks, Venkat and Zhu (2018) present evidence that a longer investment horizon makes SRI more desirable.[4] Because of their infinite horizons, endowments present a great laboratory to test if societal resources flow to where various stakeholders want them to and if risks associated with various social, environmental or governance aspects of the investment process are taken into consideration when portfolios are formed.

Our paper also sheds light on the relation between the adoption of SRI policies and investment performance. Geczy, Stambaugh, and Levin (2005) argue that investing in SRI funds is associated with a significant certainty-equivalent penalty. 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.[5] Consistent with this evidence, we find that SRI policies impose a drag on endowment performance.

Finally, our results contribute to the literature on endowments. Earlier studies analyze the optimal investment and expenditure policies of endowments and recognize that

[4] Albuquerque, Durnev, and Koskinen (2016) present a model in which addressing CSR reduces firm risks in the long run. Other related studies include Baron (2008), who argues that CSR enhances employees' productivity, and Eccles, Ioannou, and Serafeim (2014), who present evidence that environmental, social and governance (ESG) practices are inversely related to litigation risk.

[5] Also, 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 (2017).

endowments' investment policies can be used to smooth shocks to other sources of university revenues (e.g., Tobin, 1974; Black, 1976; Merton, 1992). More recently, Brown et al. (2014) find that endowments engage in "endowment hoarding" whereby they actively reduce payouts following negative financial shocks. Dimmock (2012) shows that universities facing greater volatility of nonfinancial income ("background risk") manage endowments with lower return volatility.[6] We build on this literature by showing that endowments adopt SRI policies, in part, to generate other sources of university revenues in the form of charitable gifts from donors that value social responsibility.

The remainder of the paper is organized as follows. Section 2 discusses the key variables used in our study and provides summary statistics. Section 3 discusses our main analysis and results, including the determinants of SRI policy adoption by endowments, the potential benefits of SRI policies in the form of gifts and donations, and the potential costs of SRI policies as reflected by drags on investment performance. Section 4 concludes.

2. Data and summary statistics

The data used in our study comes from two main sources. The first is the National Association of College and University Business Officers (NACUBO). NACUBO has surveyed its member endowments and foundations from the United States, Canada and Puerto Rico starting since 1984 on a variety of topics related to investment management and to the characteristics of the universities these endowments serve. Although the data are self-reported, it does not suffer from survivorship bias (see Brown, Goetzmann, Ibbotson,

[6] Brown, Garlappi, and Tiu (2010) finds evidence of security selection skill among endowment fund managers.

and Ross, 1992) since it includes institutions that ceased participating in the survey. The data are additionally free of backfill bias, as we use the temporal snapshots released in the year in which they are collected and do not allow data re-writing. Because the NACUBO surveys were collected and compiled by various organizations,[7] to preserve continuity we focus on data collected starting with 2009. Earlier versions of the NACUBO surveys were used in the literature, for example, by Brown, Garlappi and Tiu (2010).

Our study uses information on the performance, asset allocation, SRI policies, assets under management, payouts, and costs incurred by university endowments, as well as certain characteristics of the universities these endowments serve, such as the number of students and Carnegie classifications. While endowment variables such as returns or asset allocation appear in prior studies, data on their SRI policies and costs are not extensively used by other authors. Therefore, we describe SRI-related variables in detail below. Finally, we supplement the information on university characteristics with the religious affiliation from universities' websites.

The second source of data comes from the Chronicle of Philanthropy's database of large charitable gifts ($1 million or more) to universities. While the NACUBO data also contain information about aggregate donations, the Chronicle's data are more granular because the unit of observation is an individual gift and provides identifying information of the gift's donor as well as the donor's source of wealth. For example, this allows us to assess whether a large gift came from the oil industry or a wind energy generation, which

[7] NACUBO has partnered with TIAA-CREF (1988 to 1999), Cambridge Associates (2000–2008), the Commonfund (2004–2017: note that between 2004 and 2008 the main survey was compiled by Cambridge Associates but also by the Commonfund), TIAA (currently) and the NACUBO Investment Committee ran the survey prior to 1988.

is useful if we seek to understand the link between the motivation to bestow a gift upon a university and the investment policies of its endowment's portfolio.

2.1. SRI criteria

Starting with 2009, NACUBO introduced a new section titled "Social Investing Criteria" in their questionnaire. The information enables us to evaluate whether and how university endowments integrate socially responsible investing criteria into their investment practices. During our sample period, this section underwent two major modifications. First, in 2011, survey respondents began quantifying specific disaggregated percentages of investments that satisfied specific environmental, social, and governance criteria. In contrast, prior to 2011, endowments were only asked to provide aggregate figures. Second, in 2014, survey questions on percentages dedicated to SRI were replaced with qualitative queries about whether the endowment imposes SRI screens as part of its investment policies. In addition, questions on whether stakeholders interact with the endowment regarding SRI issues were also added in 2014. Based on information from the Social Investing Criteria section, we use an indicator variable (SRI) to measure an endowment's standing concerning socially responsible investments. Specifically, SRI equals one if the endowment does not respond with "No" to all questions about social responsibility in investments, and zero otherwise.

2.2. Benchmarking endowment fund performance

University endowments invest in multiple asset classes and traditionally benchmark their performance against a policy portfolio consisting of passive asset class indices

weighted by these asset classes' weights in the actual portfolio. We use the following passive asset class indices in our construction of policy portfolios: the Russell 3000 as the 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 are standard choices made by both the previous studies and practitionioners.

3. Analysis and results

In this section we present our analysis and discuss our findings related to 1) the determinants of endowments' decision to adopt SRI policies, 2) the potential benefits of SRI policies represented by greater charitable donations to the university, 3) the potential costs of SRI policies in the form of a drag on investment performance, and 4) total additions (returns plus donations) as a measure of net benefits of SRI policies.

3.1. Determinants of social responsibility in investments

Why do endowments decide to include social responsibility – loosely used in the context to include corporate social responsibility (CSR), environmental, social and governance (ESG), or impact investing – when they make investment decisions? We start with the premise that SRI policy adoption potentially entails significant costs and benefits, the magnitudes of which vary across endowment funds and universities. For example,

adopting SRI policies impose restrictions to portfolio holdings, as certain investments with poor CSR/ESG records are excluded. This could result in a significant drag on fund performance due to diversification losses and greater management costs (e.g., Cornell, 2015; Bessembinder, 2018), and an inability to capitalize on information about stock fundamentals of excluded firms. These costs are especially important for universities that depend more on endowment income to fund university operations. This leads to our first hypothesis:

H1. Universities that derive a larger proportion of their budget from endowment income are less likely to pursue SRI activities. Such endowments will avoid risking a lower contribution by pursuing costly SRI activities.

On the other hand, a potential benefit from pursuing a SRI investment policy is the promise of larger charitable gifts from donors that value social responsibility and believe such investment policies contribute positively to their social mission.[8] Such benefits would be comparatively more important for universities that depend more on donations to fund university operations, and universities for which potential donors are more likely to value social responsibility. This leads to our next set of predictions:

H2a. Endowments of universities whose budgets are more donation-dependent are more likely to pursue SRI policies. We expect such endowments to be more responsive to requests from donors that seek greater SRI.

[8] SRI policies may also be ineffective regarding the social change they seek to accomplish as illustrated by Teoh, Welch and Wazzan (1999) analysis of South African divestment.

H2b. SRI policies are more common among endowments facing greater social pressure, as measured by the number of interactions with university stakeholders who are pressuring for more SRIs.

H2c. Endowments are more likely to pursue SRI policies among church-affiliated universities, as argued by Smith and Smith (2016).

Finally, another potential benefit to endowments from adopting SRI policies is to reduce portfolio risk (e.g., Jagannathan, Ravikumar and Sammon, 2017). The reason is that firms with better ESG profiles provide a hedge against sudden regulatory changes and consumer tastes related to ESG issues, thus attenuate sudden asset price swings to which fund managers have little time to react.[9] This leads to our final prediction:

H3. Endowments are more likely to pursue SRIs when their need to reduce portfolio volatility is greater, i.e., when their current portfolio volatility is higher. This is because implementing SRIs reduces portfolio risk.

We test these predictions using a logistic regression of SRI on several key variables, as well as a set of controls. The key variables are *Budget contribution* (to test H1); *Donation contribution* (to test H2a); *Group of stakeholders* (to test H2b; these are the number of various stakeholders with whom the endowment interacted on the subject of social responsibility.); *Religious affiliation* (to test H2c); and policy portfolio *Volatility* (to test H3). The control variables are assets under management (*log(AUM)*), *Allocation to U.S. Equity*, *Allocation to Alternatives*, *Spending rate*, number of employees (*FTE staff*), number of students (*log(FTE students)*), *Total costs*, *Interest rate* charged when the

[9] See, also, Hoepner et al. (2018).

endowment borrows, and past performance (*Annual returns net*). We also split the sample into two subsamples, the first of which covers the period pre-Paris Agreement (2009-13), while the second is the period following this environmental treaty (2014-17).

The results are presented in Table II and provide support for our hypotheses. In support of H1, budget contributions are negatively related to SRI. While the statistical significance of this result is smaller during the latter sub-period, the relation holds for the latter sub-period as well as the full sample period. For example, based on the full sample coefficient of -0.642. We estimate that a one standard deviation increase in *Budget contribution* results in a 2.5% decrease in the probability that an endowment will pursue SRI policies. Table II also provides some support of H2a. Specifically, endowments of more donation-dependent universities are more likely to adopt SRI policies, especially during the latter sub-period. Perhaps, as discussed below, this relation is partly driven by explicit requests from donors that the university practice greater social responsibility.

University stakeholders are active and vocal when it comes to ESG/CSR issues. Faculty frequently write on the topic of ESG/CSR (like this study), and students seek to better the world. It makes sense that a higher degree of interaction on social responsibility issues between the endowment and the university stakeholders will result in a higher level of SRI engagement. We can test this hypothesis (H2b) only in the second half of our sample when NACUBO began collecting responses from endowments on their interactions with university stakeholders. Table II shows that the coefficient on *Group of stakeholders* is positive and significant: a point estimate of 0.236 (*p*-value of 0.00). In economic terms, an endowment that interacts with one more distinct group of stakeholders (e.g., faculty, students, donors, community members) increases the probability of SRI policy adoption

by 5.35% - an economically significant amount. Table II also provides strong support for H2c: endowments of universities with a religious affiliation increases the probability of SRI policies an economically amount, of 18.72%.

Finally, consistent with H3, we observe that past return volatility is associated with a higher propensity for SRI. This relation is statistically significant in the full sample and earlier half of our sample period. For example, our full sample estimate shows that an increase in 10% volatility translates into a 16.65% increase in the probability of implementing SRI policies. However, this relationship is no longer significant in the latter sample period.

3.2. Do SRI policies attract charitable donations to the university?

A university's endowment could adopt SRI policies as a means of promoting an image of leadership on social issues, or as a branding strategy to attract students, faculty, and staff (Smith and Smith, 2016). We hypothesize that SRI policies could also help universities attract charitable gifts from donors who are interested in promoting social responsibility. As an example, in 2013, North Carolina State University received a pledge for a $50 million donation from a foundation established by Roy H. Park Sr., an alum. The donation came with the condition that the donated funds be invested in a "socially responsible" fashion.[10] This example motivates our first test of whether SRI policies predict greater charitable donations.

[10] "NC State Built a 'Responsible' Fund That's Outperforming Its Main Portfolio," Bloomberg Markets, June 4, 2018. Mr. Park generated a large portion of his wealth from the media and communications industry and his foundation, Park Foundation, itself adopts SRI policies.

We estimate regressions of the following general form:

$$Donations_{i,t+1} = \alpha + \beta \times SRI_{i,t} + Controls + \varepsilon_{i,t+1}$$

where Donations is the dollar amount of donations, scaled by total endowment assets, that the endowment receives from donors and reports to NACUBO. A finding that $\beta>0$ would indicate that endowments adopting SRI policies are associated with greater subsequent donations received by the university. The results are reported in the second column of Table III. Consistent with our hypothesis, we find a significant positive relation between SRI and subsequent donations (*t*-statistic = 4.08).

The remaining columns of Table III present results using the Chronicle of Philanthropy's database of large charitable gifts. In columns (2-5), the dependent variable is the natural logarithm of donations received by the university, scaled by total endowment assets. The results in column (2) support our findings using the NACUBO data: SRI predicts significantly greater gifts (i.e., $\beta>0$).

To test our second prediction regarding donor type, we partition the dependent variable based on whether donors' sources of wealth lie inside or outside the oil industry. We expect the positive relation between SRI and charitable giving to be mainly driven by non-oil donors who are plausibly more interested in promoting social responsibility. This is exactly what we find: SRI is associated with significantly greater gifts from non-oil donors (*t*-statistic = 2.34), but not significant relation is found with gifts from oil donors (*t*-statistic = 1.10). The final three columns of Table III report similar findings using a measure of number of donations (versus dollars) as the dependent variable. Together, data from both NACUBO and Chronical of Philanthropy provide empirical support for our

hypothesis that SRI policies attract charitable donations to the university, especially from donors that are more inclined towards social responsibility.

To further pin down the donations story, we implement an event study of charitable giving to endowments and universities around changes in endowments' SRI policies. The event is defined as the first time that the SRI variable for an endowment switches from zero to one. For each treatment fund, we identify a five control funds by matching on total assets, spending rate, and budget contribution one year before the event. We calculate measures of cumulative donations during the pre-event window (T-5 to T-2) and the event window (T-1 to T+5), where T represents the event year. We use (T-1 to T+5) as the event window in order to capture the fact that donations may precedes the endowment's decision to become socially responsible (but the latter precedes the former), as well as the possibility that donations following the endowment's pledge to become SRI may arrive slowly and can be spread over a longer time period.

The event study results are presented in Table IV. Column (1) shows results in which the outcome variable is the total donations received by the endowment scaled by endowment assets (Donations). We find that funds adopting SRI policies (treatment) attract donations totaling 3.43% of assets over the period covering one year before and five years after the policy change. In contrast, funds that do not adopt SRI policies but are otherwise similar (control) receive donations in the amount of 2.93% over the same period. The difference, 49.57 basis points, is significant (*t*-statistic = 1.88). In contrast, during the pre-event window prior to the policy switch, we do not find any such differences in donations between the two groups of endowment funds (*t*-statistic = -0.31). This "non-result" over

the pre-event window highlights that the divergence in donations between adopters and non-adopters is special to the adoption event.

Next we examine large donations (in excess of $1 million) received by the university around SRI policy adoption dates. Columns (2) shows that, consistent with our Column (1) evidence on total donations, SRI policy adopters (treatment) receive significantly more large donations than the control group during the event window (1.61% vs. 1.13%, *t*-statistic = 1.94). Prior to the event window, in contrast, we find no such difference in donation patterns. Furthermore, a comparison of Columns (3) and (4) show that these donation effects are driven mainly from donors that source their wealth outside the chemicals, energy, mineral exploration, and oil industries (Other donors). Finally, the remaining Columns (5-7) present results in which the outcome variable is the number (versus dollars) of large donations. Again, we find that treatment funds experience a larger number of donations than control funds, especially from non-oil donors. Taken together, the event study evidence in Table IV supports our earlier findings from pooled regressions (Table III).

3.3. Socially responsible investments, and asset class exposures

Do endowments that profess greater social responsibility take real actions to reduce exposures to asset classes or types of investments known to be score low on the social responsibility scale, or are stated SRI policies just cheap talk?

To answer this question, we use an 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. The specific hypothesis is that SRI is associated with lower exposures to two indices, *Oil* and *Vice*. *Oil* represents returns of the oil industry (as reported in the Fama-French 48 industry portfolios), while *Vice* is the mutual fund representative of the tobacco, gambling, defense/aerospace and alcohol industries (with the ticker VICEX).

Each conditional exposure is calculated as $\beta_0 + \beta_1 \times SRI$, and Table 4 presents these coefficient estimations (these are the coefficients of the interaction terms). To calculate exposures to *Oil* and *Vice*, we run regressions of quarterly excess returns of endowments and the returns of *Oil* and *Vice*, while using conditional betas as outlined above. The results of these tests are presented in Table V and reveal that the interaction terms with *Oil* and *Vice* with SRI are statistically significant and negative. This is true about the entire sample, as well as the latter sub-period.[11]

In terms of economic magnitude, in the entire sample, the oil beta of an SRI endowment is 0.020 lower than the corresponding beta for an endowment which does not implement SRI policies. The vice beta of an SRI endowment is 0.022 low than the vice beta of a non-SRI endowment. It therefore seems that while the decision to become SRI does not change asset allocation, it certainly changes – by amounts that economically significant – the betas of an endowment portfolio with respect to oil and vice. SRI, it appears, is not empty talk. Overall, the results support our hypothesis that SRI endowment undertake asset allocation decisions that are indeed consistent with the principles of social responsibility.

[11] Our earliest half of the sample starts at 2012, which is the lowest time point with quarterly returns data available.

3.4. Do socially responsible endowments incur higher costs?

In this section, we investigate whether endowments which adopt SRI policies face higher costs of managing their portfolios. To test whether this is the case we regress costs incurred in the investment management process on an SRI indicator variable along with a set of controls. The results are presented in Table VI. We find endowments pursuing SRI policies incur higher costs: the coefficient of the SRI variable indicates that between 2009 and 2017 the cost differential between SRI and non-SRI endowments was 8.613 basis points (the *t*-statistic is 4.82). In particular, SRI endowments paid higher management fees (by 9.730 basis points, and a *t*-statistic of 9.50), and face higher staff costs (by 1.799, with a t-statistic of 2.44, which is quite large for an endowment, whose staff is usually lean).

These results are robust across sub-period; however, the magnitude of the cost differential declines over our sample period: 12.876 (*t*-statistic of 8.55) in the 2009 – 2013 period compared to 4.823 (*t*-statistic of 2.51). A possible explanation is that the growth in SRI products in the asset management industry has reduced the costs of investment products (via, say, mutual funds) that conform to the endowments' SRI policy constraints. Overall, however, these results strongly support the idea that endowment funds adopting SRI policies face higher costs of portfolio management as compared to their peers.

3.5. Social responsibility, investment performance and endowment growth

In this section, we study the performance of endowments whose portfolios are socially responsible. Friede, Busch and Bassen (2015) analyze over 2,000 articles linking ESG to corporate performance. They show that about 90% of these articles find a nonnegative relationship between ESG and corporate financial performance, and the large

majority of these studies find a positive relationship. Moreover, according to the study, the positive relationship between ESG and corporate performance is stable over time. Based on this evidence, we might expect endowments that adopt SRI policies to outperform their peers.[12]

Additional support of the assertion that SRI endowment outperform comes from analyzing some anecdotal evidence regarding how some university endowments became more socially responsible. In some cases, high profile student or faculty activism result in the university adopting SRI policies. Resisting such activism could make endowment investment committees unpopular with students and faculty, create headline risk, and detract from the duties of managing the portfolio. Adopting SRI policies could relieve this pressure and allow the endowment fund to focus more effort on managing its portfolio and, thus, outperform peer funds.

On the other hand, SRI policies could lead to underperformance if such policies increase portfolio risk and limit the investment opportunity set. For example, such policies likely prohibit investment in so-called "sin" stocks, which tend to outperform (Hong and Kacperczyk, 2009). In turn, more socially responsible endowment should therefore underperform. Finally, all other things equal, as we documented above that SRIs experience higher costs, we then expect SRIs to underperform.

To test for performance differences based on SRI policies, we run a panel regression of endowment performance on the SRI indicator variable and a set of controls.

[12] To further strengthen this assertion, endowments are also investors in venture capital, and impact ventures, a form of SRIs, are documented outperform by Barber, Morse and Yasuda (2016). Finally, Hoepner et al. (2018) argue that investments with higher ESG scores have lower downside risk, which further implies that more socially responsible endowments are likely to outperform.

We measure performance using the following measures: 1) the annual returns net of fees for the entire endowments, 2) the annual returns gross of fees (calculated by adding total costs to the net returns that endowments report), 3) the level of risk taken by the endowment in its asset allocation, calculated as the volatility of the policy portfolio (using current portfolio weights and the long-term covariance matrix for asset class returns), 4) net of fees alphas calculated as the difference between actual net-of-fees endowment returns and the returns of the policy portfolio, 5) gross-of-fees alphas, calculated as alphas net of fees, plus endowment management costs, 6) the volatility of alpha (i.e., volatility of the residuals in the four quarters of the year in which we calculate the alpha), and 7) Sharpe ratios (calculated using past annual returns, or as current return divided by policy portfolio volatility).

As controls, we use the following variables. First, since resistance to SRIs may detract investment committees interest from managing the portfolio, we include an indicator variable that is equal to one if the endowment interacted with stakeholders of the university in relation to SRIs, but decided not to implement any such policies. We also include assets under management, past net returns, allocations to U.S. Equity and alternatives, spending rates, budget contributions, size of staff, number of students of the university, and religious affiliations. Since research institutions, depending on the type of research they perform, may have stronger views on social responsibility, we include Carnegie classification fixed effects. Because there are differences between states in terms of attitude toward social responsibility we include state fixed effects, and as cross-sections of endowments are different from a year to another, include time fixed effects.

The results are presented in Table VII. Panel A shows that SRI endowments are associated with larger gross-of-fees returns: SRI endowments generate 16.681 basis points more per year than the endowments not applying any SRI considerations (t-statistic is 1.90). Alphas gross of fees are also 15.597 higher for SRI endowments (t-statistic of 1.67). Differences in returns and alphas *net-of-fees* are lower and about half of their gross-of-fees counterparts and no longer significant. This is consistent with our earlier findings of a positive relation between SRI policies and management costs. We also find no significant differences in Sharpe Ratios based on SRI policies (Panel C).

The latter part of our sample period covers a dramatic fall in the prices of crude oil and so-called "vice" stocks. We also know (Table V) that SRI endowments have significantly lower exposures to both oil and vice. Together, the performance of endowment funds pursuing SRI policies would be coincidentally higher due to its divestment from oil. Thus, it is important to compare the performance of endowment funds after controlling for differences in their exposure to oil and vice investments. To control for oil and vice exposures of the endowments, we implement a two-stage process. First, we model endowment returns as

$$R_t - r_{ft} = \alpha + \left(\beta_0^{Oil} + \beta_1^{Oil} \times SRI_{t-1}\right)\left(R_t^{Oil} - r_{ft}\right) + \left(\beta_0^{Vice} + \beta_1^{Vice} \times SRI_{t-1}\right)\left(R_t^{Vice} - r_{ft}\right) + \varepsilon_t,$$

where R_t is the return of the endowment at time t and R_t^{Oil}, and respectively R_t^{Vice} represent the returns of the Fama and French Oil industry index and of an index of vice (the mutual fund with the ticker VICEX). Second, we calculate the oil-and-vice adjusted returns of an endowment as

$$R_t^{adjusted} = R_t - \left(\beta_0^{Oil} + \beta_1^{Oil} \times SRI_{t-1}\right)\left(R_t^{Oil} - r_{ft}\right) - \left(\beta_0^{Vice} + \beta_1^{Vice} \times SRI_{t-1}\right)\left(R_t^{Vice} - r_{ft}\right).$$

Panel B of Table VII presents the results using oil-and-vice-adjusted returns. We see that socially responsible endowments underperform: gross and adjusted net returns and alphas are lower than those of endowments with less socially responsible portfolios. The differences are also economically significant at 84.927 basis points (*t*-statistic = -1.89) in terms of adjusted net returns and 81.593 basis points (*t*-statistic = -1.79) in terms of net alphas. This is consistent with our above discussion that the performance of SRI endowments based on unadjusted fund returns reflects from decreasing oil and vice exposures during a period when the prices of oil and vice-related securities were declining. After adjusting for these exposures, we find evidence that SRI endowments underperform their peers.

Panel C compares the unadjusted return volatilities of endowment portfolios. We see that SRI endowments have a higher portfolio volatility, as indicated by statistically significantly higher volatilities and alpha volatilities. This is consistent with SRI endowments experiencing a loss of diversification benefits due to the investment constraints of SRI policies. Finally, we discussed earlier that resisting the SRI lobby could negatively affect performance. The only statistically significant difference between our performance measures and Resist is observed for total portfolio volatility: endowments resisting SRI have 16.317 basis points more volatility than those not resisting. This suggests that, in the face of stakeholder pressure to adopt SRI policies, a failure to adopt such policies would lead to even greater portfolio risk.

Finally, to provide direct evidence about the impact of endowments' divestment decision on fund performance and risk, we conduct a difference-in-difference regression analysis. We hand-collect 17 divestment events in which a university announces that its endowment fund will divest its holdings from fossil fuels (treatment). We match each treatment endowment fund to five control endowment funds by using one-year before event total assets, spending rate, and budget contribution (as in donations event study). Thereafter, we run a set of regressions that include annual observations from *T*-1 to *T*+1, where *T* represents the event year. Divest dummy is an indicator that equals one if the endowment fund is one of the 17 treatment funds; Post-divest dummy is an indicator variable equal to one for years T and T+1. The main variable of interest is the interaction variable Divest dummy*Post-divest dummy showing the effect of divestment on fund performance and risk after the divestment announcement.

Table VIII shows the results from the event study of fund performance around fossil fuel divestment announcements. The results are broadly consistent with the idea that divestment negatively impacts returns and positively impacts risk. While the signs of all estimated coefficients on Divest dummy*Post-divest dummy are in line with our predictions, many are not significant. Perhaps, this is due to limited power of the test given that the small sample of only 17 divestments events. Even so, we find Sharpe ratios are around 11% lower following divestment decisions, and significantly so (*t*-statistic= -2.26). This is consistent with the negative and positive coefficients on the interaction variable in separate regressions of fund returns and portfolio volatility, respectively.

3.6. Measure net benefits using total additions

Our analysis above shows that endowments which adopt SRI policies attract more donations than those which did not implement such policies, but that these endowments face higher management costs, greater portfolio volatility, and lower returns after adjusting for their exposure to the oil industry and to vice. It therefore appears that adopting SRI policies results in a mix of benefits (donations) as well as shortcomings (higher costs, volatility, and underperformance relative to oil and vice). The purpose of this section is to analyze the sum of these benefits and shortcomings to answer to the question: did SRI policies result in endowment growth?

Simply adding coefficients for endowment returns and donations does not suffice to estimate this net result, because SRI policies affected individual endowments differently. To estimate the impact of SRI on total portfolio additions, we run similar tests as those reported in Table VII, but instead of using endowment investment performance as a dependent variable, we use total additions to the portfolio. We note that adjusting portfolio additions for oil and vice exposures removes these exposures not only from endowment returns but also from donations. In particular, such exposures will account for the response of donations to changes in the prices of Oil and Vice. The results are presented in Table IX.

From Table IX, we observe that in terms of portfolio additions, endowments which adopt SRI portfolio experience an average growth of 31.744 basis points in the entire sample (and this difference is statistically significant). However, this result is sharply reversed after we control for Oil and Vice exposed: once we adjust for these exposures, SRI endowments experience a decline in size by 24.480 basis points (although, in this case, the difference is not statistically significant).

From the subsample analysis, we observe that the results are robust: portfolio additions are higher for SRI endowments but lower once we adjust for oil and vice exposures. We also observe that total additions changes in response to the adoption of SRI policies are more substantial in the second half of the sample when the concept of SRI became more mainstream. For example, the difference in total portfolio additions between SRI and non-SRI endowments is only 2.547 basis points during the first subsample but increases to 63.189 basis points when measures in the second subsample. We therefore conclude that adopting SRI policies benefit university endowments, but the benefits are because the switch to SRI was made as oil prices declined.

4. Concluding remarks

We find a growing and persistent trend of SRI policy adoption among university endowment funds over 2009-2017. In the cross-section, policy adoption is significantly more common among endowments that face greater pressure from university stakeholders to incorporate socially responsible investment practices and that operate within universities that rely more on non-endowment sources of revenues to fund university operations. In turn, SRI policies are associated with significantly higher charitable donations to the university, especially from donors that derive their wealth outside "vice" industries and, therefore, donors that plausibly derive higher utility from socially responsible and sustainable investment. However, we find some evidence that SRI policies negatively impact endowment fund performance due to greater divestment costs and inefficient diversification. On balance, we find only weak evidence that SRI policies lead to greater total additions (net returns + donations) of endowments.

Our evidence supports the notion that an endowment adopts the set of policy restrictions necessary to produce an optimal investment contract between a university and its stakeholders. Universities that face greater pressure to adopt SRI policies can realize substantial benefits (in the form of donations) from doing so. Such donations act as a compensation differential for deterioration in investment performance that results from a constrained investment opportunity set. In contrast, universities that do not have as strong of a social mission and rely more on endowment income face a smaller reward and greater cost from adopting SRI policies.

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Appendix

Description of variables

The table describes control variables and dependent variables. For each variable the table presents its definition and data source.

Name	Definition	Source
Allocation to Alternatives	Percentage of the endowment portfolio invested in Alternatives	NACUBO
Allocation to U.S. Equity	Percentage of the endowment portfolio invested in U.S. Equity	NACUBO
Alpha gross	Difference between the endowment's annual return before fees and its policy portfolio return	NACUBO
Alpha net	Difference between the endowment's annual return after fees and its policy portfolio return	NACUBO
Alpha volatility	Annualized volatility of the quarterly alpha, which is the difference between the endowment's quarterly return after fees and its policy portfolio return	NACUBO
Annual return gross	Annual return of the endowment before fees	NACUBO
Annual return net	Annual return of the endowment after fees	NACUBO
Budget contribution	Fraction of the university budget represented by the endowment payout	NACUBO
Carnegie classification	Categorical variable that indicates an university's Carnegie classification	NACUBO
Consultant fees	Consultant fees and outsourcing fees	NACUBO
Direct expenses	Direct expenses such as sub-advisory fees, custody, audit and record keeping	NACUBO
Divest	Indicator variable equal to one if the endowment or its affiliated university makes a divestment decision that can be identified in the news	National Association of Scholars
Donation contribution	Contribution to the university budget represented by direct gifts to the university	NACUBO
Donations	Total gifts and bequests from donors to the endowment	NACUBO
FTE staff	Number of full-time employees of the endowment	NACUBO

(Continued)

Table-Continued

Name	Definition	Source
FTE students	Full-time equivalent of number of students enrolled (1 part-time student = 1/3 full-time student)	NACUBO
Group of stakeholders	Number of different groups of stakeholders that make requests on SRI considerations	NACUBO
Incentive fees	Incentive/performance fees paid to asset managers	NACUBO
Interest rate	Average interest rate of institutional debt	NACUBO
Large donations	Amount of donations with a minimum size of $1 million received by the university	The Chronicle of Philanthropy
Management fees	Asset management fees and mutual fund expenses	NACUBO
Number of large donations	Number of donations with a minimum size of $1 million received by the university	The Chronicle of Philanthropy
Oil	Quarterly excess returns of Fama and French oil industry portfolio	Kenneth R. French Data Library
Other fees	Other fees and expenses of managing the endowment	NACUBO
Post-divest	Indicator variable equal to one for years T and T+1 of divestment events	National Association of Scholars
Religious affiliation	Indicator variable equal to one if the university is or was affiliated with some religious group	Hand-collected
Resist	Indicator variable equal to one if the endowment experiences requests from stakeholders on SRI considerations but responds with "No" to all the questions pertaining to social responsibility in investments	NACUBO
Sharpe ratio	Sharpe ratio of the endowment portfolio	NACUBO
Spending rate	Amount of endowment spending divided by the overall endowment value	NACUBO
SRI	Indicator variable equal to one if the endowment does not respond with "No" to all the questions pertaining to social responsibility in investments	NACUBO
Staff salary	Compensation paid to internal staff	NACUBO

(Continued)

Table-Continued

Name	Definition	Source
Total additions	Sum of appreciation, investment income, donations, and other additions	NACUBO
Total assets	Total endowment assets	NACUBO
Total costs	Total costs of managing the endowment	NACUBO
Vice	Quarterly excess returns of the USA Mutuals Vice Investor Fund	Yahoo Finance
Volatility	Annualized volatility of the endowment's policy portfolio	NACUBO

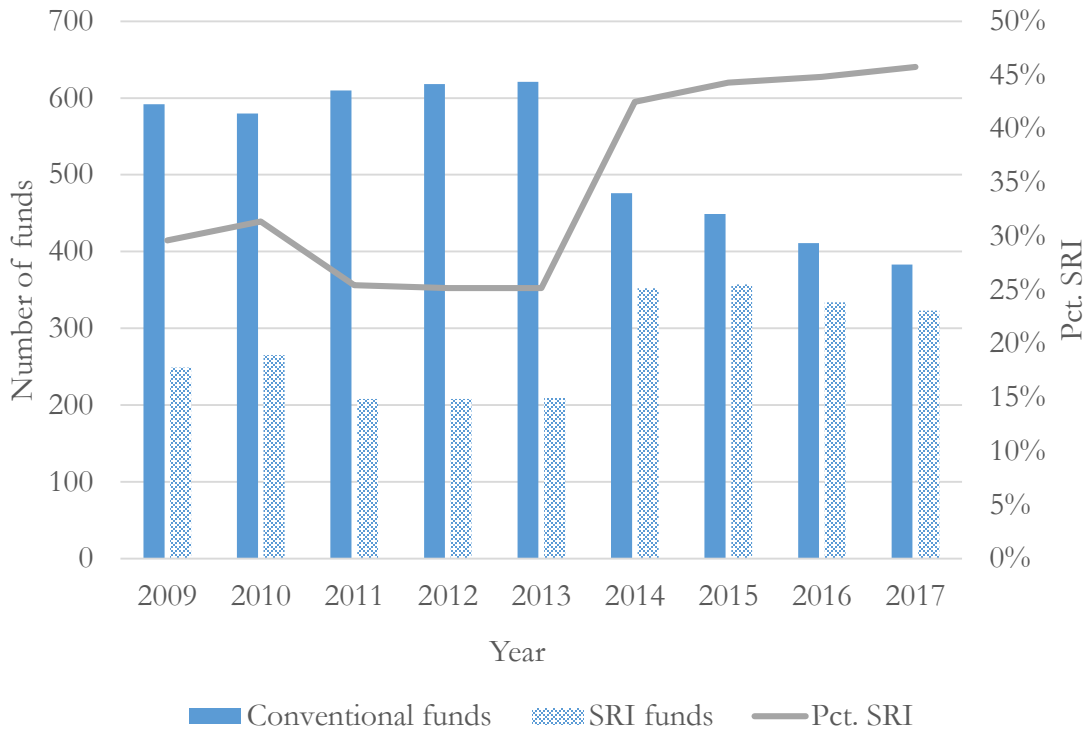

Fig. 1. Number of SRI Funds

Table I: Summary Statistics

The table reports the number of observations, mean, standard deviation, and median for key variables in the full sample, as well as 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. The sample period spans the time interval from 2009 to 2017.

Variable	Obs.	Mean	St. Dev.	Median	Diff.	t(Diff.)
SRI	7,244	0.35	0.48	0	-	-
Total assets ($ mil.)	7,237	551.61	2105.5	96.99	132.9	2.67
Donations ($ mil.)	7,157	8.56	23.59	2.01	3.213	4.99
Total additions ($ mil.)	6,595	32.22	180.33	6.52	25.608	4.75
Annual return net (pct.)	6,922	5.76	11.55	9.6	0.181	0.63
Annual return gross (pct.)	5,964	6.42	11.51	10.14	0.156	0.51
Volatility (pct.)	6,528	9.32	1.8	9.51	0.203	4.44
Alpha net (pct.)	5,789	1.44	2.48	1.47	-0.067	-0.97
Sharpe ratio	5,786	0.14	0.28	0.14	-0.011	-1.37
Allocation to U.S. Equity (pct.)	7,195	32.05	15.85	29.2	-1.201	-3.12
Allocation to Alternatives (pct.)	6,858	28.41	19.59	26.64	1.035	2.07
Spending rate (pct.)	7,047	4.38	2.02	4.48	0.027	0.58
Budget contribution (pct.)	6,316	9.94	16.9	3.6	-0.603	-1.41
Donation contribution (pct.)	5,854	4.5	9.45	2.25	0.018	0.07
FTE staff	6,975	1.68	4.69	0.5	0.757	5.68
FTE students	6,717	10338.62	18397.2	3783	42.914	0.08
Religious affiliation	7,244	0.47	0.5	0	0.176	14.49
Total costs (basis pts.)	6,199	65.91	50.93	52.35	4.219	3.17
Management fees (basis pts.)	5,413	41.16	38.2	33.54	4.971	4.59
Incentive fees (basis pts.)	5,388	3.93	16.4	0	0.037	0.08
Consultant fees (basis pts.)	5,417	8.47	12.14	5	-0.915	-2.76
Direct expenses (basis pts.)	5,400	5.72	14.87	0.2	-0.99	-2.46
Staff salary (basis pts.)	5,472	5.01	18.67	0	1.818	3.41
Other fees (basis pts.)	5,391	2.05	14	0	-0.525	-1.41
Interest rate (pct.)	4,692	3.86	1.2	4	0.09	2.47

Table II: Determinants of SRI

The table presents the results of 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. Other control variables include Allocation to U.S. Equity, Allocation to Alternatives, Spending rate, FTE staff, Log (FTE students), Total costs, Interest rate, and Annual return net. Carnegie classification, year fixed effects and state fixed effects are also included. All variables are defined in the Appendix. Results are reported for the full sample period (1) and the 2009-2013 (2) and 2014-2017 sub-periods (3 and 4). Standard errors are clustered at the year level. *p*-values are reported in parentheses.

	(1)	(2)	(3)	(4)
Group of stakeholders	-	-	-	0.236
	-	-	-	(0.00)
Log (Total assets)	0.176	0.227	0.204	0.175
	(0.00)	0.05(0.05)	(0.00)	(0.00)
Volatility	7.321	8.483	2.73	1.927
	(0.01)	(0.00)	(0.55)	(0.61)
Budget contribution	-0.642	-0.523	-1.071	-1.101
	(0.05)	(0.50)	(0.04)	(0.05)
Donation contribution	0.024	-0.016	0.039	0.037
	(0.15)	(0.60)	(0.03)	(0.05)
Religious affiliation	0.823	0.795	0.947	0.929
	(0.00)	(0.00)	(0.00)	(0.00)
Carnegie classification	Yes	Yes	Yes	Yes
Other controls?	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes
Pseudo R-squared	11.65%	15.59%	12.33%	15.39%
Obs.	2,607	1,214	1,030	1,030
Sample period	2009-17	2009-13	2014-17	2014-17

Table III: SRI and Donations

Regression results of donations received by the endowment or its affiliated university. Donations is the amount of donations received by the endowment scaled by total endowment assets. Log (Large donations) and Number of large donations are the natural logarithm of donations (scaled by total endowment assets) received by the university in excess of $1 million and the number of donations received by the university in excess of $1 million, respectively. Donations are from NACUBO; Log (Large donations) and Number of large donations are from The Chronicle of Philanthropy. For Log (Large donations) and Number of large donations, results are reported for donations from all donors (All donors), donations made to the university from donors whose sources of wealth are either chemicals, energy, mineral exploration, or oil (Oil donors), and donations made to the university from other donors (Other donors). Carnegie classification, year fixed effects and state fixed effects are included. Other control variables (not tabulated) include Annual return net, Volatility, Allocation to U.S. Equity, Allocation to Alternatives, Spending rate, Budget contribution, Donation contribution, FTE Staff, Log (FTE students), and Religious affiliation. All variables are defined in the Appendix. Standard errors are clustered at the year level. *t*-statistics are reported in parentheses.

	Donations	Log (Large donations)			Number of large donations		
	Total	All	Oil donors	Other donors	All donors	Oil donors	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
SRI	20.781	0.333	0.058	0.326	0.106	0.007	0.100
	(4.08)	(2.20)	(1.10)	(2.34)	(2.34)	(1.25)	(2.32)
Resist	53.842	0.941	0.163	1.045	0.304	0.024	0.280
	(1.59)	(8.27)	(4.85)	(9.69)	(2.83)	(4.34)	(2.74)
Log (Total assets)	-86.486	0.624	0.076	0.623	0.169	0.008	0.161
	(-9.99)	(7.02)	(4.07)	(6.43)	(7.77)	(2.91)	(7.90)
Other controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carnegie classification	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
Adj. R-squared	13.10%	14.78%	6.01%	14.64%	21.65%	8.28%	21.03%
Obs.	3,320	3,321	3,321	3,321	3,321	3,321	3,321

Table IV: Event study of donations around SRI policy adoptions

The table presents results of the event study on donations received by the endowment or its affiliated university. The event is defined as the first time that the indicator variable "SRI" of an endowment switches from zero to one. For each treatment endowment fund, we use total assets, spending rate, and budget contribution one year before the event to identify five control endowment funds. We calculate different measures of donations both five years before (T-5) and five years after (T+5) the event, where T represents the event year. Panel A presents results from the pre-event window (T-5 to T-2). Panel B presents results from the event window (T-1 to T+5). Donations, in basis points, is the amount of donations received by the endowment scaled by total endowment assets. Large donations, in basis points, is the amount of donations (with a minimum size of $1 million) received by the university, scaled by total endowment assets. Number of large donations is the number of donations (with a minimum size of $1 million) received by the university. Donations are from NACUBO; Large donations and Number of large donations are from The Chronicle of Philanthropy. For Large donations and Number of large donations, results are reported for donations from all donors (All donors), donations made to the university from donors whose sources of wealth are either chemicals, energy, mineral exploration, or oil (Oil donors), and donations made to the university from other donors (Other donors). *t*-statistics are reported in parentheses.

	Donations	Large donations			Number of large donations		
	Total	All donors	Oil donors	Other donors	All donors	Oil donors	Other donors
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Panel A. Pre-event window (T-5 to T-2)						
Treatment	309.589	99.807	0.128	99.680	0.189	0.006	0.189
Control	314.757	137.586	12.394	125.192	0.234	0.031	0.223
Difference	-5.168	-37.779	-12.267	-25.512	-0.045	-0.025	-0.034
	(-0.31)	(-1.57)	(-3.76)	(-1.09)	(-2.33)	(-5.11)	(-1.75)
	Panel B. Event window (T-1 to T+5)						
Treatment	342.681	161.169	1.332	159.837	0.282	0.020	0.279
Control	293.116	113.343	5.886	107.457	0.241	0.033	0.231
Difference	49.566	47.826	-4.554	52.380	0.041	-0.013	0.048
	(1.88)	(1.94)	(-3.89)	(2.12)	(2.16)	(-2.06)	(2.55)

Table V: SRI and Exposures to Asset Classes

The table presents the results of panel regressions of quarterly endowment excess returns on various asset class excess returns and interaction terms between asset class excess returns and the indicator variable "SRI" indicating the endowment's standing with respect to socially responsible investments. The set of asset classes includes: Fama and French oil industry portfolio (Oil) and the USA Mutuals Vice Investor Fund (Vice). Other control variables (not tabulated) include Oil and Vice. Endowment fund fixed effects are included. Sample period spans the interval from 2012 to 2017. Standard errors are clustered at the fund level. *t*-statistics are reported in parentheses.

	2012-2017			2012-2013			2014-2017		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Oil*SRI	-0.055		-0.02	-0.021		-0.01	-0.028		-0.015
	(-6.52)		(-3.21)	(-1.42)		(-0.95)	(-4.24)		(-2.58)
Vice*SRI		-0.078	-0.022		-0.03	-0.018		-0.027	-0.01
		(-7.67)	(-3.93)		(-1.42)	(-0.81)		(-5.11)	(-2.15)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	37.74%	32.29%	57.52%	63.41%	79.62%	79.62%	20.64%	16.25%	43.17%
Obs.	12,126	12,126	12,126	3,499	3,499	3,499	8,627	8,627	8,627

Table VI: SRI and Endowment Costs

Panel regression results of total costs and separate cost components of endowment fund management. Panel A shows regression results that cover the sample period from 2009 to 2017. Panel B and Panel C present regression results based on two sub-periods that are 2009-2013 and 2014-2017. All cost variables are measured in basis points. All regressions include (not tabulated) Resist, Log (Total assets), Annual return net, Volatility, Allocation to U.S. Equity, Allocation to Alternatives, Spending rate, Budget contribution, FTE staff, Log (FTE students), and Religious affiliation. All variables are defined in the Appendix. Carnegie classification, year fixed effects, and state fixed effects are included. Standard errors are clustered at the year level. *t*-statistics are reported in parentheses.

	Total costs	Management fees	Incentive fees	Consultant fees	Direct expenses	Staff salary	Other fees
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: 2009-2017							
SRI	8.613	9.73	0.914	-0.7	-1.89	1.799	-0.404
	(4.82)	(9.50)	(1.38)	(-1.63)	(-3.41)	(2.44)	(-0.90)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	13.34%	12.54%	9.18%	14.84%	4.62%	13.67%	3.22%
Obs.	3,321	2,979	2,969	2,979	2,974	3,017	2,972
Panel B: 2009-2013							
SRI	12.876	12.074	2.719	-0.515	-0.391	1.001	-0.055
	(8.55)	(7.15)	(2.82)	(-0.93)	(-0.40)	(3.16)	(-0.06)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	13.32%	13.04%	9.69%	14.59%	3.06%	20.63%	8.94%
Obs.	1,462	1,300	1,297	1,301	1,299	1,298	1,297
Panel C: 2014-2017							
SRI	4.823	8.076	-0.631	-0.906	-2.803	2.383	-0.515
	(2.51)	(9.40)	(-2.85)	(-1.12)	(-3.49)	(1.50)	(-0.94)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	15.10%	12.14%	8.08%	13.65%	4.78%	17.26%	3.37%
Obs.	1,397	1,277	1,270	1,276	1,273	1,317	1,273

Table VII: SRI and Endowment Performance

Results of panel regressions of endowment performance measures on the indicator variable "SRI" indicating the endowment's standing with respect to socially responsible investments and other characteristics of the endowment and the university. Panels A and B show results in which the dependent variable is a measure of unadjusted and oil-and-vice-adjusted performance, respectively. Panel C shows results in which the dependent variable is either Volatility, Alpha volatility, or Sharpe Ratio. All dependent variables except Sharpe Ratio are measured in basis points. All variables are defined in the Appendix. Other control variables (not tabulated) include Annual return net, Volatility, Allocation to U.S. Equity, Allocation to Alternatives, Spending rate, Budget contribution, Donation contribution, FTE staff, Log (FTE students), and Religious affiliation. Carnegie classification, year fixed effects and state fixed effects are included. Standard errors are clustered at the year level. *t*-statistics are reported in parentheses.

	Panel A: Unadjusted performance				Panel B: Oil-and-vice-adjusted performance			
	Annual return net	Annual return gross	Alpha net	Alpha gross	Annual return net	Annual return gross	Alpha net	Alpha gross
SRI	8.064	16.681	6.547	15.597	-84.927	-76.586	-81.593	-72.533
	(0.84)	(1.90)	(0.61)	(1.67)	(-1.89)	(-1.71)	(-1.79)	(-1.59)
Resist	2.073	10.198	8.954	17.938	-27.254	-20.819	-39.876	-32.658
	(0.07)	(0.36)	(0.57)	(1.26)	(-0.89)	(-0.71)	(-1.18)	(-0.99)
Log (Total assets)	29.526	27.268	24.492	22.647	30.535	27.317	25.65	23.183
	(2.72)	(2.41)	(2.70)	(2.33)	(2.02)	(1.79)	(1.26)	(1.13)
Other control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	91.88%	91.53%	16.93%	18.32%	45.58%	45.40%	21.23%	21.58%
Obs.	3,321	3,321	3.107	3,107	2,281	2,281	2,177	2,177

	Panel C: Volatility and Sharpe Ratio		
	Volatility	Alpha volatility	Sharpe ratio
SRI	11.472	8.654	0.008
	(5.02)	(1.92)	(0.49)
Resist	16.317	-1.80	0.011
	(3.87)	(-0.40)	(0.53)
Log (Total assets)	26.408	-6.802	0.026
	(7.97)	(-3.05)	(2.87)
Other control variables	Yes	Yes	Yes
Adj. R-squared	32.37%	11.23%	16.84%
Obs.	3,321	1,830	3,107

Table VIII: Endowment Performance around Fossil Fuel Divestment Announcements

Results of difference-in-difference regression analysis, in which we study endowment performance after around fossil fuel divestment announcements. The divestment event is defined as the first time that the endowment or its affiliated university makes a divestment announcement that can be identified in news articles. For each treatment endowment fund, we use total assets, spending rate, and budget contribution one year before the event to identify five control endowment funds. We run regressions that include annual observations from T-1 to T+1, where T represents the announcement year. Divest dummy is an indicator variable that equals one if the endowment announces a divestment from fossil fuels. Post-divest dummy is an indicator variable equal to one during the announcement year (T) and the following year (T+1). All dependent variables except Sharpe Ratio are measured in basis points. All variables are defined in the Appendix. Other control variables (not tabulated) include Annual return net, Volatility, Allocation to U.S. Equity, Allocation to Alternatives, Spending rate, Budget contribution, Donation contribution, FTE staff, Log (FTE students), and Religious affiliation. Carnegie classification and state fixed effects are included. Standard errors are clustered at the year level. *t*-statistics are reported in parentheses**.**

	Annual return net	Annual Return gross	Alpha net	Alpha gross	Volatility	Alpha volatility	Sharpe ratio
Divest dummy	518.395	349.642	106.745	23.853	62.256	-47.287	0.159
	(1.79)	(0.97)	(1.41)	(0.35)	(0.88)	(-1.66)	(1.74)
Post-divest dummy	-603.548	-363.103	11.323	15.913	-2.325	-7.766	0.001
	(-1.64)	(-1.94)	(0.25)	(0.34)	(-0.10)	(-1.39)	(0.02)
Divest dummy*Post-divest dummy	-467.493	-484.612	-65.531	-56.244	12.310	24.705	-0.107
	(-1.68)	(-1.70)	(-1.61)	(-1.29)	(0.16)	(0.64)	(-2.26)
Log (Total assets)	-241.826	-136.195	-0.286	-0.139	84.209	-8.403	0.007
	(-1.01)	(-0.36)	(-0.01)	(0.00)	(2.22)	(-0.84)	(0.14)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	1.42%	5.64%	9.44%	13.70%	34.76%	21.43%	7.84%
Obs.	201	201	194	194	201	154	194

Table IX: SRI and Total Additions

Results of panel regressions of endowment total additions on the indicator variable "SRI" indicating the endowment's standing with respect to socially responsible investments and other characteristics of the endowment and the university. Measures include Unadjusted Total additions and Oil-and-vice adjusted total additions. All dependent variables are measured in basis points. All variables are defined in the Appendix. Other control variables (not tabulated) include Annual return net, Volatility, Allocation to U.S. Equity, Allocation to Alternatives, Spending rate, Budget contribution, Donation contribution, FTE staff, Log (FTE students), and Religious affiliation. Carnegie classification, year fixed effects and state fixed effects are included. Standard errors are clustered at the year level. *t*-statistics are reported in parentheses.

	2009-2017		2009-2013		2014-2017	
	Unadjusted	Oil-and- vice adjusted	Unadjusted	Oil-and-vice adjusted	Unadjusted	Oil-and-vice adjusted
SRI	31.744	-24.480	2.5470	-50.075	63.189	-6.0330
	(1.96)	(-0.68)	(0.07)	(-1.31)	(2.30)	(-0.07)
Resist	65.870	-26.530	-	-	80.093	-23.094
	(2.03)	(-0.69)	-	-	(1.31)	(-0.30)
Log (Total assets)	-82.00	-26.709	-99.867	-40.053	-62.186	-19.431
	(-7.78)	(-1.88)	(-5.11)	(-1.70)	(-14.44)	(-1.13)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	69.19%	33.94%	70.73%	23.47%	56.84%	43.84%
Obs.	3,221	2,086	1,413	917	1,357	878