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Precautionary savings and the governance of nonprofit organizations

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Abstract

We present a model of nonprofit governance built on two assumptions: (1) organizations wish to hold precautionary savings in order to smooth expenditures; and (2) it is relatively easy for managers to divert these funds for personal use. Hence, donors face a trade off between expenditure smoothing and donation dissipation. We examine the model's predictions using panel data on U.S. nonprofits. We show that organizations in states with poor government oversight have managerial compensation that is more highly correlated with inflows of donations and allocate a smaller percentage of donations to the endowment for future expenditures relative to organizations in strong oversight states.

JEL classification: G30; L31
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The defining characteristic of nonprofit organizations is the nondistribution constraint (Hansmann, 1996). As a consequence, there are no shareholders that may absorb financial shocks to the organization. These fluctuations could be absorbed by employees through varying wages or employment, or recipients of the organization's services through changing program services. However, employees wish to smooth consumption, and the

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organization may wish to smooth program expenditures to maintain continuity of services. Holding precautionary savings is an alternative that is utilized by many nonprofits to guard against adverse revenue or expenditure shocks. Fisman and Hubbard (2003) presents results that are broadly consistent with the use of a fund balance as a precautionary savings device, but further note that the presence of a fund balance to smooth service expenditures may facilitate managerial 'stealing,' analogous to the free cash flow problem described by Jensen and Meckling (1976) in for profits. This possibility creates a dilemma for nonprofit donors-they may insist that funds be spent right away, thereby ensuring that their donations are put to good use at the expense of the production smoothing ability of the organization. Consistent with this idea, they find that the fraction of revenues derived from donations is lower in states with poor oversight of nonprofits.

In this paper, we build on this earlier work by presenting a model that crystallizes the intuition of this 'donor's dilemma,' and examining how this dilemma is affected by monitoring technologies. We use this model to generate additional predictions that relate to the sensitivity of diversion and precautionary savings to donation inflows. These predictions relate to changes over time within an organization, and hence generate more compelling empirical tests that further allow for the inclusion of organization fixed-effect to better control for unobserved (level) differences across firms. Specifically, our model predicts that there will be more diversion by managers if oversight is weaker, and hence donors will be less willing to have donations put into discretionary funds. We study these predictions using data from U.S. nonprofit organizations by taking advantage of cross-state differences in nonprofit oversight. We find that governance problems are greater in nonprofits in states with weaker oversight by the State Attorney General, as indicated by a higher sensitivity of executive compensation to the inflow of private donations in these states. We also find evidence that donors respond to these concerns by limiting the use of donations as precautionary savings, as indicated by a decreased sensitivity of fund balances to donation inflows in states with poor oversight. These findings are closely related to the pay sensitivity regressions that have become prevalent in the corporate finance literature (see, for example, Bertrand and Mullainathan, 2001), which shows that for profit managers are able to extract higher salaries from exogenous increases in cash flow. Our findings suggest a parallel set of governance issues affect the functioning of nonprofit organizations.

The rest of the paper is structured as follows: in Section 1, we provide a model that formalizes the key features of the donor's dilemma. The data we use are described in Section 2, and we report our results in Section 3. Section 4 concludes.

1. A simple model of nonprofit governance

To fix ideas, consider the problem faced by a not-for-profit entrepreneur who derives utility from providing a charitable good. The entrepreneur must raise donations to finance the provision of the good in two periods. The output of the good produced by the not-for-profit firm over the two periods is Q_1 in the first period and Q_2 in the second period; the cost of the good is unity. The entrepreneur receives donations D_1 from a "pioneer" donor in the first period. Because of the nondistribution constraint on the firm, those donations may be used to finance current production of the good (Q_1) or carried over as fund

balances F to finance a portion of second-period production (Q_2). Second-period donations from other donors are uncertain; they are high (D_{2H}) or low (D_{2L}) with equal probability. We assume for simplicity that the rate of interest and rate of time preference are equal to zero. Hence the not-for-profit entrepreneur's problem is given by:

$$\max_{Q_1 Q_2} U(Q_1) + 1/2[U(Q_{2L}) + U(Q_{2H})], \tag{1}$$

subject to:

$$Q_{2i} = D_1 - Q_1 + D_{2i} = F + D_{2i}, \mathrm{i} = \mathrm{L},\ \mathrm{H} \tag{2}$$

$$Q_1 \leq D_1, \tag{3}$$

where $U' > 0$ and $U'' < 0$. Eq. (2) balances the sources and uses of funds in the second period. Eq. (3) represents the external financing constraint (first-period expenses cannot exceed first-period contributions).

The optimal choice of first-period and second-period output of the not-for-profit good solves:

$$U'(Q_1) = 1/2[U'(Q_{2L}) + U'(Q_{2H})] + \mu_1, \tag{4}$$

where μ_1 is the Lagrange multiplier on the endowment non-negativity constraint, (3). Under uncertainty, the first-order condition indicates a tradeoff between the marginal utility of producing an additional unit of the not-for-profit good in period 1 and the expected marginal benefit of saving the unit cost for use in period 2. As the spread between D_{2L} and D_{2H} (and, hence, between Q_{2L} and Q_{2H}) increases, the not-for-profit entrepreneur will, all else equal, choose to produce less in period 1, carrying an endowment forward to finance a portion of production in period 2.

The possibility that the entrepreneur may allocate some endowment funds toward purposes other than future production of the not-for-profit good can be illustrated as follows. In equilibrium, the entrepreneur "diverts" a fraction s of the endowment F, receiving a net benefit $(s - \phi/2s^2)F$, where φ indexes the enforcement technology available to monitor the entrepreneur (this diversion need not represent stealing, but simply the use of funds for perquisites, organizational slack, or other purposes valued by the not-for-profit entrepreneur but not related to the production of the not-for-profit good). Higher values of ϕ are associated with greater monitoring and oversight and, hence, a lower net benefit of diversion.[2]

[2] Our model and empirical tests focus on endowment determination rather than considering the possibility of nonprofit managers diverting funds from current donations. This emphasis on endowments parallels research in corporate finance on agency costs of financial slack associated with the free cash flow (see Jensen, 1986; and the review of studies in Hubbard, 1988). In that setting, with low levels of free cash flow, managers are forced to go to capital markets to carry out investment. In our setting, managers of nonprofit organizations with negligible endowments must answer to current donors to carry out current expenditures, and are thus similarly disciplined.

Noting that $Q_1 = D_1 - F$ and $Q_{2i} = (1-s)F + D_{2i}$ (i=L,H) and letting the donor specify F, the not-for-profit entrepreneur's problem becomes:

$$\max_s U(D_1 - F) + 1/2\left[U\left((1-s)F + D_{2L}\right) + U((1-s)F + D_{2H})\right] + \left(s - \phi/2s^2\right)F, \tag{5}$$

subject to:

$$Q_{2i} = D_1 - Q_1 + D_{2i} = (1-s)F + D_{2i}, \mathrm{i} = \mathrm{L},\ \mathrm{H}.$$

$$Q_1 \leq D_1.$$

Choosing s yields:[3]

$$-\frac{1}{2}\left[U'\left((1-s)F + D_{2L}\right) + U'\left((1-s)F + D_{2H}\right)\right] + 1 - \varphi s = 0,$$

so that, with $U'' < 0$, we have $ds/d\phi < 0$. That is, the equilibrium rate of endowment diversion s depends negatively on ϕ. Greater monitoring and enforcement lead to a lower level of endowment diversion.

The entrepreneur must raise donations to finance the output of the good produced by the not-for-profit firm; further, with uncertainty over future donations, some carryover of endowment fund balances is valuable for smoothing output of the good. Prospective pioneer donors understand the possibility of diversion, which can affect both initial donations (D_1) and the ability of the not-for-profit entrepreneur to convert current donations to endowment. In period 1, the pioneer donor contributes D_1 and specifies the portion to be spent in the current period ($D_1 - F$); the entrepreneur diverts sF. In period 2, the entrepreneur and the pioneer donor expect donations from other donors of D_{2L} of D_{2H} with equal probability, and remaining funds – $D_{2i}+(1-s)F$, i=L, H – are spent. As we show below, the potential for diversion creates a trade off between the benefit of endowment funds as precautionary saving (illustrated earlier) and the cost of endowment funds in diversion. While donors may limit diversion by increasing the required "burn rate" for current donations, that higher burn rate reduces the ability of the not-for-profit firm to smooth production of the not-for-profit good.[4]

We assume that pioneer donors derive utility from the production of the not-for-profit good—$V(Q_1, Q_2)$, where $V' > 0$ and $V'' < 0$. For simplicity, we assume that their own utility

[3] Assuming that the non-negativity constraint does not bind.

[4] The tradeoff described here is analogous to that experience by a for-profit entrepreneur attempting to raise external equity financing for investment and production. With the possibility of stealing from funds raised, the entrepreneur is forced to hold a larger share of the firm's equity than is efficient for diversification, and the firm's marginal required rate of return on investment projects is higher than a neoclassical benchmark. Greater monitoring and oversight from legal and regulatory regimes in place reduce stealing, inside ownership levels, and the marginal cost of capital for investment. For alternative models and descriptions, see La Porta et al. (2000), Shleifer and Wolfenzon (2002), and Himmelberg et al. (2004).

is linear in net wealth—gross wealth W less donations D_1. That is, pioneer donors maximize:

$$\max_{D_1,F} V(D_1 - F) + 1/2[V((1-s)F + D_{2L}) + V((1-s)F + D_{2H})] + W - D_1, \tag{6}$$

subject to $D_1 < W$ (Recall that $Q_1 = D_1 - F$ and that $Q_{2i} = (1-s)F + D_{2i}$, i=L, H.). The first-order conditions for D_1 and F are given by:

$$V'(D_1 - F) = 1, \tag{7}$$

and

$$-V'(D_1 - F) + 1/2(1-s)[V'((1-s)F + D_{2L}) + V'((1-s)F + D_{2H})] = 0. \tag{8}$$

The former condition simply reflects the idea that the donor contributes to the level at which the marginal utility of not-for-profit good production equals the marginal utility of income to finance other consumption. The second condition can be used to derive $dF/d\phi$, the effect of monitoring and enforcement on endowment creation. Recall from the entrepreneur's problem that $ds/d\phi < 0$. One can then straightforwardly show that $dF/d\phi > 0$ (higher monitoring and enforcement leads to higher endowment balances), $dD_1/d\phi$ (higher monitoring and enforcement leads to higher donations), and $d(F/D_1)/d\phi > 0$ (higher monitoring and enforcement leads to an increase in the portion of donations assigned to endowment.[5]

The simple comparative static results yield four predictions for empirical analysis. First, endowment balances are valuable as precautionary savings for not-for-profit firms with variable contributions, so that greater volatility of donations should be associated with a larger endowment to smooth production of the not-for-profit good, all other things equal. Second, with $dD_1/d\phi > 0$, more 'donative' organizations should exist where monitoring and oversight of not-for-profit organizations is relatively strong. Third, with $ds/d\phi < 0$, all else being equal, lower levels of fund diversion should occur where monitoring and oversight are strong. Fourth, recall that the possibility of fund diversion creates a tradeoff between the use of endowment funds as precautionary saving and the donor's anticipation of partial dissipation of those funds. This tension leads to the prediction that $d(F/\underline{D}_1)/d\varphi > 0$: Assignment of donations to endowment fund balances is larger where monitoring and oversight are stronger.

We emphasize that our model is built on two basic assumptions: (1) that it is easier for managers to pursue personal interests with endowment funds rather than streams of

[5] Expanding (8) yields:

$$-V''(D_1 - F)\left[\frac{dD_1}{d\varphi} - \frac{dF}{D\varphi}\right] - 1/2\left[V'((1-s)F + D_{2L}) + V'((1-s)F + D_{2H})\right]\frac{ds}{d\varphi} + 1/2(1-s) \times \left[\left((1-s)\frac{dF}{d\varphi} - F\frac{ds}{d\varphi}\right)\left(V''((1-s)F + D_{2L}) + V''((1-s)F + D_{2H})\right)\right] = 0$$

With linear utility in wealth for the donor, $V''(D_1 - F)[(dD_1/d\varphi) - (dF/d\varphi)] = 0$ so that $(dD_1/d\varphi) = (dF/d\varphi)$. From the entrepreneur's problem, $ds/d\varphi < 0$. Hence with $V' > 0$ and $V'' < 0$, $dF/d\varphi > 0$ (and $dD_1/d\varphi > 0$). Note that $d(F/D_1)/d\varphi = (1/D_1)(dF/d\varphi)(1 - (F/D_1)) > 0$.

revenue, and (2) that donors have an incentive to provide managers with discretionary funds, rather than simply providing funding on an annual basis. We provide more detailed explanations of these assumptions in Fisman and Hubbard (2003), which we summarize here by referring to a related body of work in corporate finance. First, in the case of endowment versus revenue expropriation, our reasoning is analogous to that of Jensen (1986) who argues that organizations should hold high levels of debt, so all cash inflows must be used to service this debt and stave off bankruptcy, which will cause the manager to lose his job. Analogously, in a nonprofit firm, if the organization has very little cushion in the form of an endowment, all cash inflows will be required to meet the organization's basic mission requirements, leaving relatively little scope for expropriation. Jensen also provides a useful analog for explaining the use of discretionary funds. In for-profits, managers may have preferential information on investment opportunities, and may require a fund balance to act on this information. Analogously, it may be costly for nonprofit managers to have to solicit additional funds from donors when unexpected needs arise.

2. Data

For this paper, we concentrate on charitable nonprofit organizations (so-called 501(c)3 organizations, named for the section of the U.S. federal income tax code that gives them tax-exempt status), making use of the IRS Statistics of Income files. This data set is compiled by the National Center for Charitable Statistics (NCCS) at the Urban Institute, which is derived from data taken from the Form 990 that tax-exempt organizations must file with the IRS. These data contain all 501(c)(3) organizations with more than $10 million in assets plus a random sample of approximately 4000 smaller organizations. Most financial variables on the Form 990 are included, and the data are considered to be more reliable than the data in the IRS's unedited files because of the substantial error checking by the NCSS.[6] Variable definitions for all variables are listed in the Appendix.

Our measure of the endowment, or net assets, is from the Form 990; this is simply total assets less total liabilities.[7] Research on nonprofit organizations generally uses the term endowment to refer to a restricted fund for which, at least in theory, the principal cannot be spent. That is, a distinction is drawn between restricted (endowment) and unrestricted (fund balance) funds. Unfortunately, the IRS data do not allow for assets to be disaggregated in this way, although we believe that this is not a significant concern for several reasons. First, restricted (endowment) funds are held primarily by large educational institutions and hospitals, and we find that our results are robust to the exclusion of these groups. Further, these organizations are generally able to borrow against the value of their

[6] For more details, see the NCCS web site at http://www.nccs.urban.org/index.htm.

[7] An alternative, and perhaps more direct, measure of the endowment is the organization's holdings that could potentially be used to finance program expenditure. More precisely, we may use:

$$\text{Endowment} = \text{Cash} + \text{Bank Deposits} + \text{Securities} + \text{Real Estate Investment}$$

This measure is very highly correlated with reported fund balance ($\rho = 0.96$), and using it as an alternative yields virtually identical results (available from the authors upon request).

endowments, and may furthermore use the interest generated by the endowments to make interest payments on their loans. Thus, total funds available to managers (either through unrestricted funds or borrowing on funds collateralized by restricted funds) is the same in either case. It is still useful to consider the potential bias if these arguments do not hold. If fund restrictions are uncorrelated with state-level oversight of nonprofits, then our results below should be affected only by classical measurement error, and hence biased toward zero. Even if restrictions are correlated with extent of oversight, but are constant over time, this should be absorbed by our organization-specific fixed effects; we emphasize that this is an additional benefit of the approach in this paper relative to that of Fisman and Hubbard (2003). Finally, this variable (or closely related ones) has been used in the nonprofit accounting literature to measure nonprofits' fund availability (see Core et al. (2004) and Frumkin and Keating (2004) for two recent examples).

Our specifications generally scale the endowment by total expenses to get a measure of endowment intensity. This value, (Endowment/Expense), may be interpreted as the number of years that an organization could continue its current mission without additional revenues. Finally, to examine the elasticity of change in endowment with respect to donations, we require a measure of donation inflows, which is given by total private donations (Donations), as well as a measure of endowment change, $\Delta\text{Endowment} = \log(\text{End-of-Year Endowment}) - \log(\text{Beginning-of-Year Endowment})$.

Because we examine the difference in elasticities across organizations that exist in different legal environments, we also require a measure of oversight of nonprofit firms. There is considerable variation across states in the regulation of nonprofit organizations. The Office of the Ohio Attorney General carefully documented these differences in a report in 1974. As the authors of the article emphasize, there remain dramatic differences in the resources allocated to oversight of nonprofits, as well as the scope for actions against nonprofits by the state attorneys general.[8] To measure oversight, we employ a simple 'headcount' of powers of the state Attorneys General, which are listed in the Ohio Attorney General's report (see Fisman and Hubbard, 2003, for further details). In each specification we divided these values by eight to allow scores to range from zero to one.

The Statistics of Income (SOI) files contain annual observations on between 10,000 and 12,000 organizations per year, varying by year, for 1987–1996, with approximately 18,000 organizations filing in at least one year. Prior to 1987, the data were collected on a much smaller sample of organizations. We limit our analyses to the approximately

[8] One may be concerned that nonprofit regulation is of limited relevance, unless states devote significant resources to enforcing these regulations. In the same report cited above, the Office of the Ohio Attorney General also collected data on the human resources devoted to the enforcement of nonprofit regulation. The number of full-time employees devoted to enforcement, deflated by state population, is highly correlated with the extent of regulation, as measured in our study. Moreover, when we use this as a measure of governance, it yields similar (although slightly weaker) results to our law-based definition. Alternatively, examining actual convictions for misconduct is unlikely to be revealing, because effective enforcement will increase the proportion of illegal acts that are uncovered, but will reduce the number of such acts that are committed. Finally, we note that Desai and Yetman (2004) utilize very recent information on the statutes used in this paper collected by Fremont-Smith (2004). There is a very high degree of concordance between oversight in the two time periods, and a variable constructed from the more recent data yields virtually identical results. We use the earlier data to use a measure that precedes the time period under consideration.

Table 1
Summary statistics for all variables for the year 1987

	Mean	S.D.	Minimum	Maximum	Observations
Endowment ($1000)	39736.24	159664.90	0	5207517	4546
Endowment/expense	3.17	6.75	0	98.62	4546
Expense ($1000)	33436.97	101734.80	9.671	4039460	4546
Revenue ($1000)	36431.88	108203.10	6.608	4108413	4546
Private donations/revenue	0.14	0.21	0	1	4546
Private donations ($1000)	2642.20	14095.07	0	667663	4546
Executive compensation	173171.4	162066.9	220	3270905	2868

Source: The data are derived from IRS returns, based on the Statistics of Income subsample provided by the Urban Institute. Please see Section 3 of the text for additional details on the sample and its selection criteria. For variable definitions, please see the Appendix.

5300 organizations that filed with the IRS every year during this period. After removing mutual organizations, dominated by TIAA-CREF, grant-making foundations and trusts, and organizations whose industry is 'unknown', the sample is reduced to 5007 organizations. We also limit the sample to organizations that consistently report sensible values for the variables that are central to our analyses. We remove organizations with negative reported revenues or expenses, a 1987 endowment rate of greater than 100, and a negative ratio of private donations to revenues. These omissions result in a further reduction of 461 firms, leaving a total of 4546 organizations. Finally, for the specifications in which we examine the sensitivity of endowment changes to donation inflows, we require data on donations, change in endowment, and legal regime, eliminating 371 firms from the sample.[9]

We will also examine the relationship between the inflow of donations and the compensation of officers in nonprofits, and study how this varies across states. The donations data are again from the SOI files. We derive the executive compensation data from the IRS Statistics of Income, Form 990 Part V files, which contain the salaries, expenses, and benefits received by officers in a subset of nonprofits. Consistent with other work on nonprofit compensation using the IRS data (see, for example, Hallock, 2002), we use the log of total pay and benefits received by the highest-paid officer in each organization as our measure of compensation (Executive Pay). There is considerable, although not complete, overlap in the coverage of organizations by the regular SOI file and this compensation file. Furthermore, the SOI compensation file only covers the years 1992–1996. A total of 4784 organizations appear at least once in the file; after merging the data sets and deleting observations lacking in data on donations or pay, we were able to generate a balanced panel of 2868 organizations.

Table 1 presents summary statistics for the data. The most important point to observe is that the data have some extreme values in the variables of interest; for example, Executive

[9] We also exclude all organizations that switch state of incorporation during the sample period; there are 116 such organizations. One might argue that having within-firm variation in legal regime would be very useful for us. However, most of these changes seem to be because of errors in the data; the majority (79) of these organizations have only a single observation where the state differs, and this is often not the first or last year. Finally, anecdotally, we observed that the states' abbreviations were very often very close for organizations that switch between states (e.g., Arkansas and Alabama, or New York and New Jersey).

Pay values range from 220 dollars to well over 3 million dollars. The upper tail of this distribution is entirely accounted for by health care organizations. As noted in Fisman and Hubbard (2003), the sample is dominated by health care organizations, which are primarily hospitals. Health care appears to be more generally different from other nonprofit activities; in addition to the differentials in compensation, the median donation rate is significantly below that of other sectors. As numerous scholars have noted (see, for example, Weisbrod, 1998), hospitals behave increasingly like for-profit organizations; accordingly, we also report empirical results for nonprofit organization samples including and excluding hospitals. We also experimented with regressions that omitted the tails of the distribution, and found that this did not affect our results.

3. Results

The first two predictions of the model are examined using cross-sectional regressions in Fisman and Hubbard (2003). Because the second pair of predictions relate to spending and investment sensitivities, we will be able to include organization fixed effects in the regressions below that examine the sensitivity of saving and managerial diversion to donation inflows.

First, we study the evidence that donors actually have good reason to be concerned about the behavior of managers in states with poor oversight. There are many ways in which managers in nonprofit organizations might take advantage of the discretion they are given over funds. Most obviously, managers subject to relatively less oversight might be more tempted toward perquisite consumption. While observing this directly is difficult, one can examine the sensitivity of managerial pay to the inflow of donations. If managers in states with lower oversight take advantage of a more lax regulatory environment, then a higher proportion of the inflow of donations may be paid to managers. While pay-for-performance may lead to this correlation, testing for the differential sensitivity across states more effectively separates the performance effect from the diversion effect. Our test is premised on the assumption that the primary reason to expect a differential sensitivity of compensation to donation inflows according to state-level oversight is due to this type of abuse of funds.[10] We estimate:

$$\log(\text{ Managerial Compensation}_{it}) = \alpha + \beta_1 * \log(\text{Donations}_{it}) + \beta_2 * \text{Oversight}_i * \log(\text{Donations}_{it}) + \eta_i + \epsilon_{it} \quad (9)$$

where we expect $\beta_1 > 0$ and $\beta_2 < 0$. These results are presented in Table 2 for the full sample. In columns (1) and (2) we present the results for the full sample, and find that neither the direct effect in column (1), nor the interaction in column (2) is significant. However, this sample includes a large number of organizations that are largely non-donative, and therefore have very little variation in the log of donations variable (also

[10] One additional alternative hypothesis is that in heavily regulated states, organizations may 'err on the side of caution', and hence avoid any pay-performance sensitivity that would attract the attention of regulators. While we have not heard this view expressed by those in nonprofit management, we cannot rule it out at this time.

Table 2
Sensitivity of executive pay to donation inflows, variation by state-level regulation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Donations)	−0.001	0.000	0.010	0.017	0.017	0.032	0.019	0.044
	(0.002)	(0.003)	(0.003)	(0.005)	(0.004)	(0.007)	(0.004)	(0.008)
log(Donations)* regulation		−0.001		−0.014		−0.029		−0.048
		(0.005)		(0.008)		(0.010)		(0.012)
Cutoff value of donation rate	None	None	0.01	0.01	0.05	0.05	0.1	0.10
Within R^2	0.068	0.068	0.089	0.089	0.083	0.083	0.083	0.083
Observations	14340	14340	8240	8240	6405	6405	4915	4915

The dependent variable in all regressions is log(Executive Pay). Years covered by the data are 1992–1996. For variable definitions, please see the Appendix. Standard errors are in parentheses, and are adjusted for heteroskedasticity. All specifications include organization fixed-effects.

reflected in the extremely low R^2 in these regression). Hence we also restrict the sample to organizations that obtained at least some small proportion of their revenues from donations (we use as cutoffs 1%, 5%, and 10%). Having omitted non-donative organizations, we do in fact find a significant elasticity of executive compensation with respect to donation inflows, and that this sensitivity is lower in states with poor oversight. In terms of magnitude, the final column reporting the results with the most restrictive donation intensity cutoff implies an elasticity of 0.044 for organizations in lowest oversight states, and a negligible elasticity for organizations in high oversight states. Table 3 presents the same results with health care organizations omitted; we find that this does not substantively affect our results.

The second panel-based prediction of our model is that in the presence of governance problems donors should be reluctant to allow organizations to put funds into an endowment for future use. To examine this, we focus on the effect of interaction of oversight and donations on endowment growth; i.e., we test the hypothesis of differential elasticities across states of changes in endowment with respect to donations. If abuse of discretionary funds by nonprofit managers is possible, then donors should be less willing

Table 3
Sensitivity of executive pay to donation inflows with hospitals omitted, variation by state-level regulation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Donations)	0.018	0.021	0.034	0.023	0.047	0.038	0.055	0.058
	(0.006)	(0.005)	(0.007)	(0.006)	(0.008)	(0.008)	(0.009)	(0.009)
log(Donations)* regulation		−0.029		−0.012		−0.026		−0.050
		(0.008)		(0.010)		(0.011)		(0.013)
Cutoff value of donation rate	None	None	0.01	0.01	0.05	0.05	0.10	0.10
Within R^2	0.092	0.077	0.097	0.096	0.091	0.092	0.094	0.097
Observations	8630	8630	7130	7130	5940	5940	4610	4610

The dependent variable in all regressions is log(Executive Pay). Years covered by the data are 1992–1996. For variable definitions, please see the Appendix. Standard errors are in parentheses, and are adjusted for heteroskedasticity. All specifications include organization fixed-effects.

Table 4
Sensitivity of change in endowment to donation inflows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Donations)	0.003	0.006	0.006	0.011	0.006	0.003	0.005	0.010
	(0.002)	(0.003)	(0.004)	(0.005)	(0.003)	(0.004)	(0.003)	(0.005)
log(Donations)* regulation	0.002	0.006	0.016	0.015	0.008	0.032	0.015	0.025
	(0.003)	(0.005)	(0.007)	(0.007)	(0.004)	(0.007)	(0.005)	(0.008)
Cutoff value of donation rate	None	0.01	0.05	0.1	None	0.01	0.05	0.1
Hospitals excluded	No	No	No	No	Yes	Yes	Yes	Yes
Within R^2	0.006	0.011	0.012	0.017	0.019	0.018	0.022	0.024
Observations	41750	26470	20800	16660	25820	22470	19090	15480

The dependent variable in all regressions is Δlog(Endowment). Years covered by the data are 1987–1996. For variable definitions, please see the Appendix. Standard errors are in parentheses, and are adjusted for heteroskedasticity. All specifications include organization fixed-effects.

to allow managers to use donations to build up an endowment: Donors should insist that funds are spent right away. Hence we examine:

$$\Delta\log\left(\text{Endowment}_{it}\right) = \alpha + \beta_1 * \log\left(\text{Donations}_{it}\right) + \beta_2 * \text{Oversight}_i * \log\left(\text{Donations}_{it}\right) + \eta_i + \epsilon_{iy}. \quad (10)$$

We predict $\beta_2 > 0'$ i.e., a higher elasticity in higher oversight states of change in endowment with respect to donations. Again, these reduced-form specifications allow for the inclusion of organization fixed effects that control for cross-firm heterogeneity. We do not report specifications that omit the interaction term $\text{Oversight}_i * \log(\text{Donations}_{it})$ in the interests of space; the direct effect is significant regardless of the cutoff used. In Table 4, column (1), we find that for the full sample, the estimated coefficient on the interaction term is not significant, as in the compensation sensitivity regressions. However, when we focus on more donative organizations (columns (2)–(4)), we find a higher sensitivity of the change in endowment size to inflows of donations. This result is also robust to the exclusion of hospitals from the sample (columns (5)–(8)). Thus we provide evidence that donors in weak oversight states may be more reluctant to make donations that end up in a fund for future use, relative to donors in states with strong oversight.

4. Conclusion

We present a model of nonprofit governance based on the nondistribution constraint that defines the nonprofit form, and present evidence that endowments may be the source of potential governance problems in nonprofit organizations, in the spirit of the free cash flow problems initially described by Jensen (1986). In particular, we show that organizations in poor governance states, relative to strong governance states: (1) have managerial compensation that is more highly correlated with inflows of donations; and (2)

allocate a smaller percentage of donations in the endowment for future expenditures. We do not intend these results to be a critique of nonprofit organizations. Rather, our findings highlight the importance of appropriate monitoring of organizations without shareholders that might otherwise serve the purpose. Indeed, we find evidence that state-level monitoring is effective, and absent this monitoring, that donors respond by constraining managers by limiting the accumulation of reserves. Given the coarseness of our measure of oversight, this must obviously be interpreted with some caution. Hence we view this paper as an important first step in a broader effort to understand the effects of enforcement and monitoring on behaviors more generally in the nonprofit sector.

Appendix A. Data definitions

Note: figures in parentheses are the locations of data items on the IRS form 990, where appropriate. Unless otherwise noted, the source for all variables is the National Center for Charitable Statistics (NCCS).

Endowment–Total Assets–Total liabilities, according to the organization's form 990 tax return. (line 74, column (b))

Private Donations–Total direct public support (i.e., donations, excluding government funds). (line 1(a))

Δ*Endowment*–End-of-year Endowment − Beginning-of-year endowment (line 74, column (b) − line 74, column (a)).

Executive Pay–Total pay and benefits received by the highest-paid officer. (Part V, column (c)+column (d)+column (e))

Regulation–Sum of powers of the state Attorneys General with respect to the control of nonprofits, as summarized in Fisman and Hubbard (2003). Source: Ohio State Attorney General.

References

Bertrand, M., Mullainathan, S., 2001. Are CEOs rewarded for luck? The ones without principals are. The Quarterly Journal of Economics 116 (3), 901–932.

Core, J., Guay, W., Verdi, R., 2004. Agency problems of excess endowment holdings in not-for-profit firms. Wharton working paper.

For monographs;

Desai, M., Yetman, R., 2004. Constraining managers without owners: governance of the not-for-profit enterprise. Harvard Business School working paper.

Fisman, R., Hubbard, R., 2003. The role of nonprofit endowments. In: Glaeser, E. (Ed.), The Governance of Not-for-Profit Organizations. University of Chicago Press, Chicago, pp. 217–234.

Fremont-Smith, M., 2004. Governing Nonprofit Organizations: Federal and State Law and Regulation. Belkna Press, Cambridge.

Frumkin, P., Keating, E., 2004. The effectiveness of regulating governance: the case of executive compensation in nonprofit organizations. manuscript.

Hallock, K., 2002. Managerial pay and governance in American nonprofits. Industrial Relations 41 (3), 377–406.

Hansmann, H., 1996. The Ownership of Enterprise. Harvard University Press, Cambridge.

Himmelberg, C., Hubbard, R., Love, I., 2004. Investor protection, ownership, and investment. Columbia Business School working paper.

Hubbard, R., 1988. Capital market imperfections and investment. Journal of Economic Literature 36, 193–225.

Jensen, M., 1986. Agency costs of free cash flow, corporate finance, and takeovers. American Economic Review 76 (2), 323–329.

Jensen, M., Meckling, W., 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3 (4), 305–360.

La Porta, R., Lopez-di-Silanes, F., Shleifer, A., Vishny, R., 2000. Investor protection and corporate governance. Journal of Financial Economics 58 (1), 3–27.

Shleifer, A., Wolfenzon, D., 2002. Investor protection and equity markets. Journal of Financial Economics 66 (1), 3–27.

Weisbrod, B., 1998. To Profit or Not to Profit. Cambridge University Press, Cambridge.