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Consumption or Investment? On Motivations for Political Giving

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We propose a strategy to distinguish investment and consumption motives for political contributions by examining the behavior of individual corporate executives. If executives expect contributions to yield policies beneficial to company interests, those whose compensation varies directly with corporate earnings should contribute more than those whose compensation comes largely from salary alone. We find a robust relationship between giving and the sensitivity of pay to company performance and show that the intensity of this relationship varies across groups of executives in ways that are consistent with instrumental giving but not with alternative, taste-based, accounts. Together with earlier findings, our results suggest that contributions are often best understood as purchases of “good will” whose returns, while positive in expectation, are contingent and rare.

Do individuals give political contributions simply because they derive an expressive or other consumption benefit from doing so? Or are they attempting to influence policy outcomes? If the consumption view is correct, then political donations are just another means by which citizens participate in the political process (unequal to be sure—see Verba, Scholzman, and Brady 1995) and need not imply improper or undemocratic influence. In contrast, donation decisions that are driven by an investment motivation, especially when they are made on behalf of small but economically powerful minority interests, naturally raise concerns about the possibility of an undemocratic exchange of policy for dollars (Grossman and Helpman 2001; Schattschneider 1960).

Despite the intuitive plausibility of these concerns, the empirical record on the association between policy change and the funding of individual candidates falls short of unequivocal or robust.¹ The ambiguous status of that record is further underscored by the small size of the vast majority of contributions—on average about \$115 per check in recent elections. Taken together, these facts point to the consumption account as a superior explanation for why people give (Ansola-behere, de Figueiredo, and Snyder 2003).

While the consumption interpretation appears consonant with the apparently haphazard behavior of the average contributor, two critical considerations should lead one to question whether the matter is, for all intents and purposes, closed. First, from the standpoint of the effects of contributions on democratic accountability, the behavior of common contributors does not seem to be the major object of concern. A far more significant issue is the behavior of the small minority of contributors who control disproportionately large shares of society's resources and the potential relationship between that behavior and the choices of elected officials. Second, as we discuss in detail below, the search for legislative action on behalf of donors is hampered by the relevant parties' incentives to obscure it.

In this paper, we propose and implement a strategy to disentangle the motives of contributors in light of these considerations. The intuition is as follows: if individuals perceive investment value in their political contributions, we should expect to find differences in their propensity to make them corresponding to differences in their valuations of the potential benefits of those contributions (controlling for their ability to afford doing so). The presence of such a correspondence

¹For further elaboration, see the section “Political Contributions and Instrumental Benefits” below.

would allow us to conclude that their behavior must exhibit an investment motive.

To implement this strategy, we investigate the political contributions of a sample of executives from Standard and Poor's (S&P) 1,500 firms. Government policies often have profound implications for firm profitability. If, responding to this, executives perceive contributions as investments with potential pecuniary return, we should observe an association between their contribution behavior and the sensitivity of their income to changes in firm profitability: the greater that sensitivity, the more likely the executive will give and, conditional on giving, the larger her contributions should be.

Our empirical results provide robust evidence of this relationship, which persists even given controls for executive-specific attitudes toward risk, wealth and income effects, and stock volatility. Further, the incentives we identify lead us to expect that the relationship between executives' contribution behavior and the sensitivity of their income to firm performance itself varies with specific, measurable characteristics of those executives. The empirical evidence in support of these predictions further bolsters our identification of the main finding with the investment-based causal mechanism, rather than this finding's alternative interpretations consistent with specific variants of the consumption account.

Political Contributions and Instrumental Benefits

Investment in the Political "Marketplace"

Previous work on the role of campaign contributions has suggested several ways in which contributions might affect policy outcomes and thus serve as investments. The most prominent of these ways include promotion of the electoral success of sympathetic recipients (Poole and Romer 1985); quid pro quo purchases of legislative votes, legislative pressure on regulatory agencies, or of other forms of constituency service (Aranson and Hinich 1979; Baron 1989; Grossman and Helpman 1994, 2001; Snyder 1990); and buying access for an opportunity to make donor concerns known to legislators directly (Hall and Wayman 1990; Langbein 1986).

While each of these causal mechanisms is appealing, two prominent and robust findings raise questions about their soundness: the lack of definitive evidence of tangible, systematic returns on such political investments (e.g., Ansolabehere, de Figueiredo, and

Snyder 2003; Grenzke 1989; Wright 1990, 1996; but see Stratmann 1991, 2002) and the small size of the contributions (Grosseclose, Milyo, and Primo 2000; Tullock 1972). Traditional quid pro quo accounts run afoul of both of these observations, since they can neither systematically substantiate the policy change being purchased, nor explain its low price relative to its value and scarcity. Arguably, the same criticisms apply to buying access, insofar as donors will only wish to engage in it if it improves the likelihood a legislator adopts a favored policy position. The small size of contributions relative to the cost of congressional campaigns also raises questions about the plausibility of the sympathetic incumbents account, since any one contribution is unlikely to be decisive in determining the electoral outcome.

Another key challenge facing these theories is the recognition that to the extent that contributions are expected to affect policy, the result may be less desirable in the eyes of a majority of voters (Prat 2002). Should the electorate become aware of a connection between contributions and changes in policy, it might punish the relevant officials accordingly. This puts most models of contribution behavior fundamentally at odds with notions of electoral accountability (Morton and Cameron 1992, though see Coate 2004 for a model of contributions in which their signaling effect is beneficial for the voters). The more brazen and readily observable the connection between contributions and policy change, the more serious this tension becomes.

Taken together, these difficulties would seem to bolster the "consumption" interpretation of contributions: giving does not come with an expectation of a tangible return that would not occur in the absence of a contribution.

Rational Expectations and Contributor Beliefs

The difference between consumption- and investment-oriented political expenditures comes down to the following: expenditures in the former category are never expected to yield pecuniary returns for the donor, whereas those in the latter may do so under certain conditions. Any account of contributor behavior seeking to reaffirm an investment motivation must, given rational expectations, proceed on the premise that contributors are getting something in return for their money. Correspondingly, previous studies have focused their attention on measuring changes in legislative behavior in response to campaign contributions (for a review, see Ansolabehere, de

Figueiredo, and Snyder 2003).² Based on the balance of available evidence, should we set aside the possibility that contributors are motivated by the perception that they may reap pecuniary returns on their political donations? Two conceptual difficulties, arguably intrinsic to the design of many previous studies, are obstacles to this inference.

First, the range of possible legislative responses to contributions includes subtle and bill-specific actions, such as a change in how the bill is marked up in committee, a reorganization of the agenda, or a logroll between legislators, that would be difficult for the analyst to observe and, further, to identify as a direct consequence of some contribution (Hall and Wayman 1990; Wright 1996, 144–45). Legislators' concern with electoral accountability suggests that those actions would be precisely the responses to which they are likely to resort first. (The information available to the analyst is, in this case, closer to that available to the voters rather than to that of the contributors, who are more likely to be privy to the off-the-record details of the legislative process and unobservables such as legislators' word-of-mouth reputations for greater and lesser helpfulness to contributors.)

Second, a plausible investment view of contributions is unlikely to require the delivery of a policy benefit or granting access in return *with certainty*. Investment-motivated contributors may give because they recognize that a situation, however unlikely, *may* arise in which they will be able to make an effective claim by virtue of having made their contributions. Given the subtlety and the range of favored legislative responses, observing whether conditions are ripe for a legislative favor and what that favor might entail is likely to be exceedingly difficult for the political analyst.

Thus, issues of observability and contingency place severe limits on our ability to document a consistent relationship between contributions and the actions of recipients across multiple data sources. This in turn suggests the value of exploring a different empirical strategy for distinguishing between contributors' consumption and investment motives. The strategy we pursue capitalizes on the analysts' ability to account for the observable correlates of those motives, provided that we rule out the possibility that contributors—especially economically sophisticated ones—can be systematically fooled into believing that

their contribution buys them a return when in fact it does not.³

The Motivation to Contribute

If individuals' willingness to contribute is motivated by investment considerations, then their contribution behavior ought to vary systematically with their perceptions of the size of the returns that they would expect to derive from contributing. The incentives and status of corporate executives in large companies make them both a particularly plausible and politically relevant target group for the analysis of such perceptions. Their compensation tends to be influenced by their respective companies' economic performance, and through it, by actions of government officials. Further, because of their disproportionate ability, as decision makers in large firms, to affect the welfare of other constituents, they are disproportionately able to command the attention of lawmakers if need be.

While the beliefs of executives cannot be observed directly, we can observe characteristics that directly induce executives' perceptions of the size of their politically affected interests. One important characteristic is the sensitivity of the total value of the executive's compensation package to changes in his or her company's stock price.⁴ If political decisions affect company performance, then the higher this sensitivity, the more exposure the executive's welfare has to them.

To fix ideas, suppose that executive can allocate his or her endowment (e.g., from income) on three cat-

³Perhaps closest to our indirect approach for uncovering investment motives is that taken by Kroszner and Stratmann (1998, 2005), who consider the tendency of contributors to favor legislators sitting on policy-relevant committees, as well as the apparent value to legislators of establishing long-term reputations for specific policy views.

⁴To the extent that government regulation varies by industry, executives' policy interests and their willingness to contribute may also be expected to vary systematically by industry. Given the focus of this paper, however, an individual-level analysis, as opposed to an industry-level one, is necessary for two reasons. First, although individuals in a given industry may share a desire for a reduction in the oversight of that industry, each would most prefer to lessen the regulatory burden on his or her own firm, *especially* if it can be done by shifting that burden onto competing firms in the same industry (Gordon and Hafer 2005, 2007). In this sense, firms within an industry should not be expected to be unified in their political interests. Second, because industries are regulated to varying degrees, individuals in different industries might develop different tastes for contributing or beliefs about the consequences of doing so because of different day-to-day experiences with government. To distinguish, then, between investment motives and preferences for participation *qua* participation, we must turn to variation in individuals' incentives to invest, both within and across industries.

²An exception is Grier, Munger, and Roberts (1994), whose study focuses on the relationship between industry PAC contributions and degree of industry regulation.

egories of expenditures: nonpolitical expenditures, consumption-oriented political contributions, and investment-oriented political contributions. In the appendix, we present a simple heuristic representation of the executive's decision problem. From this representation, we derive two observations relevant to our main empirical analysis. First, there is a universal income effect: *ceteris paribus*, total political contributions should increase with the executive's income if the executive perceives *either* a consumption or an investment value to contributing (or both). Thus, empirical confirmation of an income effect (e.g., Farrell, Hersch, and Netter 2001) cannot discriminate between these motives.

The second observation concerns the effects of pay-to-stock-performance sensitivity. We should observe total political contributions increasing with pay-performance sensitivity *only* in the presence of an investment motivation. In other words, empirical confirmation of this relationship is indicative of the presence of such a motivation—whether or not the consumption motivation is also present. Further, given rational expectations, such evidence would also constitute indirect support for the claim that donors are getting something for their money (even if it is contingent and difficult for the analyst to observe). The research strategy that focuses on the analysis of this evidence would avoid the pitfalls of outcome-based analyses discussed in the previous section.

Data and Descriptive Statistics

We collected data on the compensation and political contribution behavior of a sample of corporate executives from the 1996 to 2002 election cycles. Standard and Poor's collects data on compensation of the top five executives for each company in the S&P "Supercomposite" 1,500, which it maintains in its *Execucomp* database. For campaign contribution data, we combed the FEC individual contribution datafiles searching for donations associated with each executive. (Details of our sampling and coding methodology are in the online appendix at <http://www.journalofpolitics.org>.) The unit of observation for our main statistical analysis is the executive-year. Summary statistics for the variables employed in our analysis appear in the online appendix.

Our measure of executive pay-to-performance sensitivity is *compensation elasticity*. We construct the measure as an elasticity for three reasons. First, it is neutral with respect to the total size of the executive's compensation (for which we can control). Second, our

measure is insensitive to firm size, unlike the commonly used measure suggested by Jensen and Murphy (1990), which captures the dollar increase in an executive's wealth associated with a dollar increase in firm value.⁵ Finally, by examining a hypothetical *percentage* change in share price rather than, say, a standard deviation in the actual share price, our measure is scale-invariant to price: in the case of outright stock ownership, a one percent return on 1,000 shares at \$50 per share is the same as a one percent return on 2,000 shares at \$25 per share.⁶

The somewhat involved procedure used to derive compensation elasticity is based largely on the portfolio valuation methodology of Hall and Liebman (1998). The biggest determinants of an executive's pay-performance relationship are the number of shares of the firm she owns outright and her option portfolio. Calculating the value of the former is straightforward: simply multiply the number of shares by the share price, adjusting both when necessary in the event of stock splits. Estimating the value of the option portfolio is more difficult; details may be found in the online appendix.

We compute two quantities: the total value, given the current share price, of executive *i*'s stock and option portfolio at time *t*, $v_{i,t}(p_t)$, and the total value given a hypothesized one percent increase in share price, $v_{i,t}(p_t^+)$. Let $s_{i,t}$ be the executive's income from salary, bonus, and other annual compensation, as well as from realized capital gains from the exercise of options. Then given the hypothetical increase in share price, executive *i*'s company-related income at time *t* is

$$s_{i,t} + [v_{i,t}(p_t^+) - v_{i,t}(p_t)],$$

where the quantity in brackets represents unrealized capital gains from the hypothetical price increase. Given the executive's company-related income in the absence of such a shift, $s_{i,t}$, we define the executive's compensation elasticity at time *t*, $\kappa_{i,t}$, as the proportionate change in income resulting from the price increase:

$$\kappa_{i,t} = \frac{v_{i,t}(p_t^+) - v_{i,t}(p_t)}{s_{i,t}}.$$

In our sample, 21% of the observations correspond to executives with zero compensation elasticity. The

⁵For a criticism of the Jensen-Murphy statistic that demonstrates that the measure is approximately inversely proportional to the square root of firm size, see Schaefer (1998).

⁶As we explain below, our measure implicitly incorporates return volatility through its effect on option values.

median nonzero value is .032, while the 95th percentile is .41.

The dependent variable is total political contributions made by an executive in a given year, which includes donations both to individual candidate campaign committees and political action and party committees.⁷ In our sample, we observe nonzero political expenditures for 35% of the executive-years.⁸ The median nonzero expenditure is \$1,866, while the 95th percentile is \$7,130. Approximately 70% of contributions made by executives went to noncandidate committees. Excluding the contributions to noncandidate committees would be inappropriate (although we do so in a robustness check of our main results), as executives might give to PACs as a means of coordinating the expenditures of their subordinates (Masters and Keim 1985).⁹ In the analysis that follows, we assume that contributors allocate their contributions optimally given a decision to contribute and therefore confine our main analysis to total contributions. Questions concerning to whom executives give, while clearly important, is beyond the scope of the current inquiry.

Empirical Approach

Model Specification and Controls

As in all empirical studies of campaign finance, a methodological issue emerges because of the large number of observations in which an executive gave precisely zero dollars. We approach this methodological difficulty by employing a derivation suggested by Wooldridge (2002, 518–19). Suppose executive i 's net utility from total contributions $c_i \geq 0$ is

$$u_i(c_i; a_i) = a_i \ln(1 + c_i) - c_i,$$

where $a_i > 0$ is a parameter scaling the benefit (either consumption or investment-related, or both) to that executive of contributing. The cost of contributing in this framework may be interpreted as the opportunity

cost with respect to nonpolitical expenditures (x_i in the heuristic representation in the appendix). The executive's optimization problem with respect to the choice of expenditure level c_i is subject to a nonnegativity constraint. It is straightforward to demonstrate that the optimal contribution, $c_i^* = \max\{0, a_i - 1\}$ or $c_i^* + 1 = \max\{1, a_i\}$. Now suppose $a_i = \exp(X_i\beta + \varepsilon_i)$, where X_i is a vector of independent variables, β is a coefficient vector, and ε_i is a normally distributed residual term with mean zero and variance σ^2 . Taking logs, we have $\ln(c_i^* + 1) = \max\{0, X_i\beta + \varepsilon_i\}$. This is precisely the setup for the Type I Tobit model, the exception being that the dependent variable is expressed as a logarithm. The Tobit model also accommodates a data adjustment motivated by the law: There is a gap in total reported contributions between zero and \$200 because committees are not required to itemize contributions smaller than that amount. Accordingly, we recode nonzero contributions as contributions above \$200 (this does not affect our results).

Unlike in Tobin's (1958) derivation, a zero contribution should be thought of not as a placeholder for an unobserved, negative contribution (there can be no such thing; see Maddala 1992, 341), but rather as a corner solution of the optimization problem.¹⁰ The coefficient estimate $\hat{\beta}$ represents the estimated marginal effect of a change in X on a latent, partially observed quantity. Although we report estimates of β in the tables below, a more meaningful estimate provided in the text, given censoring and the logarithmic specification, is that of the proportionate change in the expected value of a contribution given that one is made.¹¹

Factors other than compensation elasticity may explain executive donations, and a failure to control for these will bias our inferences if the omitted variables are correlated with it. For example, it may be the case that highly paid executives, or executives with high-valued company-specific portfolios, may also have a greater compensation elasticity κ . Accordingly,

⁷Unregulated contributions to so-called "527" organizations increased in importance in the 2004 election cycle, but our data set ends in 2002.

⁸That only a minority (albeit a sizeable one) of executives make political contributions does not by itself constitute evidence that executive contributions are consumption-oriented. Even small contributions have opportunity costs, so a preponderance of zeros may simply indicate that most executives perceive that contributions promise insufficient return to justify even a small outlay.

⁹In any event, our approach will capture the variation in executive behavior that would correspond to this motivation.

¹⁰Grier, Munger, and Roberts (1994) suggest employing Heckman's (1979) selection model in another campaign finance application. They are correct to note that Tobit constrains the coefficient vectors that determine the decision to contribute and the size of the contribution to equal one another. In the current context, however, this should not be thought of as an arbitrary assumption, but rather as an implication of the underlying theoretical model. Our derivation also liberates us from having to make untestable exclusion restrictions to properly identify the statistical model.

¹¹Proportionate change is natural given the logarithmic specification. In a robustness check below, we estimate the absolute change from a model using a linear specification of the dependent variable.

we control for the natural log of total current compensation of the executive and for the natural log of the value of the executive's company-related assets (stock plus stock options).¹² Second, shareholders seeking to align the incentives of heads of companies may assign to them a greater degree of compensation elasticity. Accordingly, we control for whether the executive was a CEO, President, or board chair. Third, given a pair of executives with the same salary and compensation elasticity, we would expect that the one working at the larger company would have to give more to induce the same expected percentage change in stock price. Accordingly, we control for the natural logarithm of total company assets.¹³

The compensation elasticity of executives increased during the time frame of our analysis; we therefore include year-specific dummy variables. Year-specific effects also allow us to control for cyclical variation in contribution behavior between election and nonelection years, and market-level factors affecting all executives. Likewise, certain industries may face a greater threat of regulation than others (Grier, Munger, and Roberts 1994), inducing their employees to contribute more. Compensation elasticity may also vary systematically by industry. We therefore include industry-specific fixed effects, aggregated by two-digit SIC code.^{14,15} As a robustness check of the main estimation, we include measures of a company's financial health: the log of company cash reserves, and the company's current ratio (current assets/current liabilities). As described in greater detail below, we also consider other plausible alternative model specifications, sampling criteria, and levels of aggregation.

¹²Natural logarithms are used to capture diminishing returns in the marginal effect of a dollar change in income.

¹³Using the natural log of market capitalization, which is very highly correlated with logged total assets ($\rho = .8$), produces substantively identical results.

¹⁴We do not possess adequate observations in each industry category to employ lower-level industry effects.

¹⁵The panel structure of the data suggests the possibility of employing executive-specific fixed effects. As we discuss below, our main results are robust to the inclusion of fixed effects in a linear model of campaign contribution behavior. In the results we present and discuss below, we do not employ fixed effects for two reasons. First, most of the executives in our sample do not give contributions; their behavior is thus perfectly predicted by an individual-specific fixed effect. Second, fixed effects in a regression context are equivalent to subtracting the individual-specific means from the dependent and time-varying explanatory variables. To the extent that executives have rational expectations about the likely trajectory of their compensation elasticity in the future, the future expected value of κ plays a critical role in influencing executive decisions.

Assessing Rival Interpretations

As in any nonexperimental study, it is not possible to prove a causal connection with evidence of a statistical association between two variables. However, following an empirical strategy advocated by Cochran (1965) and Rosenbaum (2002; chs. 1, 9), we can reduce the likelihood that our interpretation of such an association is spurious by testing additional empirical implications of instrumental political giving. Further, this strategy enables us to differentiate instrumental political giving from specific rival interpretations or mechanisms. Two rival mechanisms of particular prominence concern the tastes of executives whose compensation packages are highly elastic to firm performance.

According to the first mechanism, risk-loving individuals may be both more tolerant of highly elastic compensation packages *and* may be more willing to make political investments with uncertain returns.¹⁶ A robustness check in which we employ executive-specific fixed effects allows us to differentiate our investment-based interpretation from this mechanism. The persistence of the statistical significance of the relationship between compensation elasticity and political expenditures would point in favor of our interpretation.

The second rival mechanism concerns the unobserved income of executives with high pay-performance sensitivity. It posits that the risk associated with a highly elastic contract is all upside, because an option contract can always be rewritten by a company's compensation committee if the stock price falls too low. In that case, an observed association between compensation elasticity and contribution behavior may just reflect an unobserved income effect. If this interpretation is correct, then the value of an executive's *observed* company-related assets should be enhanced when a company's returns are more volatile, because high volatility in the absence of downside risk would make those assets more valuable. Accordingly, the observation of a stronger relationship between contribution behavior and the size of those assets in the presence of greater volatility would be consistent with the presence of the implied income effect.

Our account of political giving for instrumental reasons also gives rise to two further hypotheses not

¹⁶We adopt the standard notion of risk preference from economic theory and say that individual A is more risk-acceptant or risk-loving than individual B if the difference between A's valuation of a given lottery and her valuation of obtaining that lottery's expected outcome with certainty is greater than the corresponding difference for B.

addressed by these these alternative mechanisms. First, executives who are leaving their companies face incentives that are qualitatively different from those faced by executives who expect to remain in their jobs. Departing executives often must exercise or forfeit their outstanding company options, thus decreasing their expected benefit from political contributions. Also, even when the terms of their compensation do not require that they lose their options when leaving the company, their ability to serve as credible advocates for their former firms necessarily decreases (particularly if an executive has joined a competing firm). Thus, we anticipate the existence of a last-period effect: the magnitude of the compensation elasticity effect should be diminished in the last year of an executive's employment at a firm.¹⁷

Second, executives with longer-term stakes in a company's welfare are more likely to internalize the desire to offer political contributions as a means of insulating against adverse policy outcomes. The executive whose welfare is most closely tied to the long-run fortunes of a particular corporation is the chairman of the board of directors. More than management, board members have a legally enforceable fiduciary responsibility to shareholders and may be held liable for a failure to exercise due care (Baron 2003, 662–63). These responsibilities and the longer term stake of these executives in their companies' welfare should encourage them to create long term relationships with specific legislators. Accordingly, we expect that while their contributions should be larger in the aggregate, this behavior should be less responsive to fluctuations in compensation elasticity.¹⁸

Results

Our theory predicts a positive association between political donations and compensation elasticity κ ; however, we were agnostic regarding functional form. We experimented with a variety of functional forms for compensation elasticity (linear, log, cube root), as

¹⁷One might wonder whether exiting executives with high pay-performance elasticity would *increase* their political expenditures in an effort to boost the price of their stocks before cashing in. To sustain this argument in light of these individuals' reduced time horizons, however, one would have to accept the notion that political returns are part of an instantaneous quid pro quo. Nor is it clear why nonexiting executives would not benefit from doing the same thing.

¹⁸Alternatively, executives who already hold these preferences may be perceived as board material. In either case, the observable effect would be reduced responsiveness within this set of executives.

well as estimating a generalized additive model with smoothing splines. Here, we report estimates using $\ln(1 + \kappa)$. This specification captures the diminishing returns associated with changes in compensation elasticity, while also providing a balance of parsimony and fit. The other specifications produced results substantively very similar to those reported here.

The Effect of Compensation Elasticity

The first two columns of Table 1 display maximum likelihood Tobit estimates of two models of logged executive contributions per year (in excess of \$200, as discussed above, and in thousands of 2002 dollars). To account for the possibility of coordinated expenditures among executives (e.g., via PACs), we employ standard errors clustered on the company-year in all specifications.¹⁹ A χ^2 test with 63 degrees of freedom allows us to reject overwhelmingly the null hypothesis that the industry effects are statistically insignificant. As a robustness check, model (2) includes two measures of company financial health (whose coefficients are statistically insignificant), although missing data reduces the sample size somewhat.

Executives in leadership positions generally give more than those in other positions. *F*-tests suggest that we cannot reject the null hypothesis that CEOs and Chairs contribute equally, *ceteris paribus*. Note, though, that numerous executives hold multiple leadership positions. Our results also provide strong evidence for the existence of wealth and income effects. *Ceteris paribus*, increases in company-related assets held by the executive lead to increases in the probability the executive donates and the expected size of the contribution. Because total compensation appears both as a variable in the model and as the denominator of κ , it exerts both a direct and indirect effect on contribution behavior. In this table, we report the direct effect, which is large and highly significant.

Next, we turn to our measure of pay-performance sensitivity, $\ln(1 + \kappa)$. The coefficient estimates on this variable are positive and statistically significant at above the 99.9% level. To put this finding in more useful terms, we estimated the effect of an interquartile shift in compensation elasticity (defined here and below as a shift from its 25th to 75th percentile) holding all other model variables at their sample medians (and assuming the executive was employed in the modal industry—Energy). In specification (1), this shift produces a 17.2% ($\pm 3.9\%$) shift in the size of a

¹⁹Clustering on the executive instead does not affect the statistical significance of our main results.

TABLE 1 The Effect of Compensation Elasticity on Logged Corporate Contributions (Tobit Estimates)

| Explanatory Variable | (1) Main Estimation | (2) Controls for Company Health | (3) Incumbents Only | (4) Cycle, Not Year | (5) Linear Dep. Var. | (6) Least Squares, Executive Effects | (7) Least Squares, Company Effects |
|---|---------------------------|---------------------------------------|---------------------------|---------------------------|----------------------------|--|--|
| Board Chair | 1.99* (.34) | 2.28* (.40) | 1.25 (.48) | 2.12* (.40) | 6.78* (2.35) | .59* (.21) | 1.04* (.17) |
| Company President | .48 (.24) | .60 (.28) | -.21 (.34) | .51 (.29) | .02 (.74) | .08 (.15) | -.14 (.11) |
| Company CEO | 2.06* (.33) | 2.29* (.39) | 3.28* (.47) | 1.70* (.39) | 3.55 (2.46) | .05 (.19) | 1.15* (.16) |
| Ln(Total Current Compensation) ^a | 5.07* (.47) | 4.77* (.49) | 6.72* (.56) | 1.70* (.30) | 20.04* (3.50) | .72* (.26) | 2.36* (.23) |
| Ln(Exec.'s Company-Related Assets) | .11* (.02) | .11* (.03) | .15* (.03) | .24* (.03) | .14 (.07) | .02 (.01) | .02 (.01) |
| Ln(Total Company Assets) | 1.32* (.09) | 1.55* (.13) | 1.34* (.13) | 1.04* (.10) | 2.62* (.49) | .26* (.05) | .30* (.11) |
| Ln(Compensation Elasticity) | 4.03* (.41) | 3.78* (.43) | 5.46* (.47) | .84* (.23) | 16.41* (2.96) | .55 (.24) | 2.01* (.21) |
| Ln(Company Cash on Hand) | — | -.02 (.07) | — | — | — | — | — |
| Company Current Ratio | — | -.02 (.10) | — | — | — | — | — |
| Year, Cycle-Specific Effects | Year | Year | Year | Cycle | Year | Year | Year |
| Industry-specific Effects | Yes | Yes | Yes | Yes | Yes | Spanned | Spanned |
| σ | 6.86 | 7.10 | 8.16 | 6.53 | 22.17 | 3.57 | 3.53 |
| N | 6,821 | 5,863 | 6,821 | 4,103 | 6,821 | 6,821 | 6,821 |
| Log-likelihood | -9,939.23 | -8,017.37 | -5,968.14 | -6,736.98 | -12,156.44 | — | — |

Standard Errors (clustered on company-year) in parentheses. *indicates significance at 99% level.

^aEstimates represent the direct effect of this variable (see text).

nonzero contribution.²⁰ It bears emphasizing that the magnitude of this shift does not fully capture the effect of investment motivations in the data. As we note above, the effect of a change in income captures a combination of investment and consumption motives. The pay-performance result suggests the presence of investment motives even if we attribute *all* of the effect of income to consumption.

We also wish to draw attention to the strong positive relationship between executive contributions and the total size of their companies. This finding is consistent with the argument that executives in larger companies must give more to effect the same expected percentage change in their firms' returns. While other interpretations are possible, it is worth noting that a pure consumption account of political giving would not anticipate this relationship once one controlled for the size of the executive's own income and company-related assets.

Alternative Specifications. We estimated several additional models to assess the robustness of our findings. The relevant coefficient estimates and standard errors appear in columns (3) through (7) of Table 1. First, suppose that one were to conceive of investment-oriented giving purely in terms of dyadic relationships between contributors and incumbents. One might believe that expenditures to groups are difficult for officials to trace back to the donor, and that as such, only contributions to incumbents should be employed in the empirical analysis. As we emphasized above, this approach is overly narrow given the opportunity for investment-minded contributors to coordinate their expenditures through group spending. Nevertheless, to examine the robustness of our results to the traceability problem, we estimated a Tobit model in which the dependent variable was the natural logarithm of contributions to incumbent officials. We estimated a 15.1% shift ($\pm 3.2\%$) in the size of contributions to incumbents conditional on a decision to give associated with a shift from the 25th to 75th percentile of compensation elasticity—an effect very close in magnitude to the one for total contributions.

Second, we estimated a model in which the unit of observation was the executive-election cycle instead of the executive-year, to account for the possibility that our findings are driven by differences between on- and off-year giving (although the year-specific effects should mitigate this issue). At this level of aggregation, the coefficient on the pay-performance sensitivity

measure remains positive and significant at above the 99% level.

Third, we employed a linear specification of the dependent variable. We found that an interquartile shift in compensation elasticity produced an estimated \$462 increase in nonzero contributions. Given that the median nonzero contribution for the sample was \$1,866, this amounts to a 24.7% change about the median.

Finally, we wished to make sure that compensation elasticity is not picking up the effect of unobserved individual- or company-level characteristics. While executive- or company-specific fixed effects would seem an obvious choice, in the context of the nonlinear panel Tobit model this approach yields biased and inconsistent coefficient estimates on parameters of interest when the number of cross-sectional units is large and time periods small. (This is the “incidental parameters problem” of Neyman and Scott (1948); see also Greene (2004) for a specific analysis of Tobit.) We therefore estimated two *linear* fixed effects models, which yield \sqrt{N} -consistent coefficient estimates. These estimates appear in columns (6) and (7). The linear estimators exchange the elusive problems described above for the known bias toward zero of linear regression coefficient estimates given left-censoring. As expected, the magnitude of the coefficient estimates on our elasticity measure is smaller than in the other specifications; however, they remains positive and statistically significant at the 98% level.

Further Evidence of the Investment Motivation

Our main results suggest a strong positive association between compensation elasticity and executive political expenditures. Interpreting this association as evidence of instrumental motives for political giving requires ruling out two taste-based alternative accounts. Our finding above that the significance of the compensation elasticity effect persists even given the inclusion of executive-specific fixed effects provides strong evidence that static personality traits such as attitudes toward risk cannot fully account for the relationship. Here, we test several hypotheses detailed above to subject our account to additional empirical scrutiny and further adjudicate among competing explanations.

The Compensation Elasticity Effect in Different Subsamples of Executives. The investment-based account of contribution behavior yields specific expectations regarding differences in the strength of the relationship between compensation elasticity and

²⁰In the model with company-level information, the change was 15.4%.

TABLE 2 The Compensation Elasticity Effect in Subsamples of Executives, and the Volatility Hypothesis (Tobit Estimates)

| Explanatory Variable | (1) Last Period Effects ^a | (2) Chairs/Non chairs | (3) Volatility Hypothesis |
|---|---|--------------------------|------------------------------|
| Board Chair | .63* (.11) | 2.26* (.36) | 1.94* (.34) |
| Company President | .12 (.07) | .46 (.24) | .50 (.24) |
| Company CEO | .63* (.10) | 1.98* (.33) | 2.11* (.33) |
| Departure | .03 (.18) | — | — |
| Ln(Total Current Compensation (000s)) ^b | .35* (.04) | 1.05* (.14) | 1.06* (.14) |
| Ln(Exec's Company-Related Assets) | .03* (.01) | .10* (.02) | .23* (.05) |
| Ln(Compensation Elasticity) | — | — | 4.19* (.43) |
| Ln(Total Company Assets) | .40* (.03) | 1.32* (.09) | 1.30* (.09) |
| Return volatility | — | — | 3.37 (1.67) |
| Ln(Exec's Company-Related Assets) × Return volatility | — | — | -.33* (.11) |
| Ln(Comp. Elast.) × (1-Departure) | 1.55* (.15) | — | — |
| Ln(Comp. Elast.) × Departure | -.03 (.66) | — | — |
| Ln(Comp. Elast.) × (1-Chair) | — | 4.91* (.61) | — |
| Ln(Comp. Elast.) × Chair | — | 3.12* (.50) | — |
| σ | 1.99 | 6.85 | 6.84 |
| Year, Industry-Specific Effects | Yes | Yes | Yes |
| Log-likelihood | -6,917.91 | -9,936.75 | -9,906.15 |

N = 6,821. Standard Errors (clustered on company-year) in parentheses.

* indicates significance at 99% level.

^aDependent variable in (2) is logged dollars contributed *per day*.

^bReported estimates reflect direct minus indirect effect.

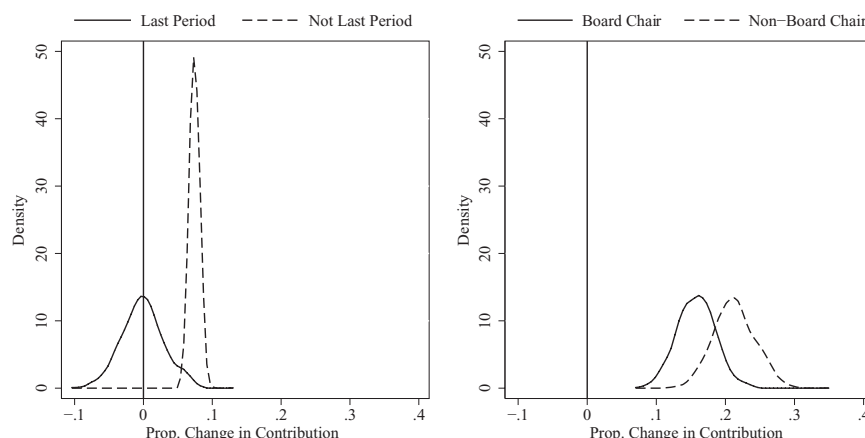
political expenditures across different populations of executives. The first two columns of Table 2 display ML estimates intended to assess three hypotheses concerning this variation.

First, we anticipate that the concerns of executives about the future profitability of their firms are likely to be diminished if the executive knows he or she is leaving. We test this hypothesis empirically by comparing the compensation elasticity effect for executives in their last year of employment in a firm with those not in their final year. Testing this hypothesis raises an issue of comparing the contributions of executives who spent the entire year in a company with those who left at some point in the middle. For the purposes

of this test, we therefore consider only those contributions made by an executive during her employment at a firm in a given year, divided by the number of days of employment at that firm in that year. The dependent variable is the log of one plus the average number of dollars *per day* contributed by the executive during her employment at the firm. We interact our pay-performance sensitivity measure with an indicator variable denoting that the executive departed that year and an indicator denoting that she did not.

Column (1) of Table 2 displays estimates from the model of last period effects. The model coefficients provide strong initial evidence in favor of this hypothesis. The left panel of Figure 1 displays kernel density

FIGURE 1 The Proportionate Effect of Changing Compensation Elasticity on the Expected Value of Nonzero Contributions



plots of the estimated proportionate change in expected nonzero contributions per day for exiters and nonexiters given the hypothesized interquartile shift in compensation elasticity. Conditional on a contribution being made, the shift results in an expected increase per day of 7.4% for nondeparting executives, but only a statistically insignificant -0.1% for those departing.

Note that our test cannot distinguish between executives who plan to leave and those whose departure is unanticipated. This fact, however, constitutes a bias *against* our finding. If those executives who were fired unexpectedly would not alter their behavior prior to their departure, and the subset of executives who know they are departing is contaminated with those who do not, the result would be to push the compensation elasticity effects for the departing and remaining executives closer together. Even given this potential bias, we observe a systematic difference in these effects.

Also note that these results cannot be interpreted as simply capturing the possibility that individuals who exit give less in general (which would be consistent with the claim that compensation elasticity proxies an unobserved wealth effect). That interpretation amounts to a claim about the effect of departure generally, rather than about its interaction with compensation elasticity. The coefficient on the *Departure* variable informs us that the data indicate no statistically significant exit effect when compensation elasticity is zero. More importantly, a sequence of *t*-tests reveals that the effect is insignificant for any value of compensation elasticity.

Second, we hypothesize that the effect of compensation elasticity on contributing will decrease for chairs of boards of directors relative to other executives.

Coefficient estimates from the model appear in column (2) of Table 2. As expected, the coefficient on the elasticity effect is greater for nonchairs than for chairs. A Wald statistic of 5.75 permits us to reject the null hypothesis that the effect is the same for both categories. The right panel of Figure 1 displays the probability density for the conditional size shift from the Chair/Nonchair model. An interquartile shift in compensation elasticity would lead to an anticipated increase of 15.8% for chairs, and 21.3% for other managers.

The Volatility Hypothesis. Lastly, if our main finding relating compensation elasticity and contribution behavior is due to an unobserved wealth effect, resulting from the possibility that highly elastic compensation schemes have little to no downside risk, then the positive association between the total value of the executive's company-related assets and her contribution behavior ought to be enhanced when her company's stock returns are more volatile. We therefore reran specification (1) from Table 1, now including a measure of the volatility of the company's stock return, as well as the interaction between volatility and the present value of the executive's company-related assets (column (3) of Table 2). While the wealth-effect account of our main finding anticipates a positive coefficient on the multiplicative term, we observe a statistically significant *negative* estimate. This further justifies the interpretation of our main finding as reflective of instrumental political giving.

Discussion

By demonstrating an association between the contribution behavior of corporate executives and the sensitivity of their compensation to firm profitability, the

foregoing analysis provides strong evidence that the corporate executives we examine make political contributions in a manner consistent with investment motivations. We have also documented differences among executives in the responsiveness of their donation behavior to the extent of this sensitivity. These differences follow further implications of the investment-motivation account and permit us to rule out alternative explanations for our findings. In this section, we first discuss how to interpret our findings in light of existing research on political expenditures. Subsequently, we consider our argument in light of potential collective action problems among executives and firms.

Reconciling Existing Evidence

A satisfactory account of political giving must be consistent with the following facts at hand: (1) executives in our study appear to make political donations from investment motivations; (2) evidence of a systematic relationship between policy and contributions is scant; and (3) as a percentage of executive income and compared with what is at stake, contributions are tiny.

As we emphasized above, a plausible view of the investment-based motivation is unlikely to include a contract specifying an explicit *a priori* promise to take specific actions under specific circumstances. Such promises, even if given, would not, as a rule, be regarded as credible because of the number of possible political contingencies that might affect the legislator's willingness to take the promised action. What *is* more credibly promised in exchange for contributions is best described as a kind of predisposition in favor of the contributor's cause—a marginal increase in the good will of the officeholder. For the politician, it is the difference between taking a phone call because the caller is an important person (e.g., by virtue of being a top executive from a Fortune 500 company with a factory in his or her district) and answering it because that important person is also someone with whom the politician has a long-standing personal relationship and who has demonstrated a willingness to offer support. From their familiarity with the manner in which such relationships are formed, both contributors and recipients can develop expectations about what (contingent) benefits each of them may expect to receive and provide under different circumstances. Indeed, the anecdotal evidence of legislative favors that makes it difficult to dismiss instrumental accounts of giving also buttresses contributors' beliefs that benefits may be obtained (Bergan 2006).

Individuals, then, respond to solicitations for campaign contributions because they recognize the possibility that, at some point in the future, they *may* obtain the officeholder's assistance, even though they do not *expect* to obtain it necessarily. What a contribution buys is a contingent obligation with a very high probability of default: given a politically contingent environment, the donor's claim may never be pressed and the payout to her need never materialize. Most of the time, the payments appear to have been wasted *ex post*. Coupled with the observability problem, this further accounts for the paucity of systematic evidence documenting exchanges of policy for dollars. When contributions do pay off, however, the return on them may, from the standpoint of a contributor, more than justify the initial investment. Variation in the extent to which individuals are exposed to potential harms or benefits produces variation in their demand for political action; this in turn produces variation in their willingness to make political donations for purposes of good will. Many perceive little or no benefit; these individuals put their money elsewhere.

This last point brings us to the issue of the relatively small absolute magnitude of political contributions. If donations are buying only a contingent obligation, and if that obligation carries with it a very high probability of default, then the donations need not be anywhere close to commensurable with the benefit a donor could (and *might*) receive. In other words, the mere *possibility* of obtaining a significant benefit as a result of making campaign contributions is not, in itself, sufficient reason to make large contributions. To justify large contributions, both the potential benefits *and* the likelihood of obtaining those benefits would have to be large.²¹

In sum, our evidence of investment motivations, taken together with the stylized facts concerning the size of contributions and the relationship between political giving and observable policy outcomes, can

²¹We would also expect contributions to be small if their marginal benefit decreased rapidly, or if their marginal cost increased rapidly, so that the latter eclipsed the former at a seemingly small level of contribution. This may occur when, for example, unusually large contributions attract negative publicity and additional scrutiny of a legislator's actions in the relevant policy area. In such circumstances, the contributor would likely obtain negative marginal benefit from exceeding some common or "normal" level of giving. Thus, even absent binding legal limits on contributions, we might in fact expect to find relatively low focal levels of appropriate contributions, with few contributors willing to risk attracting attention through larger donations.

be seen as suggesting a coherent empirical case for instrumental political giving.²²

Personal Versus Firm Political Expenditures

The analysis in this paper has posited a causal mechanism associating an executive's pay-performance sensitivity and the extent of her *personal* political activity. A natural question may arise, however: why wouldn't an executive respond to variation in pay-performance sensitivity by increasing the company's lobbying activities, rather than by unilaterally increasing her own political contributions? From the perspective of an individual executive, the advantage of this mechanism is that it does not require personal expenditures by the executive herself. However, there are two potential problems with the lobbying response. First, shifting a firm's overall lobbying strategy may require structural changes in the company's internal allocation of resources and therefore lacks the speed and flexibility that is afforded by individual decisions to contribute.²³ Perhaps more importantly, for this second mechanism to be operative, it must be the case that the company's resources are, in the first place, allocated *inefficiently* from a profit-maximizing perspective. If they were already allocated so as to maximize profit, then a change in compensation elasticity—insofar as it makes the executive want to maximize profits even more—should have no effect on the company's allocation toward lobbying. (Note that this argument does not apply for the executive's individual contributions, because the opportunity cost of those expenditures, however small, is borne by the executive and not the company.)

²²Of course, the final determination with respect to this point must await a more sophisticated political theory relating the distribution of contributions across recipients and return. A key task for such a theory would be to shed light on how to make sense of the relationship between reaching the limit on contributions to a single candidate (which occurs in 62.6% of the observations in the data set) and reaching the limit on total "hard money" contributions (which occurs in a substantially smaller proportion of executives in our sample). Absent such a theory, failing to reach the latter limit need not be a *prima facie* evidence against investment motivations.

²³To be sure, the decision to lobby is determined by a host of considerations having to do with the firm's economic and political circumstances. Some of these determinants are likely to also affect the personal expenditure decisions of executives. Others, however, may be quite distinct. The opportunity costs of a marginal unit of each type of expenditure, for example, may differ substantially. Similarly, to the extent that lobbying is informational, it is often a public good for firms within the same industry in a way that campaign expenditures by individual executives are not.

To test the efficacy of the second mechanism, we gathered, for a supplementary analysis, information from Federal Lobbying Disclosure records on the lobbying activity of a sample of firms from our analysis (those for which we have data on their CEOs) from 1999 to 2002. We then conducted a probit analysis to assess the relationship between the CEO's compensation elasticity and the probability a firm had a lobbying presence that year. Using the same controls as above, we detected no statistically significant relationship between these variables at conventional levels. This result suggests that the mechanism that is the focus of the current paper is the more efficacious one.²⁴

Conclusion

In this paper, we have provided evidence that corporate executives attach instrumental value to their political contributions. These individuals are motivated by their pecuniary interests and the belief that their contributions do have the potential to change the political outcomes that affect them. All of our hypotheses receive support. Executives whose compensation is sensitive to firm profitability have a greater propensity to donate politically. Further, the effect of this sensitivity is diminished for executives with demonstrable partisan leanings, in the last year of employment at their respective firms, and for the chairs of corporate boards of directors. This variation in the observed contribution behavior lends further credence to the investment account of executives' political giving and positively discriminates between this and the alternative, consumption-based, interpretations.

With this evidence in hand, we have sketched a theory of investment-oriented contribution behavior that is consistent with our empirical findings and with other important findings in the field of campaign finance. Donors purchase marginal increases in the good will of officeholders in light of the sensitivity of their pecuniary interests to changes in government policy. They do so recognizing that, at some point in the indeterminate future, they may require assistance, but that the contingent nature of political circum-

²⁴Note that the binary correlation between firms' decision to lobby and their corresponding chief executives' willingness to contribute is a statistically significant .29. This strongly suggests that these two kinds of expenditures are complements rather than substitutes. Thus, the possibility that executives are less likely to make investment contributions when the firm is already attempting to influence the political process through lobbying is not borne out. See also the previous note.

stances implies a constraint on an official's ability to grant it. In this account, donors have instrumental motivations, but returns on their contributions are unlikely to be systematic, and the size of donations need not be nearly commensurate to the potential benefits of a legislator's assistance.

The mode of investigation and results presented suggest several avenues for future work that may shed light on other aspects of the role of money in politics. We are currently gathering data on the allocation of contributions by individual executives among different recipients (cf. Kroszner and Stratmann (1998) for an analysis of allocation decisions of PACs). A better understanding of the extent to which those executives target their personal contributions, and the criteria they employ in doing so, will provide greater insight into the means by which political contributions are perceived by those individuals to be potentially connected to changes in policy outcomes.

Appendix: Optimal Contribution Choices

Suppose executive i can allocate her endowment (e.g., from income) ω_i on three categories of expenditures: nonpolitical expenditures x_i , consumption-oriented political contributions y_i , and investment-oriented political contributions z_i . Let κ_i be i 's compensation elasticity (an increasing function of i 's pay-performance sensitivity; we formally operationalize κ_i in our data analysis). Let $r(z_i; \kappa_i)$ represent the contribution of i 's company performance to her own utility, which may, given the presence of rational investment motives, depend on z_i . We can then represent i 's utility by the following function: $u_i \equiv f(x_i, y_i, r(z_i; \kappa_i))$. To keep the exposition simple, suppose, as is standard, that $\frac{\partial f}{\partial x_i} > 0$, $\frac{\partial f}{\partial y_i} > 0$, $\frac{\partial f}{\partial r} > 0$; $\frac{\partial^2 f}{\partial x_i^2} < 0$, $\frac{\partial^2 f}{\partial y_i^2} < 0$, $\frac{\partial^2 f}{\partial r^2} < 0$; and $\frac{\partial^2 f}{\partial x_i \partial y_i} = \frac{\partial^2 f}{\partial x_i \partial r} = \frac{\partial^2 f}{\partial y_i \partial r} = 0$.

The executive i chooses a triple (x_i, y_i, z_i) such that each of these expenditures is non-negative and the budget constraint $x_i + y_i + z_i \geq \omega_i$ is satisfied. Let (x_i^*, y_i^*, z_i^*) be i 's optimal allocation. First, consider the case in which i expects no positive relationship between political expenditures and company performance ($\frac{\partial r}{\partial z} \leq 0$). Clearly, i will make no investment-oriented political contributions: $z_i^* = 0$. It also follows that those contributions will be unresponsive to changes in compensation elasticity κ_i . Because z_i^* and

ω_i are constant with respect to κ_i , both y_i^* and x_i^* will also be unresponsive to changes in κ_i as well. However, both y_i^* and x_i^* will increase with ω_i .

Next, consider the complementary case in which there are positive marginal expected returns to investment-related contributions ($\frac{\partial r}{\partial z} > 0$). As we discussed above, one can think of these returns, to the extent that they exist, as the product of a complex strategic interaction, which the present heuristic captures in reduced form. We focus on the situation in which the returns to the investment-related contributions are produced via their effect on the executive's company's stock price, and, through it, on his or her compensation. (For systematic evidence of the effect of policy choice on stock returns more generally, see, for example, McGillivray (2003) and Gilligan and Krehbiel (1988).) Given that these returns affect the executive's welfare in this way, we can restrict our attention to the situation in which the rate at which returns increase with investment-oriented contributions is positively responsive to compensation elasticity ($\frac{\partial^2 r}{\partial \kappa_i \partial z} > 0$).

In this context, i 's utility will increase with z_i^* , and the rate at which it increases will itself increase with κ_i . (Given that $\frac{\partial f}{\partial z} = \frac{\partial f}{\partial r} \frac{\partial r}{\partial z}$, and $\frac{\partial^2 r}{\partial \kappa_i \partial z_i} > 0$, $\frac{\partial f}{\partial z_i}$ is increasing in κ_i .) Suppose κ_i increases. The marginal utilities associated with each type of expenditure must be equal at any interior optimal allocation. For this equality to be maintained given the increase in κ_i , i 's expenditures must adjust in a way that decreases the marginal benefit of investment-oriented contributions and increases the marginal benefits associated with each of the other kinds of expenditures. Given diminishing marginal benefits, this requires increasing z_i^* and decreasing y_i^* and x_i^* . Finally, because at the optimal allocation, the budget constraint holds at equality, the decrease in x_i^* that results from an increase in κ_i implies that *total* political contributions, $y_i^* + z_i^*$, increase with κ_i . As in the first case, an increase in the executive's endowment would also yield an increase in all three categories of expenditure.

The foregoing analysis assumes that the executive is acting alone. In that analysis, any change in executive contributions associated with a change in compensation elasticity presupposes that contributing individually has a greater marginal return than not. Allowing for multiple executives, any one of three conditions—each plausible in the current context—is sufficient to sustain this assumption in the face of potential collective action problems among fellow

executives within the same company: (1) contributions by one's fellow executives do not exhaust the legislator's demand for contributions; (2) the marginal return on contributions does not decrease so rapidly that, given contributions by other executives in one's company, there is no net value to increasing the total company contributions by one's own spending; or (3) given a decision by other executives not to contribute, there is a net benefit to the individual executive from contributing. If none of these conditions hold, executives may free-ride on the contributions of others.²⁵ Given any one of the three, we should not expect the presence of collective action problems between the executives of the same company, and so the posited causal mechanism has bite.²⁶

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²⁵There may also be mutual reinforcement effects working to undermine the possible collective action problems, for example if some executives pressure others to contribute, or if successful coordination of executives occurs via corporate PACs. For this to be the case, some or all executives must derive benefit from contributions via this mechanism. Note that our statistical analysis accounts for this by incorporating executive contributions to corporate PACs and clustering on company-year.

²⁶We thank an anonymous referee for pressing us to clarify these points.

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