Does Corporate Culture Matter for Firm Policies?[*]

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Abstract

Economic theories suggest that a firm's corporate culture matters for its policy choices. We construct a parent-spinoff firm panel dataset that allows us to identify culture effects in firm policies from behavior that is inherited by a spinoff firm from its parent after the firms split up. We find positive and significant relations between spinoff firms' and their parents' choices of investment, financial, and operational policies. Consistent with predictions from economic theories of corporate culture, we find that the culture effects are long-term and stronger for internally grown business units and older firms. Our evidence also suggests that firms preserve their cultures by selecting managers who fit into their cultures. Finally, we find a strong relation between spinoff firms' and their parents' profitability, suggesting that corporate culture ultimately also affects economic performance. These results are robust to a series of robustness checks, and cannot be explained by alternatives such as governance or product market links. The contribution of this paper is to introduce the notion of corporate culture in a formal empirical analysis of firm policies and performance.

"The way we do things around here" ---Marvin Bower, McKinsey & Company's former managing director, defines corporate culture in his book *The Will to Manage*

1. Introduction

The view of the business press, many executives, and the management consulting

profession is that a firm's corporate culture matters a lot for the firm's policy choices and

economic performance. However, the empirical literature in economics and finance has so far

paid little attention to the potential role that corporate culture plays in explaining what firms do,

largely due to the difficulty of measuring and quantifying corporate culture, but also due to the

lack of economic theories that explicitly model corporate culture as a determinant of firm

policies. But, as pointed out by Kreps (1990) and Hermalin (2001), understanding corporate

culture is necessary if we want to understand firms' policy choices and ultimately their

performance. The contribution of this paper is therefore to bring the notion of corporate culture

into a formal empirical analysis of firm policies and performance.[1]

What exactly is corporate culture and why should it matter for corporate decisions?

There exist many definitions of corporate culture. One common element in economic theories of

corporate culture seems to be that a firm has a specific set of norms, values, beliefs, and

preferences that is shared among its managers and workers.[2] Under this view, the firm's culture

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[1] There is a substantial body of work in the management literature that studies corporate culture (e.g., Chatman (1991) and Kotter and Heskett (1992)). As far as we know, the term "corporate culture" first appeared in this literature with an article in *Sloan Management Review* by Silverzweig and Allen (1976), and gained significant popularity after two bestselling books that both appeared in 1982: Deal and Kennedy's *Corporate Cultures: The Rites and Rituals of Corporate Life* and Peters and Waterman's *In Search of Excellence: Lessons from America's Best-Run Companies*. Both the empirical methodology of these studies and the firm behavior analyzed differ substantially from the study we are undertaking in this paper. First, a lot of management studies are based on specific case studies. Second, much work is based on surveying managers and workers on some dimensions, and then using their responses to infer the appropriateness or strength of a firm's corporate culture. Finally, whereas the outcomes considered in the management literature are often process-related, e.g., a corporation's structure or its communication practices, in this paper we study firm policies related to investments, financing, and operations.
[2] The General Social Survey (GSS), a national attitude survey performed by the NORC at the University of Chicago, included a work organization module in 1991, which shows that 78% of those surveyed agree with the following statement: "I find that my values and the organization's values are very similar."

can matter for its policy choices because the culture defines the "right" behavior when players within a firm are confronted with unforeseen contingencies or when faced with situations with multiple equilibria (Kreps (1990)). As shown in Hermalin (1994), competitive pressures can lead to asymmetric equilibria where different firms, even within the same industry or market segment, choose different strategies and policies -- it is not an equilibrium to behave similarly. Corporate culture, defined as a mechanism for choosing among multiple equilibria, can thus help explain the existence and persistence of such asymmetric equilibria (Hermalin (2001)).

As an illustration, consider the U.S. investment banking industry, a competitive industry where many have a business education. Yet, there is ample anecdotal evidence that firms' cultures matter a lot for what these firms do and for their performance. For example, the book *Goldman Sachs: The Culture of Success* describes how important the corporate culture of Goldman Sachs is, and how the firm instills its culture into its employees, in particular newly hired ones. Casual observation also suggests that different investment banks have different corporate cultures. Morgan Stanley is often said to have a conservative and risk-averse culture, where employees tend to analyze "too much." In contrast, Citibank's culture is described as aggressive, and the firm has a history of rapid growth through a series of large and risky mergers and acquisitions. These examples suggest that cultural differences can matter for what policies firms choose, and also for who the firms select to hire to implement these policies.[3]

The motivation for an empirical study of the effects of corporate culture on firm policies is further illustrated when we consider how much of the heterogeneity in policies across firms that is left unexplained by standard models. Consider for example a firm's capital structure decision, an important policy variable for most firms. In recent work, Lemmon, Roberts and

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[3] The Wall Street Journal's business school rankings shows that "Fit with the corporate culture" is one of the most important attributes for M.B.A. recruiters, one which 74.5% of those surveyed say is "very important" (Wall Street Journal, September 20, 2006).

Zender (2006) show that firm-specific effects account for more than 90% of the explained variation in capital structures across firms, whereas explanations based on standard models account for about 6%. They conclude that the main determinants of cross-sectional variation in leverage must thus be largely firm-specific and time-invariant, and to understand firms' capital structure decisions, one has to examine firm factors that remain largely fixed over long periods of time.[4] A firm's corporate culture is one such factor.

A natural experiment of the following type would provide an ideal setting for an empirical analysis of corporate culture. Suppose that a firm, for some exogenous reason, is split up into at least two separate stand-alone firms. A concrete example is the 1984 antitrust split-up of AT&T. After the split-up, the "Baby Bells" could choose their own practices independently of "Ma Bell," AT&T. Standard economic models predict that there should be no relation between the policy choices of an "offspring firm" and those of its parent, after controlling for year, industry, and firm factors. In contrast, the "corporate culture matters" view predicts that an offspring firm would choose similar policies to those of the parent even when it operates as a stand-alone firm because it shares its parent's norms, values, and beliefs about the right firm behavior. We would for example expect parent firms with abnormally low levels of leverage to produce offspring firms which also have an abnormally low appetite for debt in their capital structures. Because split-ups of AT&T-type are rare events, our analysis also involves stock-market transactions, spinoffs, in which a business unit is spun off as a separate publicly traded firm for reasons other than antitrust rulings.[5]

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[4] Analyzing extreme capital structure choices, Strebulaev and Yang (2006) find that a surprisingly large number of large U.S. firms (9%) have essentially no debt at all, and most importantly, this policy is found to be persistent over a long period of time. They test a number of explanations for such a zero-leverage policy, but they are not able to explain their results with any standard model.

[5] The choice to spin off a business unit is often endogenous, and the evidence in the literature suggest that firms do spinoffs to improve incentive-based contracts (Schipper and Smith (1983)), facilitate mergers (Cusatis, Miles and Woolridge (1993)), or to allow parent managers to focus on their core operations (Daley, Mehrotra and Sivakumar

We use a simple and intuitive empirical methodology to examine whether a firm's corporate culture matters for its policy choices. In statistical terms, our definition of corporate culture implies that the effect of a firm's culture on a specific policy can be captured by a component of the firm's fixed effect in a panel regression framework. Thus, in a first step, for each corporate policy of interest, we estimate the component of a firm's policy choice that is attributable specifically to the firm, controlling for industry effects, aggregate year-to-year fluctuations, and time-varying firm characteristics. In a second step, using the estimated spinoff and parent fixed effects from the first step, we examine whether a spinoff firm's policy choice is related to that of its parent. If corporate culture matters, we expect to find a positive correlation between spinoffs' and their parent firms' corporate practices because shared norms and beliefs about what is the right firm behavior make them both deviate in a similar way vis-à-vis a benchmark sample of firms. That is, our empirical methodology identifies culture effects in firm policies from behavior that is "inherited" by offspring firms from their parents.[6]

Our results are consistent with a firm's corporate culture playing a role for firm policy choices. We find that there is a strong and positive relation between spinoffs' and their parents' policy choices for a broad range of variables related to investment, financial, and operational decisions. That is, spinoff firms seem to inherit important firm behavior from their parents. We show that these associations are not likely to be the result of the endogenous choice to split up the firm, and cannot be explained by alternatives such as governance or product market links.

(1997) and Ahn and Denis (2004)). Some of the potential biases introduced by the endogeneity of the spinoff decision do not seem to be working in favor of finding effects of corporate culture. For example, if a business unit is spun off because it has a different "subculture" than its parent, and therefore does not "fit in," then we will find small corporate culture effects by studying this setting.

[6] With a non-corporate setting in mind, several authors have previously proposed that an economic analysis of culture should involve behavior that is "inherited by an individual from previous generations" (Guiso, Sapienza and Zingales (2006), p. 24). Parents have a natural tendency to teach their children what they in turn have learned from their own parents, without a full reassessment of the current efficiency of these beliefs and practices (e.g., Bisin and Verdier (2000)).

Consistent with predictions from existing economic theories of corporate culture, we also find that the corporate culture effects in firm policies are long-term, stronger for internally grown business units, and older firms. Our evidence is also consistent with firms preserving their cultures by selecting management teams that fit in their cultures. Finally, we find corporate culture effects also in measures of firms' economic performance.[7]

Our study complements a recently emerging literature which documents that individual managers, such as CEOs and CFOs, play an important role for firms' policy choices (e.g., Bertrand and Schoar (2003), Malmendier and Tate (2005), and Ben-David, Graham and Harvey (2006)). Some of these authors have alluded to the possibility that corporate culture may matter for firm policies, in addition to management style effects. For example, Ben-David, Graham, and Harvey find that CFOs' personal traits affect corporate decision, but at the same time they suggest that "a latent firm characteristic, potentially corporate culture" (p. 26) may also explain firms' policy choices.

In using the parent-spinoff setting as a way to examine whether a firm's corporate culture matters for its policy choices, we recognize that important research has been done in the past, for example on spinoff firms' capital structure decisions (e.g., Mehrotra, Mikkelson and Partch (2003) and Dittmar (2004)). However, for our purposes it does not matter whether spinoffs on average have significantly lower leverage ratios than their parents, as found by these authors. What we are interested in is whether a spinoff's policy choices deviate from what standard models prescribe in the same way as its parent.

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[7] Note that while we in this paper study *corporate* culture, some recent papers in economics and finance study the effects of national or regional culture differences. For example, Stulz and Williamson (2003) find that a country's culture (measured by its principal religion) is a predictor of variation in creditor rights across countries. Guiso, Sapienza and Zingales (2005) find that cultural aspects, such as religion and genetic similarities, are important determinants of economic outcomes, e.g., trade and foreign direct investments between countries. For a comprehensive review of this emerging literature, see Guiso, Sapienza and Zingales (2006).

We proceed as follows. Section 2 briefly reviews existing economic theories of corporate culture, and explains why corporate culture can matter for firm policies. Section 3 describes the construction of our spinoff-parent dataset, and reports some descriptive statistics. Section 4 presents our empirical methodology. Section 5 reports our results and robustness checks. Section 6 concludes the paper.

2. Economic theories of corporate culture

In a standard neoclassical model of the firm, corporate culture has no meaningful economic role to play. Firms that have similar production technologies and inputs, and face the same product market conditions, will choose a similar set of corporate policies and show similar performance, no matter what corporate cultures they might have. Under this view, the role of corporate culture is relegated to explain the overt behavior of firms' workers, such as the firm's dress code (e.g., whether the firm has "casual Fridays"), the internal jargon, common gossip or jokes about the firm's founders, and the like.

However, starting with the seminal work by Kreps (1990), economists have explained corporate culture using economic theory.[8] Kreps sketches a model in which a firm's culture acts as a substitute for costly communication and contracting by specifying what the right firm behavior is.[9] In cases of unforeseen contingencies or when multiple equilibria exist, a firm's culture is the set of shared expectations that provides a mechanism for making decisions. He concludes that a firm's culture thus "gives identity to the organization" (Kreps (1990, p. 256)).

Modeling how identity affects economic outcomes, Akerlof and Kranton (2000, 2005) argue that agents within an organization can lose utility if they deviate from the norms prescribe

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[8] Hermalin (2001) provides an extensive review the existing economic theories of corporate culture.
[9] Crémer (1993) models corporate culture as a stock of shared information, such as common knowledge about the right firm behavior, possessed by all workers, and shows how such shared beliefs help in aligning actions.

by the organization. In their view, corporate culture is "the division of workers into different groups, the prescribed behavior for each group and the extent to which workers identify with the organization or with the work group and adopt their respective goals" (Akerlof and Kranton (2005, p. 10). Using the idea of norms, Akerlof (2006) describes how a firm can pursue different types of policies because the norms in the firm define the right behavior for the manager. These theories provide a role for corporate culture in economics, and imply that a firm's culture can matter for its choices of policies and strategy (and not only for the decision to have casual Fridays).

Theory argues that a firm's culture can arise and be preserved through several economic mechanisms. Kreps (1990) argues that as firms adapt to unforeseen contingencies, they find out what works and what does not work and this forms the basis of what the right behavior is. Kreps's theory does not involve changing employees' preferences. His theory just requires employees to have expectations of what is the right thing to do; they can hate the norms, but they follow them because they expect others to do the same because deviations from the norm are costly.

Another set of models argues that employees can over time internalize a firm's corporate culture (Akerlof and Kranton (2000) and Lazear (1995)). For example, in the evolutionary model by Lazear, preferences are like genetic endowments, and when an employee in the firm meets ("mates with") another employee, he is replaced by a new one, whose preferences is a mixture of his former preferences and those of the employee he met.[10]

A final set of economic theories of corporate culture formalizes the notion that workers may be selected from the population based on how they "fit in" a firm's culture (Lazear (1995)

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[10] Lazear (1999) uses a random encounter model to analyze common language as one aspect of a culture.

and Van den Steen (2005a, b)).[11] For example, Van den Steen models how a firm selects and

promotes like-minded employees who share similar beliefs about the right firm behavior. In his

models, the shared beliefs can remain in the firm even when all original members of the firm

have exited. Thus, a firm's culture is pervasive and largely independent of the management.

These economic theories of corporate culture come with some directly testable

hypotheses. First, each theory predicts that a firm's culture remains largely fixed over long

periods of time because it is costly and takes time to change established norms, values, and

beliefs within a firm. Theory also predicts that the culture is stronger in firms that have grown

internally, rather than through mergers and acquisitions, and there is experimental evidence

supporting the notion of "culture clashes" in mergers.[12] In addition, both Lazear's (1995) and

Van den Steen's (2005a, b) models predict that a firm's culture is stronger in older and more

established firms because internalization of a firm's culture takes time. Also, since a firm hires

from the overall population, it comes to be dominated by one type of employees only through

selection or selective hiring, both of which are costly and take time. Finally, Lazear's (1995)

theory predicts that small firms are more likely to have strong cultures, because direct

interactions with other employees are relatively more frequent in smaller firms.

3.   Data

3.1.   *Data sources and construction of dataset*

Our dataset of spinoff-parent pairs comes from the Securities Data Corporation (SDC)

Mergers and Acquisitions Database and New Issues Database, which contains data starting in

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[11] See also the model by Bernhardt, Hughson and Kutsoati (2006), in which a firm's managers select to hire and
promote employees with similar skills as their own, because they can evaluate the employees easier.
[12] In the experiment by Weber and Camerer (2003), subjects in "firms" are allowed to develop a culture, and when
two firms merge, performance is found to decrease, subjects overestimate the performance of the merged firm, and
attribute the decrease in performance to members of the other firm.

1980. SDC reports the announcement and effective dates, the names and CUSIPs of the spinoff and the parent firms, and other information about the transactions. The resulting raw dataset consists of 1,316 completed spinoff-parent pairs from 1/1/1980 to 9/30/2005.

We then carefully clean the raw dataset in the following way:

i.) We check that the transactions in the SDC databases were completed, and we exclude transactions that cannot be confirmed by searching SEC filings and news articles on Factiva.

ii.) We require the spinoff and parent firms to be in the Compustat-CRSP merged database.

iii.) We drop spinoffs owned by multiple parents, "tracking stocks," transactions where the spinoff or parents are from the financial or utility industries, and transactions where parents or spinoffs have share codes other than 10 or 11, such as REITs and closed-end investment funds.

iv.) We require the spinoff and parent firms to have at least two years of data on Compustat after the effective dates of the transactions.

v.) We exclude spinoff firms that are the direct result of mergers.

vi.) We require that parents' pre-spinoff ownership is >50%, and that parents' post-spinoff ownership is <50%.[13]

The resulting dataset consists of 286 spinoff-parent pairs. For 217 spinoff transactions, we are able to complement the data from SDC by hand-collecting data on firms' corporate histories, governance and product market links, and management team backgrounds from online SEC filings, downloaded from the Thomson ONE Banker database. The Data Appendix has further details on the dataset construction.

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[13] This requirement makes sure that the parent does not control the spinoff after the transaction, in which case consolidation of balance sheets would introduce a mechanical positive relation between a majority-controlled spinoff and its parent for some of the corporate variables that we analyze.

For this dataset of parent-spinoff pairs and a benchmark sample of Compustat firms, we construct a panel of annual accounting variables from 1980 to 2004. Our analysis involves a broad range of important firm policies: investment policy (investments, acquisitions, acquisition dependency), financial policy (leverage, debt maturity, interest coverage, equity dependence, cash holdings, dividends), and operational policy (research and development expenditures (R&D), advertising expenditures, selling, general, and administrative expenditures (SG&A)). We also analyze corporate culture effects in firms' performance, measured by return on assets (ROA) and return on sales (ROS). Our set of control variables includes lagged logarithm of book assets, cash flow, lagged q, lagged ROA, and lagged net property, plant, and equipment (PPE). The definitions of all variables are available in the Data Appendix.

3.2. Summary statistics

Table 1 reports means, medians, and standard deviations of the corporate policies of interest from 1980 to 2004.[14] The first set of columns presents descriptive statistics for the spinoff firms. The middle set reports statistics for the parents. As a comparison, the final set of columns reports statistics for the other Compustat firms (i.e., excluding spinoff and parent firms) over the time period studied. We note that parent firms have similar rates of investment and acquisition intensity compared to their spinoffs and to other Compustat firms. Both book leverage and short-term leverage are also similar across the subsets of firms. The mean values of equity dependence, which is a proxy for the fraction of investments financed by equity, indicates that parent firms depend less on equity financing than do spinoffs and other Compustat firms. Parents also pay more dividends, and hold less cash. Some of these differences can be explained by differences in firm characteristics. For example, parents are more profitable, have higher cash

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[14] We winsorize all accounting variables at the 1% level in both tails to deal with extreme values.

flow and lower q, and the average parent is much larger than the average spinoff. We therefore control for these firm characteristics in our empirical models of firms' policy choices.

4. Empirical methodology

An implication of the economic theories of corporate culture discussed in Section 2 is that a firm's culture is specific to the firm and largely fixed over long periods of time. That is, a firm's culture can be viewed as a component of the firm's fixed policy effect in a panel regression framework. The first step of our analysis is therefore to estimate the following OLS regression specification for each policy variable of interest:

$$y_{i,t} = \alpha_t + \beta X_{i,t} + \lambda_s + \lambda_p + \lambda_c + \lambda_b + e_{i,t} \qquad s \neq p \neq c \neq b \qquad (1)$$

where $y_{i,t}$ is a firm policy variable for firm i in year t, α_t is a year fixed effect, $X_{i,t}$ is a vector of time-varying firm-level controls, and $e_{i,t}$ is an error term. To account for industry differences, $y_{i,t}$ and $X_{i,t}$ are industry-adjusted each year by subtracting the two-digit SIC code industry means from the raw values.

The remaining variables are firm fixed effects: λ_s is a vector of spinoff fixed effects, λ_p is a vector of parent fixed effects, λ_c are fixed effects for combined firms prior to the split-ups, and λ_b are fixed effects for benchmark firms, i.e., Compustat firms that are neither parents nor spinoff firms. It is important not to measure the parent fixed effects using years prior to the split-up as the consolidation of balance sheets would then mechanically introduce a positive relation between spinoff and parent fixed effects in step two of our analysis.

We can provide some more intuition for our identification strategy in this parent-spinoff setting. Each parent and spinoff fixed effect can be decomposed into two parts: $\lambda_p = c_p + o_p$ and

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$\lambda_s = c_s + o_s$. The first component is shared among a spinoff and its parent (i.e., $c_s = c_p$). This commonality arises because the two firms share a corporate culture.[15] The second component is not shared. o_s captures an effect that is specific to a spinoff but not shared with its parent, and vice versa for o_p. From equation (1), it is not feasible to identify the culture component separately from the non-shared component. Our identification strategy is therefore to use the split-up of the firm to estimate firm behavior that is inherited by a spinoff firm from its parent.

The second step therefore involves estimating the following OLS regression specification for each policy variable of interest:

$$\lambda_{j,s} = a + b\lambda_{j,p} + u_j \qquad\qquad (2)$$

where $\lambda_{j,s}$ and $\lambda_{j,p}$ have been defined above, u_j is an error term, and j denotes specific spinoff-parent pairs.[16] We estimate this equation with robust standard errors (White (1980)). Standard economic models predict that there should be no relation between the policy choices of an offspring firm and those of its parent, after controlling for year, industry, and firm factors. In contrast, the "corporate culture matters" view predicts a positive and statistically significant *b* in equation (2) because a spinoff firm inherits its parent's norms, values, and beliefs about the right firm behavior, i.e., the spinoff inherits the parent's corporate culture.

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[15] A firm's corporate culture can directly involve a particular policy variable. In an interview in an August 2006 issue of BusinessWeek, Dell Computer's CEO describes the firm's culture, and notes that "Being a hero at Dell means saving money," illustrating Dell's "cost cutting culture." On the other hand, a firm's corporate culture can also be one of, for example, risk aversion or conservatism, such as the culture of Morgan Stanley, mentioned in the introduction. In this case, the effect on firms' policy choices is more indirect.

[16] We recognize that the right-hand-side variable in equation (2) is an estimated coefficient from the first step, which is noisy by definition. This will lead to a downward bias in an OLS estimation of *b* in the second step. In subsection 5.3, we therefore also use an alternative estimation method that involves regressions on the collapsed dataset, and we also use a simulation procedure to estimate the empirical distribution of *b*, thus allowing us to learn about the properties of the estimated coefficient. In unreported regressions we have also used a weighted least squares (WLS) estimation procedure to account for the measurement error in the right-hand-side variable, where we weigh each observation by the inverse of the square root of the number of years for which the right-hand-side variable was estimated in the first step. Using this WLS procedure produces similar results.

We recognize that there must have been some economic reason for why the parent and spinoff firms were organized as a combined firm in the first place. For example, they might have shared some production technology, allowing them to exploit economies of scale or economies of scope. Changes in the firm's environment can eliminate such benefits, prompting a split-up of the firm.[17] However, although the firm splits up, the parent might still retain a significant equity ownership stake in the spinoff, creating a governance link, or there might be a customer-supplier relationship between the firms. Like shared norms and beliefs about the right firm behavior, such economic links can also result in commonality in spinoffs' and parents' policy choices. In our analysis we will therefore consider, as carefully as our dataset allows, economic links that remain between parents and their spinoffs after they split up.

5.   Results

5.1.   *Firm fixed effects in firm policies*

Table 2 reports firm fixed effects distributions and model fit measures from estimating equation (1) for investment, financial, and operational policies. For each policy, we describe the distribution by reporting the mean, standard deviation, and the 10th and 90th percentiles. We find that the average spinoff firm is more similar to the average parent firm than the benchmark sample of other Compustat firms, but there is significant heterogeneity in the firm fixed effects: the standard deviations and the differences between the 10th and 90th percentiles are very large for all distributions. The table also shows that firm fixed effects matter economically and statistically for all policy variables. Each F-test rejects the null hypothesis that all firm fixed effects are zero (p-values < 0.00), and the average increase in adjusted R-square when we include firm fixed effects is about 25 percentage points. The evidence that the main

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[17] See, e.g., Zingales (2000) for a discussion of changing firm boundaries.

determinants of variation in policy choices across firms are firm-specific and time-invariant is an important motivation for our search for corporate culture effects in firms' policy choices.

5.2. *Corporate culture effects in firm policies*

Table 3 examines the relation between spinoffs' and parents' policy fixed effects. Column (1) reports the number of observations. Column (2) reports coefficient estimates of b from equation (2) for the different sets of corporate policies. Column (3) reports standardized coefficients, which measure the relation between spinoffs' and parents' policy choices in numbers of standard deviations, thus facilitating comparisons across policies. Column (4) reports R-squares. The number of spinoff-parent pairs available for analysis varies across policies due to missing data.

Overall, the findings show that parents and spinoffs are similar in terms of their policy choices. All the 12 estimated coefficients of b in equation (2) are positive and statistically significant at least at the 10% level. This evidence suggests that spinoffs inherit some firm behavior from their parents even after they split up and operate as separate stand-alone firms. The standardized coefficients, ranging from 0.11 to 0.45, show that there are differences as to which policies are correlated the most. Also, the average R-square across policies is about 9%, with the highest being 20%, and points to the economic importance of the estimated relations. We now discuss our results in more detail.

The first variable in Table 3 that we analyze is investments, measured as net investments scaled by lagged book value of assets.[18] The relation between spinoffs' and parents' investments is positive and significant at the 1% level. Parents and their spinoffs are also similar in terms of

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[18] The results are unaffected if we use alternative measures of investments, such as capital expenditures over lagged net property, plant, and equipment.

acquisitions activities (measured by acquisitions scaled by lagged book value of assets) and their

acquisition dependency, as shown by the positive and significant coefficients. The latter variable

is our proxy for a firm's growth strategy, and measures the extent to which a firm relies on

acquisitions rather than internal growth. Thus, spinoff firms and their parents display similar

investment behavior even after they split up.

Next, we examine financial policies. There are strong positive correlations also between

spinoffs' and parents' capital structure decisions. Parents and their spinoffs have similar

leverage; the estimated coefficient is positive and significant at the 1% level.[19] The result is

similar if we analyze other leverage measures, such as a firm's interest coverage ratio, i.e.,

income before depreciation divided by interest expenses. Thus, offspring firms seem to inherit

their parents' appetite for debt. Parent firms with, say, abnormally low levels of leverage tend to

produce spinoffs which also have an abnormally low appetite for debt in their capital structures.

This evidence is interesting in light of recent studies that find that "informal rules" guide firms'

debt policy (Graham and Harvey (2001)) and that firm fixed effects largely explain leverage

policy (Lemmon, Roberts and Zender (2006)). We notice strong similarities also in choices of

debt maturity, measured by the portion of short-term debt in the capital structure.[20] We also see

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[19] Our results are not affected by using alternative measures of book leverage, e.g., the sum of long-term debt and debt in current liabilities over the sum of long-term debt, debt in current liabilities, and the book value of common equity. The results are also unaffected by the use of market-value based capital structure variables. We prefer to use a book value measure in our reported specifications because of the evidence of stock market mispricing around some equity-carveout transactions (Lamont and Thaler (2003)).

[20] A much more detailed examination would involve analyzing the relation between parents' and spinoffs' debt durations. Unreported regressions show that the estimated coefficient is positive for a firm's debt duration, but it is not statistically significant. One plausible explanation for this result is that our proxy for debt duration is very noisy, e.g., we do not have data from Compustat on the exact maturity of any debt with a longer maturity than five years. Another reason is that while a firm's corporate culture may matter for overall capital structure decisions, it may not affect very detailed capital structure decisions, after controlling for year, industry, and firm factors.

that parents and spinoffs also choose similar levels of cash holdings, after controlling for year, industry, and firm factors.[21]

One obvious concern is that some of the positive associations for these financial policies may be mechanical, since they are based on balance sheet items. For example, if there is no debt in the combined firm prior to the split-up, then the spinoff cannot receive any debt from its parent. Because of these concerns, we also analyze a financing flow measure: equity dependence, measured by net sale of equity as a fraction of investments (see, e.g., Rajan and Zingales (1998)). We find positive and significant associations for this flow measure. Thus, spinoffs that access external equity markets more for financing are likely to come from parents that do the same. Because our variables are industry-adjusted, the fact that some industries are more dependent on equity financing than others cannot explain this result.

We also analyze dividend policy. Parents and their spinoffs have similar payout policy; the estimated association is positive and significant at the 5% level. Since the study by Lintner (1956), it is well-known that firms' payout ratios are sticky.[22] Our results complement existing evidence on dividend policy choices by suggesting that the behavior of sticky payout ratios is strong enough to survive the split-up of a firm. Offspring firms that pay out low dividends are likely to originate from parent firms that also have low payout ratios.

Finally, we also examine various operational policies. Similar to the other policies analyzed, the relations between spinoffs' and parents' R&D policy, marketing policy (measured by the ratio of advertising expenses to sales), and cost cutting policy (measured by the ratio of

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[21] An alternative measure of cash holdings, commonly used by CFOs and other practitioners, is the firm's quick ratio, measured as current assets less inventories scaled by current liabilities. Since all results in this study are unaffected if we analyze quick ratios rather than cash holdings, and since much more work has been devoted in the literature to explaining cash holdings (e.g., Opler, Pinkowitz, Stulz and Williamson (1999)) than quick ratios, we choose not to report our results on quick ratios in the tables.

[22] For a recent study of dividend policy, see Brav, Graham, Harvey and Michaely (2005). Their evidence provides little support for standard models of payout policy, such as agency, signaling, and clientele hypotheses.

selling, general, and administrative expenses to sales) are positive and significant at least at the 10% level. One interpretation of this evidence of strong and pervasive similarities across a broad range of policies is that spinoff firms and their parents share a corporate culture, i.e., they share norms, beliefs, and expectations about right firm behavior.

5.3. *Robustness of results*

We perform a series of tests to verify the robustness of the above results. First, in Table 4, we present results from an alternative estimation method where we first collapse our industry-adjusted dataset at the firm level, and then reestimate the relations between spinoff firms' and parents' policy choices. More specifically, starting with the firm-year dataset, we compute within-firm means of the industry-adjusted policy variables for spinoffs and parents using all available years of data after the split-up. In column (1), we then report Spearman's rank correlation coefficients. We find that all correlations are positive and significant at the 1% level. In column (2), we regress the collapsed data for spinoffs on those of their parents. Again, all associations are positive and statistically significant. In column (3), we replicate the regression of the previous column, but add the same set of firm-level controls for spinoff firms as in our firm fixed effects regressions. We find that all relations but one are positive and significant.

Second, because the variables in equation (2) are estimated with error, one worry is that the distribution of the estimated b is non-normal, and that we overstate the significance level in Table 3. We therefore use a simulation procedure to obtain the empirical distribution of b. We reassign each spinoff to a random Compustat firm, and reestimate b.[23] This procedure is

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[23] We reestimate the following model:
$$\lambda_s = a_{sim} + b_{sim}\lambda_b + u_{sim} \tag{3}$$
where λ_s and λ_b are randomly matched pairs of spinoffs and Compustat benchmark firms.

repeated 100,000 times per policy. Table 5 shows that the estimates of *b* all fall above the 95th percentile of the simulated distributions. Because this procedure does not take into account that parent firms may be different from other Compustat firms, an alternative is to reassign each spinoff to a random parent, and then reestimate *b*.[24] Again, the table shows that the estimates of *b* fall above the 95th percentile of the simulated distributions. Thus, inferring statistical significance based on the simulated distributions does not alter our conclusion regarding similarities of spinoffs' and parent firms' policy choices.

Finally, we verify that spinoffs' and parents' policy choices are more similar than what is to be expected if we instead compare parents to firms that appear very similar to actual spinoff firms. We therefore match each spinoff based on industry, firm size and q. A "placebo spinoff" is in the same two-digit SIC industry as the actual spinoff, and has firm size that is 70% to 130% of the spinoff's. The firm with the closest q is selected as the placebo.[25] Table 6 shows that only one policy, equity dependence, is associated with a positive and significant coefficient when estimating the relation for parents' and their placebo spinoffs, and the economic magnitude is much smaller than in Table 3. An alternative is to match each spinoff firm to another firm in the same industry that goes public within +/- 1 year of the split-up, but that is not the result of a spinoff. If more than one firm meets this criterion, the firm with the closest size is selected as the placebo. Again, the table shows that none of the estimated relations are positive and significant. That is, spinoffs' and parents' policy choices are more similar than what is to be expected if comparing parents to firms that appear very similar to actual spinoff firms.

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[24] We reestimate the following model:
$$\lambda_s = a_{sim} + b_{sim}\lambda_{p'} + u_{sim} \tag{4}$$
where λ_s and $\lambda_{p'}$ are randomly matched pairs of spinoffs and parents, i.e., *p'* is most often not equal to *p*.

[25] The procedure of matching based on industry, size, and q follows the standard in the finance literature (see, e.g., Barber and Lyon (1997)).

5.4. Are the effects long-term?

Each economic theory of corporate culture that we discuss in Section 2 predicts that a firm's culture remains largely fixed over long periods of time because it is costly and takes time to change shared norms, values, and beliefs that exist within a firm. We therefore test whether the positive relations between spinoffs' and parents' policy choices are long-term rather than transitory. We do so by estimating the spinoff and parent fixed effects in equation (1) starting T years after the split-up, and then correlating these fixed effects by estimating equation (2). Evidence that the effects persists over time would be economically more interesting and also more convincing that we are documenting a culture effect and not simply transitory effects.

The first set of columns of Table 7 present results for $T = 1$, i.e., we estimate the fixed effects starting one year after the split-up. Excluding the first year does not alter our results. The middle set of columns examine longer term effects by reporting results for $T = 5$. All the relations between spinoff firms' and parents' policy choices are positive and all but two are significant at the 10% level. The final set of columns report results for $T = 10$ years.[26] We see that all of the relations remain positive, and all but three are statistically significant. Most importantly, all the coefficients that were strongly significant in Table 3 remain significant over the longer term. Thus, more than a decade after the firms split up into separate stand-alone firms, we find that parents and spinoff firms still behave very similarly when compared to other Compustat firms.[27]

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[26] Because our dataset starts in 1980 and because firms exit the panel, we lose an average of 77% of the spinoff-parent pairs when we set $T = 10$ years, preventing us from analyzing the effects over an even longer period of time.
[27] In principle we could also study spinoffs that are spun off from firms that are themselves spinoff firms, and examine how similar their policy choices are to those of their "grandparent" firms. However, there are only nine such transactions in our dataset, preventing us from any statistical analysis.

5.5. Observable firm characteristics and corporate culture effects

We have so far presented suggestive evidence that there are corporate culture effects in firms' policy choices: offspring firms seem to inherit firm-specific practices from their parents after they have split up and these similarities remain strong even after long periods of time. In this sub-section, we provide evidence to show that the similarities correlate with several firm characteristics that determine the strength of a firm's culture. Economic theories of corporate culture provide specific predictions for what characterizes firms in which we can expect the shared norms, values, and beliefs to be particularly strong. Thus, based on these theories we can predict which offspring firms will inherit more of their parents' behavior. Evidence based on tests of these theories would not only provide more convincing evidence that a firm's corporate culture matter for its policy choices, but also shed light on how a firm's culture affects its behavior.[28]

5.5.1. Internal growth versus mergers and acquisitions

Economic theories on corporate culture and experimental evidence on culture clashes in mergers suggest that a firm's culture is stronger in firms that have largely grown internally, rather than through mergers and acquisitions.[29] We therefore expect corporate culture effects to be stronger in business units that are the product of internal growth. To test this prediction, we start by collecting data on the spinoff firm's corporate history, in particular how the spinoff became a business unit of the parent. Our data sources are SEC filings and newspaper articles.

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[28] The firm characteristics we study in this paper are only a small subset of those that we think might be related to the strength of a firm's culture. However, to limit the risk of estimating spurious correlations, our focus is on firm characteristics for which economic theories of corporate culture have specific predictions.

[29] The relevance of this argument relies on the assumption that some firms select to merge although their respective corporate cultures are not perfectly similar. While an important question for future research, it is beyond the scope of this paper to systematically examine whether corporate culture matters for which firms select to merge. However, we note that many news paper articles seem to suggest that there are culture clashes in some mergers.

We find that 46% of the spinoff firms are the result of internal growth within the parent rather than a merger or acquisition. Next, we add to equation (2) an interaction term between the parent fixed effect and a dummy variable for whether the spinoff firm is the result of internal growth. The first set of columns in Table 8 show that most of the interaction terms are positive and significant. That is, spinoffs seem to inherit relatively more of their parents' behavior when they are the product of internal growth compared to when they are the result of a merger or acquisition. This evidence supports our conjecture that firms' corporate cultures can explain their policy choices. Implicitly, this evidence also suggests that in some mergers and acquisitions, firms' corporate cultures may clash.

5.5.2. Firm age

Several of the models discussed in Section 2 predict that a firm's corporate culture is stronger in older and more established firms because internalization of a firm's culture and selective hiring take time and are costly (e.g., Lazear (1995) and Van den Steen (2005a, b)). Therefore, the corporate culture effects are likely to be stronger in older parents. We measure firm age for the parent at the time of the split-up by computing the number of years that the parent has been in the Compustat database. We separate the parents into two groups, older versus younger firms, based on the median age.[30] With this cutoff, the average age among older parents is 43 years, compared to only 14 years for younger ones. We then add to equation (2) an interaction term between the parent fixed effect and a dummy variable for whether the parent is an older firm. The majority of the interaction terms in the middle set of columns in Table 8 are

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[30] Although standard in the literature, this is clearly a crude proxy of firm age because some firms may go public, and thus enter the Compustat database, when they are older firms. Also, the firm age of some older firms is downward biased because the Compustat database does not start till 1950. However, it seems unlikely to us that potentially noisy estimates of firm age would introduce any systematic bias in our analysis.

positive and significant. That is, spinoffs seem to inherit significantly more of their parents'

corporate practices when they come from older parents compared to when they come from young

ones. This evidence is consistent with theories that argue that a firm's shared norms, beliefs, and

expectations about the right firm behavior are stronger in older and more established firms.

5.5.3. *Firm size*

Lazear's (1995) model predicts that smaller firms have stronger corporate cultures

because direct interactions among employees are more frequent in smaller firms. Our proxy for

firm size is the total number of employees of the combined firm as of the fiscal year end just

prior to the split-up. Because the average parent firm is larger than the average Compustat firm,

we use the median size among all Compustat firms to separate parents into two groups: larger

and smaller firms. With this cutoff, the average size among larger parents is 15,500 employees,

compared to only 260 for smaller parents. Next, we add to equation (2) an interaction term

between the parent fixed effect and a dummy variable for whether the combined firm is a smaller

firm. We find that only three of the interaction terms in the final set of columns in Table 8 are

significant, two of them positive while the other is negative.[31]

These insignificant interaction terms contrast sharply with our results for the other

observable firm characteristics that we analyze. Although shared norms and beliefs may be

propagated more easily within smaller firms, the benefits from a stronger corporate culture might

be greater in larger firms, where coordination problems regarding policy and strategy choices are

common and can be very complex.[32] As argued by Hermalin (2001), the benefits to investing in

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[31] In unreported regressions, we also use the book value of total assets as an alternative proxy for firm size. The results are very similar, except that the negative interaction term on dividend policy is no longer significant.
[32] Consider for example General Electric (GE). The business press often suggests that the "GE culture" is very strong, although GE is a very large company with business units all over the world and in many different industries.

a stronger corporate culture can therefore be greater in larger firms. If both of these opposing economic mechanisms are at work in equilibrium, then the lack of an association between firm size and the extent to which offspring firms inherit their parent firms' behavior is not surprising.

5.6. *Management and corporate culture effects*

Economic theories of corporate culture predict that managers and workers are, at least in part, selected from the population based on how they will "fit in" a firm's corporate culture (Lazear (1995) and Van den Steen (2005a, b)). That is, firms select and promote like-minded employees who share similar beliefs about the right firm behavior. We therefore expect that the extent to which offspring firms inherit their parents' policy choices is not any less significant when an outside CEO or management team, with little or no prior exposure to the firm's culture, is brought in to run the spinoff firm.

To test this prediction, we collect data on management's background from the biography sections of firms' SEC filings. We find that 18% of the spinoff CEOs are outsiders in the sense that they have a background of at most three years in the combined firm prior to the split up. This three-year requirement is arbitrary but helps ensure that spinoff managers have little or no exposure to the parent firm's corporate culture prior to managing the spinoff firm. We then add to equation (2) an interaction term between the parent fixed effect and a dummy variable for whether the spinoff CEO is an outsider. We find that none of the interaction terms in the first set of columns in Table 9 are significant at the 10% level. The joint F-tests show that, for five policies, we cannot reject the null hypothesis of no inherited behavior when an outside CEO is brought in. Because relatively few CEOs are outsiders, we also add an interaction term between the parent fixed effect and a dummy variable that is one if the spinoff's management team has

more outsiders than the median spinoff firm. Only one of the interaction terms in the second set of columns is negative and significant at the 10% level. The joint F-tests are not significant for five of the firm policy variables we study.

Our results suggest that offspring firms' policy choices are somewhat less similar to those of their parent when an outside CEO or management team is brought in to run the spinoff firm. This evidence complements a recently emerging literature which documents that top managers matter for firms' policies because they have their own individual "style" (e.g., Bertrand and Schoar (2003), Malmendier and Tate (2005), and Ben-David, Graham and Harvey (2006)). However, consistent with theories of selective hiring, we also find that firm behavior is inherited even when those with little or no prior exposure to the firm's culture are brought in as top managers. Thus, a firm's culture is a latent firm characteristic that do not come and go with a specific CEO or management team.

5.7. Corporate culture and firm performance

If a firm's corporate culture affects its policy choices, we would expect it to ultimately matter also for its economic performance (Kreps (1990) and Hermalin (2001)). In Table 10, we therefore study culture effects in corporate performance measures by estimating the relation between spinoffs' and parents' performance fixed effects. One measure we examine is the rate of return on assets, measured by the ratio of operating income before depreciation (EBITDA) divided by lagged book assets. We also examine the firm's return on sales, where we scale operating income by total revenues rather than assets. We focus on these two measures because the numerator is cash flows from a firm's operations, and thus not particularly sensitive to a

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firm's specific accounting practices.[33] Consistent with corporate culture effects in firm performance, we find a positive and significant relation between spinoff firms' and parents' corporate performance. Thus, better-performing parents seem to produce better-performing offspring firms, after controlling for year, industry, and firm factors.

However, our evidence also suggests that a firm's corporate culture is an economic mechanism through which poor corporate performance can persist: poorly performing spinoffs tend to come from parent firms that are themselves not performing well.[34] This evidence supports economic theories of corporate culture which suggest that a potential cost of a firm's culture is that the firm's shared norms, beliefs, and expectations sometimes make it difficult to change firm behavior even when doing so is required by the firm's environment (e.g., Lazear (1995)). Thus, although the shared cultural norms in a firm likely were efficient when they were first introduced, they might continue to be instilled into managers and workers even after they are no longer efficient.[35]

5.8. *Alternative explanations*

Like a common corporate culture and shared norms and beliefs about the right firm behavior, economic links that remain between parents and their spinoffs after they split up can also result in commonality in policy choices and corporate performance. In our analysis below, we therefore consider whether governance links, industry links, customer-supplier relationships,

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[33] While an important question for future research, it is beyond the scope of this paper to systematically examine the relevance of a firm's corporate culture for specific accounting practices and earnings management. A firm's corporate culture may matter for the aggressiveness of a firm's accounting practices, or even the likelihood of corporate fraud.

[34] As a robustness check, we have verified that the performance similarities between spinoffs and their parents are present also among firms that perform very poorly. There is a positive and significant performance relation among parent-spinoff pairs for which parents' performance fixed effects are negative, i.e., for which parents underperformed the benchmark sample of Compustat firms, after controlling for year, industry, and firm factors.

[35] For examples of delayed adjustment behavior of culture in a non-corporate setting and for a discussion of some explanations for such behavior, see Guiso, Sapienza, and Zingales (2006).

or contractual agreements regarding shared assets can explain the observed similarities between spinoffs and their parents.

5.8.1.   Governance links

To examine whether governance links can explain our results, we first examine equity ownership by the parent after the split-up. A parent firm that retains significant equity ownership might be able to influence the spinoff towards firm behavior that the parent firm considers appropriate, which is likely to be the behavior of the parent itself. To check that our results are not driven by such ownership stakes, we reexamine our main results in Table 3 by focusing on spinoff-parent pairs where the parent retains no ownership after the split-up. We find that 87% of the parents retain no equity ownership. Conditional on a parent retaining a stake, the mean equity ownership is 29%, ranging from 6.4% to 49.9%. The first set of columns in Table 11 shows that the relations between parents' and spinoffs' policy choices and firm performance measures are positive and all but one are statistically significant when we focus on transactions where the parent retains no equity ownership after the split-up.

Next, we focus on governance links where the parent firm's CEO sits on their spinoff's board of directors after the split-up, thereby potentially influencing the spinoff's policy choices and performance. Data from firms' SEC filings show that 34% of the parent CEOs sit on the spinoff's board, although many likely sit there only temporarily, till a new slate of directors has been elected. The second set of columns shows that the relations between parents' and spinoffs' policy choices and performance are positive, and all but two are significant at least at the 10% level. Thus, alternative explanations based on parental influence through equity ownership or parent CEO's board seat are unlikely to explain our results.

5.8.2. Product market links

We first examine whether industry links not captured by industry adjustment of the

policy and performance variables can provide an explanation for why spinoff firms inherit their

parents' behavior. That is, firms in the same industry are more likely to share commonalities that

may not be captured by our control variables. For example, spinoffs and their parents may share

the same production technology relevant to the industry. To verify that our results are not driven

by such industry links, we first focus our analysis on spinoffs and parents that operate in

different industries after the split-up. Defining industries according to three-digit SIC codes, we

find that 73% operate in different industries.[36] The first set of columns in Table 12 shows that

the relations between parents' and spinoffs' policy choices and operating performance measures

are positive and all but two are statistically significant. Thus, industry links and commonalities

that come from same-industry affiliations are unlikely to explain our results.

Next, we turn to more specific product market relationships after the split-up. Suppose

that the parent is a major customer of the spinoff.[37] Then the parent (spinoff) firm can

potentially affect the policy choices and the profitability of the spinoff (parent) also bound by the

relationship.[38] To check that such links do not drive our results, we now focus on spinoffs that

do not have a major customer or supplier relationship with their parent. We use data from the

Compustat customer segment files.[39] The vast majority, 85%, of our sample does not have any

such relationships after the split-ups. The middle set of columns shows that the relations

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[36] The results are unaffected if we use two-digit or four-digit SIC codes to define industries.

[37] A specific example of such a parent-spinoff pair is Ford Motor Company and its spinoff, parts-supplier Visteon Corporation. Ford is a rather extreme case in that the firm makes up as much as 74% of Visteon's total sales during the period that we study.

[38] In recent studies, Kale and Shahrur (2006) find that the characteristics of a firm's suppliers and customers matter for its capital structure decisions, and Cohen and Frazzini (2006) find that an economic shock to a firm can have an effect on its customers.

[39] Regulation SFAS No. 131 requires firms to report customers representing more than 10% of the total sales in financial reports to shareholders.

between parents' and spinoffs' policy choices and profitability measures are positive, and all but one are statistically significant when we focus on transactions where there is no customer-supplier relationship after the split-up. Thus, an alternative explanation based on customer-supplier relationships is unlikely to explain our results.

Finally, we verify that our results are not driven by parents and spinoffs that share control over a critical asset or production technology, e.g., strategic alliances or shared patents. We consider shared assets to be "material" if they are reported in firms' SEC filings. We find that 85% of the spinoff-parent pairs do not share assets after the split-up. The final set of columns shows that the relations between parents' and spinoffs' policy choices are positive, and all but three are significant at least at the 10% level. The performance relations are significant at all levels. Thus, shared assets cannot explain most of our results for policy choices, and they cannot explain our firm performance results. It is possible that there exist contracts between parents and their spinoffs that are not disclosed in SEC filings. However, it seems unlikely that contractual agreements that are not sufficiently important to be reported in SEC filings would be a significant driver behind any of our results.

6. Conclusion and extensions

The contribution of this paper is to bring the notion of corporate culture into a formal empirical analysis of firm policies and performance. To do so, we construct a parent-spinoff firm dataset which enables us to identify corporate culture effects in firm policies from behavior that is inherited by a spinoff firm from its parent after the firms split up and operate as separate stand-alone firms. Our results are consistent with a firm's corporate culture playing a role for its policy choices. We find strong and positive relations between spinoffs' and their parents' policy

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choices for a broad range of variables related to investment, financial, and operational decisions. Consistent with predictions from economic theories of corporate culture, we also find that the corporate culture effects in firm policies are long-term, stronger for internally grown business units, and older firms. Our evidence is also consistent with firms preserving their cultures by selecting management teams that fit in their cultures. Finally, we find corporate culture effects also in measures of firms' economic performance.

The evidence that a firm's corporate culture matters for its policy choices and performance raises a series of questions for future research. How is a firm's corporate culture created? Kreps (1990) emphasizes the importance of a firm's early history in the formation of a particular culture, and Schein (1983) suggest that a firm's founder can play a central role in the development of the culture as she draws on her own experience when the firm faces unforeseen contingencies. Perhaps fiscally conservative founders (possibly due to their upbringing) will create conservative firms, with a cost cutting culture and very low appetite for debt even when standard economic models prescribe more debt financing. Also, can corporate cultures change over time? If so, what economic forces prompt such changes to a firm's identity? Another important question is: What characterizes a successful corporate culture? That is, why are some shared norms and beliefs superior to others? And what economic mechanisms prevent other firms from simply adapting them? Finally, in this paper we study culture effects in firms that split up, but the reverse exercise of studying firms that merge is equally important, in particular in light of business press suggestions of "culture clashes" in mergers, and recent experimental evidence by Weber and Camerer (2003). Answers to these questions would add to our understanding of the role of culture in a corporate setting.

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Data Appendix

Construction of dataset

Description	No. of transactions
Download spinoffs from SDC M&A and New Issues databases. Time period is from 1/1/1980 to 9/30/2005.	1,316
Verify that the spinoff took place by checking SEC filings and newspaper articles on Factiva. Require the spinoff and parent to be on Compustat.	850
Delete spinoffs owned by two parents, "tracking stocks," transactions where spinoffs or parents are from the financial or utility industries, and transactions where parents or spinoffs have share codes other than 10 or 11.	624
Require that the spinoff and parent have at least two years of data on Compustat after the effective date of the transaction.	436
Require that parents' pre-spinoff ownership is >50% and that parents' post-spinoff ownership is <50%.	286
Transactions with online proxy statements and/or 10-Ks.	217

Variable definitions

Investment policy variables

Acquisition dependency is defined as acquisitions (item 129) divided by total net investments. Total net investments is the sum of the capital expenditures (item 128), increase in investments (item 113), and acquisitions (item 129) less the sum of sales of property, plant and equipment (item 107) and sale of investments (item 109). Missing items 128, 113, 129, 107, and 109 are substituted with zeros.

Acquisitions is defined as acquisitions (item 129) divided by lagged book value of assets (item 6).

Investments is defined as total net investments scaled by lagged book value of assets (item 6). Total net investments is the sum of the capital expenditures (item 128), increase in investments (item 113), and acquisitions (item 129) less the sum of sales of property, plant and equipment (item 107) and sale of investments (item 109). Missing items 128, 113, 129, 107, and 109 are substituted with zeros.

Financial policy variables

Cash holdings is defined as cash and short-term investments (item 1) divided by book value of assets (item 6) less cash and short-term investments (item 1)

Dividend/earnings is the ratio of the sum of common dividends (item 21) and preferred dividends (item 19) over operating income before depreciation (item 13).

Equity dependence is defined as sale of common and preferred stock (item 108) less purchase of common and preferred stock (item 115) divided by total net investments. Total net investments is the sum of the capital expenditures (item 128), increase in investments (item 113), and acquisitions (item 129) less the

sum of sales of property, plant and equipment (item 107) and sale of investments (item 109). Missing items 115, 128, 113, 129, 107, and 109 are substituted with zeros.

Interest coverage is defined as operating income before depreciation (item 13) divided by interest expenses (item 15).

Leverage is defined as the sum of long-term debt (item 9) and debt in current liabilities (item 34) scaled by book assets (item 6).

Short-term leverage is defined as debt in current liabilities (item 34) divided by book assets (item 6).

Operational policy variables

Advertising is the ratio of advertising expense (item 45) over sale (item 12). Missing item 45 is substituted with zeros.

R&D is the ratio of R&D expenditures (item 46) over lagged book assets (item 6). Missing item 46 is substituted with zeros.

SG&A is the ratio of selling, general, and administrative expenses (item 189) over sales (item 12). Missing item 189 is substituted with zeros.

Operating profitability variables

Return on assets is the ratio of operating income before depreciation (item 13) over lagged book assets (item 6).

Return on sales is the ratio of operating income before depreciation (item 13) over sales (item 12).

Control variables

Cash flow is defined as the sum of earnings before extraordinary items (item 18) and depreciation (item 14) divided by lagged book value of assets (item 6).

Net property, plant, and equipment ratio is defined as the net property plant and equipment (item 8) divided by book value of assets (item 6). This variable is lagged.

Size is defined as the natural logarithm of book assets (item 6) in 2004 million dollars. This variable is lagged.

Tobin's q is defined as the market value of assets divided by the book value of assets (item 6). The market value of assets equals the book value of assets plus the market value of common equity (item 25 × item 199) less the sum of the book value of common equity (item 60) and balance sheet deferred taxes (item 74). This variable is lagged.

Table 1
Descriptive statistics

The table reports descriptive statistics of the variables used in the study for all years from 1980 to 2004, separately for the spinoffs, the parents, and all other non-financial, non-utility firms in the Compustat-CRSP merged database. See section 3 for details on the construction of the spinoff-parent data set. The definitions of all variables are available in the Data Appendix. *N* refers to the maximum number of firm-year observations; not all variables are available for each firm-year. All variables are winsorized at the 1% level in both tails.

Variables	Spinoffs		Parents		Compustat Firms	
	Mean	SD	Mean	SD	Mean	SD
Investment policies						
Investments	0.12	0.17	0.11	0.13	0.11	0.18
Acquisitions	0.04	0.11	0.03	0.09	0.03	0.10
Acquisition dependency	0.17	0.30	0.15	0.26	0.11	0.26
Financial policies						
Leverage	0.24	0.21	0.26	0.19	0.24	0.22
Interest coverage	20.72	105.71	19.84	71.71	16.49	105.45
Short-term leverage	0.04	0.08	0.05	0.07	0.07	0.11
Cash holdings	0.36	0.91	0.18	0.49	0.38	0.94
Equity dependence	1.18	6.73	0.08	2.10	1.52	7.01
Dividend/earnings	0.04	0.11	0.11	0.13	0.04	0.12
Operational policies						
R&D	0.05	0.11	0.03	0.06	0.05	0.10
Advertising	0.01	0.03	0.01	0.03	0.01	0.03
SG&A	0.31	0.54	0.21	0.23	0.35	0.53
Profitability						
Return on assets	0.10	0.23	0.16	0.12	0.08	0.24
Return on sales	-0.26	1.88	0.11	0.49	-0.23	1.65
Control variables						
Cash flow	0.04	0.23	0.10	0.10	0.02	0.24
Tobin's Q	2.04	1.94	1.67	1.12	2.07	2.00
Net PPE ratio	0.32	0.23	0.35	0.20	0.29	0.22
Book assets (in 2004 $ mil)	1,434	3,022	3,969	5,542	758	2,535
N	1,935		4,187		92,127	

Table 2
Firm fixed effects in firm policies

The table reports descriptive statistics of the firm fixed effects obtained from panel regressions of each dependent variable on time-varying firm-level control variables, and year and firm fixed effects. The firm fixed effects are reported separately for spinoffs, parents, and all other non-financial, non-utility firms in the Compustat-CRSP merged database. The definitions of all variables are available in the Data Appendix. In the panel regressions, all variables are industry-adjusted by subtracting the industry means from the raw values. The industry-adjusted variables are then winsorized at the 1% level in both tails. The control variables for the investment policy dependent variables consist of lagged logarithm of book assets, lagged q, and cash flow. The control variables for the financial policy dependent variables consist of lagged logarithm of book assets, lagged ROA, lagged q, and lagged net PPE. For the operational policy variables, each regression includes lagged logarithm of book assets, lagged ROA, lagged q, and a dummy variable indicating whether the dependent variable is missing and has been set to zero. The column *R-Sq w/o FE* reports the adjusted R-squares of regressions of each of the dependent variables on the control variables and year fixed effects, while the column *R-Sq w/ FE* reports the adjusted R-squares of regressions that also include firm fixed effects. The column *F-Test* reports the p-values of F-tests for the joint significance of the firm fixed effects.

Table 2, cont'd

Dependent variables	Spinoffs				Parents				Compustat Firms				Model Fit		
	Mean	SD	10 Pctl	90 Pctl	Mean	SD	10 Pctl	90 Pctl	Mean	SD	10 Pctl	90 Pctl	R-Sq w/o FE	R-Sq w/ FE	F-Test
Investment policies															
Investments	0.03	0.12	-0.10	0.16	0.04	0.09	-0.08	0.15	-0.02	0.15	-0.18	0.14	0.04	0.20	0.00
Acquisitions	0.01	0.06	-0.05	0.09	0.01	0.05	-0.04	0.06	-0.01	0.07	-0.07	0.06	0.01	0.12	0.00
Acquisition dependency	0.03	0.19	-0.16	0.29	0.03	0.22	-0.19	0.29	0.00	0.19	-0.17	0.23	0.03	0.15	0.00
Financial policies															
Leverage	-0.03	0.19	-0.22	0.23	-0.04	0.18	-0.25	0.17	0.00	0.19	-0.20	0.26	0.06	0.60	0.00
Interest coverage	-16.91	126.75	-112.86	79.27	-13.26	89.68	-100.16	89.20	-5.01	104.35	-73.10	67.25	0.10	0.34	0.00
Short-term leverage	0.04	0.08	-0.01	0.12	0.04	0.07	-0.01	0.12	0.07	0.10	-0.01	0.19	0.05	0.45	0.00
Cash holdings	0.03	1.21	-1.09	0.93	0.06	1.19	-0.96	0.89	-0.09	0.96	-0.89	0.64	0.10	0.49	0.00
Equity dependence	0.68	5.63	-6.51	5.87	1.21	6.38	-6.22	7.04	-0.35	6.37	-6.05	4.75	0.17	0.35	0.00
Dividend/earnings	-0.06	0.13	-0.16	0.05	-0.01	0.13	-0.13	0.12	-0.03	0.12	-0.12	0.07	0.04	0.14	0.00
Operational policies															
R&D	0.03	0.07	-0.06	0.11	0.04	0.06	-0.03	0.10	0.01	0.08	-0.07	0.09	0.28	0.72	0.00
Advertising	0.01	0.03	-0.02	0.03	0.01	0.03	-0.01	0.03	0.01	0.04	-0.02	0.03	0.16	0.32	0.00
SG&A	0.01	0.82	-0.73	0.55	-0.01	0.71	-0.82	0.57	0.02	0.61	-0.55	0.48	0.13	0.32	0.00

Table 3
Corporate culture effects in firm policies

The table examines the relation between spinoffs fixed effects and parents fixed effects. The firm fixed effects are obtained from panel regressions of industry-adjusted dependent variables on several time-varying firm-level control variables, and year and firm fixed effects. The definitions of all variables are available in the Data Appendix. *N* gives the number of observations used in the regressions. For each dependent variable, *Coeff (Std Coeff)* gives the coefficient (standardized coefficient) in a regression of the spinoff fixed effects on the parent fixed effects. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	N	Coeff	Std Coeff	R-Sq
Investment policies				
Investments	265	0.385***	0.305	0.09
		(0.08)		
Acquisitions	254	0.400***	0.342	0.12
		(0.08)		
Acquisition dependency	264	0.094*	0.109	0.01
		(0.05)		
Financial policies				
Leverage	262	0.346***	0.330	0.11
		(0.08)		
Interest coverage	238	0.453***	0.289	0.08
		(0.16)		
Short-term leverage	264	0.265**	0.214	0.05
		(0.11)		
Cash holdings	263	0.386***	0.382	0.15
		(0.10)		
Equity dependence	251	0.346***	0.386	0.15
		(0.07)		
Dividend/earnings	263	0.181**	0.188	0.04
		(0.09)		
Operational policies				
R&D	266	0.549***	0.445	0.20
		(0.08)		
Advertising	265	0.113*	0.108	0.01
		(0.06)		
SG&A	265	0.418***	0.353	0.12
		(0.10)		

Table 4
Robustness of results: Alternative estimation methods

The table reports results from alternative ways of examining the relation between spinoffs' policy choices and their parents' policy choices. We first calculate the within-firm time-series average of the industry-adjusted dependent variables for each spinoff and for each parent. The *Spearman's Corr* column reports Spearman's rank correlation coefficient from correlating the within-firm mean of the policy variables for spinoffs and parents. The *Coeff* column gives the coefficient in a regression of the spinoff's within-firm mean of the policy variable on the parent's corresponding within-firm mean. The *Coeff - Full Model* column gives the coefficient in a regression of the spinoff's within-firm mean of the policy variable on the parent's corresponding within-firm mean, and the spinoff firm's within-firm means of the control variables described in Table 2. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	Spearman's Corr	Coeff	Coeff - Full Model
Investment policies			
Investments	0.157***	0.240**	0.217**
		(0.10)	(0.10)
Acquisitions	0.223***	0.393***	0.387***
		(0.08)	(0.08)
Acquisition dependency	0.216***	0.126**	0.123**
		(0.05)	(0.05)
Financial policies			
Leverage	0.234***	0.260***	0.283***
		(0.07)	(0.07)
Interest coverage	0.304***	0.399***	0.417***
		(0.11)	(0.11)
Short-term leverage	0.223***	0.228***	0.244***
		(0.08)	(0.09)
Cash holdings	0.406***	0.316***	0.270***
		(0.09)	(0.09)
Equity dependence	0.332***	0.296***	0.237***
		(0.07)	(0.07)
Dividend/earnings	0.270***	0.231***	0.176***
		(0.05)	(0.06)
Operational policies			
R&D	0.333***	0.530***	0.406***
		(0.10)	(0.08)
Advertising	0.274***	0.167**	0.143
		(0.07)	(0.09)
SG&A	0.347***	0.336***	0.336***
		(0.08)	(0.09)

Table 5
Robustness of results: Evidence from simulations

The table reports the results from simulations. In the first simulation, we reassign each spinoff to a random firm, where the random firm is drawn from the population of Compustat firms, excluding the parents and spinoffs. Next, we regress the spinoff fixed effects on the random firm's fixed effects. We retain the coefficient estimate. We repeat this procedure 100,000 times to obtain an empirical distribution of the coefficients. In the second simulation, we reassign each spinoff to a random parent other than its own parent. The table reports the standard deviation, 10th and 90th percentiles of these two simulated distributions of coefficients. The column *Pctl* reports the percentage of simulated coefficients that fall below the coefficients estimated in Table 3 where the regression is based on the spinoff firm fixed effects against its true parent firm fixed effects. The definitions of all variables are available in the Data Appendix.

Dependent variables	Reassign to Random Firm				Reassign to Random Parent			
	SD	10th Pctl	90th Pctl	Pctl	SD	10th Pctl	90th Pctl	Pctl
Investment policies								
Investments	0.052	-0.066	0.067	99	0.078	-0.100	0.100	99
Acquisitions	0.070	-0.088	0.090	99	0.074	-0.094	0.095	99
Acquisition dependency	0.086	-0.108	0.111	91	0.054	-0.068	0.070	98
Financial policies								
Leverage	0.067	-0.085	0.087	99	0.065	-0.083	0.085	99
Interest coverage	0.192	-0.234	0.234	98	0.104	-0.131	0.132	99
Short-term leverage	0.053	-0.064	0.070	99	0.078	-0.094	0.103	99
Cash holdings	0.122	-0.153	0.153	99	0.064	-0.079	0.082	99
Equity dependence	0.061	-0.077	0.076	99	0.057	-0.072	0.074	99
Dividend/earnings	0.098	-0.124	0.124	95	0.060	-0.076	0.076	99
Operational policies								
R&D	0.077	-0.098	0.097	99	0.076	-0.098	0.097	99
Advertising	0.086	-0.107	0.110	99	0.068	-0.082	0.083	99
SG&A	0.111	-0.135	0.137	99	0.075	-0.093	0.095	99

Table 6
Robustness of results: Evidence from matching

The table reports the results from matching. The matching is done as of the year data is first available in Compustat for the spinoff firm after the split-up. In the column *Placebo Spinoff 1*, each spinoff is matched to a placebo spinoff that is in the same 2-digit SIC industry, has book assets that is within 70% to 130% of the spinoff's assets, and that has the closest q to the spinoff. We then regress the parent fixed effects on the placebo spinoff's fixed effects. In the column *Placebo Spinoff 2*, each spinoff is matched to a placebo spinoff that is in the same 2-digit SIC industry, that first appears in Compustat in the +/- 1 years surrounding the split-up, and that has the closest book assets to the spinoff. The definitions of all variables are available in the Data Appendix. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	Placebo Spinoff 1		Placebo Spinoff 2	
	Coeff	R-Sq	Coeff	R-Sq
Investment policies				
Investments	-0.056	0.00	0.005	0.00
	(0.06)		(0.07)	
Acquisitions	-0.061	0.01	0.056	0.00
	(0.05)		(0.07)	
Acquisition dependency	-0.013	0.00	0.012	0.00
	(0.05)		(0.06)	
Financial policies				
Leverage	-0.002	0.00	-0.086	0.01
	(0.05)		(0.07)	
Interest coverage	0.116	0.02	-0.077	0.01
	(0.07)		(0.06)	
Short-term leverage	-0.052	0.00	-0.004	0.00
	(0.03)		(0.05)	
Cash holdings	0.053	0.01	-0.003	0.00
	(0.07)		(0.05)	
Equity dependence	0.155*	0.03	0.011	0.00
	(0.09)		(0.07)	
Dividend/earnings	0.015	0.00	-0.008	0.00
	(0.04)		(0.04)	
Operational policies				
R&D	-0.064	0.01	0.029	0.00
	(0.04)		(0.06)	
Advertising	0.026	0.00	0.184	0.01
	(0.04)		(0.12)	
SG&A	0.030	0.00	0.010	0.00
	(0.03)		(0.05)	

Table 7
Long-term versus transitory corporate culture effects in firm policies
The table examines whether the corporate culture effects are long-term or transitory effects. The column
T+1 reports the results of estimating a regression of the spinoff fixed effects on the parent fixed effects
where the fixed effects are estimated without the parent and spinoff's observations in the first year of the
spinoff. The column *T+5* (*T+10*) excludes the first 5 (10) years. The definitions of all variables are
available in the Data Appendix. Robust standard errors are reported in parentheses. ***, **, and *
indicate significance at the 1%, 5%, and 10% levels, respectively.

| | T + 1 | | | T + 5 | | | T + 10 | | |
Dependent variables	N	Coeff	R-Sq	N	Coeff	R-Sq	N	Coeff	R-Sq
Investment policies									
Investments	265	0.382***	0.09	176	0.362***	0.09	63	0.342***	0.08
		(0.08)			(0.09)			(0.10)	
Acquisitions	254	0.399***	0.12	170	0.297***	0.06	61	0.350***	0.08
		(0.08)			(0.10)			(0.10)	
Acquisition dependency	264	0.091*	0.01	175	0.052	0.00	62	0.115	0.01
		(0.05)			(0.07)			(0.08)	
Financial policies									
Leverage	262	0.343***	0.11	177	0.403***	0.15	62	0.336***	0.09
		(0.08)			(0.08)			(0.09)	
Interest coverage	238	0.449***	0.08	160	0.415**	0.06	55	0.564**	0.09
		(0.17)			(0.16)			(0.24)	
Short-term leverage	264	0.265**	0.05	177	0.260**	0.04	62	0.009	0.00
		(0.11)			(0.12)			(0.09)	
Cash holdings	263	0.386***	0.15	177	0.401***	0.14	62	0.608***	0.18
		(0.10)			(0.11)			(0.16)	
Equity dependence	250	0.357***	0.15	165	0.449***	0.19	52	0.545***	0.14
		(0.07)			(0.10)			(0.15)	
Dividend/earnings	263	0.184**	0.04	176	0.241**	0.05	62	0.213*	0.04
		(0.09)			(0.11)			(0.11)	
Operational policies									
R&D	266	0.550***	0.20	178	0.546***	0.20	62	0.644***	0.23
		(0.08)			(0.09)			(0.09)	
Advertising	265	0.115*	0.01	177	0.083	0.01	62	-0.019	0.00
		(0.06)			(0.07)			(0.07)	
SG&A	265	0.410***	0.12	177	0.298***	0.07	62	0.262***	0.05
		(0.10)			(0.07)			(0.09)	

Table 8
Observable firm characteristics and corporate culture effects

This table examines the variation in corporate culture strength. For each dependent variable and for each proxy of corporate culture strength, we regress the spinoff fixed effects on the parent fixed effects and an interaction of the parent fixed effects and a dummy variable indicating strong corporate culture. In the column *Internal Growth*, the indicator variable equals one if the spinoff is the result of internal growth, and zero otherwise. In the column *Parent Age*, the indicator variable equals to one if the parent's age at the time of the spinoff, as measured by the number of years the parent is in Compustat, equals one if the parent's age is above the median age among all parents. In the column *Parent Size*, the indicator variable equals to one if the parent's number of employees in the fiscal year end just prior to the spinoff is below the median number of employees of other Compustat firms. The definitions of all variables are available in the Data Appendix. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	Internal Growth		Parent Age		Parent Size	
	Coeff	Interact.	Coeff	Interact.	Coeff	Interact.
Investment policies						
Investments	0.262**	0.392***	0.171*	0.470***	0.378***	-0.049
	(0.11)	(0.14)	(0.10)	(0.13)	(0.09)	(0.27)
Acquisitions	0.219*	0.467***	0.234**	0.347**	0.453***	-0.356
	(0.12)	(0.15)	(0.11)	(0.15)	(0.08)	(0.46)
Acquisition dependency	0.078	0.012	0.052	0.095	0.090	0.209
	(0.08)	(0.12)	(0.06)	(0.11)	(0.06)	(0.29)
Financial policies						
Leverage	0.114	0.383***	0.223***	0.284**	0.278***	0.060
	(0.10)	(0.14)	(0.08)	(0.13)	(0.09)	(0.12)
Interest coverage	0.573*	-0.277	0.437**	0.053	0.423*	-0.046
	(0.31)	(0.35)	(0.20)	(0.34)	(0.22)	(0.39)
Short-term leverage	-0.028	0.390*	0.230**	0.090	0.277*	0.057
	(0.07)	(0.20)	(0.11)	(0.21)	(0.14)	(0.25)
Cash holdings	0.159	0.507**	0.222*	0.415**	0.324***	0.755***
	(0.16)	(0.22)	(0.12)	(0.20)	(0.11)	(0.23)
Equity dependence	0.021	0.654***	0.118	0.535***	0.369***	0.083
	(0.08)	(0.10)	(0.07)	(0.10)	(0.08)	(0.32)
Dividend/earnings	0.169	-0.056	0.212	-0.075	0.216**	-0.558***
	(0.18)	(0.21)	(0.14)	(0.16)	(0.09)	(0.18)
Operational policies						
R&D	0.321**	0.295**	0.383***	0.360***	0.488***	0.480**
	(0.13)	(0.14)	(0.09)	(0.13)	(0.10)	(0.23)
Advertising	0.077	0.041	0.125*	-0.036	0.090	0.254
	(0.08)	(0.10)	(0.07)	(0.11)	(0.07)	(0.25)
SG&A	0.106	0.432**	0.229**	0.285*	0.420***	-0.531
	(0.15)	(0.20)	(0.09)	(0.17)	(0.12)	(0.47)

Table 9
Management and corporate culture effects

This table examines the interrelations of management, corporate culture, and firm policies. For each dependent variable, we regress the spinoff fixed effects on the parent fixed effects and an interaction of the parent fixed effects and a dummy variable which equals one when 1) the spinoff CEO is a outside; or 2) the percentage of outsiders on the spinoff's management team is higher than the median among our sample of spinoffs. Outsiders are those who were not employed by the parent and/or who did not sit on the parent's board for more than 3 years prior to the spinoff. The column *P-Value* reports the p-value of the F-test for whether the sum of the coefficient on the parent fixed effects and the coefficient on the interaction term is significantly different from zero. The definitions of all variables are available in the Data Appendix. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	Outside CEO			Outside Management Team		
	Coeff	Interact.	P-Value	Coeff	Interact.	P-Value
Investment policies						
Investments	0.433***	-0.070	0.000	0.364**	0.110	0.000
	(0.11)	(0.13)		(0.14)	(0.15)	
Acquisitions	0.406***	0.041	0.002	0.220*	0.363**	0.000
	(0.11)	(0.18)		(0.12)	(0.17)	
Acquisition dependency	0.072	0.072	0.395	0.043	0.110	0.133
	(0.06)	(0.18)		(0.07)	(0.13)	
Financial policies						
Leverage	0.264***	0.303	0.003	0.229*	0.169	0.001
	(0.10)	(0.20)		(0.12)	(0.15)	
Interest coverage	0.447**	0.443	0.081	0.442*	0.052	0.136
	(0.21)	(0.55)		(0.23)	(0.40)	
Short-term leverage	0.273*	-0.144	0.338	0.380	-0.271	0.212
	(0.16)	(0.18)		(0.23)	(0.22)	
Cash holdings	0.432***	-0.096	0.002	0.705***	-0.432*	0.034
	(0.14)	(0.16)		(0.19)	(0.23)	
Equity dependence	0.387***	0.010	0.016	0.442***	-0.108	0.005
	(0.09)	(0.18)		(0.10)	(0.15)	
Dividend/earnings	0.152	-0.104	0.751	0.239	-0.193	0.603
	(0.13)	(0.20)		(0.22)	(0.24)	
Operational policies						
R&D	0.533***	-0.205	0.070	0.411***	0.177	0.000
	(0.10)	(0.18)		(0.13)	(0.14)	
Advertising	0.094	-0.054	0.877	0.130	-0.076	0.542
	(0.07)	(0.26)		(0.09)	(0.12)	
SG&A	0.453***	-0.494	0.906	0.382**	0.053	0.006
	(0.11)	(0.36)		(0.15)	(0.22)	

Table 10
Corporate culture and firm performance

The table examines corporate culture effects in firm performance. The firm fixed effects are obtained from panel regressions of the industry-adjusted dependent variables on lagged logarithm of book assets, and year and firm fixed effects. *N* gives the number of observations used in the OLS regressions. For each dependent variable, *Coeff (Std Coeff)* gives the coefficient (standardized coefficient) in a regression of the spinoff fixed effects on the parent fixed effects. The definitions of the variables are available in the Data Appendix. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables		Coeff	Std Coeff	R-Sq
Return on assets	284	0.294***	0.143	0.03
		(0.10)		
Return on sales	283	0.371***	0.383	0.19
		(0.06)		

Table 11
Alternative explanations: Governance links

This table examines the effects of governance links. The column *No Parental Equity Ownership* reports the results of regressing the spinoff fixed effect on parent fixed effect after restricting the sample to those where the parent do not retain any equity ownership after the split-up. The column *No Parent CEO on Board* restricts the sample to those where the parent's CEO does not sit on the spinoff's board of directors. The definitions of all variables are available in the Data Appendix. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	No Parental Equity Ownership		No Parent CEO on Board	
	Coeff	R-Sq	Coeff	R-sq
Investment policies				
Investments	0.422***	0.11	0.443***	0.12
	(0.08)		(0.11)	
Acquisitions	0.444***	0.16	0.453***	0.18
	(0.08)		(0.10)	
Acquisition dependency	0.105*	0.01	0.158*	0.03
	(0.06)		(0.08)	
Financial policies				
Leverage	0.375***	0.11	0.160	0.02
	(0.09)		(0.12)	
Interest coverage	0.489***	0.09	0.671***	0.13
	(0.18)		(0.25)	
Short-term leverage	0.290**	0.06	0.329*	0.09
	(0.13)		(0.20)	
Cash holdings	0.345***	0.13	0.300**	0.08
	(0.10)		(0.14)	
Equity dependence	0.350***	0.15	0.374***	0.16
	(0.08)		(0.09)	
Dividend/earnings	0.197**	0.04	0.272*	0.06
	(0.10)		(0.14)	
Operational policies				
R&D	0.542***	0.20	0.576***	0.22
	(0.09)		(0.11)	
Advertising	0.103	0.01	0.049	0.00
	(0.07)		(0.10)	
SG&A	0.394***	0.10	0.242**	0.04
	(0.11)		(0.12)	
Profitability				
Return on assets	0.238**	0.02	0.285**	0.04
	(0.11)		(0.14)	
Return on sales	0.375***	0.20	0.407***	0.20
	(0.07)		(0.09)	

Table 12
Alternative explanations: Product market links
This table examines the effects of industry links, customer-supplier relationships and contractual agreements regarding shared assets. The column *No Industry Link* reports the results of regressing the spinoff fixed effect on parent fixed effect after restricting the sample to those where the parent and spinoff belong to different 3-digit SIC industries. The column *No Customer-Supplier Rel.* restricts the sample to those where the spinoff is neither a major customer nor a supplier of the parent as recorded in the Compustat customer segment files. The column *No Contract* restricts the sample to those where the spinoff and parent do not have any product market relationship of non-transitional nature as reported in the proxy statements or 10-K filings, other than a customer-supplier relationship. The definitions of all variables are available in the Data Appendix. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 12, cont'd

Dependent variables	No Industry Link		No Customer-Supplier Rel.		No Contract	
	Coeff	R-sq	Coeff	R-sq	Coeff	R-sq
Investment policies						
Investments	0.330***	0.06	0.395***	0.09	0.403***	0.12
	(0.10)		(0.09)		(0.11)	
Acquisitions	0.445***	0.14	0.445***	0.14	0.403***	0.12
	(0.10)		(0.10)		(0.11)	
Acquisition dependency	0.139**	0.02	0.093	0.01	0.093	0.01
	(0.06)		(0.06)		(0.06)	
Financial policies						
Leverage	0.356***	0.11	0.340***	0.11	0.295***	0.08
	(0.09)		(0.08)		(0.10)	
Interest coverage	0.344*	0.06	0.444**	0.08	0.463*	0.07
	(0.18)		(0.18)		(0.25)	
Short-term leverage	0.246**	0.03	0.221**	0.04	0.324**	0.06
	(0.11)		(0.10)		(0.16)	
Cash holdings	0.266***	0.09	0.400***	0.16	0.333***	0.13
	(0.10)		(0.12)		(0.12)	
Equity dependence	0.222***	0.07	0.351***	0.15	0.349***	0.19
	(0.07)		(0.08)		(0.09)	
Dividend/earnings	0.064	0.01	0.205**	0.04	0.132	0.02
	(0.08)		(0.10)		(0.13)	
Operational policies						
R&D	0.414***	0.12	0.535***	0.19	0.506***	0.18
	(0.09)		(0.09)		(0.10)	
Advertising	0.118	0.01	0.129*	0.01	0.067	0.00
	(0.07)		(0.07)		(0.08)	
SG&A	0.452***	0.11	0.434***	0.13	0.355***	0.14
	(0.14)		(0.11)		(0.11)	
Profitability						
Return on assets	0.321***	0.04	0.256**	0.02	0.438***	0.12
	(0.11)		(0.12)		(0.10)	
Return on sales	0.289***	0.13	0.383***	0.21	0.406***	0.25
	(0.07)		(0.07)		(0.08)	