Does Corporate Culture Matter for Investment and Financial Policies?*

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Abstract

Economic theories suggest that a firm's "corporate culture," defined as the shared beliefs within a firm about the optimal course of action, can matter for its policy choices. In this paper, we approach culture empirically by using a panel of parent-spinoff firm pairs that allows us to identify culture effects in corporate finance practices from behavior that is inherited by a spinoff firm from its parent firm after the firms split up. We find significant commonality in spinoff and parent firms' investment and financing policies. These similarities are found to be persistent, and cannot be explained by inertia causing stickiness of initial policies; nor can they be explained by ownership, customer-supplier, industry or other significant contractual links that remain between the firms. Consistent with culture theories, we find that the commonality is stronger for internally grown spinoff firms and for those that originate from older parent firms. In addition, we find that a firm's culture is a latent firm characteristic that does not come and go with a particular CEO. Finally, we also find commonality in more direct proxies for culture related to human capital policies. Overall, we conclude that economic theories of corporate culture can help us better understand firm behavior and decision-making in the area of corporate finance.

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1. Introduction

A common view among corporate executives and in the business press is that a firm's so-called "corporate culture" can play an important role for firms' decisions and policies. In addition, economists have started to develop formal theories to explain the formation, existence, and persistence of a firm's culture and how it forms an integral part of any firm's contracting and governance environment.[1] So far, the empirical literature in corporate finance has paid little attention to the role that corporate culture can play in explaining important decisions about investments and financing. This paper's contribution is to be a first attempt to fill this gap in the literature. Motivated by empirical work on culture in other economic settings, we develop an empirical framework that allows us to assess the impact of culture on corporate finance practices using spinoff and parent firm pairs. Our empirical evidence suggests that economic theories of corporate culture can help us better understand firm behavior and decision-making in the area of corporate finance.

We start by defining the economic meaning of "corporate culture." Throughout this paper, we draw on a theoretical literature in economics, which started with the seminal work by Kreps (1990). In these theories, a firm's culture is the well-established shared beliefs and organizational preferences among the firm's managers and workers that can help solve coordination problems and incentive issues within the firm (see, e.g., Kreps (1990), Crémer (1993), Lazear (1995), and Hermalin (2001)). Economic theories also explain how a firm's culture, once formed, can persist over time through (i) selection of employees who share these beliefs, or (ii) employees' internalization of the firm's beliefs, preferences, and norms (see, e.g., Lazear (1995), Akerlof and Kranton (2000, 2005), Bernhardt, Hughson and Kutsoati (2006), and Akerlof (2007)).[2] These theories imply that the shared beliefs about what the "right"

[1] For example, in his review of work on corporate culture in economics, Hermalin (2001) notes that "By writing this chapter, I'm agreeing with the proposition that corporate culture is worthy of study by economists and is amenable to our methods. Worthy because corporate culture is an important determinant of firms' capabilities and performance. Moreover, it both complements and substitutes for many of the other governance structures that economists have long studied."

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

behavior is in a firm can directly impact a particular firm policy, or alternatively, indirectly affect corporate finance practices through a common organizational attitude or preference, such as the risk-aversion in a firm.

We can illustrate these arguments by looking at an example. The U.S. investment banking industry is a large and competitive industry where many managers and other employees have a formal business or finance education. Still, there is ample anecdotal evidence to suggest that "corporate culture" affects policies and important decisions. For example, the book *Goldman Sachs: The Culture of Success* describes the importance of the Goldman culture, i.e., which defines the shared beliefs within the firm, and how the firm instills these beliefs into its employees, particularly newly-hired ones. Another observation is that different firms, even within this one single industry, can have very different beliefs about the optimal course of action and corporate policies. Morgan Stanley is often said to be conservative and risk-averse with a "culture of no" when it comes to investments.[3] In sharp contrast, many Wall Street analysts describe Citibank as having an "aggressive culture" and the firm has a record of growth through large and risky mergers and acquisitions.[4] Thus, casual observation suggests that firm-specific beliefs and norms play a role for important corporate finance related decisions.[5]

The motivation for a study of the importance of culture in corporate finance is further emphasized when we consider recent evidence on how much of the cross-sectional variation in corporate finance practices is firm-specific and time-invariant. For example, Lemmon, Roberts and Zender (2007) analyze capital structure decisions and find that firm-specific effects account for more than 90 percent of the explained variation across firms, whereas standard models account for about 6 percent. Other authors, and also Table 4 in this paper, find similar evidence for many other policies. Thus, the main determinant of cross-sectional variation in many corporate policies is firm-specific and time-invariant, and to explain

[3] See BusinessWeek, June, 2006.
[4] See BusinessWeek, October, 2004.
[5] There is evidence from surveys on the importance of shared beliefs and norms within firms. For example, the General Social Survey (GSS), an attitude survey performed by the NORC at the University of Chicago, included a work organization module in 1991, which shows that 78 percent of those surveyed agree with the statement "I find that my values and the organization's values are very similar."

firms' investment and financing decisions, we have to consider firm characteristics that remain largely fixed over long periods. Based on economic theory, we hypothesize that the firm's "corporate culture" is one such latent firm characteristic.

Identifying culture effects in corporate finance practices is empirically very challenging. The approach we take in this paper is to systematically examine commonality in investment and financing decisions among spinoff-parent firm pairs. This approach is motivated by economists' work on culture in settings other than a corporate one. In their review of the impact of culture for economic outcomes, Guiso, Sapienza and Zingales (2006) argue that a study of culture should focus on behavior that is "inherited by an individual from previous generations" (p. 24). Bisin and Verdier (2000) and Fernández, Fogli and Olivetti (2004) argue that the transmission of culture from one generation to another takes place through parents' tendency to instill beliefs about the "right" behavior into their children based on what they learned from their own parents without a full reassessment of the current optimality of those beliefs. We argue that adopting this intuition is useful also in a corporate context. In our setting, a spinoff firm inherits its parent firm's culture and beliefs by virtue of inheriting managers and workers with the parent firm's beliefs about the optimal course of action and policies. By taking this approach of "deriving" culture effects from observed firm behavior, we want to avoid the subjective task of explicitly measuring corporate culture.[6] We recognize that our approach to examining the impact of culture of firm policies is not without challenges, but measuring corporate culture explicitly is at least as problematic in our assessment, so an approach of indirectly deriving culture effects might thus be the best available starting point.

Our empirical evidence consists of two parts. First, based on the above intuition, we hypothesize that, controlling for industry and other firm characteristics, spinoff firms choose similar policies to those

[6] There is a body of work in the management literature that studies "corporate culture" (e.g., Schein (1985) and Kotter and Heskett (1992)). However, both the empirical methodology of these studies and the firm behavior analyzed differ substantially from the study we are undertaking. First, a lot of management studies are based on case studies of select firms. Second, much work is based on surveying employees on some dimensions, and then using their responses to infer the content or strength of a firm's 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 analyze policies related to investments and financing.

of their parent firms even after the split-up, i.e., when the firms operate as separate stand-alone companies. Consistent with this prediction, we find that spinoff firms' corporate finance practices are much more similar to those of their parent firms than to those of their own matched industry peer firms. The economic magnitudes of these effects are found to be large. We also show that the similarities in policy choices are persistent over a long period, are not due to inertia causing stickiness of the initial policies, and cannot be explained by ownership links, customer-supplier relationships, industry links, or other contractual links that sometimes remain between spinoff and parent firms after the split-up.

Second, because we are still concerned that the observed commonality between the spinoff and its parent firms' investment and financial policies is caused by an omitted variable, we also study the cross-section of spinoff-parent firm pairs by examining among which subsets of firms the similarities are the strongest. Our hypotheses concerning where we would a priori expect stronger effects draw on theories of corporate culture (Lazear (1995), Hermalin (2001), Van den Steen (2005a,b) and Bernhardt, Hughson and Kutsoati (2006)) and experimental evidence on "culture clashes" in mergers (Weber and Camerer (2003)). Consistent with predictions yielded by these theories and experiments, we find that the similarities are significantly stronger for internally grown spinoff firms than for spinoff firms that previously became part of the combined firm as a result of a merger or acquisition. We also find stronger similarities for spinoff firms that originate from older parent firms. We conclude that the observed commonality in spinoff and parent firms' corporate finance practices is stronger among the subset of firms where economic theory predicts that the shared beliefs about the optimal course of action are likely to be stronger and more ingrained.

Our paper is most closely related to the recent work on managerial "style" in firm policies by Bertrand and Schoar (2003).[7] However, we argue that the effects reported in this paper are different from, but related to, such style effects. First, Bertrand and Schoar show that there are significant "CEO fixed effects" in investment and financing policies, but at the same time there are also significant firm fixed

[7] Malmendier and Tate (2005) and Ben-David, Graham and Harvey (2006) also have studied how managerial biases, such as overconfidence, can affect corporate finance practices.

effects in these policies.[8] That is, while controlling for who a firm's CEO is helps explain firm behavior, it does not seem to alter the conclusion that the main determinant of cross-sectional variation in many corporate policies is firm-specific and time-invariant. Second, and more importantly, because the CEO of a spinoff firm is by definition not the same individual as the CEO of the parent firm, what we are documenting in this paper cannot be individual CEO style effects, but rather "management culture" effects. We view a firm's culture as more than the specific characteristics of the firm's CEO: it is a latent firm characteristic that evolves slowly over time and that does not come and go with a particular CEO. Our interpretation of the evidence in this paper of wide-spread beliefs within a firm about the "right" corporate practices is also consistent with the recent evidence presented by Bloom and Van Reenen (2007).[9]

We are not first to use the term "culture" or to find evidence of its importance in explaining economic outcomes related to corporate finance. Previous work has studied the effects of culture and shared beliefs at the country level. For example, using a country's principal religion as a proxy for its culture, Stulz and Williamson (2003) find that it predicts the cross-sectional variation in creditor rights better than a country's openness to international trade, its language, its income per capita, or the origin of its legal system. In another example, Guiso, Sapienza and Zingales (2005) find that beliefs rooted in culture impact cross-country trade, portfolio investment, and direct investment among European countries. In contrast, we study culture at the individual firm level in this paper. Although, e.g., religion is only one possible proxy out of many for culture at the country level, explicitly measuring culture at the firm-level is an even more subjective task than finding a proxy at the country level. This motivates the approach taken in this paper of indirectly deriving culture effects from observed behavior rather than explicitly measuring culture at the firm level.

[8] Firm fixed effects do not proxy for CEO fixed effects, at least when studying a longer time-series, because the average CEO tenure from is only about seven years (Kaplan and Minton (2006)).

[9] Bloom and Van Reenen (2007) use survey data on practices of middle management. They argue that "[corporate practices] are part of the organizational structure and behavior of the firm, typically evolving slowly over time even as CEOs and CFOs come and go.

We also want to recognize that prior work in the corporate finance literature has analyzed the decision to spin off a firm.[10] Parent firms have been found to do spinoffs to improve incentive-based contracts (Schipper and Smith (1983)) and to make spinoff and parent managers focus on their respective core businesses (Daley, Mehrotra and Sivakumar (1997)). While it can be an endogenous choice to spinoff a firm, it is not clear that this per se biases our evidence towards more commonality in spinoff and parent firms' policies.[11] First, our evidence that spinoff firms tend to choose similar practices to their parent firms becomes even more surprising in light of the previous literature's evidence that the spinoff firm's management has much stronger incentives to focus on the stand-alone company's business than they had previously. Second, if a firm is spun off because it does not "fit in," i.e., has a different "subculture" and different beliefs about the optimal policies than its parent firm has, then we would expect to find little or no post-spinoff commonality in policy choices.

The paper is organized as follows. Section 2 reviews existing economic theories of corporate culture. Section 3 outlines our empirical framework. Section 4 describes our spinoff-parent firm dataset. Section 5 reports our results. Finally, Section 6 concludes.

2. Economic theories of corporate culture

To explain why a firm's "corporate culture" can be expected to play an important role for corporate decisions and policy choices, we draw on an emerging theoretical literature in economics. In this section, we review these theories.[12]

[10] In addition to work on the spinoff decision, there has been some empirical work related to spinoff firms' leverage decisions (e.g., Mehrotra, Mikkelson and Partch (2003)) and investment behavior and efficiency (e.g., Gertner, Powers and Scharfstein (2002), and Ahn and Denis (2004)). In recent work, Colak and Whited (2007) control for differences between firms and the endogenous choice to split up the firm, and in contrast to previous work in the literature, they find no evidence of changes in investment efficiency between firms that spin off or divest divisions and a control sample.

[11] The number of arguably exogenous firm split-ups due to, e.g., antitrust rulings, is very low, preventing us from any meaningful statistical tests of this subset of observations. However, we do not believe that analyzing spinoff transactions that are not due to antitrust rulings or the like would bias our results towards finding evidence of commonality in spinoff and parent firms' policy choices.

[12] We refer to Hermalin (2001) for a more extensive review of economic theories of corporate culture.

In a neoclassical model of the firm where the rational expectations assumption leads to all beliefs about optimal firm behavior coinciding, there is no room for heterogeneous beliefs across firms, and therefore corporate culture has no meaningful economic role to play in such a model. However, starting with Kreps (1990), economists have used various economic models to explain the existence of firm-specific beliefs about right firm behavior using the term "corporate culture." Building on the assumption of incomplete contracts, Kreps presents a theory in which a firm's culture acts as a substitute for costly coordination and communication by prescribing what the "right" behavior is in a firm. As corporate decision makers are confronted with multiple equilibria or have to adapt to unforeseen contingencies they find out what works and what does not work and that establishes the culture in the firm. That is, in Kreps's (1990) view, a firm's culture is the set of shared beliefs about the optimal course of action and policies in a firm and it differs across firms depending on the firm's history.

In a related economic analysis of corporate culture, Crémer (1993) develops a model based on the assumption that managers' and workers' capacity to receive, process, and transmit information is a scarce resource. He then defines corporate culture as the stock of knowledge shared by employees of a firm, but not by the overall population from which they come. By sharing this stock of knowledge, contracting costs can be reduced. In particular, Crémer argues that corporate culture has three elements that will make it an effective coordination mechanism in corporate decision making: (i) it provides a common language; (ii) it ensures a shared knowledge about important facts; and (iii) it provides common knowledge of the established norms of behavior in the firm.

Lazear (1995) expands on this notion of corporate culture by developing a dynamic model that implies homogeneity in beliefs and preferences within a firm, but heterogeneity in the overall population from which managers and workers are drawn. Lazear's model explains how a firm's culture, once formed, can persist over time through (i) selection of employees who share the firm's beliefs, or (ii) employees' internalization of the beliefs, preferences, and norms in a firm. In his model, workers' preferences are like genetic endowments, so when a worker meets (or "mates with," in Lazear's

terminology) another worker in the firm, his preferences evolve to be a combination of his former preferences and those of the one he just met.

In another economic analysis of corporate culture, Van den Steen (2005a,b) models how firms select like-minded managers and workers who share the firm's particular beliefs about the optimal course of action. Van den Steen's models imply that a firm's culture and shared beliefs are persistent, remain in the firm even after all founders are gone, and are largely independent of management, i.e., it is a latent firm characteristic that evolves slowly over time and that does not come and go with a particular CEO. Finally, Bernhardt, Hughson and Kutsoati (2006) model how managers select and promote employees with similar skills to their own because they can more easily evaluate those skills.

3. Empirical framework and predictions

An important implication of the above theories is that a firm's culture is specific to the firm and largely fixed over long periods. Therefore, the first step of our empirical analysis involves panel regressions to estimate, for each corporate finance related policy of interest, the component that is specific to that firm, controlling for industry, year, and time-varying firm characteristics. However, we are not interested in these fixed effects per se, but rather the component of a spinoff firm's fixed policy effect that is *shared* with its parent firm, i.e., the corporate culture. Thus, in the second step, we assess the extent to which the policy choices by spinoff firms can be explained by those of their parent firms using the estimated spinoff and parent fixed effects from the first step. In this section, we describe this empirical framework in more detail.

3.1. Estimating firm fixed effects

The first step is to estimate the following OLS regression specification for each policy:

$$y_{i,t} = \alpha_t + \beta X_{i,t} + \lambda_{i,s} + \lambda_{i,p} + \lambda_{i,c} + \lambda_{i,b} + e_{i,t} \qquad s \neq p \neq c \neq b \tag{1}$$

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 effect, $y_{i,t}$ and $X_{i,t}$ are industry-adjusted each year by subtracting the industry means from the raw values. We use two-digit SIC codes to define industries, but we have checked that our findings are robust to rather using the Fama and French (1997) industry classifications.

The remaining variables in equation (1) are firm fixed effects: the λ_s's are fixed effects for spinoff firms, the λ_p's are fixed effects for parent firm, the λ_c's are fixed effects for combined firms prior to the split-ups, and finally, the λ_b's are fixed effects for benchmark firms, i.e., Compustat firms that are neither spinoff, parent, or combined firms. We do not measure the parent fixed effects using data from years prior to the split-up as the consolidation of balance sheets may introduce a mechanical positive relation between spinoff and parent firm fixed effects in the second step of the analysis. That is, prior to the spinoff, we estimate one firm fixed effect for the combined firm; after the spinoff, we are able to estimate separate fixed effects for the spinoff and parent firms.

3.2. The relation between spinoff and parent firm fixed effects

The second step involves estimating the following OLS regression specification for each policy:

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

where $\lambda_{j,s}$ and $\lambda_{j,p}$ are spinoff and parent firm fixed effects, u_j is an error term, and *j* denotes specific spinoff-parent firm pairs.[13] Equation (2) is estimated with robust standard errors (White (1980)).

We can provide some intuition for this approach. Each spinoff and parent fixed effect can be decomposed into two parts. The first component is shared among the spinoff firm and its parent firm.

[13] 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 can lead to attenuation bias in an OLS estimation of *b* in the second step. In section 5.1.2, as an alternative, we therefore also report evidence from non-parametric and parametric estimation methods applied on the panel dataset collapsed at the firm-level. The results from these estimation methods are stronger in statistical terms.

This commonality in policy choices can arises because the two firms have managers and workers with similar beliefs about the optimal course of action even after the split-up. The second component is not shared, and captures an effect that is specific to a spinoff firm but not related to that of its parent firm. Our empirical framework allows us to disentangle these two components.

3.3. Empirical predictions

3.3.1. Persistency of effects

Theory implies that a firm's "corporate culture" remains largely fixed over long periods because it is costly and takes time to change well-established organizational preferences and beliefs about the optimal policies within a firm, i.e., both the selection and the internalization processes take time. Our above empirical framework allows us to test empirically whether spinoff firms' investment and financial policies remain similar to those of their parent firms several years after the firms have split up and operate as separate stand-alone companies.

3.3.2. Cross-sectional predictions

The theories reviewed in Section 2 also yield cross-sectional predictions concerning among which subsets of spinoff-parent firm pairs we would a priori expect the similarities in corporate policies to be the strongest.

Internal growth versus mergers and acquisitions (M&A). A spinoff firm's culture is hypothesized to be more similar to its parent's when the combined firm was the result of internal growth as supposed to a merger or an acquisition. If firms that merge have different cultures, then the combined firm will have employees that are less homogenous in terms of their beliefs compared to what the two pre-merger firms had individually (Lazear (1995)). There also exists some experimental evidence that supports the notion of "culture clashes" in mergers. In the experiment by Weber and Camerer (2003), subjects in "firms" (in

a laboratory setting) develop a "culture" in the sense of a particular language for solving problems.[14] When two firms with different cultures merge, performance is found to decrease, and subjects are found to overestimate the performance of the merged firm and to attribute the decrease in performance to members of the other firm.

Firm age. The models by Lazear (1995), Van den Steen (2005a), and Bernhardt, Hughson and Kutsoati (2006) predict that a firm's culture is stronger in older firms. Because a firm hires from the overall population, it comes to be homogeneous and dominated by those with one type of belief only through selection and internalization, both of which take time. We test whether spinoff firms' corporate finance practices are more similar to those of their parents when their parent firms are older and thus have more well-established and ingrained beliefs about the optimal course of action.

Firm size. Theory offers conflicting predictions regarding firm size and the strength of corporate culture. On the one hand, Lazear's (1995) model predicts that smaller firms are more likely to have stronger cultures, because interactions with other employees are more frequent in smaller firms. On the other hand, the benefits from investing in a stronger culture may be bigger in larger firms, where coordination problems regarding what policies to choose are often more common and complex (Hermalin (2001)). Thus, our tests will provide evidence on which of these effects is more important empirically.

3.4. Discussion of limitations of empirical approach

While our empirical approach of deriving culture effects from observed firm behavior in a spinoff setting has several advantages -- most importantly that we avoid the subjective task of explicitly measuring corporate culture -- it also has limitations. First, spinoff firms and their parents may be mechanically similar at the time of the split-up, but these effects may not be persistent over a long period, as corporate culture theories would predict. Our approach to this concern is to compare the policy choices of the spinoff firms and their parent firms several years, e.g., five years, after the firms split up, and assess if they still choose similar practices.

[14] See Lazear (1999) for an economic analysis of culture and language.

Second, a related concern is that the firm fixed effects may come from inertia and stickiness of spinoff and parent firms' initial policy choices. For example, firms may at the time of the split-up, for some reason, choose policies for the spinoff firm similar to those of the parent firm. Absent economic shocks to these policy choices, the initial choices may then persist in the spinoff firm because of managerial inertia. We address this concern by applying a dynamic framework which allows us to ask the following: if a spinoff firm deviates from the parent firm's policy choice, does it then tend to adjust back to the choice of the parent firm? Active adjustment would not be consistent with an inertia explanation.

Third, the common component in decisions and policies may be explained by other important economic links between spinoff firms and their parent firms after the split-up. We address this concern by carefully controlling for all significant economic links disclosed in the firms' SEC filings. These economic links include ownership links, customer-supplier relationships, industry links, or other contractual links that remain between spinoff and parent firms after the split-up.

Finally, because we are concerned that the commonality in spinoff and parent firms' policies is caused by an omitted variable which we are not able to measure using observable data, we also study the cross-section by explicitly analyzing among which spinoff-parent firm pairs the similarities are the strongest. As outlined in the previous subsection, our hypotheses regarding where we a priori would expect stronger effects draw on theories of corporate culture and experimental evidence on "culture clashes" in mergers.

4. Data

4.1. 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 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 as outlined in the Data

Appendix. 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, customer-supplier relationships, contractual 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.

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 variables related to investment policy (investments, acquisitions, acquisition dependency, research and development (R&D) expenditures) and financial policy (leverage, debt maturity, interest coverage, equity dependence, cash holdings, dividends). 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.

4.2. Summary statistics

Table 1 reports means, medians, and standard deviations of the corporate policies of interest from 1980 to 2004.[15] 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 on average have similar rates of investment and acquisition intensity compared to their spinoff firms 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 likely be explained by differences in firm characteristics. For example, parents are more profitable, have higher cash flow and lower q, and the average parent is much larger than the average

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

spinoff. We therefore control for these firm characteristics in our empirical models of firms' policy choices.

5. Results

5.1. Similarity between spinoff and parent firms' policy choices

In this section, we report evidence on the similarity in investment and financing policy choices between spinoff firms and their parent firms. First, we ask whether spinoff firms' practices are more similar to those of their parents or their peer firms (identified by a standard matching procedure). Next, we report evidence on similarities using the panel dataset collapsed at the firm-level. Finally, we report evidence from the empirical framework involving panel regressions that we outlined in Section 3.

5.1.1. Evidence from comparing spinoff firms to their parents versus their peer firms

Before presenting evidence from a framework that controls for industry, year, and time-varying firm characteristics, we compare spinoff firms' policy choices to those of both their own parents and their peer firms, using our panel of raw (non-industry-adjusted) data of firms' policy choices. We start by matching each spinoff firm to peer firms within the same two-digit SIC industry and within +/-30 percent of the average size of the spinoff firm during our sample period. For each spinoff firm, we then compute an average policy over all years after the split-up; for each parent, we calculate an average policy after the last spinoff the firm is involved in; and for each peer firm, we calculate an average policy over the years that the firm is in Compustat. Next, we ask whether spinoff firms' policies are more similar to those of their own parents or their peer firms by comparing the absolute differences in policy choices.

Table 2 reports the percentage of observations where the spinoff firm is more similar to its own parent than to its peer firms. The p-values are from binomial tests of whether the percentages are significantly different from a random draw, i.e., 50 percent. To provide one example, 67.3 percent of the spinoff firms are found to have an investment policy that is more similar to that of its parent firm than to its matched peer firms. As can be seen in the table, for each of the investment and financing policies,

more than half of the spinoff firms are more similar to their parents that to their peers. Only one of the binomial test statistics is not statistically significant at the 1% level. In addition, Figure 1 shows that this conclusion is not altered if we only consider spinoff-parent firm pairs that are in different industries. We see that the results remain remarkably similar in terms of the economic significance.

The conclusion that emerges from this analysis of the raw panel data is that spinoff firms tend to choose corporate investment and financial policies that are much more similar to those of their own parent firms than to those of their peer firms. That is, the beliefs about optimal behavior when it comes to important investment and financing policies seem to be more similar in spinoff and parent firms than among spinoff firms and their matched peer firms.

5.1.2. Evidence from collapsed firm-level data

Next, collapsing our panel dataset at the firm-level, we examine the correlations between the spinoff and parent firms' policy choices using a non-parametric approach, and we also present evidence from a parametric approach by regressing spinoff firms' policy choices on those of their parent firms. In practice, we start with the firm-year panel dataset and compute within-firm means of the industry-adjusted policies for both spinoff and parent firms using all years of data available after the split-ups. Using this collapsed dataset, we then analyze the relations between spinoff firms' and their parents' policy choices to see if they tend to be positively and significantly related.

Table 3 reports Spearman's rank correlation coefficients between spinoff and parent firms' corporate practices. We find that the correlations are positive and statistically significant for each of the policies. In the table, we also regress the collapsed data for spinoff firms on those of their parents. We find that all the estimated coefficients are positive and significant at least the 5% level. We conclude from this analysis that spinoff firms and their parent firms display similar behavior when it comes to choosing investment and financial policies.

5.1.3. Evidence from panel regressions

We now turn to the evidence from our empirical framework involving panel regressions that we outlined in Section 3. In the first step, we estimate for each corporate policy of interest the component of each firm's policy choice that is specific to that firm, controlling for industry, year, and time-varying firm characteristics. Recall from equation (1) that the spinoff and parent firm fixed effects are estimated using data from years after the spinoff transactions.

Table 4 reports firm fixed effects distributions and model fit measures from estimating equation (1) for each of the policies we analyze. We characterize each of the resulting policy distribution by its mean, standard deviation, and the 10th and 90th percentiles. We find that the average spinoff firm tends to choose investment and financial policies that are more similar to those of the average parent firm compared to the benchmark sample of all other Compustat firms, but we also see that there is significant heterogeneity in the firm fixed effects: the standard deviations and the differences between the 10th and 90th percentiles are large for all distributions. Furthermore, the final set of columns in the table show that firm fixed effects is a main determinant of cross-sectional variation in all corporate policies. The F-tests reject the null hypothesis that all firm fixed effects are zero (p-values < 0.00) for each policy, and the average increase in adjusted R-square when we include firm fixed effects is 26 percentage points.

Next, we want to ask whether spinoff firms in the upper (lower) tail of a particular firm fixed effects distribution tend to come from parent firms that are also found in the upper (lower) tail of the same policy distribution. Thus, in the second step, using the estimated spinoff and parent firm fixed effects, we assess the extent to which spinoff firms' policy choices can be explained by those of their parents. Table 5 reports the number of observations, which varies across policies because of missing Compustat data. The table also reports coefficient estimates of b and R-squares from equation (2) for each of the policies.

Overall, we conclude that there is important commonality in spinoff and parent firms' corporate finance practices even after the firms split up and operate as stand alone companies: the estimated coefficients in the table are positive and significant at least at the 10% level for each of the investment and financing policies analyzed. That is, the beliefs in the spinoff firm about the optimal course of action

in terms of corporate finance practices are similar to those of their own parent firms even after we control for important industry and firm characteristics in a panel regression framework.

We now discuss these results in some more detail. First, we consider the evidence regarding corporate investment policies and firms' attitudes towards growth. We find that spinoff and parent firms display similar practices when it comes to corporate investment and M&A activity. The coefficient estimates for these policies are all positive and statistically significant. In addition, we find similarities in acquisition dependency, a policy variable which attempts to measure the extent to which a firm relies on M&A rather than internal growth, although this effect is only significant at the 10% level. Finally, there is also a positive and significant relation between spinoff and parent firms' R&D policy, another measure of investment and growth policy.

Considering financing policies, we find evidence of significant commonality also in spinoff and parent firms' capital structure decisions.[16] These effects are significant at least at the 5% level. Thus, spinoff firms seem to share their parent firms' risk aversion and appetite for more or less debt in the capital structure. That is, spinoff firms with low levels of financial leverage (i.e., spinoff firms in the lower tail of the leverage fixed effects distribution) tend to come from parents that are also found in the lower tail of the same distribution, and vice versa. We find significant similarities also for financing flow measures such as, e.g., equity dependence, rather than balance sheet ratios. Thus, spinoff firms that access external equity markets more for financing are likely to originate from parent firms that do the same. Because all policies are industry-adjusted, the fact that some industries are more equity-dependent than others cannot explain this result. Finally, there are also positive and significant correlations between the cash holdings and payout ratios of spinoff firms and those of their parents.[17]

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

[17] This result is even more interesting considering the importance of industry affiliation and size in determining cash levels (e.g., Opler, Pinkowitz, Stulz and Williamson (1999)).

5.1.4. Robustness checks

Before we discuss the economic significance of our above evidence in more detail, we report a series of checks that we have performed to make sure that the basic results are robust. One concern is that the spinoff decision is often not exogenous and thus spinoff and parent firms are a select subset of firms which choose similar policies. We therefore systematically assess the probability of finding a strong positive relation between spinoff firms and their parent firms by the use of a bootstrap-type simulation procedure. We start by reassigning each spinoff firm to a random parent firm. Next, we regress the spinoff firm fixed effects on the random parent firm fixed effects.[18] We retain the resulting coefficient estimate. We repeat this procedure 10,000 times per policy to obtain a bootstrap distribution of the coefficient. Table 6 characterizes the distributions. Most importantly, we find that the coefficients from the assignment of spinoff firms to their own parents (i.e., the coefficients reported in Table 5) are above the 95th percentile of the bootstrap distributions for each of the policies. We conclude from this analysis that assigning each spinoff firm to a random parent firm only very infrequently results in commonality in investment and financing policy choices comparable to that found in Table 5. Figure 2 shows the resulting bootstrap distributions for two of the variables, investments and leverage.

We summarize without tabulating other robustness checks that we have performed.[19] First, we have re-run our regressions with the specific policy variable definitions and model specifications used by Bertrand and Schoar (2003), because they also analyze a broad set of corporate finance practices. Our results are not affected by such changes. Second, we have also considered several alternative measures of the policies we analyze. For example, our use of a book-value-based leverage measure is motivated by the evidence of stock market mispricing around some equity-carveout transactions (Lamont and Thaler (2003)), but our results are unaffected by the use of market-value based capital structure measures.

[18] More specifically, we reestimate the following model:

$$\lambda_{j,s} = a^{sim} + b^{sim}\lambda_{j,p'} + u_j^{sim}$$

where $\lambda_{j,p'}$ is the firm fixed effect for a randomly selected parent firm.

[19] These robustness tests are available from the authors upon request.

5.1.5. Discussion of results on similarities

The conclusion from the evidence presented so far is that there is important commonality in spinoff and parent firms' investment and financing policies. Spinoff firms tend to choose policies that are much more similar to those of their parent firms than we would expect from a comparison with their peer firms. These findings suggest that the beliefs within a firm about optimal corporate finance practices can be so strong and well-established that spinoff firms inherit them from their parent firms even after the firms split up and operate separately as stand-alone companies. Below, we discuss the magnitude of the estimated effects. We also provide a discussion of possible explanations for why the extent of similarity between spinoff and parent firms differs across different corporate practices.

The magnitude of the estimated coefficients from the regressions in Table 5 is large in economic terms for most of the policies we study. Take for example investments. The coefficient is 0.39, so a spinoff firm from a parent firm with 1 percent extra investment is associated with, on average, about 0.39 percent additional investment. From Table 4, we also see that a one standard deviation increase in a parent firm's extra investment (measured by capital expenditures as a ratio of lagged total assets) is associated with an increase in the extra investments of the spinoff by 0.04 (=0.09 × 0.39). To give a benchmark, the mean investment ratio is 0.12 for spinoff firms, so this is an increase of 29 percent. For leverage, the coefficient is 0.35, so a spinoff firm from a parent with 1 percent extra leverage has about 0.35 percent extra debt in its capital structure. A one standard deviation increase in a parent firm's extra leverage is associated with an increase in the extra leverage of the spinoff by 0.06 (0.18 × 0.35). Relative to the average spinoff leverage of 0.24, this is an increase of 26 percent.

We find in Table 5 that a spinoff firm's policy choices are explained to a significant extent by its parent's behavior. The average R-square is about 10 percent, ranging from 1 to 19 percent. To put these effects in context with related work, Bertrand and Schoar (2003) find that managerial style fixed effects add 1 to 10 percent to the model fit for corporate investment and financing policies.

Finally, an important question is why there is stronger commonality among some policies than others. If the commonality is driven by similarities in beliefs about the optimal course of action, then we hypothesize that a firm's "culture" disproportionately impacts policies when there is more uncertainty about what the right behavior is. If firms and their managers have a very good theory for a particular policy, firms would not deviate much in their policy choices because the cost in lost value would likely outweigh the cost of changing a policy subject to the constraint of the culture. An implication of this argument is that we would expect culture to explain relatively more variation for policies when firms and managers do not know what the optimal policy is. A proxy for the extent to which there is uncertainty about the optimal policy choices is the increase in adjusted R-square when we add firm fixed effects to the model specifications in Table 4. A very crude test, given the small number of policies, is to correlate the R-squares in Table 5 and the increase in adjusted R-square from adding firm fixed effects to the baseline model specifications in Table 4. We find that Spearman's rank correlation coefficient is 0.44. While we do not want to interpret this result too aggressively because of the small number of policies and lack of statistical power, it suggests that spinoff firms rely more on their parents' behavior as guidance when there is more uncertainly about the optimal course of action, i.e., when firms and managers do not a very good theory for a particular policy.

5.2. Evidence on persistency of effects

Because the evidence of commonality reported so far may be entirely driven by initial but disappearing similarities, we next compare spinoff firms and their parent firms starting five years after the spinoff transaction and assess the extent to which they still choose similar policies even after the firms have had several years to adjust their initial policies. In practice, we estimate the spinoff and parent firm fixed effects in equation (1) stating at $t = 5$, rather than at $t = 0$ (the year of the spinoff transaction), with separate fixed effects being estimated for spinoff and parent firms for the first five years after the firms split up). More specifically, we reestimate equation (1):

$$y_{i,t} = \alpha_t + \beta X_{i,t} + \lambda_{i,s,t\in[0,4)} + \lambda_{i,s,t\in[5,\infty)} + \lambda_{i,p,t\in[0,4)} + \lambda_{i,p,t\in[5,\infty)} + \lambda_{i,c} + \lambda_{i,b} + e_{i,t} \qquad s \neq p \neq c \neq b\,, \qquad (3)$$

where the variables are defined after equation (1). Using the estimated spinoff and parent firm fixed effects, $\lambda_{j,s,t\in[5,\infty)}$ and $\lambda_{j,p,t\in[5,\infty)}$, where *j* denotes specific spinoff-parent firm pairs, we then reestimate equation (2).

The first set of columns in Table 7 reports that all the relations between spinoff and parent firms' policy choices are positive and all but one are statistically significant at least at the 10% level. Most importantly, all the coefficients that were strongly significant in Table 5 remain significant over the longer term. Thus, even if we analyze spinoff-parent firm pairs starting five years out from the time of the spinoff transaction, we find that there are strong similarities between spinoff firms' and their parents' policy choices. Several spinoff and parent firms exit our panel during the first five years after the split-up, so as a comparison, we re-estimate the relations reported in Table 4, but for the subsample of firms that remain in the panel for five years. We report these coefficient estimates in the second set of columns in Table 7. That is, both sets of columns involve the same firms. As can be seen in the table, the two sets of coefficients are similar in terms of statistical and economic significance. We conclude from the above evidence that the commonality in spinoff and parent firms' investment and financing choices remains over long periods and is not simply due to initial but disappearing similarities.[20]

5.3. Evidence on inertia

To test whether inertia and stickiness of initial policies can explain our results, we next analyze adjustments when spinoff firms have deviated from their parent firms' corporate finance practices. If shared beliefs about the optimal behavior explain the observed similarities, then we would expect an

[20] In principle, there are several other tests that can be performed related to the persistency of the effects. First, rather than measuring commonalities starting five years after the split-ups, we could start after, e.g., ten years. Because our dataset starts in 1980 and because firms exit our panel, we lose an average of 77 percent of the spinoff-parent pairs if we were to measure similarities after ten years. Second, we can 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 spinoff transactions in our dataset, preventing us from any meaningful statistical tests.

active adjustment back towards the parent firm's policies after a deviation. However, if our results are caused by inertia, then we would not observe any such adjustments.

Our approach is to estimate the following model for each policy:

$$y_{j,t} - y_{j,t-1} = \alpha_t + \beta\left(y_{j,parent} - y_{j,t-1}\right) + \varepsilon_{j,t} \quad (4)$$

where j denotes spinoff-parent firm pairs, t indexes years, α_t denotes year fixed effects, $y_{i,t}$ is the policy variable of interest for a spinoff firm after the split-up, $y_{j,parent}$ is the average policy of the parent firm after the split-up, and $\varepsilon_{j,t}$ is an error term. The estimated β coefficient is of interest for this analysis.

As can be seen in the first set of columns in Table 8, the estimated β coefficients are positive and statistically significant at least at the 5% level for each of the policies. Spinoff firms actively adjust back towards the parent firm's policy choice when they have deviated from it. For example, we find that when a spinoff firm deviates from the leverage ratio of the parent firm, the firm adjusts about 13 percent of this difference in an average year, which is comparable to the numbers in the existing literature; e.g., Fama and French (2002) report adjustment speeds between 8 and 18 percent for leverage decisions. However, unlike prior work, our focus is on an adjustment towards the parent firm's policies.

Finally, because this model specification may suffer from forward-looking bias as the parent's policy is averaged over all years after the split-up, we also estimate models where we substitute $y_{j,parent}$ for $y_{j,combined}$, i.e., the average policy of the combined firm prior to the split-up. As can be seen in the second set of columns in the table, this model specification does not change the results. Overall, the above evidence on active adjustments is not consistent with inertia explaining our results.

5.4. Spinoff-parent similarities and economic links

Economic links between spinoff and parent firms that remain after the firms split up may cause the observed similarities in corporate finance practices. Next, we systematically examine firms' SEC

filings (proxy statements and 10-Ks), and categorize the links into four categories: (i) ownership links, (ii) customer-supplier relationships, (iii) industry links, and (iv) other contractual links.

5.4.1. Ownership links

Parent firm equity ownership in the spinoff firm is the most direct economic link that can remain after the spinoff transaction. A parent firm that retains significant control through ownership can influence the spinoff firm towards policy choices that the parent firm believes to be optimal, which may be the policy choices of the parent firm itself.

We collect ownership data from firms' SEC filings. Only 13 percent of the parent firms retain equity ownership after the spinoff transaction, a proportion that likely decreases even more over time. Conditional on retaining ownership, the mean stake is 29 percent, ranging from 6.4 to 49.9 percent. Next, the first column of Table 9 shows that the relations between spinoff and parent firms' policy choices remain positive and statistically significant at least at the 10% level after we drop firm pairs with post-spinoff equity ownership links. Most importantly, the coefficients are all similar in economic significance to those found in Table 5. We conclude that the observed commonality in spinoff and parent firms' behavior is not driven by parent firms that retain significant ownership.[21]

5.4.2. Customer-supplier relationships

Suppose that the parent firm is a significant customer or supplier of the spinoff firm. In this situation, the parent firm's behavior might be expected to impact the policy choices of the spinoff firm also bound by the relationship. Recent work by Kale and Shahrur (2007) documents that the characteristics of a firm's customers and suppliers matter for its capital structure decisions, and Cohen and Frazzini (2007) find that economic shocks to a firm affects its customers. Thus, our results could

[21] In an untabulated analysis, we have also considered ownership links through common blockholders as well as director overlap on the firms' boards. We find that our results cannot be explained by firm pairs with overlapping 5 percent blockholders. For director overlap we focus on whether the CEO of the parent firm is on the spinoff firm's board. Because we find that our results are not driven by firm pairs with such arrangements, it seems unlikely that other, arguably less influential, directors drive our results.

potentially be due to significant customer-supplier relationships that remain between parent and spinoff firms.

Data on customer-supplier relationships are obtained from Compustat's segment files because Regulation SFAS No. 131 requires firms to disclose in their SEC filings customers representing more than 10 percent of total sales. We find that 15 percent of the firm pairs have such a customer-supplier relationship at the time of the spinoff transaction. The second column of Table 9 reports that the relations between spinoff and parent firms' policy choices are positive, and all but one are statistically significant at least at the 5% level after we drop firm pairs with a customer-supplier relationship.

5.4.3. Industry links

Although the firm policies and control variables used so far in the analysis are all industry-adjusted each year, we want to test whether intra-industry links, not captured by standard industry-adjustments, drive our results. We find that 27 percent of the spinoff-parent firm pairs operate in the same three-digit SIC code industry. The third column of Table 9 shows that the relations between spinoff and parent firms' policy choices remain positive and all but two are statistically significant at least at the 10% level after we drop firm pairs with potential unobservable intra-industry links.[22]

5.4.4. Other contractual links

Finally, we also consider other contractual links that remain between spinoff and parent firms after they split up. Most firms disclose and discuss contracts in a separate subsection of their 10-Ks, but we have manually gone through each spinoff and parent firm's entire SEC filings around the spinoff transaction and collected data on strategic alliances, shared patents, etc. We find such contracts among

[22] We have also considered inter-industry links because spinoff and parent firms can have significant overlap in input and output markets although they do not operate in the same industry. For a subset of the firm pairs for which data is available, we have identified the overlap in spinoff and parent firms' output and input markets, using the measures by Fan and Lang (2000). Our results are not driven by firm pairs with the most significant input and output market overlap (the upper quartile).

only 15 percent of the firm pairs.[23] The final column of Table 9 reports that the relations between spinoff and parent firms' policy choices are positive and statistically significant after we drop these spinoff-parent firm pairs.

5.4.5. Summary

After having considered all economic links remaining between spinoff and parent firms that are disclosed to shareholders through firms' SEC filings, we conclude that they cannot explain why spinoff firms tend to choose policies that are similar to those of their parent firms even after the firms split up and operate as stand-alone entities. As these links are measured at the time of the spinoff transactions, they likely overestimate the economic links to the extent that the links are not long term. Finally, we note that it is very unlikely that contractual agreements between a spinoff and parent firm that are not sufficiently significant to be disclosed in SEC filings would be a significant determinant of the observed commonality in policy choices.

5.5. Evidence from the cross-section of similarities in spinoff and parent firm policies

Next, we study the cross-section of spinoff-parent firm pairs by examining among which subsets of firms the commonality in corporate finance practices is strongest.

5.5.1. Internal growth versus M&A

We hypothesize that a spinoff firm's beliefs about the right behavior are more similar to its parent firm's when the spinoff firm was the result of internal growth rather than a merger or an acquisition (e.g., Lazear (1995) and Weber and Camerer (2003)). We therefore start by collecting detailed data on each spinoff firm's corporate history, i.e., how the spinoff firm came to be a business unit of the parent in the

[23] We note that almost all spinoff firms and their parents have "transition agreements" regarding administrative matters, but these temporary contracts are not interesting for our analysis and thus not considered.

first place. Our data sources are firms' SEC filings and also newspaper articles through the Factiva database. We find that 46 percent of the spinoff firms are the result of internal growth.

When estimating equation (2), we add an interaction term between the parent firm fixed effect and an indicator variable for whether the spinoff firm originates from internal growth. More specifically, we estimate the following model specification:

$$\lambda_{j,s} = a + b\lambda_{j,p} + c\lambda_{j,p}\delta_{j,internal} + u_j, \quad (5)$$

where $\delta_{j,internal}$ is an indicator variable that is 1 if the spinoff is the result of internal growth, and 0 otherwise.[24] The first column of Table 10 reports that most of the interaction terms are positive and statistically significant at least at the 10% level. That is, we find stronger similarity in spinoff and parent firms' policies when spinoff firms are the result of internal growth than when they are the result of a merger or an acquisition.

5.5.2. Firm age

We also hypothesize that the beliefs in a firm about the optimal course of action are stronger and more homogeneous in older and more well-established firms because both selection of managers and workers who share these beliefs and the internalization of a firm's organizational preferences takes time (Lazear (1995), Van den Steen (2005a), and Bernhardt, Hughson and Kutsoati (2006)). Based on these theories, we expect spinoff firms from older parent firms to choose corporate policies that are more similar to those of their parents.

We measure firm age for the parent by computing the number of years that the combined firm has been in the merged CRSP-Compustat database at the time of the split-up. We then separate the parents

[24] We do not add $\delta_{j,internal}$ as a variable because we have no a priori hypothesis regarding a relation between this variable per se and the spinoff firm fixed effect, $\lambda_{j,s}$. However, we have checked that adding $\delta_{j,internal}$ to the model specification does not affect any of our results. The vast majority of the estimated coefficients on $\delta_{j,internal}$ are insignificant. This conclusion holds also for the model specifications that involve other observable firm characteristics which we study in the rest of this section.

into two subsets, older and younger firms, based on the median age. The average age among older parent firms is 52 years, compared to only 16 years for younger parent firms.

We estimate equation (2), adding an interaction term between the parent firm fixed effect and an indicator variable that is 1 if the spinoff firm originates from an older parent, and 0 otherwise. The second column of Table 10 reports that many of the interaction terms are positive and statistically significant at least at the 5% level. That is, spinoff firms from older parents tend to choose firm policies that are more similar to their parents' compared to when they originate from younger parent firms. This evidence is consistent with theories which suggest that shared beliefs about the optimal course of action are more well-established and ingrained in older firms.

5.5.3. Firm size

Based on economic theory we hypothesize that smaller firms are more likely to have strong shared beliefs, because interactions with other employees are relatively more frequent in smaller firms (Lazear (1995)). In contrast, the benefits from investing in a stronger "corporate culture" are greater in larger firms, where coordination problems regarding what policies to choose are more common and often much more complex (Hermalin (2001)).

We measure firm size for the parent firm by the total number of employees in the combined firm at the time of the spinoff transaction. Because the average parent firm is larger than the average Compustat firm, we then use the median size among all Compustat firms to separate parents into two subsets of larger and smaller parent firms. The average number of employees is 15,500 for larger parents, but only 260 for smaller parent firms.

When we estimate equation (2), we add an interaction term between the parent firm fixed effects and an indicator variable that is 1 if the spinoff firm originates from a smaller firm. The final column of Table 10 shows that three of the interaction terms are statistically significant at least at the 5% level; two

of them are positive and one is negative.[25] One interpretation of this evidence that is consistent with existing theories is that both of the opposing effects related to firm size are at work in equilibrium, but it is difficult to empirically disentangle the effects.

5.5.4. Summary

Consistent with predictions yielded by economic theories of "corporate culture" and experimental evidence on "culture clashes," we find that the similarities are significantly stronger for internally grown spinoff firms than for spinoff firms that became part of the combined firm as a result of a merger or an acquisition. More broadly, this evidence speaks to the question of where do the shared beliefs about the optimal course of action and policies come from? Kreps (1990), for example, emphasizes a firm's early history for the formation of a firm's culture. Our evidence shows the importance of a firm's origin for the shared beliefs in a firm about what the optimal course of action and policies are. We also find stronger similarities for spinoff firms that originate from older parent firms. In summary, the commonality in spinoff and parent firms' corporate finance practices is found to be stronger among the subset of firms where corporate culture theories predict that the shared beliefs about the optimal course of action are likely to be stronger and more ingrained.

5.6. Possible interpretations of the commonality in corporate finance policies

One possible interpretation of the observed similarities is that shared beliefs about the optimal policies, i.e., a firm's "corporate culture," play a role for firms' corporate finance decisions. However, there are at least two important questions that one may have regarding our interpretation of the evidence presented so far. First, are the effects in this paper managerial "style" effects? Second, is there any evidence from arguably more direct proxies for corporate culture? We attempt to address these questions in this section.

[25] In untabulated regressions, we also use total assets as an alternative proxy for firm size. The results are similar, except that the negative interaction term is not statistically significant.

5.6.1. Relation to managerial "style" effects

Economic theory suggests that "corporate culture" effects in corporate finance practices and managerial "style" effects, documented by Bertrand and Schoar (2003), might be related. The models by Lazear (1995), Van den Steen (2005a, b), and Bernhardt, Hughson and Kutsoati (2006) show that managers and other employees are, at least in part, selected from the overall population based on how well they fit into a firm's culture. That is, firms are more likely to endogenously choose to hire CEOs with "styles," i.e., beliefs about the right behavior and policies, which fit into the firm's culture.

To analyze the relation to managerial "style" effects, we start by collecting data on the background of spinoff firms' CEOs from the biography sections of firms' SEC filings. 18 percent of the spinoff CEOs are "new" in the sense that they have a background of less than three years in the combined firm.[26] Next, we want to ask if the policy choices are significantly different when a spinoff firm's CEO is new. When estimating equation (2), we add an interaction term between the parent firm fixed effect and an indicator variable for whether the spinoff firm's CEO is new. More specifically, we estimate the following model specification:

$$\lambda_{j,s} = a + b\lambda_{j,p} + c\lambda_{j,p}\delta_{j,new} + u_j\,, \tag{6}$$

where $\delta_{j,new}$ is an indicator variable that is 1 if the spinoff firm's CEO is new, and 0 otherwise. Table 11 shows that none of the interaction terms are statistically significant. Most importantly, the F-tests show that the hypothesis that $b + c = 0$ in equation (6) can be rejected at least at the 10% level for most of the policies, implying that spinoff firms choose similar policies to their parent firms even when a new CEO is hired to manage the firm.[27]

[26] We recognize that the three-year requirement is arbitrary but it helps to identify spinoff CEOs who have little or no exposure to the parent firm's "culture" and beliefs about the optimal course of action prior to being hired to manage the spinoff firm.

[27] In untabulated regressions, we also show that these results are unaffected if we consider a broader set of top-executives (CFOs and other managers) as reported in the biography sections of firms' SEC filings.

Bertrand and Schoar (2003) report that a CEO's style in his first job explains 5 percent to 35 percent (depending on policy) of the style the manager has in his last job, so CEOs do not have perfectly persistent styles. Thus, a possible interpretation is that while managers have individual styles, they have to adapt their style more or less to fit into a firm's culture. Furthermore, because the CEO of a spinoff firm cannot, by definition, be the same individual as the CEO of the parent firm, what we are documenting in this paper are not individual CEO "style" effects, but rather what me can call "management culture" effects. The above evidence supports the view that a firm's "culture" is more than the specific characteristics of the firm's CEO: it is a latent firm characteristic that evolves slowly over time and that does not come and go with a particular CEO.

5.6.2. Evidence from more direct proxies of corporate culture

While the evidence so far reduces the number of possible interpretations of the observed similarities between spinoff and parent firm to those with the same cross-sectional predictions as economic theories of corporate culture, we also want to systematically analyze more direct proxies of "corporate culture," to provide a more complete analysis. Because a firm's culture, as discussed in Section 2, evolves and is transmitted through interactions between the firm's employees, it should be intrinsically linked to a firm's human capital polices. Policies related to, e.g., employee relations, are by many corporate executives and in the business press often considered the most overt expressions of a firm's culture. If the results regarding corporate finance practices are driven by commonality in spinoff and parent firms' corporate cultures, we should be able to observe similarities also for more direct proxies of culture.

While data availability significantly constrains an analysis of human capital polices, for a subset of 114 spinoff-parent firm pairs we are able to match our dataset with data from SOCRATES, a database containing yearly ratings of public U.S. firms' policies with a social impact.[28] Two of the rated policies in

[28] The database, assembled by KLD Research and Analytics, covers around 650 large public U.S. firms each year 1991-2000 (mainly firms belonging to the S&P 500), but increases to about 3,100 firms in 2006, because of recent

SOCRATES relate specifically to employees and organizational capital: *Employee relations* and *Diversity*. The definitions of these variables are available in the Data Appendix. For each of these policies we can construct an "index" by summing the number of "strengths" recorded for spinoff and parent firms in a particular year. More specifically:

$$k_{s,i,t} = \sum_{n=1}^{N_i} \theta_{s,n,t} \quad \text{and} \quad k_{p,i,t} = \sum_{n=1}^{N_i} \theta_{p,n,t}, \tag{7}$$

where $k_{s,i,t}$ and $k_{p,i,t}$ are the "indexes" for spinoff firm *s* and parent firm *p*, respectively, and policy *i* for year *t*. N_i is the maximum number of rated "strengths" for policy *i*. θ is an indicator variable that is 1 or 0 depending on the ratings in SOCRATES.[29] We drop firm-years prior to the year of the split-up, and then compute the within-firm means of these "indexes" as measures of long-term human capital policies in the firm.

Panel A of Table 12 reports summary statistics for the human capital policy variables separately for spinoff and parent firms. The most important finding is that there is significant variation among spinoff firms and parent firms, respectively. Next, we ask whether there is a commonality in these measures. Panel B reports Spearman correlation coefficients and Tobit regressions. Because of the non-normal distribution of the variables we calculate bootstrapped standard errors (based on 1,000 repetitions) for the Tobit regressions. All the estimated Spearman and Tobit coefficients are positive and significant at the 1% level Overall, we conclude that there are important similarities between spinoff and parent firms also for more direct and explicit proxies of culture, such as human capital policies. Although our above analysis is to be considered exploratory, this evidence provides some further support for our interpretation that culture and shared beliefs within firms impact their policies.

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additions of firms from the Russell 1000 and 2000 indices. This database has been used in prior work in corporate finance by, e.g.,Landier, Nair and Wulf (2007). See www.kld.com for more details.

[29] Because our sample period of spinoff transactions starts much earlier than the SOCRATES data, we do not observe 45 spinoff and 21 parent firms in the SOCRATES database until at least 5 years after the split-up of the firms. If anything, we consider this an advantage of the matched dataset because this implies that we do not start measuring similarities until several years after the spinoff transaction, and therefore our results will not be driven by initial but disappearing similarities.

5.7. Discussion and Implications

We propose "corporate culture" as the economic explanation that best fits the patterns in firm behavior documented in this paper. Our results suggest that there are well-established beliefs in firms about the optimal course of action and policies that are so strong and ingrained that they survive even after a firm splits up into separate, stand-alone companies. This notion of culture as beliefs about what is the "right" behavior has been modeled in an emerging literature in economics, and thus has theoretical support, and also fits well with arguments by corporate executives, in the business press, and in case studies of select companies.

We recognize that a potential concern regarding our empirical approach and evidence is that an omitted variable which we are not able to measure using observable data is explaining the commonality in spinoff and parent firm behavior. However, such an alternative explanation is constrained by both existing corporate finance theories and by the observed patterns in the data. The alternative interpretation must be a theoretically motivated and persistent firm characteristic that evolves slowly over time and does not come and go with a particular CEO. It also has to yield precisely the same predictions regarding cross-sectional patterns across spinoff-parent firm pairs that economic theories of corporate culture do. Overall, we believe that corporate culture is a more plausible economic interpretation of the evidence in this paper than existing alternatives.

What are the implications of evidence of culture effects in corporate finance practices for our understanding of corporate finance and for how firms choose investment and financial policies? There are several important implications. First, it is an established empirical fact from recent corporate finance research (e.g., Lemmon, Roberts and Zender (2007)) that the standard theories of firm investment and financing decisions can only explain a small proportion of the cross-sectional difference across firms. A substantial amount of differential remains unexplained, which is often characterized using firm fixed effects. These firm fixed effects attempt to capture intangible aspects of a firm's contracting and governance environment. However the precise economic meaning of these "intangibles" is often left

unexplained. This paper suggests that a firm's corporate culture is one such intangible which can give partial economic context to the significance of firm fixed effects in corporate finance practices.

Also, our results show that the origin of a firm can have important long-term and persistent implications for what policies the firm will choose. For example, a spinoff firm chooses practices that are much more similar to those of their parent firms than to their own matched industry peer firms, and these effects are stronger for firms that originate from within the parent. In his economic analysis of corporate culture, Kreps (1990) has previously emphasized a firm's early history for the formation of a firm's specific shared beliefs about the optimal course of action. Firms' specific corporate histories and experiences can be central for firm behavior also many years after defining events and experiences. Thus, another implication of our evidence is that our understanding of firms' choices of corporate finance practices will be incomplete if we only consider contemporaneous firm characteristics and do not carefully consider the firm's past experiences, corporate history and defining experiences.

Finally, an implication of our evidence is that the shared beliefs in a firm about the optimal course of action can constrain firm behavior to behavior that is consistent with the culture. As Kreps (1990) and Hermalin (2001) have previously pointed out, a corporate culture is formed to enable coordination within the firm when firms react to unforeseen circumstances. Therefore, at the time of the formation, the culture is likely to lead to efficiency gains. However, as environmental changes require the firm to behave differently, a strong set of beliefs about what is the "right" course of action may constrain the firm from adapting to these changes. Such tradeoffs between coordination and adaptation have been modeled in recent papers by Dessein and Santos (2006) and Bolton, Brunnermeier and Veldkamp (2007). It is beyond the limits of the present paper to examine the costs of benefits of strong cultures, but future work in empirical corporate finance may shed light on these issues.

6. Conclusion

In this paper, our we have taken a first systematic look at data to see if they are consistent with "corporate culture," in the sense of shared beliefs about optimal policies, playing any role for corporate

finance decisions. We use a panel of spinoff-parent firm pairs and find significant commonality in spinoff and parent firms' investment and financial policies. These similarities are found to be persistent, and cannot be explained by inertia causing stickiness of initial policies; nor can they be explained by ownership, customer-supplier, industry or other significant contractual links that remain between the firms. Consistent with culture theories, we find that the commonality is stronger for internally grown spinoff firms and for those that originate from older parent firms. In addition, we find that a firm's culture is a latent firm characteristic that does not come and go with a particular CEO. Finally, we find commonality in more direct proxies for culture, related to human capital policies. Overall, our evidence suggests that the shared beliefs about the optimal policies can be so strong in a firm that they survive the split up of the firm. Although we do not want to interpret our findings too aggressively because of the small sample and the specific spinoff-parent setting we analyze, we conclude that patterns emerge in data that are consistent with a firm's "culture" playing an important role for firm behavior and decision-making in the area of corporate finance.

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Appendix

Construction of dataset

Procedure	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
We require that the spinoff and parent firms are in the Compustat-CRSP merged database, and then we verify that the transaction was completed by searching SEC filings and newspaper articles on Factiva.	850
We drop spinoff firms 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 (e.g., REITs and closed-end investment funds).	624
We require that the spinoff and parent firms have at least two years of data on Compustat after the effective date of the transaction. We drop spinoff firms that are the direct result of mergers.	436
We 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.

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

Human capital policy variables

Diversity is equal to the within-firm mean of the number of strengths recorded in SOCRATES for the Diversity "Qualitative Issue Area." We only consider strengths continuously recoded in SOCRATES for the 1991-2006 time period. The individual strengths considered are: (i) Female/minority CEO; (ii) Promotion of women and minorities; (iii) Seats led by women, minorities, and/or the disabled on the board of directors; (iv) Work/life benefits; (v) Women & minority contracting; (vi) Employment of the disabled; and (vii) Other diversity strengths.

Employee relations is equal to the within-firm mean of the number of strengths recorded in SOCRATES for the Employee Relations "Qualitative Issue Area." We only consider strengths continuously recoded in SOCRATES for the 1991-2006 time period. The individual strengths considered are: (i) Union relations; (ii) Cash profit sharing; (iii) Employee involvement; (iv) Retirement benefits; and (v) Other employee relations strengths.

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.

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

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
Summary statistics

The table reports summary statistics for the variables used in this study for all years from 1980 to 2004, separately for spinoff firms, parent firms, and all other non-financial, non-utility firms in the Compustat-CRSP merged database. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. *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.

	Spinoff firms		Parent firms		Compustat firms	
Variables	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
R&D	0.05	0.11	0.03	0.06	0.05	0.10
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
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
Return on assets	0.10	0.23	0.16	0.12	0.08	0.24
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

Evidence from comparing spinoff firms to their parents versus their peer firms

The table examines the similarity in policy choices between spinoff firms and their parents compared to the similarity between spinoff firms and their industry-, and size-matched peers. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. We start by matching each spinoff firm to peer firms within the same two-digit SIC industry and with average firm size within +/-30 percent of the average size of the spinoff firm during the 1980 to 2004 period. A minimum of three peer firms is required. For each spinoff firm, we then compute an average policy over all years after the split up; for each parent, we calculate an average policy over all the years after the last spinoff; and for each peer firm, we calculate an average policy over the years that the firm is in Compustat. The absolute difference in policy choices between the spinoff and its parent and between the spinoff and the average among its peer firms is then calculated. Finally, the percentage of observations for which the absolute difference between the spinoff firm's policy and the parent firm's policy is smaller than the average absolute difference between the spinoff firm's policy and that of its peer firms is calculated. The column *p-value* reports the p-value from a binomial test of whether the percentage is significantly different from 50 percent.

Dependent variables	N	Spinoff firm closer to parent than to peer firm	p-value
Investment policies			
Investments	263	67.3%	0.000
Acquisitions	250	70.0%	0.000
Acquisition dependency	262	58.4%	0.007
R&D	263	63.9%	0.000
Financial policies			
Leverage	261	63.2%	0.000
Interest coverage	239	77.8%	0.000
Short-term leverage	263	69.2%	0.000
Cash holdings	263	78.7%	0.000
Equity dependence	257	60.3%	0.001
Dividend/earnings	261	53.3%	0.293

Table 3
Evidence from collapsed firm-level data

The table reports results from collapsed data at the firm-level. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. We start with the firm-year panel data set and compute within-firm means of the industry-adjusted policies for both spinoff and parent firms using all years of data available after the split-ups. The *Spearman's corr* column reports Spearman's rank correlation coefficient from correlating the within-firm mean of the policy for spinoff and parent firms. The *Coeff* column gives the coefficient from a regression of spinoff firms' within-firm means of the policy on parent firms' corresponding within-firm means. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels respectively.

Dependent variables	N	Spearman's corr	Coeff
Investment policies			
Investments	286	0.157***	0.217**
			(0.10)
Acquisitions	270	0.223***	0.387***
			(0.08)
Acquisition dependency	284	0.216***	0.123**
			(0.05)
R&D	286	0.333***	0.406***
			(0.08)
Financial policies			
Leverage	284	0.234***	0.283***
			(0.07)
Interest coverage	262	0.304***	0.417***
			(0.11)
Short-term leverage	286	0.223***	0.244***
			(0.09)
Cash holdings	286	0.406***	0.270***
			(0.09)
Equity dependence	279	0.332***	0.237***
			(0.07)
Dividend/earnings	284	0.270***	0.176***
			(0.06)

Table 4
Firm fixed effects in investment and financing policies

The table reports summary statistics for the firm fixed effects 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 spinoff firms, parent firms, and the benchmark sample of all other non-financial, non-utility firms in the Compustat-CRSP merged database during the 1980 to 2004 period. 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. Spinoff and parent firm fixed effects are estimated using data from years after the spinoff transactions (see Section 3 for details). The control variables for the investment policy regressions consist of lagged logarithm of book assets, lagged q, and cash flow. For the R&D regression an indicator variable for whether the dependent variable is missing and has been set to zero is also included. The control variables for the financial policy regressions consist of lagged logarithm of book assets, lagged ROA, lagged q, and lagged net PPE. The column *R-Sq w/o FE* reports the adjusted R-squares for 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 for regressions that also include firm fixed effects. The column *p-value* reports the p-values from an F-test for the joint significance of the firm fixed effects.

	Spinoff firms				Parent firms				Compustat firms				Model fit		
Dependent variables	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	p-value
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	0.000
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	0.000
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	0.000
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	0.29	0.73	0.000
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	0.000
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	0.000
Short-term leverage	-0.03	0.08	-0.08	0.06	-0.02	0.06	-0.07	0.07	-0.01	0.10	-0.08	0.11	0.04	0.42	0.000
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	0.000
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	0.000
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	0.000

Table 5
Evidence from panel regressions

The table examines the relation between spinoffs' fixed effects and parents' fixed effects. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. The firm fixed effects are from panel regressions of industry-adjusted dependent variables on several time-varying firm-level control variables, and year and firm fixed effects (see Table 4 for details). *N* refers to the number of observations in the regressions. The column *Coeff* reports the coefficient from a regression of the spinoff firm fixed effects on the parent firm fixed effects. The column *R-Sq* reports the R-squares from these regressions. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	N	Coeff	R-Sq
Investment policies			
Investments	265	0.385***	0.09
		(0.08)	
Acquisitions	254	0.400***	0.12
		(0.08)	
Acquisition dependency	264	0.094*	0.01
		(0.05)	
R&D	265	0.530***	0.19
		(0.08)	
Financial policies			
Leverage	262	0.346***	0.11
		(0.08)	
Interest coverage	238	0.453***	0.08
		(0.16)	
Short-term leverage	263	0.213*	0.03
		(0.09)	
Cash holdings	263	0.386***	0.15
		(0.10)	
Equity dependence	251	0.346***	0.15
		(0.07)	
Dividend/earnings	263	0.181**	0.04
		(0.09)	

Table 6

Evidence from bootstrap simulations: Assignment of spinoff firms to random parent firms

The table reports results from a bootstrap simulation procedure. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. We start by reassigning each spinoff firm to a random parent firm. Next, we regress the spinoff firm fixed effects on the random parent firm fixed effects. We retain the coefficient estimate. We repeat this procedure 10,000 times per corporate policy to obtain a bootstrap distribution of the coefficient. The table reports the standard deviation, 10th and 90th percentiles of these two simulated distributions of coefficients. The column *p-value* reports the percentage of the estimated coefficients from the assignment of spinoff firms to random parent firms that are larger than the coefficients estimated in Table 5.

Dependent variables	SD	10th pctl	90th pctl	p-value
Investment policies				
Investments	0.079	-0.101	0.101	0.000
Acquisitions	0.074	-0.092	0.095	0.000
Acquisition dependency	0.053	-0.067	0.069	0.040
R&D	0.075	-0.098	0.096	0.000
Financial policies				
Leverage	0.065	-0.084	0.085	0.000
Interest coverage	0.104	-0.129	0.132	0.000
Short-term leverage	0.083	-0.101	0.109	0.000
Cash holdings	0.064	-0.080	0.082	0.000
Equity dependence	0.057	-0.074	0.074	0.000
Dividend/earnings	0.060	-0.076	0.076	0.001

Table 7
Evidence on persistency of effects

The table examines whether spinoff firms' policies remain similar to those of their parents even a long period after they split up. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. The column *t = 5* reports the results from estimating a regression of the spinoff firm fixed effects on the parent firm fixed effects where the fixed effects are estimated starting five years after the spinoff transaction, with separate fixed effects being estimated for spinoff and parent firms for the first five years after the split up. The column *t = 0* reports the results from the same regressions as in Table 4 for the subset of spinoff-parent firm pairs that remain in the panel for at least five years. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

		Firm fixed effects estimated starting at:			
		t = 5		*t* = 0	
Dependent variables	N	Coeff	R-Sq	Coeff	R-Sq
Investment policies					
Investments	176	0.362***	0.09	0.367***	0.10
		(0.09)		(0.09)	
Acquisitions	170	0.297***	0.06	0.361***	0.10
		(0.10)		(0.09)	
Acquisition dependency	175	0.052	0.00	0.095*	0.01
		(0.07)		(0.05)	
R&D	178	0.574***	0.22	0.527***	0.19
		(0.08)		(0.08)	
Financial policies					
Leverage	177	0.403***	0.15	0.343***	0.11
		(0.08)		(0.08)	
Interest coverage	160	0.415**	0.06	0.467***	0.10
		(0.16)		(0.16)	
Short-term leverage	177	0.208*	0.02	0.153*	0.01
		(0.11)		(0.09)	
Cash holdings	177	0.401***	0.14	0.392***	0.14
		(0.11)		(0.11)	
Equity dependence	165	0.449***	0.19	0.384***	0.18
		(0.10)		(0.08)	
Dividend/earnings	176	0.241**	0.05	0.236**	0.06
		(0.11)		(0.10)	

Table 8
Evidence on inertia

The table reports results of regressions that test whether spinoff firms adjust back towards their parent firms' policies when they have deviated from it. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. The column *Parent firm's policies* reports results from estimating the following regression for each policy: $y_{j,t} - y_{j,t-1} = \alpha_t + \beta\left(y_{j,parent} - y_{j,t-1}\right) + \varepsilon_{j,t}$, where α_t denotes year fixed effects, $y_{j,parent}$ is the average policy of the parent firm after the split-up, and $\varepsilon_{j,t}$ is an error term. We report the coefficient β and the adjusted R-sq from this specification. The column *Combined firm's policies* reports results from estimating the above regression for each policy, substituting $y_{j,parent}$ for $y_{j,combined}$, i.e., the average policy of the combined firm prior to the split-up. Standard errors clustered at the individual firm-level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels respectively.

	Adjustment to:					
	Parent firm's policies			Combined firm's policies		
Dependent variables	N	Coeff	R-Sq	N	Coeff	R-Sq
Investment policies:						
Investments	1,617	0.723***	0.35	1,497	0.604***	0.29
		(0.05)			(0.06)	
Acquisitions	1,448	0.798***	0.37	1,391	0.650***	0.31
		(0.04)			(0.07)	
Acquisition dependency	1,588	0.558***	0.28	1,475	0.635***	0.31
		(0.04)			(0.05)	
R&D	1,617	0.149***	0.11	1,497	0.173***	0.14
		(0.03)			(0.02)	
Financial policies:						
Leverage	1,611	0.130***	0.07	1,491	0.129***	0.06
		(0.02)			(0.02)	
Interest coverage	1,348	0.265***	0.10	1,282	0.286***	0.11
		(0.07)			(0.07)	
Short-term leverage	1,616	0.265***	0.09	1,496	0.319***	0.10
		(0.05)			(0.05)	
Cash holdings	1,616	0.254***	0.15	1,496	0.284***	0.16
		(0.07)			(0.08)	
Equity dependence	1,337	0.639***	0.30	1,286	0.663***	0.31
		(0.03)			(0.03)	
Dividend/earnings	1,584	0.338***	0.17	1,490	0.340***	0.17
		(0.06)			(0.05)	

Table 9
Spinoff-parent similarities and economic links

The table examines whether significant economic links reported in firms' SEC filings can explain spinoff-parent firm similarities. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. The column *Ownership links* reports the results of regressing spinoff firm fixed effect on parent firm fixed effect after dropping firm pairs where parent firms retain >0 percent equity ownership immediately after the spinoff transaction. The column *Customer-supplier relationships* drops firm pairs where the spinoff firm has a customer or supplier relationship with the parent firm amounting to more than 10 percent of the spinoff firm's total sales. The column *Industry links* drops firm pairs where the spinoff and parent firms operate in the same three-digit SIC code. The column *Other contracts* drops firm pairs where the spinoff and parent firms disclose a contractual agreement between the firms in their SEC filings around the spinoff transaction. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Excluding spinoff-parent firm pairs with:							
Dependent variables	Ownership links		Customer-supplier relationships		Industry links		Other contracts	
Dependent variables	N	Coeff	N	Coeff	N	Coeff	N	Coeff
Investment policies								
Investments	232	0.422***	225	0.395***	197	0.330***	171	0.403***
		(0.08)		(0.09)		(0.10)		(0.11)
Acquisitions	223	0.444***	215	0.445***	191	0.445***	161	0.403***
		(0.08)		(0.10)		(0.10)		(0.11)
Acquisition dependency	231	0.105*	224	0.093	196	0.139**	171	0.093
		(0.06)		(0.06)		(0.06)		(0.06)
R&D	232	0.516***	225	0.518***	197	0.415***	171	0.506***
		(0.09)		(0.09)		(0.08)		(0.10)
Financial policies								
Leverage	229	0.375***	222	0.340***	196	0.356***	169	0.295***
		(0.09)		(0.08)		(0.09)		(0.10)
Interest coverage	207	0.489***	200	0.444**	180	0.344*	151	0.463*
		(0.18)		(0.18)		(0.18)		(0.25)
Short-term leverage	230	0.253**	223	0.171*	196	0.164	170	0.341**
		(0.13)		(0.09)		(0.11)		(0.16)
Cash holdings	230	0.345***	223	0.400***	196	0.266***	170	0.333***
		(0.10)		(0.12)		(0.10)		(0.12)
Equity dependence	221	0.350***	212	0.351***	188	0.222***	165	0.349***
		(0.08)		(0.08)		(0.07)		(0.09)
Dividend/earnings	230	0.197**	223	0.205**	196	0.064	170	0.132
		(0.10)		(0.10)		(0.08)		(0.13)

Table 10
The cross-section of similarities in spinoff and parent firm policies

The table studies the cross-section of spinoff-parent firm pairs by examining among which subsets of firms the commonality in corporate finance practices is the strongest. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. For each dependent variable, we regress the spinoff fixed effects on the parent fixed effects and an interaction of the parent fixed effects and an indicator variable. In the column *Internal Growth*, the indicator variable equals 1 if the spinoff is the result of internal growth, and 0 otherwise. In the column *Firm Age*, the indicator variable equals 1 if the spinoff firm originates from an older parent, and 0 otherwise. We measure firm age for the parent by computing the number of years that the combined firm has been in the merged CRSP-Compustat database at the time of the split-up. An older parent firm has above median age. In the column *Firm Size*, the indicator variable equals 1 if the spinoff firm originates from a smaller firm. We measure firm size for the parent by the total number of employees of the combined firm at the time of the split-up. Because the average parent firm is larger than the average Compustat firm, we then use the median size among all Compustat firms to separate parents into two subsets of larger and smaller parent firms. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Internal growth			Firm age			Firm size		
Dependent variables	N	Coeff	Interact.	N	Coeff	Interact.	N	Coeff	Interact.
Investment policies									
Investments	198	0.262**	0.392***	265	0.170*	0.467***	238	0.374***	-0.015
		(0.11)	(0.14)		(0.10)	(0.13)		(0.09)	(0.22)
Acquisitions	187	0.219*	0.467***	254	0.243**	0.328**	227	0.448***	-0.142
		(0.12)	(0.15)		(0.11)	(0.15)		(0.09)	(0.24)
Acquisition dependency	198	0.078	0.012	264	0.057	0.085	237	0.081	0.240
		(0.08)	(0.12)		(0.06)	(0.11)		(0.06)	(0.21)
R&D	198	0.319***	0.260**	265	0.375***	0.348***	238	0.463***	0.417**
		(0.12)	(0.13)		(0.09)	(0.13)		(0.10)	(0.20)
Financial policies									
Leverage	195	0.114	0.383***	262	0.228***	0.271**	235	0.245***	0.188
		(0.10)	(0.14)		(0.08)	(0.13)		(0.09)	(0.12)
Interest coverage	172	0.573*	-0.277	238	0.437**	0.053	212	0.444*	-0.134
		(0.31)	(0.35)		(0.20)	(0.34)		(0.23)	(0.35)
Short-term leverage	196	0.022	0.333*	263	0.193*	0.046	236	0.206	0.063
		(0.12)	(0.20)		(0.11)	(0.21)		(0.15)	(0.21)
Cash holdings	196	0.159	0.507**	263	0.221*	0.417**	236	0.306***	0.808***
		(0.16)	(0.22)		(0.12)	(0.20)		(0.11)	(0.23)
Equity dependence	188	0.021	0.654***	251	0.121	0.529***	225	0.373***	0.047
		(0.08)	(0.10)		(0.07)	(0.10)		(0.09)	(0.30)
Dividend/earnings	196	0.169	-0.056	263	0.212	-0.075	236	0.223**	-0.489***
		(0.18)	(0.21)		(0.14)	(0.16)		(0.09)	(0.17)

Table 11
Effects of a new CEO

The 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 Appendix. Robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	Coeff	Interact.	p-value
Investment policies			
Investments	0.433***	-0.070	0.000
	(0.11)	(0.13)	
Acquisitions	0.406***	0.041	0.002
	(0.11)	(0.18)	
Acquisition dependency	0.072	0.072	0.395
	(0.06)	(0.18)	
R&D	0.533***	-0.205	0.070
	(0.10)	(0.18)	
Financial policies			
Leverage	0.264***	0.303	0.003
	(0.10)	(0.20)	
Interest coverage	0.447**	0.443	0.081
	(0.21)	(0.55)	
Short-term leverage	0.273*	-0.144	0.338
	(0.16)	(0.18)	
Cash holdings	0.432***	-0.096	0.002
	(0.14)	(0.16)	
Equity dependence	0.387***	0.010	0.016
	(0.09)	(0.18)	
Dividend/earnings	0.152	-0.104	0.751
	(0.13)	(0.20)	

Table 12
Evidence from more direct proxies of corporate culture

The table reports results from employee relations and diversity ratings collected from the SOCRATES database, 1991-2006. The sample is 114 parent-spinoff pairs for which we observe both firms in the database. For each area of interest (employee relations or diversity), firms are rated on their strengths. The rating is binary; a firm is assigned a value of 1 if it has particular strength, and 0 otherwise. The ratings are updated each year. *Employee relations* is defined as the within-firm mean of the number of employee strengths. *Diversity* is defined as the within-firm mean of the number of diversity strengths. See the Appendix for a more detailed description of the construction of these two variables. Panel A describes summary statistics for *Employee relations* and *Diversity* for spinoff and parent firms, respectively. Panel B reports measures of commonality in these policies within spinoff- parent firm pairs. The *Spearman* column reports Spearman's rank correlation coefficient from correlating the ratings for spinoff and parent firms. The *Tobit* column reports the coefficient estimate from a Tobit regression of spinoff firms' ratings on parent firms' ratings. Bootstrapped standard errors (1,000 repetitions) are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels respectively.

Panel A: Summary statistics for spinoff and parent firms

	Spinoff firms (N=114)				Parent firms (N=114)			
Variables	Mean	SD	Max.	Min.	Mean	SD	Max.	Min.
Employee relations (max. = 5)	0.24	0.46	1.78	0	0.45	0.64	2.15	0
Diversity (max. = 7)	0.43	0.71	3.70	0	0.85	1.14	5.25	0

Panel B: Spearman correlation coefficients and Tobit coefficient estimates

Variables	Spearman	Tobit
Employee relations	0.298***	0.680***
		(0.20)
Diversity	0.385***	0.537***
		(0.12)
N	114	114

Figure 1
Evidence from comparing spinoff firms to their parents versus their peer firms

The figure examines the similarity in policy choices between spinoff firms and their parents compared to the similarity between spinoff firms and their industry-, and size-matched peers. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. We start by matching each spinoff firm to peer firms within the same two-digit SIC industry and with average firm size within +/-30 percent of the average size of the spinoff firm during the 1980 to 2004 period. A minimum of three peer firms is required. For each spinoff firm, we then compute an average policy over all years after the split up; for each parent, we calculate an average policy over all the years after the last spinoff; and for each peer firm, we calculate an average policy over the years that the firm is in Compustat. The absolute difference in policy choices between the spinoff and its parent and between the spinoff and the average among its peer firms is then calculated. Finally, the percentage of observations for which the absolute difference between the spinoff firm's policy and the parent firm's policy is smaller than the average absolute difference between the spinoff firm's policy and that of its peer firms is calculated.

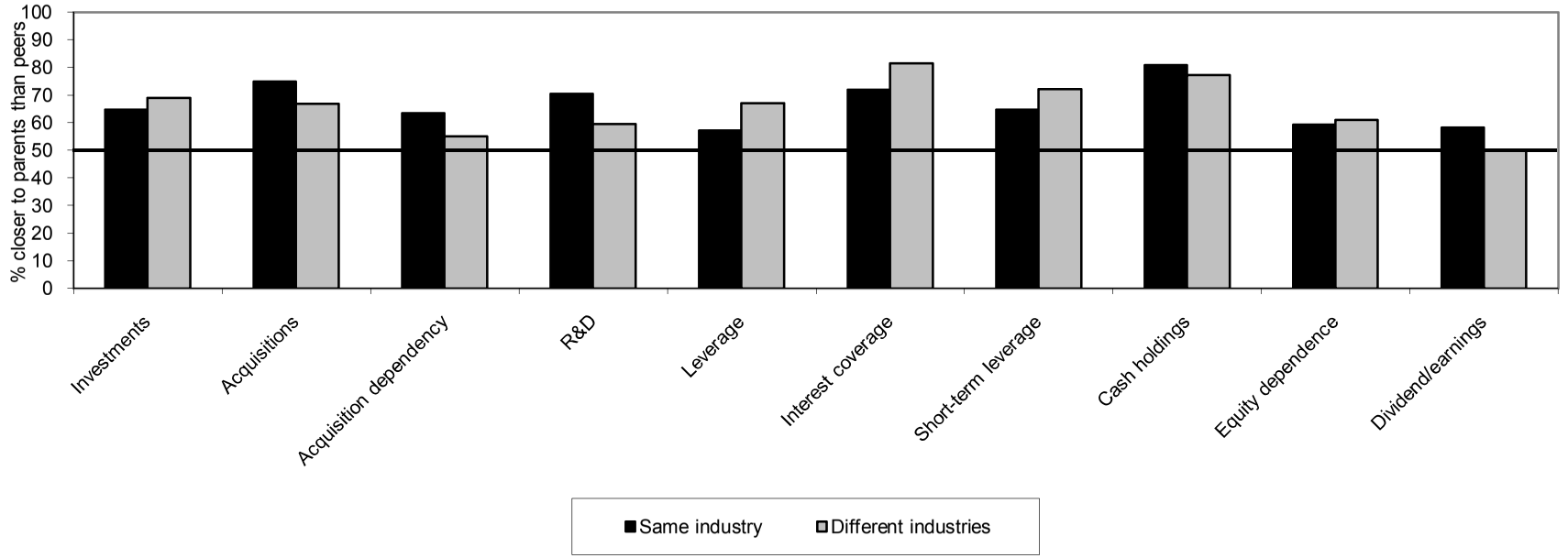
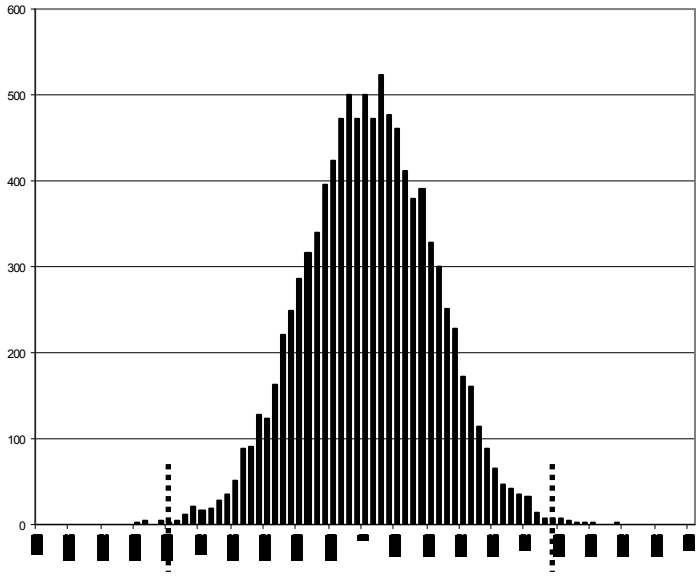


Figure 2

Evidence from bootstrap simulations: Assignment of spinoff firms to random parent firms

The figures report results from a bootstrap simulation procedure. The Appendix contains details on the construction of the spinoff-parent data set and variable definitions. We start by reassigning each spinoff firm to a random parent firm. Next, we regress the spinoff firm fixed effects on the random parent firm fixed effects. We retain the coefficient estimate. We repeat this procedure 10,000 times per corporate policy to obtain a bootstrap distribution of the coefficient. The figures report the simulated distributions of coefficients for two policies, investments and leverage. A dotted line is used to indicate +/- 3 standard deviations from the mean of the respective distributions.

Panel A: Bootstrap distribution for investments



Panel B: Bootstrap distribution for leverage