

Build, Buy, or Partner? The Relative Performance of an Acquisitive Strategy*

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Abstract

We conceptualize mergers as one of several strategies for creating value and study acquisition performance by evaluating the performance of firms employing an acquisitive strategy. Relative to other firms, acquisitive firms deviate more from value maximization, innovate less, and exhibit lower employee and total factor productivity. These effects are concentrated among firms that are dependent on employee relationship-specific investments or whose workforce is vulnerable to acquisition-related personnel disruptions. We therefore propose that an acquisitive strategy hurts firm performance by fostering disruptive conditions that diminish employee effectiveness and by weakening employees' incentive to cultivate relationship-specific investments.

Keywords: Mergers and acquisitions; corporate strategies; firm value; employee incentives.

JEL Classification: G34

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1. Introduction

Previous studies of merger and acquisition (M&A) performance typically examine the acquiring firm's stock return and/or its post-merger operating performance (see, e.g., Jensen and Ruback (1983), King et al. (2004), and Martynova and Renneboog (2008) for reviews). In this paper, we propose a different but complementary approach founded on the standard premise that the ultimate corporate objective is to maximize the value of the firm. Building on this premise, we explicitly recognize that firms have several strategic alternatives for achieving this objective and thus evaluate the valuation and performance of firms employing an acquisitive strategy relative to those adopting alternative strategies such as collaborative partnerships and organic growth. This allows us to examine the cumulative effect of a firm's acquisition activities and provide evidence on whether acquisitions are an effective means of achieving the objective of maximizing value.

Mintzberg (1987) differentiates between intended strategy and realized strategy. The former views strategy as a statement of intent, that is, how a firm proposes to achieve its business objectives. The latter, in contrast, views strategy as a pattern in a series of resource allocation decisions followed by actions. We conceptualize strategy in this latter sense and define a firm's adoption of an acquisitive strategy in a given year based on the number of acquisitions it completed during the preceding 5 years. We also define analogous measures for the adoption of strategic partnerships and organic growth strategies. We evaluate the effectiveness of an acquisitive strategy by relating these measures to firm value and corporate performance.

The effect of an acquisitive strategy on firm value depends on its relative impact on the size, timing, and riskiness of future corporate cash flows. Conceptually, the timing effect is fairly straightforward. Because an acquisitive strategy involves purchasing other businesses with existing operations, its effect on future cash flows is likely to manifest faster than the effects of

alternative strategies. In contrast, it is not clear a priori whether an acquisitive strategy has a positive or negative effect on the size or riskiness of future cash flows. The size effect is indeterminate because an acquisitive strategy is likely to increase revenue (due to synergies and/or market power gains) as well as investments in operating capital (because targets are usually acquired at a premium) while having an uncertain effect on operating expenses. Similarly, an acquisitive strategy may increase or decrease the riskiness of future cash flows, depending on the riskiness of the combining firms' cash flows as independent firms and the correlation between those cash flows. Thus, the question of the relative performance of an acquisitive strategy is ultimately an empirical one.

We explore this question using a sample of over 21,000 yearly observations on more than 2,600 firms during 1996–2014. We find that an acquisitive strategy is associated with a statistically significant reduction in firm value. The effect is also economically meaningful: An increase of one standard deviation in acquisitiveness is associated with a reduction of 5.1% in firm value. We recognize the difficulty of interpreting this result as causal and perform several analyses to aid in identifying the effects of an acquisitive strategy. First, we control for historical valuation during the period over which our proxy for acquisitiveness is measured to attenuate reverse causality concerns. Next, we estimate a firm fixed effects model to control for time-invariant correlated omitted variables. Finally, we use a geographical distance-based instrument for the adoption of an acquisitive strategy in a two-stage least squares (2SLS) instrumental variable regression. Each test indicates that the negative relation between firm value and an acquisitive strategy is not likely attributable to confounding factors.

Next, we evaluate reasons for this negative relation by analyzing the effect of an acquisitive strategy on corporate cash flow and the riskiness of cash flow. We find that an acquisitive strategy

is associated with reductions in both the size and riskiness of future cash flow but the size effect is much larger than the risk effect. We then focus on the potential effects of an acquisitive strategy on a firm's employees to better understand how an acquisitive strategy diminishes corporate cash flow. Prior work such as Pfeffer (1995) emphasizes the importance of a firm's workforce in creating value, noting that workforce-related soft assets such as employee know-how, corporate culture, and interpersonal relationships are significant value drivers. We argue that an acquisitive strategy presents employees with especially disruptive conditions that diminish their effectiveness. First, regular integration-related employee layoffs provide opportunities for the firm to expropriate employee investments in firm-specific human capital (Shleifer and Summers, 1988). Knowing this, employees of acquisitive firms will invest less in such assets ex ante, thereby reducing their productivity and effectiveness in value creation (Rajan and Zingales, 1998; Acharya et al., 2014). Such layoffs are also likely to weaken employee loyalty and commitment, resulting in potentially costly behaviors including absenteeism and excessive voluntary turnover (Eisenberger et al., 1986; Gellatly, 1995; Somers, 1995). Finally, an acquisitive firm's personnel teams are continually changing as employees of acquired businesses are integrated. This hinders the development of a well-defined corporate culture and increases the likelihood and frequency of cultural clashes, thereby reducing employee effectiveness in value creation (Guiso et al., 2015).

We perform several tests to evaluate these arguments. First, we explore whether an acquisitive strategy adversely affects employees' incentives to invest in firm-specific human capital and workforce conditions by examining its effect on corporate innovation and employee and total factor productivity. Using patenting activity as a proxy for corporate innovation, we find that acquisitive firms receive fewer patents than firms pursuing other strategies. Similarly, revenue per employee and total factor productivity both decrease with acquisitiveness. Taken together,

these results suggest that workforce-related issues play a significant role in explaining the negative effect of an acquisitive strategy on corporate cash flow and firm value.

We evaluate this further by examining whether the effects of an acquisitive strategy differ based on the extent to which a firm is exposed to acquisition-related personnel issues. Interestingly, we find that the adverse effects of an acquisitive strategy are mainly confined to such firms. The negative effects of an acquisitive strategy on firm value and productivity exist mainly among R&D-intensive firms and firms whose workforces are more likely to be disrupted by repeated changes in personnel teams. Similarly, an acquisitive strategy is associated with reductions in patents and citations per patent mainly among R&D-intensive firms. Thus, an acquisitive strategy per se does not appear to be beneficial or harmful to firm value and performance. Rather, corporate outcomes suffer when an acquisitive strategy is adopted by firms that are dependent on employee relationship-specific investments or other employee-related soft assets.

This paper extends the M&A literature in several ways. Conceptualizing acquisitions as a corporate strategy allows us to provide evidence on the cumulative effects of a firm's acquisition activities rather than just the effects of a single acquisition or a term-limited acquisition program. Thus, we complement existing studies that focus on single deals (e.g., Masulis et al. (2007)) and those that examine transactions within a specific acquisition program (e.g., Fuller et al. (2002)). Second, prior studies predominantly focus on the short- and intermediate-term performance of individual acquisitions or acquisition programs even though the substantial redeployment of resources and the complexity of activities involved in a merger suggest that a longer-term longitudinal perspective would be more appropriate. While some studies evaluate long-term acquisition performance using long-horizon abnormal buy-and-hold returns and calendar time portfolio approaches, several critics argue that such tests can be severely misspecified and are

subject to biases (e.g., Fama, 1998; Mitchell and Stafford, 2000; Bessembinder and Zhang, 2013). Our approach allows us to evaluate the long-run impact of acquisitions on firm value and performance while circumventing these potential biases.

Our results also illustrate the importance of workforce issues in acquisition performance. Although a large number of studies focus on the impact of transaction-specific variables and target and/or bidder characteristics on acquisition gains, the literature has only recently begun to consider the role of employee-related soft assets and employee incentives in explaining acquisition performance (see, e.g., Ahern et al., 2015; Barger et al., 2015; John et al., 2015). We complement these studies by demonstrating that personnel concerns play a significant role in the effectiveness of an acquisitive strategy. By extension, our results also delineate firm-types for which an acquisitive strategy may be particularly inappropriate.

The remainder of the paper proceeds as follows. Section 2 provides a conceptual evaluation of the relative effects of an acquisitive strategy on firm value and corporate performance. Section 3 describes our data sources, sample, and main variables. Section 4 reports our primary results while section 5 examines the effect of an acquisitive strategy on corporate cash flow and the riskiness of cash flow. Section 6 focuses on the effects of an acquisitive strategy on employees as a potential channel for its impact on firm performance. Section 7 concludes with a summary.

2. A conceptual evaluation of the relative effect of an acquisitive strategy

Basic valuation theory implies that firm value depends on expected corporate cash flows as well as the timing and riskiness of those cash flows. Thus, the effect of an acquisitive strategy on firm value depends on its relative impact on the size, timing, and riskiness of future cash flows. The size of corporate cash flow increases with revenue but declines with expenses and investments

in operations. Compared to other strategies, an acquisitive strategy generates an immediate increase in revenue because it involves the outright purchase of existing firms. Moreover, the combination of two independent firms can create additional revenue beyond the sum of the combining firms' independent sales due to the so-called synergy effect. Sources of such revenue gains include market power, cross-selling opportunities, and access to new markets for both parties (Eckbo, 1983; Shahrur, 2005). Thus, an acquisitive strategy has the potential to generate excess revenue relative to other strategies and to do so at a faster pace.

In contrast, the potential effect of an acquisitive strategy on operating expenses is less obvious. The combination of two independent firms offers opportunities to reduce costs by eliminating redundancies and by facilitating the sharing of best practices, technologies, and skills that increase efficiency. Yet much of these benefits require the seamless integration of acquired businesses into the firm's operations. Such integration, however, creates a state of constant fluidity in work processes and changes in personnel teams that can negatively affect employees. Also, synergistic cost reductions typically involve employee layoffs. This can result in higher costs because of the need to provide severance payments and its potential to dampen employee morale. In addition, an acquisitive strategy can hinder the retention of top technical employees and middle managers because of increased competition for promotion opportunities and because competitors often use the occasion of an acquisition to lure away the best talent in the merged firm (Bekier and Shelton, 2002; Zollo and Meier, 2008). Thus, while an acquisitive strategy can result in cost savings by eliminating redundancies and generating efficiencies, it can also result in significant integration expenses and personnel disruptions that increase costs and attenuate efficiency gains.

The final component of the size of corporate cash flow is investment in operations. While all business development strategies require ongoing investment in the firm's operations, an

acquisitive strategy requires larger investments because purchasing an independent business normally involves the payment of a premium in excess of the replacement cost of the target firm's net assets. In addition, payment for an acquired firm is due on a faster schedule than would be the case for capital investments under organic growth or a strategic partnership.

Overall, the above discussion implies that the relative effect of an acquisitive strategy on the size of future cash flows is uncertain because it likely increases revenue but also increases investments in operating capital and has an indeterminate effect on operating expenses.

The effect of an acquisitive strategy on the timing of future cash flows is relatively clear-cut. Unlike organic growth or strategic partnerships, the effects of an acquisitive strategy on expected cash flows manifest faster since it involves the outright purchase of existing firms. In contrast, the relative effect of this strategy on the riskiness of future cash flows is uncertain. Because it results in the combination of cash flow streams from previously independent firms, the effect of an acquisitive strategy on the riskiness of the combined firm's future cash flows depends on the standalone riskiness of the combining firms' future cash flows as independent entities as well as the correlation between those cash flows. As long as the independent cash flows are not perfectly positively correlated, combining them produces a diversification benefit that lowers the riskiness of the combined cash flows. However, if acquired businesses have larger standalone riskiness than the acquiring firm, then the combined firm's future cash flow may become riskier regardless of the potential diversification benefit of less-than-perfectly-positively-correlated cash flows. Thus, an acquisitive strategy may reduce or increase the riskiness of the acquiring firm's future cash flows.

Based on the preceding discussion, we conclude that the relative effect of an acquisitive strategy on firm value is an empirical question because it is theoretically indeterminate due to

uncertainty in how an acquisitive strategy affects the size and riskiness of future cash flows relative to other strategies. The following sections detail our approach to answering this question.

3. Sample and variables

3.1. Data sources and sample construction

As described below, our baseline tests require data from the following databases: Compustat, Securities Data Company (SDC) Platinum, and Execucomp. Our sample covers 1996–2014. It includes all U.S. public firms in the intersection of these databases for a sample of 21,839 annual observations for 2,665 unique firms. Sample sizes for specific tests vary depending on data availability for variables in those tests.

3.2. Measuring acquisitive strategy

We measure a firm’s adoption of an acquisitive strategy in each year based on the number of other businesses it acquired during the preceding 5 years. Because recent acquisitions arguably represent a stronger commitment to an acquisitive strategy than distant ones, we define our acquisitive strategy variable as follows:¹

$$AcqStrategy_t = Acqs_{t-1} + (0.8 \times Acqs_{t-2}) + (0.6 \times Acqs_{t-3}) + (0.4 \times Acqs_{t-4}) + (0.2 \times Acqs_{t-5}) \quad [1]$$

In [1], $Acqs_{t-1}$, $Acqs_{t-2}$, $Acqs_{t-3}$, $Acqs_{t-4}$, and $Acqs_{t-5}$ are the number of acquisitions completed by the firm in years $t-1$ through $t-5$, respectively. To minimize the effect of outliers, we use the natural log of $(1 + AcqStrategy)$ in our regressions. We define acquisition activity broadly and include all completed transactions classified by SDC as mergers, acquisitions, purchase of assets, and acquisitions of certain assets (provided the acquirer owned less than 50% of the target before

¹ Our results are similar when we simply add the number of acquisitions over the preceding 5 years without weighting recent acquisitions more heavily. In earlier versions of the paper, we used the proportion of years in which a firm acquired 1 or more other businesses during the preceding 5 years without regard to the number of acquisitions. Results are very similar.

the transaction and 50% or more after), regardless of whether SDC reports deal value or not. This allows us to capture a broad spectrum of acquisition activity and avoids potential biases from data screens that limit acquisitions to larger deals between publicly traded firms (see, e.g., Netter et al., 2011). We recognize that our measure treats all acquisitions equally regardless of their size. We decide against dollar-weighting transactions because doing so results in a significant measurement error since deal values are not disclosed for a large proportion of transactions (36% in our sample).

Panel A of Table 1 shows the distribution of acquisition activity. Twenty-two percent of firms made no acquisitions in the 5 years immediately preceding a given sample year while 21.7% completed just one acquisition. At the other tail, 8.7% of firms completed at least 1 acquisition during each of the preceding 5 years. The median firm completed 1.4 (weighted) acquisitions during those 5 years, while the sample mean is 2.3 (weighted) acquisitions. Median and mean (unweighted) acquisitions are 2.0 and 3.7, respectively.

3.2. *Other strategies*

We focus on two other strategies: strategic partnerships and organic growth. Similar to our measure of the adoption of an acquisitive strategy, we measure a firm's use of strategic partnerships in a given year as the natural log of (1 plus) the weighted number of new strategic alliances and joint ventures it formed with other firms during the preceding 5 years. Our data for alliance and joint venture formations come from the SDC database.

Panel B of Table 1 shows the distribution of strategic partnership activities. Forty-two percent of firms formed no new strategic alliances or joint ventures during the entire 5 years preceding a given sample year while 20.7% created a new alliance or joint venture during only 1 of those years. Recall that corresponding figures for acquisition activities are 22.0% and 21.7%, respectively. Thus, acquisitions are relatively more common than strategic partnerships in our

sample. In the right tail of the distribution, 8.8% of sample firms formed a new partnership during each of the 5 years preceding a given year. Mean and median number of (weighted) new partnerships created during those years are 1.9 and 0.6, respectively. Corresponding statistics for unweighted partnerships are 3.2 and 1.0, respectively.

In contrast to acquisitive and partnership strategies, creating proxies for an organic growth strategy is more complicated because there are no clear-cut ways to measure a firm's organic growth activities. We focus on net investments in operations (excluding acquisitions) under the premise that such investments reflect a firm's commitment of resources to grow its operations internally. For each year t , we define net investments in operations as:

$$NIOPS_t = (CAPEX_t - SPPE_t - DEP_t) + (NOWC_t - NOWC_{t-1}) \quad [2]$$

Here, NIOPS is net investments in operations, CAPEX is capital expenditures, SPPE is receipts from sale of property, plant, and equipment, DEP is depreciation expense, and NOWC is net operating working capital (that is, the difference between the sum of cash, inventories, accounts receivable, and prepaid expenses and the sum of accounts payable and accruals). The first part of [2] captures investment in long-term operating assets net of replacements due to asset sales and economic wear and tear. The second part reflects short-term investment in operations net of funds provided by short-term operating liabilities. We normalized NIOPS by revenue and measure a firm's use of an organic growth strategy in any given year as its average normalized net investment in operations during the preceding 5 years. For univariate comparison with acquisitive and partnership strategies, we classify a firm as adopting an organic growth strategy in a given year if its normalized NIOPS is greater than the median for all Compustat firms in that year.²

² Strictly speaking, a positive NIOPS amounts to organic growth since it represents a net investment in internal operations. We choose a median cutoff point to allow a reasonably clear-cut definition of firms employing an organic growth strategy.

Panel C of Table 1 displays the distribution of organic growth activity for our sample firms. For 5.8% of the sample, net investment in operations is lower than the median for all Compustat firms during each of the 5 years preceding a given sample year while 14.2% exceed the Compustat median in only 1 of those 5 years. In contrast, 16.4% of sample firms invest more in internal operations than the median Compustat firm in each of the 5 years preceding a given year. Full sample mean and median net investment in operations during those years are 6.6% and 2.6% of revenue, respectively.

We examine the pairwise correlation coefficients between the three strategies to evaluate whether firms tend to adopt them as complements or substitutes. We find a positive correlation between acquisitions and strategic partnerships ($\rho = 0.32$, p -value < 0.001), suggesting that firms tend to treat them as complementary strategies. The other two pairwise correlations are statistically significant but less meaningful economically. The correlation between organic growth and strategic partnerships is 0.05 (p -value < 0.001) while the correlation between an organic growth strategy and an acquisitive strategy is -0.02 (p -value = 0.002).

3.3. *Dependent and control variables*

Our measure of effectiveness in value creation is Tobin's q , which we define as the market value of common equity plus the book values of preferred equity and long-term debt, divided by the book value of assets. Following prior literature (see, e.g., Myers, 1977; Smith and Watts, 1992; Yermack, 1996), we control for several firm and industry characteristics that are correlated with firm value. These include total assets, operating profitability (operating income before depreciation divided by book value of total assets at the beginning of the year), R&D spending, corporate diversification (number of reportable business segments), capital expenditures, fixed asset intensity (net property, plant, and equipment divided by book value of total assets), leverage (book

value of long-term debt divided by book value of total assets), CEO tenure, CEO incentives (delta of CEO equity and option holdings), and the intensity of industry competition (revenue-based Herfindahl index computed at the 4-digit standard industrial classification (SIC) code level). We also include 2-digit primary SIC code dummies and year fixed effects to account for time-invariant industry characteristics and macroeconomic trends during the sample period. To limit the influence of extreme outliers, we winsorize all continuous variables at 1% in both tails. Table 2 presents descriptive statistics for these variables.

4. Acquisitive strategy and firm value

Table 3 reports results of regressions evaluating the effect of an acquisitive strategy on firm value. The dependent variable in each regression is Tobin's q . Column (1) contains results of our baseline model, a pooled OLS regression with standard errors clustered at the firm level. It shows that an acquisitive strategy is associated with a statistically significant reduction in Tobin's q . The coefficient implies that an additional (weighted) acquisition during the preceding 5 years is associated with an economically significant reduction of 2.5% in firm value in the current year while an increase of one standard deviation in acquisitiveness is associated with a reduction of 5.1% in firm value. In untabulated tests, we evaluate the sensitivity of our baseline result to outliers by estimating a median regression, using log-transformed Tobin's q , and winsorizing q at higher thresholds (e.g., 2% and 5%). Results are very similar to those in column (1) of Table 3.

In contrast to this result, column (1) shows a positive relation between firm value and each of partnership and organic growth strategies. The coefficients imply that an increase of one standard deviation in new partnership formation and organic growth activities is associated with an increase in firm value of 6.6% and 4.3%, respectively.

These results suggest that the relative effect of an acquisitive strategy on firm value is negative. Nevertheless, we recognize that several confounding issues may affect the validity of this inference. First, it is possible that the result suffers from reverse causality because managers may pursue acquisitions in an attempt to shore up declining firm performance. To address this concern, we control for each firm's average Tobin's q over the immediately preceding 5 years. Recall that our measure of acquisitiveness reflects acquisitions made during the 5 years preceding each sample year. Controlling for average Tobin's q during the same period allows us to capture potential firm value considerations in the adoption of an acquisitive strategy, which should attenuate reverse causality concerns. As one would expect, column (2) of Table 3 shows that historical valuation significantly explains current firm value. Nevertheless, our measure of acquisitiveness remains negative and statistically significant at the 1% level, and its coefficient is virtually the same as in column (1). Thus, it does not appear that our base results are attributable to the effect of prior performance concerns in the adoption of an acquisitive strategy.

Second, it is possible that our results are biased by some omitted and potentially unobservable variables that are correlated with the adoption of an acquisitive strategy and firm value. For example, intrinsic management ability may affect both the decision to pursue acquisitions (through its effect on ego, for instance) and firm value. Column (3) of Table 3 presents results of a firm fixed effects regression with firm-level clustered standard errors. Because it relies entirely on within-firm variation to identify the effect of an acquisitive strategy on firm value, this model allows us to control for any correlated omitted variable, provided that such variables are time-invariant. As column (3) shows, our acquisitive strategy variable remains significantly negatively associated with firm value in this regression.

The above notwithstanding, we cannot rule out the possibility that time-varying correlated omitted variables bias our estimate of the effect of an acquisitive strategy on firm value. While a completely randomized experiment in which firms are randomly assigned into treatment (i.e., those adopting an acquisitive strategy) and control (i.e., those adopting other strategies) groups would be a conclusive test for proper identification, this is prohibitively costly. Likewise, we are not aware of any exogenous shocks to acquisitiveness that can serve as a basis for a quasi-natural experiment. Therefore, we rely on an instrumental variable (IV) approach as a tenable alternative. The primary advantage of this framework is that it permits valid inference in the presence of reverse causality, correlated omitted variables, and other sources of unobserved heterogeneity. The major difficulty lies in the paucity of relevant and valid instruments.

To identify an instrument, we rely on the literature that shows that the likelihood of an acquisition decreases with the distance between firm pairs (see, e.g., Uysal et al. (2008) and Kang and Kim (2008)). Thus, we expect the average distance between a firm and all other firms to be (inversely) correlated with its adoption of an acquisitive strategy. Furthermore, although prior studies show that geographic proximity is a significant factor in firm outcomes, a consistent result in these studies is that what matters is proximity to certain types of firms (such as those in related industries, along the supply chain, or R&D clusters), not just simple geographic proximity to a broad universe of other firms in itself.³ Therefore, we base our instrument on the distance between a firm and every other firm (i.e., proximity per se) rather than distance to specific firm types to increase the likelihood that it satisfies the exclusion restriction.

³ For examples, see Audretsch and Feldman (1996) for R&D spillover among geographically clustered industry firms, Chu et al. (2014) for the role of geographic proximity in innovation spillover along the supply chain, and Petersen and Rajan (2002) for the effect of proximity to banks on bank lending.

Each year, we calculate the distance between each firm's headquarters and the headquarters of every other firm in Compustat, using their respective postal ZIP codes. We then calculate the median distance to the company's headquarters and average this over the preceding 5 years. We use this 5-year average as our instrument for the adoption of an acquisitive strategy. Column (4) of Table 3 reports results of the first stage regression predicting acquisitiveness. As expected, the instrument is negative and highly statistically significant. In addition, the Cragg-Donald Wald F -statistic for weak instruments is 41.59, which rejects the null hypothesis that the instrument is weak based on a Stock-Yogo critical value of 16.38 (Stock and Yogo, 2005). Column (5) of Table 3 contains results of the second stage regression. Consistent with our earlier results, it shows that the instrumented acquisitive strategy variable is negative and significant. Overall, we conclude that our tests suggest that an acquisitive strategy depresses firm value relative to other strategies such as organic growth, joint venturing, or strategic alliances.

A potential argument against this conclusion is that our measure of firm value (i.e., Tobin's q) inherently penalizes acquisitive firms. This is because its denominator (i.e., total assets) is reported at book values for non-acquisitive firms and essentially at market values for acquisitive firms since U.S. GAAP requires purchase accounting for recording business combinations. Thus, acquisitive firms will tend to have a lower Tobin's q , almost by construction. We address this concern by estimating an additional firm fixed effects regression where we use acquisition-adjusted Tobin's q as the dependent variable. We define acquisition-adjusted Tobin's q as Tobin's q calculated with the denominator equal to total assets less acquisition spending. As column (6) of Table 3 shows, an acquisitive strategy is negatively associated with Tobin's q even after adjusting for acquisition expenditures.

Another potential criticism of our results is that they may not correctly evaluate the relative effects of an acquisitive strategy. This is because our regressions include firm-years when net investment in operations is negative (i.e., firm-years with negative scores on our proxy for organic growth strategy). Since such firms are essentially shrinking, it may not be meaningful to compare firms that are growing through acquisitions or partnerships with them. We estimate two additional firm fixed effects regressions to address this concern. In the first, we restrict the sample to firm-years with positive net investment in operations. This allows us to evaluate the relative effects of different strategies among non-shrinking firms. In the second, we restrict the sample to firm-years with positive net investment in operations during which the firm either (1) scores above the sample median on the acquisitive strategy variable and below median on the other two strategies, or (2) scores above the sample median on the partnership strategy variable and below median on acquisitiveness and organic growth, or (3) scores above the sample median on organic growth and below median on acquisitiveness and partnering. This regression thus represents a within-firm comparison of years when a firm grows its operations while clearly pursuing an acquisitive, partnership, or organic growth strategy. Columns (7) and (8) of Table 3 present results of these regressions. In both cases, the acquisitiveness variable is negative and statistically significant.

Overall, our tests indicate that an acquisitive strategy lowers firm value relative to other strategies. A principal follow-on to this result is the important question of why an acquisitive strategy is associated with reduced firm value. Earlier, we proposed that the relative effect of an acquisitive strategy on value depends on how it affects the size, timing, and riskiness of corporate cash flows and concluded that its effects on the size and riskiness of cash flows are empirical issues. Thus, we begin our analysis by evaluating the effects of an acquisitive strategy on corporate cash flow and the riskiness of cash flow.

5. Acquisitive strategy and the size and riskiness of corporate cash flow

Table 4 presents results of regressions for corporate cash flow. Conceptually, the relevant cash flow for valuation is after-tax cash flow available for distribution to investors after accounting for operating expenses and capital spending. Our proxy for this is after-tax operating cash flow less capital expenditures, normalized by beginning-of-year total assets, defined as follows:

$$CF_t = ((OIBD_t - (TAX_t - \Delta DEFTAX_t) - CAPEX_t) / ASSETS_{t-1}) \quad [3]$$

In [3], OIBD is operating income before depreciation, TAX is income tax expense, DEFTAX is deferred taxes, CAPEX is capital expenditures, and ASSETS is total assets.

Column (1) of Table 4 shows our base regression, a pooled OLS model with year and industry fixed effects and standard errors clustered by firm. The acquisitive strategy variable is negative but insignificant. It becomes significant in column (2) when we control for historical cash flow to ameliorate potential reverse causality concerns. It is also negative and significant in the firm fixed effects regression in column (3). Its coefficient in the latter implies that an increase of one standard deviation in acquisitiveness is associated with a reduction of 71 basis points in after-tax corporate cash flows. Compared to the sample mean cash-flow-to-assets ratio of 6.5%, this amounts to an economically significant reduction of 10.9%. Results are similar when we normalize cash flow using acquisition-adjusted total assets, as column (4) shows. Finally, the acquisitive strategy variable is insignificant in column (5), which presents the results of the second-stage of a 2SLS model.

Table 5 reports results of our analysis of the effect of an acquisitive strategy on the riskiness of corporate cash flow. For each year t , we measure the riskiness of cash flow using the standard deviation of cash flow (as defined earlier) over years t through $t+4$. Regressions in Table 5 are

analogous to the corresponding regressions in Table 4. In each model but (5), the acquisitive strategy variable is negative and statistically significant. Its coefficient in the firm fixed effects model (column (3)) implies that an increase of one standard deviation in acquisitiveness is associated with a reduction of 15 basis points in the volatility of future cash flows. Relative to the sample average cash flow volatility of 4.1%, this translates to a reduction of 3.6% in volatility. We obtain similar results in (4) when we normalize cash flow using acquisition-adjusted total assets.

Taken together, results in Tables 4 and 5 suggest that an acquisitive strategy diminishes firm value because it lowers corporate cash flow more than it lowers the volatility of cash flows. As discussed above, an increase of one standard deviation in acquisitiveness lowers cash flow by 10.9% but reduces the volatility of cash flows by only 3.6%. This raises the important question of why an acquisitive strategy is so deleterious to corporate cash flow. To answer this question, we focus on the potential effects of an acquisitive strategy on a firm's workforce because employees are ultimately the ones who must implement a firm's strategies for creating value and the extent of such value creation depends significantly on workforce-related soft assets such as employee know-how, corporate culture, and interpersonal relationships (see, e.g., Pfeffer (1996)). We propose that, relative to the other strategies, an acquisitive strategy is more likely to affect employee incentives, corporate culture, and personnel teams in ways that diminish the effectiveness of a firm's workforce. For example, synergistic cost savings are usually cited as a primary motivation for mergers. Such savings however often require layoffs to eliminate redundancies or otherwise reshape the combined firm's workforce. Thus, employees of an acquisitive firm face a significantly higher and recurring threat of involuntary turnover compared to employees of non-acquisitive firms. This creates a greater threat of ex post expropriation that discourages such employees from investing in relationship-specific human capital ex ante and thus

lowers their productivity and contributions to corporate cash flows and firm value (Rajan and Zingales, 1998; Acharya et al., 2014).

Furthermore, social exchange theory and the norm of reciprocity (Blau, 1964; Eisenberger et al., 1986) suggest that regular layoffs are likely to diminish employee loyalty and commitment because employees construe their firm's actions and practices as indications of its commitment to them, which they reciprocate in their commitment and loyalty to the firm. Gellatly (1995) finds that committed employees exhibit lower absenteeism rates and fewer total days absent. Similarly, Somers (1995) finds a negative association between employee commitment and voluntary turnover. Given that absenteeism and voluntary employee turnover are costly, this suggests that acquisitive firms are also likely to experience lower productivity because of diminished employee loyalty and commitment.

Ahern et al. (2015, p. 167) suggest that a merger inherently requires the combination and coordination of employees from the acquiring and target firms, without which "the firm would operate as two separate entities under common ownership and no value is likely to be created." This suggests two other channels through which an acquisitive strategy potentially results in lower employee productivity and effectiveness.

First, an acquisitive firm's personnel teams are constantly changing as employees from acquired businesses are integrated into the firm's work teams on a regular basis. As a result, an acquisitive firm is less likely to sustain meaningful corporate culture and more likely to experience cultural clashes among its employees. Since a set of well-defined and commonly shared corporate social norms can constraint employee moral hazard and enhance workforce effectiveness (Guiso et al., 2015), acquisitive firms are more likely to suffer from reduced employee productivity because of the fluidity of their corporate cultures and greater potential for cultural clashes among

their employees. Second, an acquisitive strategy can hinder the retention of top technical employees and middle managers because such employees are more likely to leave for other firms to avoid the disruptions associated with an acquisition (Bekier and Shelton, 2002; Zollo and Meier, 2008; Brockner et al., 1987).

We evaluate these arguments in the following section. First, we examine the effect of an acquisitive strategy on employee incentives to cultivate relationship-specific investments by evaluating its effect on corporate innovation. We focus on corporate innovation because it is a major context in which success depends on employee investment in firm-specific human capital. If an acquisitive strategy lowers the incentives for employees to make such investments, then we expect a negative relation between corporate innovation and acquisitiveness. However, many firms do not engage in readily quantifiable or measurable innovation. Thus, we analyze employee and total factor productivity to provide broader-based evidence on how an acquisitive strategy affects employee incentives and their commitment to the firm. Lastly, we explore whether the value effects of an acquisitive strategy are stronger for firms that are more exposed to employee-related intangible issues that are likely exacerbated by an acquisitive strategy.

6. Employee intangibles and the effects of an acquisitive strategy

6.1. Corporate innovation

Our measures of corporate innovation are the number of patents granted each firm by the U.S. Patent and Trademark Office (USPTO) and citations per patent. We obtain these data from the Harvard Dataverse project (Lai et al., 2011). We assign each patent to its application (rather than grant) year but it is important to note that patents are only reported by the USPTO after approval. The average patent is granted 2.1 years after application. Therefore, we exclude the last

three years from the sample to ensure that we capture true patenting activity. As a result, the sample for our patenting activity tests ends in 2007 even though the patent database itself ends in 2010.

Table 6 shows results of our tests. Each regression controls for variables that prior work suggests as important covariates of corporate innovation, including firm size, leverage, growth opportunities, corporate diversification, CEO tenure and compensation incentives, and industry competitiveness (Hall and Ziedonis, 2001; Brown et al., 2009; Manso, 2011; Bushee, 1998). We also control for R&D spending. Thus, the estimated effect of an acquisitive strategy on our corporate innovation measures is conditioned on the same level of innovation input. We include year and 2-digit SIC code industry fixed effects and cluster standard errors at the firm level.

In Panel A, the dependent variable is the natural logarithm of (1 plus) the number of ultimately approved patents filed in each year. The regressions are Tobit models because the number of patents is censored at zero since true innovation output is unobserved for firms with no patents. As column (1) shows, acquisitive firms receive fewer patents. Coefficients in the model imply that an additional (weighted) acquisition is associated with 1.8% fewer patents and an increase of one standard deviation in acquisitiveness is associated with a reduction of 3.8% in the number of patents, evaluating other variables at their sample means. In column (2), we control for the number of patents received by each firm during the same past 5 years over which we construct our measure of acquisitiveness. As the results show, the acquisitive strategy variable is negative but statistically insignificant.⁴ Finally, column (3) shows results of the second stage regression in a 2SLS model where we use the median distance between each firm and all other firms in

⁴ We do not estimate firm fixed effect regressions for our measures of corporate innovation because the models are Tobit models for which the panel identifier fixed effect estimator is biased and inconsistent (see, e.g., Cameron and Trivedi, 2005).

Compustat as an instrument for acquisitiveness. As in column (1), we find that an acquisitive strategy is significantly negatively related with the number of patent grants.

Panel B presents results of analogous regressions for the natural logarithm of (1 plus) citations per patent. The table shows that the acquisitive strategy variable is statistically insignificant. As we show later in section 6.3, an acquisitive strategy is associated with fewer patents and citations per patent among R&D-intensive firms, for which patenting activity arguably better measures corporate innovation.

In contrast to these results, Table 6 suggests that partnering and organic growth strategies are positively associated with corporate innovation. Partnering intensity is positive and significant in 3 of 4 regressions while organic growth intensity is positive and significant in all specifications. Coefficients in columns (1) and (3) imply that an additional (weighted) partnership is associated with increases of 8.6% and 3.3% in approved patent applications and citations per patent, respectively. Similarly, an increase of one standard deviation in organic growth intensity is associated with increases of 2.2% and 1.4% in patents and citations per patent, respectively.

5.2. *Employee and total factor productivity*

Table 7 presents result of our analysis of the effects of an acquisitive strategy on productivity. In addition to the control variables in our earlier regressions, we also control for workforce unionization because previous work (e.g., Freeman and Medoff, 1979; DiNardo and Lee, 2004) suggests that unionization has a significant effect on productivity. We focus on employee productivity in Panel A and firm-level total factor productivity in Panel B. Our measure of employee productivity is the natural log of sales per employee. Mean and median sales per employee are \$435,000 and \$271,000, respectively. We measure total factor productivity using

residuals from industry-specific regressions of revenue on the number of employees, fixed assets, and year fixed effects.

Column (1) of Panel A shows that an acquisitive strategy has a significant negative effect on employee productivity. The coefficient implies that an increase of one standard deviation in acquisitiveness is associated with a reduction of 7.5% in revenue per employee and an additional (weighted) acquisition depresses employee productivity by 3.7%. In column (2), we control for average sales per employee over the preceding 5 years to account for potential employee productivity considerations in the adoption of an acquisitive strategy. As the results indicate, we continue to find a negative relation between an acquisitive strategy and employee productivity. Column (3) introduces firm fixed effects to mitigate potential biases attributable to time-invariant correlated omitted variables while also controlling for historical employee productivity. Results are similar to those in columns (1) and (2). Finally, we estimate a 2SLS IV regression using the historical 5-year average of the median distance between each firm's headquarters and the headquarters of all other Compustat firms in each year as an instrument for acquisitive strategy. Column (4) presents results of the second stage regression. Consistent with the other results in the table, it shows that an acquisitive strategy is negatively related with employee productivity though the level of statistical significance is only marginal (p -value = 0.135).

Panel B presents results of analogous tests for total factor productivity. As the table shows, results are comparable to those for employee productivity. In particular, an acquisitive strategy is always negatively related with total factor productivity and significantly so in columns (1) – (3). In column (4), the level of statistical significance is marginal (p -value = 0.142). In contrast, Table 7 shows that employee and total factor productivity both increase with strategic partnering intensity while the evidence is mixed for organic growth activities.

In all, the tests described in this section thus far suggest that acquisitive firms experience depressed employee and firm-level productivity and also generate less innovation output for the same level of inputs into the innovation process. These results are consistent with our proposition that an acquisitive strategy reduces the incentive for employees to engage in relationship-specific investments and creates other workforce disruptions that hinder their effectiveness. We investigate this conjecture further by evaluating whether the effect of an acquisitive strategy differs based on the need for employee investment in relationship-specific human capital and the potential for integration-related workforce disruptions.

5.3. *The moderating effect of employee intangibles*

Following the literature (see, e.g., Jensen, 1993; Faleye et al., 2014), we presume that R&D-intensive firms have a greater need for employee relationship-specific investments. We define R&D-intensive firms as those in the upper quartile of the distribution of R&D expenditures to total assets.⁵ For these firms, R&D expenses average 9.8% of assets, with a median of 8.0%. For non-R&D-intensive firms, mean and median R&D ratio are 0.35% and 0.00%, respectively.

To identify firms with greater exposure to integration-related personnel problems, we focus on employee unionization, labor force size, and the degree of operating focus. Unions constrain a firm's ability to reallocate its human resources, especially when those reallocation decisions involve layoffs and/or job redefinitions (Freeman and Medoff, 1979). Such constrained reallocation increases the potential for employee discontent when employees from acquired businesses are integrated into the acquiring firm's personnel teams. Thus, we expect greater integration-related personnel complications at highly unionized firms. Similarly, we expect firms with fewer employees to be more vulnerable to such issues because a large number of employees

⁵ We choose the 75th percentile because R&D ratio equals 0.0% for more than half of our sample (56%). Thus, splitting the sample at the median does not produce a meaningful contrast between R&D-intensive and other firms.

enhances a firm's ability to absorb employees of acquired businesses with minimal disruptions to its work teams. In addition, a large employee base minimizes potential disruptions to the acquiring firm's corporate culture by making it easier to assimilate employees from acquired firms. Relatedly, we expect focused firms to have a greater exposure to integration-related personnel problems because all their employees belong to the same business unit into which employees of acquired firms are also integrated. This concentrates all acquisition-related personnel issues in a single business unit and increases the likelihood of firm-wide workforce disruptions.

Because each of these variables likely captures different aspects of a firm's exposure to acquisition-related workplace disruptions, we construct a composite measure of all three variables using principal component analysis. The measure has factor loadings of 0.88 on the percentage of industry employees in labor unions, -0.47 on the number of employees (natural log), and -0.10 on the number of business segments (natural log). Thus, the factor assigns higher scores to focused firms in highly unionized industries who have fewer employees. We therefore define firms with factor scores above the median as those that are vulnerable to potential integration-related personnel problems.

Table 8 presents results of regressions evaluating the impact of R&D intensity and the potential for acquisition-related workforce disruptions on the effectiveness of an acquisitive strategy. These regressions are analogous to those in earlier tables except that they include indicator variables for R&D-intensive firms and vulnerable firms as well as the interaction terms between these variables and our acquisitive strategy variable. In the Tobin's q regression in column (1), the interaction terms for acquisitive R&D-intensive firms and acquisitive vulnerable firms are both negative and significant. Their coefficients imply that an increase of one standard deviation in acquisitiveness is associated with a reduction of 6.3% in firm value for an R&D-intensive firm

and a reduction of 3.2% for a firm whose workforce is vulnerable to integration-related disruptions. The combined effect is a reduction of 9.5% in firm value for an R&D-intensive firm with a vulnerable workforce. Thus, the negative value effect of an acquisitive strategy is significantly larger for firms exposed to significant employee-related soft asset issues.

Results are similar in columns (2) and (3) for employee and total factor productivity, respectively. An R&D-intensive firm suffers reductions of 1.9% in revenue per employee and 1.7 percentage points in total factor productivity for an increase of one standard deviation in acquisitiveness while corresponding productivity losses are 3.0% and 2.3 percentage points for a firm with a vulnerable workforce. In contrast, revenue per employee increases by 1.0% for an increase of one standard deviation in acquisitiveness among firms that are neither R&D-intensive nor vulnerable to acquisition-related workforce distractions. Once again, the negative effect of an acquisitive strategy is present mainly among firms where employee-related soft assets and concerns are more pronounced.

Columns (4) and (5) present results for our corporate innovation variables. As the table shows, the interaction term for vulnerable firms is statistically insignificant in both regressions. Thus, potential exposure to acquisition-related workforce disruptions appears to play no significant role in the relation between acquisitiveness and corporate innovation output. In contrast, the interaction term for acquisitive R&D-intensive firms is negative and statistically significant while the standalone acquisitive strategy variable itself is insignificant. Thus, an acquisitive strategy affects the quantity and quality of corporate patents mainly among R&D-intensive firms, that is, when the need for employee relationship-specific investments is greater. The coefficients imply that, for an R&D-intensive firm, an increase of one standard deviation in acquisitiveness is associated with reductions of 4.7% and 2.7% in patents and citations per patent, respectively.

These results are significant for several reasons. First, they show that, relative to alternative strategies, an acquisitive strategy is largely inconsequential for many firms in that its net effect is immaterial. Second, they demonstrate the importance of implicit contracts between firms and employees especially when employees must cultivate relationship-specific investments for firm success. An acquisitive strategy provides repeated opportunities for the firm to breach such contracts ex post by using acquisitions to justify layoffs. Our results suggest that employees rationally cut back on such investments ex ante, resulting in poorer innovation, lower productivity, and depressed firm value. Finally, the results provide additional though indirect evidence that our main findings are not driven by confounding issues. If they were, then we should find no theoretically predictable differences in the effect of an acquisitive strategy on different firm types.

6. Summary and conclusion

We study M&A performance by evaluating the performance of acquisitive firms relative to firms employing other business strategies. Our basic intuition is that acquisitions are only one of several strategic alternatives for maximizing value. Evaluating an acquisitive strategy relative to others thus provides a more complete understanding of the effectiveness of acquisitions.

We define the extent of a firm's adoption of an acquisitive strategy based on the number of acquisitions it completed during the immediately preceding 5 years. We then relate this measure to firm value for a sample of over 21,000 observations on more than 2,600 firms during 1996–2014. We find that an acquisitive strategy is negatively associated with firm value, thus suggesting that acquisitions generally are a less effective tool for maximizing value. Several other tests show that this relation is explained by the impact of an acquisitive strategy on employee incentives and workforce conditions. An acquisitive strategy increases the opportunity for a firm to expropriate

employee relationship-specific investments via acquisition-related layoffs. Our results suggest that this discourages such investments ex ante, leading to poorer innovation output and lower employee and firm-level productivity. In addition, the negative effects of an acquisitive strategy are concentrated mainly among firms where employee-related soft assets are more important for value creation, such as R&D-intensive firms and those with a greater likelihood of integration-related workforce disruptions and other employee morale issues.

Mergers remain a significant piece of many firms' business strategy. Our results suggest the need for a careful evaluation of each firm's circumstances especially as they relate to employee skills, incentives, and morale before the adoption of an acquisitive strategy. We hope that these results encourage additional research that views acquisitions not just as one-off events or programs but as part of a strategy set and that seeks to further delineate when this choice is appropriate.

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Table 1. Distribution of acquisition, partnership, and organic growth activities

This table shows the distribution of years of different business development activities during the preceding 5 years by our sample firms (21,839 firm-year observations for 2,665 firms during 1996–2014). We code a firm as engaging in acquisition activity in a given year if it acquires 1 or more other businesses during that year. A firm engages in partnerships in a given year if it formed at least 1 new strategic alliance or joint venture with another firm (or firms) during that year. A firm engages in organic growth in a given year if its revenue-normalized net investment in operations is greater than the median for all Compustat firms in that year.

Years of activity	A: Acquisitions		B: Partnerships		C: Organic growth	
	Percent	Cum. %	Percent	Cum. %	Percent	Cum. %
0	22.0	22.0	42.5	42.5	5.8	5.8
1	21.7	43.7	20.7	63.1	14.2	20.0
2	19.2	62.9	12.5	75.6	21.4	41.4
3	16.1	79.0	8.4	84.0	22.8	64.2
4	12.3	91.3	7.2	91.2	19.4	83.6
5	8.7	100.0	8.8	100.0	16.4	100.0

Table 2. Summary statistics

The sample consists of 21,839 annual observations for 2,665 firms between 1996 and 2014. Total assets and revenue are in millions of dollars. Employees are in thousands. Tobin's q is the market value of common equity plus the book values of preferred equity and long-term debt, divided by the book value of assets. Leverage is the book value of long-term debt divided by total assets. Return on assets is operating income before depreciation divided by beginning-of-year total assets. R&D expenditures is R&D expense divided by revenue. Corporate diversification is the number of reportable business segments. CAPEX is capital expenditures divided by total assets. Fixed asset intensity is net property, plant, and equipment divided by total assets. CEO tenure is in years. CEO incentives is natural log of (1 +) the dollar sensitivity of CEO firm-specific wealth (option and stockholdings) to 1% change in the firm's stock price. Herfindahl index is revenue-based and constructed at the 4-digit SIC code level. For each year t , unweighted acquisitions is the number of acquisitions completed during years $t-1$ to $t-5$ while weighted acquisitions is the number of acquisitions completed in year $t-1$ plus 80%, 60%, 40%, and 20% of acquisitions completed in years $t-2$ through $t-5$, respectively. Unweighted partnerships and weighted partnerships are constructed analogously using new strategic alliances and joint ventures. Organic growth is average revenue-normalized net investment in operations during the preceding 5 years. All continuous variables are winsorized at the 1st and 99th percentiles.

	Mean	Standard deviation	First quartile	Median	Third quartile
Total assets	10,425.720	28,461.550	706.610	2,000.686	6,758.993
Revenue	5,742.540	12,401.300	616.506	1,575.612	4,777.500
Employees	19.183	38.856	2.121	5.852	16.900
Tobin's q	1.550	1.377	0.791	1.173	1.853
Leverage	0.189	0.165	0.038	0.171	0.294
Return on assets	0.105	0.109	0.050	0.094	0.153
Corporate diversification	2.424	1.468	1.000	2.000	3.000
R&D expenditures	0.048	0.237	0.000	0.000	0.033
CAPEX	0.051	0.053	0.018	0.036	0.066
Fixed asset intensity	0.272	0.236	0.084	0.200	0.409
CEO tenure	7.361	7.209	2.000	5.000	10.000
CEO incentives	5.290	1.671	4.295	5.331	6.367
Herfindahl index	0.257	0.201	0.120	0.192	0.335
Weighted acquisitions	2.265	2.527	0.200	1.400	3.200
Unweighted acquisitions	3.710	4.004	1.000	2.000	5.000
Weighted partnerships	1.862	3.061	0.000	0.600	2.200
Unweighted partnerships	3.156	5.119	0.000	1.000	4.000
Organic growth	0.066	0.324	0.000	0.026	0.076

Table 3. Acquisitive strategy and firm value

The dependent variable in all columns but (4) and (6) is Tobin's q , defined as is the market value of common equity plus the book values of preferred equity and long-term debt, divided by the book value of assets. The dependent variable in (4) is acquisition intensity while the dependent variable in (6) is acquisition-adjusted Tobin's q , defined at Tobin's q calculated using assets less acquisition spending in the denominator. Acquisition intensity is the natural log of (1 +) the weighted number of acquisitions completed during years $t-1$ through $t-5$, with weights of 1.0, 0.8, 0.6, 0.4, and 0.2, respectively. Partnership intensity is defined analogously, using new strategic alliances and joint ventures. Organic growth intensity is average revenue-normalized net investment in operations during years $t-1$ through $t-5$. Historical DV is average of the relevant dependent variable over years $t-1$ through $t-5$. Firm size is the natural log of total assets. Corporate diversification is the natural log of the number of reportable business segments. Leverage is the ratio of long-term debt to total assets. Return on assets is operating income before depreciation divided by total assets at the beginning of the year. R&D expenditures is R&D expense divided by revenue. CAPEX is capital expenditures divided by total assets. Fixed asset intensity is net property, plant, and equipment divided by total assets. CEO incentives is natural log of (1 +) the dollar sensitivity of CEO firm-specific wealth (option and stockholdings) to 1% change in the firm's stock price. CEO tenure is natural log of (1 +) the CEO's tenure in years. Herfindahl index is revenue-based and constructed at the 4-digit SIC code level. Columns (1), (2), (4) and (5) include year and 2-digit SIC code industry fixed effects. Columns (3), (7), and (8) include year and firm fixed effects. Column (4) is the first stage of a 2SLS model in which distance is the instrument for acquisition intensity. Column (5) is the second stage. Columns (1) – (6) are estimated over the full sample. Column (7) is estimated over firms with positive net investments in operations. Column (8) is estimated over firm-years with positive net investment in operations during which the firm either (1) scores above the sample median on the acquisition intensity and below median on the other two strategies, or (2) scores above the sample median on the partnership intensity and below median on acquisitiveness and organic growth, or (3) scores above the sample median on organic growth intensity and below median on acquisitiveness and partnering. Robust standard errors clustered at the firm level are in parentheses. Levels of statistical significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

Table 3 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Tobin's q</i>	<i>Tobin's q</i>	<i>Tobin's q</i>	<i>Acquisition intensity</i>	<i>Tobin's q</i>	<i>Adj. q</i>	<i>Tobin's q</i>	<i>Tobin's q</i>
Acquisition intensity	-0.109*** (0.025)	-0.109*** (0.017)	-0.062** (0.026)	----	-0.928** (0.471)	-0.102*** (0.023)	-0.056* (0.033)	-0.102*** (0.037)
Partnership intensity	0.129*** (0.026)	0.059*** (0.018)	-0.025 (0.030)	0.067*** (0.017)	0.112*** (0.038)	-0.014 (0.024)	-0.033 (0.038)	-0.124** (0.052)
Organic growth intensity	0.205** (0.082)	-0.063 (0.075)	0.068 (0.078)	-0.042* (0.025)	-0.096 (0.078)	0.044 (0.073)	0.205** (0.082)	0.049 (0.131)
Historical <i>q</i>	----	0.458*** (0.021)	0.242*** (0.025)	0.002 (0.008)	0.457*** (0.020)	0.216*** (0.025)	0.209*** (0.029)	0.157*** (0.052)
Firm size	-0.202*** (0.018)	-0.120*** (0.012)	-0.580*** (0.051)	0.157*** (0.010)	0.010 (0.076)	-0.501*** (0.046)	-0.645*** (0.067)	-0.488*** (0.066)
Corporate diversification	-0.191*** (0.029)	-0.042** (0.016)	-0.034 (0.033)	0.086*** (0.019)	0.032 (0.047)	-0.009 (0.032)	-0.027 (0.042)	0.001 (0.049)
Leverage	-0.402*** (0.132)	-0.114 (0.085)	-0.267** (0.120)	0.442*** (0.071)	0.247 (0.221)	0.052 (0.128)	-0.338** (0.152)	-0.153 (0.213)
Return on assets	5.410*** (0.388)	3.804*** (0.285)	3.669*** (0.320)	-0.169** (0.079)	3.711*** (0.277)	4.007*** (0.335)	4.120*** (0.312)	3.482*** (0.345)
R&D expenditures	1.196*** (0.159)	0.704*** (0.096)	0.225 (0.153)	-0.102*** (0.032)	0.655*** (0.097)	0.266 (0.166)	0.249 (0.201)	0.408*** (0.037)
CAPEX	2.044*** (0.404)	0.748*** (0.261)	0.905** (0.357)	0.068 (0.211)	0.770** (0.323)	0.761** (0.361)	0.672* (0.394)	1.052** (0.484)
Fixed asset intensity	-0.626*** (0.128)	-0.187** (0.076)	-0.396** (0.201)	-0.721*** (0.095)	-0.766** (0.358)	-0.404* (0.209)	-0.406* (0.229)	-1.071*** (0.272)
CEO incentives	0.238*** (0.015)	0.165*** (0.011)	0.200*** (0.013)	0.014** (0.006)	0.175*** (0.013)	0.201*** (0.013)	0.219*** (0.016)	0.159*** (0.019)
CEO tenure	-0.110*** (0.016)	-0.068*** (0.011)	-0.056*** (0.012)	0.017* (0.010)	-0.055*** (0.015)	-0.064*** (0.012)	-0.058*** (0.015)	-0.056*** (0.018)
Herfindahl index	-0.196*** (0.076)	-0.054 (0.046)	-0.043 (0.145)	0.056 (0.064)	0.002 (0.079)	-0.077 (0.140)	-0.054 (0.190)	0.115 (0.213)
Distance	----	----	----	-0.063** (0.024)	----	----	----	----
Observations	18,448	18,442	18,442	18,401	18,401	17,348	14,007	4,652
Adjusted <i>R</i> ²	0.463	0.604	0.318	0.344	0.489	0.310	0.318	0.313

Table 4. Acquisitive strategy and corporate cash flow

The dependent variable in (1) – (3) and (5) is after-tax operating cash flow less capital expenditures, normalized by beginning-of-year assets. The dependent variable in (4) is after-tax operating cash flow less capital expenditures, normalized by acquisition-adjusted beginning-of-year assets. Acquisition intensity is the natural log of (1 +) the weighted number of acquisitions completed during years $t-1$ through $t-5$, with weights of 1.0, 0.8, 0.6, 0.4, and 0.2, respectively. Partnership intensity is defined analogously, using new strategic alliances and joint ventures. Organic growth intensity is average revenue-normalized net investment in operations during years $t-1$ through $t-5$. Historical CF is the 5-year average of the dependent variable calculated over years $t-1$ to $t-5$. Firm size is the natural log of total assets. Corporate diversification is the natural log of the number of reportable business segments. Leverage is the ratio of long-term debt to total assets. Return on assets is operating income before depreciation divided by total assets at the beginning of the year. R&D expenditures is R&D expense divided by revenue. CAPEX is capital expenditures divided by total assets. Fixed asset intensity is net property, plant, and equipment divided by total assets. CEO incentives is natural log of (1 +) the dollar sensitivity of CEO firm-specific wealth (option and stockholdings) to 1% change in the firm's stock price. CEO tenure is natural log of (1 +) the CEO's tenure in years. Herfindahl index is revenue-based and constructed at the 4-digit SIC code level. Models (1), (2) and (5) include year and 2-digit SIC code industry fixed effects. Models (3) and (4) include year and firm fixed effects. Column (5) is the second stage of a 2SLS model in which acquisition intensity is instrumented using the 5-year average of the median distance (in thousands of miles) between a firm's headquarters and the headquarters of all other Compustat firms in each year. Robust standard errors clustered at the firm level are in parentheses. Levels of statistical significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

	(1) Cash flow	(2) Cash flow	(3) Cash flow	(4) Cash flow	(5) Cash flow
Acquisition intensity	-0.0006 (0.002)	-0.0040*** (0.001)	-0.0099*** (0.002)	-0.0071*** (0.002)	0.0007 (0.033)
Partnership intensity	-0.0074*** (0.002)	-0.0032** (0.001)	-0.0086*** (0.002)	-0.0094*** (0.002)	-0.0034 (0.003)
Organic growth intensity	-0.0105 (0.008)	0.0209** (0.008)	0.0080 (0.012)	0.0070 (0.012)	0.0209** (0.008)
Historical CF	----	0.4164*** (0.037)	0.1339*** (0.032)	0.1291*** (0.031)	0.4131*** (0.040)
Firm size	-0.0008 (0.002)	-0.0021** (0.001)	0.0138*** (0.003)	0.0152*** (0.003)	-0.0029 (0.005)
Corporate diversification	-0.0101*** (0.002)	-0.0066*** (0.002)	-0.0073*** (0.002)	-0.0078*** (0.002)	-0.0072** (0.003)
Leverage	-0.0131 (0.013)	-0.0090 (0.009)	-0.0467*** (0.013)	-0.0395*** (0.014)	-0.0110 (0.017)
R&D expenditures	-0.1320*** (0.008)	-0.0945*** (0.006)	-0.0696*** (0.017)	-0.0709*** (0.017)	-0.0977*** (0.006)
CAPEX	-0.8529*** (0.041)	-0.7668*** (0.036)	-1.0373*** (0.036)	-1.0605*** (0.037)	-0.7670*** (0.036)
Fixed asset intensity	0.0310*** (0.011)	0.0609*** (0.010)	0.0223 (0.017)	0.0182 (0.018)	0.0636*** (0.024)
CEO incentives	0.0137*** (0.001)	0.0109*** (0.001)	0.0085*** (0.001)	0.0088*** (0.001)	0.0109*** (0.001)
CEO tenure	-0.0057*** (0.001)	-0.0049*** (0.001)	-0.0016 (0.001)	-0.0016 (0.001)	-0.0049*** (0.001)
Herfindahl index	-0.0025 (0.008)	-0.0041 (0.005)	-0.0223* (0.012)	-0.0245** (0.012)	-0.0046 (0.006)
Observations	18,412	18,412	18,412	18,412	18,371
Adjusted R^2	0.350	0.467	0.251	0.245	0.467

Table 5. Acquisitive strategy and the riskiness of corporate cash flow

The dependent variable in (1)–(3) and (5) is the standard deviation of years t to $t+4$ after-tax operating cash flow less capital expenditures normalized by beginning-of-year assets. The dependent variable in (4) is the standard deviation of years t to $t+4$ after-tax operating cash flow less capital expenditures normalized by acquisition-adjusted beginning-of-year assets. Acquisition intensity is the natural log of (1 +) the weighted number of acquisitions completed during years $t-1$ through $t-5$, with weights of 1.0, 0.8, 0.6, 0.4, and 0.2, respectively. Partnership intensity is defined analogously, using new strategic alliances and joint ventures. Organic growth intensity is average revenue-normalized net investment in operations during years $t-1$ through $t-5$. Historical CFV is the 5-year average of the dependent variable calculated over years $t-1$ to $t-5$. Firm size is the natural log of total assets. Corporate diversification is the natural log of the number of reportable business segments. Leverage is the ratio of long-term debt to total assets. Return on assets is operating income before depreciation divided by total assets at the beginning of the year. R&D expenditures is R&D expense divided by revenue. CAPEX is capital expenditures divided by total assets. Fixed asset intensity is net property, plant, and equipment divided by total assets. CEO incentives is natural log of (1 +) the dollar sensitivity of CEO firm-specific wealth (option and stockholdings) to 1% change in the firm’s stock price. CEO tenure is natural log of (1 +) the CEO’s tenure in years. Herfindahl index is revenue-based and constructed at the 4-digit SIC code level. Models (1), (2), and (5) include year and 2-digit SIC code industry fixed effects. Models (3) and (4) include year and firm fixed effects. Column (5) is the second stage of a 2SLS model in which acquisition intensity is instrumented using the 5-year average of the median distance (in thousands of miles) between a firm’s headquarters and the headquarters of all other Compustat firms in each year. Robust standard errors clustered at the firm level are in parentheses. Levels of statistical significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

	(1) CF <i>riskiness</i>	(2) CF <i>riskiness</i>	(3) CF <i>riskiness</i>	(4) CF <i>riskiness</i>	(5) CF <i>riskiness</i>
Acquisition intensity	-0.0033*** (0.001)	-0.0031*** (0.001)	-0.0020** (0.001)	-0.0018* (0.001)	-0.0196 (0.020)
Partnership intensity	0.0033*** (0.001)	0.0022*** (0.001)	-0.0004 (0.001)	-0.0006 (0.001)	0.0033** (0.002)
Organic growth intensity	0.0015 (0.003)	-0.0091* (0.005)	-0.0009 (0.003)	-0.0011 (0.003)	-0.0098** (0.005)
Historical CFV	---	0.3925*** (0.077)	0.1818*** (0.059)	0.1808*** (0.059)	0.3899*** (0.075)
Firm size	-0.0058*** (0.001)	-0.0030*** (0.001)	-0.0108*** (0.002)	-0.0108*** (0.002)	-0.0004 (0.003)
Corporate diversification	-0.0044*** (0.001)	-0.0013 (0.001)	-0.0005 (0.001)	-0.0007 (0.001)	0.0002 (0.002)
Leverage	0.0122*** (0.004)	0.0064 (0.004)	-0.0013 (0.006)	-0.0002 (0.006)	0.0143 (0.011)
R&D expenditures	0.0372*** (0.004)	0.0237*** (0.004)	0.0011 (0.005)	0.0012 (0.005)	0.0232*** (0.004)
CAPEX	0.1955*** (0.021)	0.1212*** (0.022)	0.1242*** (0.018)	0.1215*** (0.018)	0.1219*** (0.022)
Fixed asset intensity	-0.0170*** (0.006)	-0.0079* (0.004)	-0.0072 (0.010)	-0.0067 (0.010)	-0.0196 (0.015)
CEO incentives	0.0005 (0.000)	0.0001 (0.000)	0.0009** (0.000)	0.0011*** (0.000)	0.0002 (0.000)
CEO tenure	-0.0009 (0.001)	-0.0000 (0.000)	0.0001 (0.001)	0.0001 (0.001)	0.0002 (0.001)
Herfindahl index	-0.0101*** (0.003)	-0.0060** (0.003)	0.0050 (0.006)	0.0053 (0.006)	-0.0048 (0.003)
Observations	16,756	16,756	16,756	16,756	16,724
Adjusted R^2	0.248	0.406	0.120	0.117	0.361

Table 6. Acquisitive strategy and corporate innovation

In Panel A, the dependent variable is the natural log of (1 +) the number of ultimately approved patent applications filed in each year. The dependent variable in Panel B is the natural log of (1 +) citations per patent. Acquisition intensity is the natural log of (1 +) the weighted number of acquisitions completed during years $t-1$ through $t-5$, with weights of 1.0, 0.8, 0.6, 0.4, and 0.2, respectively. Partnership intensity is defined analogously, using new strategic alliances and joint ventures. Organic growth intensity is average revenue-normalized net investment in operations during years $t-1$ through $t-5$. Historical DV is the 5-year average of the respective dependent variable calculated over years $t-1$ to $t-5$. Firm size is the natural log of total assets. Corporate diversification is the natural log of the number of reportable business segments. Leverage is the ratio of long-term debt to total assets. R&D expenditures is R&D expense divided by revenue. CAPEX is capital expenditures divided by total assets. Fixed asset intensity is net property, plant, and equipment divided by total assets. CEO incentives is natural log of (1 +) the dollar sensitivity of CEO firm-specific wealth (option and stockholdings) to 1% change in the firm's stock price. CEO tenure is natural log of (1 +) the CEO's tenure in years. Herfindahl index is revenue-based and constructed at the 4-digit SIC code level. Each regression is a Tobit model except for (3) and (6), which are second stages of 2SLS models in which acquisition intensity is instrumented using the 5-year average of the median distance (in thousands of miles) between a firm's headquarters and the headquarters of all other Compustat firms in each year. Each regression includes year and 2-digit SIC code industry fixed effects. Robust standard errors clustered at the firm level are in parentheses. Levels of statistical significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

	<i>Panel A: Patents</i>			<i>Panel B: Citations per patent</i>		
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
Acquisition intensity	-0.142* (0.076)	-0.014 (0.028)	-0.657** (0.308)	-0.057 (0.062)	-0.014 (0.032)	0.040 (0.151)
Partnership intensity	0.588*** (0.068)	0.058** (0.026)	0.058** (0.024)	0.321*** (0.055)	0.038 (0.028)	-0.001 (0.013)
Organic growth intensity	0.166** (0.079)	0.179*** (0.052)	0.056* (0.031)	0.151** (0.069)	0.134** (0.059)	0.027 (0.019)
Historical DV	----	1.146*** (0.017)	0.908*** (0.012)	----	1.185*** (0.025)	0.667*** (0.010)
Firm size	0.659*** (0.052)	0.061*** (0.020)	0.142*** (0.054)	0.404*** (0.042)	0.096*** (0.021)	0.002 (0.026)
Corporate diversification	0.085 (0.089)	-0.031 (0.033)	0.033 (0.034)	0.013 (0.070)	-0.013 (0.035)	-0.029* (0.018)
Leverage	-1.038*** (0.334)	-0.123 (0.118)	0.287 (0.178)	-0.717*** (0.270)	-0.060 (0.129)	-0.058 (0.093)
R&D expenditures	0.710*** (0.131)	0.126*** (0.043)	-0.006 (0.037)	0.487*** (0.111)	0.038 (0.045)	-0.019 (0.034)
CAPEX	1.884 (1.211)	0.125 (0.459)	0.531** (0.233)	0.861 (1.014)	-0.630 (0.617)	0.187 (0.144)
Fixed asset intensity	-1.464*** (0.543)	-0.365** (0.176)	-0.565** (0.228)	-1.066** (0.450)	-0.104 (0.212)	0.061 (0.115)
CEO incentives	0.049 (0.033)	0.045*** (0.013)	0.025*** (0.008)	0.044* (0.027)	0.018 (0.015)	0.009** (0.004)
CEO tenure	-0.130*** (0.048)	-0.030 (0.020)	0.004 (0.011)	-0.130*** (0.039)	-0.050** (0.022)	-0.009 (0.007)
Herfindahl index	-0.359 (0.283)	-0.095 (0.106)	0.004 (0.069)	-0.236 (0.238)	0.069 (0.104)	0.038 (0.034)
Observations	11,521	11,521	11,490	11,521	11,521	11,490
Adjusted/pseudo R^2	0.239	0.474	0.780	0.238	0.417	0.638

Table 7. Acquisitive strategy and firm productivity.

The dependent variable in Panel A is the natural log of sales per employee. The dependent variable in Panel B is total factor productivity, defined as residuals from industry-specific regressions of revenue on the number of employees, fixed assets, and year fixed effects. Acquisition intensity is the natural log of (1 +) the weighted number of acquisitions completed during years $t-1$ through $t-5$, with weights of 1.0, 0.8, 0.6, 0.4, and 0.2, respectively. Partnership intensity is defined analogously, using new strategic alliances and joint ventures. Organic growth intensity is average revenue-normalized net investment in operations during years $t-1$ through $t-5$. Historical DV is the 5-year average of the respective dependent variable calculated over years $t-1$ to $t-5$. Firm size is the natural log of total assets. Corporate diversification is the natural log of the number of reportable business segments. Leverage is the ratio of long-term debt to total assets. R&D expenditures is R&D expense divided by revenue. CAPEX is capital expenditures divided by total assets. Fixed asset intensity is net property, plant, and equipment divided by total assets. CEO incentives is natural log of (1 +) the dollar sensitivity of CEO firm-specific wealth (option and stockholdings) to 1% change in the firm's stock price. CEO tenure is natural log of (1 +) the CEO's tenure in years. Herfindahl index is revenue-based and constructed at the 4-digit SIC code level. Unionization is the percentage of unionized industry workers. Each regression includes year and 2-digit SIC code industry fixed effects except (3) which includes year and firm fixed effects. Column (4) is the second stage of a 2SLS model in which acquisition intensity is instrumented using the 5-year average of the median distance (in thousands of miles) between a firm's headquarters and the headquarters of all other Compustat firms in each year. Levels of statistical significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

Panel A: Sales per employee

	(1)	(2)	(3)	(4)
Acquisition intensity	-0.104*** (0.018)	-0.017*** (0.005)	-0.014** (0.006)	-0.456 (0.305)
Partnership intensity	0.105*** (0.016)	0.019*** (0.005)	0.005 (0.007)	0.050** (0.023)
Organic growth intensity	0.127*** (0.043)	0.045** (0.023)	0.035 (0.025)	0.039 (0.026)
Historical DV	---	0.906*** (0.008)	0.519*** (0.029)	0.860*** (0.037)
Firm size	0.073*** (0.012)	0.001 (0.003)	0.024** (0.012)	0.075 (0.052)
Corporate diversification	-0.128*** (0.022)	-0.013** (0.006)	-0.016 (0.012)	0.025 (0.028)
Leverage	-0.025 (0.081)	-0.041 (0.025)	-0.128*** (0.045)	0.160 (0.139)
R&D expenditures	-0.361*** (0.033)	-0.146*** (0.029)	-0.379*** (0.030)	-0.201*** (0.049)
CAPEX	0.553** (0.263)	0.150 (0.110)	0.362*** (0.115)	0.143 (0.144)
Fixed asset intensity	-0.626*** (0.120)	-0.114*** (0.031)	-0.340*** (0.073)	-0.442* (0.235)
CEO incentives	0.014** (0.007)	0.009*** (0.002)	0.009*** (0.003)	0.013*** (0.005)
CEO tenure	-0.019* (0.010)	-0.006* (0.003)	-0.006* (0.004)	0.003 (0.009)
Herfindahl index	-0.313*** (0.075)	-0.030* (0.016)	-0.000 (0.049)	-0.009 (0.035)
Unionization	-0.894*** (0.327)	0.031 (0.131)	-0.198 (0.171)	-0.072 (0.220)
Observations	16,971	16,962	16,962	16,922
Adjusted R^2	0.577	0.913	0.506	0.824

Panel B: Total factor productivity

	(1)	(2)	(3)	(4)
Acquisition intensity	-0.083 ^{***} (0.014)	-0.021 ^{***} (0.005)	-0.014 ^{**} (0.006)	-0.360 (0.245)
Partnership intensity	0.066 ^{***} (0.013)	0.014 ^{***} (0.005)	-0.002 (0.007)	0.037 ^{**} (0.018)
Organic growth intensity	0.076 ^{**} (0.035)	0.033 (0.023)	0.035 (0.029)	0.027 (0.026)
Historical DV	----	0.876 ^{***} (0.009)	0.431 ^{***} (0.023)	0.836 ^{***} (0.033)
Firm size	-0.002 (0.010)	-0.004 (0.003)	-0.024 ^{**} (0.011)	0.051 (0.040)
Corporate diversification	-0.091 ^{***} (0.017)	-0.009 (0.005)	-0.006 (0.010)	0.022 (0.023)
Leverage	-0.099 (0.064)	-0.038 [*] (0.022)	-0.127 ^{***} (0.037)	0.114 (0.109)
R&D expenditures	-0.305 ^{***} (0.034)	-0.142 ^{***} (0.027)	-0.354 ^{***} (0.037)	-0.185 ^{***} (0.042)
CAPEX	0.246 (0.191)	-0.207 ^{**} (0.091)	0.064 (0.091)	-0.210 [*] (0.116)
Fixed asset intensity	-1.498 ^{***} (0.086)	-0.247 ^{***} (0.029)	-0.831 ^{***} (0.064)	-0.537 ^{**} (0.218)
CEO incentives	0.015 ^{***} (0.006)	0.009 ^{***} (0.002)	0.011 ^{***} (0.003)	0.012 ^{***} (0.004)
CEO tenure	-0.020 ^{**} (0.008)	-0.010 ^{***} (0.003)	-0.007 [*] (0.004)	-0.003 (0.007)
Herfindahl index	-0.165 ^{***} (0.059)	-0.016 (0.015)	-0.004 (0.048)	0.005 (0.030)
Unionization	-0.667 ^{**} (0.269)	-0.016 (0.122)	-0.167 (0.158)	-0.093 (0.188)
Observations	16,952	16,937	16,937	16,897
Adjusted R^2	0.209	0.782	0.239	0.637

Table 8. Employee intangibles, acquisitive strategy, and corporate outcomes

Dependent variables are shown in the heading for each column. Tobin's q is the market value of common equity plus the book values of preferred equity and long-term debt, divided by the book value of assets. SLE is the natural log of sales per employee. TFP is residuals from industry-specific regressions of revenue on the number of employees, fixed assets, and year fixed effects. Patents is the natural log of (1 +) the number of ultimately approved patent applications filed in each year. Cites is the natural log of (1 +) citations per patent. Acquisition intensity is the natural log of (1 +) the weighted number of acquisitions completed during years $t-1$ through $t-5$, with weights of 1.0, 0.8, 0.6, 0.4, and 0.2, respectively. Partnership intensity is defined analogously, using new strategic alliances and joint ventures. Organic growth intensity is average revenue-normalized net investment in operations during years $t-1$ through $t-5$. R&D-intensive equals 1 for firms in the upper quartile of the distribution of R&D expenses to total assets, 0 otherwise. Vulnerable workforce equals 1 for firms in the upper half of the distribution of scores on a factor with loadings of 0.88 on the percentage of industry employees in labor unions, -0.47 on the number of employees (natural log), and -0.10 on the number of business segments (natural log), 0 otherwise. Historical DV is the 5-year average of the respective dependent variable calculated over years $t-1$ to $t-5$. Firm size is the natural log of total assets. Corporate diversification is the natural log of the number of reportable business segments. Leverage is the ratio of long-term debt to total assets. Return on assets is operating income before depreciation divided by total assets at the beginning of the year. CAPEX is capital expenditures divided by total assets. Fixed asset intensity is net property, plant, and equipment divided by total assets. CEO incentives is natural log of (1 +) the dollar sensitivity of CEO firm-specific wealth (option and stockholdings) to 1% change in the firm's stock price. CEO tenure is natural log of (1 +) the CEO's tenure in years. Herfindahl index is revenue-based and constructed at the 4-digit SIC code level. Columns (1) – (3) are OLS models with year and 2-digit SIC code industry fixed effects while (4) and (5) are Tobit models with the same fixed effects. Robust standard errors clustered at the firm level are in parentheses. Levels of statistical significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

Table 8 continued

	(1)	(2)	(3)	(4)	(5)
	<i>Tobin's q</i>	<i>SLE</i>	<i>TFP</i>	<i>Patents</i>	<i>Cites</i>
Acquisition intensity	-0.049** (0.019)	0.014* (0.007)	0.005 (0.007)	0.025 (0.044)	0.013 (0.053)
Partnership intensity	0.031 (0.020)	0.011** (0.005)	0.007 (0.005)	0.031 (0.027)	0.020 (0.029)
Organic growth intensity	-0.118 (0.108)	0.038** (0.018)	0.026 (0.020)	0.161*** (0.057)	0.129* (0.067)
R&D-intensive	0.455*** (0.061)	0.029** (0.014)	0.021 (0.013)	0.427*** (0.075)	0.329*** (0.093)
Vulnerable workforce	0.021 (0.041)	0.118*** (0.020)	0.096*** (0.015)	0.001 (0.081)	0.006 (0.091)
R&D-intensive × Acquisition intensity	-0.136*** (0.047)	-0.026*** (0.009)	-0.024*** (0.009)	-0.144*** (0.051)	-0.156*** (0.059)
Vulnerable workforce × Acquisition intensity	-0.068** (0.030)	-0.041*** (0.011)	-0.032*** (0.009)	0.052 (0.052)	0.085 (0.059)
Historical DV	0.478*** (0.021)	0.899*** (0.009)	0.871*** (0.009)	1.137*** (0.018)	1.183*** (0.026)
Firm size	-0.120*** (0.014)	0.017*** (0.004)	0.009*** (0.003)	0.082*** (0.022)	0.125*** (0.024)
Corporate diversification	-0.053*** (0.017)	0.002 (0.006)	0.005 (0.005)	0.002 (0.034)	0.012 (0.037)
Leverage	0.003 (0.100)	-0.049* (0.027)	-0.049** (0.024)	-0.031 (0.120)	-0.052 (0.137)
Return on assets	3.222*** (0.314)	----	----	----	----
CAPEX	0.741*** (0.272)	0.136 (0.110)	-0.218** (0.090)	-0.169 (0.480)	-0.861 (0.683)
Fixed asset intensity	-0.218*** (0.081)	-0.077* (0.030)	-0.218*** (0.029)	-0.255 (0.186)	-0.014 (0.237)
CEO incentives	0.173*** (0.011)	0.008*** (0.002)	0.009*** (0.002)	0.040*** (0.014)	0.013 (0.016)
CEO tenure	-0.072*** (0.012)	-0.006* (0.003)	-0.010*** (0.003)	-0.027 (0.021)	-0.045* (0.023)
Herfindahl index	-0.025 (0.050)	-0.018 (0.016)	-0.005 (0.015)	-0.047 (0.106)	0.113 (0.112)
Observations	16,966	16,962	16,937	10,256	10,256
Adjusted/pseudo R^2	0.598	0.912	0.780	0.474	0.411