Organization Capital and Mergers and Acquisitions[*]

Kai Li
Sauder School of Business, University of British Columbia
2053 Main Mall, Vancouver, BC V6T 1Z2
604.822.8353
kai.li@sauder.ubc.ca

Buhui Qiu
Rotterdam School of Management, Erasmus University
Burgemeester Oudlaan 50, 3062 PA Rotterdam
31.10.408.1450
bqiu@rsm.nl

Rui Shen
Nanyang Business School, Nanyang Technological University
50 Nanyang Avenue, Singapore 639798
65.6316.8798
shenrui@ntu.edu.sg

First version: March, 2013   This version: May, 2014

Abstract

Using a large sample of completed U.S. merger and acquisition (M&A) transactions over the period 1984-2011, we uncover one important source of value creation—acquirer organization capital as measured by capitalized selling, general, and administrative expense. We find that acquirers with more organization capital achieve significantly higher abnormal announcement period returns, and better post-merger operating and stock performance than acquirers with less organization capital. Post-merger, high organization-capital acquirers cut more on cost of goods sold, selling, general, and administrative expense, and reduce more leverage than do low organization-capital acquirers. We further find that the effect of acquirer organization capital on deal performance is stronger when the acquirer has a high status or is a serial acquirer. Our main findings are robust to different measures of organization capital and endogeneity concerns. We conclude that organization capital is one important means to realize merger gains.

Organization Capital and Mergers and Acquisitions

Abstract

Using a large sample of completed U.S. merger and acquisition (M&A) transactions over the period 1984-2011, we uncover one important source of value creation—acquirer organization capital as measured by capitalized selling, general, and administrative expense. We find that acquirers with more organization capital achieve significantly higher abnormal announcement period returns, and better post-merger operating and stock performance than acquirers with less organization capital. Post-merger, high organization-capital acquirers cut more on cost of goods sold, selling, general, and administrative expense, and reduce more leverage than do low organization-capital acquirers. We further find that the effect of acquirer organization capital on deal performance is stronger when the acquirer has a high status or is a serial acquirer. Our main findings are robust to different measures of organization capital and endogeneity concerns. We conclude that organization capital is one important means to realize merger gains.

1. Introduction

Organization capital, as characterized by Evenson and Westphal (1995, p. 2237)—"the knowledge used to combine human skills and physical capital into systems for producing and delivering want-satisfying products"—has long been recognized as an important factor in the production process of a firm. Examples of organization capital include Wal-Mart's supply chain management system, Dell's built-to-order distribution system, Microsoft's software development system, and Disney's animatronics and show design system. Not surprisingly, ever since Adam Smith,[1] economists have been closely studying the properties of organization capital and its effects on production output.[2] A number of finance and accounting studies show positive associations between organization capital and firm value and stock returns.[3]

In this paper, we examine whether and how organization capital helps create shareholder value through corporate mergers and acquisitions (M&As). By definition, organization capital is the body of knowledge and business processes and systems to facilitate the match between human capital and physical capital, and more organization capital improves the match leading to operational efficiency. Such body of knowledge is potentially transferrable from one organization (e.g., the acquirer) to another (e.g., the target firm).

The experience of Danaher Corporation illustrates the role of organization capital in M&As and in creating shareholder value. Danaher Corporation, headquartered in Washington D.C., is one of the largest manufacturing companies in the U.S. with over 50,000 employees. Its products are concentrated in the fields of design, manufacture, and marketing of industrial and consumer products. It operates in four segments: Professional Instrumentation, Medical Technologies, Industrial

---

[1] See the first chapter of "*The Wealth of Nations*" (Smith (1776)).
[2] See, for example, Marshall (1930), Arrow (1962), Rosen (1972), Jovanovic (1979), Prescott and Visscher (1980), Becker (1993), Ericson and Pakes (1995), Hall (2000), Tomer (1987), Jovanovic and Rousseau (2001), Atkeson and Kehoe (2005), McGrattan and Prescott (2010), and Bloom, Sadun, and Reenen (2012).
[3] See, for example, Lev and Sougiannis (1996), Chan, Lakonishok, and Sougiannis (2001), Lev and Radhakrishnan (2005), Lev, Radhakrishnan, and Zhang (2009), Eisfeldt and Papanikolaou (2013), and Hirshleifer, Hsu, and Li (2013).

Technologies, and Tools & Components. The science and technology giant, according to Anand, Collis, and Hood (2011), has "a systematic and wide-ranging set of organizational processes the firm has developed to drive growth and create value," which is named Danaher Business System (DBS). Since the 1980s, the firm has acquired several hundred companies and successfully applied DBS to the acquired firms to capture operational efficiency gains from the combination. Over the years, Danaher has achieved phenomenal growth and created tremendous shareholder value via acquisitions.

In this paper, we ask the following research questions: Do firms with more (less) organization capital make good (bad) acquirers in the market for corporate control? What are the underlying mechanisms? Although prior work has shown a positive association between organization capital and firm value, our study aims to identify one particular channel through which organization capital creates value.

Using a large and comprehensive sample of completed U.S. merger and acquisition transactions over the period 1984-2011, we examine the role of acquirer organization capital in corporate acquisitions. Following Eisfeldt and Papanikolaou (2013), we measure the stock of organization capital of an acquirer using capitalized selling, general, and administrative (SG&A) expense, a large part of which consists of expenses related to labor and information technology (IT) (white collar worker wages, training, consulting, and information technology expenses).

We show that acquirers with more organization capital achieve significantly higher abnormal announcement period returns, and better post-merger operating and stock performance than acquirers with less organization capital. *Ceteris paribus*, a one-standard-deviation increase in pre-acquisition organization capital of the acquirer is on average associated with 0.26 percentage points increase in abnormal announcement period returns, 1.49 percentage points increase in post-merger three-year improvement in operating performance, and 7.84 percentage points increase in post-merger three-year buy-and-hold abnormal returns. Using alternative measures of organization capital and controlling for corporate governance practices of the acquirer does not change our main findings.

2

To shed light on how organization capital helps create shareholder value in M&As, we first examine post-merger corporate policy changes associated with high organization-capital acquirers. We find that within the three-year period after deal completion, high organization-capital acquirers cut more on cost of goods sold, selling, general, and administrative expense, and reduce more leverage compared to low organization-capital acquirers. We further examine what acquirer characteristics are conducive to the effect of acquirer organization capital on deal performance. We find that the effect of acquirer organization capital on deal performance is strengthened when the acquirer has a high status as measured by excess analyst coverage, or the acquirer is a serial acquirer.

Naturally, there are concerns that our findings may be driven by endogeneity. One concern is selection whereby high organization-capital acquirers simply choose better deals, rather than their organization capital makes those deals better. Another is that omitted variables drive both acquirers to have more organization capital and deals to be better. A third concern is reverse causality. We address these concerns in a number of ways.

To help separate the selection from treatment effects of acquirer organization capital, we employ the difference-in-differences (DD) estimators that are commonly used to recover the treatment effects. The identification challenge is that the association between acquirer organization capital and deal outcome could be due to the endogenous selection of firms into a treatment group, rather than due to the impact of acquirer organization capital on post-merger deal outcome. We employ a sample of acquirers with failed merger bids for reasons unrelated to acquirer organization capital and compare their subsequent performance with a sample of acquirers in completed deals matched on pre-bid performance measures. We show that high organization-capital acquirers in completed deals perform significantly better than their counterparts with failed merger bids, suggesting that there is likely a causal relation between more acquirer organization capital and better deal outcome.

To address the omitted variable concern whereby an unobservable causing both more acquirer organization capital and better deal outcome leading to spurious association between the two and

3

reverse causality, we employ the instrumental variable approach to extract the exogenous component of acquirer organization capital and relate it to deal performance. Our instrumental variable captures the demand side consideration for firms to invest in organization capital—the industry-level growth uncertainty. Given that this variable is correlated with industry-level merger waves, we employ the residual as the instrumental variable from regressing the industry-level growth uncertainty on the industry-level merger activity. We find that after instrumenting acquirer organization capital, there remains a significant positive association between the exogenous component of acquirer organization capital and post-merger acquirer performance.

Our paper differs from prior work and thus makes contributions to the literature in the following dimensions. First, we add to the voluminous M&A literature by uncovering one important source of value creation—acquirer organization capital (see, for example, the two volumes on corporate takeovers edited by Eckbo (2010a, 2010b)). Using a multitude of approaches including post-merger policy changes in acquirers, a quasi-natural experiment involving failed merger bids, and the instrumental-variable approach, we establish a causal link between more acquirer organization capital and better deal outcome.

Second, we add to the young and growing literature on organization capital and firm performance (see, for example, Chan, Lakonishok, and Sougiannis (2001) and Eisfeldt and Papanikolaou (2013)) by identifying one important channel through which organization capital contributes to firm value—making value-enhancing M&As whereby acquirers apply their superior organization capital to improve operational efficiency of the combined entity.

Finally, we add to the literature on the importance of intangibles in firm value and corporate policy. Prior work shows that reputation, employee satisfaction, and organization capital are associated with sustained superior financial performance (see for example, Roberts and Dowling (2002), Lev, Radhakrishnan, and Zhang (2009), and Edmans (2011)). Carlin and Gervais (2009) study how managerial diligence and employee work ethic affect employment contracts and firm value.

Berk, Stanton, and Zechner (2010) and Falato, Kadyrzhanova, and Sim (2013) highlight the importance of human capital in corporate financial policy. Our findings in this paper suggest that organization capital has important implications for corporate acquisition policy—high organization-capital firms make better deals.

The paper proceeds as follows. In the next section, we review related literature and develop our hypotheses. We describe our sample formation and construction of key variables and provide a sample overview in Section 3. We present the main results on the role of organization capital in M&As in Section 4. In Section 5, we examine the underlying mechanisms behind the effect of organization capital on deal performance. We address endogeneity concerns in Section 6 and conclude in Section 7.

2. Literature Review and Hypothesis Development

2.1. Related Literature

Our paper is closely related to and motivated by two strands of the literature. First, there is a large M&A literature examining what type of firms makes a good acquirer. According to Andrade, Mitchell, and Stafford (2001) and Betton, Eckbo, and Thorburn (2008), over half of the M&A deals destroy acquirer shareholder value, and on average, acquirer shareholders at best breakeven. This begs the question of why M&As still take place. The literature has put forward many explanations, such as agency problems, hubris, overvaluation of equity, financial and operating synergies, and industry shocks, for the sources of value creation and destruction. A recent literature further suggests that certain acquirer characteristics are associated with superior deal performance, such as low cash holdings (Harford (1999)), small firm size (Moeller, Schlingemann, and Stulz (2004)), the presence of monitoring shareholders (Chen, Harford, and Li (2007)), and good corporate governance practices (Masulis, Wang, and Xie (2007)). We contribute to the M&A literature by demonstrating a new source

of value creation—an acquirer's organization capital.

Second, there is a growing finance and accounting literature studying the relations between organization capital or components of organization capital and firm policies and performance. In one of the first studies in this area, Lev and Sougiannis (1996) document a significant association between firms' R&D capital and subsequent stock returns, suggesting either a systematic mispricing of the shares of R&D-intensive companies, or a compensation for an extra-market risk factor associated with R&D. Chan, Lakonishok, and Sougiannis (2001) further demonstrate that stock prices do not fully value firms' intangible assets—R&D and advertising expenses—by showing that firms with high R&D (advertising expense) to equity market value earn large excess returns. Lev and Radhakrishnan (2005) and Lev, Radhakrishnan, and Zhang (2009) show that a firm's organization capital is an important determinant of its operating performance and firm value. Lustig, Syverson, and Van Nieuwerburgh (2011) demonstrate that organization capital contributes to increased CEO pay inequality and pay-performance sensitivity and the accompanying decrease in labor market reallocation. Carlin, Chowdhry, and Garmaise (2012) further show that high organization-capital firms experience low employee turnover, and possess high diversity in skill and wages among incumbent employees who are promoted from within the firm. Using the stock of assets created by R&D expense, computer software expenditures, and human and organizational capital, Falato, Kadyrzhanova, and Sim (2013) show that the rise in intangible capital explains a big part of U.S. firms' large cash holdings. Eisfeldt and Papanikolaou (2013) develop a model to show that the time-varying division of cash flows from organization capital between shareholders and key talent of the firm imposes an additional risk to shareholders. As a result, firms with more organization capital have average returns that are 4.6% higher than firms with less organization capital. On the other hand, Hirshleifer, Hsu, and Li (2013) attribute the return predictive ability of innovation efficiency (i.e., the ratio of patents to R&D expense) to mis-pricing and investor inattention.

2.2. Our Hypotheses

As defined in the introduction, and further elaborated by Lev, Radhakrishnan, and Zhang (2009, p. 276) that firms with more organization capital possess "the agglomeration of business processes and systems, as well as a unique corporate culture, that enables them to convert factors of production into output more efficiently than competitors." Importantly, this agglomeration of business processes and systems cannot be easily mimicked by competitors, thus more organization capital captures firms' fundamental ability to generate superior performance.

However, Lustig, Syverson, and Van Nieuwerburgh (2011) and Eisfeldt and Papanikolaou (2013) argue that at least part of a firm's organization capital is embodied in its key talent and, thus, can be transferred to other firms as a result of job changes. Bloom, Sadun, and Van Reenen (2012; pp. 169) provide further evidence that, "…US multinationals partially transfer their business models to their overseas affiliates—and a walk into McDonald's or Starbucks anywhere in Europe suggests that this is not an unreasonable assumption…."

In the M&A setting, using survey data of 101 horizontal acquisitions conducted by U.S. and European acquirers, Capron and Pistre (2002) find that acquirers often transfer their own product innovation capabilities, marketing expertise, and general management expertise to target firms, and such (expected) knowledge transfer from acquirers to target firms is positively associated with acquirer abnormal announcement period returns. Using both the U.K. and continental European plant-level datasets, Bloom, Sadun, and Reenen (2012) show that affiliates of U.S. multinationals achieve higher productivity than non-U.S. multinationals and domestic firms from their IT capital and are also more IT intensive. They further show that U.S. multinationals' superior management practices account for most of their higher output elasticity of IT.

By mobilizing and exploiting its superior organization capital, we expect that a high organization-capital acquirer will realize greater operating performance improvement and reap more

synergistic gains after the acquisition than does a low organization-capital acquirer.[4] In an efficient

market, such long-term gains to the acquirer should be at least partially reflected in announcement

period returns and most likely reflected in post-merger long-run operating and stock performance. We

thus have our hypotheses as follows:

> *H1: Acquisitions made by high organization-capital acquirers are associated with higher*
> *announcement period returns than those by low organization-capital acquirers.*
>
> *H2: Acquisitions made by high organization-capital acquirers are associated with better post-*
> *merger operating and stock performance than those by low organization-capital acquirers.*

One alternative is that high organization-capital acquirers are simply good at picking better

deals, and there is no transferring of organization capital from acquirers to target firms. Another

possibility is that unobservable firm characteristics lead to both more organization capital and better

deals. A third possibility is the reverse causality story whereby successful acquisitions generate more

organization capital in the acquirers.

Our empirical analyses are designed to test the two hypotheses and also attempt to distinguish

between the alternative explanations. In the next section we describe our sample and key variable

construction and present descriptive statistics.

3. Sample Formation and Overview

3.1. Our Sample

We obtain a large and comprehensive sample of completed M&A transactions from the

---

[4] We focus on the role of acquirer organization capital in M&As for the following reasons. First, organization capital is more about the body of knowledge and business processes and systems that make a firm excel, not just about the technology (as modeled in Faria (2008)). Typically, acquirers are much larger than target firms and are more likely to apply their organization capital to target firms as modeled in Carlin, Chowdhry, and Garmaise (2011) and shown in our motivating example in the introduction instead of the other way around. Second, after deal completion, acquirer managers are most likely to be in charge of the merged entity. If acquirers had low organization capital to start with as reflected in low-efficiency business processes and systems and poor managerial skills, then these acquirer managers might not be able to fully utilize target firms' organization capital, or even destroy target firms' organization capital. It is thus harder to detect any meaningful association between target firm organization capital and deal outcome.

Thomson One Banker SDC database for the period 1984-2011. We impose the following filters to obtain our final sample: 1) the deal is classified as "Acquisition of Assets (AA)", "Merger (M)," or "Acquisition of Majority Interest (AM)" by the data provider;[5] 2) the acquirer is a U.S. public firm listed on the AMEX, NYSE, or NASDAQ; 3) the acquirer holds less than 50% of the shares of the target firm before deal announcement and ends up owning 100% of the shares of the target firm through the deal;[6] 4) the deal value is at least $1 million (in 1983 dollar value); 5) the relative size of the deal (i.e., the ratio of transaction value over book value of acquirer total assets) is at least 1%; 6) the target firm is domiciled in the U.S.; 7) the target firm is a public firm, a private firm, or a subsidiary; and 8) basic financial and stock return information is available for the acquirer. Our final sample consists of 16,804 completed deals for the period 1984-2011.

Table 1 Panel A provides a sample overview. We see a large merger wave centered around the Internet bubble, and a smaller wave in the period leading to the recent financial crisis. Half of the deals involve private target firms, about 30% of the deals aim at subsidiaries, and the rest of the target firms are publicly listed.

3.2. Measuring Organization Capital

Following Lev and Radhakrishnan (2005), Lev, Radhakrishnan, and Zhang (2009), and Eisfeldt and Papanikolaou (2013), we measure a firm's stock of organization capital using capitalized SG&A expense.[7] Among other items, SG&A expense includes IT investments, consulting, employee training costs, advertising and marketing expense, research and development expense, and

---

[5] According to Netter, Stegemoller, and Wintoki (2011), these three deal forms capture about 98% of M&A deals covered by the Thomson One Banker SDC database during the period 1992-2009.

[6] In unreported analysis, we find that acquirer organization capital has no significant association with target firms' corporate policy changes in partial acquisitions.

[7] Eisfeldt and Papanikolaou (2013) cross-validate this measure of organization capital in a number of ways. First, they show that high organization-capital firms have higher managerial quality scores according to the measure of Bloom and Van Reenen (2007). Second, high organization-capital firms spend more on information technology. Finally, high organization-capital firms are also more likely to list "loss of key personnel" as a risk factor in their 10-K filings.

information systems and distribution channel investments, which are expenses aimed at improving a firm's competitive edge, hence its organization capital.

We compute the stock of organization capital (OC) using the perpetual inventory method. Specifically, we recursively estimate the stock of organization capital by cumulating the deflated value of SG&A expense,

$$OC_{i,t} = (1 - depr_{OC})OC_{i,t-1} + \frac{SG\&A_{i,t}}{cpi_t},$$ (1)

where $depr_{OC}$ is the depreciation rate and cpi_t is the consumer price index. To implement the law of motion in Equation (1), we first choose the initial stock according to

$$OC_{i,0} = \frac{SG\&A_{i,1}}{g + depr_{OC}},$$

where the average real growth rate of firm-level SG&A expense, g, is industry-specific (at the two-digit SIC level) and depends on which year firm i first enters the Compustat database, and the depreciate rate is 15%, which is the depreciation rate used by the BEA in their estimation of R&D capital in 2006 (Eisfeldt and Papanikolaou (2013)).[8] $SG\&A_{i,1}$ is firm i's first-year SG&A with non-missing data in Compustat. During our sample period, 81.9% of Compustat firm-year observations have valid (i.e., non-missing) information on SG&A expense. We treat subsequent missing values of firm i's SG&A as zero. Finally, we scale organization capital by a firm's book value of total assets.

Given that organizational capital is a relatively new concept in the finance and accounting literature, it is important to understand how organization capital is correlated with other firm characteristics. We compute organization capital for each firm in the Compustat universe and then sort firms into organization capital quartile every year during the sample period 1984-2011. Table A1 Panel A in the Appendix compares firm characteristics between firms in the top and bottom organization capital quartiles.

---

[8] It is worth noting that our results are robust to choices of the depreciation rate ranging between 10% and 40%.

We first show that more organization capital is associated with low contemporaneous ROA (using the median provides opposite conclusion). This is not surprising because organization capital is based on capitalized SG&A expense, which is a cash expense in computing ROA. On the other hand, investment in organization capital is expected to improve firm performance over time. We show that more organization capital is associated with a bigger improvement in ROA in the next year. Importantly, we show that firms with more organization capital are associated with lower cost of goods sold (hence higher gross profit margin). Finally, we show that firms with more organization capital tend to be much smaller, and have lower sales growth, higher M/B, higher cash holdings and lower leverage than firms with low organization capital. Table A2 Panel B presents the correlation matrix between organization capital and firm characteristics. The same pattern emerges as that in Panel A.

3.3. Measures of Deal Performance

Following prior work (see, for example, Chen, Harford, and Li (2007) and Masulis, Wang, and Xie (2007)), we employ a number of deal performance variables: *CAR(-1, 1), ΔROA1, ΔROA3, BHAR1,* and *BHAR3.* The reason for us to have multiple post-merger long-run performance measures is that serial acquirers are quite common (Fuller, Netter, and Stegemoller (2002)), and we want to capture the long-run performance effect of a particular deal, so the one-year window seems to be a nice compromise to the three-year window typically used to measure long-run performance. Further, when computing long-run performance measures, we remove any acquirers subsequently making other large acquisitions (as defined to be the ratio of transaction value to book value of acquirer total assets greater than 1%) over the one-year or three-year window. Our results do not change in any qualitative manner if we do not remove such acquirers (with confounding deals) when computing long-run performance measures.

CAR(-1, 1) is the cumulative abnormal return (in percentage points) of the acquirer from one

day before to one day after the deal announcement date (day *0*). Daily abnormal stock return is calculated by subtracting the CRSP value-weighted market return from the stock return of the acquirer.[9] *ΔROA3* is the average return on assets (ROA) (in percentage points) of the acquirer in the three-year period after deal completion minus ROA of the acquirer in the year prior to deal announcement. *ΔROA1* is the change in acquirer ROA from the year before deal announcement to the year after deal completion. *BHAR3* (*BHAR1*) is the three-year (one-year) buy-and-hold abnormal stock return (in percentage points) of the acquirer after deal completion following Chen, Harford and Li (2007; pp. 287).

Table 1 Panel B provides basic summary statistics. Table A2 in the Appendix provides detailed definitions of all variables. All dollar values are in 2011 dollars. All continuous variables are winsorized at the 1st and 99th percentiles.

We show that the mean *CAR(-1, 1)* is positive at 1.37%, and the median is 0.61%. By comparison, Moeller, Schlingemann, and Stulz (2004) report a mean (median) acquirer *CAR(-1, 1)* of 1.1% (0.36%) for 12,023 acquisitions from 1980 to 2001, and Betton, Eckbo, and Thorburn (2008) report a mean (median) acquirer *CAR(-1, 1)* of 0.73% (0%) for 15,987 transactions from 1980 to 2005. In contrast, post-merger long-run operating and stock performance is dismal with negative mean and median values, confirming prior findings that most acquisitions do not create shareholder value in the long run (Loughran and Vijh (1997), and Betton, Eckbo, and Thorburn (2008)).[10]

The mean (median) ratio of organization capital to total assets is 1.04 (0.79). By comparison, Eisfeldt and Papanikolaou (2013, Table 3) report the median ratio of organization capital to total assets is 0.27 for the low organization capital quintile and 2.71 for the high organization capital

---

[9] It is worth noting that our main results do not change qualitatively if daily abnormal stock returns are computed using the market model and the CRSP value-weighted market returns, with the estimation window being days (-200, -60) prior to the deal announcement date (Chen, Harford, and Li (2007)).

[10] For comparison, Loughran and Vijh (1997) show that the average five-year BHAR for a sample of 788 deals over the period 1970-1989 is −15.9%, and Betton, Eckbo, and Thorburn (2008) show that the average five-year BHAR for a sample of 15,298 deals over the period 1980-2003 is −21.9%.

quintile.

Before making acquisitions, acquirers have positive mean (median) ROA of 3.04% (4.21%), mean (median) M/B of 3.68 (2.41), and strong stock returns in the year prior to making a bid with a mean (median) value of 36.7% (19.4%). The mean (median) leverage ratio of acquirers is 0.19 (0.13), and the mean (median) fraction of shares outstanding held by the top five institutional investors is 0.21 (0.20). In terms of the Compustat size decile, our average (median) acquirer is in the 9th (7th) decile.

In terms of deal characteristics, about a quarter of the deals use cash, a fifth use stock, and the rest employs a mix of cash and stock. Close to 40% of the deals are diversifying deals involving acquirer and target firms belonging to different two-digit SIC codes. Less than 5% of the deals are tender offers. The mean (median) ratio of the transaction value to acquirer book assets is 0.37 (0.12). Most of the sample characteristics are generally comparable to those reported in the literature (see, for example, Andrade, Mitchell, and Stafford (2001), Moeller, Schlingemann, and Stulz (2004), and Bena and Li (2012)).

Table 1 Panel C presents the correlation matrix of the variables. We show that acquirer organization capital is positively and significantly associated with *CAR(-1, 1)* and *BHAR1* at the 1% level. The correlation matrix suggests little problem of multicolinearity. Given that omitted variable bias in univariate correlations can mask the true relations between the variables, next we employ multiple regressions to examine the role of acquirer organization capital in M&As.

4. Main Results

4.1. Acquirer Organization Capital and Deal Performance

To test our hypotheses, we run cross-sectional regressions of the deal performance variables on pre-acquisition acquirer organization capital and other firm and deal controls:

$$Deal\ Performance_{i,t} = \alpha + \beta_1 OC_{i,t-1} + \beta_2 ROA_{i,t-1} + \beta_3 M/B_{i,t-1} + \beta_4 Leverage_{i,t-1} +$$

$$\beta_5 Past\ Return_{i,t-1} + \beta_6 Top5\ institutions_{i,t-1} + \beta_7 Firm\ size_{i,t-1} + \beta_8 All\ cash_{i,t} +$$

$$\beta_9 All\ stock_{i,t} + \beta_{10} Diversifying_{i,t} + \beta_{11} Tender\ offer_{i,t} + \beta_{12} Relative\ size_{i,t} +$$

$$\beta_{13} Private\ target_{i,t} + \beta_{14} Subsidiary\ target_{i,t} + Industry\ FEs + Year\ FEs + \varepsilon_{i,t} \qquad (2)$$

where the dependent variable could be one of the five deal performance measures: *CAR(-1, 1)*,
ΔROA1, *BHAR1*, *ΔROA3*, and *BHAR3*. The control variables closely follow prior literature (see
Andrade, Mitchell, and Stafford (2001), Moeller, Schlingemann, and Stulz (2004), and Chen, Harford,
and Li (2007)). In all specifications, we control for industry (at the two-digit SIC level) and year fixed
effects and present standard errors that are clustered by acquirers and robust to heteroskedasticity.

Table 2 Panel A presents the regression results. In column (1), we show that acquirer
organization capital is positively and significantly associated with acquirer abnormal announcement
period returns at the 1% level, lending strong support for our first hypothesis (H1). In terms of the
economic significance, one standard deviation increase in acquirer organization capital is associated
with 0.26% increase in *CAR(-1, 1)*, noting that the sample mean *CAR(-1, 1)* is 1.37%. Given that the
average market capitalization of the acquirers at two days before the announcement is $3,650 million,
the positive price reaction corresponds to an average increase in acquirer market capitalization by
about $10 million.

In columns (2)-(5), we show that acquirer organization capital is positively and significantly
associated with all measures of post-merger long-run performance at the 1% level, lending strong
support for our second hypothesis (H2). In terms of the economic significance, one standard deviation
increase in acquirer organization capital is associated with 1.21% in *ΔROA1*, 3.46% in *BHAR1*, 1.49%
in *ΔROA3*, and 7.84% in *BHAR3*, noting that both mean and median values for these four measures
are negative.

In addition to the above key findings, we further show that pre-acquisition acquirer ROA and

M/B are negatively and significantly associated with post-merger changes in ROA, the former being consistent with the well-known mean reversion pattern in ROA (Fama and French (2000)) and the latter being consistent with the long-run underperformance of glamour (i.e., high M/B) acquirers (Rau and Vermaelen (1998)). Ownership by the five largest institutions is negatively and significantly associated with acquirer abnormal announcement period returns, while positively and significantly associated with post-merger changes in acquirer ROA. Acquirer size is negatively and significantly associated with acquirer abnormal announcement period returns, but positively and significantly associated with most of the post-merger long-run performance measures. All cash deals are mostly positively associated with deal performance, while all stock deals are mostly negatively associated with deal performance. Tender offers, large targets relative to acquirers, private targets, and subsidiary targets are positively and significantly associated with acquirer abnormal announcement period returns. Our findings on the control variables are generally consistent with those documented in the M&A literature (see, for example, Harford (1999), Fuller, Netter, and Stegemoller (2002), Moeller, Schlingemann, and Stulz (2004), and Betton, Eckbo, and Thorburn (2008)), which gives us some confidence in our findings on the positive association between acquirer organization capital and deal performance.

4.2. Decomposing Acquirer Organization Capital

As we discussed earlier, SG&A expense includes many items that are not necessarily all contributing to a firm's competitive edge, hence its organization capital. It would be informative if we could pinpoint particular aspects of SG&A expense that are associated with better post-merger performance outcome.

During our sample period 1984-2011, 45.8% of Compustat firm-year observations have valid (i.e., non-missing) information on R&D expense, and 34.5% of Compustat firm-year observations have valid (i.e., non-missing) information on advertising expense. We decompose acquirer

organization capital into three components: OC due to R&D, OC due to marketing, and OC due to human capital and business processes and systems.[11] We capitalize R&D expense and advertising expense, treating missing values as zero, following the same specification as in Equation (1). The OC component due to human capital and business processes and systems (i.e., *OC_Residual*) is obtained as the difference between acquirer organization capital and the sum of *OC_R&D* and *OC_Advertising*.[12]

Table 2 Panel B presents the regression results based on Equation (2) where we replace acquirer organization capital by its three components. In column (1), we show that acquirer *OC_R&D* is negatively and significantly, while acquirer *OC_Advertising* and *OC_Residual* are both positively and significantly, associated with acquirer abnormal announcement period returns. In terms of the economic significance, one standard deviation increase in acquirer *OC_R&D* is associated with 0.19% decrease in *CAR(-1, 1)*, while one standard deviation increases in acquirer *OC_Residual* is associated with 0.37% increases in *CAR(-1, 1)*, respectively.

In columns (2)-(5), we show that acquirer *OC_R&D* is positively and significantly associated with post-merger one-year buy-and-hold abnormal returns at the 5% level, while is negatively and significantly associated with post-merger three-year long-run operating performance at the 5% level. We further show that acquirer *OC_Advertising* is not significantly associated with any of the post-merger long-run performance measures. Importantly, we show that acquirer *OC_Residual* is positively and significantly associated with all measures of post-merger long-run performance at the 1% level, lending strong support for our second hypothesis (H2). In terms of the economic significance, one standard deviation increase in acquirer *OC_Residual* is associated with 2.31% increase in *ΔROA1*,

---

[11] In software industry (3-digit SIC code: 737), R&D expense is not part of SG&A expense but part of cost of goods sold. So for that industry we do not deduct capitalized R&D expense from OC when calculating *OC_Residual*.
[12] The correlations between *OC_R&D* and *OC_Advertising*, between *OC_R&D* and *OC_Residual*, and between *OC_R&D* and *OC_Residual* are 0.08, 0.27, and 0.37, respectively. The standard deviation of *OC_R&D* is 0.216, and the standard deviation of *OC_Residual* is 1.092.

3.52% increase in *BHAR1*, 2.94% increase in *ΔROA3*, and 11.47% increase in *BHAR3*.

4.3. Using Alternative Measures of Acquirer Organization Capital

There are several concerns about our measure of organization capital. First, accounting practices governing the exact composition of SG&A expense vary across industries, and hence the measurement error in firm-level organization capital may have an industry component. To address this concern, instead of using the construct for organization capital directly, we use the industry-median adjusted ratio of organization capital to total assets. Table 3 Panel A presents the results. For brevity, we only present the coefficient estimate on acquirer organization capital in this table. We show that industry-median adjusted acquirer organization capital is positively and significantly associated with deal performance using all five performance measures.

Second, organization capital might be measured with error, because the primary input to the measure—SG&A expense might contain expenses not directly related to building up a firm's unique business processes and systems that lead to its competitive edge. If the fraction of SG&A expense that represents investment in organization capital does not vary across firms, this error will not affect firms' ranking in terms of the ratio of organization capital to total assets. One way to address this concern is not to use the direct construct, but sort yearly firms in the Compustat universe into organization capital deciles and assign our sample of acquirers into those decile bins and use the resulting rank of acquirer organization capital in the multivariate regressions. Table 3 Panel B presents the results. We show that again, a high rank of acquirer organization capital is associated with significantly better deal performance using all five measures.

Third, we combine the above two approaches and sort yearly firms in the Compustat universe into deciles based on the industry-median adjusted ratio of organization capital to total assets. We then use the resulting decile rank in the multivariate regressions and the results are provided in Panel C. Again, a higher rank of industry-median adjusted acquirer organization capital is significantly

associated with better deal performance across all five measures.

Fourth, we also employ an alternative five-year straight line depreciation approach to capitalize SG&A expense and the results are provided in Panel D. Again, we show that using this alternative measure, acquirer organization capital is positively and significantly associated with deal performance measured in different ways.

Lastly, instead of using capitalized SG&A expense to proxy for organization capital, we use the ratio of SG&A expense to total assets and Panel E presents the results. We show that high investment in organization capital as measured by acquirer SG&A expense is positively and significantly associated with all long-run deal performance measures but not acquirer abnormal announcement period returns. Given that the results using the flow measure of organization capital appear to be weaker than our earlier results based on the stock measure (Table 2), it seems quite unlikely that our main findings based on the stock measure of organization capital are mostly driven by reverse causality.

4.4. Cross-Validating Our Measure of Organization Capital

Given that our measure of organization capital is based on SG&A expense which might include items unrelated to our intent that organization capital is the set of business processes and systems that improve operational efficiency, it is important for us to validate the measure using some well-established markers for best practices in the corporate world. We employ the following three measures of firm quality as alternatives to organization capital: the managerial ability score of Demerjian, Lev, and McVay (2012), the Fortune magazine's "100 Best Companies to Work for in America" list (see Edmans (2011) for details), and the Computerworld's "100 Best Places to Work in IT" list.

Using the data envelopment analysis (DEA), Demerjian, Lev, and McVay (2012) develop a new measure of managerial ability based on managers' efficiency, relative to their industry peers, in

18

transforming corporate resources to revenues. These authors show that this new measure outperforms traditional measures (e.g., stock returns, media coverage, etc.) in capturing managerial ability.

Black and Lynch (2005) argue that employer-provided training is an important component of workplace organization and organization capital. In their framework, organization capital captures training, employee voice, and work design, which are the main criteria Fortune uses to create its "Best Companies to Work for" list (see Edmans (2011) and Table A2 in the Appendix for details). Edmans (2011) shows that firms on Fortune's "100 Best Companies to Work for in America" list have greater employee satisfaction and deliver superior long-run stock returns. The list is available in 1984, 1993, and 1998-2012.[13] Given our lead-lag specification in Equation (2), we keep deals announced in 1985, 1994, and 1999-2011 for this analysis. The key variable of interest, Fortune's best company, equals the reversed rank on the Fortune's "100 Best Companies to Work for in America" list (as in Edmans (2011)) for an acquirer on the list, and zero otherwise.

Finally, we also use the Computerworld's "100 Best Places to Work in IT" as an alternative measure of acquirer organization capital (see details on how the list is compiled in Table A2). Both Bloom, Sadun, and Reenen (2012) and Eisfeldt and Papanikolaou (2013) take the view that investment in IT is an important part of organization capital. The list is available in 2003, 2006, and 2009. Given our lead-lag specification in Equation (2), we use the 2003 list for deals announced in 2004-2006, the 2006 list for deals announced in 2007-2009, and the 2009 list for deals announced in 2010-2011. The key variable of interest, Computerworld's best place in IT, equals the reversed rank on the Computerworld's "100 Best Places to Work in IT" list for an acquirer on the list, and zero otherwise. Table A3 in the Appendix presents the results from this exercise.

We first show that all these measures of firm quality are positively and significantly correlated with organization capital (Panel A). We further show that these alternative measures of firm quality

---

[13] We thank Alex Edmans for providing the Fortune's "100 Best Companies to Work for in America" list.

are largely positively associated with our measures of deal outcome and in a number of cases, these measures are positively and significantly associated with deal outcome, and are never negatively and significantly associated with deal outcome (Panel B). In summary, the exercise in Table A3 gives us some confidence that our measure of organization capital is highly correlated with what we intent it to capture—the body of knowledge and business processes and systems leading to operational efficiency.

4.5. Controlling for Corporate Governance

Prior work has shown that corporate governance matters in M&A decisions (see, for example, Cotter, Shivdasani, and Zenner (1997), Harford and Li (2007), and Masulis, Wang, and Xie (2007)). So it is important to control for acquirer governance characteristics when examining the role of organization capital in M&As. Table A4 in the Appendix presents the results when we control for corporate governance practices including executive equity-based pay, board independence, and the E-index (Bebchuk, Cohen, and Ferrell (2009)).[14] It is worth noting that our sample is materially reduced due to data availability on those governance measures.

We show that our main findings remain largely unchanged: Acquirer organization capital is, most of the time, positively and significantly associated with deal performance measures. We further show that very often, our corporate governance measures are not significantly associated with deal performance and occasionally, they are negatively and significantly associated with deal performance. In untabulated analyses, we show that when we include all corporate governance controls (rather than one at a time) in the regressions, our main findings do not change in any qualitative manner.

In summary, Tables 2-3 provide strong evidence in support of our two hypotheses that high organization-capital acquirers achieve significantly higher abnormal announcement period returns and

---

[14] Our main findings do not change in any qualitative manner if we use Gompers, Ishii, and Metrick's (2003) G-index instead.

better post-acquisition long-run operating and stock performance than do low organization-capital acquirers.

5. How Acquirer Organization Capital Improve Deal Outcome?

5.1. Post-Merger Acquirer Policy Changes

To shed light on how acquirer organization capital helps create shareholder value, we first examine post-merger corporate policy changes associated with high organization-capital acquirers compared to those associated with low organization-capital acquirers. Table 4 presents the results.

The corporate policies that we examine are changes in cost of goods sold, SG&A expense, components of SG&A including R&D and advertising expenses, capital expenditures, and market leverage from the fiscal yearend before deal announcement to the first fiscal yearend after deal completion (Panel A) and to the third fiscal yearend after deal completion (Panel B). We find that using either window, high organization-capital acquirers cut more on cost of goods sold and SG&A expense (R&D in particular) compared to low organization-capital acquirers. This is not surprising as one major source of M&A synergies is cost-cutting and we show that high organization-capital acquirers are better at cutting costs than their low organization-capital peers. In terms of financial policy, acquirer organization capital is associated with a significant reduction in leverage.

Overall, the evidence in Table 4 suggests that the significantly better post-deal merger performance associated with high organization-capital acquirers are partly driven by their greater cost cutting effort.

5.2. The Role of Acquirer Status

We next examine what acquirer characteristics are conducive to the effect of acquirer organization capital on deal performance.

Carlin, Chowdhry, and Garmaise (2011) provide a rationale for value-creating mergers. Consider a merger between two firms with very different levels of organization capital. Assuming there is some overlap between the tasks of the two firms, the low organization-capital firm at the newly merged firm will likely learn the business processes and systems of the high organization-capital firm. The value created by a merger is equal to the value of the merged firm minus the sum of the values of the two constituent firms. Since the organization capital of the firm whose business processes and systems is not adopted is simply lost, Carlin, Chowdhry, and Garmaise (2011) predict that the value created by the merger is greatest when one of the constituent firms has a lot of organization capital and the second has very little. This brings up a natural question: How effective can acquirers transfer their organization capital to target firms?

Management scholars suggest that firms' distinct positions in the status hierarchy generate a behavioral order that guides inter-firm interactions. For example, Chung, Singh, and Lee (2000) show that status similarity between two firms increases the likelihood of them forming alliances. Cowen (2012) argues that large status differences between merging firms create clear deference expectations that aid integration interactions. Consistent with that argument, Shen, Tang, and Chen (2013) show that the greater the status differential between an acquirer and a target firm, the more positively the market reacts to both the acquirer and the target firm upon deal announcement, the more likely it is for the deal to be completed, and the more likely the acquirer is to achieve better post-acquisition performance.

Given that the status differential between two firms is aligned with expectations of their roles embedded in corporate acquisitions, we expect that the higher status of the acquirer, the easier it is for acquirer organization capital to be applied to the operation of the combined entity, the better the post-merger deal performance.

Following Shen, Tang, and Chen (2013), we run a yearly regression of the number of analysts following (based on the number of analysts included in the earnings forecast consensus in December

22

each year as the coverage of a firm for that particular year) on firm size decile rank and ROA decile rank within the I/B/E/S database, and use the residual of acquirer analyst coverage to proxy for acquirer status.[15] In this way, our measure of acquirer excess analyst coverage controls for the size and performance effects in analyst coverage decisions.[16] Table 5 Panel A presents the regression results based on an expanded specification to Equation (2) by adding this new acquirer status variable and its interaction with acquirer organization capital.

We find that high status acquirers are associated with worse post-merger operating and stock performance, while high organization-capital acquirers are associated with better deal outcome. Importantly, we find that the effect of acquirer organization capital on deal performance is strengthened when the acquirer has a high status. These results again suggest that acquirer organization capital is likely behind the improvement in deal outcome.

5.3. Serial Acquirers

So far, we have shown that an acquirer with more organization capital can achieve better deal performance outcome through applying/transferring its own organization capital to a target firm in order to improve the operational efficiency of the combined entity. We would expect that this transfer of organization capital becomes more efficient as the acquirer has done it many times in the past. Following Fuller, Netter, and Stegemoller (2002), we define a serial acquirer to be a firm that has done at least five deals over any three-year period during the sample period. We then estimate an expanded specification to Equation (2) by adding the serial acquirer indicator variable and its interaction with acquirer organization capital. In this exercise, the post-merger long-run performance measures are limited to one-year after (not three-years after) due to the overlapping deals by

---

[15] If a firm is not covered by I/B/E/S, we treat its analyst coverage as zero and include it in our analyses. Using the natural logarithm of one plus the number of analysts following as the dependent variable does not change our main findings.

[16] See Shen, Tang, and Chen (2013) on various validation tests of this status measure including its correlation with a media-report based measure of status and Fortune's "Most Admired Companies in America" list.

construction. We do not drop any contaminating deals because our goal is to show whether and how serial acquirers perform in each every deal. Table 5 Panel B presents the results.

We show that serial acquirers are positively associated with post-merger one-year buy-and-hold abnormal returns, and acquirer organization capital is positively associated with all three deal performance variables. Importantly, the interaction term between organization capital and serial acquirer is positive and significant when the dependent variables are the two post-merger one-year performance measures.

We conclude that both high status and serial acquirers facilitate the role of acquirer organization capital in improving deal performance outcome.

6. Addressing Endogeneity

So far we have demonstrated strong positive associations between pre-acquisition acquirer organization capital and various measures of post-merger deal performance, it is a challenge to establish causality, i.e., whether more organization capital of acquirers causes good deal performance. For example, our results could be driven by self-selection whereby high organization-capital acquirers choose better deals, rather than their superior organization capital makes those deals better. Alternatively, there might be unobservable firm characteristics that drive both more organization capital and better deal performance outcome, leading to the positive associations that we uncover in Table 2, but nothing to do with causality. Finally, there is the reverse causality concern, i.e., better deals lead to more investment in acquirer organization capital. We address these concerns in this section.

6.1. Separating Selection from Treatment

We employ the difference-in-differences (DD) estimators that are commonly used to recover

the treatment effects. The identification challenge is that the association between acquirer organization capital and deal outcome could be due to the endogenous selection of firms into a treatment group, rather than due to the impact of acquirer organization capital on post-merger deal outcome.

To address such selection concerns, we exploit a quasi-experiment. Specifically, following Bena and Li (2012) and Seru (2014), we employ a control sample of withdrawn bids that failed for reasons exogenous to acquirer organization capital. In this case, the assignment of firms to the treatment sample (completed deals) versus the control sample can be treated as random with respect to the deal outcome variables that we examine.

To form the control sample, we begin with 1,066 withdrawn bids with necessary firm-level information in Compustat/CRSP announced over the period 1984 to 2011. We then read news articles for each withdrawn bid, excluding those bids that could fail due to organization capital of either merger partner, including disagreement over growth strategy, restructuring, or valuation, news of negative developments, and bids where the reason for failure cannot be determined, or that were expected to fail. We arrive at a sample of 387 withdrawn bids due to reasons exogenous to organization capital, including competing bids, objections by regulatory bodies, and adverse macroeconomic shocks or market conditions.

Table 6 Panel A provides the detailed steps involved to form the final control sample involving acquirers with withdrawn bids and matched with acquirers with completed deals by acquirer (target firm) industry (2-digit SIC), and similar industry-adjusted ROA and stock return performance in the three-year period prior to the bid. We end up with a control sample of 160 withdrawn bids (92 failed bids due to competing bids, 46 cases due to objections by regulatory bodies, and 22 cases due to adverse market conditions) with matching completed deals (i.e., the treatment sample).

To validate the formation of our control and treatment samples, we run a multivariate regression where the dependent variable is an indicator variable, completion, that takes a value of one if the firm-

year observation belongs to the control sample, and zero otherwise. In column (1), we use three years

of data prior to the bid announcement and show that only firm size has a negative and significant effect

on the likelihood of deal completion. In column (2), we use firm characteristics as of the fiscal year end

prior to the bid announcement to explain deal completion. We also add the pre-bid three-year average

change in operating performance (ROA) as an explanatory variable. We find that none of firm

characteristics in the year prior to the bid announcement is associated with the likelihood of deal

completion. The evidence in Panel B suggests that the pre-bid firm characteristics of the control and the

treatment samples are quite similar including the level of organization capital and the level and change

in performance—and as a result, none of these variables can predict which firm eventually completes

its acquisition bid. We conclude that within the treatment and control samples, both acquirer

organization capital and firm performance are exogenous to the completion decision.

We then estimate a difference-in-differences regression using a panel dataset that contains

information on deals in the treatment and control samples from three years prior to bid announcement

to three years after deal completion/withdrawal:

$$Deal\ Performance_{i,t} = \alpha + \beta_1\ Acquirer\ Organization\ Capital_{i,t-1} + \beta_2\ Treat_{i,t} + \beta_3 After_{i,t}$$

$$+\beta_4 Acquirer\ Organization\ Capital_{i,t-1} \times Treat_{i,t} + \beta_5 Treat_{i,t} \times After_{i,t}$$

$$+\beta_6 Acquirer\ Organization\ Capital_{i,t-1} \times After_{i,t}$$

$$+\beta_7 Acquirer\ Organization\ Capital_{i,t-1} \times Treat_{i,t} \times After_{i,t}$$

$$+Other\ Acquirer\ Controls + Other\ FEs + e_{it}. \tag{3}$$

The dependent variable, *Deal Performance*$_{i,t}$, is either buy-and-hold annual return or ROA of acquirer

i in each year *t*. *Treat*$_{i,t}$ is an indicator variable equal to one for treatment deals, and zero otherwise (i.e.,

for control bids). *After*$_{i,t}$ is an indicator variable equal to one for the post-merger time period, and zero

otherwise. In one specification, we include industry fixed effects. We also include year fixed effects to

difference away a common trend affecting deals in both the treatment and control samples. In another

specification, in addition to year fixed effects, we include firm fixed effects to difference away any time-invariant differences among firms. As a result, our approach estimates the differences over time in deal outcome for the same cross section units (Wooldridge (2006)). Table 6 Panel C presents the results.

Columns (1)-(2) present the panel data regression results by including industry and year fixed effects. We find that the coefficients on acquirer organization capital are positive and significant. We further find that the coefficients on two other standalone indicator variables $Treat_{i,t}$ and $After_{i,t}$ and three two-way interaction terms are largely insignificantly and sometimes negatively significant. Importantly, we find that the coefficients on the interaction term $Acquirer\ Organization\ Capital_{i,t-1} \times$ $Treat_{i,t} \times After_{i,t}$ are positive and significant. Columns (3)-(4) present the panel data regression results by including firm and year fixed effects. Given that organization capital is a stock measure that changes little over time, we find that the coefficients on acquirer organization capital are positive but not significant. Importantly, we find that the coefficients on the interaction term $Acquirer$ $Organization\ Capital_{i,t-1} \times Treat_{i,t} \times After_{i,t}$ are positive and significant. Our findings, showing performance improvement post-merger for deals associated with high acquirer organization capital compared to the average outcome, support the significant treatment effects of acquirer organization capital on deal performance.[17]

Taken together, we conclude that the better deal outcome associated with high organization-capital acquirers is mostly driven by the treatment effects of acquirer organization capital.

6.2. The Instrumental Variable Approach

To address the omitted variable concern whereby unobservables cause both more acquirer organization capital and better deal performance outcome leading to spurious association between the two, we employ the instrumental variable approach to extract the exogenous component of acquirer

---

[17] Ideally we would like to obtain direct evidence on changes taking place in target firms, but data limitation prevents us from doing so because after the deal consummation, there is no separate financial reporting on target firms.

organization capital and relate it to deal performance outcome. We need an instrumental variable that explains firms' investment in organization capital (the relevance condition) but has nothing to do with deal performance (the exclusion restriction).

Our instrumental variable is motivated by Carlin, Chowdhry, and Garmaise (2012) who suggest that firms in rapidly changing industries are less likely to invest in organization capital because such industries have a high technology obsolescence risk which reduces the usefulness of a firm's organization capital into the future. To capture the dynamically changing nature of an industry, we first compute firm-level standard deviations of (seasonally-adjusted) quarterly asset growth rates using eight quarters of data within that industry, and then take the industry-median of those firm-level standard deviations.

Mitchell and Mulherin (1996) and Harford (2005) show that fast changing industries are more likely to have merger waves, which might have implications for deal performance within those waves. However, Netter, Stegemoller, and Wintoki (2011) argue that merger waves, both in aggregate and within industries, are far less apparent when deals with private acquirers and small deals are included in the analysis. This observation, to some extent, assuages the concern about our instrumental variable meeting the exclusion restriction given that our sample have far more deals involving private and subsidiary targets. Nonetheless, we try to remove the merger wave effect in our measure of industry-level growth uncertainty. To do so, we first sum up merger deals announced at the two-digit SIC level based on acquirer industry affiliation for each year over the period 1980-2012. We similarly sum up merger deals announced at the two-digit SIC level based on target industry affiliation for each year over the same period. Then for each two-digit SIC industry, we run a time series regression of the industry-median standard deviation of asset growth rates on the natural logarithm of one plus the deal count for that industry based on acquirers' industry and the natural logarithm of one plus the deal

count for that industry based on target firms' industry.[18] The residual from this regression is the instrumental variable. We expect this annual industry-level instrumental variable controlling for merger waves to capture a firm's incentive to invest in organization capital—the demand for organization capital—while having nothing to do with deal performance. Table 7 Panel A presents the instrumental variable regression results.

Column (1) presents the first-stage regression results where we regress acquirer organization capital on the instrument, (residual) industry-median standard deviation of asset growth rates, and a set of other firm and deal characteristics to obtain the fitted value of organization capital. Consistent with our conjecture, we show that the instrument has the expected sign and is significantly correlated with acquirer organization capital (at the 1% level): Greater industry-level growth uncertainty reduces acquirers' investment in organization capital.

Columns (2)-(6) present the second-stage regression results where we regress different deal performance measures on the fitted value for acquirer organization capital, and the same set of control variables as used in the first stage.[19] We show that the instrumented measure of acquirer organization capital is positively and significantly associated with most of the deal performance measures (with the exception of acquirer announcement period abnormal returns).

In summary, our instrumental variable approach helps address the concerns of omitted variables that drive both acquirers to have more organization capital and deals to be better and reverse causality by showing that there is a systematic correlation between the exogenous component of acquirer organization capital and deal performance.

To conclude, after our multi-pronged approaches to addressing endogeneity concerns and to

---

[18] Capturing the industry-level merger waves using the sum of deal counts by acquirers' industry affiliation and target firms' industry affiliation does not change our main findings.

[19] Given that the two-stage estimator is biased and inefficient but consistent (see Wooldridge (2006)), it is not surprising to see that the coefficient estimate on organization capital is much larger than but with similar levels of significance as the coefficient estimate on the un-instrumented organization capital in Table 2. It is more important to compare any significant changes in sign on those coefficient estimates with versus without instrumentation.

establishing causality, we conclude that there is a likely causal relation between pre-acquisition acquirer organization capital and deal performance. As mentioned earlier, Chan, Lakonishok, and Sougiannis (2001), Lev and Radhakrishnan (2005), and Lev, Radhakrishnan, and Zhang (2009) find that a firm's organization capital is positively correlated with its valuation and operating and stock performance. We contribute to this strand of literature by identifying one mechanism—corporate acquisitions—through which organization capital contributes to firm value and performance.

7. Conclusions

Using a large and comprehensive sample of completed U.S. merger and acquisition transactions over the period 1984-2011, we uncover one important source of value creation—acquirer organization capital as measured by capitalized selling, general, and administrative expense. We find that acquirers with more organization capital achieve significantly higher abnormal announcement period returns, and better post-merger operating and stock performance than acquirers with less organization capital. Post-merger, high organization-capital acquirers cut more on cost of goods sold and selling, general, and administrative expense, and reduce more leverage than do low organization-capital acquirers. We further find that the effect of acquirer organization capital on deal performance is stronger when the acquirer has a high status or is a serial acquirer. Our main findings are robust to different measures of organization capital and endogeneity concerns. We conclude that organization capital is one important means to realize merger gains.

Since a firm's organization capital relates to its operating capabilities, investment capabilities, and innovation capabilities (Evenson and Westphal (1995)), future research is called for to examine whether and how acquirer organization capital interacts with other mechanisms such as product market competition and corporate governance practices in determining takeover outcomes. It would also be interesting to explore the relation between organization capital and the timing and magnitude

of merger waves.

Appendix:

Table A1
Organization capital and firm characteristics

We compute organization capital (OC) for each firm in the Compustat universe and then sort firms into organization capital quartiles every year during our sample period 1984-2011. Panel A compares firm characteristics between firms in the top and bottom organization capital quartiles and reports the two-sample t-test and Wilcoxon ranksum test statistics (in p-values). Panel B presents pairwise correlations between organization capital and firm characteristics, with superscripts a, b, and c corresponding to statistical significance at the 1, 5, and 10 percent levels, respectively. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles each year. All dollar values are in 2011 dollars.

Panel A: Organization capital and firm characteristics

	Top OC Quartile			Bottom OC Quartile				
	Mean	Median	StdDev	Mean	Median	StdDev	t-test	Wilcoxon test
ROA	-0.581	3.149	14.599	0.933	1.140	7.395	0.000	0.000
ΔROA	0.495	0.195	11.832	-0.533	-0.024	5.922	0.000	0.000
COGS	56.909	58.874	20.419	67.769	63.684	34.775	0.000	0.000
ΔCOGS	0.183	-0.077	7.536	0.403	-0.050	14.195	0.020	0.786
SG&A	57.844	53.741	25.157	1.459	0.943	2.333	0.000	0.000
R&D	5.579	0.578	8.324	0.753	0.000	4.140	0.000	0.000
Advertising	2.833	0.000	4.959	0.218	0.000	1.183	0.000	0.000
CAPEX	5.183	3.814	5.041	4.255	0.375	7.800	0.000	0.000
Firm size	4.481	4.279	1.880	6.906	6.865	2.064	0.000	0.000
Total assets	700.168	72.153	3055.808	6101.788	958.107	13576.760	0.000	0.000
Sales growth	8.814	5.330	38.340	24.085	10.158	59.668	0.000	0.000
M/B	3.035	1.830	3.551	2.006	1.479	2.086	0.000	0.000
Cash holdings	0.168	0.098	0.184	0.110	0.048	0.168	0.000	0.000
Leverage	0.196	0.110	0.224	0.385	0.388	0.268	0.000	0.000

Panel B: Pairwise correlations

	OC	ROA	ΔROA	COGS	ΔCOGS	SG&A	R&D	Adv.	CAPEX	Firm size	Sales growth	M/B	Cash holdings	Leverage
OC	1.000													
ROA	-0.094[a]	1.000												
ΔROA	0.064[a]	-0.421[a]	1.000											
COGS	-0.156[a]	-0.253[a]	0.049[a]	1.000										
ΔCOGS	-0.004	0.118[a]	-0.298[a]	-0.198[a]	1.000									
SG&A	0.853[a]	-0.073[a]	0.049[a]	-0.252[a]	0.005[c]	1.000								
R&D	0.300[a]	-0.234[a]	0.061[a]	-0.077[a]	-0.001	0.368[a]	1.000							
Advertising	0.340[a]	0.043[a]	0.003	-0.091[a]	-0.004	0.399[a]	0.000	1.000						
CAPEX	-0.015[a]	0.045[a]	-0.037[a]	0.007[b]	0.007[b]	0.045[a]	-0.030[a]	0.049[a]	1.000					
Firm size	-0.390[a]	0.202[a]	0.013[a]	-0.048[a]	-0.017[a]	-0.412[a]	-0.223[a]	-0.073[a]	-0.121[a]	1.000				
Sales growth	-0.135[a]	-0.009[a]	-0.057[a]	-0.011[a]	0.030[a]	-0.009[a]	0.063[a]	-0.011[a]	0.116[a]	-0.112[a]	1.000			
M/B	0.096[a]	-0.022[a]	0.039[a]	-0.074[a]	-0.012[a]	0.173[a]	0.206[a]	0.076[a]	0.094[a]	-0.104[a]	0.210[a]	1.000		
Cash holdings	0.084[a]	-0.104[a]	-0.030[a]	-0.007[a]	0.012[a]	0.118[a]	0.427[a]	0.007[b]	-0.089[a]	-0.248[a]	0.141[a]	0.207[a]	1.000	
Leverage	-0.200[a]	-0.171[a]	0.051[a]	0.085[a]	-0.018[a]	-0.278[a]	-0.317[a]	-0.085[a]	-0.078[a]	0.282[a]	-0.111[a]	-0.272[a]	-0.446[a]	1.000

Table A2

Variable definitions

Variable	Definition
OC	Organization capital scaled by total assets, constructed using SG&A expense and the perpetual inventory method following Eisfeldt and Papanikolaou (2013). For a firm in Compustat, starting from the first year with non-missing SG&A expense, we recursively construct the stock of organization capital by cumulating the CPI-deflated value of SG&A expense using a depreciation rate of 15%. The initial stock of organization capital is calculated with a 10% real growth rate of SG&A expense.
CAR(-1, 1)	Cumulative abnormal return (in percentage points) of the acquirer from one day before to one day after the deal announcement date. Abnormal return is calculated by subtracting the CRSP value-weighted market return from the stock return of the acquirer.
ΔROA1	Return on assets (in percentage points) of the acquirer in year $c+1$ minus return on assets of the acquirer in year $a-1$. Year c is the year of deal completion. Year a is the year of deal announcement. To compute the variable, the acquirer must not complete any confounding deal with transaction value greater than 1% of the acquirer's total assets within the one year after deal completion.
BHAR1(3)	One-year (three-year) buy-and-hold abnormal stock return (in percentage points) of the acquirer after deal completion constructed following Lyon, Barber, and Tsai (1999) and Chen, Harford and Li (2007). Specifically, we first sort the NYSE/NASDAQ/AMEX firms each month into NYSE size deciles and then further partition the bottom decile into quintiles, producing 14 total size groups. We simultaneously sort firms into book-to-market (B/M) deciles. After determining which of the 140 (14 size × 10 B/M) groups the acquirer is in at the month-end prior to deal completion, we choose from that group the control firm that is the closest match on prior year stock return and is not involved in any significant acquisition activity in the prior year (three years). One-year (three-year) buy-and-hold return (starting from the month after deal completion) is then calculated for the acquirer and the control firm. Finally, the one-year (three-year) buy-and-hold abnormal return is the difference between the acquirer return and the corresponding contemporaneous control firm return. To compute the variable, the acquirer must not complete any confounding deal with transaction value greater than 1% of the acquirer's total assets within the one year (three years) after deal completion.
ΔROA3	Average return on assets (in percentage points) of the acquirer from year $c+1$ to year $c+3$ minus return on assets of the acquirer in year $a-1$. To compute the variable, the acquirer must not complete any confounding deal with transaction value greater than 1% of the acquirer's total assets within the three years after deal completion.
ROA	Income before extraordinary items scaled by total assets (in percentage points).
Gross profit margin (GPM)	The difference between sales and cost of goods sold scaled by sales (in percentage points).
COGS	Cost of goods sold scaled by sales (in percentage points).
Sales growth	(Sales in year $t+1$ – Sales in year t)/Sales in year t.
M/B	Market value of equity divided by book value of equity.
Cash holdings	Cash and cash equivalent scaled by total assets.
Leverage	Book value of debt divided by the sum of book value of debt and market value of equity.
Past return	Buy-and-hold stock return (in percentage points) in the year prior to deal announcement.
Top5 institutions	The fraction of shares outstanding held by the five largest institutional investors prior to deal announcement.
Firm size	Natural logarithm of total assets.
All cash	An indicator variable that takes a value of one if the bid involves only cash payment to the target shareholders, and zero otherwise.
All stock	An indicator variable that takes a value of one if the bid involves only stock swap with the target shareholders, and zero otherwise.

Diversifying	An indicator variable that takes a value of one if the acquirer is not from the same two-digit SIC industry as the target firm, and zero otherwise
Tender offer	An indicator variable that takes a value of one if the bid is a tender offer made to the target shareholders, and zero otherwise
Relative size	The ratio of deal transaction value to the acquirer's total assets.
Private target	An indicator variable that takes a value of one if the target firm is privately held, and zero otherwise.
Subsidiary target	An indicator variable that takes a value of one if the target firm is a subsidiary, and zero otherwise.
OC_R&D	Organization capital due to R&D scaled by total assets, constructed using R&D expense and the perpetual inventory method following Eisfeldt and Papanikolaou (2013).
OC_Advertising	Organization capital due to marketing scaled by total assets, constructed using advertising expense and the perpetual inventory method following Eisfeldt and Papanikolaou (2013).
OC_Residual	OC – OC_R&D – OC_Advertising.
Ind.-adj. OC	(Organization capital − the two-digit SIC industry-median organization capital) scaled by total assets.
OC rank	The annual decile rank of a firm's organization capital based on the Compustat universe.
Ind.-adj. OC rank	The annual decile rank of a firm's industry-median adjusted organization capital based on the Compustat universe.
OC 5yr straight	Organization capital scaled by total assets, constructed by capitalizing SG&A expense using a five-year straight line depreciation method. Salvage value is set to zero. The beginning value of organization capital before IPO is assumed to be zero.
OC flow	SG&A expense scaled by total assets.
OC lag3	Organization capital scaled by total assets, lagged by three years.
Equity-based pay	The sum of restricted stock grants and options awards scaled by total compensation, averaged across top-five executives.
Board independence	The fraction of independent directors on a corporate board.
E-index	Based on Bebchuk, Cohen, and Ferrell (2009). The E-index assigns each firm one point for each of the following six provisions in the index that the firm has: staggered board, limits to amend bylaws, limits to amend charter, supermajority voting, golden parachutes, and poison pill.
Industry growth uncertainty	For each two-digit SIC industry, the residual of a time-series regression of annual industry-median standard deviation of asset growth (calculated using the standard deviation of past eight-quarters' seasonally-adjusted asset growth rates) on the natural logarithm of one plus the SDC deal count in that industry based on the acquirer industry affiliation and the natural logarithm of one plus the SDC deal count in that industry based on the target firm's industry affiliation, using data from 1980 to 2012.
Acquirer	An indicator variable that takes a value of one if the firm is an acquirer, and zero otherwise.
Target firm	An indicator variable that takes a value of one if the firm is a target firm, and zero otherwise.
Managerial ability score	Based on Demerjian, Lev, and McVay (2012). Using data envelopment analysis that includes one output—sales and seven inputs—net property, plant, and equipment, net operating leases, net R&D, purchased goodwill, other intangible assets, cost of inventory, and SG&A expense, the measure captures managers' efficiency in generating revenues.

Fortune's best company	The reverse rank of a firm on the Fortune's "100 Best Companies to Work For in America" list, and zero if a firm is not ranked. Fortune compiles the ranking based on the following methodology (Edmans (2011)). Two-thirds of the score comes from employee responses to a 57-question survey created by the Great Place to Works Institute in San Francisco, which covers topics such as attitudes toward management, job satisfaction, fairness, and camaraderie. The remaining one-third of the score comes from the Institute's evaluation of factors such as a firm's demographic makeup, pay and benefits programs, and culture. The final score covers four areas: credibility (communication to employees), respect (opportunities and benefits), fairness (compensation, diversity), and pride/camaraderie (teamwork, philanthropy, celebrations).
Computerworld's best place in IT	The reverse rank of a firm on the Computerworld's "Best Places to Work For in IT" list, and zero if a firm is not ranked. Computerworld compiles the ranking based on the following methodology. The first component is a 66-question survey asking about average salary and bonus increases, percentage of IT staffers promoted, IT staff turnover rates, training and development, and the percentage of women and minorities in IT staff and management positions. The second component is information on retention efforts; programs for recognizing and rewarding outstanding performance; benefits such as flextime, elder care and child care; and policies for reimbursing employees for college tuition and the cost of pursuing technology certifications. The third component is feedback from employees including their satisfaction with training and development programs, compensation, benefits and work/life balance, employee morale in their IT departments, and the importance of various benefits. See details at (http://www.computerworld.com/s/article/9239821/How_we_chose_the_Best_Places_to_Work_in_IT_)
Acquirer status	The residual of a regression of the number of analysts following on firm size decile rank and ROA decile rank using the I/B/E/S database, following Shen, Tang, and Chen (2013).
Serial acquirer	An indicator variable that takes the value of one if an acquirer has done at least five deals over any three-year period during our sample period 1984-2011, and zero otherwise, following Fuller, Netter, and Stegemoller (2002).
Completion	An indicator variable that takes the value of one if an acquirer has completed its bid, and zero otherwise.

Table A3

Validity tests of our organization capital measure

Panel A presents OLS regression results using the Compustat universe where the dependent variables are different measures of firm quality: the managerial ability score rank of Demerjian, Lev, and McVay (2012), the Fortune's best company list, and the Computerworld's best place in IT list. Panels B-D presents regression results based on the same specification as in Table 2 but replaces OC with these alternative measures of firm quality. Two-digit SIC industry and year fixed effects are included. Definitions of the variables are provided in Table A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Correlations of organization capital with various firm quality measures

Dependent Variable	Managerial ability score (1)	Fortune's best company (2)	Computerworld's best place in IT (3)
OC	0.006***	0.121***	0.131***
	(0.001)	(0.021)	(0.031)
Firm size	0.007***	0.285***	0.302***
	(0.001)	(0.044)	(0.056)
Intercept	Yes	Yes	Yes
Obs	98,550	60,745	10,797
Adj. R^2	0.002	0.013	0.014

Panel B: Managerial ability score and deal performance

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
Managerial ability score	-0.188	1.784**	-1.352	1.747**	-9.135
	(0.269)	(0.877)	(3.177)	(0.841)	(8.570)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	14,279	7,175	7,175	3,724	3,724
Adj. R^2	0.044	0.124	0.008	0.199	-0.001

Panel C: Fortune's best company and deal performance

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
Fortune's best company	0.009	0.080***	-0.043	0.065**	-0.011
	(0.010)	(0.021)	(0.140)	(0.030)	(0.275)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	7,839	4,185	4,185	2,067	2,067
Adj. R^2	0.044	0.157	0.008	0.226	-0.000

Panel D: Computerworld's best place in IT and deal performance

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
Computerworld's best place in IT	0.005 (0.011)	-0.000 (0.032)	0.242* (0.142)	0.026 (0.035)	-0.137 (0.256)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	4,143	2,345	2,345	1,072	1,072
Adj. R^2	0.057	0.112	0.008	0.193	-0.002

Table A4

Controlling for corporate governance practices

Panels A-C conduct robustness checks by adding different corporate governance controls to the regression specification in Table 2. Two-digit SIC industry and year fixed effects are included. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Controlling for executive equity-based pay

Dependent	CAR(-1, 1)	ΔROA1	BHAR1	ΔROA3	BHAR3
Variable	(1)	(2)	(3)	(4)	(5)
OC	-0.056	0.907**	2.986**	1.446***	16.030***
	(0.129)	(0.382)	(1.383)	(0.348)	(3.720)
Equity-based pay	0.449	-1.427	-12.271**	-3.944***	-11.100
	(0.435)	(1.502)	(5.907)	(1.448)	(14.721)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	6,370	3,070	3,070	1,476	1,476
Adj. R²	0.053	0.187	0.012	0.261	0.005

Panel B: Controlling for board independence

Dependent	CAR(-1, 1)	ΔROA1	BHAR1	ΔROA3	BHAR3
Variable	(1)	(2)	(3)	(4)	(5)
OC	0.438**	0.846*	3.439*	1.693***	8.711*
	(0.209)	(0.504)	(1.820)	(0.449)	(4.654)
Board independence	-0.368	-4.272**	-13.303	-4.066**	-8.473
	(0.802)	(2.175)	(9.701)	(2.061)	(23.946)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	2,764	1,384	1,384	804	804
Adj. R²	0.051	0.228	0.004	0.238	0.017

Panel C: Controlling for the E-index

Dependent	CAR(-1, 1)	ΔROA1	BHAR1	ΔROA3	BHAR3
Variable	(1)	(2)	(3)	(4)	(5)
OC	-0.053	0.492	4.452***	0.904***	14.196***
	(0.153)	(0.438)	(1.549)	(0.325)	(3.860)
E-index	-0.103	0.066	-0.538	-0.036	-1.103
	(0.087)	(0.178)	(0.997)	(0.208)	(2.667)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes

Obs	4,061	2,147	2,147	1,202	1,202
Adj. R^2	0.054	0.168	0.007	0.251	0.016

References:

Anand, B., D. Collis, and S. Hood, 2011. Danaher corporation, Harvard Business School Case 708-445.

Andrade, G., M. Mitchell, and E. Stafford, 2001. New evidence and perspectives on mergers, *Journal of Economic Perspectives* 15, 103-120.

Arrow, K., 1962. The economic implications of learning by doing, *Review of Economic Studies* 29, 155-173.

Atkeson, A. and P. Kehoe, 2005. Modeling and measuring organization capital, *Journal of Political Economy* 113, 1026-1053.

Bebchuk, L.A., A. Cohen, and A. Ferrell, 2009. What matters in corporate governance? *Review of Financial Studies* 22, 783-827.

Becker, G., 1993. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, 3rd ed., Chicago: University of Chicago Press.

Bena, J., and K. Li, 2012. Corporate innovations and mergers and acquisitions, *Journal of Finance* forthcoming.

Berk, J., R. Stanton, and J. Zechner, 2010. Human capital, bankruptcy, and capital structure, *Journal of Finance* 65, 891-926.

Betton, S., B.E. Eckbo, and K. Thorburn, 2008. Corporate takeovers, in: Eckbo, B.E. (Ed.), *Handbook of Corporate Finance: Empirical Corporate Finance* Vol. II, Amsterdam: Elsevier/North-Holland, 291-429.

Black, S.E., and L.M. Lynch, 2005. Measuring organization capital in the new economy, in: Corrado, C., J. Haltiwanger, and D. Sichel (Eds.), *Measuring Capital in the New Economy*, Chicago: University of Chicago Press, 205-236.

Bloom, N., R. Sadun, and J. Van Reenen, 2012. Americans do IT better: US multinationals and the productivity miracle, *American Economic Review* 102, 167-201.

Bloom, N., and J. Van Reenen, 2007. Measuring and explaining management practices across firms and countries, *Quarterly Journal of Economics* 122, 1351-1408.

Capron, L., and N. Pistre, 2002. When do acquirers earn abnormal returns? *Strategic Management Journal* 23, 781-794.

Carlin, B., B. Chowdhry, and M. Garmaise, 2011. Investment in organization capital, UCLA working

paper, available at: http://personal.anderson.ucla.edu/mark.garmaise/orgcaprevision7-names.pdf.

Carlin, B., B. Chowdhry, and M. Garmaise, 2012. Investment in organization capital, *Journal of Financial Intermediation* 21, 268-286.

Carlin, B., and S. Gervais, 2009. Work ethic, employment contracts, and firm value, *Journal of Finance* 64, 785-821.

Chan, L.K.C., J. Lakonishok, and T. Sougiannis, 2001. The stock market valuation of research and development expenditures, *Journal of Finance* 56, 2431-2456.

Chen, X., J. Harford, and K. Li. 2007. Monitoring: Which institutions matter? *Journal of Financial Economics* 86, 279-305.

Chung, S., H. Singh, and K. Lee, 2000. Complementarity, status similarity and social capital as drivers of alliance formation, *Strategic Management Journal* 21, 1-22.

Cotter, J.F., A. Shivdasani, and M. Zenner, 1997. Do independent directors enhance target shareholder wealth during tender offers? *Journal of Financial Economics* 43,195-218.

Cowen, A., 2012. An expanded model of status dynamics: The effects of status transfer and interfirm coordination, *Academy of Management Journal* 55, 1169-1186.

Demerjian, P., B. Lev, and S. McVay, 2012. Quantifying managerial ability: A new measure and validity tests, *Management Science* 58, 1229-1248.

Eckbo, B.E., (Ed.), 2010a. *Corporate Takeovers: Modern Empirical Developments. Volume 1: Valuation Estimates and Takeover Activity*, Elsevier/Academic Press.

Eckbo, B.E., (Ed.), 2010b. *Corporate Takeovers: Modern Empirical Developments*. *Volume 2: Bidding Strategies, Financing, and Corporate Control*, Elsevier/Academic Press.

Edmans, A., 2011. Does the stock market fully value intangibles? Employee satisfaction and equity prices, *Journal of Financial Economics* 101, 621-640.

Eisfeldt, A., and D. Papanikolaou, 2013. Organization capital and the cross-section of expected returns, *Journal of Finance* 68, 1365-1406.

Ericson, R., and A. Pakes, 1995. Markov-perfect industry dynamics: A framework for empirical work, *Review of Economic Studies* 61, 53-82.

Evenson, R., and L. Westphal, 1995. Technological change and technological strategy, in: J. Behrman and T. N. Srinivasan (Eds.), *Handbook of Development Economics*, Amsterdam: Elsevier, 2209-2299.

Falato, A., D. Kadyrzhanova, and J.W. Sim, 2013. Rising intangible capital, shrinking debt capacity, and the US corporate savings glut, Federal Reserve Board working paper.

Fama, E.F., and K.R. French, 2000. Forecasting profitability and earnings, *Journal of Business* 73, 161-175.

Faria, A.L., 2008. Mergers and the market for organization capital, *Journal of Economic Theory* 138, 71 -100.

Fuller, K., J. Netter, and M. Stegemoller, 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions, *Journal of Finance* 57, 1763-1793.

Gompers, P., J. Ishii, and A. Metrick, 2003. Corporate Governance and equity prices, *Quarterly Journal of Economics* 118, 107-155.

Hall, R. 2000. E-capital: The link between the stock market and the labor market in the 1990s, Brookings Papers on Economic Activity.

Harford, J., 1999. Corporate cash reserves and acquisitions, *Journal of Finance* 54, 1969-1997.

Harford, J., 2005. What drives merger waves? *Journal of Financial Economics* 77, 529-560.

Harford, J., and K. Li, 2007. Decoupling CEO wealth and firm performance: The case of acquiring CEOs, *Journal of Finance* 62, 917-949.

Hirshleifer, D., P.-H. Hsu, and D. Li, 2013. Innovative efficiency and stock returns, *Journal of Financial Economics* 107, 632-652.

Jovanovic, B., 1979. Job matching and the theory of turnover, *Journal of Political Economy* 87, 972-990.

Jovanovic, B., and P. Rousseau, 2001. Vintage organization capital, NBER Working Papers 8166.

Lev, B., and S. Radhakrishnan, 2005. The valuation of organization capital, in: Corrado, C., J. Haltiwanger, and D. Sichel (Eds.), *Measuring Capital in the New Economy*, Chicago: University of Chicago Press, 73-110.

Lev, B., S. Radhakrishnan, and W. Zhang, 2009. Organizational capital, *Abacus* 45, 275-298.

Lev, B., and T. Sougiannis, 1996. The capitalization, amortization, and value-relevance of R&D, *Journal of Accounting and Economics* 21, 107-138.

Loughran, T., and A.M. Vijh, 1997. Do long-term shareholders benefit from corporate acquisitions?

Journal of Finance 52, 1765-1790.

Lustig, H., C. Syverson, and S. Van Nieuwerburgh, 2011. Technological change and the growing inequality in managerial compensation, *Journal of Financial Economics* 99, 601-627.

Lyon, J.D., B.M. Barber, and C. Tsai, 1999. Improved methods for tests of long-run abnormal stock returns, *Journal of Finance* 54, 165-201.

Marshall, A., 1930. *Principles of Economics: An Introductory Volume*, 8th ed., London: Macmillan.

Masulis, R., C. Wang, and F. Xie, 2007. Corporate governance and acquirer returns, *Journal of Finance* 62, 1851-1889.

McGrattan, E.R., and E.C. Prescott, 2010. Unmeasured investment and the puzzling US boom in the 1990s, *American Economic Journal: Macroeconomics* 2, 88-123.

Mitchell, M.L., and J.H. Mulherin, 1996. The impact of industry shocks on takeover and restructuring activity, *Journal of Financial Economics* 41, 193-229.

Moeller, S., F. Schlingemann, and R. Stulz, 2004. Firm size and the gains from acquisitions, *Journal of Financial Economics* 73, 201-228.

Netter, J., M. Stegemoller, and M. B. Wintoki, 2011. Implications of data screens on merger and acquisition analysis: A large sample study of mergers and acquisitions from 1992 to 2009, *Review of Financial Studies* 24, 2316-2357.

Prescott, E., and M. Visscher, 1980. Organization capital, *Journal of Political Economy* 88, 446-461.

Rau, P.R., and T. Vermaelen, 1998. Glamour, value and the post-acquisition performance of acquiring firms, *Journal of Financial Economics* 49, 223-253.

Roberts, P.W., and G.R. Dowling, 2002. Corporate reputation and sustained superior financial performance, *Strategic Management Journal* 23, 1077-1093.

Rosen, S., 1972. Learning by experience as joint production, *Quarterly Journal of Economics* 86, 366-382.

Seru, A., 2014. Firm boundaries matter: Evidence from conglomerates and R&D activity, *Journal of Financial Economics* 111, 381-425.

Shen, R., Y. Tang, and G. Chen, 2013. When the role fits: How firm status differentials affect corporate takeovers? *Strategic Management Journal* forthcoming.

Smith, A., 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Tomer, J., 1987. *Organizational Capital: The Path to Higher Productivity and Wellbeing*, New York: Praeger.

Wooldridge, J., 2006. *Introductory Econometrics: A Modern Approach*, 3rd Edition, South-Western, Cincinnati, OH.

Table 1

Summary statistics

The sample consists of 16,804 completed M&A transactions between 1984 and 2011 from the Thompson One Banker SDC database. The sample selection criteria are as follows: 1) the deal is classified as "Acquisition of Assets (AA)", "Acquisition of Majority Interest (AM)," or "Merger (M)" by the data provider; 2) the acquirer is a U.S. public firm listed on the AMEX, NYSE, or NASDAQ; 3) the acquirer holds less than 50% of the shares of the target firm before deal announcement and ends up owning 100% of the shares of the target firm through the deal; 4) the deal value is at least \$1 million (in 1983 dollar value); 5) the relative size of the deal (i.e., the ratio of transaction value over book value of acquirer total assets) is at least 1%; 6) the target firm is domiciled in the U.S.; 7) the target firm is a public firm, a private firm, or a subsidiary; and 8) basic financial and stock return information is available for the acquirer. Panel A presents the distribution of the sample. Panel B presents descriptive statistics of the variables. Panel C presents pairwise correlations of the variables, with superscripts a, b, and c corresponding to statistical significance at the 1, 5, and 10 percent levels, respectively. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars.

Panel A: Sample distribution

Year	All Deals	Private Target	Subsidiary Target	Public Target
1984	372	148	137	87
1985	208	42	72	94
1986	274	88	99	87
1987	234	76	77	81
1988	262	78	99	85
1989	289	96	131	62
1990	267	101	120	46
1991	290	138	96	56
1992	453	221	173	59
1993	573	278	217	78
1994	798	408	233	157
1995	878	430	261	187
1996	1,106	580	313	213
1997	1,441	780	367	294
1998	1,371	713	365	293
1999	1,065	583	249	233
2000	985	562	208	215
2001	620	290	175	155
2002	587	273	200	114
2003	588	270	190	128
2004	678	365	184	129
2005	679	369	180	130
2006	682	385	182	115
2007	664	384	160	120
2008	435	251	116	68
2009	284	139	82	63
2010	375	186	113	76
2011	346	200	105	41
Total	16,804	8,434	4,904	3,466

Panel B: Descriptive statistics

	Obs	Mean	10th Percentile	Median	90th Percentile	StdDev
CAR(-1, 1)	16804	1.374	-6.479	0.609	10.052	7.739
ΔROA1	8511	-5.365	-18.065	-1.012	5.436	18.920
BHAR1	8511	-8.219	-78.834	-6.548	61.794	65.275
ΔROA3	4458	-5.353	-18.736	-2.216	4.095	13.442
BHAR3	4458	-19.735	-148.518	-16.009	105.695	121.973
OC	16804	1.043	0.090	0.785	2.263	1.000
ROA	16804	3.039	-6.555	4.208	12.431	10.029
M/B	16804	3.676	1.085	2.412	6.998	4.164
Leverage	16804	0.192	0.000	0.132	0.494	0.201
Past return	16804	36.733	-31.472	19.386	115.890	79.388
Top5 institutions	16804	0.209	0.049	0.203	0.363	0.125
Total assets	16804	2946.274	32.350	328.059	4461.847	20598.420
All cash	16804	0.260	0.000	0.000	1.000	0.438
All stock	16804	0.210	0.000	0.000	1.000	0.407
Diversifying	16804	0.385	0.000	0.000	1.000	0.487
Tender offer	16804	0.038	0.000	0.000	0.000	0.190
Relative size	16804	0.374	0.020	0.115	0.789	1.559
Private target	16804	0.502	0.000	1.000	1.000	0.500
Subsidiary target	16804	0.292	0.000	0.000	1.000	0.455

Panel C: Pairwise correlations

	CAR (-1,1)	ΔROA1	BHAR1	ΔROA3	BHAR3	OC	ROA	M/B	Leverage	Past return	Top5 inst.	Firm size	All cash	All stock	Diversify-ing	Tender offer	Rel. size	Priv. target	Sub. target
CAR(-1, 1)	1.000																		
ΔROA1	0.038[a]	1.000																	
BHAR1	-0.021[b]	0.173[a]	1.000																
ΔROA3	0.027[a]	0.754[a]	0.159[a]	1.000															
BHAR3	-0.033[a]	0.122[a]	0.509[a]	0.211[a]	1.000														
OC	0.071[a]	0.003	0.031[a]	-0.012	0.019	1.000													
ROA	-0.043[a]	-0.063[a]	0.052[a]	-0.265[a]	0.024	-0.014[c]	1.000												
M/B	-0.006[a]	-0.185[a]	-0.029[a]	-0.186[a]	-0.006	0.057[a]	-0.027[a]	1.000											
Leverage	0.007	0.164[a]	0.028[a]	0.211[a]	0.025[c]	-0.274[a]	-0.132[a]	-0.245[a]	1.000										
Past return	0.016[b]	-0.106[a]	-0.028[b]	-0.160[a]	-0.009	-0.028[a]	0.044[a]	0.368[a]	-0.139[a]	1.000									
Top5 inst.	-0.050[a]	0.052[a]	0.017	0.020	-0.004	0.011	0.126[a]	-0.016[b]	-0.055[a]	-0.043[a]	1.000								
Firm size	-0.170[a]	0.154[a]	0.036[a]	0.171[a]	0.061[a]	-0.304[a]	0.178[a]	-0.055[a]	0.272[a]	-0.072[a]	0.228[a]	1.000							
All cash	0.008	0.044[a]	0.019[c]	0.027[c]	0.011	0.031[a]	0.116[a]	-0.059[a]	-0.041[a]	-0.061[a]	0.140[a]	0.146[a]	1.000						
All stock	-0.048[a]	-0.090[a]	-0.040[a]	-0.052[a]	0.015	-0.062[a]	-0.094[a]	0.168[a]	-0.040[a]	0.117[a]	-0.132[a]	0.011	-0.305[a]	1.000					
Diversifying	0.012	-0.014	-0.011	-0.043[a]	-0.032[b]	0.095[a]	0.032[a]	-0.010	-0.052[a]	-0.013[c]	-0.042[a]	-0.048[a]	0.015[b]	-0.043[a]	1.000				
Tender offer	-0.027[a]	0.026[b]	0.017	0.029[c]	-0.018	0.039[a]	0.052[a]	-0.030[a]	0.014[c]	-0.029[a]	0.009	0.136[a]	0.183[a]	-0.087[a]	0.045[a]	1.000			
Rel. size	0.044[a]	-0.093[a]	-0.027[b]	-0.086[a]	-0.004	0.060[a]	-0.089[a]	0.125[a]	-0.073[a]	0.066[a]	-0.067[a]	-0.162[a]	-0.061[a]	0.095[a]	0.001	0.007	1.000		
Priv. target	0.054[a]	-0.079[a]	-0.023[b]	-0.102[a]	-0.023	0.076[a]	-0.031[a]	0.085[a]	-0.187[a]	0.069[a]	-0.009	-0.282[a]	-0.099[a]	0.015[c]	0.039[a]	-0.186[a]	-0.032[a]	1.000	
Sub. target	0.075[a]	0.051[a]	0.016	0.058[a]	-0.005	0.006	0.026[a]	-0.059[a]	0.076[a]	-0.045[a]	0.059[a]	0.019[b]	0.118[a]	-0.244[a]	0.007	-0.122[a]	-0.021[a]	-0.644[a]	1.000

Table 2

Acquirer organization capital and deal performance

The sample consists of 16,804 completed M&A transactions between 1984 and 2011 from the Thompson One Banker SDC database. Panel A reports the baseline regression results. Panel B decomposes acquirer organization capital into OC due to R&D, marketing, and human capital and business processes and systems (i.e., OC_Residual). Two-digit SIC industry and year fixed effects are included. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: The baseline results

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
OC	0.259***	1.209***	3.456***	1.492***	7.844***
	(0.089)	(0.323)	(0.933)	(0.284)	(2.459)
ROA	-0.006	-0.203***	0.343***	-0.424***	0.353
	(0.009)	(0.041)	(0.095)	(0.038)	(0.270)
M/B	-0.014	-0.438***	-0.095	-0.315***	-0.271
	(0.022)	(0.100)	(0.242)	(0.085)	(0.538)
Leverage	2.685***	4.951***	8.959*	2.677**	2.085
	(0.410)	(1.154)	(4.813)	(1.164)	(13.396)
Past return	0.002	-0.006	-0.018	-0.014***	-0.010
	(0.001)	(0.005)	(0.013)	(0.005)	(0.032)
Top5 institutions	-2.391***	7.242***	7.054	3.876**	-14.773
	(0.569)	(1.775)	(6.803)	(1.581)	(17.183)
Firm size	-0.240***	0.571***	0.194	0.580***	1.586***
	(0.018)	(0.057)	(0.201)	(0.053)	(0.545)
All cash	0.422***	0.583	-0.088	0.801**	3.064
	(0.134)	(0.407)	(1.668)	(0.407)	(4.535)
All stock	0.076	-3.234***	-5.485**	-1.811***	2.808
	(0.197)	(0.737)	(2.257)	(0.693)	(5.584)
Diversifying	-0.171	-0.620	-1.914	-0.640	-5.490
	(0.137)	(0.446)	(1.556)	(0.413)	(4.068)
Tender offer	1.375***	0.207	1.746	0.127	-18.959*
	(0.319)	(0.748)	(3.793)	(0.702)	(10.051)
Relative size	0.151**	-0.430	-0.867	-0.326	0.396
	(0.069)	(0.334)	(0.648)	(0.278)	(1.308)
Private target	2.084***	0.185	-1.488	0.200	-4.883
	(0.187)	(0.638)	(2.140)	(0.591)	(5.537)
Subsidiary target	2.725***	0.372	-0.592	0.825	-5.069
	(0.202)	(0.624)	(2.278)	(0.595)	(5.832)
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.053	0.122	0.012	0.200	0.007

Panel B: Decomposing OC into R&D, advertising, and human capital/business system components

Dependent	CAR(-1, 1)	ΔROA1	BHAR1	ΔROA3	BHAR3
Variable	(1)	(2)	(3)	(4)	(5)
OC_R&D	-0.894**	-2.548	10.953**	-4.115**	7.090
	(0.421)	(1.642)	(4.488)	(1.703)	(11.537)
OC_Advertising	1.126	-1.213	-4.011	-1.981	-12.541
	(0.730)	(2.009)	(7.130)	(1.823)	(17.119)
OC_Residual	0.343***	2.116***	3.226***	2.693***	10.505***
	(0.113)	(0.368)	(1.213)	(0.328)	(3.176)
ROA	-0.010	-0.219***	0.370***	-0.457***	0.339
	(0.009)	(0.041)	(0.095)	(0.039)	(0.273)
M/B	-0.013	-0.422***	-0.083	-0.283***	-0.170
	(0.022)	(0.101)	(0.242)	(0.087)	(0.529)
Leverage	2.501***	4.278***	10.035**	1.605	1.476
	(0.414)	(1.174)	(4.838)	(1.169)	(13.406)
Past return	0.002	-0.006	-0.019	-0.014***	-0.011
	(0.001)	(0.005)	(0.013)	(0.005)	(0.032)
Top5 institutions	-2.264***	7.477***	6.327	4.201***	-15.191
	(0.571)	(1.764)	(6.819)	(1.564)	(17.184)
Firm size	-0.240***	0.602***	0.193	0.619***	1.680***
	(0.018)	(0.058)	(0.205)	(0.056)	(0.545)
All cash	0.420***	0.562	-0.047	0.745*	3.048
	(0.133)	(0.407)	(1.667)	(0.404)	(4.539)
All stock	0.117	-3.116***	-5.778**	-1.656**	2.699
	(0.197)	(0.737)	(2.262)	(0.689)	(5.609)
Diversifying	-0.184	-0.689	-1.906	-0.744*	-5.665
	(0.138)	(0.446)	(1.554)	(0.411)	(4.064)
Tender offer	1.383***	0.191	1.759	0.041	-19.076*
	(0.319)	(0.750)	(3.793)	(0.706)	(10.048)
Relative size	0.148**	-0.425	-0.854	-0.302	0.434
	(0.069)	(0.338)	(0.646)	(0.291)	(1.307)
Private target	2.073***	0.155	-1.406	0.110	-4.988
	(0.187)	(0.638)	(2.138)	(0.592)	(5.540)
Subsidiary target	2.700***	0.289	-0.365	0.672	-5.128
	(0.203)	(0.624)	(2.279)	(0.595)	(5.844)
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.053	0.124	0.012	0.206	0.007

Table 3

Alternative measures of acquirer organization capital and deal performance

The sample consists of 16,804 completed M&A transactions between 1984 and 2011 from the Thompson One Banker SDC database. This table conducts robustness checks by using alternative measures of OC and the same regression specification as in Table 2. For brevity, we only report the coefficient estimates on alternative measures of OC. Two-digit SIC industry and year fixed effects are included. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Using industry-median adjusted OC

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
Ind.-adj. OC	0.235***	0.945***	3.141***	1.317***	6.230**
	(0.090)	(0.322)	(0.944)	(0.284)	(2.534)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.053	0.121	0.011	0.195	0.005

Panel B: Using decile rank of OC

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
OC rank	0.107**	1.135***	2.418***	1.008***	5.502***
	(0.045)	(0.168)	(0.527)	(0.155)	(1.324)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.053	0.127	0.013	0.200	0.008

Panel C: Using decile rank of industry-median adjusted OC

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
Ind.-adj. OC rank	0.022	0.562***	1.283***	0.559***	3.082***
	(0.025)	(0.086)	(0.292)	(0.075)	(0.750)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.052	0.125	0.012	0.199	0.008

Panel D: Using five-year straight line depreciation of SG&A expense to compute OC

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
OC 5yr straight line	0.447***	2.408***	7.059***	2.969***	15.991***
	(0.167)	(0.655)	(1.790)	(0.589)	(4.588)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.053	0.122	0.012	0.197	0.007

Panel E: Using SG&A expense to measure OC

Dependent Variable	CAR(-1, 1) (1)	ΔROA1 (2)	BHAR1 (3)	ΔROA3 (4)	BHAR3 (5)
OC flow	0.570	3.852**	12.347**	5.680***	44.052***
	(0.475)	(1.788)	(5.175)	(1.633)	(13.199)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.052	0.120	0.011	0.192	0.007

Table 4

Post-merger acquirer policy changes

The sample consists of 16,804 completed M&A transactions between 1984 and 2011 from the Thompson One Banker SDC database. This table examines post-merger acquirer policy changes. In Panel A, the dependent variables are computed as the level of a policy measure in the first year after deal completion minus the level of the same measure in the last year before deal announcement. In Panel B, the dependent variables are computed as the average level of a policy measure in the three years after deal completion minus the level of the same measure in the last year before deal announcement. For brevity, we only report the coefficient estimates on OC. The pre-acquisition policy measure, control variables (as in Table 2), two-digit SIC industry and year fixed effects are included but not reported. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Post-merger one-year changes in corporate policy

Dependent	ΔCOGS1	ΔSG&A1	ΔR&D1	ΔAdvertising1	ΔCAPEX1	ΔLeverage1
Variable	(1)	(2)	(3)	(4)	(5)	(6)
OC	-0.993***	-1.131***	-0.237***	-0.029	-0.113**	-0.012***
	(0.190)	(0.387)	(0.066)	(0.021)	(0.052)	(0.002)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Obs	7,837	7,785	7,879	7,879	7,879	7,811
Adj. R^2	0.152	0.144	0.053	0.159	0.377	0.187

Panel B: Post-merger three-year changes in corporate policy

Dependent	ΔCOGS3	ΔSG&A3	ΔR&D3	ΔAdvertising3	ΔCAPEX3	ΔLeverage3
Variable	(1)	(2)	(3)	(4)	(5)	(6)
OC	-1.235***	-2.145***	-0.250***	-0.053*	-0.064	-0.016***
	(0.256)	(0.472)	(0.082)	(0.028)	(0.058)	(0.003)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
Obs	4,019	3,968	4,050	4,050	4,050	4,002
Adj. R^2	0.195	0.156	0.055	0.207	0.534	0.223

Table 5

Organization capital, acquirer status, and serial acquirer

The sample consists of 16,804 completed M&A transactions between 1984 and 2011 from the Thompson One Banker SDC database. Panel A investigates the interaction effect of acquirer organization capital and acquirer status on deal performance by adding acquirer status and the interaction between OC and acquirer status to the regression specification in Table 2. Panel B investigates the interaction effect of acquirer organization capital and serial acquirer on deal performance by adding serial acquirer and the interaction between OC and serial acquirer to the regression specification in Table 2. For this investigation, we do not impose the requirement that the acquirer must not complete any confounding deal with transaction value greater than 1% of the acquirer's total assets within the one year after deal completion. Two-digit SIC industry and year fixed effects are included. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Organization capital and acquirer status

Dependent	CAR(-1, 1)	ΔROA1	BHAR1	ΔROA3	BHAR3
Variable	(1)	(2)	(3)	(4)	(5)
OC × Acquirer status	-0.004	0.122***	0.001	0.069**	0.005
	(0.010)	(0.035)	(0.001)	(0.028)	(0.003)
OC	0.256***	1.117***	0.034***	1.457***	0.076***
	(0.091)	(0.321)	(0.009)	(0.283)	(0.025)
Acquirer status	0.017	-0.154***	-0.003	-0.095**	-0.004
	(0.016)	(0.057)	(0.002)	(0.044)	(0.005)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes
Obs	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.053	0.123	0.012	0.197	0.007

Panel B: Organization capital and serial acquirer

Dependent	CAR(-1, 1)	ΔROA1	BHAR1
Variable	(1)	(2)	(3)
OC × Serial acquirer	-0.045	1.186*	3.938*
	(0.175)	(0.636)	(2.018)
OC	0.267***	1.090***	2.557***
	(0.095)	(0.269)	(0.847)
Serial acquirer	0.087	-0.047	4.872**
	(0.198)	(0.759)	(2.308)
Control variables	Yes	Yes	Yes
Industry and year FEs	Yes	Yes	Yes
Intercept	Yes	Yes	Yes
Obs	16,804	14,624	14,624
Adj. R^2	0.053	0.148	0.014

Table 6

The difference-in-differences analysis

This table reports our investigation of the ex-post treatment effect of a merger deal on post-merger acquirer performance outcome. Panel A provides the steps taken to form the sample of control deals involving failed merger bids for reasons exogenous to acquirer or target firm organization capital. Panel B presents coefficient estimates from Probit regressions relating pre-bid firm characteristics to the likelihood of a bid succeeding for an acquirer. The dependent variable is the completion indicator variable. Panel C presents coefficient estimates from OLS regressions obtained using a panel dataset that has, for each deal in the treatment sample (i.e., completed deals) and the control sample (i.e., failed merger bids), observations running from three years prior to bid announcement, to three years after the deal completion/withdrawal. The dependent variable is either buy-and-hold stock return or ROA in each year. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Control sample construction

Withdrawn due to competing bids, regulatory objections, or adverse market conditions	387
The acquirer completed a deal in the same year with another target firm	
in the same industry as the target in the withdrawn deal	-59
Not enough years of observation surrounding the withdrawal	-116
Matching on the acquirer industry (2-digit SIC)	-5
Matching on the target firm industry (2-digit SIC)	-17
Matching on pre-bid industry-adjusted three-year average ROA and buy-and-hold return terciles	-30
Final failed merger bid sample	160

Panel B: Selection of withdrawn deals

Dependent Variable	Completion	Completion
OC	0.028	0.094
	(0.107)	(0.094)
ROA	-0.007	0.001
	(0.010)	(0.026)
M/B	-0.047	-0.035
	(0.045)	(0.047)
Leverage	-0.235	-0.271
	(0.471)	(0.438)
Past return	0.000	-0.001
	(0.001)	(0.002)
Top5 institutions	0.006	0.006
	(0.007)	(0.007)
Firm size	-0.100**	-0.078
	(0.048)	(0.064)
Average ROA growth in the past three years		0.004
		(0.027)
Industry FE	Yes	Yes
Year FE	Yes	Yes
Intercept	Yes	Yes
Obs	960	320
Pseudo R^2	0.081	0.124

Panel C: Explaining acquirer performance

Dependent Variable	BHR (1)	ROA (2)	BHR (3)	ROA (4)
OC	7.246**	0.968***	6.412	1.451
	(3.568)	(0.313)	(6.777)	(1.054)
Treat	3.831	0.384	-8.344	0.331
	(3.862)	(0.408)	(8.545)	(1.034)
After	-8.832**	-0.249	-8.852*	-0.810
	(3.567)	(0.481)	(5.190)	(0.672)
OC × Treat	-8.117	-0.592	-3.245	0.111
	(5.091)	(0.631)	(5.659)	(0.827)
Treat × After	-5.531	-0.284	5.257	-0.849
	(3.666)	(0.335)	(7.388)	(1.070)
OC × After	-4.206	-1.504***	-3.578	-1.465*
	(3.717)	(0.559)	(3.987)	(0.841)
OC × Treat × After	8.536*	1.589**	10.501**	1.568*
	(4.600)	(0.634)	(5.119)	(0.934)
ROA	0.273	0.519***	0.270	0.222***
	(0.200)	(0.042)	(0.313)	(0.052)
M/B	-1.486*	0.220*	-5.889***	0.098
	(0.765)	(0.121)	(1.173)	(0.228)
Leverage	22.739***	-2.359***	74.153***	-2.351
	(8.213)	(0.842)	(14.063)	(1.706)
Past return	-0.047	0.008*	-0.083**	0.013***
	(0.029)	(0.005)	(0.036)	(0.005)
Top5 institutions	-0.101	-0.017	-0.274	-0.047
	(0.113)	(0.014)	(0.227)	(0.030)
Firm size	-0.474	0.297***	-28.084***	-1.691***
	(0.753)	(0.109)	(5.259)	(0.612)
Industry FE	Yes	Yes	No	No
Year FE	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes
Intercept	Yes	Yes	Yes	Yes
Obs	1,920	1,920	1,920	1,920
Adj. R^2	0.155	0.460	0.243	0.535

Table 7

Addressing endogeneity

The sample consists of 17,141 completed M&A transactions between 1984 and 2011 from the Thompson One Banker SDC database. This table reports the results from addressing endogeneity concerns. This table reports the two-stage least squares (2SLS) regression results. The instrumental variable in the first stage is the asset growth uncertainty in an industry controlling for the merger wave effect. Two-digit SIC industry and year fixed effects are included. Definitions of the variables are provided in Appendix A2. All continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 2011 dollars. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Dependent Variable	OC	CAR(-1, 1)	ΔROA1	BHAR1	ΔROA3	BHAR3
	1st stage	2nd stage	2nd stage	2nd stage	2nd stage	2nd stage
	(1)	(2)	(3)	(4)	(5)	(6)
OC		0.150	12.210***	27.556**	8.845**	85.972**
		(1.049)	(3.541)	(13.919)	(3.556)	(37.824)
Instrumental Variable:						
Industry growth uncertainty	-2.454***					
	(0.354)					
ROA	-0.004***	-0.008	-0.150***	0.439***	-0.373***	0.671*
	(0.001)	(0.010)	(0.044)	(0.111)	(0.040)	(0.345)
M/B	0.004	-0.017	-0.432***	-0.217	-0.390***	-1.311
	(0.003)	(0.023)	(0.094)	(0.276)	(0.103)	(0.874)
Leverage	-0.494***	2.631***	9.950***	19.953**	6.495***	40.722*
	(0.059)	(0.647)	(2.068)	(7.858)	(2.073)	(22.786)
Past return	-0.001***	0.002	-0.002	-0.011	-0.012**	0.001
	(0.000)	(0.001)	(0.005)	(0.014)	(0.005)	(0.040)
Top5 institutions	0.060	-2.325***	7.266***	7.636	5.131***	-3.600
	(0.091)	(0.568)	(1.998)	(7.175)	(1.891)	(19.757)
Firm size	-0.081***	-0.381***	1.603***	2.090*	1.210***	7.404***
	(0.005)	(0.089)	(0.290)	(1.130)	(0.241)	(2.609)
All cash	0.004	0.408***	0.589	-0.003	0.654	1.147
	(0.017)	(0.133)	(0.456)	(1.746)	(0.461)	(5.105)
All stock	-0.009	0.073	-2.714***	-5.043**	-1.322*	5.557
	(0.023)	(0.196)	(0.760)	(2.368)	(0.700)	(6.409)
Diversifying	0.056***	-0.162	-1.067**	-3.167*	-0.889*	-8.952*
	(0.018)	(0.148)	(0.508)	(1.755)	(0.465)	(4.909)
Tender offer	0.092**	1.432***	-0.578	0.280	-0.705	-27.259**
	(0.041)	(0.333)	(0.941)	(4.087)	(0.989)	(12.033)
Relative size	0.007	0.146**	-0.418	-0.887	-0.427	-0.373
	(0.006)	(0.068)	(0.336)	(0.794)	(0.273)	(2.332)
Private target	-0.107***	2.102***	0.481	-0.309	0.027	-3.981
	(0.021)	(0.212)	(0.673)	(2.372)	(0.582)	(6.021)
Subsidiary target	-0.071***	2.748***	0.467	-0.030	0.732	-3.774
	(0.023)	(0.213)	(0.665)	(2.412)	(0.613)	(6.408)
Industry and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Obs	16,804	16,804	8,511	8,511	4,458	4,458
Adj. R^2	0.318	0.052	0.121	0.011	0.192	0.006