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Corporate Relocations, Social Capital Disruptions, and Employee Attention to Internal Controls Over Financial Reporting

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ABSTRACT

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Keywords: Social capital, internal control quality, employees, SOX 404, psychosocial characteristics, headquarters relocation

I. INTRODUCTION

Studies have documented that two to five percent of firms relocate their headquarters each year (Strauss-Kahn and Vives, 2009; Call, Campbell, Dhaliwal, and Moon Jr., 2017).¹ Prior research in accounting and finance has generally focused on motivations for relocations and, to a lesser extent on relocation outcomes such as firm profitability or market reactions. However, one overlooked factor is that relocations can engender substantial employee disruption through turnover or by necessitating adjustments by employees to their new environments. While such disruption can permeate a firm's operations, we focus on its impact on one aspect, the firm's quality of internal control over financial reporting (ICFR). This investigation is relevant because ICFR is an underlying determinant for a firm's financial reporting quality and ICFR quality is highly dependent on employee stability (PCAOB, 2010; COSO, 2013; SEC, 2019).

We examine the potential negative effects of employee disruptions surrounding headquarter relocations on firms' internal control quality. Anecdotal evidence provides some instances of such employee disruptions. For example, Jamba, Inc. disclosed the following after a relocation in 2016:²

“[Relocation] resulted in significant employee turnover and the planned and unplanned loss of personnel led to business disruptions stemming from delays in filling vacant positions and a lack of personnel with institutional or procedural knowledge and experience” (Jamba, Inc., 2017, p. 15).

We start with a basic research question: Are corporate headquarter relocations associated, on average, with lower internal control quality following relocation? Employees participate in the day-to-day operations of internal controls, acquiring experience and knowledge necessary for proper internal control functions. With relocation, employee disruptions occur, and internal

¹ The range includes U.S. public and non-public firms.

² Due to this disruption, Jamba, Inc.'s Q1-Q3 2017 10-Qs and FY 2017 10-K financial filings were delayed.

control operations can suffer. We then examine two important cross-sectional variations in the potential effects of employee disruption on internal control quality. First, does the change in internal control quality vary with the extent of change in the psychosocial characteristics – or social capital – between the new and old firm location? Research in economics and sociology show that psychosocial characteristics – such as social and behavior norms and networks of social and recreational activities – of an employee’s community influences his/her relocation decisions (Rau, Popp, Namberger, and Mogege, 2019; Zarabi and Lord, 2019; Sprumont, Benam, and Viti, 2020). Thus, the extent of employee disruption that a relocating firm would experience depends on the extent of *change* in the local psychosocial characteristics engendered by the relocation. Second, does the change in internal control quality vary with the extent to which the effectiveness of controls is dependent on employee experience? Companies’ internal control processes range from automatic to manual and simple to complex and vary in the degree of needed employee experience. A relocation can break the continuity of employee experience that internal controls depend on and thereby negatively impact internal control effectiveness.

We define corporate headquarters as the physical location housing the firm’s centralized administrative and decision-making functions (i.e., legal, finance, accounting, human resources, and executives) and the employees performing those functions.³ A corporate headquarters differs from a regional (or divisional) headquarters in that the regional headquarters can only make decisions and perform functions that affect the region or division it oversees and not the whole company. Using a sample of 894 corporate relocations during 2005-2017 and a control sample matched on fiscal year of relocation and size of the relocating firm, we find that relocating firms exhibit significantly higher likelihood of ineffective internal control in the first year of

³ Throughout the paper, we use “corporate headquarters” and “headquarters” interchangeably.

relocation, measured by auditor-assessed effectiveness of internal control over financial reporting.^{4,5}

Next, we examine the association between the ineffectiveness of internal control and the change in social capital between the pre- and post-change locations. Our social capital measure, which has been used in many recent studies, is an index provided by the Northeast Regional Center for Rural Development (NRCRD) at Pennsylvania State University.⁶ This index is intended to be the “collective manifestation of behaviors, attitudes, and values of individual members of a community” (Rupasingha, Goetz, and Freshwater, 2006, p.85). Thus, it measures how “at-home” and attached individuals are to their immediate community. It follows that *changes* in social capital levels stemming from relocations can capture how alike or dissimilar the communities are, thus measuring the extent of expected employee disruptions. We argue that employees of a headquarters relocating to a dissimilar community are less likely to relocate, which means high employee disruptions and heightened opportunities for, and occurrences of, internal control quality issues. Importantly, because an employee’s allegiance to community can occur regardless of whether social capital is “high” or “low”, we expect larger *absolute* changes in the index to be associated with higher likelihood of internal control ineffectiveness following relocation. Using the absolute change in the index as well as an indicator variable for change, we

⁴ We limit our main analysis to the first year after relocation because (1) the disequilibrium to employee stability is likely to manifest most in this year and (2) to avoid confounding factors after the first year of relocation. Other studies examining effects of relocation or employee turnover disruptions also limit their studies to short windows (i.e., Pirinsky and Wang, 2006; Li *et al.*, 2021). In additional analysis, we examine the subsequent year, and the results reinforce our inference that relocation is associated with lower internal control quality in the first year following relocation.

⁵ Under the Sarbanes-Oxley (SOX) Act of 2002, external auditors are required, starting in 2004, to evaluate and opine on the effectiveness of companies’ internal controls over financial reporting.

⁶ The data is publicly available at: <https://aese.psu.edu/nercrd/community/social-capital-resources/social-capital-variables-for-1997-2005-2009>. We explain the social capital measure in detail later. This measure is used in numerous recent accounting and finance studies (e.g., Jha and Chen, 2015; Hasan, Hoi, Wu, and Zhang, 2017a; 2017b; Gupta, Raman, and Shang, 2018; Jha, 2019; Krishnan, Lee, Son, and Song, 2021).

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find that the adverse effect of internal control ineffectiveness is stronger when headquarters relocations are accompanied by high *absolute* differences in social capital (i.e., either moving from low to high or high to low social capital counties).

An entity’s internal controls can vary in the extent to which they require employee experience for effective performance. Competent and experienced employees are necessary for the proper functioning of manual, particularly non-procedural, internal controls. These internal controls usually involve employee judgment to identify and address exceptions and errors. Accordingly, we examine whether the adverse effect on post-relocation internal control ineffectiveness is significant for controls that are particularly dependent on stable employees for effective performance. We find this to be the case.

Thus, our main results support the expectation that disruptions in psychosocial characteristics of a firm’s local neighborhood can affect its internal control quality potentially through disruptions encountered by employees. We examine this result further separating our social capital measure into two sub-measures, “norms” and “networks” (Rupasingha *et al.*, 2006). Norms capture the county’s attitude towards and participation in civic duties, like voting in elections and responding to census counts. Networks capture participation and connections in the social and recreational activities of a county. Our results suggest that disruptions in both norms and networks are strongly associated with the likelihood of internal control ineffectiveness. This finding underscores the connection between disruptions to employees’ social environment following relocation with internal control quality.

Our study contributes to the literature on both headquarter relocations and internal control quality. Investigations of headquarter relocations focus mostly on motivations for relocating and, in a few studies, on firm performance following the moves. No study has, as we do, examined

the internal control ineffectiveness as the outcome measure.⁷ Internal control quality remains, despite a large literature, an important topic of study because it has been shown to impact financial reporting (e.g., earnings quality), cost of capital, and operational efficiency.⁸ Our contribution to this large literature on internal control quality is that we use the disruptive nature of relocations as a setting in which employee stability – a significant requirement for internal control quality – is adversely affected. Our setting is a disequilibrium situation where employee stability can be reasonably expected to be affected, allowing us to assess its impact on internal control quality. This also contributes to the very limited literature examining the role of employees in internal control quality.

We introduce a new role for social capital compared with previous research in accounting/finance studies. These studies generally focus on the monitoring role of social capital and find, in cross-sectional studies, that “high” social capital yields favorable outcomes (Hasan *et al.*, 2017a, 2017b; Krishnan *et al.*, 2021). Of particular relevance to our study, Krishnan *et al.* (2021) shows a positive association between social capital *levels* and internal control quality and attributes this association to social capital monitoring management. We posit that social capital also measures employees’ attachment to their local communities. Thus, we focus on *changes* in social capital to capture disruption of employees’ local attachment. Our finding that both increases and decreases in social capital adversely impacts internal control quality adds insights beyond Krishnan *et al.* (2021).

II. BACKGROUND AND RESEARCH QUESTIONS

⁷ A contemporaneous working paper, Beck, Czerney, and Lee (2024), finds that corporate relocations are detrimental to financial reporting quality and documents, in additional analyses, that internal control quality suffers as well. Our study focuses on how community impacts of corporate relocations, namely social capital changes, affects internal control functions thus adding insights into how corporate decisions, employees, and community ties interact.

⁸ For example, Feng, Li, McVay, and Skaife (2015), Jaggi, Mitra, and Hossain (2015), Järvinen and Myllymäki (2016), Donelson, Ege, and McInnis (2017), and Cheng, Goh, and Kim (2018).

Research relating to relocations generally focuses on motivating factors. Motivations include access to better talent and infrastructure, operational efficiency, tax incentives and abatements, future expansions, and branding (Birkinshaw, Braunerhjelm, Holm, and Terjesen, 2006; Strauss-Kahn and Vives, 2009; Chow, Huang, Klassen, and Ng, 2021).⁹ Some studies document positive stock market reactions when firms relocate to improve operations or reduce costs (Chan, Gau, and Wang, 1995). However, research on the immediate outcomes of relocation is sparse. One study, Gregory, Lombard, and Seifert (2005), examines firm performance. Using the six years surrounding relocation and an industry-matched sample it documents measures such as return on assets and equity do not significantly improve following relocations.¹⁰ Gregory *et al.* (2005) also do not find significant effects in firm performance between short and long-distance relocations.

We suggest that the impact of relocation on the firm’s *internal control* is an important outcome to investigate because it in turn can affect firm operations and financial performance. Weak internal control quality is associated with more erroneous internal reports and lower firm operational efficiency (Cheng *et al.*, 2018), fraudulent reporting (Donelson *et al.*, 2017), real earnings management, (Järvinen and Myllymäki, 2016), and weaker earnings quality (Jaggi *et al.*, 2015).¹¹

RQ1: Does Relocation result in lower quality Internal Control over financial reporting?

A firm’s internal control quality is dependent on the quality of its employees. The COSO framework underscores the importance of firms retaining knowledgeable and competent

⁹ Anecdotal evidence from recent relocations of McKesson Corp., Honeywell, Newell Brands and Chipotle echo the allure of tax incentives and new talent (Barrabi, 2018; Repko, 2018).

¹⁰ However, Pirinsky and Wang (2006) finds that when firms relocate to localities with other firms in their industry, their stock performs better immediately after the move suggesting that the relocation had a favorable outcome.

¹¹ Feng *et al.* (2015) find that firms that report inventory-related internal control material weaknesses are more likely to experience inventory-related issues, such as lower inventory turnover ratios and more inventory impairments. See Chalmers, Hay, and Khlif (2019) for a recent literature review of internal control studies in accounting.

employees for the proper functioning of internal controls and achieving firm objectives (COSO, 2013). Auditing Standards also highlight the importance of employee quality for effective internal controls and requires auditors to assess the competence of personnel responsible for a company's internal controls (PCAOB, 2010).¹² Prior research on the link between employees and internal control quality has been limited. Call *et al.* (2017) finds that firms with more educated employees exhibit fewer internal control weaknesses. Guo *et al.* (2016) finds that firms with employee-friendly policies are less likely to report internal control weaknesses, suggesting possibly that such policies encourage employee loyalty and adherence to job expectations. Neither focuses on employee experience or stability in the workforce.

Given the importance of workforce experience for internal control quality, relocating firms are particularly vulnerable to internal control ineffectiveness. Their employees must choose between uprooting their lives to move with the firm or leaving the firm and finding employment elsewhere. Those who relocate with the firm must adjust to their new locations, a potentially stressful process. When employees choose not to relocate, the firm faces the consequences of losing knowledgeable and experienced employees and burdens of replacing those employees.¹³ Thus, the stress of relocating, direct loss of experienced and knowledgeable employees, and indirect cost of finding replacement employees means that firm's internal controls can suffer immediately after relocation.¹⁴

¹² Recently, the SEC issued a proposal for firms to disclose employee changes and significant employee events, such as significant turnover, hiring, and management practices, and their impact on firm operations (SEC, 2019).

¹³ It follows that the *extent* of employee disruption would heighten the expected association. However, measuring employee disruption is challenging because it is not readily observable. We reference studies surveying employees of relocating firms to understand the source of relocation disruption variation and identify a reliable proxy.

¹⁴ Existing literature examining employee turnover, one type of employee disruption, suggests a generally negative relationship between employee turnover and firm performance (i.e., sales growth, ROA, ROE, store productivity) due to the loss of skilled and experienced employees and expense of corporate resources to find suitable replacements (Dess and Shaw, 2001; Shaw, Duffy, Johnson, and Lockhart, 2005; De Winne, Marescaux, Sels, Van Beveren, and Vanormelingen, 2019; Li, Lourie, Nekrasov, and Shevlin, 2021). A nuance of the generally negative relationship is that at certain low levels of employee turnover, the firm benefits because inefficient and

However, this may not always be the case. Headquarters relocation is a major firm event that requires careful planning over time. Part of the planning involves establishing a transition plan that minimizes disruptions. The transition plan accounts for how many employees are likely to relocate and resign. These factors suggest that with properly designed and executed internal controls and relocation plans, relocating firms may not experience a noticeable change in internal control quality. Thus, the association between relocations and subsequent change in ineffectiveness of internal control is an empirical question.

RQ2: Relocation, Change in Social Capital, and Internal Control Quality

Survey studies from economics and sociology document that employees’ decisions to relocate with the firm depends on psychosocial characteristics (Rau *et al.*, 2019; Zarabi and Lord, 2019; Sprumont *et al.*, 2020). Psychosocial characteristics are community-level behavioral and social norms, values, and attitudes that attach and guide the behaviors and beliefs of the individuals and businesses of that community (Zarabi and Lord, 2019; Sprumont *et al.*, 2020). The more employees are attached to the current community and the more dissimilar the new community is to the current community, the less willing they are to relocate (Noe and Barber, 1993; Feldman and Bolino, 1998). For those employees that choose to relocate, the emotional toll of relocating is a source of stress that can negatively affect work performance (Forster, 1990; Stroiman, 2021). Thus, the extent of change in psychosocial characteristics stemming from relocation can reflect the extent of employee disruption.

An empirical proxy for psychosocial characteristics is the social capital of the community in which the firm and its employees reside (Putnam, 1995; Putnam, 2001; Adler and Kwon, 2002). There are numerous definitions of social capital. In essence, social capital measures

underperforming employees are terminated and replaced with more productive and motivated employees (De Winne *et al.*, 2019; Li *et al.*, 2021).

community-level behavioral norms, values, and attitudes that affect and guide the behaviors and beliefs of the individuals and businesses of that community, as well as attachment to the community (Rupasingha *et al.*, 2006). When a firm relocates, it can experience a change in local social capital as it moves from one county to another. In a case study, Chenhall, Hall, and Smith (2010) demonstrate that social capital can be a lens for examining how employees react to management control systems. At a higher societal level, Malmi *et al.* (2020) finds interdependence between societal values and norms and management controls. These studies highlight the importance of social capital to employees and firm operations.¹⁵

While we cannot observe how firms and their employees perceive social capital changes, to the extent that their employees are comfortable with the social capital at the initial location, we expect that a change in social capital would be viewed by them as undesirable. An individual employee's moving decision will depend on weighing this undesirable change against possible benefits from the change in location. We conjecture that, other things equal, more employees are willing to relocate when the current and new communities are similar in social capital levels and less willing to relocate when the opposite is true. Thus, a firm will experience greater disruption if it relocates to a socially very different county. Further, in the event of a relocation, employees that choose to relocate will need to break their existing community attachments and form new attachments in the new community, requiring a potentially disruptive and stressful adjustment process to themselves and their families. When multiple individuals, such as in the case of firm relocation, experience this disruption concurrently, the disruption can percolate to the firm and negatively affect operations.

¹⁵ Additionally, Li, Sun, and Ettredge (2017) find that similarities in social norms influence auditor selection among peer firms.

In sum, we expect the extent of employee disruption resulting from relocation to be greater the higher the *absolute* difference in social capital between two counties. We focus on absolute change because we are agnostic about the qualitative interpretation of the social capital in each county and argue that *magnitude* of disruption rather than *direction* of disruption impacts internal controls.

RQ3: Relocation and Internal Control Quality: The Role of Control-Dependence on Employee Experience

Internal controls over financial reporting fall into one of two general categories – automated and manual. Automated controls function without human intervention and are integrated within an entity’s enterprise system. General IT controls and non-HR employees having restricted access to payroll data are examples of automated controls. We focus on the impact of relocation on manual internal controls. Manual controls require some amount of human intervention and therefore, employee judgment and experience to properly function. On one extreme, some manual controls require very little judgment; we categorize these as *procedural* controls. Examples include a control around new employees reading and signing the company’s employee handbook or employees receiving regular mandatory training. Procedural controls also involve the assignment of employees to various roles but do not determine the nature of the assigned roles.

In contrast, *non-procedural* controls are manual controls that require employee experience and/or judgment to properly function. Examples include a warehouse employee counting delivered inventory and reconciling the count to the bill of lading or approving a list of invoices generated by the accounts payable system. Other examples of manual controls that rely on employee judgment include reconciling account balances at month end, resolving exceptions, or determining the appropriate accounting treatment for equity investments.

Therefore, we examine whether the adverse effect on effectiveness of internal control following relocation is particularly marked when internal controls are employee experience-dependent internal controls.

III. Research Design

Relocation Disruption Measure

We use a U.S. county-level social capital index as a proxy for the extent of psychosocial disruption to employees associated with firm relocations. The Northeast Regional Center for Rural Development (NRCRD) at Pennsylvania State University provides the index, developed by Rupasingha *et al.* (2006). The index is computed from a principal component analysis using four county characteristics: (1) voter turnout, (2) census response rates, (3) number of nonprofit organizations, and (4) number of social, recreational, and religious organizations and associations per every 10,000 individuals of an U.S. county in the survey year.¹⁶ Voter turnout and census response rates measure a county's sense of civic responsibilities, while social, recreational, religious, and nonprofit organizations densities capture the residents' behavioral and social networks (Rupasingha *et al.*, 2006). This data is updated periodically between 1997 and 2014.¹⁷ We use the 2009 data because it is in the middle of our sample period and the data year is closest to the 2010 U.S. Census data that we use to link counties to zip codes and firms' headquarters locations.

The four characteristics included in defining the social capital index allows for a partition into two social capital components, norms and networks. Following previous work, we construct norms to comprise voter turnout and census reports (#1 and #2 above) and networks to comprise

¹⁶ Rupasingha *et al.* (2006) provides a detailed description of the construction of this social capital measure.

¹⁷ The updates were made in 1997, 2005, 2009, and 2014. Hasan *et al.* (2017a, 2017b) find that there is a high correlation between social capital measures of any two periods.

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number of nonprofit organizations, and number of social, recreational, and religious organizations (#3 and # 4 above) (Hasan *et al.*, 2017a, 2017b, Krishnan *et al.*, 2021).

We require all relocating firms to have social capital values for both the pre- and post-location counties. Using the firm’s business zip code to identify its county in the pre- and post-location years, we determine its social capital index in the two locations. We use the absolute difference in the social capital index between the two locations, *CHSC_raw*, to measure the difference in psychosocial factors between the two counties, agnostic of the direction of the change. We also construct a second measure, *CHSC*, an indicator variable coded 1 if the absolute difference in social capital from pre to post-relocation is greater than 0, and 0 otherwise.

Employee Experience and Internal Control Effectiveness

In RQ3, we examine possible differences in the disruption effects of relocation arising from controls that are or are not very dependent on stability in the firm’s work force. We posit that headquarter relocations induce employee turnover and/or changes to employee roles and responsibilities that can disrupt the proper implementation of manual and employee experience-dependent internal controls, thus increasing the likelihood of internal control weaknesses. We use detailed explanations in the Audit Analytics database to categorize internal control weaknesses into those that (1) are procedural in nature and do not depend on employee experience and (2) relate to employee experience-dependent internal controls.

We find six of the internal control categories listed in the database fall in the first group: ineffective, non-existent or understaffed audit committee, senior management competency, tone, reliability issues, ethical or compliance issues with personnel, acquisition, merger, disposal or reorganization issues, segregations of duties/design of controls (personnel), and accounting

personnel resources, competency/training.¹⁸ All other internal control issues listed in Audit Analytics fall in the second group. Such controls relate, for example, to the appropriate accounting treatment of various transactions, reconciliation of account balances, investigation of exceptions and errors, and timeliness and completeness of financial reporting.

Empirical Models

We start our empirical tests with a base linear probability model (LPM):

$$\begin{aligned}
 ICINEFF_{i,t} = & \beta_0 + \beta_1 POST \times RELOCATE_{i,t} + \beta_2 RELOCATE_i + \beta_3 NO_PENSION_{i,t} \\
 & + \beta_4 RESTRUCTURE_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 LOSS_{i,t} + \beta_8 BM_{i,t} + \beta_9 \\
 & LEVDBT_{i,t} + \beta_{10} CFO_{i,t} + \beta_{11} BIG4_{i,t} + \beta_{12} INV_{i,t} + \beta_{13} REC_{i,t} \\
 & + Year\ FE + Industry\ FE + \varepsilon_{i,t} \quad (1)
 \end{aligned}$$

ICINEFF (internal control ineffectiveness) is an indicator variable that equals 1 if the firm reports one or more “internal control material weakness” as detected by its auditor for the fiscal year *t*, and 0 otherwise. *POST* is an indicator variable that takes the value of 1 in the year of relocation, and 0 in the year before relocation. *RELOCATE* is an indicator variable that takes the value of 1 if firm *i* relocated, and 0 otherwise. The coefficient β_1 captures the change in the likelihood of *ICINEFF* from the pre- to post-relocation period for relocating firms compared with the change for non-relocating firms over the same period. A positive β_1 coefficient would indicate that relocation resulted in an increase in internal control ineffectiveness.

To examine RQ2, we replace *POST*RELOCATE* from Eq. (1) with two variables *POST*RELOCATE*CHSC* and *POST*RELOCATE*NO_CHSC*. RQ3 explores whether the change in *ICINEFF* differs across internal controls that are more or less vulnerable to employee disruption. We separate the sample into groups with the two types of internal control weaknesses

¹⁸ These are coded 11, 13, 21, 35, 42 and 44 in the Audit Analytics Internal Control database. The definitions of the codes are: 11 – Ineffective, non-existent, or understaffed audit committee; 13 – senior management, competency, tone, reliability issues; 21 – ethical or compliance issues with personnel; 35 – acquisition, merger, disposal or reorganization issues; 42 – segregations of duties/design of controls; and 44 – accounting personnel resources, competency/training.

and estimate model (1) separately for each group.

Control Variables

Following prior literature, we control for several firm and auditor characteristics (e.g., Simunic, 1980; Carcello and Li, 2013; Guo *et al.*, 2016; Bhaskar, Schroeder, and Shepardson, 2019) and industry and year fixed effects (see Appendix A for variable definitions). Two firm characteristics of specific relevance in the relocation context are the presence of pension, *NO_PENSION*, and restructuring plans, *RESTRUCTURE*. We control for the presence of defined benefit pension plans as prior literature suggests that employees with vested pension plans are more loyal and willing to relocate with the firm (Feldman and Bolino, 1998). *NO_PENSION*, equals 1 if the firm reports no pension plan assets. We also control for restructuring because a firm’s restructuring plan may motivate its relocation or employee turnover and affect the likelihood of internal control issues. *RESTRUCTURE* equals 1 if the firm reports restructuring expenses for the fiscal year, and 0 otherwise. Our financial controls are *SIZE*, *ROA*, *LOSS*, book-to-market (*BM*), debt leverage (*LEVDEBT*), cash flow from operations (*CFO*), *inventory* (*INV*) over assets, and receivables (*REC*) over assets. We also control for Big 4 (*BIG4*) auditors.

IV. Sample and Results

Sample Construction

We construct our sample in two steps. We first identify firms that relocate their headquarters and subsequently build a sample of relocating and control firm-year observations surrounding the year of relocations. We start by identifying firm headquarters relocations between 2005-2017 for non-regulated industries (i.e., excluding utilities and financial services firms).¹⁹ We obtain historic locations from the Loughran and McDonald Augmented 10-X

¹⁹ We identify non-regulated industries using the Fama-French 12 classifications. We excluded SICs 4901-4999 and 6001-6999, inclusive, as these represent utilities and financial industries.

Header data (Loughran and McDonald, 2016).²⁰ Using Python, we extract each firm's headquarters address from the heading of every 10-Q and 10-K within our sample period. We identify a relocation occurrence when there is a change in business zip code between two successive financial filings (e.g., 10-K to 10-Q, 10-Q to 10-Q, or 10-Q to 10-K).²¹ We limit our sample to U.S. firms relocating within the U.S. to minimize confounding country effects and because social capital data is only available for U.S. counties. We retain the year immediately preceding relocation and the year of relocation. This results in 10,057 firm-years.

Table I, Panel A, describes our sample selection procedures starting with the 10,057 firm-year headquarters relocations observations described above. Since we need one pre-relocation year for our analysis, we start relocations in 2005 because SOX Section 404, the auditing standard that required auditor assessments of clients' internal control effectiveness, was implemented in 2004. We eliminate 4,362 firm-year observations which do not have the required SOX 404 data in Audit Analytics and/or required Compustat variables. Next, for each firm relocation observation, we require one year surrounding the relocation. This means that for every pre-relocation year observation, there must be a corresponding post-relocation year observation and vice versa. We remove firms with multiple relocations in consecutive years, to eliminate the possibility of overlapping pre and post years.²² We eliminate 3,837 firm-year observations that do not meet these criteria. We also eliminate 70 firm-year observations with missing control

²⁰ The Loughran and McDonald Augmented 10-X Header data is publicly available for download at: <https://sraf.nd.edu/data/augmented-10-x-header-data/>.

²¹ 10-K/Q headings list both business and mailing addresses. We use the business address because it represents the physical location of the firm's headquarters. While most mailing addresses are the same as the business addresses, some mailing addresses are P.O. Boxes.

²² For example, if a firm relocates in 2007 and again in 2008, it is considered a consecutive relocation, and therefore excluded from our sample.

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sample data. Our final relocation sample comprises 1,788 firm-year observations for 894 unique firms.²³

We construct a control sample by matching the relocation firms with non-relocating firms on year of relocation, closest size, and same SIC two-digit industry. The resulting control sample has 1,788 firm-year observations, and the final full sample comprises 3,576 firm-year observations.

Table I, Panel B, shows the breakdown of the relocation and non-relocation samples by Fama-French 12 industries. Most of our relocating firms belong to the business equipment, healthcare, medical equipment, and construction industries. Chemical and consumer durables industries have the fewest relocating firms. Overall, the relocation and non-relocation samples have similar allocations of industries. In Panel C, descriptive statistics for firm size for the two samples show the validity of matching the relocating and non-relocating firms on size. The difference in both means and median is not statistically significant. This supports the appropriateness of our matching criteria.²⁴

Relocation Impact on Firms

We posit that firm relocation engenders disruption among employees, which negatively impacts internal control effectiveness. The extent of disruption depends both on the number of employees that must relocate and, we posit, the change in social capital from between the two destinations. To quantify the extent of the disruption in the employee base, we looked for data on the number of employees, or jobs, impacted by the relocation in our sample of relocating firms. Not surprisingly, relocating firms provide sparse details regarding their relocation in quarterly,

²³ Our process of assembling the headquarters relocation sample is almost identical to that in Chow, Huang, Klassen, and Ng (2021). Our sample size is close to theirs.
²⁴ In untabulated analyses, we employ different matching criteria such as matching on fiscal year instead of relocation year, allowing for replacements and duplicates. Our results and inferences remain unchanged.

annual, and 8-K filings, especially when many corporate employees are potentially impacted.²⁵ Therefore, we manually searched Google News for local reporting for the one year around the time of the firm relocation. We found local news articles for 176 of our 894 relocating firms. Of these, 150 local news reports provided details about the number of jobs relocated, jobs lost, and/or jobs gained at the new location. The mean (median) jobs relocated are 319.5 (150). Unfortunately, the sample size is too small for estimation of our empirical models. However, the *ICINEFF* rates for pre- and post-relocation are 6.0% and 8.7%, respectively, suggesting a negative impact of relocation on internal control quality. Furthermore, 45.3% of these firms experienced social capital changes with their relocations.

Descriptive Statistics

Table II, Panel A, which presents the frequency for ineffective internal control (*ICINEFF*) for the full sample, shows that 669 firm-year observations reported *ICINEFF*. Prior research categorizes material weaknesses into entity-level and account-specific material weaknesses. Following this literature, we examined the nature of the material weaknesses in our sample. We find that almost all of the 654 firm-year observations had both entity-level and account-specific weaknesses. Only 15 firm-year observations reported entity-level only *ICINEFF*. No observations reported account-specific only *ICINEFF*.²⁶ Further, 501 firm-year observations are procedural-related *ICINEFF*, and the remaining 168 firm-year observations are non-procedural (requiring employee experience) related *ICINEFF*.

Table II Panel B presents frequency of *ICINEFF* by pre- and post-relocation and by indicator of social change for the relocation sample. In the pre-period, 172 firm-year

²⁵ Employee headcount data is available in Compustat, but it is net of inflows and outflows for the entire company, not just the corporate headquarters.

²⁶ Since we do not have sufficient observations in each category of *ICINEFF*, we cannot test entity-level and account-specific internal control ineffectiveness separately.

observations (19.2%) reported internal control issues. In the post-period, *ICINEFF* increases to 197 (22.04%) firm-year observations. Additionally, relocation involved a social capital change for 862 firm-year observations, or 431 unique firms. For relocations involving no social capital changes, 161 (17.4%) firm-year observations had internal control issues compared to 208 (24.1%) firm-year observations for relocations with social capital changes. This provides preliminary evidence that relocation and relocation with social capital changes negatively impacts internal control effectiveness.

Table II, Panel C presents descriptive statistics for our control and dependent variables, bifurcated by relocation and control samples. 20.6 percent of the relocation sample reported internal control issues compared to 17.2 percent of the control sample.²⁷ A t-test revealed that this difference is statistically significant. Relocation firms are more likely to undertake corporate restructuring and be in a net loss position than control firms. On the other hand, control firms have higher ROAs and inventory balances than relocation firms. For the remaining variables, there is no statistically significant difference between control and relocation firms.

RQ1 Results

Table III presents the results for Eq. (1) This is our baseline effect of relocation on internal control effectiveness. The lack of a statistically significant coefficient on *RELOCATE* indicates that relocating and control firms do not differ on internal control effectiveness in the pre-period. However, the coefficient for *RELOCATE**xPOST* is positive and significant ($p<0.01$ ($p<0.05$)). This indicates that for relocating firms, internal control effectiveness is, on average, negatively impacted in year after relocation.

²⁷ For the control sample, pre- and post-relocation *ICINEFF* rates are 153 (17.1%) and 154 (17.2%) firm-year observations, respectively. Comparatively, the pre- and post-relocation *ICINEFF* rates for the relocation sample are 172 (19.2%) and 197 (22.0%) firm-year observations, respectively.

RQ2 Results

In Table IV, we examine the effect of relocations involving social capital changes on internal control effectiveness. Recall that our social capital measure proxies for individuals' attachments and involvements to their communities, and so a change in social capital represents the breakage of existing social ties and the formation of new social ties, a significant disruption.²⁸ In Columns (1) and (2) of Table IV, we interact *RELOCATExPOST* with an indicator for social capital change (*CHSC*) and absolute raw changes in the social capital index (*CHSCraw*), respectively. We find positive and significant coefficients for *RELOCATExPOSTxCHSC* and *RELOCATExPOSTxCHSCraw*, indicating that relocations involving any and greater social capital changes are detrimental to internal control effectiveness of the relocating firms.

As discussed, previous research distinguishes between two aspects, norms and networks, of social capital (Jha, 2019; Krishnan *et al.*, 2021). In Columns (3) through (6) of Table IV, we investigate whether change in either or both components contribute to our findings in Columns (1) and (2). Similar to our analyses in Columns (1) and (2), we interact *RELOCATExPOST* with an indicator for norms or network social capital (Columns (3) and (5)) and absolute raw changes in norms and networks (Columns (4) and (6)). We find positive and significant coefficients of similar magnitudes for *RELOCATExPOSTxCHNORMS*, *RELOCATExPOSTxNORMSraw*, *RELOCATExPOSTxCHNETW*, and *RELOCATExPOSTxNETWraw*, which suggests that both changes in norms and network social capital contribute to internal control ineffectiveness for relocation firms, and neither change dominates the effect.

²⁸ While we cannot rule out the possibility that relocations with no changes in social capital do not involve the breakage and formation of social ties, we argue that a change represents permanent losses or gains in the quantity of social ties, which is more disruptive.

RQ3 Results

Table V, Panel A, presents our results with procedural internal control ineffectiveness (*PROC_ICINEFF*) as the dependent variable. We find that changes in social capital due to relocation are associated with procedural type internal control ineffectiveness as evidenced by the positive and significant coefficients for *POSTxRELOCATExCHSC* and *POSTxRELOCATExCHSCraw* in Columns (1) and (2), respectively. We find some evidence that changes in social capital norms and networks are also associated with procedural type internal control ineffectiveness; only one of the two interactions for norms and networks is significant.

In Table V Panel B, we show the results with non-procedural, employee-experience dependent, internal control ineffectiveness (*NONPROC_INCINEFF*) as the dependent variable. The results for the *RELOCATExPOST* interactions are generally stronger than those in Panel A. We find positive and significant coefficients for interactions with change in social capital (columns 1-2), change in norms (columns 3-4), and change in network.

Taken altogether, the results in Table V, Panels A and B support our findings in Table III that the internal control environment deteriorates, in general, for all relocating firms. When a relocation is coupled with a change in social capital, the already deteriorating internal control environment worsens for relocating firms that depend on accumulated employee experience and expertise.²⁹

V. Additional Analyses

Social Capital Measure

²⁹ In untabulated results, we rerun our analyses in Table V using a multinomial logit regression which allows us to include the full sample. Our results and inferences are unchanged. Thus, our results are not impacted by regression model specifications.

As previously discussed, the data and consequentially our social capital measure is updated periodically – in 2005, 2009 and 2014 - within our sample period. While there are some changes in social capitals amongst U.S. counties from 2005 to 2014, these changes are minor. Using a heat map, Jha and Cox (2015) demonstrate that social capital measures are quite similar year after year for the same U.S. counties. Our social capital measure is constructed with the 2009 data. In untabulated analyses, we examine the correlation between the 2005, 2009, and 2014 social capital measures and find that the 2009 social capital measure, the year of data that we used, is highly correlated with both the 2005 (0.934) and 2015 (0.918) measures. Thus, we have comfort that our results are unlikely affected by the timing of the social capital data.

Subsequent Period Test

We perform a subsequent period test to address the concern that our findings are driven by unobservable firm characteristics and not by relocation disruptions. Prior literature documents high costs of internal control weaknesses and not remediating those weaknesses in the form of audit costs, reputation damages, and decreased financial reporting quality (Krishnan, Rama, and Yinghong, 2008; Swanquist and Whited, 2015; Ge, Koester, and McVay, 2017). Given these costs, a firm is incentivized to remediate internal control weaknesses by the following financial reporting period.

In Table VI, Column (1), we rerun our analysis in Table III to include two years after relocation. In Column (2), we include separate interaction terms for two post years following relocation. We find a positive and significant coefficient for *RELOCATExPOST1* but no significance for *RELOCATExPOST2*. The result suggests that relocating firms may have remediated internal control issues. Importantly, this strengthens our main findings that relocation

disruption is associated with an increase in likelihood of *ICINEFF* in the year following relocation and less likely the result of inherent firm characteristics.

Relocating Distance

Relocating distance can moderate or exacerbate the effect of social capital change on internal control effectiveness. In Table VII, we split our sample by relocations involving less than 50 miles (Panel A) and equal to or more than 50 miles (Panel B) and rerun our analyses in Table V. Relocations of 50 miles or more are long distance relocations which can exacerbate the effect of social change on internal control effectiveness as fewer employees may be willing to move. Relocations less than 50 miles are likely to be within employees’ commuting distances. In Panel A, we find that none of our variables of interest are significant. This is unsurprising since firms could be relocating a short distance within the same county that results in no social capital change. However, we find positive and significant results in Panel B across our various measures of social capital changes, which indicate that larger relocation distances are associated with internal control ineffectiveness when coupled with social capital changes.

VI. Conclusions

We present evidence that firm headquarters relocation negatively impacts the firm’s internal control quality in the year following relocation, possibly reflecting disruptions to employees’ psychosocial environments. We measure the disruption as the absolute change in social capital between the old and new locations. Negative effects on internal control effectiveness are proxied by the presence of reported SOX 404 internal control material weaknesses in the period after relocation. Specifically, we find that more disruptive relocations are associated with higher likelihoods of internal control ineffectiveness. We also find that

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3 internal controls dependent on employee experience are particularly vulnerable to the disruptive
4 effects of relocations.
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8 Our study contributes to the limited but growing literature on employee disruptions and
9 the relation to internal control quality. We demonstrate the importance of social capital on
10 corporate internal control functions. Our evidence also supports recent policy changes requiring
11 firms to disclose material employee events. Given recent events and firms contemplating return-
12 to-office policies, our results show that headquarters relocations can worsen the problem
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14 (Armstrong Relocation & Companies, 2022). For firms planning a relocation, it is important to
15 mitigate employee disruptions for internal control effectiveness.
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APPENDIX A
Variable Definitions

Variable	Definition
Dependent Variables	
<i>ICINEFF</i>	= 1 if firm receives one or more SOX 404 internal control material weakness auditor opinion, and 0 otherwise. (Source: Audit Analytics)
<i>PROC_ICINEFF</i>	= 1 if firm receives one or more procedural-related SOX 404 internal control material weakness auditor opinion according to Audit Analytics IC coding, and 0 otherwise. (Source: Audit Analytics)
<i>NONPROC_ICINEFF</i>	= 1 if firm receives one or more nonprocedural related SOX 404 internal control material weakness auditor opinion according to Audit Analytics IC coding, and 0 otherwise. (Source: Audit Analytics)
Test Variables	
<i>POST</i>	= 1 if year of firm headquarters relocation or subsequent years, and 0 otherwise. (Source: 10Q/K)
<i>RELOCATE</i>	= 1 if firm relocated, and 0 otherwise. (Source: 10Q/K)
<i>NO_CHSC</i>	= 1 if no change in social capital from pre- to post-relocation period, and 0 otherwise. (Source: NRCRD)
<i>CHSC</i>	= 1 if absolute difference in social capital from pre- to post-relocation is greater than 0, and 0 otherwise. (Source: NRCRD)
<i>CHSCraw</i>	= Absolute raw changes in social capital index from pre- to post-relocation. (Source: NRCRD)
<i>CHNORMS</i>	= 1 if absolute change from pre- to post-relocation in the “norms” component of social capital greater than 0, and 0 otherwise. (Source: NRCRD)
<i>NORMSraw</i>	= Absolute raw changes in “norms” component of social capital from pre- to post-relocation. (Source: NRCRD)
<i>CHNETW</i>	= 1 if absolute change in the “networks” component of social capital from pre- to post-relocation is greater than 0, and 0 otherwise. (Source: NRCRD)
<i>NETWraw</i>	= Absolute raw changes in “network” component of social capital from pre- to post-relocation. (Source: NRCRD)
Control Variables	
<i>NO_PENSION</i>	= 1 if firm reports pension plan assets, and 0 otherwise. (Source: Compustat data PPLAO)

<i>RESTRUCTURE</i>	= 1 if firm reports restructure expenses (Compustat data <i>RCP</i>) in period of move, and 0 otherwise.
<i>SIZE</i>	= Natural log of total assets (Compustat data <i>AT</i>) for period <i>t</i> .)
<i>ROA</i>	= Return on assets (Compustat data <i>IB/AT</i>) in period <i>t</i> .
<i>LOSS</i>	= 1 if net income (Compustat data <i>NI</i>) for period <i>t</i> is <0, and 0 otherwise.
<i>BM</i>	= Book to market value ratio (Compustat data $(AT-LT)/(CSHO*PRCC_F)$) for period <i>t</i> .
<i>LEVDEBT</i>	= Total long-term debt over total assets (Compustat data <i>DLTT/AT</i>) for period <i>t</i> .
<i>CFO</i>	= Cash flow from operations over total assets (Compustat data <i>OANCF/AT</i>) for period <i>t</i> .
<i>INV</i>	= Total inventory over total assets (Compustat data <i>INVT/AT</i>) for period <i>t</i> .
<i>REC</i>	= Total receivables over total assets (Compustat data <i>RECT/AT</i>) for period <i>t</i> .
<i>BIG4</i>	= 1 if firm is audited by a Big 4 auditor (EY, PWC, KPMG, Deloitte) in period <i>t</i> , and 0 otherwise. (Source: Audit Analytics)

^a Northeast Regional Center for Rural Development. Website: <https://aese.psu.edu/nercrd/community/social-capital-resources>

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TABLE I
Sample

Panel A: Sample Selection

	Observations
U.S. firm relocation observations from 2005-2017 (Source: Form 10-Q and 10-K filings)	10,057
Less:	
Missing required Compustat data or information on internal control material weakness from Audit Analytics	(4,362)
Firms with insufficient pre and/or post relocation data	(3,837)
Firms with missing control observations data	(70)
Final sample of relocation firm-year observations (pre- and post-years)	1,788
Number of unique firms and relocations	894
Final sample of control firm-year observations (pre- and post-years)*	1,788

*Control firm-year observations are matched on year of relocation, closest size, and within the same SIC two-digit industry.

(Continued on next page)

(TABLE I continued)

Panel B: Industry Composition of Relocation and Control Samples

RELOCATE Sample		
Industry ^a	N	Percent
Consumer Nondurables	80	4.47
Consumer Durables	52	2.91
Manufacturing	174	9.73
Oil, Gas, and Coal Extraction and Products	126	7.05
Chemicals and Allied Products	50	2.8
Business Equipment	382	21.36
Telephone and Television Transmission	72	4.03
Wholesale, Retail, and Some Services	114	6.38
Healthcare, Medical Equipment, and Drug	380	21.25
Other	358	20.02
Total	1,788	100

Control Sample		
Industry ^a	N	Percent
Consumer Nondurables	76	4.25
Consumer Durables	50	2.8
Manufacturing	198	11.07
Oil, Gas, and Coal Extraction and Products	126	7.05
Chemicals and Allied Products	42	2.35
Business Equipment	466	26.06
Telephone and Television Transmission	72	4.03
Wholesale, Retail, and Some Services	114	6.38
Healthcare, Medical Equipment, and Drug	372	20.81
Other	272	15.21
Total	1,788	100

^a Fama-French 12 Industry groupings.

(Continued on next page)

(TABLE I continued)

Panel C: Firm size^a comparison between RELOCATE and Non-relocate Samples

Sample	N	Min	Max	Mean	P25	P50	P75
RELOCATE	894	-3.69	10.17	4.66	2.84	4.98	6.71
Control	894	-3.69	10.17	4.75	2.95	5.02	6.8

	RELOCATE Sample	Non-relocate Sample	Difference	P-value ^b
T-test for mean SIZE in year of move	4.66	4.75	0.09	0.5191
Test for median SIZE in year of move	4.98	5.02	0.04	0.6606
N	894	894		

^a Firm size (SIZE) = Natural Log(total assets)
^b T-test for difference in means; Wilcoxon rank-sum test for difference in medians.
Source: Authors own work.

TABLE II
Descriptive Statistics

Panel A: Frequency of Internal Control Ineffectiveness

	0 (No)	1 (Yes)
Ineffective Internal Control (<i>ICINEFF</i>)	2,907	669
Ineffectiveness resulting from Entity-Level control weaknesses only	3,651	15
Ineffectiveness resulting from Account-specific control weaknesses only	3,576	0
Ineffectiveness resulting from weaknesses that are both Entity-Level and Account-Specific	2922	654
Procedural internal control weaknesses	3,075	501
Non-Procedural (employee-dependent) internal controls weaknesses	3,408	168
N	3576	

Panel B: Frequency of Internal Control Ineffectiveness by Post and Social Capital Change

	Post = 0	Post =1	CHSC = 0	CHSC = 1
ICINEFF = 0	722	697	765	654
ICINEFF = 1	172	197	161	208
Total	894	894	926	862

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(TABLE II continued)

Panel C: Comparison of RELOCATE and Control Samples

Variable	Control					RELOCATE					Difference in Means
	Mean	25 th Percent.	Med.	75 th Percent.	Std. Dev.	Mean	25 th Percent.	Med.	75 th Percent.	Std. Dev.	
ICINEFF	0.172	0	0	0	0.377	0.206	0	0	0	0.405	-0.035***
BIG4	0.803	1	1	1	0.398	0.819	1	1	1	0.385	-0.016
SIZE	0.008	0	0	0	0.088	0.317	0	0	1	0.465	-0.309***
LOSS	0.549	0	1	1	0.498	0.527	0	1	1	0.499	0.022
ROA	4.712	2.955	4.976	6.699	2.824	4.600	2.835	4.970	6.669	2.934	0.107
CFO	0.423	0	0	1	0.500	0.549	0	1	1	0.498	-0.057***
INV	-1.128	-0.306	0.002	0.066	5.467	-1.613	-0.408	-0.033	0.048	7.001	0.485**
REC	-0.360	-0.140	0.053	0.119	1.640	-0.430	-0.208	0.033	0.101	1.735	0.07
BM	0.093	0	0.027	0.141	0.132	0.075	0	0.022	0.111	0.111	0.018***
LEVDEBT	0.136	0.040	0.108	0.190	0.127	0.130	0.030	0.097	0.184	0.132	0.006
N (Firms)	1,788					1,788					

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed t-test. See Appendix A for variable definitions.
Source: Authors own work.

TABLE III
Headquarters Relocation and Internal Control Ineffectiveness

<i>Dependent Variable: ICINEFF</i>	
	(1)
	Coeff (t-statistics)
<i>RELOCATE_{xPOST}</i>	0.038*** (2.699)
<i>RELOCATE</i>	-0.001 (-0.075)
<i>NO_PENSION</i>	-0.015 (-0.771)
<i>RESTRUCTURE</i>	0.012 (0.560)
<i>SIZE</i>	-0.051*** (-9.446)
<i>ROA</i>	-0.004* (-1.831)
<i>LOSS</i>	0.068*** (4.263)
<i>BM</i>	-0.007 (-1.331)
<i>LEVDEBT</i>	-0.025 (-1.101)
<i>CFO</i>	0.001 (0.152)
<i>BIG4</i>	-0.021 (-1.000)
<i>INV</i>	-0.056 (-0.650)

(Continued on next page)

(TABLE III continued)

	<i>Dependent Variable: ICINEFF</i>
	(1)
<i>REC</i>	-0.018 (-0.243)
<i>INTERCEPT</i>	0.632*** (4.818)
Fixed Effects	Industry, Year
Clustered SE	Firm
N	3,576
Adj.-R ²	0.208

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Robust standard errors are clustered at the unique firm level. We present t-statistic in parentheses for each variable. See Appendix A for variable definitions. Source: Authors own work.

TABLE IV
Headquarters Relocation, Social Capital Change and Internal Control Ineffectiveness

	<i>Dependent Variable: ICINEFF</i>					
	Change in social capital		Change in Norms		Change in Networks	
	(1)	(2)	(3)	(4)	(5)	(6)
	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)
<i>POSTxRELOCATExCHSC</i>	0.055***					
	(2.801)					
<i>POSTxRELOCATExCHSCraw</i>		0.045**				
		(2.517)				
<i>POSTxRELOCATExCHNORMS</i>			0.057***			
			(2.883)			
<i>POSTxRELOCATExNORMSraw</i>				0.001**		
				(2.052)		
<i>POSTxRELOCATExCHNETW</i>					0.058***	
					(2.881)	
<i>POSTxRELOCATExNETWraw</i>						0.002***
						(2.589)
<i>POSTxRELOCATExNO_CHSC</i>	0.022 (1.203)	0.016 (0.847)	0.022 (1.197)	0.014 (0.755)	0.022 (1.180)	0.016 (0.847)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm
F-test	1.69	NA	1.85	NA	2.00	NA
N	3,576	3,576	3,576	3,576	3,576	3,576
Adj- R ²	0.208	0.208	0.208	0.208	0.208	0.208

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Robust standard errors are clustered at the unique firm level. We present t-statistic in parentheses for each variable. See Appendix A for variable definitions. Source: Authors own work.

TABLE V
Headquarters Relocation and Procedural and Non-Procedural Internal Control Ineffectiveness

Panel A: Procedural Internal Control Ineffectiveness

	Dependent Variable: PROC_ICINEFF					
	Change in social capital		Change in Norms		Change in Networks	
	(1)	(2)	(3)	(4)	(5)	(6)
	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)
POSTxRELOCATExCHSC	0.032* (1.727)					
POSTxRELOCATExCHSCraw		0.034** (1.991)				
POSTxRELOCATExCHNORMS			0.035* (1.875)			
POSTxRELOCATExNORMSraw				0.000 (1.311)		
POSTxRELOCATExCHNETW					0.036* (1.892)	
POSTxRELOCATExNETWraw						0.001 (1.577)
POSTxRELOCATExNO_CHSC	-0.004 (-0.216)	-0.005 (-0.297)	-0.003 (-0.186)	-0.008 (-0.462)	-0.003 (-0.184)	-0.008 (-0.446)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm
F-test	2.31	NA	2.6	NA	2.72*	NA
N	3,408	3,408	3,408	3,408	3,408	3,408
Adj- R ²	0.206	0.206	0.206	0.206	0.206	0.206

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Robust standard errors are clustered at the unique firm level. We present t-statistic in parentheses for each variable. See Appendix A for variable definitions. Source: Authors own work.

(Continued on next page)

(TABLE V continued)

Panel B: Non-Procedural Internal Control Ineffectiveness

	<i>Dependent Variable: NONPROC_ICINEFF</i>					
	Change in social capital		Change in Norms		Change in Networks	
	(1)	(2)	(3)	(4)	(5)	(6)
	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)
<i>POSTxRELOCATExCHSC</i>	0.042*** (2.621)					
<i>POSTxRELOCATExCHSCraw</i>		0.027** (2.050)				
<i>POSTxRELOCATExCHNORMS</i>			0.040** (2.541)			
<i>POSTxRELOCATExNORMSraw</i>				0.000* (1.833)		
<i>POSTxRELOCATExCHNETW</i>					0.041** (2.542)	
<i>POSTxRELOCATExNETWraw</i>						0.002** (2.492)
<i>POSTxRELOCATExNO_CHSC</i>	0.037** (2.521)	0.030** (2.067)	0.036** (2.481)	0.030** (2.060)	0.036** (2.456)	0.034** (2.312)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm
F-test	0.06	NA	0.04	NA	0.07	NA
N	3,075	3,075	3,075	3,075	3,075	3,075
Adj- R ²	0.063	0.062	0.062	0.061	0.062	0.064

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Robust standard errors are clustered at the unique firm level. We present t-statistic in parentheses for each variable. See Appendix A for variable definitions. Source: Authors own work.

TABLE VI
Headquarters Relocation Social Capital Difference and Internal Control Ineffectiveness
Two Years After Relocation

	<i>Dependent Variable: ICINEFF</i>	
	(1)	(2)
	Coeff (t-statistics)	Coeff (t-statistics)
<i>RELOCATExPOST</i>	0.029** (2.233)	
<i>RELOCATExPOST1</i>		0.040*** (2.924)
<i>RELOCATExPOST2</i>		0.013 (0.822)
Controls	Yes	Yes
Fixed Effects	Industry, Year	Industry, Year
Clustered SE	Firm	Firm
N	5,057	5,057
Adj.-R ²	0.213	0.213

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Robust standard errors are clustered at the unique firm level. We present t-statistic in parentheses for each variable. See Appendix A for variable definitions. Source: Authors own work.

TABLE VII
Relocation Distance

Panel A: Relocation Distance Less Than 50 Miles

	<i>Dependent Variable: ICINEFF</i>					
	Change in social capital		Change in Norms		Change in Networks	
	(1)	(2)	(3)	(4)	(5)	(6)
	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)
<i>POSTxRELOCATExCHSC</i>	0.024 (0.993)					
<i>POSTxRELOCATExCHSCraw</i>		0.002 (0.118)				
<i>POSTxRELOCATExCHNORMS</i>			0.022 (0.899)			
<i>POSTxRELOCATExNORMSraw</i>				0.000 (0.294)		
<i>POSTxRELOCATExCHNETW</i>					0.026 (1.052)	
<i>POSTxMOVERxNETWraw</i>						0.000 (0.320)
<i>POSTxRELOCATExNO_CHSC</i>	0.024 (1.274)	0.019 (0.993)	0.023 (1.238)	0.020 (1.040)	0.024 (1.270)	0.019 (1.029)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm
F-test	0.00	NA	0.00	NA	0.01	NA
N	3,383	3,383	3,383	3,383	3,383	3,383
Adj- R ²	0.203	0.203	0.203	0.203	0.203	0.203

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Robust standard errors are clustered at the unique firm level. We present t-statistic in parentheses for each variable. See Appendix A for variable definitions. Source: Authors own work.

(Continued on next page)

(TABLE VII continued)

Panel B: Relocation Distance Greater Than or Equal to 50 miles

	Dependent Variable: ICINEFF					
	Change in social capital		Change in Norms		Change in Networks	
	(1)	(2)	(3)	(4)	(5)	(6)
	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)	Coeff (t-stats)
<i>POSTxRELOCATExCHSC</i>	0.110***					
	(2.682)					
<i>POSTxRELOCATExCHSCraw</i>		0.081**				
		(1.973)				
<i>POSTxRELOCATExCHNORMS</i>			0.574***			
			(3.076)			
<i>POSTxRELOCATExNORMSraw</i>				0.001		
				(0.651)		
<i>POSTxRELOCATExCHNETW</i>					0.114	
					(0.756)	
<i>POSTxMOVERxNETWraw</i>						0.004**
						(2.386)
<i>POSTxRELOCATExNO_CHSC</i>	-0.050	-0.087	0.338*	-0.139	-0.052	-0.081
	(-0.414)	(-0.704)	(1.801)	(-1.120)	(-0.274)	(-0.667)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year	Industry, Year
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm
F-test	1.82	NA	12.80***	NA	1.96	NA
N	1,981	1,981	1,981	1,981	1,981	1,981
Adj- R ²	0.249	0.251	0.251	0.249	0.249	0.252

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Robust standard errors are clustered at the unique firm level. We present t-statistic in parentheses for each variable. See Appendix A for variable definitions. Source: Authors own work.