

Remotely Productive: The Efficacy of Remote Work for Executives*

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Abstract

We study the efficacy of remote working arrangements between CEOs and firms. Long-distance CEOs underperform according to operating performance, firm valuation, insider reviews, and announcement returns to CEO departures. These effects are stronger when the CEO lives further away and crosses multiple time zones. Using the private costs from uprooting the CEO's spouse as an instrument for the CEO's decision to work remotely, we verify the robustness of performance outcomes. The underperformance of long-distance CEOs is related to short-termism, loss of information, and consumption of leisure, such as recreational boats and beach homes.

JEL Codes: G30, G34, G41

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A recent trend in corporate management has been a dramatic rise in remote work. While this shift was catalyzed by the global pandemic of 2020-2022, it raises the question of whether remote management can be adopted as an efficient long-term strategy after the economy returns to business as usual. Using a large survey, Barrero, Bloom, and Davis (2023) find that the global pandemic fueled a broad adoption of remote work into professional schedules, particularly for corporate managers and personnel with graduate degrees.

We provide evidence on remote arrangements of CEOs and study their association with corporate outcomes during normal business times. We seek to distinguish between two diverging views on remote management, which offer compelling arguments but relatively little empirical evidence.

On the one hand, the flexibility of remote management can allow boards to attain high-profile CEOs who would otherwise be unwilling to relocate for the job. Supporters of this view argue that remote technology accommodates many of the CEOs' daily tasks and offers efficiency gains. For example, Porter and Nohria (2018) find that CEOs spend 72% of their time in meetings and conduct 39% of their communication via remote means, such as email or phone. These tasks can be done remotely, and doing so can raise efficiency. Consistent with this view, Dingel and Neiman (2020) rank management jobs among the top five categories on the feasibility of remote work, with 87% of the tasks suitable for remote work. The advantages of remote management have also received support from CEOs. For example, the CEO of Patagonia, Yvon Chouinard, has coined the term "management by absence" (or MBA) in his "MBA theory of management." This leadership style has become sufficiently widespread to earn its own classification in the management literature as a Laissez-faire CEO style, characterized by hands-off management from a distance (Yang 2015).

On the other hand, the opponents of remote management argue that managing from a distance serves the CEO's own interests at the shareholders' expense. For example, in early 2020, Elliott Asset Management launched an activist campaign against Jack Dorsey, the CEO of Twitter and Square, voicing concerns about his remote management, while another large shareholder explicitly attributed Twitter's underperformance to "Mr. Dorsey's move to Africa."¹ Twitter stock jumped 7.9 percent at the campaign launch on March 2, 2020. Within a week, Dorsey cancelled his plans to work from overseas and called his announcement a mistake.

Other high-profile CEOs went through a similar change of views on remote management after experimenting with it during the pandemic. One surprising example is Zoom Inc., the architect of the leading

¹ Open letter to the Chairman of the Board of Twitter, Inc., by Prof. Omid Kordestani, owner of 334,000 shares, Dec. 6, 2019. Available at: <https://www.profgalloway.com/twtr-enough-already>

technology platform for remote management. An early supporter of remote work, Zoom CEO Eric Yuan requested his personnel to return to the office in 2023, concluding that remote management hinders collaboration: “We cannot have a great conversation. We cannot debate...” (Asher 2023). Meta CEO Mark Zuckerberg, who initially voiced plans to run the firm remotely for half of the year and led a firm-wide adoption of remote work, halted this policy in 2022 after “an internal analysis of performance data”, concluding that “it is still easier to build trust in person and those relationships help us work more effectively” (Capoot 2023). These examples show that the effects of remote arrangements are hard to predict *ex ante* even for well-informed insiders at technologically advanced firms that appear unconstrained by geographic distance.

To study the efficacy of remote management, we build a comprehensive database of 929 long-distance CEOs—those whose roundtrip commute from home to the headquarters exceeds 100 miles. We identify such CEOs by hand-collecting data on their remote arrangements from proxy statements and employment contracts and cross-checking it with CEOs’ primary residences from voter registrations. The average (median) long-distance CEO lives 979 (776) miles from the headquarters, flies in for a few days a week, and works remotely from home or another location at other times. This schedule resembles common remote arrangements in broader samples. Barrero, Davis, and Bloom (2023) find that the most frequent remote arrangement in the U.S. workforce entails working from the office for three days a week and working remotely on the other days.

We find that long-distance CEOs are economically important. In 2000-2019, 17.6% of public firms in our sample employed a long-distance CEO, and such arrangements have become more common in the latest sample years. Long-distance CEOs appear across all major industries, with a higher concentration in technology and retail. About 62% of long-distance arrangements cover the entire CEO spell at the firm, while 17% switch from a long-distance location to the headquarters, and 21% switch in the opposite direction.

Our first analysis studies why firms hire long-distance CEOs. The evidence suggests that firms use these contracts to extend the scope of their talent search and accommodate local segmentation in the CEO labor market and CEOs’ geographic preferences. Long-distance arrangements are more common for firms located in areas with a thinner executive pool and in industries that require more specialized executive talent. Such arrangements are also more common for firms headquartered in peripheral locations, such as land-locked states in colder climates. These results parallel prior evidence on CEO market segmentation (Yonker 2017a;

Cziraki and Jenter 2021) and highlight the importance of the local candidate pool and lifestyle factors for attracting executive talent (Knyazeva, Knyazeva, and Masulis 2013; Deng and Gao 2013).

Our evidence suggests that long-distance arrangements help firms recruit CEO candidates with stronger credentials who might be unwilling to relocate to the firm's headquarters. Compared with locally based CEOs of the same firms, their long-distance peers are more likely to have prior CEO experience, hold degrees from Ivy League schools, and possess larger professional networks.

At the time of appointing long-distance CEOs, their firms look similar to other firms that finish a CEO search, according to (1) firm fundamentals, such as size, investment, and cash reserves, (2) trailing performance, such as past ROA and stock returns, and (3) forward-looking metrics, such as Tobin's Q, earnings forecasts, and expected stock returns from analyst price targets. We also arrive at the same conclusion when we infer expectations about a firm's future prospects from opportunistic insider trades. If anything, the insider trade imbalance around the appointment of long-distance CEOs suggests directionally more favorable (but insignificant) expectations of insiders than those at other firms that complete a CEO search. Thus, we find no evidence that boards and CEOs enter into remote arrangements in bad faith or in extreme circumstances.

Our main finding is that remote CEO arrangements are associated with weaker operating performance. After the initiation of such an arrangement, we find a meaningful and persistent decline in operating performance and no subsequent reversal. When a firm is run by a long-distance CEO, it earns a 70 bps lower annual ROA than when the same firm is run by a locally-based CEO, after controlling for other CEO attributes, such as an external hire status and out-of-state origin. This performance differential, equivalent to 9% of the standard deviation in ROA, is greater for CEOs who live further away from the headquarters and cross multiple time zones. However, the decline in performance is not specific to long-distance commuting and holds for CEOs who work remotely from one of the firm's field offices away from the headquarters.

To establish a tighter link between a CEO's remote contract and firm outcomes, we focus on a subset of CEOs who switch between onsite and remote arrangements during the same employment spell at one firm. When a CEO ends a remote arrangement and moves to the headquarters, the firm's operating performance improves. Conversely, after a CEO relocates away from the headquarters, the firm's performance declines.

It is possible that a CEO's decision to initiate or end a remote arrangement is correlated with changes in his intrinsic motivation, private information about the firm's prospects, or other unobservable factors. To

elicit such forward-looking expectations at the time of a CEO's switch between a remote and onsite arrangement within one employment spell, we rely on two groups of informed agents: (1) CEOs, directors, and top executives and (2) equity analysts. The first group is privy to private information in the boardroom and their own intrinsic motivations, while the second group is tasked predicting corporate performance. We find no changes in informed signals from both groups immediately before the switch in the CEO's remote status. Specifically, we find no significant changes in the opportunistic insider trades of top insiders (across all groups) and no changes in the recommendations and forecasts of equity analysts. We alert the reader that while these tests raise a higher bar for a potential omitted variable, they do not completely rule out the possibility of latent factors and selection effects in firm outcomes. Thus, we view these results as associations.

Consistent with the operating performance results, we also find that a firm's valuation declines under a remote CEO arrangement. When a firm is run by a long-distance CEO, it earns a 0.096 lower Tobin's Q, a decline equivalent to 4.9% of the mean and 6.0% of the standard deviation. Our estimates on operating performance and valuation are robust to a variety of specifications, including those with Firm*CEO spell fixed effects, which exploit a switch in a CEO's long-distance status during one employment spell at the same firm. By holding constant a Firm-CEO spell pair, this research design accounts for the endogenous matching between CEOs and firms and absorbs time-invariant CEO characteristics (such as skill, innate ability, or risk aversion) that could be correlated with a CEO's selection into a long-distance arrangement.

If remote arrangements accommodate location frictions in the CEO labor market, why do these frictions arise in the first place? In their interviews and public statements, CEOs often explain their long-distance arrangements by the decision to avoid uprooting their family in general or their spouse in particular. Following this logic, we develop an instrumental variable that exploits the private costs of uprooting the CEO's spouse or domestic partner from her home state. After identifying the CEO's then-current partner from deed and marriage records, we infer the home state of the CEO's spouse from the first digits of her social security number. We show that a CEO is several times more likely to have a remote arrangement if relocating his family to the headquarters would force his spouse to leave her home state, thus likely disrupting her network and access to family. This instrument is a powerful predictor of CEOs' long-distance arrangements (F-statistic = 20.1), while being plausibly unrelated to firm policies. Using the uprooting of the CEO's spouse as an

idiosyncratic source of variation in the likelihood of a long-distance arrangement, we verify that firm performance and valuation decline during such arrangements, and these results are significant at 1%.

Next, we study the mechanisms underlying the link between remote CEO arrangements and firm outcomes by analyzing 1.5 million CEO reviews from employees, managers, and executives. We find that a CEO's approval rate at the same firm drops by 5.9 percentage points after he switches to a remote arrangement. This effect is even stronger in the reviews from better-informed insiders—those who hold management jobs and work at the headquarters. The reviews identify several common concerns in the evaluations of long-distance CEOs: (1) short-term focus, (2) disconnect from daily operations, and (3) absenteeism and perquisites, which erode employee incentives for efficiency.

We find support for the three channels motivated by insider reviews. First, consistent with short-termism, remote CEO arrangements are associated with a decline in R&D spending and a shift in investment towards assets with a shorter useful life. Second, consistent with information loss, the decline in performance during long-distance arrangements is stronger for geographically localized firms, where information is concentrated at the headquarters. Third, consistent absenteeism, the decline in performance during remote CEO arrangements is twice as strong when the CEO resides in a beach home or owns a recreational yacht.

Finally, we study whether the board and investors learn from the performance of long-distance CEOs. As a CEO's performance in a remote arrangement is observed over time, the board appears to update its priors and take corrective actions. This gradual learning is consistent with anecdotal evidence on firms' experimentation with remote arrangements and subsequent policy revisions, as well as insights about gradual on-the-job CEO evaluation from structural estimation (Taylor 2010). Long-distance CEOs are more likely to resign under pressure and, consequently, finish their tenure 1.8 earlier than their peers at the same firm. The departures of long-distance CEOs yield positive announcement returns of 2.4–2.6%, in contrast to the traditionally muted market reactions to CEO departures (Weisbach 1988). This evidence suggests that investors perceive an increase in firm value from ending a long-distance CEO arrangement.

Boards also adjust their recruiting policies after a long-distance experience. Firms that employed a long-distance CEO are less likely to have another such arrangement in the future. Some firms introduce clauses in employment contracts requiring future CEOs to establish a residence near the firm's headquarters.

The main contribution of this article is to provide evidence on long-distance CEO relationships with their firms and identify the mechanisms linking them with firm outcomes. We extend a growing literature in economics on the effects of labor policies that incorporate remote work and long-distance commuting. In complement to prior research, which has studied rank-and-file staff and white-collar professionals, our paper focuses on key agents at the top of the corporate hierarchy endowed with control rights over the firm.

Bloom, Han, and Liang (2023) suggest that remote work has a different effect on the productivity of executives and staff. Using an experiment at a technology firm to add remote work on two weekdays, the authors find that rank-and-file employees report higher productivity and lower quit rates, consistent with the evidence from call centers (Bloom et al. 2015; Mas and Pallais 2017). However, in the same experiment, Bloom, Han, and Liang (2023) find the opposite effects of remote work on managers, such as a decline in perceived productivity, pessimism about the policy, and management attrition. The authors suggest that the effects of remote work differ for jobs that require critical analyses and managerial decisions. Consistent with this view, several studies find negative effects of remote work on white-collar professionals, such as procrastination of patent examiners (Frakes and Wasserman 2016), increased coordination costs of IT developers (Gibbs, Mengel, and Siemroth 2021), lower informativeness of equity analysts (Naderi 2023), underperformance of fund managers (Cao, Simin, and Xiao 2023), and lower productivity of academics (Barber et al. 2021).

Our paper departs from most research on white-collar professionals by studying remote arrangements outside of the global pandemic and offering micro evidence from insiders on their efficacy and economic mechanisms. Our focus on normal business times mutes the effects of temporary disruptions that were associated with remote work during the pandemic but are unlikely to persist in the future, such as school shutdowns, pandemic-induced stress, and commuting disruptions. These temporary factors constrained the productivity of remote work during the pandemic (Barber et al. 2021; Du 2024) but have been mostly eliminated thereafter. Yet, we caution the reader that our findings describe usual business times, and these relationships are likely to evolve as firms continue to re-optimize remote work after the global pandemic.

We also extend the literature on the labor market for CEOs. Cziraki and Jenter (2021) show that the pool of CEOs candidates is surprisingly small. Over 90% of CEO hires are familiar to the board as former directors, directors' coworkers, or corporate insiders, suggesting that boards recruit from their networks and heed private effort when completing a CEO search. Taylor (2010) develops the first structural model of CEO

turnover and finds that CEO search and replacement entail large private utility costs to the board. Cremers and Grinstein (2014) and Yonker (2017a) show that the labor market for CEOs is segmented by industry and location, respectively. Deng and Gao (2013) find that the CEO's willingness to work for a firm varies with the desirability of its location. Collectively, this evidence suggests that the pool of CEO candidates is limited, particularly for firms in peripheral locations and in niche industries, and boards incur significant private costs to complete a CEO search. Our results suggest that firms endowed with less attractive lifestyle factors and a thinner local talent pool respond to these constraints by adopting long-distance CEO arrangements. This strategy expands the candidate pool and attracts competitive talent but comes with some long-distance frictions.

We also add to the literature on CEOs' private residences and geographic preferences. Liu and Yermack (2012) pioneered the literature on CEOs' residences by assembling the first dataset of CEOs' real estate assets. They focus on CEOs' real estate transactions and find that CEOs' purchases of luxurious estates are followed by a decline in firm performance, consistent with entrenchment. Recent work highlights the important role of CEOs' geographic preferences in acquisitions (Jiang et al., 2019; Chung et al., 2018) and labor policies (Yonker 2017b; Guenzel, Hamilton, and Malmendier 2023). We complement this work by identifying the drivers of CEOs' location preferences in remote arrangements, such as their proclivity for favorable tax jurisdictions, high quality of local schools, proximity to water, and milder and warmer climates.

We also add to the literature that studies the effect of geographic distance inside the firm. Giroud (2013) finds that production plants located further away from the headquarters obtain less investment and have lower productivity. In complement to this work's focus on the location of physical assets, our paper studies the location choices of the firm's top executives and demonstrates their importance for firm outcomes.

Finally, we also add to an emerging literature that studies the role of CEOs' families in their financial decisions. Cronqvist and Yu (2017) find that CEOs who have a daughter invest more in corporate social responsibility. Yonker (2017a) shows that CEOs are significantly more likely to run firms in the state of their childhood home, and this pattern is related to their preference for proximity to family. Duchin, Simutin, and Sosyura (2021) provide evidence on the composition of CEOs' families and show that familial factors affect CEOs' hiring decisions and capital allocations. Decaire and Sosyura (2023) find that CEO divert corporate resources to increase the value of their family assets. We find that CEOs' family factors affect their choice of primary residence and the decision to work remotely, and such decisions matter for firm outcomes.

1. Data and Sample

1.1. Disclosure of CEOs' long-distance working arrangements

We begin constructing the sample of long-distance CEOs by conducting a comprehensive search of corporate disclosures, which discuss CEOs' commuting arrangements in 2000–2019. We limit our sample to publicly traded companies that are headquartered in the U.S. and have available data on CEOs from Execucomp or BoardEx. We start our sample in 2000 because data coverage in BoardEx is sparse in prior years. Our primary sources of disclosure comprise definitive proxy statements and CEO employment and separation agreements.

Definitive proxy statements (form DEF 14A) are mandatory disclosures filed with the Securities and Exchange Commission (SEC) when a publicly traded firm requests a shareholder vote, most commonly in conjunction with an annual meeting proxy. Our primary interest is in the additional disclosures related to CEOs' personal benefits and working arrangements in the proxy statement.

In the section dedicated to executive compensation, proxy statements disclose the dollar value of annual compensation classified as other than as salary or bonus, such as the reimbursement of the CEO's commute to the primary residence, home office expenditures, or relocation expenses. Item 402 of SEC Regulation S-K (Executive Compensation) explicitly requires such disclosures: "Examples of items requiring disclosure as perquisites or personal benefits under Item 402 include, but are not limited to: ... personal travel using vehicles owned or leased by the company, personal travel otherwise financed by the company, personal use of other property owned or leased by the company, housing and other living expenses (including but not limited to relocation assistance and payments for the executive or director to stay at his or her personal residence), commuting expenses (whether or not for the company's convenience or benefit)." ²

If the combined value of the executives' personal benefits exceeds \$10,000 per year, firms must report these expenses and identify each item by type, regardless of the amount. Firms must also provide "a narrative disclosure of specific information regarding tabular items where necessary to an understanding of the tabular disclosure." ³ These narrative disclosures are helpful for our purposes because they often discuss the location of the CEO's primary residence in conjunction with his commuting expenditures. If a firm only discloses that

² As per disclosure requirements for executive compensation under 17 CFR § 229.402, Item 402 (page 78): <https://www.sec.gov/rules/final/2006/33-8732a.pdf>

³ According to the disclosure guidance for executive compensation under 17 CFR § 229.402, Item 402 (page 18): <https://www.sec.gov/rules/final/2006/33-8732a.pdf>

the CEO's primary residence is "out of state", we establish its address from voter registration and deed records, following the algorithm in Section 1.2. Appendix A.1 shows sample disclosures of long-distance commuting arrangements in the definitive proxy statements.

We augment and cross-check the information in proxy statements with disclosures from CEOs' employment and separation agreements, as well as their amendments. SEC Regulation S-K requires that firms disclose the terms of their employment agreements with named executives, including the CEO. These agreements are usually filed as exhibits accompanying the annual report or the proxy statement, and we obtain them from the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. CEOs' employment agreements nearly always include a section on expense reimbursement and relocation expenditures, which we use to identify and confirm a CEO's remote status. For example, employment agreements of long-distance CEOs often acknowledge that the CEO will maintain his primary residence away from the headquarters, will be given an allowance for the technological setup of a remote home office, and will be reimbursed for travel expenses related to his long-distance commute to the headquarters. Appendix A.2 shows examples of such disclosures in CEOs' employment agreements.

1.2. CEOs' primary residences

To establish the address of a CEO's primary residence, we rely on the executive's voter registration records, deed transfer records, and tax assessment records. We then cross-check this information with the CEO's self-identified primary residence in employment and separation agreements, political contribution forms, insider trading records, and, where available, corporate disclosures of the names and addresses of the beneficial owners of stock, using the algorithm described below.

We hand-match CEOs with long-distance working arrangements to the Lexis Nexis Public Records (LNPR) database, using each executive's full name and year of birth. LNPR aggregates information on over 500 million U.S. individuals (live and deceased), who are traced throughout the database via a unique ID linked to one's social security number and employment records. Examples of records provided by LNPR include deed and tax assessment records, utility and telephone connections, and criminal filings. Prior studies have used LNPR to acquire personal information on CEOs (Cronqvist, Makhija, and Yonker 2012; Yermack

2014), fund managers (Pool, Stoffman, and Yonker 2012; Chuprinin and Sosyura 2018), securitization agents (Cheng, Raina, and Xiong 2014), and financial journalists (Ahern and Sosyura 2015).

We manually validate the accuracy of each LNPR match by ensuring that the CEO's employer, work email address, and title listed in the employment records in LNPR match the executive's career history. Using LNPR, we obtain each CEO's date of birth (month and year), state of origin (indicated by the first three digits of the social security number), history of residential addresses, deed transfers, and tax assessment records. LNPR covers the universe of county deed records during our sample period.

We define a CEO's primary residence in a given year as the address where this executive is registered to vote or where he resides together with his spouse (based on utility and phone billing records in LNPR). As an additional check, we verify that the location of the CEO's primary residence matches the city of the CEO's residence mentioned in the firm's discussion of the commuting expenses in the proxy statement.

Voter registration records are useful for identifying the CEO's primary residence because they typically require state-level identification (such as the state driver's license) and proof of continued residence in the state. Besides the CEO's residential address, voter registration records include the date of birth, date of registration, and date of last activity or moving out. We obtain voter registration records by filing disclosure requests for statewide voter registration data with each state's Department of State and combine these records with the voter registration records available from LNPR. Using the combination of these sources, we obtain voter registration data for 36 states and the District of Columbia, which together comprise 86.5% of the U.S. population.⁴ We match executives to voter registration records using their full name and the month and year of birth (from LNPR). We verify these matches by confirming that the CEO's spouse (established via state vital records) is registered to vote at the same address. This robustness check provides external validation of the accuracy of our data because CEOs' residential addresses (from voter records) and the information on their spouses (from state vital records and home deed records) come from unconnected data sources.

If we are missing a CEO's voter registration record, we establish the executive's primary residence as the address of his real estate property (based on the history of deed records in LNPR) that matches the city of the CEO's primary residence in the firm's description of commuting expenses. If a firm does not disclose the

⁴ The fourteen states for which we do not have voter registration data include Arizona, Indiana, Iowa, Kentucky, Maine, Montana, New Hampshire, New Mexico, North Dakota, Tennessee, South Carolina, South Dakota, Virginia, and West Virginia. As of 2019, the estimated combined population of these states is 51.4 million people or 15.5% of the U.S. population (331.8 million).

city of the CEO's primary residence, we use the address where the CEO lives together with his spouse and verify that this address matches the CEO's primary address listed in the employment agreement or political contribution forms. Using this verification method, we identify the primary residence for 100% of the long-distance CEOs in our sample.

Finally, we construct a historical panel of corporate headquarters from proxy statements and calculate the distance between the address of the firm's headquarters and the CEO's primary residence at the time of his tenure, using Google maps. We also calculate the time difference (in hours) between these locations, using the Time Zone Database. We augment these data with executives' education, career histories, and governance data from BoardEx, and firm financials from Compustat.

1.3. Dates of remote arrangements

To establish the starting and ending year of a CEO's long-distance arrangement with a firm, we follow the firm's history of annual disclosures in the proxy statements pertaining to the CEO's commuting and relocation expenses. For example, if a firm discloses the reimbursement of its CEO's commuting expenses in 2012–2015, followed by the reimbursement of relocation expenses in 2015, we infer that the CEO had a long-distance working arrangement in 2012–2015, which ended with his relocation to the headquarters in 2015.

We verify CEO relocation events by tracing the revisions in CEOs' employment agreements (in the sections pertaining to remote work), as well as purchases and sales of the primary residences. During the relocation year, we establish the approximate month of the CEO's relocation to or away from the headquarters by using the earliest of the following dates: (1) sale of the prior primary residence, (2) purchase of a new home near the headquarters, or (3) voter registration in a new state. We obtain the dates of home transactions from deed transfer records in LNPR and augment this information with property-level history from Zillow.com.

To exploit the variation in a CEO's long-distance status within each CEO-firm pair, we also collect the starting and ending dates of the CEO's tenure with the firm and the announcement dates for the CEO's appointment and departure. We obtain these data from corporate press releases about management changes.

1.4. Sample and summary statistics

We start with a sample of publicly traded U.S. firms with available data on CEOs from Execucomp or BoardEx and impose three sample filters. First, we exclude executives acting as temporary CEO replacements during a

search for a permanent CEO—namely, interim or acting CEOs—because they have a short time horizon and likely a different set of incentives than regular CEOs. Second, to ensure a sufficient period for evaluating CEO performance, we exclude CEOs who held their position for less than 12 months. Finally, we exclude firms with missing data on income or assets. After imposing these filters, we arrive at our main sample of 6,655 CEOs and 3,136 firms. Table B.1 in Appendix B shows the sequence of sample selection criteria and the number of observations retained after each filter.

We impose two conservative criteria to define CEOs with long-distance working arrangements. First, we require that the roundtrip commute between the CEO's primary residence and the firm's headquarters exceed 100 miles. Second, we require that the long-distance working arrangement between the CEO and the firm last for a minimum of 12 months. This criterion eliminates short-term transitions associated with a CEO's slow relocation to the headquarters over the first months of his tenure. The combination of these filters suggests that our estimates likely reflect the lower bound of the number of CEOs with long-distance working arrangements.

In the sample of 6,655 CEOs, we identify 929 CEOs who have had a long-distance working arrangement at some point in their CEO career. Moreover, 427 CEOs have had both regular and long-distance arrangements, allowing us to study how the same CEO performs under different working regimes.

Table 1 reports sample summary statistics, and the top pane focuses on the characteristics of CEOs. The average CEO is 56 years old, holds two external board seats, and stays in his CEO position for 6.4 years. The dominant majority (97%) of CEOs are male, 64% have graduate degrees, and 42% hold MBAs. Most CEOs reside within a short drive from the headquarters. The median distance between the CEO's primary residence and the headquarters is 8.8 miles, and the 75th percentile of this distance is 15.9 miles. These distances align well with those reported for the homes of CEOs at S&P 500 firms in Liu and Yermack (2012).

The middle pane of Table 1 describes CEOs' remote working arrangements. Approximately 8% of firms in a given year during our sample period maintain a current long-distance arrangement with their CEO, and 17.6% of firms have such an arrangement at some point during our sample period. The average (median) long-distance CEO lives 979 (776) miles from the firm's headquarters and maintains a long-distance working arrangement for 3.2 years or about 74% of his CEO tenure. Just under half (45%) of long-distance CEOs live in a different time zone than their firm's headquarters. The average (median) explicit costs of a long-distance

CEO arrangement to the firm, inferred from expense reimbursements reported as “other pay” in CEO compensation, are about \$207,000 (\$95,000) per year.

Table B.2 in Appendix B compares the CEOs who have a long-distance working arrangement with those who reside near the firm’s headquarters. The long-distance CEOs in our sample are statistically indistinguishable from their local counterparts along most of the examined attributes such as age, gender, business education, and chairman role. If anything, long-distance CEOs are slightly more qualified in terms of their graduate degrees and external board experience. The main difference between the two groups of CEOs is that long-distance CEOs remain in their CEO role for 1.85 years less than their local counterparts, a stark distinction with a *t*-statistic of 8.3. In section 5, we investigate this pattern by studying the likelihood of forced CEO turnover and the announcement returns associated with the departures of long-distance CEOs.

The bottom pane of Table 1 shows that our sample covers economically important firms. The average firm has a market capitalization of \$22 billion, earns annual revenue of \$6.2 billion, spends \$366 million on annual capital investment, generates an annual return on assets of 3.6%, and maintains a Tobin’s Q of 1.95.

In summary, approximately one in six public firms in our sample has had a long-distance CEO over the past two decades, and these firms account for a significant fraction of the market capitalization. Long-distance CEOs look similar in their credentials to their local counterparts but have significantly shorter tenures.

2. Remote Management: Descriptive Evidence

This section provides a systematic description of remote CEO arrangements. Section 2.1 focuses on the time-series and cross-sectional patterns in remote work. Section 2.2 describes the lifestyle preferences of long-distance CEOs and investigates the role of economic, familial, and social factors in their choice of primary residences.

2.1. Time-series and cross-sectional patterns

Figure 1 focuses on the time-series dynamics in remote management. This figure plots the proportion of publicly traded firms in our sample managed by a long-distance CEO in a given year from 2000 to 2019. The frequency of remote CEO arrangements has been steadily increasing during most of our sample period, peaking at about 10% after 2015. This pattern is consistent with rapid technological development during the first decade of the new millennium that facilitated remote work.

Figure 2 plots the distribution of long-distance CEOs across industries. Firms with a remote CEO arrangement during our sample period appear in all of the main industries, according to the Fama-French 12-industry classification. As expected, long-distance CEOs arrangements are most common for technology firms, where remote work is likely more feasible. Such arrangements are also more frequent in sectors with a wider geographical span, such as retail.

Figure 3 plots the heat map showing the fraction of firms run by long-distance CEOs in each state, where the firm's location is identified by its headquarters during the CEO's tenure. The figure reveals a well-dispersed geographic pattern in remote arrangements. Long-distance CEOs manage firms scattered across 47 states, and such arrangements are more prevalent for firms headquartered in colder climates and remote inland areas. The top five states with the highest fraction of remote CEOs (shown in darker colors) include Wyoming, Iowa, Vermont, Kansas, and North Dakota. In each of these states, more than 25% of firms have had a long-distance CEO during our sample period.

In summary, long-distance CEOs manage firms in all Fama-French 12 industries and across all regions in the U.S., although with a greater concentration in inland states. The frequency of remote management has increased over the past two decades, suggesting an important trend in corporate governance.

2.2. Lifestyle preferences of long-distance CEOs

Figure 4 maps the primary residences of long-distance CEOs. As discussed earlier, a CEO's primary residence is the home where the CEO is registered to vote and where he resides with his spouse or domestic partner. Figure 4 reveals three clear patterns. First, the residences of long-distance CEOs gravitate towards warmer climates. Second, there is a lower density of CEO residences in landlocked states. Third, many CEO residences cluster narrowly along the coastal shoreline, particularly in Florida and California. For example, 15% of the long-distance CEOs in our sample live within a 5-minute walk (0.25 miles) to the ocean beach.

Table 2 compares the counties of primary residences of long-distance CEOs and those of their firms' headquarters. We view the county of the firm's headquarters as a reasonable opportunity set of residences that would be available to a long-distance CEO under the counterfactual—that is, if the CEO decided to live near the firm's headquarters instead of having a long-distance commute.

The top pane of Table 2 focuses on climate parameters, using data on local weather from the Integrated Surface Database of the National Oceanic and Atmospheric Administration. Relative to the area near the firm's headquarters, long-distance CEOs opt to reside in milder climates, as shown by the significantly lower within-year temperature variability near their primary residences, a strong pattern with a t -statistic of 5.24. The average annual temperatures are a couple of degrees higher near CEOs' residences than at the firm's headquarters, but these relatively small differences in annual averages, when decomposed further, reflect a preference for warmer winters accompanied by milder summers (e.g., San Diego vs. St. Louis).

The middle pane of Table 2 focuses on the landscape and access to leisure. Relative to the county of the firm's headquarters, the counties of the CEOs' primary residences have a 30% lower population density and a significantly lower elevation span, and they are about 50 miles closer to the ocean shore. The average long-distance CEO also lives within about 10 miles from the nearest globally ranked golf course (according to the Rolex World's Top 1,000 Golf Courses).

The bottom pane of Table 2 focuses on socioeconomic factors. This pane reveals that long-distance CEOs reside in more favorable tax jurisdictions, with the top marginal tax rates on income and capital gains that are 71–79 basis points lower than in the county of the firm's headquarters. These differentials amount to an economically significant 12–13% reduction in state income taxes. This pattern is consistent with anecdotal evidence that some long-distance CEOs strategically manage the number of days they spend near the firm's headquarters to maintain their out-of-state residence status. One prominent example is Robert Benmosche, the CEO of AIG, who allegedly designed his travel schedule from his primary residence in Florida to the company's headquarters in New York in a way that would allow him to maintain his status as a resident of Florida, a state with no income tax.⁵

Finally, long-distance CEOs choose to live in counties with better high schools. Using the national rankings of high schools by the U.S. News and World Report, we find that the average national rank of the schools in the counties of remote CEOs is about 244 ranking positions better than in the county of their firm's headquarters, a strongly significant result with a t -statistic of 5.03. In contrast, other socioeconomic

⁵ Fitzpatrick, Dan, and Serena Ng, "Where's the Boss at Rescued Firms?" *The Wall Street Journal*, March 29, 2010. Available at: <https://www.wsj.com/articles/SB10001424052702303410404575152032941255888>

characteristics of the county, such as the average household income and the fraction of adults with a college degree, show no significant differences.

In summary, long-distance CEOs appear to choose their home locations according to a combination of lifestyle, economic, and family considerations. Relative to the county of the company's headquarters, long-distance CEOs reside in counties with a milder climate, lower tax rates, and better schools.

3. Performance Outcomes in Remote CEO Arrangements

3.1. Evidence from firm insiders

We begin the analysis by studying personal assessments of the CEO's performance by corporate insiders, such as mid-level managers, plant supervisors, and rank-and-file employees at the same firm. This setting offers three useful features. First, it provides us with a large number of direct, quantifiable evaluations that pertain directly to the CEO rather than the firm. Second, since the evaluations of the CEO are usually accompanied by free-form comments, they help us gain insights into the stated reasons for the CEO's approval or disapproval without limiting the scope of possible mechanisms by ex-ante priors. Third, prior research shows that the internal reviews of the CEO by firm employees contain novel, value-relevant information that predicts future firm performance and stock returns (Huang et al. 2015; Green et al. 2019).

Our dataset comprises nearly 1.5 million insider reviews for the sample firms compiled by Glassdoor, Inc., from the start of this practice in 2008 to the end of the sample period in 2019. The data provider offers additional services to employees, such as salary benchmarking, and, in return, requires an employee to provide an anonymous company review, salary disclosure, or interview discussion. This business model, which requires a submission of a review and personal authentication, produces a large volume of evaluations while limiting the impact of outliers and the scope for manipulation. The integrity of the reviews is preserved by the company's policy to never edit authentic reviews and to apply screens to detect fraud.

Table 3 focuses on the assessment of the CEO's professional performance by firm insiders, according to the question "Do you approve of the way your CEO is leading your company?" The answer to this question is recorded on a three-point scale (approve, no opinion, or disapprove), and the dependent variable in Table 3 is an indicator that equals 1, 0, or -1, respectively. The main independent variable, *Long-distance CEO* is a binary indicator that equals 1 during CEO-years when the CEO has a remote working arrangement with the firm and the roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles, and

0 otherwise. The regressions alternate with respect to year and firm fixed effects. Standard errors are adjusted for heteroskedasticity and clustered by firm to accommodate time-series dependence in residuals. Here and henceforth, we report the absolute values of t -statistics.

The results show that employees are more likely to disapprove of the professional performance of long-distance CEOs. This conclusion is reliably significant at 1% across all specifications, whether these CEOs are compared against their peers at other firms in the same year (column 2) or against other CEOs at the same firm (columns 3–4). According to the full specification in column 4, which exploits within-firm variation in CEO approvals, remote CEOs have a 3.8 percentage point lower approval rate than other CEOs at the same firm. Relative to the mean approval rate of 71%, this differential amounts to a significant difference of 5.4%.

Column 5 shows that the lower approval rate of long-distance CEOs is more prevalent in the evaluations from the arguably more informed insiders—those who hold managerial positions (identified as “manager”, “director”, or “senior” in the job title and captured by the binary indicator *Review by manager*). This incremental effect is captured by the interaction term *Long-distance CEO x Review by manager*, which suggests that the gap in the approval rate between long-distance CEOs and other CEOs at the same firm widens by another 1.8 percentage points (coefficient = -0.018, t -statistic = 3.41) in the reviews from managerial personnel. The resulting approval gap of 5.4 percentage points (or 7.6%) is particularly stark because, all else equal, managers appear to be more lenient in their CEO reviews and more likely to approve of a CEO’s actions, as shown by the unconditionally positive coefficient on the term *Review by manager*.

Column 6 shows that the gap in the approval rate between long-distance CEOs and other CEOs at the same firm also expands in the reviews from another group of insiders who are plausibly better informed about the CEO—those who work at the firm’s headquarters or in the same state (identified from their office location). The marginal effect is a further reduction in the approval rate of 1.2 percentage points that, when combined with the baseline effect, amounts to a gap in the approval rate of 5.2 percentage points or 7.3%.

Next, we examine the qualitative content of employees’ reviews. To gain insights into the issues raised about the CEOs’ performance, we read a sample of comments in the area labeled as feedback on the CEO. Our free-form content analysis reveals three common themes in the evaluations of commuter CEOs.

First, employees suggest that long-distance CEOs have a short-term focus and are not committed to the firm in the long-run. Some employees point out the general short-termism in the CEO’s behavior by

emphasizing “a very short-term focus” or “prioritizing short-term goals.” Others argue that long-distance CEOs are swayed by the nearsighted incentives and lack “a long-term vision.” Appendix A.3 shows examples of the common themes in the reviews and provides a sample of their detailed comments.

Second, firm insiders reveal that long-distance CEOs are less informed about the firm’s daily operations. Many reviews point out that long-distance CEOs appear to be “out of touch”, “disconnected”, or “clueless as to day to day operations.” Other employees voice similar issues by describing long-distance CEOs as “confused,” “detached from the workforce,” and “completely lost.”

Third, employees raise concerns about CEO absenteeism and worry about the CEO’s consumption of leisure and perquisites instead of solving the firm’s issues. A common theme in the reviews is that long-distance CEOs are “not around most of the time,” “too hands off,” “invisible,” or “generally absent.” According to the reviews, this absenteeism is exacerbated by the consumption of leisure and perquisites, which undermine employee effort and incentives for cost efficiency. In the words of one employee, “it’s disheartening to know layoffs are pending (10k in late 2013) and see the executives taking their helicopters back and forth to their homes.”

In summary, employees and firm insiders suggest that long-distance CEOs underperform in running their companies and relate this outcome to three common issues: (1) short-termism, (2) information loss, and (3) absenteeism and leisure. The remainder of Section 3 tests these conjectures by studying firm performance and valuation during remote CEO arrangements, and Section 4 studies the proposed economic mechanisms.

3.2. Operating performance

Figure 5 depicts changes in a firm’s operating performance around the CEO’s start of a long-distance arrangement. The horizontal scale shows event time in years, where year one corresponds to the first year after the firm’s CEO enters a long-distance working arrangement. The vertical scale shows the firm’s operating performance, measured as the return on assets (ROA) and defined as the ratio of annual net income to total book assets (variable definitions appear in Appendix C). Vertical bars represent 95% confidence intervals. Figure 5 exploits only within-firm variation in event time, thus netting out the effect of time-invariant firm characteristics, such as a firm’s location, industry, geographic dispersion, and complexity.

Figure 5 reveals three clear patterns. First, there is no significant pre-trend before the start of a CEO’s long-distance commute. The ROA remains stable during the three years preceding a long-distance

arrangement and, if anything, ticks up slightly in the year immediately preceding the start of a long-distance arrangement. Second, there is a sharp drop in a firm's performance in the first-year after the CEO enters a long-distance arrangement. Third, the drop in operating performance is persistent and shows no reversal during the long-distance years. Overall, a long-distance CEO arrangement is associated with a significant and persistent decline in operating performance, after netting out the effect of time-invariant firm characteristics.

Table 4 studies the association between a CEO's long-distance working arrangement and his firm's operating performance, while absorbing unobservable heterogeneity across firms, CEOs, and time periods. The dependent variable is a firm's ROA, and the main variable of interest is an indicator *Long distance CEO*, which is equal to one for firm-years when the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles. Here and henceforth, *t*-statistics (reported as absolute values) are based on standard errors that are adjusted for heteroskedasticity and clustered by firm to account for time-series correlation in firm-level financial policies and outcomes.

Column 1 in Panel A of Table 4 studies within-firm variation in ROA around the CEO's long-distance arrangement. The results from this regression match those in Figure 5 in magnitude and statistical significance. According to column 1, a firm's ROA declines by 1 percentage point (or 13.4% of the standard deviation in ROA) when its CEO starts a remote arrangement. This result is significant at 1% with a *t*-statistic of 3.17.

Column 2 in Panel A includes CEO fixed effects, which account for time-invariant differences across CEOs, such as innate ability, ethics, and execution skills. This specification compares the performance of the same CEO between the periods when he lives near the firm's headquarters and the periods when he has a remote working arrangement. The results in this specification confirm the strong negative association between a remote CEO arrangement and operating performance (significant at 1%). The inclusion of CEO fixed effects indicates that this association cannot be explained by time-invariant CEO attributes correlated with a decision to work remotely. In other words, long-distance working arrangements do not indicate low-quality CEOs; rather, the same CEO appears to achieve weaker operating results under a long-distance working arrangement.

Column 3 includes firm and CEO fixed effects simultaneously and shows that the negative relation between long-distance commuting and firm performance is robust to absorbing both cross-firm and cross-CEO heterogeneity. With the inclusion of these fixed effects, the magnitude and significance of the main results remain comparable. The addition of CEO fixed effects to a specification with firm fixed effects

increases the adjusted R^2 from 43.8% to 56.4% (columns 1 and 3, respectively), suggesting that unobservable differences across CEOs explain an additional 12.6% of the variation in firm performance. This is consistent with prior evidence that CEOs influence firm performance (e.g., Adams, Almeida, and Ferreira 2005; Malmendier and Tate 2009; Kaplan, Klebanov, and Sorensen 2012) and that this effect is causal (Jenter, Matveyev, and Roth 2016; Bennedsen, Pérez-González, and Wolfenzon 2020).

Column 4 augments the specification with year fixed effects, which account for the economy-wide temporal variation in firm performance. The main results persist with a similar magnitude and significance in the regressions saturated with firm, CEO, and year fixed effects. According to this specification, a given CEO achieves a 1 percentage point lower ROA at the same firm when he has a long-distance arrangement than when he lives near the headquarters. This result is statistically significant at 1% with a t -statistic of 3.56.

Column 5 introduces the most restrictive specification by replacing firm and CEO fixed effects with CEO*Firm fixed effects, while also controlling for year fixed effects. In this column, the estimates are derived from the time-series variation in a CEO's long-distance status within the CEO-firm pair, after netting out the temporal variation in ROA attributable to the economy and the business cycle. By holding constant the CEO-firm pairs, this specification accounts for the matching between CEOs and firms. The coefficient on the indicator *Long-distance CEO* remains negative, significant at 5% (t -statistic = 2.28), and similar in economic magnitude to earlier specifications. These results indicate that the underperformance of long-distance CEOs is not driven by the matching of long-distance CEOs to low-quality firms. The comparison of point estimates, which remain stable as the regressions are saturated with fixed effects, suggests that the economic magnitude of the association between long-distance CEOs and firm performance is mostly attributable to a change in the CEO's remote status rather than to the characteristics of firms, CEOs, or CEO-firm pairs.

Panel B in Table 4 offers a formal test of the pre-trends in operating performance preceding the CEO's shift to a remote arrangement. This table also tests for the persistence in the performance drop after the shift to remote work. In particular, Panel B studies the dynamics of a firm's operating performance in event time relative to the start of the CEO's remote working arrangement, where the indicators *Long-distance year t* correspond to the event years before or after the start of the CEO's long-distance arrangement. Event year 0 is the omitted base year.

The results in Panel B confirm two important patterns suggested by Figure 5. First, before the switch to a remote CEO arrangement, there is no evidence of a pre-trend in firm performance. The coefficients on event-year dummies preceding the switch to remote work (i.e., event years -3, -2, and -1) have near-zero point estimates and are never statistically significant across all columns, which absorb various sources of heterogeneity in firm performance. Second, after the switch to a remote CEO arrangement, there is a rapid and persistent decline in firm performance of a similar magnitude to that reported in Figure 5. This result holds even in the most restrictive specification saturated with CEO*Firm fixed effects (column 4), where identification is derived from comparing the performance of the same firm under the same CEO before and after the start of his remote arrangement.

Panel C in Table 4 documents several cross-sectional and time-series patterns in the association between remote CEO arrangements and operating performance. Column 1 shows that the negative relation between a CEO's remote arrangement and operating performance is stronger for CEOs who live further away from the headquarters. According to the point estimates on the variables *Long-distance CEO, below median distance* and *Long-distance CEO, above median distance* in column 1, the drop in operating performance is about 50% greater in economic magnitude for CEOs whose commuting distance to the headquarters exceeds the sample median (776 miles).

Column 2 shows that the negative effect of remote CEO arrangements is economically larger and statistically stronger for CEOs who live in a different time zone than the firm's headquarters. This can be seen from comparing the point estimates on the variables *Long-distance CEO, same time zone* and *Long-distance CEO, different time zone* in column 2 (-0.008 and -0.012, respectively).

Column 3 indicates that the negative association between long-distance CEOs and firm performance is about 38% greater in absolute magnitude when the CEO is more important for firm outcomes because he also serves as the chairman of the board. This is consistent with the additional control rights over the firm's strategic decisions and financial outcomes accruing to the board chair.

Column 4 focuses on the time-series patterns. This specification compares the performance of long-distance CEOs during the first and second decades in the sample period (2000 to 2010 and 2011 to 2019, respectively). The results show that long-distance working arrangements between CEOs and firms are negatively associated with firm performance during both the first and second half of the sample period, and

these conclusions are reliably statistically significant at 1%. The point estimates suggest that the negative association between long-distance arrangements and firm performance became smaller in magnitude during the second half of the sample. This result is consistent with a number of technological improvements in the infrastructure supporting remote work and electronic communication during the recent decade.

In summary, the start of a CEO's long-distance commute is associated with a rapid and significant drop in the firm's operating performance. This pattern shows no evidence of a pre-trend or reversal and remains robust to accounting for unobservable CEO and firm characteristics, as well as CEO-firm matches. Firm performance is weaker when the CEO's commute is longer and crosses multiple time zones.

The significant variation in firm performance in the predicted direction with factors related to the intensity and convenience of remote work, such as the CEO's travel distance, time zones, and available technology, indicates that the link between long-distance CEOs and firm performance is unlikely to be spurious. The results so far set a high bar for a possible omitted variable that could explain the decline in firm performance while being unrelated to the CEO's long-distance arrangement. Such a variable cannot be a time-persistent firm or CEO characteristic (captured by the respective fixed effects). It should vary within each CEO-firm pair, produce a decline in firm performance precisely after the CEO's switch from an onsite to a remote working arrangement, and increase in intensity with the CEO's importance for firm outcomes and the inconvenience of the commute.

3.3. Firm valuation

If the decline in operating performance indicates a less efficient use of the firm's assets, it should be reflected in the firm's market valuation. This subsection tests this hypothesis by studying the changes in the firm's Tobin's Q during periods of long-distance CEO arrangements.

Table 5 examines the association between a CEO's long-distance working arrangement and his firm's market valuation, while controlling for unobservable heterogeneity across firms, CEOs, and time periods. The dependent variable is a firm's Tobin's Q, a common measure of valuation outcomes in corporate governance (e.g., Kaplan and Zingales 1997; Gompers, Ishii, and Metrick 2003; Cremers and Ferrell 2014). As before, the main variable of interest is a binary indicator *Long-distance CEO*, which denotes CEO-years with a long-distance working arrangement. Appendix C provides further details on variable definitions.

The results in Table 5 show an economically important and statistically significant decline in firm valuation during the period when the firm's CEO has a long-distance working arrangement. The coefficients on the indicator *Long distance CEO* are uniformly negative and remain statistically significant across all columns as the model is gradually saturated with fixed effects. In columns 1–2, the point estimates remain stable as we sequentially absorb the heterogeneity in market valuation attributable to firm and CEO fixed effects. In columns 3–4, the results remain robust after jointly including firm, CEO, and year fixed effects. In column 5, the decline in firm valuation persists after saturating the model with high-dimensional fixed effects, which absorb the variation in firm valuation unique to each CEO-firm pair.

According to the most restrictive specification in column 5, a firm experiences a 0.096 decline in Tobin's Q after its CEO switches to a remote working arrangement. This drop is equivalent to 4.9% of the mean and 6.0% of the standard deviation in Tobin's Q, respectively. Since this estimate is derived in a specification with CEO*Firm fixed effects, while also controlling for year fixed effects, it captures the valuation decline attributable to the CEO's shift from an onsite to a long-distance status within the same firm, after netting out the temporal variation due to the business cycle.

In summary, long-distance CEO arrangements are associated with a significant decline in firm valuation, consistent with weaker operating performance. This result persists after restricting the analysis to CEOs who switch between an onsite and long-distance working arrangement while running the same firm.

3.4. Instrumental variable analyses

This section aims to tighten up further the empirical link between a CEO's long-distance arrangement and its consequences for firm performance by exploiting a personal driver of a CEO's commuting decision plausibly unrelated to firm performance. To select such a variable, we review interview transcripts with long-distance CEOs, their responses to analysts' questions during earnings calls, and their personal disclosures explaining their decision to have a remote working arrangement.

Among the most common factors, CEOs state that their decision to work long-distance aims to circumvent uprooting their family in general and their spouse in particular. Specifically, CEOs often cite their desire to avoid disrupting the spouse's involvement with the community, family connections, or professional career. Appendix A.4 provides examples of CEO disclosures explaining their decision to work remotely.

Following the CEOs' reasoning, we develop an instrumental variable that exploits the private costs of uprooting the CEO's spouse or domestic partner from her home state. We argue that the private relocation costs for the CEO's spouse are significantly higher if the relocation to the firm's headquarters would force her to leave her home state, thus disrupting her network, community involvement, local philanthropic activities, and access to relatives and friends. We identify the CEO's spouse or domestic partner at the time of the CEO's appointment from state marriage records, county deed records showing co-owned titles, and address history showing co-habitation. The CEO's spouse or partner is usually listed among the first potential relatives in the Lexis Nexis Public Records Database (LNPR).

Using LNPR, we obtain the spouse's age, prior address history, social security number (SSN, with the exception of the last four digits), and the year and state where the SSN was issued. The first three SSN digits indicate the state of its issuance, which we label as the spouse's home state. During the period when most of the CEOs' spouses obtained their SSNs, these numbers were typically issued during an individual's teen years at the time of applying for the first job or the first driver's license. Thus, the state of SSN issuance is usually the state where the CEO's spouse grew up.

To provide a simple, replicable, and easy-to-interpret instrument definition, we introduce the variable *Uprooting the spouse*, defined as an indicator that equals 1 if moving the CEO's household to the company's headquarters would require the CEO's spouse to leave her home state, and 0 otherwise. In other words, the instrument takes on the value of 1 if the spouse resides in her home state immediately prior to the CEO's appointment (based on her address history) and if the relocation to the headquarters would require her to move out of state. We focus on states as a geographic unit of measurement because SSN digits designate the issuing state. In addition, many professional licenses for working spouses (such as real-estate, accounting & tax, medicine, and jurisprudence) are defined at the state level, capturing additional private relocation costs from an out-of-state move.

We believe that the proposed instrument is likely to meet the exclusion restriction. Since the CEO's spouse is typically uninvolved in the firm's financial decisions, we believe that the spouse's private relocation costs are unlikely to be directly related to the firm's financial policies and outcomes, aside from the instrument's hypothesized effects on the CEO's decisions.

Panel A in Table 6 shows first-stage instrumental variable regressions. The uprooting of the spouse is a powerful predictor of CEOs' long-distance arrangements. A CEO is significantly more likely to have a remote working arrangement if relocating his spouse to the headquarters would take her out of her home state. This result is statistically significant at 1% (with a range of t -statistics from 4.71 to 5.84) across all specifications, which alternate with respect to CEO, year, and firm fixed effects. Focusing on within-CEO variation in remote vs. onsite working arrangements (column 4), the likelihood of the same CEO to opt for a remote working arrangement increases by 39.6% if the move to the headquarters would uproot his spouse from her home state.

The first-stage F-statistics indicate a powerful instrument. The lowest estimate of the F-statistic of 22.55 comfortably exceeds the rule-of-thumb threshold of 10 recommended for strong instruments in linear regressions (Stock and Yogo 2005). The adjusted R^2 of the first-stage regression indicates that the first-stage regression explains a significant part of the variation in CEOs' commuting decisions.

Panel B in Table 6 shows the results of the second-stage instrumental variable regressions, which examine the effect of a CEO's long-distance arrangement on his firm's operating performance. The dependent variable is a firm's ROA, and the main independent variable is the predicted value of the indicator *Long-distance CEO* from the first stage regression. The result from the second-stage regression confirms the negative effect of a CEO's long-distance status on firm performance. The coefficient on the instrumented indicator *Long-distance CEO* is negative and significant at 1% across all specifications. The range of point estimates in columns 1–4 indicates a decline in the firm's ROA of 120–160 basis points. This range is comparable to the estimated effect of about 100 basis points obtained in the baseline specification in Panel A of Table 4. This pattern suggests that relying on the plausibly exogenous source of variation in the CEO's long-distance status does not materially alter our earlier conclusions, consistent with a low likelihood of omitted variables.

Panel C in Table 6 shows the results of second-stage instrumental variable regressions that examine the effect of a CEO's long-distance arrangement on firm valuation (Tobin's Q). The results confirm a robust negative effect on Tobin's Q. This conclusion remains statistically significant across all specifications, whether we exploit within-firm or within-CEO variation in long-distance working arrangements.

In summary, CEOs are significantly more likely to opt for a long-distance arrangement if it allows them to avoid uprooting their spouse from her home state. Using this source of variation as an instrument for the CEO's long-distance status, we find that such arrangements have a negative effect on firm performance and valuation.

4. Mechanisms

This section studies the drivers of changes in operating performance during long-distance CEO arrangements. We then examine three non-mutually exclusive mechanisms proposed in insider reviews as contributing factors to performance outcomes: (1) short-termism, (2) information loss, and (3) leisure.

4.1. Decomposition of operating performance

Table 7 studies the association between long-distance CEO arrangements and the main components of a firm's operating performance. Panel A focuses on the components of income (the numerator of ROA), and the dependent variables in this panel comprise the natural logarithms of annual sales, cost of goods sold, and selling, general, and administrative expenses (SG&A). Panel B examines the main categories of assets (the denominator of ROA), and the dependent variables in this panel are the natural logarithms of cash holdings, current assets, and long-term assets. The logarithmic transformation of the dependent variable allows to interpret the coefficients as approximate percentage changes in the outcomes of interest. We estimate the baseline empirical model of operating performance (as in Panel A in Table 4) and report the full specification with firm, CEO, and year fixed effects in odd-numbered columns. We report the most restrictive specification with high-dimensional fixed effects in even-numbered columns.

Table 7 reveals three empirical patterns. First, the changes in operating performance during long-distance CEO arrangements are driven by the changes in income rather than assets. Second, the decline in income is driven by the increase in costs rather than the decline in sales. In particular, the point estimates in Panel A suggest that long-distance CEO arrangements are associated with a statistically significant 2.7% increase in the cost of goods sold and a statistically significant 1.7% increase in selling, general, and administrative expenses, despite no significant changes in sales. Third, the changes in assets are muted and offset each other across different categories of assets. The point estimates suggest that an 8.4% increase in cash holdings (with t -statistics of 1.36 and 1.58) is accompanied by a 1.8% decline in long-term assets, but these changes fall short of being statistically significant at conventional levels.

The increase in administrative expenses and production costs during remote CEO arrangements, accompanied by stagnant sales, aligns well with the evidence in Bertrand and Mullainathan (2003) on the symptoms of CEOs “enjoying a quiet life” with more leisure and looser cost controls. The directional increase in cash holdings, accompanied by a slight decline in long-term assets could be suggestive of short-termism. The next subsection examines these economic channels in more detail.

4.2. Economic channels

Table 8 provides evidence on the three economic channels commonly cited in the CEO reviews by firm insiders. Panel A tests the hypothesis of short-termism in financial policies. If long-distance CEOs learn that their remote arrangements are unlikely to last in the long run (for example, because of the private costs of commuting or reduction in family time), they may have a shorter time horizon in their financial decisions. Under this hypothesis, long-distance CEOs would reduce investment in assets, such as R&D, that produce an immediate charge to income but yield benefits that would likely accrue beyond the CEO’s expected appointment horizon. The same incentives also predict a reduction in long-term investment and a tilt in investment towards assets with a shorter useful life that matches the CEO’s appointment horizon.

Panel A in Table 8 provides evidence consistent with short-termism in the investment policies of long-distance CEOs. Columns 1 and 2 show that remote CEO arrangements are associated with a significant decline in R&D spending and capital investment, which are measured as a percent of book assets. The point estimates suggest that the investment rate in R&D and capital expenditures declines by 23 and 16 basis points, respectively, or about 5.2% and 3.8% of their corresponding means.

Columns 3 and 4 zoom in on the firm’s investment activities. Column 3 shows that capital investment becomes less responsive to long-term investment opportunities, proxied by the changes in Tobin’s Q, following Shin and Stulz (1998) and Ozbas and Scharfstein (2010). Column 4 shows that capital investment in property, plant, and equipment shifts towards assets with a shorter useful life, as indicated by the decline in the average useful life of investment assets. The average useful life of investment assets is measured as the annual change in net property plant and equipment divided by the annual change in depreciation.

Panel B in Table 8 examines the information channel. Prior work suggests that the physical presence of firm insiders on corporate premises helps them acquire valuable information and make performance-improving decisions in multiple contexts (e.g., Giroud 2013; Kalnins and Lafontaine 2013; Bernstein, Giroud,

and Townsend 2016). Conversely, a less frequent presence of long-distance CEOs at the headquarters would likely reduce opportunities for onsite information acquisition, making the CEO more “detached,” “out of touch,” or “uninformed,” in the words of insiders’ reviews in Section 2.

The evidence in Panel B supports the information hypothesis. The operating performance of long-distance CEOs suffers more when the CEO’s access to information at the headquarters is more crucial for firm outcomes. Column 1 shows that the decline in ROA during periods of long-distance CEO arrangements is attenuated at geographically dispersed firms where information is likely to be less concentrated at the headquarters, such as restaurant chains and retail networks. We measure a firm’s geographic dispersion by the number of states where it operates, according to the business description in its annual report, using the approach in and the data from Garcia and Norli (2012).

Column 2 shows that the decline in operating performance during remote CEO arrangements is more than twice as strong for externally-hired CEOs, for whom onsite presence is likely more important for information acquisition than for their internally-promoted counterparts with established information networks within the firm. Externally hired CEOs are those whose professional position immediately preceding the CEO appointment was with another firm.

Column 3 shows that the decline in operating performance is milder for long-distance CEOs who have access to their firm’s regional office near their primary residence. We collect this information from employment agreements, which explicitly allow the CEO to use the company’s field office near the CEO’s primary residence to conduct his business duties.

Panel C in Table 8 investigates the leisure channel. Since long-distance CEOs spend more time away from the headquarters and working from home, they could dedicate some of the away time to leisure, particularly in the presence of the typically better leisure opportunities near their remote homes. Consistent with this channel, insiders’ reviews often refer to long-distance CEOs’ absenteeism and consumptive of private benefits. Recent work by Ben-Rephael, Carlin, Da, and Israelsen (2021) suggests that the amount of time a CEO spends on work-related tasks versus other activities is a strong driver of firm performance. Since leisure is unobservable, we construct proxies for the CEO’s consumption of leisure and test their relation with performance outcomes.

Panel C in Table 8 provides evidence in support of the leisure channel. Column 1 shows that the decline in the firm's operating performance (ROA) expands to 140 basis points for long-distance CEOs who own recreational boats. This result is significant at 1% with a t -statistic of 3.15, and the magnitude is nearly double the performance decline of 80 basis points observed for other long-distance CEOs. We collect CEOs' purchases of private vessels from state vessel registration records in LNPR and identify recreational yachts as those whose intended use in the registration record is stated as "pleasure" or "leisure."

Column 2 shows that the decline in the firm's operating performance expands to 150 basis points for long-distance CEOs who maintain their primary residence in a beach home during their long-distance arrangement. A beach home is a CEO's residence located within 0.25 miles (about a 5-minute walk) of the ocean shore in one of the following warm-climate states: California, Florida, Georgia, Hawaii, Alabama, North Carolina, and South Carolina.

Column 3 shows that the decline in firm performance during long-distance CEO arrangements is significantly stronger for CEOs who live within 10 miles of a premium golf course, according to the 2019 list of the 200 best golf courses by *Golf Digest*. This result is consistent with the evidence in Yermack (2006) that golf is a popular leisure activity among CEOs (over 40% of CEOs in his sample maintain golf club memberships), and CEOs' trips to golf destinations are negatively associated with firm performance.

In summary, the decline in firm performance during long-distance CEO arrangements likely reflects a combination of several non-mutually exclusive economic channels. We find evidence consistent with CEO short-termism, information frictions, and increased consumption of leisure.

5. Learning

In our final analysis, we study whether the board and investors update their priors about the performance of long-distance CEOs and take corrective actions if these CEO underperform. This analysis makes a step towards understanding whether the initiation of long-distance agreements between the firm and the CEO reflects diffused priors about the outcomes of such arrangements or agency frictions.

Our analysis so far suggests that long-distance working arrangements between firms and CEOs, on average, do not appear to be value improving. If the erosion in operating performance and firm value is indeed

attributable to the suboptimal firm-CEO match, such matches should be short-lived. The board of directors should end a long-distance arrangement with a CEO after extracting a sufficiently precise signal from his performance under such an arrangement. Panels A and B in Table 9 test this conjecture.

Panels A in Table 9 compares the longevity of CEO appointments between long-distance CEOs and their locally-based peers. The dependent variable is the longevity of a CEO-firm match, defined as the natural logarithm of the number of years between the CEO's effective appointment date and the effective date of departure from the CEO position.

The results in Panel A show that long-distance CEO arrangements do not last. Long-distance CEOs are more likely to separate from the firm, resulting in shorter CEO tenures. Columns 1–2 show that this conclusion is significant at 1% when we compare the CEOs of the same firm, as indicated by firm fixed effects. Column 3–4 demonstrate that this pattern persists if we restrict our analysis to within-CEO variation and compare the duration of appointments for the same CEO across multiple firms under onsite versus long-distance arrangements. In column 4, the point estimate of -0.059 (expressed as the natural logarithm of years) on the indicator *Long-distance CEO* indicates that the same CEO retains his position for one year less if it involves a long-distance arrangement. Relative to the average CEO tenure of 6.38 years in our sample, this represents an economically important 15.7% reduction in CEO tenure.

Panel B in Table 9 examines the likelihood of forced turnover in long-distance CEO arrangements. The dependent variable is a binary indicator that equals 1 if the CEO departure is forced, and 0 otherwise. We classify a CEO departure as forced if a corporate press release, media article, or CEO interview explicitly indicate that the CEO was ousted, terminated, or resigned under the pressure from the board or shareholders. The results in Panel B show that long-distance CEOs are more likely to be terminated. If we focus on within-firm variation in termination decisions (columns 1–2), the same firm is 6.4–6.5 percentage points more likely to terminate its contract with a long-distance CEO than with a regular CEO, a result significant at 1%.

Panel C in Table 9 shows the announcement returns to the appointments and departures of long-distance CEOs. The outcome variable is the announcement return on the company's stock around a three-day window [-1;1] centered on the day of the announcement. The announcement date is the earliest date when the CEO's appointment or departure is first announced by the firm in a press release or during a conference call.

The table shows cumulative abnormal returns (CARs) and buy-and-hold returns (BHARs) calculated according to the Capital Asset Pricing Model (CAPM).

The results in Panel A reveal no significant differences in announcement returns around the appointments of onsite and long-distance CEOs. This result is consistent with the evidence that most of the professional credentials are statistically indistinguishable between these CEO groups at the time of their appointments (Appendix Table B.2). Thus, *ex-ante*, it appears that market participants do not view the appointments of long-distance CEOs as initiated in bad faith.

The departures of long-distance CEOs are associated with a 2.5–2.6% increase in the firm’s market value, and these estimates are statistically significant at 1%. The sharp and immediate increases in firm value in response to the departures of long-distance CEOs are consistent with our evidence that remote arrangements, on average, are associated with declines in operating performance and firm valuation. In contrast, the departures of regular CEOs are met with near-zero, statistically insignificant announcement returns. This pattern is consistent with prior evidence that CEO departures in general settings result in close-to-zero or slightly negative announcement returns, reflecting the costs associated with CEO replacement (e.g., Borstadt 1985; Reinganum 1985; Weisbach 1988; Jenter, Matveyev, and Roth 2016).

Panel D in Table 9 tests whether boards adjust their future recruiting policies after a first-hand experience with a long-distance CEO. This table studies the likelihood of a firm that has previously employed a long-distance CEO to appoint another long-distance CEO in the future. The dependent variable is an indicator that equals 1 if the firm appoints another long-distance CEO, and 0 otherwise, and the regressions are estimated as linear probability models. *Past long-distance CEO* is a binary indicator that equals 1 if the company has previously employed a long-distance CEO.

The results in Panel D show a clear pattern. After working with a long-distance CEO, a firm becomes significantly less likely to enter into a long-distance CEO arrangement in the future. This result is strongly significant across all columns (*t*-statistics = 3.45 to 5.85) and robust to various combinations of fixed effects. The evidence in Panel D is consistent with board learning from its first-hand experience with a long-distance CEO and drawing inferences about the performance consequences of long-distance arrangements. In support of this interpretation, we have come across cases when boards make qualitative revisions in their future

contractual agreements with CEOs. For example, some firms appear to introduce clauses in employment agreements that require future CEOs to relocate to the area near the firm's headquarters.

In summary, at the time of their appointment, long-distance CEOs are not systematically different from other CEOs according to their professional credentials and announcement returns. After observing the CEO's performance in a remote arrangement, the board is more likely to fire the CEO and less likely to engage another long-distance CEO in the future. Departures of long-distance CEOs trigger strong positive returns.

6. Conclusion

This paper has studied the performance consequences of CEOs' long-distance working arrangements. We find that such arrangements are associated with weaker operating performance, lower firm valuation, and a lower approval rate of the CEO's policies by firm insiders. These effects are related to CEO short-termism, loss of information, and consumption of leisure. Consistent with these frictions, long-distance CEO arrangements do not last in the long-run.

As remote work is becoming increasingly popular across all levels of corporate hierarchy, our paper makes a step towards to a better understanding of the consequences of long-distance arrangements for top executives. Our evidence suggests that CEOs' family considerations have a first-order effect on their decisions to work remotely. While most prior research has focused on CEOs' monetary incentives and career concerns in explaining their professional decisions, we find that CEOs' non-pecuniary incentives from family factors have profound economic consequences. We hope that the growing interest in constructing a more complete picture of CEOs' non-pecuniary motives beyond their firm will continue to expand our understanding of their professional decisions.

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Appendix A: Sample disclosures

This appendix includes sample disclosures of CEOs' long-distance working arrangements from proxy statements and employment letters, as well as CEOs' personal disclosures related to the reasons for their long-distance working arrangements. The appendix also provides sample reviews of long-distance CEOs by firm insiders.

Appendix A.1

Sample disclosures of CEO long-distance arrangements in proxy statements

Example 1

Proxy statement for Vista Outdoor Inc., for shareholders' meeting on 06/18/2018, p. 37

CEO: Christopher T. Metz

The amounts in this column consist of a stipend for expenses in connection with Mr. Metz's commuting between Vista Outdoor's Utah headquarters and his home in Florida.

Example 2

Proxy statement for Global Eagle Entertainment Inc., for shareholders' meeting on 11/28/2017, p. 30

CEO: David M. Davis

Amounts disclosed under "All Other Compensation" include (1) for Mr. Davis, approximately \$50,000 for commuting benefits for his travel to and from his principal residence in Minnesota and our Company's headquarters in Los Angeles, California, and \$4,300 for 401(k) employer matching contributions;

Example 3

Proxy statement for 3D Systems Corporation for shareholders' meeting on 04/30/2007, p. 35

CEO: Abraham N. Reichental

Since joining the Company in 2003, Mr. Reichental's primary residence has been in South Carolina, and the living expenses were for a residence maintained by him in California, where our headquarters were located until 2006.

Example 4

Proxy statement for Mattel Inc., for shareholders' meeting on 04/05/2017, p. 81

CEO: Christopher A. Sinclair

For Mr. Sinclair, the amount shown is a special allowance of \$60,000 per month, in lieu of participation in Mattel's relocation program or any one-time special relocation payment, and was intended to assist Mr. Sinclair with his living and commuting expenses while working in California and maintaining his primary residence in Florida. Mr. Sinclair ceased to be eligible for this allowance effective April 1, 2017 in connection with his new role as Executive Chairman.

Example 5

Proxy statement for Libbey Inc., for shareholders' meeting on 03/28/2019, p. 28

CEO: William A. Foley

Direct payment or reimbursement of personal financial planning and tax return preparation fees; annual executive health screening and related services; ground transportation for trips between Toledo, Ohio, and the Detroit/Wayne County Metropolitan airport for the executive when traveling for business purposes and the executive's spouse when traveling together; membership in one airline club of the executive's choice; for executives relocating at Libbey's request, moving and related expenses associated with the move (may also include loss-on-sale protection when necessary to attract talent); and, for Mr. Foley until April 24, 2019, a housing allowance for housing in the Toledo, Ohio, area since his primary residence is in the Cleveland, Ohio, area.

Example 6

Proxy statement for Verisign Inc., for shareholders' meeting on 04/10/2012, p. 31
CEO: D. James Bidzos

Additionally, because Mr. Bidzos was located in California and the Company's headquarters are in Virginia, the Company also provided Mr. Bidzos with a corporate-leased apartment and automobile while he was in Virginia. The Compensation Committee approved a value not to exceed \$10,000 per month for the apartment, costs associated with the apartment such as cleaning services and utilities, and the automobile.

Example 7

Proxy statement for FSI International Inc., for shareholders' meeting on 12/07/2011, p. 19
CEO: Donald S. Mitchell

In addition to Company-paid premiums on term life and long-term disability policies for executive officers, the Company also pays the cost for Mr. Mitchell to travel to our headquarters in Minneapolis from his office in San Diego, and for his lodging expenses while in Minneapolis. These arrangements were agreed to by the Company and Mr. Mitchell in 1999 in connection with his original hiring by the Company.

Example 8

Proxy statement for Cryo Cell International Inc., for shareholders' meeting on 10/30/2019, p. 19
CEO: David Portnoy

The agreements also provide for reimbursement for all business expenses, including reasonable commuting expenses for David Portnoy between his home in Miami, Florida to the Company's headquarters in Tampa, Florida, including lodging and rental car expenses for when he is working in the Company's offices in Tampa. David Portnoy's principal place of employment shall be at the Company's offices in Miami, Florida, provided he shall travel to the Company's headquarters as necessary to fulfill his responsibilities under the agreement.

Appendix A.2

Sample disclosures of CEO long-distance arrangements in employment contracts

Example 1

Exhibit 10.1 in the annual report (10-K) for NCR Corporation for fiscal year 2005, p. 3
CEO: James M. Ringler

Because you will need to spend time working at the Company's headquarters in Dayton, Ohio, NCR will provide you with the following during the Engagement: (a) temporary housing at its corporate guest facility in Dayton, Ohio, including meals at such facility (with an approximate cost to the Company of \$3,000 per month); and (b) a rental vehicle and car service to and from the airport (with an approximate cost to the Company of \$1,500 per month).

During the Engagement, NCR will also permit you to use the corporate aircraft for business travel and for travel between your Florida residence or any other residence and the Company's offices in Dayton, Ohio, and elsewhere as needed.

Example 2

Exhibit 10.1 in the current report (8-K) for ATA Holdings Corporation on 10/21/2005, p. 2
CEO: John G. Denison

The Companies understand that Executive's permanent residence is in Dallas, Texas, and the Companies acknowledge that Executive may continue to commute weekly or bi-weekly to such permanent residence consistent with Executive's commuting practices during his employment under the Initial Employment Agreement, as long as such commuting does not interfere unreasonably with the execution of Executive's duties for the Companies.

Example 3

Exhibit 10 in the current report (8-K) for Rite Aid Corporation on 01/18/2000
CEO: Mary F. Sammons

Other than for necessary travel in connection with the performance of his duties hereunder, the Executive shall be based in Portland, Oregon, and shall not at any time be required to relocate his primary residence from the Portland metropolitan area, regardless of the location from time to time of the Company's principal headquarters. The Company shall provide suitable office space, staff and equipment to enable the Executive to discharge his duties from such location.

Example 4

Exhibit 10.1 in the current report (8-K) for Convergys Corporation on 02/12/2010, p. 2
CEO: Jeffrey H. Fox

For so long as you remain employed with the Company, the Company shall provide you with temporary housing or a monthly housing allowance to be paid to you on the last business day of each month commencing February 2010 and otherwise reimburse you in accordance with the Company's general expense policies.

Example 5

Exhibit 99 in the current report (8-K) for Zilog Inc., on 01/30/2002
CEO: James M. Thorburn

The Company will reimburse Executive for all reasonable business expenses actually incurred by Executive, including commuting expenses for up to two round trip visits per week to Executive's residence, and expenses incurred for temporary housing.

Example 6

Exhibit 10.35 in the annual report (10-K) for Spirit Airlines Inc., for fiscal year 2015, page 2
CEO: Robert L. Fornaro

Executive shall be required to maintain regular hours at Company's headquarters (which are currently located in Miramar, Florida) and to perform his duties and responsibilities hereunder primarily from and at the Company's headquarters, it being understood and agreed that the foregoing shall not preclude Executive from traveling on Company business to the extent reasonably required to perform his duties and responsibilities. Subject to the foregoing, Executive may perform, on a lesser scale, some of his duties and responsibilities from and at his primary residence; provided, however, that Executive shall arrange his schedule so as to be present in person at the Company's headquarters as and when necessary to perform those duties and responsibilities that cannot be effectively or properly performed elsewhere.

Example 7

Exhibit 10.16 in the annual report (10-K) for Starz LLC for fiscal year 2012, page 2
CEO: Christopher Albrecht

Executive shall not be required to relocate his principal residence from the Los Angeles, California metropolitan area to the Englewood, Colorado metropolitan area during the Term. The Company and Executive shall agree on a reasonable budget for Executive's travel between Los Angeles and Englewood as necessary for the conduct of the Company's business and the performance of Executive's duties hereunder.

Example 8

Exhibit 10.1 in the current report (8-K) for Novatel Wireless Inc on 08/06/2014, page N/A
CEO: Alex Mashinsky

In connection with the Executive's commute from his New York residence, the Company will also reimburse Executive for the cost of his weekly trips from New York to San Diego, including coach-class travel, reasonable San Diego area lodging reimbursement, and ground transportation. The Executive shall also be entitled to \$750 per month non-accountable reimbursement for all other costs incurred in connection with his commute to and stay in the San Diego area, including but not limited to non-business meals.

Appendix A.3

Sample insider reviews of long-distance CEOs grouped by common themes

1. Short-termism in financial decisions

Current management is putting short term gains ahead of long term vision.

Executive leadership seems to have little direction, poor communication, no accountability. Prioritize short term goals over long term ones.

The company has a very short term focus.

Management needs to have long term vision, minimize frequent reorganization, and appreciate talent within the company.

2. Information frictions and disconnect from the firm's daily operations

CEO is completely out of touch with some selling practices regarding customers.

There is a huge disconnect between upper management and the rest of the workforce.

Upper Management and CEO are clueless as to day to day operations.

CEO is out of touch with his employees.

An out of touch CEO and corporate staff.

Upper management not always in tune to what is happening on the research and development level.

Upper Management disconnected.

3. Absenteeism and consumption of perquisites and leisure

CEO generally absent from the Buffalo office and seems out of touch.

CEO is not around most of the time and with the senior management changing so rapidly, future of the company is very uncertain.

I can't say I have ever seen the people like the CEO or CFO in the NY headquarters office more than a handful of times over numerous years.

Management absent most times.

Upper Management is not around enough.

Very hard to swallow travel cuts when the company helicopter continues to fly almost daily.

It's disheartening to know layoffs are pending (10k in late 2013) and see the executives taking their helicopters back and forth and to their homes.

I have worked at the HQ site for several years. I have seen the executives throttling others pay so they can stuff their wallets. 600K spent on the CEO for his furniture, nearly a million dollars spent for a lease so the CEO can travel in his own private jet, hundreds of thousands spent for fuel for the CEO's personal plane (Yes he has his OWN plane).

They expect you as a DM to get your managers (\$30,000 a year) and your hourly employees (min. wage) to work miracles while corporate executives take the private company jet back and forth to work from home every week. It's insanity.

Management also preaches price controls but doesn't practice it themselves in any way/shape/form (e.g. - purchase of second corporate jet).

Appendix A.4

Examples of CEO disclosures explaining the reasons for their long-distance arrangements

Example 1

CEO: Jay A. Snowden

Company: Penn National Gaming, Inc.

Article: Penn National's new CEO put all he learned from poker and football into a challenging first year

Author: Gary Rotstein

Source: US Bets

Publication date: 12/16/2020

Snowden has had Boston connections ever since his Harvard days in the late 1990s — his wife is from there, and they make their home there, with him commuting weekly to Pennsylvania on commercial flights into Philadelphia.

Example 2

CEO: Spencer Rascoff

Company: Zillow Group, Inc.

Article: Filing shows what Zillow pays for CEO's air commute from L.A. to Seattle

Author: Monica Nickelsburg

Source: GeekWire

Publication date: 04/27/2017

"Beginning this summer, I will be splitting my time between Seattle and L.A., where my wife grew up and where all four of our parents live," Spencer Rascoff wrote at the time of his move.

Example 3

CEO: Dorrit J. Bern

Company: Charming Shoppes, Inc.

Article: How one CEO juggles her job and family miles apart

Author: Joann S. Lublin

Source: The Wall Street Journal

While she yearned to be a CEO, Bern didn't want to uproot her family... The struggling retailer refused to give up its pursuit, and eventually offered to pay for Bern's Philadelphia apartment and flights home for five years.

Appendix B: Sample Construction and Composition

This appendix describes the construction of our sample and compares the characteristics of long-distance CEOs with other CEOs in the sample.

Appendix Table B.1
Sample Construction

This table shows the sample selection criteria and provides the number of firms, CEOs, and observations screened out by each sample filter. The sample consists of publicly traded U.S. firms covered by Execucomp or BoardEx with available data on CEO tenures. The sample period is 2000–2019.

Sample selection criteria	# firms	# CEOs	# observations
Public firms with available data on CEOs	3,819	8,418	49,749
- Interim or Acting CEOs	104	268	961
- CEOs with tenure less than one year	317	926	3,098
- Firms with missing information on income or assets	262	569	8,760
= Final Sample	3,136	6,655	36,930

Appendix Table B.2
A Comparison of Long-Distance CEOs and Local CEOs

This table compares the characteristics of long-distance CEOs and local CEOs in our sample. Long-distance CEOs are those whose roundtrip commute from the primary residence to the firm's headquarters exceeds 100 miles. Local CEOs are all other CEOs. The sample period is 2000–2019, and the values reported are time-series averages. Sample selection criteria appear in Appendix Table B.1. The right-hand side column shows the absolute values of *t*-statistics for the tests of the differences of means, and the levels of statistical significance are indicated as follows: *=10%, **=5%, ***=1%.

Variable	Long-distance CEOs	Local CEOs	Difference	t-statistic
Age, years	56.16	55.94	0.22	1.53
Male indicator	0.96	0.97	-0.01	1.30
Tenure with the firm, years	5.73	7.58	-1.85	8.28***
Graduate degree indicator	0.67	0.64	0.03	1.42
MBA indicator	0.44	0.42	0.02	1.08
External board seats	2.61	2.17	0.44	2.33**
Chairman-CEO indicator	0.46	0.48	-0.02	1.27

Appendix C. Variable Definitions

This appendix defines the variables. Parenthetical entries refer to the annual Compustat item name.

C.1 CEOs

Age, years: CEO's age in years

Appointment of another long-distance CEO: An indicator that equals 1 if a firm that has previously employed a long-distance CEO appoints another long-distance CEO, and 0 otherwise

Chairman-CEO indicator: An indicator that equals 1 during firm-years when the firm's CEO also serves as the chairman of the board of directors, and zero otherwise.

Different time zone indicator: An indicator equal to one if the home of a long-distance CEO is in a different time zone than the firm's headquarters, and zero otherwise.

Distance from remote home to HQ, miles: The distance between the firm's headquarters and the CEO's home, in miles, calculated for long-distance CEOs.

Duration of remote arrangement, years: The number of years that a CEO works remotely in a given firm.

External board seats: The number of directorships at other firms.

Forced departure: An indicator that equals 1 if the CEO is terminated or forced to resign, and 0 otherwise.

Fraction of tenure in remote arrangement: The number of years that a CEO works remotely in a given firm divided by his overall tenure as CEO.

Graduate degree indicator: An indicator equal to one if the manager holds a graduate degree and zero otherwise

Internally (externally) hired long-distance CEO: A CEO whose immediately preceding professional position was with the same firm (different firm).

Long-distance CEO indicator: An indicator that equals 1 during CEO-years when the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles, and 0 otherwise.

Long-distance CEO with leisure boat: An indicator variable that equals one if the CEO owns a private vessel during his long-distance arrangement, and the use of the vessel is classified as "pleasure" in the state vessel registration.

Long-distance CEO in beach home: An indicator that equals 1 if the CEO's primary home is within 0.25 miles of the ocean shore in one of the following warm-climate states: CA, FL, GA, NC, SC, or AL, and 0 otherwise.

Long-distance CEO near golf: An indicator that equals 1 if the long-distance CEO's primary home is within 10 miles of a top-200 golf course, according to the 2019–2020 national ranking of U.S. golf courses by *Golf Digest*.

Long-distance CEO, below (above) median distance: An indicator that equals 1 if the distance between the CEO's primary residence and the headquarters is less (greater) than the median distance for long-distance CEOs (775.86 miles).

Long-distance CEO, same (different) time zone: An indicator equal to 1 for long-distance CEOs whose home is in the same (a different) time zone than the headquarters and 0 otherwise.

Male indicator: An indicator equal to one if the manager is male and zero if the manager is female.

MBA indicator: An indicator equal to one if the manager holds an MBA degree and zero otherwise

Period 2000-2010: An indicator equal to 1 for long-distance CEOs in the years 2000-2010, and 0 otherwise.

Satellite office: An indicator that equals 1 if the firm has a field office within 30 miles of the long-distance CEO's primary residence, and 0 otherwise.

Time in CEO position: The natural logarithm of the number of years between the effective appointment date and the effective date of departure from the CEO position.

Tenure with the firm, years: The number of years the manager has worked at the firm.

Uprooting the spouse: An indicator that equals 1 if moving the CEO's household to the company's headquarters would require the spouse to leave her home state, and 0 otherwise. The home state of the spouse is the state where she received her social security number.

C.2 Firms

Book value of total assets, \$ bil: Book value of total assets (at) in billions of dollars.

Capital expenditures, \$ millions: capital expenditure (capx) in millions of dollars.

CapEx (%): The percentage ratio of capital expenditure (capx) to book value of total assets (at).

EBITDA: Earnings before interest, taxes, depreciation and amortization (ebitda) in millions of dollars.

Geographic dispersion of operations: The number of states in which the firm operates, according to its annual report.

Investment useful life: The average useful life of acquired assets, measured as the annual change in net PP&E (ppent) divided by the annual change in depreciation (dp).

Market capitalization, \$ bil: book assets (at) + market value of common equity (csho*prcc_f) - common equity (ceq).

Net income, \$ millions: Net income (ni) in millions of dollars.

R&D expenditure, \$ millions: research and development expenditure (xrd) in millions of dollars.

R&D (%): The percentage ratio of R&D expenditure (xrd) to book value of total assets (at).

ROA: Return on assets, calculated as net income (ni) divided by the book value of total assets (at).

Sales, \$ millions: Net sales (sale) in millions of dollars.

Tobin's Q: Market value of assets [book assets (at) + market value of common equity (csho*prcc_f) - common equity (ceq)] / book value of total assets (at).

C.3 Employee Reviews

The following variables are based on employee reviews on www.glassdoor.com.

Employee approval rate: An indicator equal to 1, 0, or -1, if the employee's answer to the question "Do you approve of the way your CEO is leading your company?" is "approve," "no opinion," or "disapprove," respectively.

Review by manager: An indicator that equals 1 if the reviewer's job title includes the words "manager," "director," or "senior," and 0 otherwise.

Review from HQ state: An indicator that equals 1 if the reviewer is based in the state of the firm's headquarters, and 0 otherwise.

Figure 1
Frequency of Long-distance CEOs over Time

This figure plots the proportion of long-distance CEOs among all sample CEOs in 2000-2019. *Long-distance CEO* is an indicator that equals 1 during CEO-years when the CEO's roundtrip commute from the primary residence to the firm's headquarters exceeds 100 miles. The sample consists of 6,655 CEOs at 3,136 publicly-traded U.S. firms covered by Execucomp or BoardEx with non-missing data on CEO tenure. Sample selection criteria and variable definitions appear in appendixes B and C, respectively.

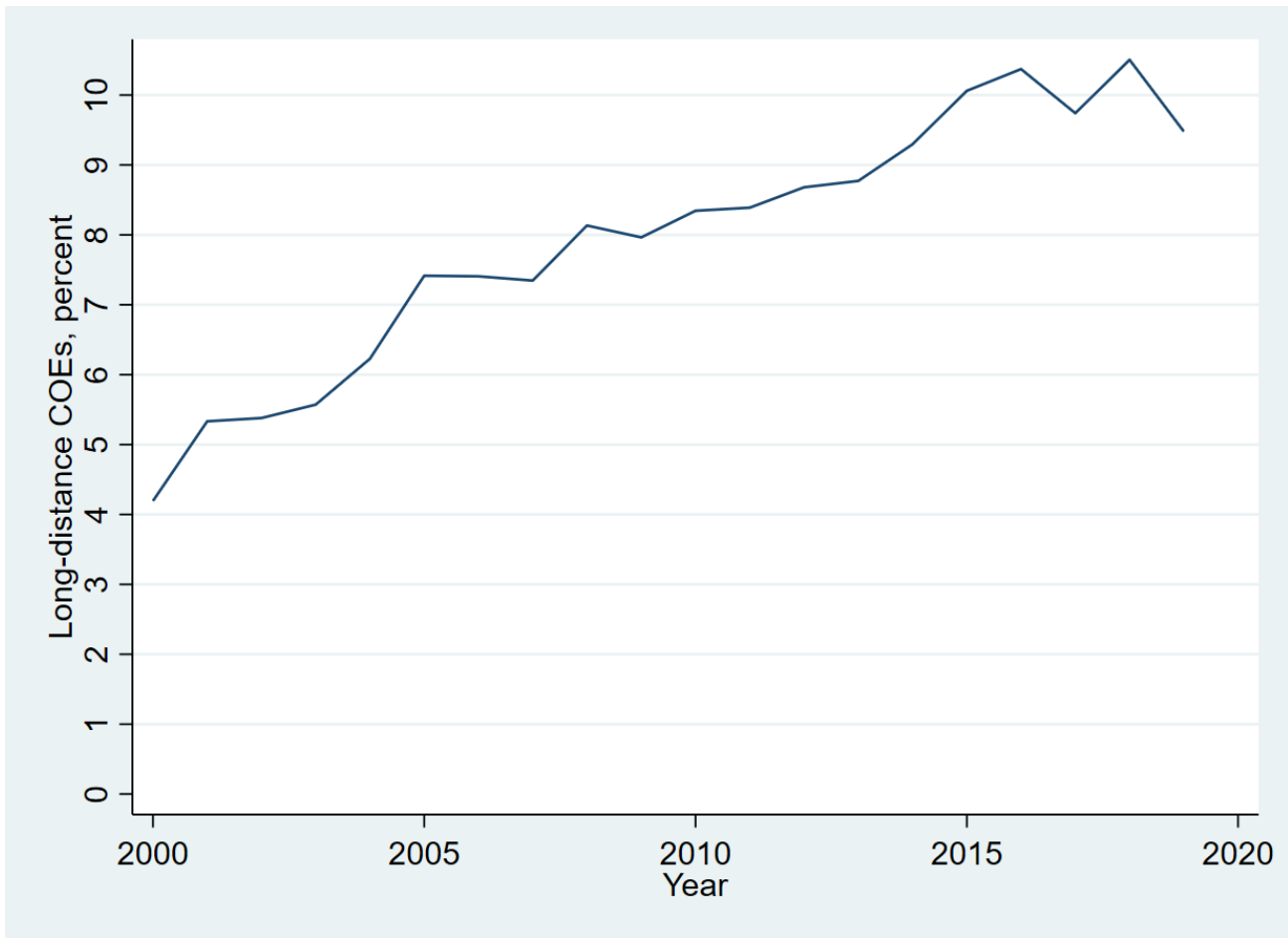


Figure 2
Proportion of Long-distance CEOs by Industry

This figure shows the proportion of long-distance CEOs across the twelve Fama-French industries. The bars indicate the fraction of CEOs with a long-distance working arrangement in a given industry, averaged over the sample period from 2000 to 2019. A long-distance arrangement is one where the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles. Sample selection criteria and variable definitions appear in appendixes B and C, respectively.

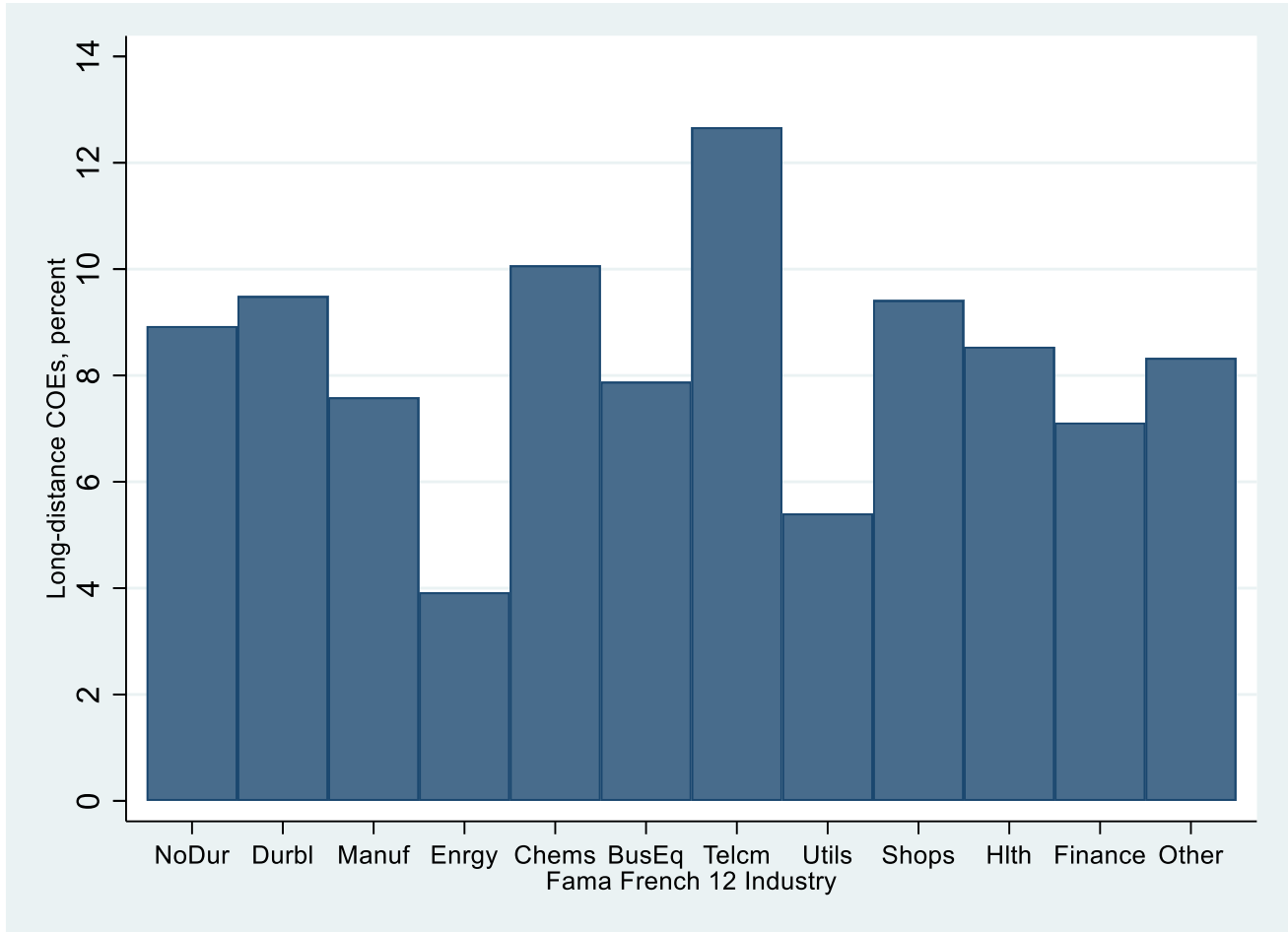


Figure 3
Proportion of Long-Distance CEOs by the State of the Firm's Headquarters

This figure shows the proportion of long-distance CEOs by the state of the firm's headquarters. Darker colors indicate states with a higher proportion of firms (headquartered in a given state) that have had a long-distance working arrangement with a CEO in 2000-2019. A long-distance arrangement is one where the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles. Sample selection criteria and variable definitions appear in appendixes B and C, respectively.

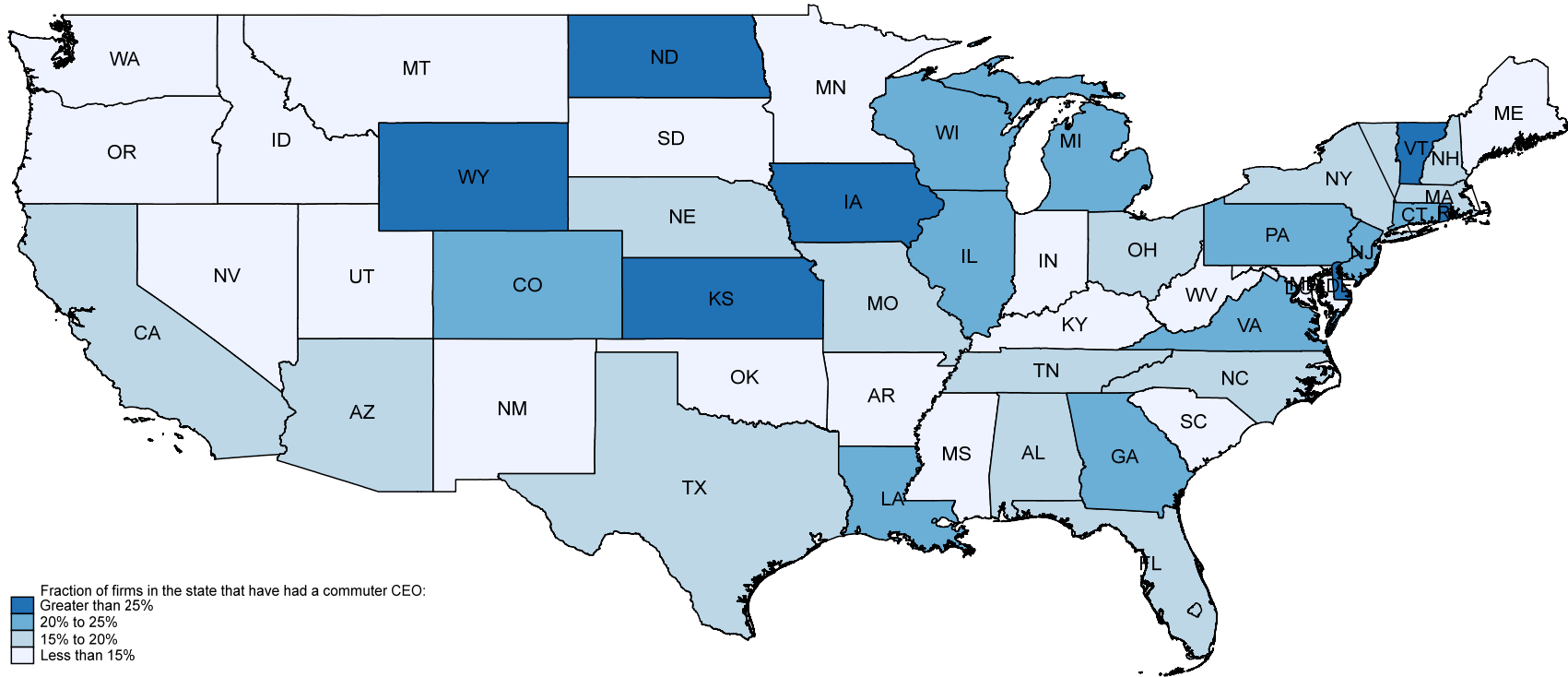


Figure 4
Primary Residences of Long-distance CEOs

The figure plots the locations of the primary residences of long-distance CEOs. Long-distance CEOs are defined as CEOs whose roundtrip commute from the primary residence to the firm's headquarters exceeds 100 miles. A CEO's primary residence is the home where the CEO is registered to vote and where he resides with his spouse or domestic partner. Darker-shaded circles correspond to locations with multiple long-distance CEOs. Sample selection criteria and variable definitions appear in appendixes B and C, respectively.

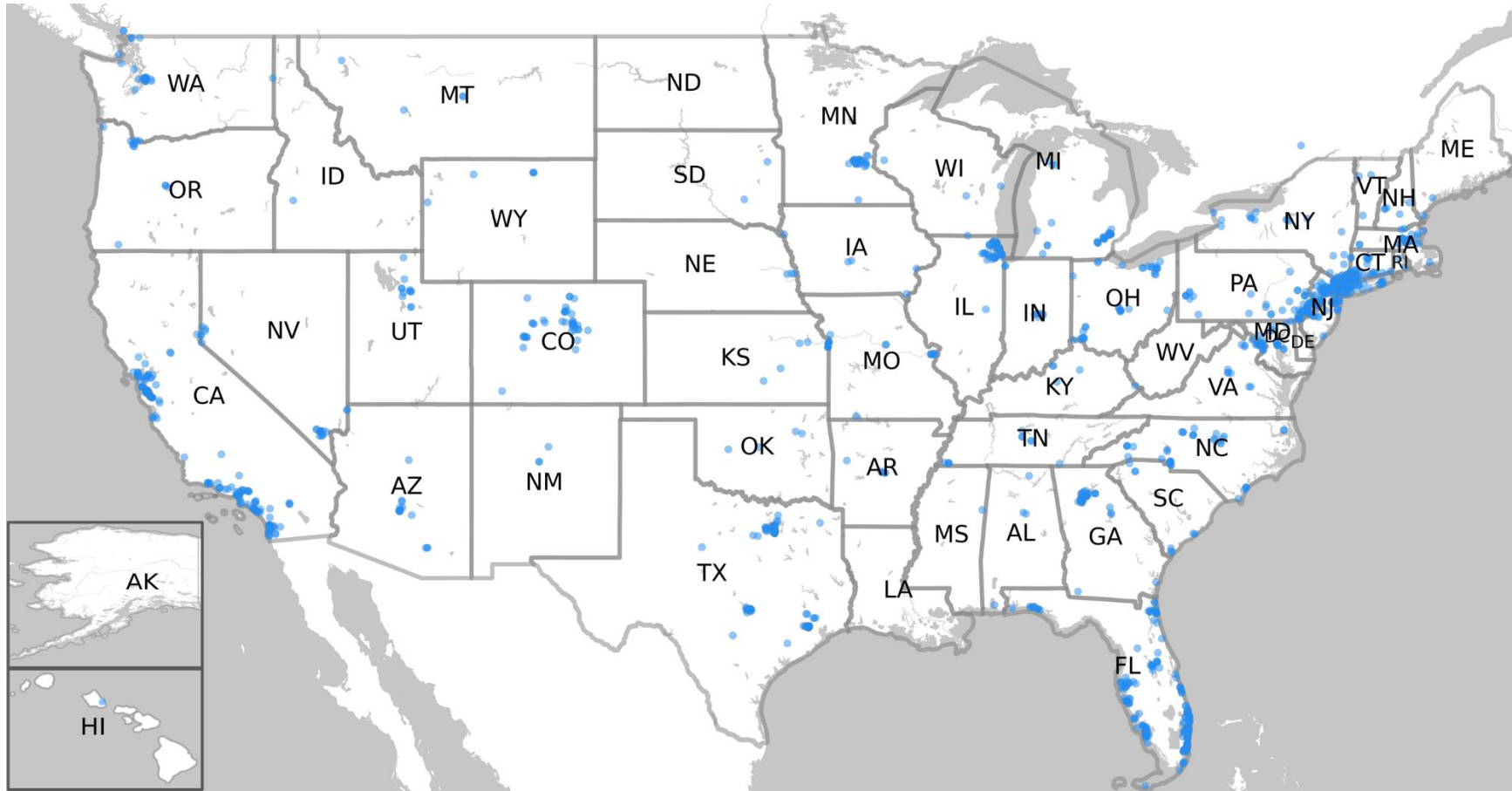


Figure 5
Operating Performance in Long-Distance CEO Arrangements

This figure shows the dynamics of a firm's operating performance in event time relative to the start of the CEO's remote working arrangement. The x-axis indicates the three years before and after the start of the CEO's long-distance arrangement (marked as year 0). The y-axis shows the firm's annual return on assets (ROA), and the vertical bars correspond to 95% confidence intervals. A long-distance working arrangement is one where the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles. Sample selection criteria and variable definitions appear in appendixes B and C, respectively.

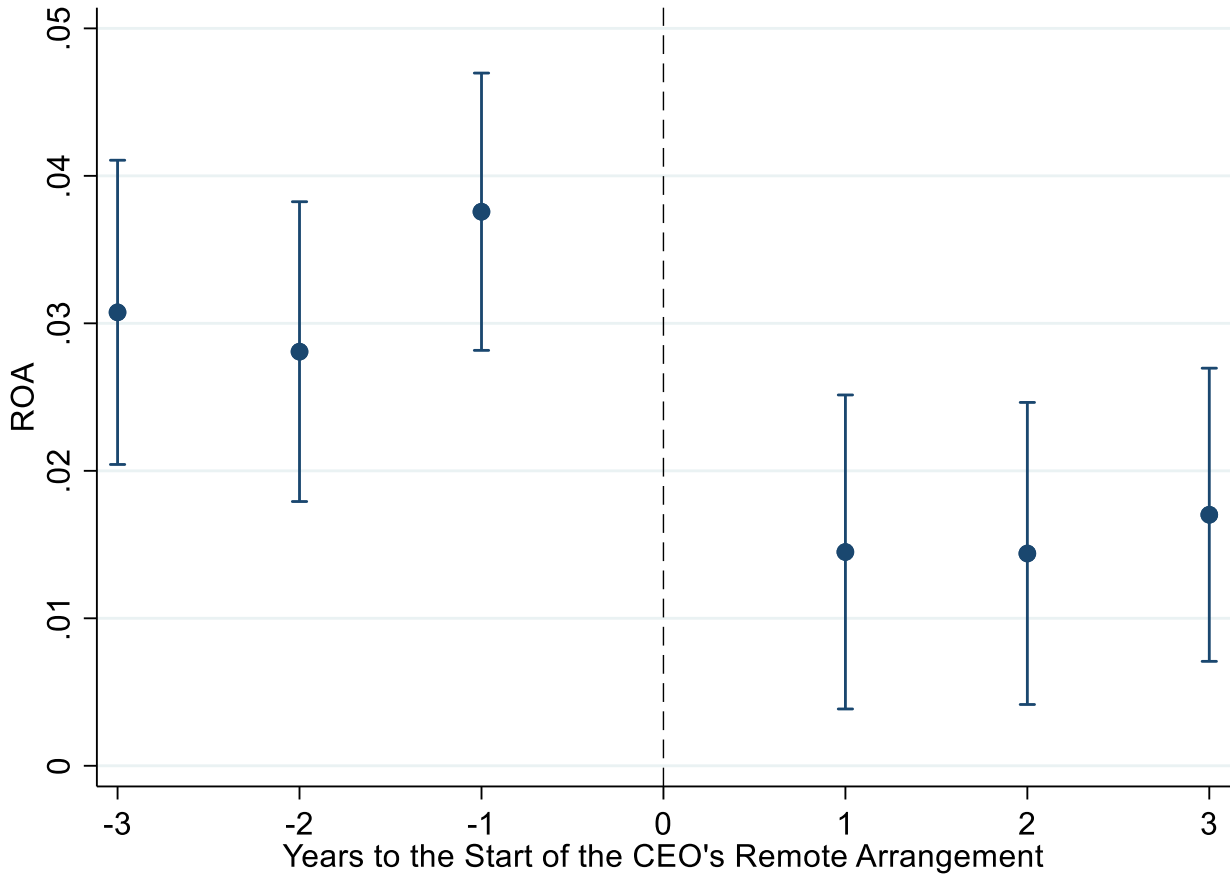


Table 1
Summary Statistics

This table reports summary statistics for CEOs and their firms. The sample consists of 6,655 CEOs at 3,136 publicly-traded U.S. firms covered by Execucomp or BoardEx in 2000–2019 with non-missing data on CEO tenure. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. *Long-distance CEO* is an indicator that equals 1 during CEO-years when the CEO's roundtrip commute from the primary residence to the firm's headquarters exceeds 100 miles.

Variable	Mean	25th percentile	Median	75th percentile	Standard deviation
CEO characteristics					
Age, years	55.96	51.00	56.00	61.00	7.42
Male indicator	0.97	1.00	1.00	1.00	0.18
Tenure with the firm, years	6.38	2.00	6.00	10.00	5.23
Graduate degree indicator	0.64	0.00	1.00	1.00	0.58
MBA indicator	0.42	0.00	0.00	1.00	0.52
External board seats	2.21	1.00	2.00	3.00	1.49
Chairman-CEO indicator	0.47	0.00	0.00	1.00	0.48
Employee approval rate	0.71	0.00	1.00	1.00	0.45
Distance from home to HQ, miles	90.40	4.32	8.77	15.93	70.09
CEOs' remote arrangements					
Long-distance CEO indicator	0.08	0.00	0.00	0.00	0.27
Different time zone indicator	0.45	0.00	0.00	1.00	0.50
Distance from remote home to HQ, miles	979.06	262.14	775.86	1,324.75	859.02
Duration of remote arrangement, years	3.22	1.00	2.00	4.00	3.22
Fraction of tenure in remote arrangement	0.74	0.38	1.00	1.00	0.36
Costs of remote arrangements based on "other compensation", \$000	206.59	24.54	94.78	288.54	252.07
Firms					
Book value of total assets, \$ bil.	18.26	0.68	2.16	7.65	114.05
Market capitalization, \$ bil.	21.98	1.14	3.46	11.49	107.52
Sales, \$ millions	6,156	476	1,360	4,331	19,651
Net income, \$ millions	400.54	10.71	67.95	261.99	2,235.56
Capital expenditures, \$ millions	366.01	11.44	46.44	187.00	1,410.04
CapEx, %	4.33	1.25	2.91	5.66	4.79
R&D expenditures, \$ millions	116.96	0.25	23.60	91.52	228.73
R&D, %	4.48	0.04	2.13	7.08	5.44
Return on Assets (ROA), %	3.61	0.87	3.93	7.94	7.45
Tobin's Q	1.95	1.13	1.49	2.17	1.60
Geographic dispersion of operations	11.32	4.00	8.00	14.00	10.94

Table 2
Home locations of long-distance CEOs: Climate, landscape, and socioeconomics

This table compares the counties of primary residences of long-distance CEOs and those of their firms' headquarters. The right-hand side column shows the absolute values of *t*-statistics for the tests of the differences of means. Values reported are county-level averages, except for distances, which are calculated for the exact addresses. Long-distance CEOs are defined as CEOs whose roundtrip commute to the headquarters exceeds 100 miles. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. Statistical significance levels for the test of the difference in means are indicated as follows: *=10%, **=5%, ***=1%.

Variable	Headquarters	Primary home	Difference	<i>t</i> -statistic
Climate				
Average annual temperature, degrees F	56.14	58.06	1.93	5.17***
Within-year temperature variability (monthly st. deviation), degrees F	14.62	13.73	-0.89	5.24***
Days of sunshine per year	215.36	216.86	1.50	1.02
Average annual rainfall, inches	38.32	41.85	3.53	5.21***
Average annual snowfall, inches	21.60	20.87	-0.73	0.70
Landscape and leisure				
Distance to the ocean shore, miles	198.68	149.60	-49.09	6.24***
Distance to the nearest water body (ocean, lake, or river), miles	6.17	2.80	-3.36	1.55
Distance to a top 1,000 golf course	12.60	10.54	-2.07	4.68***
Population density, residents per square mile	4,980.36	3,429.27	-1,551.10	3.57***
Elevation span (highest minus lowest point), meters	1,837.55	1,633.09	-204.46	4.59***
Fraction of non-flat land, %	65.83	64.16	-1.67	4.86***
Socioeconomics				
Top marginal state income tax rate, %	6.00	5.21	-0.79	12.98***
Top marginal state capital gains tax rate, %	5.66	4.95	-0.71	11.29***
Median annual household income, year 2019 dollars	82,011.49	82,033.26	21.77	0.03
Percent of adults with a bachelor's degree or higher	41.59	41.01	-0.59	1.55
Mean national high school quality rank (low rank = high quality)	5,063.07	4,819.19	-243.88	5.03***

Table 3
Motivating Evidence: Employee Approval Rate of Long-Distance CEOs

This table studies how a CEO’s remote working arrangement is associated with his approval rate by the firm’s employees. The dependent variable, *Employee approval rate*, is based on an employee’s answer to the question “Do you approve of the way your CEO is leading your company?” The indicator *Employee approval rate* equals 1, 0, or -1, if the employee’s answer to this question is “approve,” “no opinion,” or “disapprove,” respectively. *Long-distance CEO* is a binary indicator that equals 1 during CEO-years when the CEO’s roundtrip commute from his primary residence to the firm’s headquarters exceeds 100 miles, and 0 otherwise. *Review by manager* is a binary indicator that equals 1 if the reviewer’s job title includes the words “manager,” “director,” or “senior,” and 0 otherwise. *Review from HQ state* is a binary indicator that equals 1 if the reviewer is based in the state of the firm’s headquarters, and 0 otherwise. Data on employee reviews are from Glassdoor, Inc., during 2008–2019, and the regression sample consists of 1,470,553 reviews. Variable definitions appear in Appendix C. The regressions alternate with respect to year and firm fixed effects. The absolute values of *t*-statistics (in brackets) are based on standard errors that are heteroskedasticity consistent and clustered by firm. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Dependent variable	Employee approval rate					
Column	(1)	(2)	(3)	(4)	(5)	(6)
Long-distance CEO	-0.094*** [10.545]	-0.091*** [9.489]	-0.037*** [8.140]	-0.038*** [8.355]	-0.036*** [7.734]	-0.040*** [8.459]
Review by manager					0.026*** [5.353]	
Long-distance CEO x Review by manager					-0.018*** [3.410]	
Review from HQ state						0.007*** [5.477]
Long-distance CEO x Review from HQ state						-0.012** [2.054]
Year fixed effects	No	Yes	No	Yes	Yes	Yes
Firm fixed effects	No	No	Yes	Yes	Yes	Yes
N_obs	1,470,553	1,470,553	1,470,553	1,470,553	1,470,553	1,470,553
<i>R</i> ²	0.001	0.003	0.095	0.097	0.097	0.097

Table 4
Long-distance CEOs and Operating Performance

This table studies how a CEO's remote working arrangement is associated with his firm's operating performance. The dependent variable is the firm's annual return on assets (ROA), defined as the ratio of annual operating income to book assets. The main independent variable, *Long-distance CEO*, is a binary indicator that equals 1 during CEO-years when the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles, and 0 otherwise. Panel A presents baseline results. Panel B shows the dynamics of a firm's operating performance in event time relative to the start of the CEO's remote working arrangement, where the indicators *Long-distance year t* correspond to the event years before or after the start of the CEO's long-distance arrangement. Panel C presents cross-sectional evidence. *Long-distance CEO, below (above) median distance* is a binary indicator that equals 1 if the distance between the CEO's primary residence and the headquarters is less (greater) than the median distance for long-distance CEOs (775.86 miles). *Chairman-CEO* is a binary indicator that equals 1 during firm-years when the firm's CEO also serves as the chairman of the board of directors. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. The absolute values of *t*-statistics (in brackets) are based on standard errors that are heteroskedasticity consistent and clustered by firm. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: The ROA of Long-distance CEOs

Dependent variable	Return on Assets (ROA)				
Column	(1)	(2)	(3)	(4)	(5)
Long-distance CEO	-0.010*** [3.174]	-0.014*** [3.385]	-0.010*** [3.316]	-0.010*** [3.561]	-0.010** [2.278]
Firm fixed effects	Yes	No	Yes	Yes	No
CEO fixed effects	No	Yes	Yes	Yes	No
Year fixed effects	No	No	No	Yes	Yes
Firm x CEO fixed effects	No	No	No	No	Yes
N_obs	36,930	36,930	36,930	36,930	36,930
R^2	0.438	0.570	0.564	0.579	0.601

Panel B: Time-Series Dynamics of the ROA of Long-distance CEOs

Dependent variable	Return on Assets (ROA)			
Column	(1)	(2)	(3)	(4)
Long-distance year -3 or earlier	-0.002 [0.393]	0.005 [0.573]	0.007 [0.726]	0.007 [0.875]
Long-distance year -2	-0.008 [1.573]	0.001 [0.159]	0.003 [0.342]	0.003 [0.413]
Long-distance year -1	-0.007 [0.946]	-0.007 [0.831]	-0.005 [0.572]	-0.005 [0.689]
Long-distance year +1	-0.016*** [3.635]	-0.011* [1.792]	-0.011* [1.698]	-0.010* [1.950]
Long-distance year +2	-0.014*** [3.366]	-0.011** [2.228]	-0.012** [2.318]	-0.012*** [2.794]
Long-distance year +3 or later	-0.007* [1.866]	-0.007 [1.431]	-0.007 [1.609]	-0.007* [1.939]
Firm fixed effects	Yes	No	Yes	No
CEO fixed effects	No	Yes	Yes	No
Firm x CEO fixed effects	No	No	No	Yes
N_obs	4,235	4,235	4,235	4,235
R^2	0.550	0.612	0.679	0.688

Panel C: Cross-Sectional Variation in the ROA of Long-distance CEOs

Dependent variable	Return on Assets (ROA)			
	(1)	(2)	(3)	(4)
Long-distance CEO, below median distance	-0.008** [2.016]			
Long-distance CEO, above median distance	-0.012*** [3.282]			
Long-distance CEO, same time zone		-0.008** [2.202]		
Long-distance CEO, different time zone		-0.012*** [3.087]		
Long-distance CEO			-0.008*** [3.095]	
Chairman-CEO			-0.003* [1.738]	
Long-distance CEO x Chairman-CEO			-0.003** [2.116]	
Long-distance CEO				-0.011*** [3.302]
Long-distance CEO x Period 2000-2010				-0.008*** [2.994]
Firm fixed effects	Yes	Yes	Yes	Yes
CEO fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N_obs	36,930	36,930	36,930	36,930
R ²	0.579	0.579	0.584	0.579

Table 5
Robustness: CEO Remote Arrangements and Firm Valuation

This table studies the relation between CEOs' remote working arrangements and firm valuation, using ordinary least squares (OLS) panel regressions. The dependent variable is *Tobin's Q*, which measures the ratio of the firm's market value to its book value. The main independent variable, *Long-distance CEO*, is a binary indicator that equals 1 during CEO-years when the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles, and 0 otherwise. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. The absolute values of *t*-statistics (in brackets) are based on standard errors that are heteroskedasticity consistent and clustered by firm. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Dependent variable	Tobin's Q				
Column	(1)	(2)	(3)	(4)	(5)
Long-distance CEO	-0.164*** [3.582]	-0.156** [2.577]	-0.131*** [3.360]	-0.096** [2.549]	-0.096** [2.028]
Firm fixed effects	Yes	No	Yes	Yes	No
CEO fixed effects	No	Yes	Yes	Yes	No
Year fixed effects	No	No	No	Yes	Yes
Firm x CEO fixed effects	No	No	No	No	Yes
N_obs	36,930	36,930	36,930	36,930	36,930
R^2	0.641	0.738	0.746	0.764	0.773

Table 6
An Instrumental Variable Analysis of Firm Performance and Valuation

This table studies the effect of CEOs' remote working arrangements on operating performance and firm valuation in an instrumental variable specification estimated via a two-stage least squares regression. Panel A shows the first-stage regressions that estimate the effect of uprooting the CEO's spouse on his decision to work remotely. In Panel A, the dependent variable, *Long-distance CEO*, is a binary indicator that equals 1 for CEOs whose roundtrip commute from the primary residence to the headquarters exceeds 100 miles, and 0 otherwise. The instrumental variable, *Uprooting the spouse*, is an indicator that equals 1 if moving the CEO's household to the company's headquarters would require the spouse to leave her home state, and 0 otherwise. The home state of the spouse is the state where she received her social security number. Panel B shows the second-stage regressions where the dependent variable is the firm's return on assets (ROA), defined as the ratio of annual operating income to book assets. Panel C shows the second-stage regressions where the dependent variable is the firm's Tobin's Q, which approximates the ratio of the firm's market value to its book value. The second-stage regressions in Panels B and C use the predicted values of *Long-distance CEO* from the first stage. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. The absolute values of *t*-statistics (in brackets) are based on standard errors that are heteroskedasticity consistent and clustered by firm. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: First-stage regressions of *Long-distance CEO*

Dependent variable	Long-distance CEO			
Column	(1)	(2)	(3)	(4)
Uprooting the spouse	0.210*** [5.798]	0.208*** [5.835]	0.396*** [4.709]	0.396*** [4.765]
Year fixed effects	No	Yes	No	Yes
Firm fixed effects	Yes	Yes	No	No
CEO fixed effects	No	No	Yes	Yes
N_obs	29,465	29,465	29,465	29,465
<i>R</i> ²	0.656	0.659	0.848	0.849
<i>F</i> -Statistic	37.450	37.930	22.550	23.100

Panel B: Second-stage regressions of *ROA*

Dependent variable	Return on Assets (ROA)			
Column	(1)	(2)	(3)	(4)
Instrumented Long-distance CEO	-0.012*** [2.729]	-0.015*** [2.936]	-0.014*** [3.630]	-0.016*** [3.620]
Year fixed effects	No	Yes	No	Yes
Firm fixed effects	Yes	Yes	No	No
CEO fixed effects	No	No	Yes	Yes
N_obs	29,465	29,465	29,465	29,465
<i>R</i> ²	0.474	0.489	0.555	0.569

Panel C: Second-stage regressions of *Tobin's Q*

Dependent variable	Tobin's Q			
Column	(1)	(2)	(3)	(4)
Instrumented Long-distance CEO	-0.275** [2.271]	-0.278** [2.284]	-0.236** [2.282]	-0.234*** [3.048]
Firm fixed effects	Yes	No	Yes	Yes
CEO fixed effects	No	Yes	Yes	Yes
Year fixed effects	No	No	No	Yes
N_obs	29,465	29,465	29,465	29,465
R ²	0.018	0.704	0.721	0.754

Table 7
Decomposition of Operating Performance

This table studies how a CEO's remote working arrangement is associated with the components of his firm's return on assets (ROA). Panel A examines the income components of the return on assets. In Panel A, the dependent variable is the natural logarithm of the firm's annual sales (columns 1–2), cost of goods sold (columns 3–4), and selling, general, and administrative expenses (columns 5–6). Panel B examines the asset components of the return on assets. In Panel B, the dependent variable is the natural logarithm of the firm's cash holdings (columns 1–2), short-term assets (columns 3–4), and long-term assets (columns 5–6). The main independent variable, *Long-distance CEO*, is a binary indicator that equals 1 during CEO-years when the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles, and 0 otherwise. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. The absolute values of *t*-statistics (in brackets) are based on standard errors that are heteroskedasticity consistent and clustered by firm. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: Income

Dependent variable	Sales		Cost of goods sold		SG&A	
Column	(1)	(2)	(3)	(4)	(5)	(6)
Long-distance CEO	-0.006 [0.284]	-0.006 [0.161]	0.027** [2.237]	0.027** [2.022]	0.017** [2.062]	0.017* [1.859]
Firm fixed effects	Yes	No	Yes	No	Yes	No
CEO fixed effects	Yes	No	Yes	No	Yes	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm x CEO fixed effects	No	Yes	No	Yes	No	Yes
N_obs	36,930	36,930	36,930	36,930	36,930	36,930
R ²	0.964	0.966	0.963	0.965	0.972	0.973

Panel B: Assets

Dependent variable	Cash holdings		Short-term assets		Long-term assets	
Column	(1)	(2)	(3)	(4)	(5)	(6)
Long-distance CEO	0.084 [1.584]	0.084 [1.358]	0.006 [0.965]	0.006 [0.768]	-0.018 [0.803]	-0.018 [0.489]
Firm fixed effects	Yes	No	Yes	No	Yes	No
CEO fixed effects	Yes	No	Yes	No	Yes	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm x CEO fixed effects	No	Yes	No	Yes	No	Yes
N_obs	36,930	36,930	36,930	36,930	36,930	36,930
R ²	0.890	0.893	0.941	0.946	0.964	0.965

Table 8
Mechanisms

This table studies three non-mutually exclusive mechanisms behind the decline in operating performance at firms run by long-distance CEOs: short-termism (Panel A), information asymmetry (Panel B), and CEO leisure (Panel C). The main independent variable across all panels is *Long-distance CEO*, a binary indicator that equals 1 during CEO-years when the CEO's roundtrip commute from his primary residence to the firm's headquarters exceeds 100 miles, and 0 otherwise. In Panel A, the dependent variable is one of the measures of firm investment: research and development, capital expenditures, and the average useful life of acquired assets. *R&D (%)* and *CapEx (%)* are the percentage ratios of research and development expenditure and capital expenditure to the book value of total assets, respectively. *Investment useful life* is the annual change in net PP&E divided by the annual change in depreciation. Panel B studies the information asymmetry channel. In this panel, the dependent variable is the firm's annual return on assets (ROA). In this panel, *Firm geographic dispersion* is the number of states in which the firm operates, according to its annual report. Internally (externally) hired long-distance CEOs denote those whose immediately preceding professional position was with the same firm (different firm). *Satellite office* is a binary indicator that equals 1 if the firm has a field office within 30 miles of the long-distance CEO's primary residence, and 0 otherwise. Panel C studies the leisure channel. *Long-distance CEO with leisure boat* is an indicator variable that equals one if the CEO owns a private vessel during his long-distance arrangement, and the use of the vessel is classified as "pleasure" in the state vessel registration. *Long-distance CEO in beach home* is a binary indicator that equals 1 if the CEO's primary home is within 0.25 miles of the ocean shore in one of the following warm-climate states: CA, FL, HI, GA, NC, SC, or AL, and 0 otherwise. *Long-distance CEO near golf* is a binary indicator that equals 1 if the long-distance CEO's primary home is within 10 miles of a top-200 golf course, according to the 2019–2020 national ranking of U.S. golf courses by *Golf Digest*. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. The absolute values of *t*-statistics (in brackets) are based on standard errors that are heteroskedasticity consistent and clustered by firm. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: Short-termism

Dependent variable	R&D (%)	CapEx (%)	CapEx (%)	Investment useful life
Column	(1)	(2)	(3)	(4)
Long-distance CEO	-0.233** [2.324]	-0.163** [2.029]	-0.054** [2.084]	-0.657*** [3.576]
Tobin's Q			0.269*** [6.595]	
Long-distance CEO x Tobin's Q			-0.141*** [3.074]	
Firm fixed effects	Yes	Yes	Yes	Yes
CEO fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N_obs	36,930	36,930	36,930	36,930
R^2	0.806	0.787	0.810	0.188

Panel B: Information Asymmetry

Dependent variable	Return on Assets (ROA)			
	Column	(1)	(2)	(3)
Long-distance CEO		-0.021** [2.171]		
Firm geographic dispersion		0.007 [1.485]		
Long-distance CEO x Firm geographic dispersion		0.002* [1.763]		
Long-distance CEO hired internally			-0.010** [2.253]	
Long-distance CEO hired externally			-0.025*** [4.053]	
Long-distance CEO, no satellite office				-0.012*** [4.086]
Long-distance CEO, satellite office				-0.003 [1.339]
Firm fixed effects	Yes	Yes	Yes	Yes
CEO fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N_obs	36,930	36,930	36,930	36,930
R^2	0.580	0.579	0.579	0.579

Panel C: Leisure

Dependent variable	Return on Assets (ROA)		
	(1)	(2)	(3)
Long-distance CEO without leisure boat	-0.008** [2.286]		
Long-distance CEO with leisure boat	-0.014*** [3.153]		
Long-distance CEO not in beach home		-0.006 [1.541]	
Long-distance CEO in beach home		-0.015*** [3.247]	
Long-distance CEO far from golf			-0.005 [1.218]
Long-distance CEO near golf			-0.017*** [4.189]
Firm fixed effects	Yes	Yes	Yes
CEO fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
N_obs	36,930	36,930	36,930
R ²	0.579	0.579	0.579

Table 9
Board learning about long-distance performance

This tables studies how the board of directors responds to the performance of long-distance CEOs. Panel A studies the relation between long-distance working arrangements and CEO tenure. In this panel, the dependent variable is the natural logarithm of the CEO's tenure, defined as the number of years between the effective appointment date and the effective date of departure from the CEO position. Panel B studies the relation between long-distance working arrangements and CEO terminations. In this panel, the dependent variable is a binary indicator that equals 1 if the CEO is terminated or forced to resign, and 0 otherwise. Panel C studies announcement returns around the appointments and departures of long-distance CEOs. Cumulative abnormal returns (CARs) and buy-and-hold returns (BHARs) are calculated using the CAPM within a three-day window [-1,1] centered on the announcement date. Panel D studies the likelihood of a firm that has previously employed a long-distance CEO to appoint another long-distance CEO. In this panel, the dependent variable is an indicator that equals 1 if the firm appoints another long-distance CEO, and 0 otherwise, and the regressions are estimated as linear probability models. *Past long-distance CEO* is a binary indicator that equals 1 if the company has previously employed a long-distance CEO. *Long-distance CEO* is defined as a CEO whose roundtrip commute from home to the headquarters exceeds 100 miles. Sample selection criteria and variable definitions appear in appendixes B and C, respectively. The absolute values of *t*-statistics (in brackets) are based on standard errors that are heteroskedasticity consistent and clustered by firm. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: Tenure of Long-distance CEOs

Dependent variable	Time in CEO position			
Column	(1)	(2)	(3)	(4)
Long-distance CEO	-0.247*** [7.082]	-0.210*** [6.832]	-0.057** [2.005]	-0.059** [2.115]
Firm fixed effects	Yes	Yes	No	No
CEO fixed effects	No	No	Yes	Yes
Year fixed effects	No	Yes	No	Yes
N_obs	36,930	36,930	36,930	36,930
R^2	0.558	0.592	0.968	0.960

Panel B: Forced Turnovers of Long-distance CEOs

Dependent variable	Forced departure			
Column	(1)	(2)	(3)	(4)
Long-distance CEO	0.065*** [2.864]	0.064*** [2.862]	0.015** [2.003]	0.014* [1.956]
Firm fixed effects	Yes	Yes	No	No
CEO fixed effects	No	No	Yes	Yes
Year fixed effects	No	Yes	No	Yes
N_obs	3,532	3,532	3,532	3,532
R^2	0.815	0.819	0.994	0.994

Panel C: Announcement Returns to CEO Appointments and Departures

Event	CEO	CAR	t-statistic	BHAR	t-statistic
Appointments	Long-distance CEO	0.001	0.089	0.005	0.661
	Non-long-distance CEO	0.002	1.294	0.002	1.150
	Difference	-0.002	0.274	0.003	0.521
Departures	Long-distance CEO	0.025	2.574	0.026	2.736
	Non-long-distance CEO	0.001	0.374	0.000	0.008
	Difference	0.024	3.522	0.026	3.872

Panel D: The Likelihood of Appointing Another Long-distance CEO

Dependent variable	Appointment of another long-distance CEO			
Column	(1)	(2)	(3)	(4)
Past long-distance CEO	-0.119*** [3.488]	-0.163*** [4.965]	-0.333*** [5.845]	-0.319*** [5.711]
Firm fixed effects	Yes	Yes	No	No
CEO fixed effects	No	No	Yes	Yes
Year fixed effects	No	Yes	No	Yes
N_obs	3,532	3,532	3,532	3,532
R^2	0.516	0.527	0.793	0.799