Executive Mobility in the United States, 1920-2023*

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Abstract

We examine the evolution of executive mobility over the past century, developing a new measure that nests both turnover and across-firm executive moves. We find that in the eight decades leading up to 1999, CEO and CFO mobility increased notably. In contrast, starting in the early-2000s executive mobility declined sharply, with mobility in 2011-2022 being less than half its late-1990s peak, returning to mobility levels of the 1960s and 1970s. We find that the benefits of reallocating executives, labor market size, compensation, and general managerial skills help explain executive mobility trends.

Keywords: Executive mobility; Reallocation; Executive labor markets; Corporate governance trends

JEL codes: G30, J41

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1. Introduction

A rich literature examines the labor market for corporate executives. This research is important because it sheds light on trends in labor-market conditions, the skill sets required to be a successful executive, and the use and effects of executive compensation. Influential papers by Huson et al. (2001) and Murphy and Zabojnik (2007) document that chief executive officer (CEO) turnover and external-to-the-firm hires increased through the last few decades of the 20th century, which they attribute to general managerial skills becoming more important.[1] Consistent with these implications, the number of firms and occupations in which a typical executive works during her career increased starting in the 1970s (Frydman, 2019). Other research documents that the level of executive pay and the importance of equity-based compensation increased significantly beginning in the 1980s (e.g., Murphy, 1999; Gabaix and Landier, 2008; Frydman and Saks, 2010). A common thread in this literature is increasing executive job mobility through about 2000, which is when the data used in many of these papers end.

Our paper adds to the executive labor-market literature in six ways. The first two relate to the fact that the extant literature primarily focuses on the period from 1970 through about 2000. We explore mobility in a broader setting and document new patterns over the past century by constructing a new dataset of executive moves between U.S. public firms over the 1920–2020 period. The dataset contains more than 11,000 executive moves and nearly 395,000 unique executives, involving over 22,000 unique firms.

Our first contribution using this near-century of data is to document long-term trends in executive mobility over the last eight decades of the 20th century. While before 1986 fewer than 5% of departing CEOs became executives of other firms within two years, more than 7% did so during 1986–1999.[2] Moreover, chief executives moved across an increasingly diverse set of industries over time, and their job moves appear to trade off job title prestige with pay.

Our second contribution is documenting a sharp decline in executive mobility that started in the early 2000s, as executives' propensity to move to new jobs in other firms decreased

[1] See also Kaplan and Minton (2012), Custódio et al. (2013) and Graham et al. (2020) for related evidence.

[2] Throughout the paper, we separately examine periods before and after 1986, motivated by previous research, as well as our data, that suggests executive mobility began to increase in the mid-1980s (e.g., Murphy and Zabojnik, 2007).

significantly during 2000–2023.[3] By 2011 executive mobility had declined to levels not seen since the mid-1980s. As described next, we explore whether this new trend upends the common view of modern CEOs as generalists.

Third, we explore which factors are associated with the long-term evolution of aggregate mobility, both the increase preceding 2000 and the decline following 2000. Our analyses suggest several forces are at play. First, aggregate executive movements are more frequent when the benefits of these reallocations are greater, which contrasts with patterns of capital and rank-and-file employee reallocations (Eisfeldt and Rampini, 2006; Saks and Wozniak, 2011). Second, the increasing–then–decreasing trend in executive mobility is associated with the size of the executive labor market. Third, measures of the importance of general managerial skills (e.g., the ratio of enrollment in MBA to engineering master's programs and the variety of industries to which executives move) are significantly positively correlated with our measures of aggregate mobility over time. Fourth, executive compensation trends—particularly option pay—coincide with mobility trends. Finally, the more prevalent use of non-compete agreements in executive contracts since the mid-1990s coincides with the concurrent decline in mobility.

Our fourth contribution is the development of a new measure of executive mobility. This measure is the product of two components: (i) the propensity with which a departing executive finds new executive work rather than retiring from executive work, and (ii) turnover (which creates job openings). Much of the existing literature uses the second component (turnover; e.g., Huson et al., 2001; Murphy and Zabojnik, 2007) as a proxy for mobility. However, we show that the first component is more important in driving trends in executive mobility, explaining more than two-thirds of the variation in overall mobility.[4] We also show that while most of the above-mentioned factors explain trends in both components of aggregate

[3]This trend for executives appears to be consistent with a general decline in labor mobility in the US since 2000. See, e.g., "Fewer Americans Uproot Themselves for a New Job," The Wall Street Journal, August 20, 2018. Related, Decker et al. (2020) document that rank-and-file employee job reallocation rates have declined since the 1980s in the US economy, and in "high-tech" sectors since the early-2000s.

[4]Some executive mobility research also uses career paths of given individuals to measure mobility, and often finds a different mobility trend. For example, we document that executive mobility trended up throughout most of the last century. The finding contrasts somewhat with a finding in Frydman (2019) that the mobility of executives at largest public firms, measured by the number of firms a given executive worked for during her career, declined between the 1930s and 1960s.

mobility, the associations are more consistently significant for the first component.

Fifth, we show for the first time that the mobility of chief financial officers (CFOs) is higher, and increased faster, than that of CEOs during the 20th century.[5] Combined with the above-mentioned importance of skill generality measures in explaining executive mobility, this comparison of CFO and CEO mobility suggests skill generality as a key determinant of executives' labor-market mobility. The faster-rising CFO mobility since the mid-1980s is consistent with CFOs playing an increasingly active role across broad functional areas over the past several decades (see, e.g., Groysberg et al., 2011).

2. Data and Sample Selection

We construct a comprehensive database of corporate officers, such as the chief executive officer (CEO), chief financial officer (CFO), and various corporate vice presidents (VPs), and their movements across US public firms from 1920 to 2020. We combine information from a number of sources. First, we hand-collect names of corporate executives, as well as financial data on their firms, from Moody's Industrial Manuals ('Moody's') from 1920 to 1988, and also the year 1998. Second, we collect names of corporate executives from Compact Disclosure during 1985-2005. Third, we supplement these two primary data sources using Mergent (which took over the Industrial Manual from Moody's; 2002-2011) and GMI Ratings (which took over Board Analyst; 2002-2011) for more recent years. We then use news searches to manually check the validity of all cases of CEO and CFO moves, and collect the new job titles of moving executives and whether the moves were associated with mergers and acquisitions or subsidiary relations.

Our full sample includes 248,156 firm-year observations for 22,340 unique firms and 395,114 executives (including 55,370 CEOs and 51,891 CFOs) from 1920 to 2023. We describe trends in executive mobility using this full sample (see the next section), as well as subsamples for 1920-1949, 1950-1985, and 1986-2011.

[5] Between 1920-1949 and 1950-1985, the propensity of departing CFOs to become CFOs of other companies increased from 1.4% to 3.3%. But during 1986-1999, this propensity jumped to 9.7%, triple the propensity of CEO-to-CEO moves during the same period.

3. Trends in Executive Mobility in the Past Century

This section examines long-run trends in the mobility of US corporate executives from 1920-2011 using a sample of executives' movements across firms. We provide evidence that executive mobility across firms and industries increased over the past century; in contrast, mobility trends have reversed in the last decade. We construct formal variables that measure executive mobility across companies.

3.1. Propensity and Nature of Executive Mobility over the Century

The breadth of the US executive labor market has changed considerably over the past 90 years. The first four tables explore whether these changes led to improved mobility for executives, CEOs and CFOs in particular. We first document an increase in the magnitude of how often an executive leaving one job takes a job at another company, rather than retires from executive work. Table 1, Panel A shows that among the CEOs who left their jobs during 1920-1949 and 1950-1985, only 3.0% (= 45/1,496) and 5.3% (= 261/4,916) moved to other firms to become executives within the next two years.[6] In comparison, during 1986-2011, 7.4% (= 1,170/15,755) of former CEOs became officers at other firms, representing 147% and 40% increases in the "move rate" after vacating a CEO position.

A more detailed examination reveals that this increase around the mid-1980s is driven in part by those moving from one CEO position to another CEO position. 461 out of 15,755 departing CEOs (2.9%) became CEOs at other firms during 1986-2011, while only 18 out of 1,496 (1.2%) and 58 out of 4,916 departing CEOs (1.2%) moved to other firms as CEO for the periods from 1920 to 1949 and from 1950 to 1985, respectively.[7] The fraction of former CEOs who move to become non-CEO executives at their new firms also increased, from 1.8% during 1920-1949 to 4.1% and 4.5% during the 1950-1985 and 1986-2011 periods. However, as we show later, this relatively high average level of mobility during 1986-2011 masks a sharp upward

[6] In Table 1 and throughout the paper, we define an executive move as a given executive leaving a firm and becoming an executive at another firm within two years after the departure.

[7] These fractions of CEO-to-CEO moves are similar to estimates in Gibbons and Murphy (1992) that 2.2% of 1,631 departing CEOs in their dataset become CEOs at other firms during 1970-1988. Also, they find that approximately 3.8% of the departing CEOs take a non-CEO position at another firm, similar to our finding that about 4.1% of departing CEOs became non-CEO officers during 1950-1985.

trend followed by a sharp downward trend, with the change in direction occurring around 2000.

Turning to the mobility of CFOs, Panel B shows that the propensity of CFOs who leave their initial firms to accept executive positions at other firms increased even more than that of CEOs over the past century. During 1920-1949, only 2.8% of departing CFOs moved to become executives at other companies. By 1950-1985, this propensity more than doubled to 5.9% and increased again to 13.4% over 1986-2011. By this period, the average CFO's propensity to move to another firm is considerably higher than the average CEO's (7.4%) propensity to move. We will show later that CFO mobility sharply increased and then decreased around 2000, akin to the CEO mobility trends.

This higher and faster-increasing mobility of CFOs relative to CEOs over the past century is consistent with the CFO's skills being more general and thus more easily redeployable across firms. Moreover, anecdotal evidence suggests that CFO skills became increasingly "CEO-like," which would also increase their appeal to other firms.[8] Another non-mutually-exclusive explanation for the faster-increasing CFO mobility relative to CEO mobility (especially after 1985) is increasing visibility of CFOs due to improved communication technologies. In particular, increased exposure of public firm CFOs in earnings calls and in the media may have given finance chiefs improved opportunities to move to other firms.[9]

In addition to the likelihood of moving to a new firm, we also explore the breadth of new positions. We find that throughout 1920-2011, common first non-CEO job titles of moving CEOs at the new firm include President (36.4%), VP (17.7%), and COO (8.7%). Thus, as explored in more detail below, it appears not uncommon for former CEOs to move as non-CEO executives of larger (and likely more complex) firms, and sometimes ultimately become CEO of the new firm (see Internet Appendix A for examples of these CEO-to-non-CEO moves). In comparison, a relatively higher proportion of CFOs (about three quarters) move to a CFO po-

[8] See, e.g., Groysberg et al. (2011) and "Johnson Controls Hires Company Outsider as Finance Chief," The Wall Street Journal, August 18, 2020. These articles suggest that CFOs are increasingly involved with operation-related roles such as product development and technology, as well as traditional roles such as managing acquisitions.

[9] Also, the magnitude of the CFO pay increase in the last two decades is smaller than the increase in CEO pay, which may have led finance chiefs to continue to work longer than chief executives. Using Frydman and Saks (2010) and ExecuComp data, we find that the average total CEO (CFO) compensation increased by $2.4 million ($1.1 million) over 1986-2011.

sition in their new companies. A plausible explanation for this difference is that CFOs' skills, while more portable across firms and industries, are specific to corporate finance functions. As a result, it is rare that previous CFOs become chief operating officers (COOs) or divisional managers that require operation-specific skills. However, consistent with CFOs' skills becoming more like CEOs' over time, 5.5% of CFOs who moved to other companies became CEOs during 1986-2011, while only 3.4% of moving CFOs became CEOs during 1950-1985 and none did during 1920-1949.

Table 2 explores a related question on the nature of executive moves: Do executive job movements represent external promotions? Answering this question is important to understand how firms might respond to changing external job opportunities of their own executives, which we examine in Section V. The first three columns show that CEOs on average move to larger firms and receive a large pay increase. Over the full sample period (1920-2011), 66.2% of CEO moves are to larger firms, measured by total assets. A larger fraction of CEOs (72.6%) move to a bigger company when they become non-CEO executives at a new firm (column 3). In comparison, column 2 shows that when CEOs move as CEOs, the new companies are less likely to be larger (at 55.5%). In addition, the pay (defined as the sum of salary, bonus, and stock and option grants) increase upon moving is on average marginally larger for CEO-to-other executive (108.0%) relative to CEO-to-CEO moves (74.3%).

These results are consistent with CEOs moving to other firms to receive either (1) job-title-prestige and higher pay, or (2) less-job-title-prestige but a larger pay increase at a larger company, which may offer increased career opportunities in the future. Thus, the full sample results in Panel A suggest that the majority of CEO moves can be characterized as external promotions in terms of prestige of the employer, career opportunities, and compensation. In terms of trends, while moving to larger firms became more common between 1920-1949 and 1950-1985, particularly for CEO-to-non-CEO moves, this trend has reversed somewhat in 1986-2011.

Columns 4 through 6 present the results for CFOs who move to other firms. On average, about half of CFOs move to larger firms. Thus, moving to a larger organization is less common for CFOs (48.0%) than CEOs (66.2%) over the century. Also, the propensities are similar

whether CFOs maintain or change job titles at a new firm. Upon moving, CFOs experience larger pay increases than do CEOs. Contrary to CEOs, CFOs who keep their title upon moving receive a larger pay increase (523%) than those who change job titles (120%).

3.2. Cross-Industry Mobility of Executives

The previous section shows that the propensity of departing corporate executives to find new executive work increased over the past century. We now examine trends in the frequency at which executives move to jobs in other industries among the subset of moves, which could be an important element of the mobility patterns documented in the previous section. Table 3 illustrates trends in cross-industry mobility by presenting the fraction of CEO moves from an "origin" to a "destination" industry. For compactness, this "graphical" analysis relies on one-digit SIC codes but in our empirical analysis of executive retention strategies in Section V, we use two-digit SIC codes. Panel A (1920-1949) and Panel B (1950-1985) show that before 1986, over 60% of CEO moves-to-new-firms, including moves to same- and different-industry firms, occur within the manufacturing sector (SIC = 2 or 3).[10] In comparison, Panel C shows that, from 1986 through 2011, the fraction of moves between manufacturing industries decreases to 31%.[11] This magnitude of reduction (about 50%) is greater than that for the general reduction in the fraction of manufacturing firms among public firms between 1920-1949 and 1986-2011 (a 38% reduction, from 78% to 48% of all firms). Thus, Panel C demonstrates a more varied set of origin and destination industries for external CEO hires in recent decades.

We formally examine the diversity of industries across which CEOs move using the Herfindahl-Hirschman Index (HHI) of the fraction of moves between industry pairs. This concentration measure of between-industry moves was 0.165 during 1920-1949, 0.157 during 1950-1985, and decreased to 0.065 during 1986-2011, indicating that CEO moves in the later period are more widely dispersed across industries. In addition, we find that "off-diagonal" movements (i.e., across different industries) became more frequent over the century: the fraction of across-different-industry movements was 40.0% during 1920-1949, and increased to 46.7% and 47.2% during 1950-1985 and 1986-2011. The finding that CEOs moved to a more diverse set of in-

[10] For 1920-1949, 62.2% = 17.8% + 2.2% + 8.9% + 33.3%; and for 1950-1985, 63.3% = 11.9% + 8.4%+ 8.1% + 34.9%.
[11] 30.8% = 6.7% + 3.1% + 3.3% + 17.7%.

dustries in recent decades is consistent with the increasing importance of general managerial skills, as opposed to industry- or firm-specific skills, in the executive labor market (Murphy and Zabojnik, 2007; Custódio et al., 2013; Frydman, 2019). Overall, the evidence in Table 3 suggests enhanced across-industry mobility for CEOs through time.

4 presents the analogous fraction of CFO moves from one industry to another. The table shows that the career moves of CFOs are across a more diverse set of industries than are CEOs'. For example, between 1920 and 1949, the HHI of the fraction of CFO moves between industries is 0.126 and the propensity of across-industry moves is 52.4%, whereas the corresponding numbers for CEOs are 0.165 and 40.0% (from Table 3). Across the next two eras, CFO mobility increased, and finance executives continued to move across more diverse sets of industries and to different industries more often than chief executives. The CFO HHI decreased from 0.111 during 1950-1985 to 0.061 during 1986-2011 (vs. 0.157 and 0.065 for CEOs), and the fraction of out-of-industry moves increased from 52.9% to 55.2% (vs. 46.7% and 47.2% for CEOs). Thus, a comparison of across-industry mobility of CEOs and CFOs is consistent with CFOs having more general skills than CEOs, and thus exhibiting higher mobility across industries in the past century.

3.3. Trends in Formal Mesaures of Executive Mobility

3.3.1. Mesaures of Executive Mobility

To further examine the time-series changes in executive mobility and the factors that drive the trends, we formally construct aggregate measures of executive mobility. Specifically, we measure executive mobility as the total number of CEOs who move to other firms as executives, scaled by the lagged total number of CEOs, or separately, scaled by the lagged total number of CEO turnover events. These aggregate measures capture the propensity at which sitting or leaving CEOs are hired by other firms. (We repeat the same calculations for CFOs.) The resulting measures are defined as follows:

$$Mobility_t = \underbrace{\frac{\#\ CEO\ (or\ CFO)\ moves_t}{\#\ CEOs\ (or\ CFOs)_{t-1}}}_{\text{(A)}} \quad \text{or} \quad \underbrace{\frac{\#\ CEO\ (or\ CFO)\ moves_t}{\#\ CEO\ (or\ CFO)\ turnovers_{t-1}}}_{\text{(B)}} \tag{1}$$

where $Mobility_t$ is an aggregate measure of mobility for CEOs in year t, $\#\ CEOmoves_t$ is the number of CEOs in year $t-2$ or $t-1$ who become officers at another firm in year t; $\#\ CEOs_{t-1}$ is the number of CEOs, and $\#\ CEOturnovers_{t-1}$ is the number of CEO turnovers in year $t-1$. Analogous mobillity measures ca be constructed for CFOs.

An executive may move to another firm because she is looking for an opportunity at unrelated firms or because of mergers and acquisitions (M&As). To account of the effects of M&As, we construct two versions of our executive mobility measures — the first one accounts for all moves, and the second one excludes moves directly tied to M&As or subsidiary relations (see Frydman (2019) for a related discussion).

3.3.2. Trends in Executive Mobility

Figure 1, Panel A shows that the two measures of CEO mobility that are scaled by the number of CEOs ((A) in Eq. (1)), whether including or excluding M&A / subsidiary-related events, move in parallel from 1921 through 2011 ($\rho = 0.957$).[12] The dashed gray line showing the difference between the two measures indicates that the portion of mobility due to M&As or across subsidiaries is relatively stable across the century. That is, M&A trends do not drive aggregate mobility trends. Panel B presents the measures scaled by the number of CEO turnover events ((B) in Eq. (1)), which exhibit similar patterns with the mobility measures shown in Panel A. Given that M&As or subsidiary relations do not drive mobility in an important way, our analysis below relies primarily on the mobility measures that include executive moves associated with M&As or subsidiaries.

Note that our first mobility measure for CEOs in Eq. (1) can be re-written as:

$$\begin{aligned} Mobility_t &= \underbrace{\frac{\#\ CEO\ moves_t}{\#\ CEOs_{t-1}}}_{\text{(A)}} \\ &= \underbrace{\frac{\#\ CEO\ moves_t}{\#\ CEO\ turnovers_{t-1}}}_{\text{(B)}} \times \underbrace{\frac{\#\ CEO\ turnovers_{t-1}}{\#\ CEOs_{t-1}}}_{\text{(C)}} \end{aligned} \tag{2}$$

Panel C of Figure 1 presents this decomposition of the first mobility measure (A) into these

[12] Our mobility measures require the lagged number of CEOs or turnovers, and thus begin in 1921.

two components: (B) the number of CEO moves scaled by the number of CEO turnovers (which is the second mobility measure in Eq. (1)), and (C) the turnover rate (i.e., the number of CEO turnovers scaled by the number of CEOs). Thus, our mobility measure (A) nests the two main proxies for executive mobility employed in the literature–the propensity of departing executives to find new executive work (B) and turnover rate (C) (e.g. Huson et al., 2001; Murphy and Zabojnik, 2007; Frydman, 2019) and allows us to examine which approach is more informative.

Panel C shows that the components reinforce each other when mobility increases and then decreases from the 1980s through 2000s; nonetheless, the first component (B), which captures the propensity of departing executives to find new executive work, is the dominant driver of executive mobility: a statistical decomposition shows that the variation in the log of the first component drives approximately 68% of the variation in the log of the overall mobility measure (and the second component, turnover rate, and its covariance with the first term drive 32%). In addition, the first component is more similar to overall mobility in its steady increase from the mid-1980s to 1999. These results highlight one contribution of our paper relative to previous work: showing that executive mobility involves departing executives finding new executive-level jobs (B) in addition to executive turnover (C); and documenting that the former is empirically the more important element of mobility.

Both elements of mobility generally trended up throughout most of the sample period, consistent with the overall trends we presented in the previous sections. In an unreported regression, we find that a linear time trend accounts for nearly 30% of variation in aggregate CEO mobility from 1921 to 2011. However, as we explore below, a time-trend does not alone explain trends in executive mobility, given the decline that began in about 2000.

The mobility measures for CFOs shown in Figure 2 exhibit similarly increasing long-run trends until the late-1990s, when they began to decline as did the measures for CEOs. The key difference is that the magnitude of the increase during the late-1980s and 1990s, as well as the peak level in the late-1990s, is much higher for CFOs. As mentioned above, potential explanations for the greater increase in CFOs' mobility relative to CEOs' include the increased visibility of CFOs due to their changing roles (e.g., more like CEO's) and improved communi-

cation technology over the last two decades of the 20th century. Nonetheless, CFO mobility exhibits a familiar downward trend post-1999. In the next section, we turn to the analysis of what explains these mobility trends.

4. Explaining Executive Mobility Trends

The previous section documents generally increasing executive mobility in the past century, with the trend reversed in the last decade of the sample. In this section, we explore potential explanations for these trends, with a focus on explaining the increasing-then-decreasing pattern from the 1980s to the 2000s. Existing research argues and provides some evidence that increasing importance of general managerial human capital can explain the increase in executive mobility during the 1980s and 1990s (e.g. Murphy and Zabojnik, 2007; Frydman, 2019). However, this research does not document the subsequent decline in mobility (because the samples used in the previous research end around the turn of the century).

4.1. Labor Market Size, Nature of Executive Contracts, and Benefits of Executive Movements

The past two decades observed a steady decline in the number of listed firms, reversing a long-run increasing trend before the 2000s (see, e.g., Doidge et al., 2017). In addition, firm concentration has increased across many industries since the late-1990s (Grullon et al., 2019; Covarrubias et al., 2019). We begin our investigation by analyzing whether these shifts in market structures are associated with time-series patterns in executive mobility. We initially show graphical evidence for a number of explanatory variables, then present regression evidence in Section 4.5.

The literature on search frictions shows that larger labor markets facilitate job search, leading to higher labor mobility and match quality (e.g. Diamond, 1982; Petrongolo and Pissarides, 2006). Therefore, to the extent that the executive labor market is segmented between public and private firms, the changing number of public firms could affect the size of the labor market and in turn executive mobility.[13] Following the literature, we measure the labor

[13] Consistent with segmented labor markets for US corporate executives, Cziraki and Jenter (2022) find that almost 80% of executives hired by S&P500 firms are from publicly traded US firms.

market size (or thickness) for public firm executives using the log number of firms on the NYSE, Amex, and Nasdaq (see, e.g., Petrongolo and Pissarides, 2006; Harmon, 2013). Later, we consider moves to private firms.

Panel A of Figure 3 shows that labor market size exhibits long-run trends similar to those for mobility from 1974 to 2011, with a correlation of 0.713.[14] As the number of public firms increased considerably in the 1980s, the mobility measure also exhibited an increasing trend. Importantly, both the number of public firms and executive mobility experienced a pronounced increasing-then-decreasing pattern since the mid-1980s. Thus, the graphical analysis suggests that the changing size of executive labor markets could be a plausible explanation for changing mobility we document.[15]

In addition to these dynamics with respect to labor market size, the changing nature of labor contracts for executives could explain their mobility trends. Kini et al. (2020) find that the fraction of newly hired CEOs whose contracts are covered by non-compete agreements increased from about 45% in the mid-1990s and about 60% in the early 2000s to close to 70% by the late 2000s. Thus, the increasing prevalence of non-compete clauses for executives, which limit their across-firm mobility, could explain the decline in mobility since the early 2000s.

While the changing executive labor market size and nature of labor contracts could explain long-run secular trends in mobility, including the decline since the early-2000s, what might account for variations at a higher frequency, such as business cycles? A potentially important driver of aggregate executive mobility at this frequency relates to benefits to reallocating executives across firms. Existing research on reallocation of labor and capital argues that the cross-sectional dispersion of outcomes (such as productivity and wages) is a plausible measure of the benefits of reallocation (see, e.g., Eisfeldt and Rampini, 2006; Decker et al., 2020). The idea is that larger differences in firm performance provide opportunities for productive

[14] We begin the analysis of labor market size in 1974, when CRSP began to include NASDAQ in addition to NYSE and Amex firms. In a robustness check, we find qualitatively similar labor market size results on the full sample from 1921-2011.

[15] It is important to distinguish the labor market thickness explanation for declining mobility from a potentially mechanical relation in that our sample is made up of public firms. (So, for example, if the public firms that disappear are each replaced with a private firm, and executives continue to move to these private firms at the same rate as before so "true" mobility has not changed, our measure might mechanically exhibit a decline in mobility). To eliminate this mechanical possibility, in Section 4.6, we perform an analysis that also includes private firms and confirm that executive mobility does in fact decline post-1999.

reallocation of executives between firms. Following this line of research, we employ the standard deviation of return on assets (ROA) across firms on the NYSE and Amex as a measure of the reallocation benefits.[16] Panel B of Figure 3 plots it along with the CEO mobility measure.[17]

The panel shows that ROA dispersion covaries positively with CEO mobility ($\rho = 0.415$), particularly around important business cycle events such as the Great Depression and the recessions of 1948-49 and 2007-09. In addition, both ROA dispersion and executive mobility increased from the mid-1980s to the late-1990s. These findings are consistent with the notion of efficient CEO movements in that CEOs tend to move across firms when the benefits of such reallocation are high. It is particularly interesting that our result contrasts with existing evidence that reallocation of general workforce and capital assets either does not covary (workers) or negatively covaries (capital) with dispersion measures (Saks and Wozniak, 2011; Eisfeldt and Rampini, 2006). Thus, in this sense our finding suggests that executive labor markets reallocate more efficiently than these other markets, perhaps because the executive labor market suffers less from frictions such as financial constraints and adverse selection.

4.2. General Managerial Skills and Executive Mobility

The previous section shows evidence that changes in labor market size and benefits of executive reallocation are associated with aggregate trends in mobility. We now turn our attention to whether changing importance of general managerial human capital could explain executive mobility trends from the 1960s through 2000s by employing new as well as classical measures. First, the ability of executives to move across industries, as shown in Tables III and IV, is intuitively an important component of mobility. We therefore examine whether trends in cross-industry moves is related to variation in executive mobility over time, using the HHI of the fraction of between-industry (one-digit SIC) CEO movements. For this analysis, we calculate the HHI using the past ten years of CEO moves beginning in 1960, when the calculation of the HHI becomes feasible due to a large enough number of moves. Panel C of Figure 3 plots the inverse HHI measure of between-industry movements and our mobility measure, and

[16] We exclude NASDAQ firms in our calculation of ROA dispersion to maintain consistency of the variable over a long time period.

[17] To avoid mechanical relations between the dispersion measure and executive mobility due to capital reallocation (which includes M&As and sales of subsidiaries), in this graph we use the mobility measure that excludes M&A- and subsidiary-related moves.

shows that they are positively correlated ($\rho = 0.675$). A dramatic increase in 1/HHI (which implies a higher degree of cross-industry mobility) since the mid-1980s coincides with a large increase in executive mobility. Also, both series are relatively stable between the 1970s and early-1980s. During the 2000s, the inverse HHI measure plateaus while the mobility measure declines. Hence, propensity of cross-industry moves is a candidate explanation of executive mobility until about 2000 but likely not thereafter.

The second measure of general executive skills is the ratio of new enrollment in MBA degree to engineering master's degree programs in the US, proxied by the number of degrees conferred two years after. We collect data on master's degrees conferred in business and related fields (referred to as "MBA" henceforth) and in engineering and engineering technologies (referred to as "engineering" henceforth) from the US Department of Education, National Center for Education Statistics from 1970 through 2011. (The 1970 start date is due to data availability.) Murphy and Zabojnik (2007) argue that the rising popularity of MBA education during the 1980s-1990s indicates increasing importance of general management skills for corporate executives, relative to firm- or industry-specific skills. Anecdotal evidence suggests however that specialized, perhaps technology-related skills might have become more important for executives in the most recent decade in our sample given the rise of technology-oriented firms (see, e.g., Gartner, 2019).[18]

Panel D of Figure 3 plots both the MBA-to-engineering degree enrollment ratio and our mobility measure from 1970 to 2011. Both variables increased during the 1970s and then decreased until the mid-1980s. Since the late-1980s, both the relative number of MBA program enrollment and the mobility measure increased substantially through the late-1990s. During the 2000s, the mobility measure declined substantially, whereas the relative importance of MBA to engineering education experienced a relatively small decrease. Thus, the importance of general managerial skills (over technical skills) is a candidate explanation for executive mobility until about 2000 but likely not thereafter.

Lastly, a particular type of general management skills relates to managing complex organizations by acquiring and restructuring firms and divisions, often across different industries

[18] Gartner (2019), Top 10 Emerging Skills For the C-Suite.

(e.g. Vancil, 1987; Custódio et al., 2013). In particular, as the market for corporate control emerged in the early 1980s, these general skills were likely more valuable for corporate executives, especially those who oversee large, complex firms.[19] We measure the importance of the "restructuring-related" general management skills using the intensity of M&As in the US corporate sector.

Panel E plots the number of completed M&A transactions among US targets and acquirers (from the SDC) scaled by the lagged number of public firms on the NYSE, Amex, and Nasdaq, along with our mobility measure excluding moves associated with M&As or subsidiaries (to avoid any mechanical correlation between the two variables). The two series show very similar, increasing trends from 1982 to 1998.[20] Except for a brief divergence during the early- to mid-2000s, they also both exhibit downward trends in the last few years of the sample. The close co-movements of the M&A intensity in the US corporate sector and executive mobility ($\rho = 0.778$) is consistent with changing importance of restructuring- or finance-related general managerial skills being one of the drivers of executive mobility trends in the past several decades.[21]

4.3. Executive Mobility and Pay

What are the implications of the dynamics of executive mobility documented above for executive compensation? Existing research shows that equity-based incentive pay could be related to executive mobility. In particular, equity-based pay with vesting periods, stock options in particular, could work as a retention tool for executives (e.g., Oyer, 2004; Jochem et al., 2018; Lie and Que, 2019). This mechanism implies that firms may want to use more equity-based pay when labor market mobility is high, to retain their executives.

[19] See Murphy (2013) for a historical account for the rise of the market for corporate control, and hostile takeovers in particular, Murphy argues that corporate managers' pursuit of inefficient diversification and larger firm size in the previous decades had led to active corporate restructuring markets in the 1980s and 1990s (Murphy, 2013, p. 267).

[20] We begin the series in 1982 when SDC's data coverage becomes stable.

[21] Also consistent with the declining importance of finance- and restructuring-related skills for CEOs during the 2000s, Fuller et al. (2020) analyze CEO job descriptions between 2000 and 2017 collected from a top executive search firm and find that the importance of CEOs' ability to manage "financial and material resources" has declined steadily since the early-2000s. An alternative non-mutually-exclusive explanation is that outsider CEOs have an advantage in restructuring given little social or emotional ties to the stakeholders (such as employees) and particular lines of business. Under this explanation, increasing demand for "restructuring skills" from the CEO would lead to increased demand for outside CEOs and hence a more active external labor market (see, e.g., Khurana, 2002).

Panel F of Figure 3 plots the average equity-based CEO pay (i.e., option and stock grants) as a fraction of total pay, along with our mobility measure. CEO compensation data cover 1936-2011 and are from Frydman and Saks (2010) and Execucomp.[22] The panel shows that the increasing-then-decreasing mobility pattern since the mid-1980s almost exactly coincides with the pattern of the average fraction of option grants over total CEO compensation. This positive correlation is consistent with option-based incentives becoming more important during the 1980s and 1990s in response to increasing executive mobility (we explore this hypothesis in more detail in Section 5). The fraction of stock plus option grants also shows a similar trend, although less so since 2005 when stock grants became quantitatively more important (Murphy, 2013).

4.4. Geographic Mobility of Executives

The previous sections examine determinants of aggregate executive mobility under the (implicit) assumption that the US executive labor market is national. Along these lines, existing research has found that the modern labor market for executives is largely national, although there is considerable geographical concentration of movement within a given area such as a state and county (e.g. Kedia and Rajgopal, 2009; Yonker, 2017; Sauvagnat and Schivardi, 2024). However, little is known about geographic mobility earlier in the century. In this section, for the first time in the literature we explore trends in geographical mobility of executives over the past century. In particular, we examine whether executive mobility across (vs. within) geographical areas could explain the overall mobility patterns shown above.

A plausible hypothesis would be that mobility of corporate executives across geographic areas increased over the century due to considerable improvements in transportation and communication technologies.[23] On the other hand, the literature on worker mobility shows that geographical mobility of rank-and-file employees has declined in the US since the 1980s (Molloy et al., 2011, 2014). Therefore, we explore whether executive mobility to new jobs

[22] We thank Carola Frydman for making her dataset available on her website. Pay data from Execucomp are adjusted for backfilling following Gillan et al. (2020).

[23] One particular effect of improved technologies on executives' mobility is on their propensity to commute long distance or telecommute. See "Lands' End CEO Federica Marchionni Is Pushed Out," The Wall Street Journal, September 26, 2016 for an example of a public company CEO whose permanent residence (New York City) is a long distance away from its headquarters (Dodgeville, WI). Furthermore, the recent COVID-19 pandemic appears to have accelerated this trend.

in different geographical areas has also declined in the past several decades. Thanks to our century-long data, we are able to test these competing hypotheses. For our analysis, we employ two definitions of local labor markets: states and counties,[24] and define the location of a given CEO as the location of her employer's headquarters.[25]

Over the full sample period, the average fraction of cross-state and cross-county moves among all CEO moves are 68.6% and 77.5%, indicating that the vast majority of executive moves in the US in the past century are across (as opposed to within) local labor markets. Executives' high cross-local labor market mobility is consistent with the existing evidence that geographical mobility is greater for high-skill workers (Topel, 1986; Bound and Holzer, 2000) and the US executive labor market is national.

Importantly, Panel G of Figure 3 shows that the fraction of across-state and across-county CEO moves increased in the early part of the sample period until the early-1990s. This finding is consistent with our hypothesis that CEO mobility became more diverse in terms of geographical dispersion along with improvements in transportation and communication technologies. However, the fraction of across-state and across-county CEO moves declined since the early 1990s, while CEO mobility increased for part of this period. Taken together, the univariate results in Panel G do not reveal a close relation between geographic mobility and overall executive mobility trends.

4.5. Time-Series Regression Analysis

The previous sections present graphical relations between executive mobility and various economic variables. Some of these variables appear to co-move with the increasing-then-decreasing pattern of executive mobility. In this section, we use a regression framework to formally analyze the time-series relation between variables in Figure 3 and CEO mobility, with a focus on whether the variables help explain the increasing and/or decreasing mobility

[24] We do not use commuting zones (CZs) or metropolitan areas, other commonly used definitions of local labor markets, given the difficulty of using these geographical units in a consistent manner over the long sample period. For example, CZs are officially defined only since 1980 (Source: US Department of Agriculture).

[25] We identify headquarter locations using various sources including Moody's, "The Corporate Directory of U.S Public Companies," "SEC Digest," and 10-K filings.

patterns. Specifically, we estimate the following equation:

$$Mobility_t = \alpha + t + \beta_1 \cdot X_t \cdot \mathbb{1}\left[t < 2000\right] + \beta_2 \cdot X_t \cdot \mathbb{1}\left[t \geq 2000\right] + \beta_3 \cdot \mathbb{1}\left[t \geq 2000\right] + \gamma \cdot M_t + \varepsilon_t \tag{3}$$

where $Mobility_t$ represents our measure of aggregate executive mobility in year t defined in (1); t represents a linear time trend; X_t includes explanatory variables that capture such aggregate factors as executive labor market thickness, benefits of reallocating executives, and the importance of general managerial skills as introduced in the previous sections; $\mathbb{1}\left[t \geq 2000\right]$ is an indicator that is equal to one if year t greater than or equal to 2000;[26] M_t represents a vector of macroeconomic variables including the growth rate in real GDP, BAA-AAA credit spread, aggregate productivity, and three-month T-bill rate; and ε_t represents random errors. To account for serial correlation both in the mobility measure and explanatory variables, we use Newey-West standard errors with four years of lag.

Table 5, Panel A summarizes the regression results based on the mobility measure capturing the propensity of sitting executives to find new executive work ((A) in Eq. (2)), and reveals the following patterns.[27] First, proxying for executive labor market size using the log number of firms on the NYSE, Amex, and Nasdaq, we find that the variable is positively correlated with aggregate CEO mobility at the 1% level both before and after 2000 (column 1). The coefficient of 0.026 post-2000 indicates that a decrease from 2000 to 2011 in the measure of labor market size for corporate executives (of 0.43 log points) is associated with a 1.1 percentage point ($= \exp(0.026 \times 0.43) - 1$) decrease in executive mobility in the 2000s. The relation between the measure of labor market size and CEO mobility is also statistically significant at the 1% level before 2000, although the magnitude is somewhat smaller than that after 2000.

In column 2, we include the cross-sectional standard deviation of ROA as a measure of benefits of executive movements across firms (see, e.g., Eisfeldt and Rampini, 2006; Saks and Wozniak, 2011; Decker et al., 2020, for similar approaches). We find that the cross-sectional

[26] Our results are similar if we change the turning point year that defines the indicators to 1999 or 2001.

[27] We find quantitatively similar results when we use an alternative mobility measure that captures the propensity of departing executives to find new executive work or turnover ((B) or (C) in Eq. 1), see Table A1 in the Internet Appendix.

dispersion measure is significantly positively associated with mobility across the sample period, with the association more pronounced post-2000. These results support the notion that CEOs tend to move across firms when the benefits of such reallocations are greater, throughout the near-century. Relatedly, the coefficients on macroeconomic variables in the same column show that CEO mobility is negatively associated with economic growth and productivity (the latter is significant at the 1% level). This result shows that CEO movements are more frequent in "bad times," when the benefits of reallocation tend to be greater (Bloom et al., 2018).

In the next three columns, consistent with the graphical evidence in Section III.B, the proxies for the importance of general management skills: (1) the inversed HHI of CEO moves across industries (column 3), (2) the ratio of the number of MBA and engineering master's degree program new enrollment (column 4), and (3) the number of M&A transactions scaled by the lagged number of firms on major exchanges (column 5); all are significantly positively correlated with CEO mobility before 2000. The relative number of MBA program enrollment continues to be positively correlated with CEO mobility after 2000 (and thus helps explain the post-2000 downward trend in mobility), whereas the inversed HHI of cross-industry movements and M&A intensity are not correlated with executive mobility post-2000.

In column 6, we find that mobility is significantly positively correlated with the fraction of total pay attributable to option and restricted stock grants, consistent with firms using incentive pay as a retention tool for executives when their mobility is high. Moreover, estimates in columns 7 and 8 show that the fraction of option grants but not stock grants is significantly associated with mobility (especially after 2000), consistent with the former being a more effective retention tool (Oyer and Schaefer, 2003; Gopalan et al., 2014). Lastly, column 9 shows a significantly negative correlation between CEO mobility and the fraction of across-state CEO moves before 2000, opposite to what one might expect to explain the trend in mobility before 2000.

In Table 5, Panel B, we estimate a multivariate regression version of Eq. (3) that includes all variables. We estimate these time-series regressions starting in three different years (1936, 1960, 1974) due to various start years for different variables. Due to statistical concerns per-

forming regressions with many explanatory variables on a relatively small sample, we interpret the estimates with great caution, especially post-2000. Focusing on column 3 which presents estimates for 1974-2011, we find that the measures of benefits of executive reallocation and general management skills explain the mobility trends before 2000. This finding indicates that these economic forces influenced executive mobility independent of each other pre-2000. However, these variables are not significantly correlated with executive mobility after 2000. Only the fraction of option and stock pay explains the mobility trends both before and after the inflection point for mobility. Note also that the evidence is consistent with reallocation of executives becoming efficient around 1960, as reflected in the coefficient on the standard deviation of ROA, which is significantly positive for 1960-1999 but not for 1936-1999.

While the multivariate results are instructive, due to statistical concerns we return to the univariate analysis in Table 5, Panel A to draw our conclusions for this section. In sum, the time-series regression analysis finds that executive labor market size, time-varying benefits to reallocating executives, option pay, and several proxies for importance of general managerial skills explain the increasing trend in mobility before 2000. The same variables explain the decreasing mobility trend post-2000, though only one of the general management skill variables (MBA vs. engineering education) remains significant.[28]

4.6. Robustness: The Impact of Executives Moving to Private Firms

A potential explanation for the measured trends in executive mobility concerns a changing fraction of executives moved from public to private firms, which we do not observe because private firms are not accounted for in our data. For example, the decline in the executive mobility measures during the 2000s may be due to an increasing fraction of executives moving from public to private firms. To investigate this possibility, we randomly select approximately 10% of the final observed year of firm-CEO pairs in our sample and track out-of-our-sample career paths of these CEOs after their departure using Marquis Who's Who (which contains information on private firm employment).

We first confirm that this alternative data source also indicates increasing propensities for public firm CEOs to move to public firms over the past century (as we find in our main

[28] In untabulated analysis, we find quantitatively similar results for CFO mobility.

sample). During the 1920-1949, 1950-1985, and 1986-2011 periods, 1.6%, 4.2%, and 6.3% of departing CEOs moved to public companies as executives. These trends align with our main findings. Important for this robustness check, Who's Who allows us to document the rate at which departing public firm CEOs move to private firms, which has increased from 3.3%, 4.5%, and to 5.5% across the three eras.

Importantly, we do not find evidence that the recent decline in mobility is due to an increase in the public to private firm moves of CEOs. We find that the rate of public firm CEOs moving to public firms is 8.2% (3.4%) during the 1986-1999 (2000-2011) period, confirming the pattern in our data. Also, the rate of public firm CEOs moving to private firms only slightly increases (from 5.3% to 5.8%) across the periods. Therefore, an increasing propensity of movements from public to private firms does not account for the decline in our mobility measures after 2000.[29]

5. Cross-Sectional Determinants of Executive Mobility

The previous two sections document time-series trends in aggregate executive mobility over the past century and propose plausible explanations for the trends. In this section, we explore drivers of executive mobility in the cross-section of firms. This analysis sheds light on whether drivers of time-series mobility also explain across-firm heterogeneity, including which firm and CEO characteristics (such as firm size and CEO tenure) are associated with labor market mobility. To address these questions, we estimate the following logistic regression using a panel of firms from 1921-2011:[30]

$$\mathbb{1}\left[Move\right]_{ijt} = \alpha_t + \gamma \cdot X_{ijt} + \varepsilon_{ijt} \tag{4}$$

where $\mathbb{1}\left[Move\right]_{ijt}$ is an indicator that is equal to one when the CEO of firm i in industry j as of year t moved to another firm in our sample by year t+1 or t+2 (i.e., within next two years), and zero otherwise; α_t represents year fixed effects; X_{ijt} represents a vector of firm,

[29] It is also possible that if CEOs are on average older in the 2000-2011 period (because for example they continue to work later in life), then mobility might decline. However, we do not find evidence of this possibility: average ages of CEOs differ only slightly between 1986-1999 (55.9) and 2000-2011 (58.5).

[30] We obtain quantitatively similar results using a linear probability model.

CEO, and industry characteristics including firm ROA, Tobin's q, size (measured by log total assets), CEO tenure, and the two-digit SIC industry average and standard deviation of ROA for firm i in industry j in year t; and ε_{ijt} represents random errors double clustered both at the two-digit SIC industry and year levels. All variables are Winsorized at the 1% and 99% levels to mitigate potential influences of outliers.

Table 6, Panel A presents estimation results for (4) based on the full sample, and Panel B for a subsample of firm-years in which there is CEO departure. Thus, Panel A estimates the cross-sectional determinants of CEO mobility for sitting CEOs, similar to the mobility measure (A) in (2), which scales the number of CEO moves by the lagged number of CEOs. Panel B shows the cross-sectional determinants of CEO mobility conditional on turnover, similar to the first component of the mobility measure (B) in (2), representing the propensity of departing executives to find new executive work.

The two panels document several cross-sectional patterns of CEO mobility. First, consistent with CEO reallocation being more frequent when the benefits are greater, as shown above for aggregate mobility, column 2 in the two panels shows that the coefficients on the across-firm standard deviation of ROA in a given industry are significantly positive. Second, firm performance measured by ROA and Tobin's q is negatively associated with the CEO's propensity to move to other firms as executive. In addition, industry-level average ROA is also negatively correlated with CEO mobility. These results are consistent with our time-series finding that executives tend to move in "bad times" (Table 5). Third, the coefficients on firm size are significantly positive in Panel A, suggesting that sitting CEOs of larger companies exhibit higher mobility. This result supports the assumption that larger firms offer better career opportunities. Lastly, the negative coefficients on CEO tenure suggest that short-tenure CEOs are more likely to move across firms than long-tenure CEOs.

Panel C presents estimation results for a version of (4) that uses an indicator for CEO turnover as dependent variable on the full sample. Thus, the panel shows the cross-sectional determinants of CEO turnover, similar to the second component of the mobility measure (C) in Eq. (2). The estimates confirm that the portion of CEO mobility due to turnover largely reinforces the cross-sectional patterns we find in Panels A and B — CEOs depart more when

the benefits of reallocation are larger and the firm or industry performs worse; and larger firm CEOs experience more churning in the labor market. Consistent with the cross-sectional mobility results for CEOs capturing patterns of executive mobility in general, we find quantitatively similar results when we estimate (4) using CFO moves and turnovers (untabulated). Overall, the evidence in Table 6 shows that firm and industry performance and its dispersion are key determinants of mobility in the cross-section, consistent with our time-series evidence.

6. Conclusion

We uncover several new long-run trends in the job mobility of executives by constructing a new dataset of executive movements during 1920-2011. CEO and CFO mobility generally increased over the six decades leading up to the end of the 20th century. This increase was accompanied by executives moving across an increasingly diverse set of industries over time. In stark contrast, following an inflection point around 2000, executive mobility declined sharply, returning to levels not seen since the 1980s.

We offer several explanations for the evolution of mobility over the century, including changing benefits to reallocating executives across firms, labor market size, and importance of general managerial ability. A key takeaway is that the benefits to executive reallocation are significantly positively associated with aggregate mobility both when mobility was increasing (before 2000) and also when mobility was decreasing (after 2000). Future research should explore the ramifications of the decreasing executive mobility for corporate policies, as well as why executive movements across firms appear more efficient relative to reallocation of rank-and-file employees and capital assets.

We also document substantial time-series co-movement between executive mobility and equity-based executive pay, and investigate whether the relation is due to firms' attempt to retain executives when their mobility increases.

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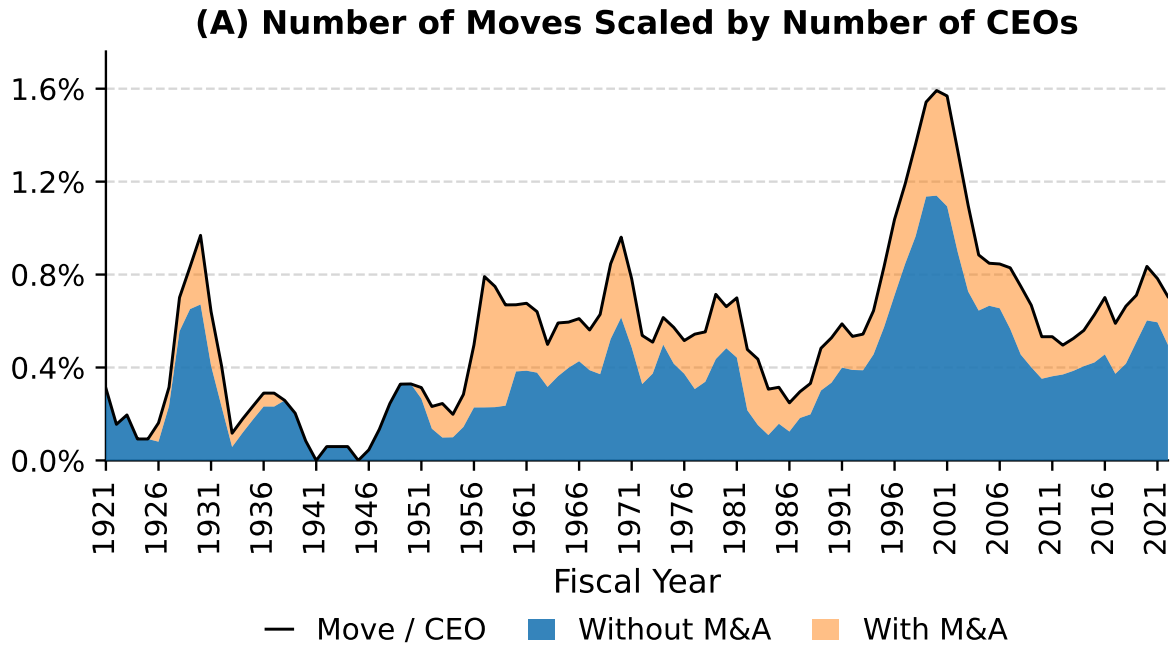
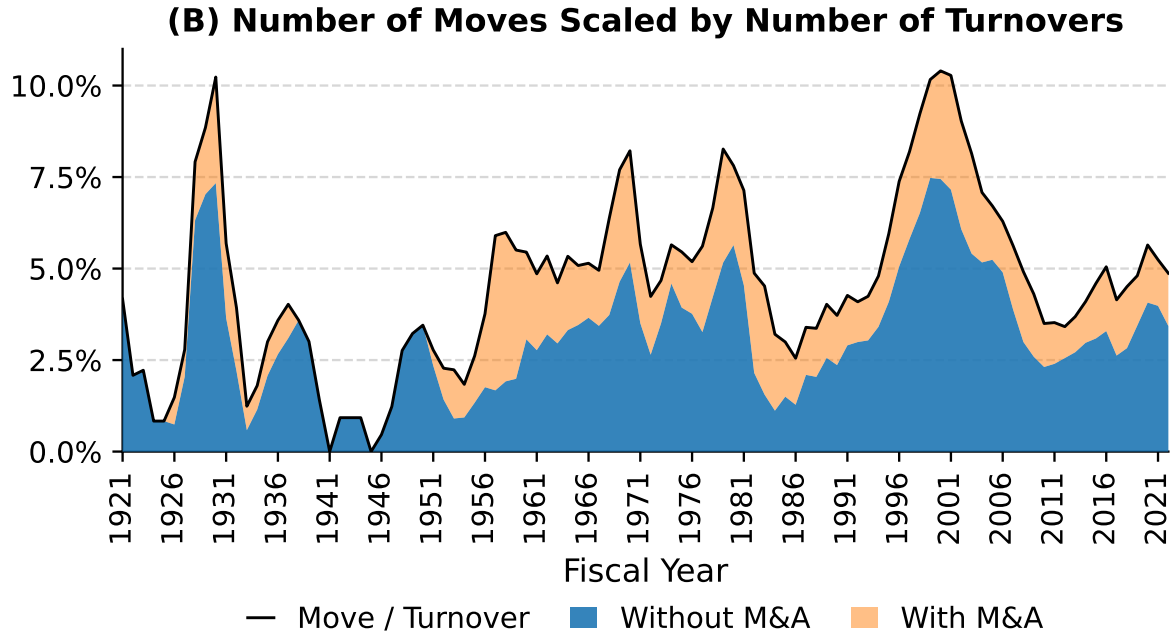
Figure 1. Measures of Executive Mobility for CEOs

This figure plots three measures of executive mobility for CEOs from 1921 through 2021 (three-year moving average). Move is the number of CEOs in year $t-2$ or $t-1$ who become CEOs or other executive officers at other firms in our sample in year t. CEO is the total number CEOs in year $t-1$. Turnover is the number of CEOs who leave firms in year $t-1$. All Moves includes all CEO movements while Moves without M&As excludes M&A or subsidiary-related moves. Moves with M&As is M&A or subsidiary-related moves. Panel C decomposes (A) Move/CEO into (B) Move/Turnover and (C) Turnover/CEO as in (2) and shows how each component evolves over time.





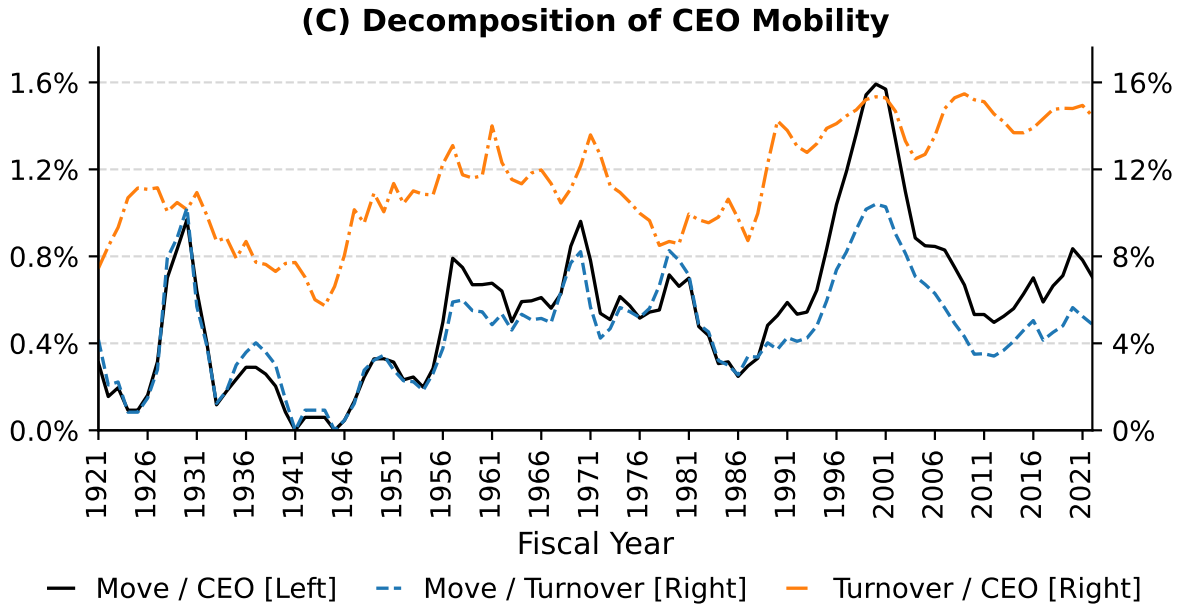
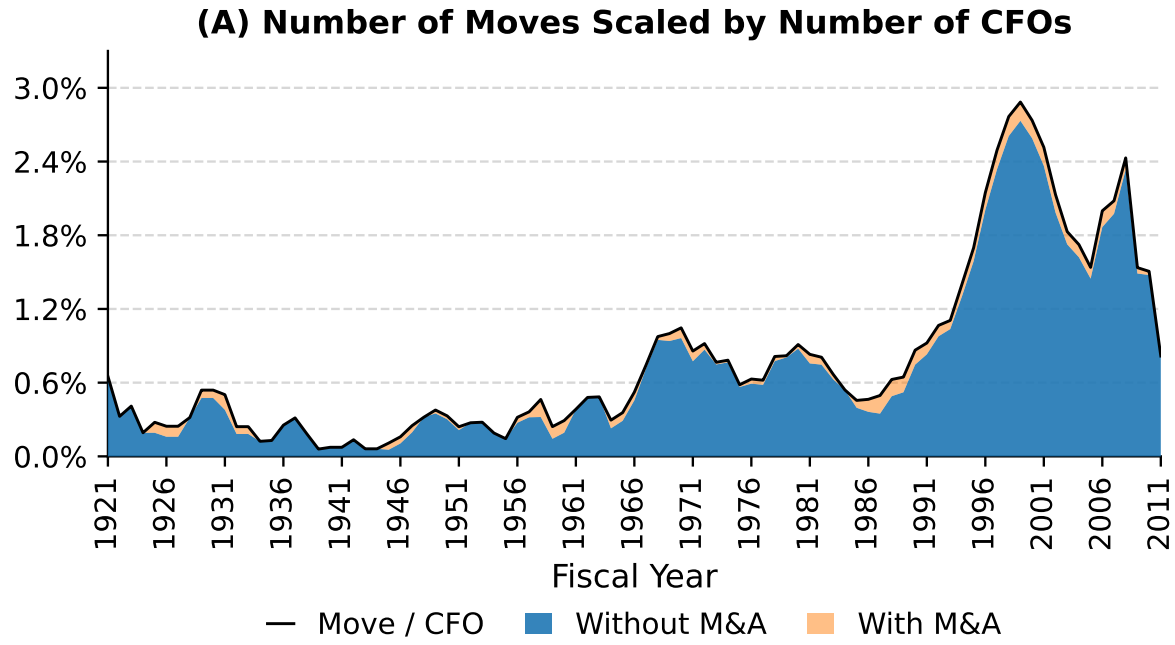
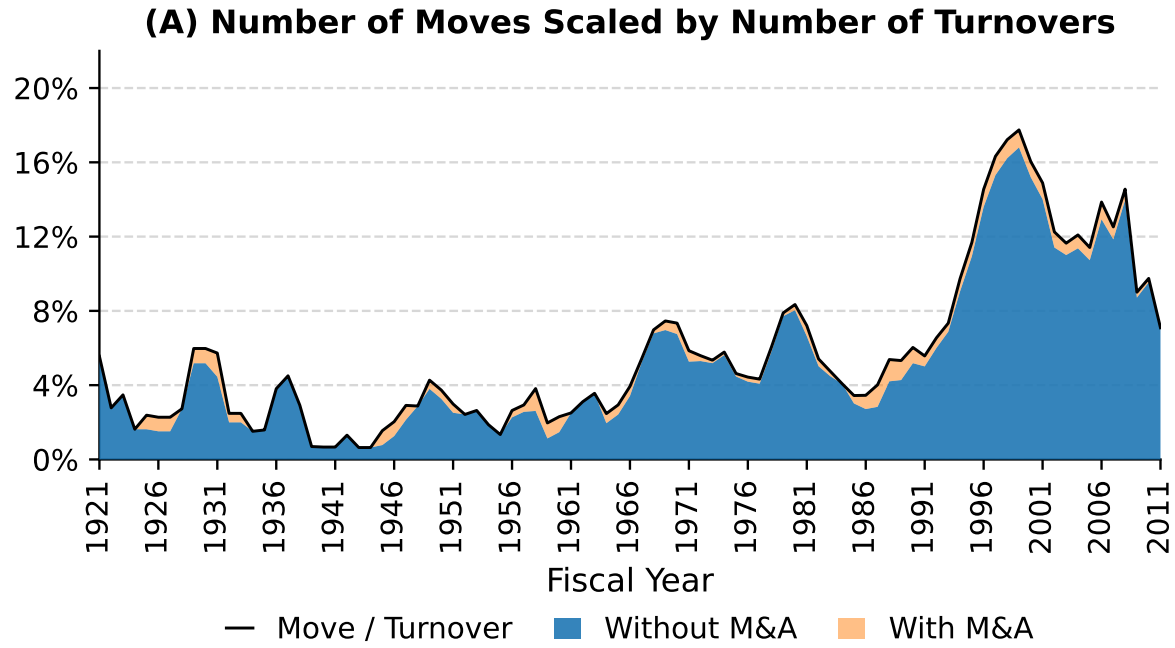

(C) Decomposition of CEO Mobility
1.6%
1.2%
0.8%
0.4%
0.0%
16%
12%
8%
4%
0%
1921
1926
1931
1936
1941
1946
1951
1956
1961
1966
1971
1976
1981
1986
1991
1996
2001
2006
2011
2016
2021
Fiscal Year
Move / CEO [Left]
Move / Turnover [Right]
Turnover / CEO [Right]

Figure 2. Measures of Executive Mobility for CFOs

This figure plots three measures of executive mobility for CFOs from 1921 through 2021 (three-year moving average). Move is the number of CFOs in year $t-2$ or $t-1$ who become CFOs or other executive officers at other firms in our sample in year t. CFO is the total number CFOs in year $t-1$. Turnover is the number of CFOs who leave firms in year $t-1$. All Moves includes all CFO movements while Moves without M&As excludes M&A or subsidiary-related moves. Moves with M&As is M&A or subsidiary-related moves. Panel C decomposes (A) Move/CFO into (B) Move/Turnover and (C) Turnover/CFO as in (2) and shows how each component evolves over time.





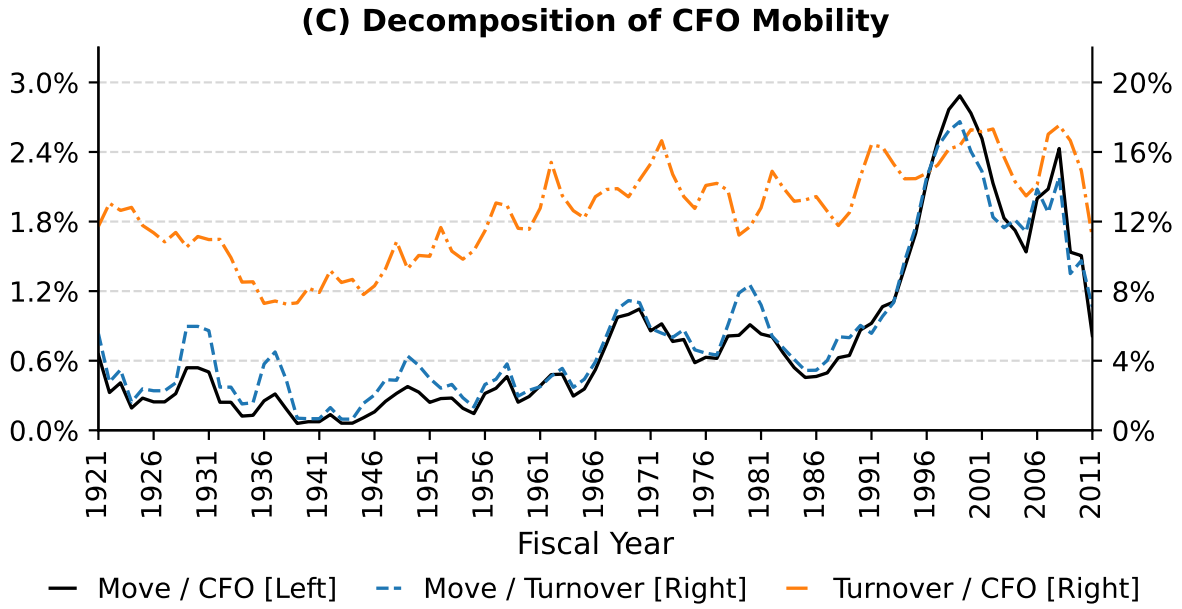
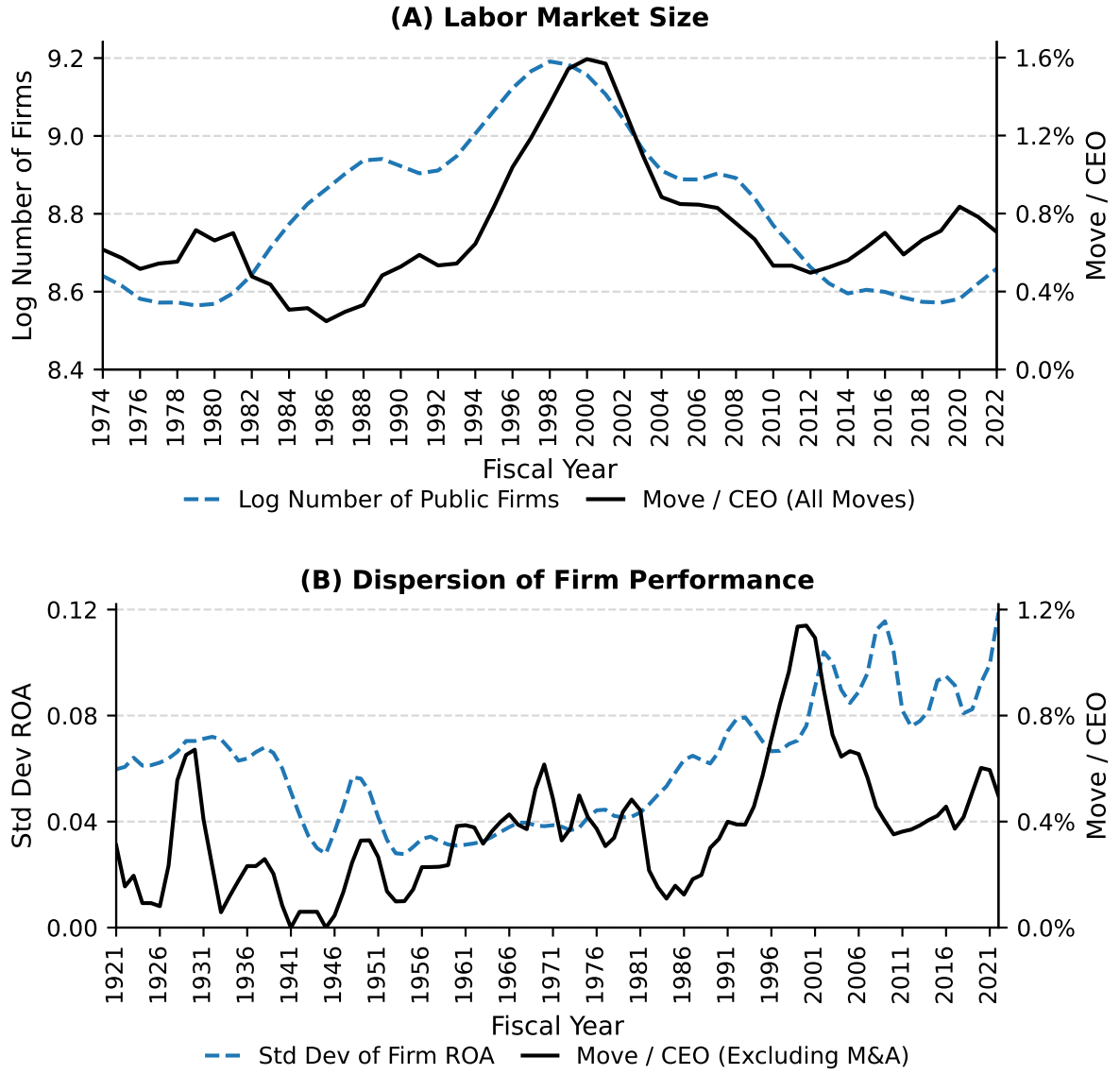
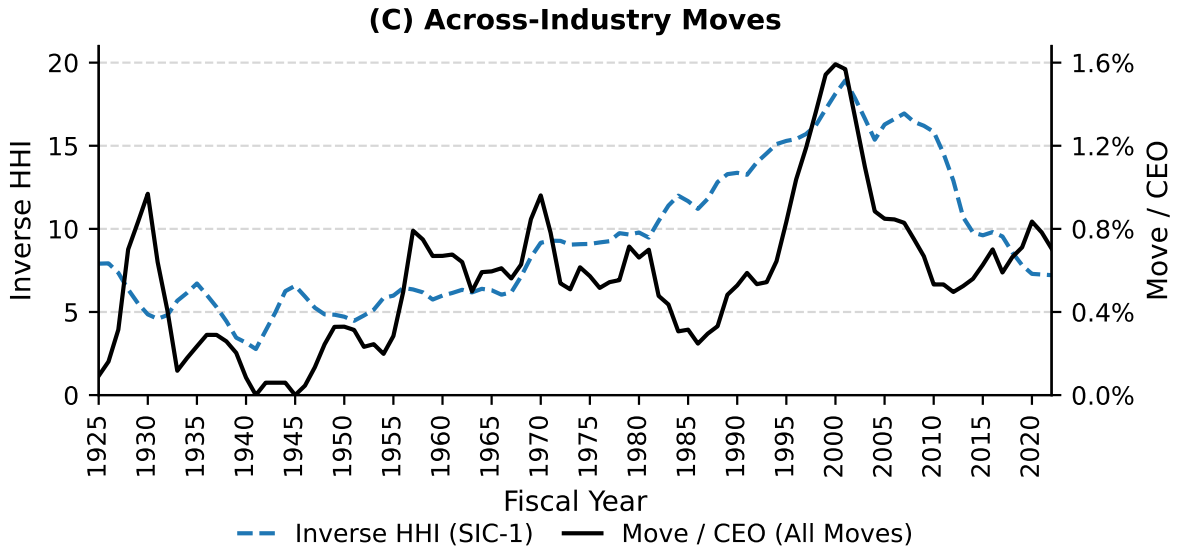
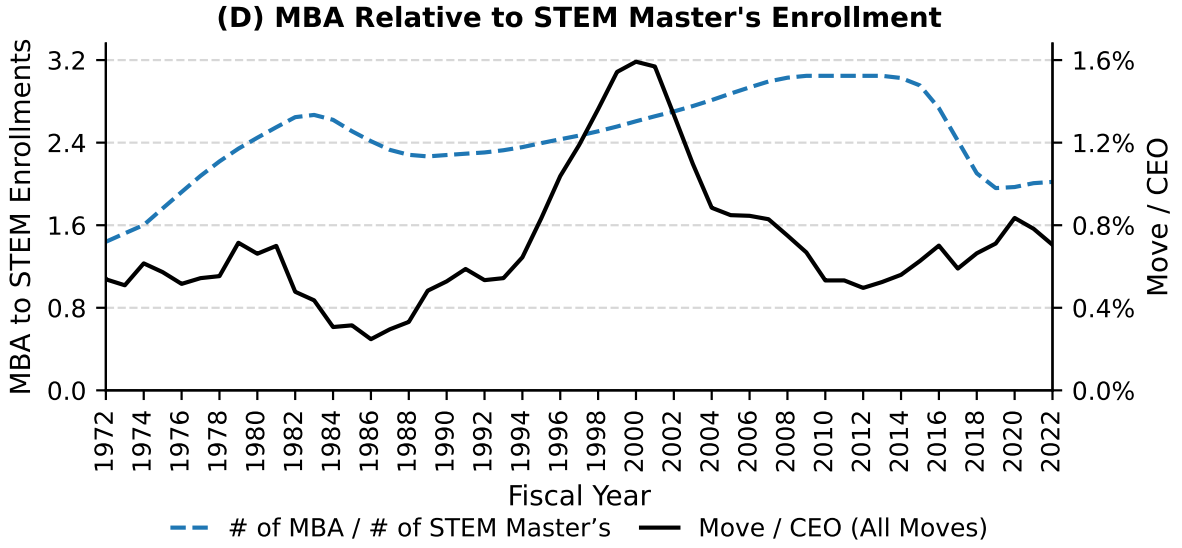

(C) Decomposition of CFO Mobility
3.0%
2.4%
1.8%
1.2%
0.6%
0.0%
20%
16%
12%
8%
4%
0%
1921
1926
1931
1936
1941
1946
1951
1956
1961
1966
1971
1976
1981
1986
1991
1996
2001
2006
2011
Fiscal Year
Move / CFO [Left]
Move / Turnover [Right]
Turnover / CFO [Right]

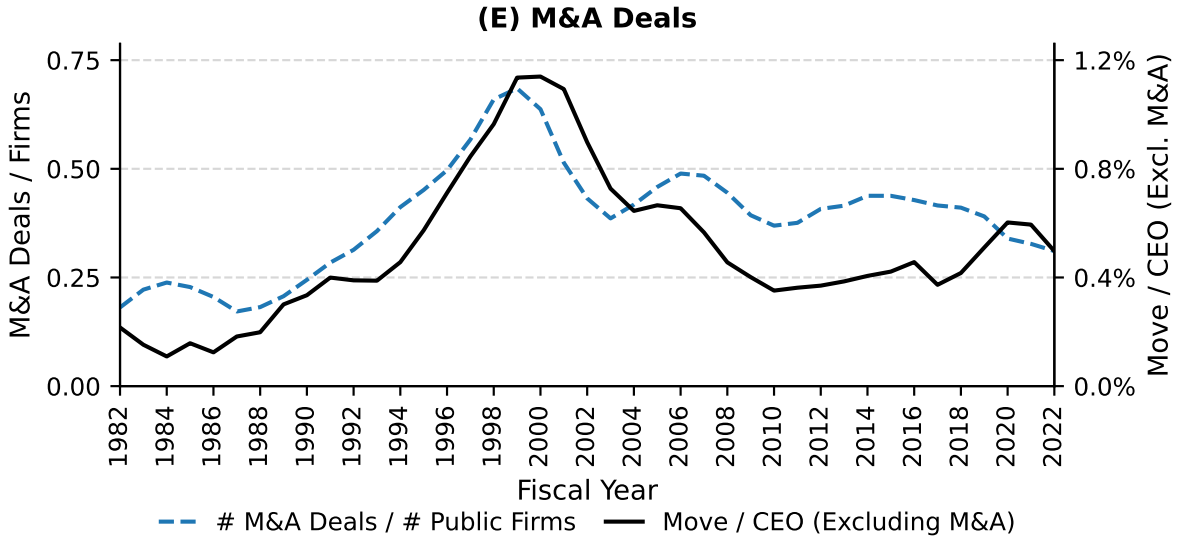
Figure 3. Executive Mobility and Underlying Factors

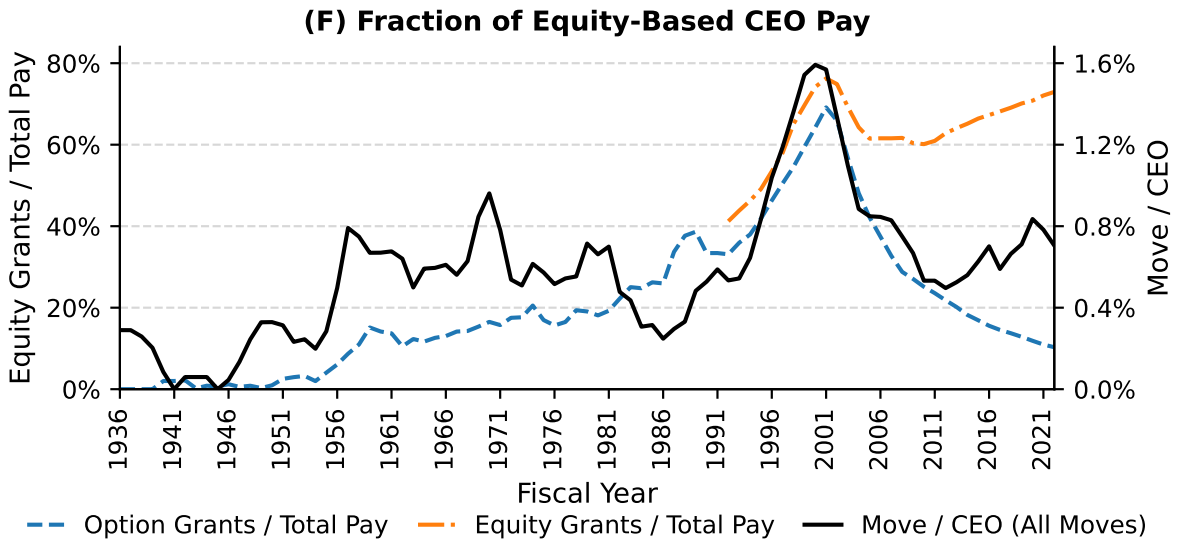
This figure compares the trends in variables that potentially explain executive mobility with our mobility measure (three-year moving average). Move is the number of CEOs in year $t-2$ or $t-1$ who become CEOs or other executive officers at other firms in our sample in year t. CEO is the total number CEOs in year $t-1$. All Moves includes all CEO movements while Moves without M&As excludes M&A or subsidiary-related moves. Panel A shows the log number of NYSE, Amex and Nasdaq listed public firms. Panel B shows the standard deviation of NYSE and Amex listed firms' return on assets. Panel C shows the inverse of the Herfindahl-Hirschman Index of the fraction of CEO moves across one-digit SIC industries over the past ten years. Panel D shows the number of business master's degree programs enrollment over the number of engineering master's degree programs enrollment in the US. Panel E shows the number of completed M&A deals by US public acquirors over the number of NYSE, Amex and Nasdaq listed public firms. Panel F shows the fraction of equity pay (stock and option grants) and option grants over total pay (salary and bonus plus equity pay). Panel G shows the fraction of across-state and across-county CEO moves over the past ten years.




(C) Across-Industry Moves
Inverse HHI
Move / CEO
Fiscal Year
Inverse HHI (SIC-1)
Move / CEO (All Moves)


(D) MBA Relative to STEM Master's Enrollment
MBA to STEM Enrollments
Move / CEO
Fiscal Year
# of MBA / # of STEM Master's
Move / CEO (All Moves)


(E) M&A Deals
M&A Deals / Firms
Move / CEO (Excl. M&A)
Fiscal Year
M&A Deals / # Public Firms
Move / CEO (Excluding M&A)


(F) Fraction of Equity-Based CEO Pay
Equity Grants / Total Pay
80%
60%
40%
20%
0%
1.6%
1.2%
0.8%
0.4%
0.0%
Move / CEO
1936
1941
1946
1951
1956
1961
1966
1971
1976
1981
1986
1991
1996
2001
2006
2011
2016
2021
Fiscal Year
Option Grants / Total Pay
Equity Grants / Total Pay
Move / CEO (All Moves)

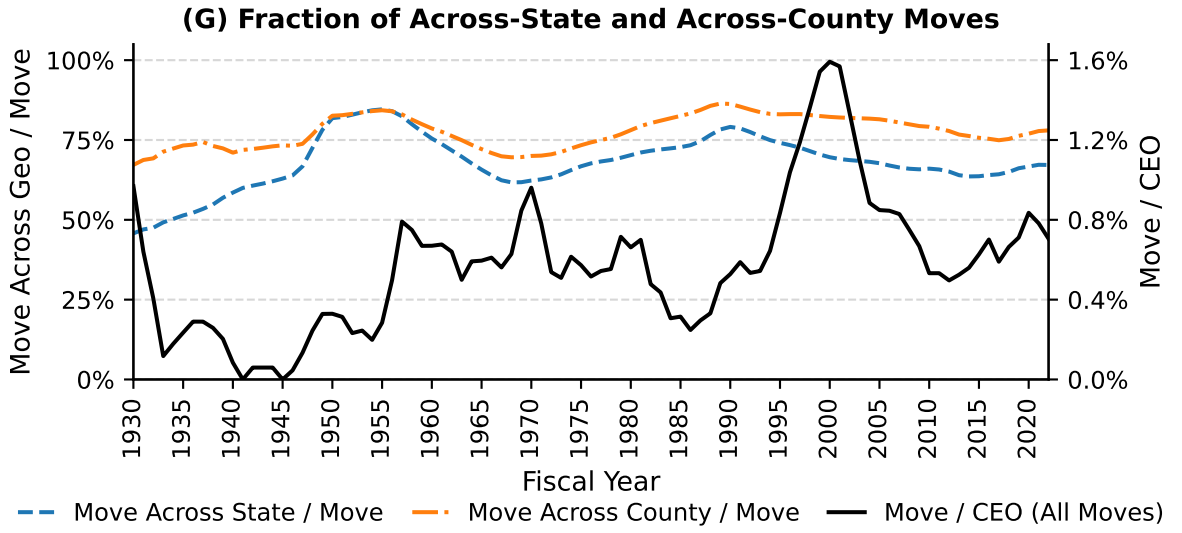

(G) Fraction of Across-State and Across-County Moves
Move Across Geo / Move
100%
75%
50%
25%
0%
1.6%
1.2%
0.8%
0.4%
0.0%
Move / CEO
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Fiscal Year
Move Across State / Move
Move Across County / Move
Move / CEO (All Moves)

Table 1. CEO and CFO Moves and New Job Titles

This table presents the number of CEOs and CFOs who leave office (Turnovers) and the number of CEOs and CFOs who are hired at new firms (Moves) in our sample from 1920 through 2011 in three different periods. A move is defined as a CEO (CFO) who worked at a firm in year $t-2$ or $t-1$ moves to another firm in year t. The new title is the first new job title of a former CEO (CFO) who moves to a new firm in Panel A (Panel B), with Non-CEO (Non-CFO) indicating a move to a non-CEO (non-CFO) role at the new firm (e.g., COO). Numbers in parentheses are the ratio of the number of former CEOs or CFOs who move to other firms to the number of CEO or CFO turnovers in each period.

Panel A. CEO Turnovers, Moves and New Job Titles

	(1)	(2)	(3)	(4)	(5)
	Full Sample	1920-1949	1950-1985	1986-2002	2003-2022
CEO Turnovers	34,990	1,496	4,916	11,605	16,973
Become officer of new firm (%)	2,083	45	261	877	900
	(5.95%)	(3.01%)	(5.31%)	(7.56%)	(5.30%)
Become CEO of new firm (%)	916	18	58	333	507
	(2.62%)	(1.20%)	(1.18%)	(2.87%)	(2.99%)
Become non-CEO of new firm (%)	1,167	27	203	544	393
	(3.34%)	(1.80%)	(4.13%)	(4.69%)	(2.32%)

Panel B. CFO Turnovers, Moves and New Job Titles

	(1)	(2)	(3)	(4)	(5)
	Full Sample	1920-1949	1950-1985	1986-2002	2003-2022
CFO Turnovers	24,628	1,552	6,163	12,707	4,206
Become officer of new firm (%)	1,941	41	276	1,429	195
	(7.88%)	(2.64%)	(4.48%)	(11.25%)	(4.64%)
Become CFO of new firm (%)	1,418	19	144	1,100	155
	(5.76%)	(1.22%)	(2.34%)	(8.66%)	(3.69%)
Become non-CFO of new firm (%)	523	22	132	329	40
	(2.12%)	(1.42%)	(2.14%)	(2.59%)	(0.95%)

Table 2. Relative Firm Size and Compensation for Moving CEOs and CFOs

This table presents the relative firm size and compensation change for CEOs and CFOs who move to other firms from 1920 through 2011. A move is defined as a CEO (CFO) who worked at a firm in year $t-2$ or $t-1$ moves to another firm in year t. New Title is the first job title of an externally hired former CEO (CFO). To larger firms is the fraction of former CEOs or CFOs who move to a firm that is larger than their previous firm in terms of total assets. Pay change is the percentage change in an externally hired CEO's or CFO's salary and bonus plus option and stock grants in the first year, relative to that from her previous employment. We do not present pay change results before 1986 given the small number of observations for which we can observe pay both before and after moves. The numbers in parentheses are the number of observations underlying the percentages.

	(1)	(2)	(3)	(4)	(5)	(6)
	CEO Moves			CFO Moves		
	All	CEO	Non-CEO	All	CFO	Non-CFO
To larger firm						
Full Sample	63.1%	53.3%	70.5%	47.0%	45.8%	50.2%
	(1,643)	(705)	(938)	(1,859)	(1,379)	(480)
1920-1949	65.9%	66.7%	65.4%	60.0%	52.6%	66.7%
	(44)	(18)	(26)	(40)	(19)	(21)
1950-1985	69.9%	47.2%	76.4%	46.8%	46.3%	47.4%
	(163)	(36)	(127)	(205)	(108)	(97)
1986-2002	65.7%	52.3%	73.4%	46.0%	45.2%	48.7%
	(726)	(264)	(462)	(1,146)	(877)	(269)
2003-2022	58.7%	54.0%	64.4%	48.3%	46.9%	53.8%
	(710)	(387)	(323)	(468)	(375)	(93)
Pay change						
1986-2011	87.9%	74.3%	108.0%	428.4%	522.7%	120.1%
	(166)	(99)	(67)	(260)	(206)	(63)

Table 3. Frequency of CEO Moves between Industries

This table presents the frequency of CEOs moving from a firm in the origination industry to another firm in the destination industry for three time periods from 1920 through 2011. A move is defined as a CEO who worked at a firm in year $t-2$ or $t-1$ moves to another firm in year t. SIC-From is the one-digit SIC industry of the firm that a given CEO departs and SIC-To is the one-digit SIC industry of the firm to which the CEO moves as CEO or another executive. HHI is the Herfindahl-Hirschman Index of the fraction of moves across one-digit SIC industries. The mean fractions are calculated using cells with non-zero values, while the HHI is calculated by assuming zeros for cells with missing values. Across-industry move is the fraction of out-of-industry moves among all moves in a given period.

Panel A. 1920-1949: 45 moves (Mean 6.25%, HHI 0.165, Across-industry move 40.0%)

SIC-From / SIC-To	(1) SIC0 Agric., Forestry, Fishing	(2) SIC1 Mining & Constr.	(3) SIC2 Light Manuf.	(4) SIC3 Heavy Manuf.	(5) SIC4 Transport. & Public Utilities	(6) SIC5 Wholesale & Retail Trade	(7) SIC6 Finance, Insurance, Real state	(8) SIC7 General Services	(9) SIC8 Professional Services	(10) SIC9 Public Admin.	(11) Total
SIC0. Agriculture, Forestry, Fishing											0.00%
SIC1. Mining & Construction				4.44%		2.22%					6.70%
SIC2. Light Manufacturing		2.22%	17.78%	2.22%	2.22%	2.22%					26.70%
SIC3. Heavy Manufacturing		4.44%	8.89%	33.33%			2.22%	2.22%			51.10%
SIC4. Transportation & Public Utilities					2.22%						2.20%
SIC5. Wholesale & Retail Trade			2.22%			6.67%					8.90%
SIC6. Finance, Insurance, Real Estate		4.44%									4.40%
SIC7. General Services											0.00%
SIC8. Professional Services											0.00%
SIC9. Public Administration											0.00%
Total	0.00%	11.10%	28.90%	40.00%	4.40%	11.10%	2.20%	2.20%	0.00%	0.00%	100.00%

Panel B. 1950-1985: 261 moves (Mean 2.56%, HHI 0.157, Across-industry move 46.7 %)

SIC-From / SIC-To	(1) SIC0 Agric., Forestry, Fishing	(2) SIC1 Mining & Constr.	(3) SIC2 Light Manuf.	(4) SIC3 Heavy Manuf.	(5) SIC4 Transport. & Public Utilities	(6) SIC5 Wholesale & Retail Trade	(7) SIC6 Finance, Insurance, Real state	(8) SIC7 General Services	(9) SIC8 Professional Services	(10) SIC9 Public Admin.	(11) Total
SIC0. Agriculture, Forestry, Fishing											0.00%
SIC1. Mining & Construction		1.15%	0.77%	1.15%		0.77%			0.38%		4.60%
SIC2. Light Manufacturing		2.30%	11.88%	8.43%	0.38%	1.53%	0.38%	1.15%			26.00%
SIC3. Heavy Manufacturing		0.38%	8.05%	34.87%	0.77%	4.60%	1.53%	0.38%	0.77%		51.10%
SIC4. Transportation & Public Utilities		0.38%				0.77%		0.38%			1.50%
SIC5. Wholesale & Retail Trade		0.38%	2.68%	3.83%		3.83%		0.38%	0.38%		11.50%
SIC6. Finance, Insurance, Real Estate			0.38%		0.38%	0.38%			0.38%		1.50%
SIC7. General Services			0.77%	0.38%		0.38%		1.53%			3.10%
SIC8. Professional Services			0.38%					0.38%			0.80%
SIC9. Public Administration											0.00%
Total	0.00%	5.00%	24.80%	48.50%	1.50%	12.20%	1.90%	4.20%	1.90%	0.00%	100.00%

Panel C. 1986-2011: 1,170 moves (Mean 1.43%, HHI 0.065, Across-industry move 47.2%)

SIC-From / SIC-To	(1) SIC0 Agric., Forestry, Fishing	(2) SIC1 Mining & Constr.	(3) SIC2 Light Manuf.	(4) SIC3 Heavy Manuf.	(5) SIC4 Transport. & Public Utilities	(6) SIC5 Wholesale & Retail Trade	(7) SIC6 Finance, Insurance, Real state	(8) SIC7 General Services	(9) SIC8 Professional Services	(10) SIC9 Public Admin.	(11) Total
SIC0. Agriculture, Forestry, Fishing				0.09%				0.17%			0.30%
SIC1. Mining & Construction	0.09%	4.10%	0.60%	0.68%	0.17%	0.43%	0.09%	0.43%	0.26%	0.09%	7.00%
SIC2. Light Manufacturing	0.26%	0.34%	6.67%	3.25%	0.94%	1.11%	0.09%	0.68%	1.45%		15.00%
SIC3. Heavy Manufacturing	0.09%	0.51%	3.08%	17.69%	1.88%	1.71%	0.09%	2.99%	1.37%	0.09%	29.30%
SIC4. Transportation & Public Utilities		0.09%	0.17%	1.11%	3.93%	0.09%	0.09%	1.11%	0.17%		6.80%
SIC5. Wholesale & Retail Trade		0.09%	0.68%	2.39%	0.43%	5.64%	0.17%	1.37%	0.68%		11.30%
SIC6. Finance, Insurance, Real Estate		0.17%					0.17%	0.34%	0.43%		1.10%
SIC7. General Services		0.34%	0.60%	3.16%	1.37%	1.28%	0.17%	11.97%	1.11%	0.09%	20.10%
SIC8. Professional Services	0.09%	0.17%	2.48%	1.97%	0.09%	0.34%	0.09%	1.20%	2.65%		9.00%
SIC9. Public Administration									0.09%		0.20%
Total	0.50%	6.00%	14.50%	30.20%	8.80%	10.60%	0.90%	20.30%	8.10%	0.20%	100.00%

Table 4. Frequency of CFO Moves between Industries

This table presents the frequency of CFOs moving from a firm in the origination industry to another firm in the destination industry for three time periods from 1920 through 2011. A move is defined as a CFO who worked at a firm in year $t-2$ or $t-1$ moves to another firm in year t. SIC-From is the one-digit SIC industry of the firm that a given CFO departs and SIC-To is the one-digit SIC industry of the firm to which the CFO moves as CFO or another executive. HHI is the Herfindahl-Hirschman Index of the fraction of moves across one-digit SIC industries. The mean fractions are calculated using cells with non-zero values, while the HHI is calculated by assuming zeros for cells with missing values. Across-industry move is the fraction of out-of-industry moves among all moves in a given period.

Panel A. 1920-1949: 42 moves (Mean 5.88%, HHI 0.126, Across-industry move 52.4%)

SIC-From / SIC-To	(1) SIC0 Agric., Forestry, Fishing	(2) SIC1 Mining & Constr.	(3) SIC2 Light Manuf.	(4) SIC3 Heavy Manuf.	(5) SIC4 Transport. & Public Utilities	(6) SIC5 Wholesale & Retail Trade	(7) SIC6 Finance, Insurance, Real state	(8) SIC7 General Services	(9) SIC8 Professional Services	(10) SIC9 Public Admin.	(11) Total
SIC0. Agriculture, Forestry, Fishing											0.00%
SIC1. Mining & Construction				4.76%			2.38%				6.70%
SIC2. Light Manufacturing		2.38%	21.43%	11.90%	2.38%			2.38%			26.70%
SIC3. Heavy Manufacturing		2.38%	9.52%	21.43%	2.38%	2.38%					51.10%
SIC4. Transportation & Public Utilities											2.20%
SIC5. Wholesale & Retail Trade			2.38%	2.38%		4.76%					8.90%
SIC6. Finance, Insurance, Real Estate		2.38%	2.38%								4.40%
SIC7. General Services											0.00%
SIC8. Professional Services											0.00%
SIC9. Public Administration											0.00%
Total	0.00%	11.10%	28.90%	40.00%	4.40%	11.10%	2.20%	2.20%	0.00%	0.00%	100.00%

Panel B. 291 moves (Mean 2.32%, HHI 0.111, Across-industry move 52.9%)

SIC-From / SIC-To	(1) SIC0 Agric., Forestry, Fishing	(2) SIC1 Mining & Constr.	(3) SIC2 Light Manuf.	(4) SIC3 Heavy Manuf.	(5) SIC4 Transport. & Public Utilities	(6) SIC5 Wholesale & Retail Trade	(7) SIC6 Finance, Insurance, Real state	(8) SIC7 General Services	(9) SIC8 Professional Services	(10) SIC9 Public Admin.	(11) Total
SIC0. Agriculture, Forestry, Fishing											0.00%
SIC1. Mining & Construction		1.03%	1.37%	2.06%		1.72%		0.34%			4.60%
SIC2. Light Manufacturing	0.34%	2.75%	12.71%	7.90%	0.34%	2.75%	0.69%	0.34%	0.34%		26.00%
SIC3. Heavy Manufacturing		2.75%	7.22%	26.80%	1.03%	3.09%	2.41%	1.37%	1.03%		51.10%
SIC4. Transportation & Public Utilities			0.34%	0.34%	0.34%	0.34%		0.34%			1.50%
SIC5. Wholesale & Retail Trade		0.34%	1.72%	4.12%		5.84%	0.34%	0.34%			11.50%
SIC6. Finance, Insurance, Real Estate		0.34%	0.34%	0.34%							1.50%
SIC7. General Services			0.34%	1.72%		0.34%	0.34%	0.34%			3.10%
SIC8. Professional Services				0.69%				0.34%			0.80%
SIC9. Public Administration											0.00%
Total	0.00%	5.00%	24.80%	48.50%	1.50%	12.20%	1.90%	4.20%	1.90%	0.00%	100.00%

Panel C. 2,117 moves (Mean 1.43%, HHI 0.061, Across-industry move 55.2%)

SIC-From / SIC-To	(1) SIC0 Agric., Forestry, Fishing	(2) SIC1 Mining & Constr.	(3) SIC2 Light Manuf.	(4) SIC3 Heavy Manuf.	(5) SIC4 Transport. & Public Utilities	(6) SIC5 Wholesale & Retail Trade	(7) SIC6 Finance, Insurance, Real state	(8) SIC7 General Services	(9) SIC8 Professional Services	(10) SIC9 Public Admin.	(11) Total
SIC0. Agriculture, Forestry, Fishing								0.05%			0.30%
SIC1. Mining & Construction		2.60%	0.47%	0.71%	0.43%	0.24%		0.47%	0.19%	0.09%	7.00%
SIC2. Light Manufacturing	0.09%	0.28%	4.72%	3.59%	0.61%	1.23%	0.14%	1.65%	1.32%	0.05%	15.00%
SIC3. Heavy Manufacturing	0.05%	0.94%	3.07%	17.15%	1.18%	2.03%	0.09%	7.42%	1.94%	0.05%	29.30%
SIC4. Transportation & Public Utilities		0.05%	0.38%	1.04%	2.74%	0.43%		2.03%	0.38%	0.09%	6.80%
SIC5. Wholesale & Retail Trade		0.38%	0.85%	1.70%	0.43%	5.10%	0.14%	2.08%	0.43%	0.05%	11.30%
SIC6. Finance, Insurance, Real Estate		0.05%		0.05%	0.05%	0.05%	0.19%	0.24%			1.10%
SIC7. General Services		0.28%	1.56%	4.49%	0.94%	1.65%	0.33%	10.11%	1.46%		20.10%
SIC8. Professional Services	0.05%	0.05%	1.32%	1.61%	0.19%	0.47%	0.09%	1.42%	2.17%		9.00%
SIC9. Public Administration									0.05%		0.20%
Total	0.50%	6.00%	14.50%	30.20%	8.80%	10.60%	0.90%	20.30%	8.10%	0.20%	100.00%

Table 5. Explaining the Trend in Executive Mobility

This table presents time-series regression estimates for the determinants of aggregate executive mobility from 1921 through 2011. The dependent variable is the number of CEO moves in year t divided by the number of CEOs in year t-1. A move is defined as a CEO who worked at a firm in year t-2 or t-1 moves to another firm in year t. Number of public firms is the total number of firms listed on the NYSE, Amex, and Nasdaq. Stddev. of ROA is the standard deviation of ROA of NYSE and Amex listed firms. 1/HHI across industries is the average inverse of the Herfindahl-Hirschman Index of the fraction of CEO moves across one-digit SIC industries over the past ten years. Number of New MBAs / New Engineering Masters is the number of business master's degree programs enrollment over the number of engineering master's degree programs enrollment in the US. Number of M&As is the number of completed M&A deals among US acquirors and targets. Avg. Option + Stock Granted / Total Compensation is the average fraction of option and restricted stock grants in total CEO compensation (= salary + bonus + option and restricted stock grants). % of Across-state Moves is the average proportion of across-state CEO moves over the past ten years. Real GDP growth is the growth rate of real GDP in the US. Credit spread (BAA - AAA) is the average yield difference of BAA and AAA rated 30-year US corporate bonds. Productivity is nominal GDP in year t over total private non-residential fixed assets in year t-1. 3-month T-bill (%) is the 3-month US Treasury bill rate. $\mathbb{1}[t < 2000]$ is an indicator that is equal to one if year t is less than 2000. $\mathbb{1}[t \geq 2000]$ is an indicator that is equal to one if year t is greater than or equal to 2000. Numbers in the parentheses are t-statistics with Newey-West (1987) adjustment for four lags. All variables are defined in the Appendix.

Panel A. Univariate Regressions

	(1) 1921-2022	(2) 1921-2022	(3) 1925-2022	(4) 1972-2022	(5) 1982-2022†	(6) 1936-2022	(7) 1936-2022	(8) 1936-2022	(9) 1930-2022
Log # Public Firms × $\mathbf{1}[t < 2003]$	0.002*								
	(1.971)								
Log # Public Firms × $\mathbf{1}[t \geq 2003]$	0.013***								
	(3.651)								
Std dev ROA × $\mathbf{1}[t < 2003]$		0.091**							
		(2.085)							
Std dev ROA × $\mathbf{1}[t \geq 2003]$		0.034							
		(0.959)							
Inverse HHI across industries × $\mathbf{1}[t < 2003]$			0.001**						
			(2.502)						
Inverse HHI across industries × $\mathbf{1}[t \geq 2003]$			0.000*						
			(1.687)						
MBA STEM Ratio × $\mathbf{1}[t < 2003]$				0.006*					
				(1.714)					
MBA STEM Ratio × $\mathbf{1}[t \geq 2003]$				-0.001					
				(-1.161)					
M&A Deals to Firms Ratio × $\mathbf{1}[t < 2003]$					0.016***				
					(8.175)				
M&A Deals to Firms Ratio × $\mathbf{1}[t \geq 2003]$					0.003				
					(0.360)				

Equity to Total Pay Ratio × $\mathbf{1}[t < 2003]$						0.013***			
						(4.652)			
Equity to Total Pay Ratio × $\mathbf{1}[t \geq 2003]$						-0.003			
						(-0.317)			
Options to Total Pay Ratio × $\mathbf{1}[t < 2003]$							0.014***		
							(4.182)		
Options to Total Pay Ratio × $\mathbf{1}[t \geq 2003]$							0.007***		
							(2.645)		
Stock to Total Pay Ratio × $\mathbf{1}[t < 2003]$								0.066***	
								(4.047)	
Stock to Total Pay Ratio × $\mathbf{1}[t \geq 2003]$								-0.005**	
								(-2.334)	
Cross-State Move Ratio × $\mathbf{1}[t < 2003]$									-0.011*
									(-1.887)
Cross-State Move Ratio × $\mathbf{1}[t \geq 2003]$									0.001
									(0.651)
$\mathbf{1}[t \geq 2003]$	-0.102***	0.004	0.002	0.016**	0.004	0.006	0.002**	0.005***	-0.007
	(-3.453)	(0.882)	(0.730)	(2.066)	(0.918)	(0.975)	(2.059)	(6.135)	(-1.489)
Real GDP Growth	-0.008*	-0.003	-0.008	-0.008	-0.014	-0.004	-0.005	-0.008**	-0.013**
	(-1.902)	(-0.582)	(-1.580)	(-0.265)	(-1.294)	(-1.018)	(-1.259)	(-2.003)	(-2.152)
Credit Spread (BAA − AAA)	-0.202***	-0.212***	-0.165***	-0.242*	-0.032	-0.116**	-0.130***	-0.156**	-0.218***
	(-4.506)	(-3.865)	(-3.653)	(-1.701)	(-0.682)	(-2.129)	(-2.641)	(-2.590)	(-2.675)
Productivity	-0.005***	-0.001	-0.003**	0.005	0.002	-0.001	-0.001	-0.003*	-0.003
	(-3.223)	(-0.687)	(-2.037)	(1.644)	(0.585)	(-0.439)	(-1.083)	(-1.895)	(-1.178)
3-Month T-Bill (%)	0.004	0.047***	0.017	-0.035*	-0.019	0.019	0.015	0.049***	0.052***
	(0.173)	(2.872)	(1.159)	(-1.701)	(-0.629)	(1.444)	(1.160)	(4.187)	(3.475)
Observations	102	102	98	51	41	87	87	87	92
R-squared	0.444	0.390	0.449	0.280	0.624	0.576	0.566	0.548	0.328

† CEO moves exclude M&A and subsidiary-related events

Panel B. Multivariate Regressions Using All Variables

	(1) 1936-2022	(2) 1936-2022	(3) 1972-2022
Log # Public Firms × $\mathbf{1}[t < 2003]$	-0.003**	-0.003*	-0.007*
	(-2.326)	(-1.910)	(-1.738)
Log # Public Firms × $\mathbf{1}[t \geq 2003]$	0.008***	0.017***	0.010
	(2.950)	(4.032)	(1.323)
Std dev ROA × $\mathbf{1}[t < 2003]$	-0.047*	-0.053	-0.115***
	(-1.862)	(-1.550)	(-3.219)
Std dev ROA × $\mathbf{1}[t \geq 2003]$	-0.003	-0.015	-0.038*
	(-0.136)	(-0.561)	(-1.733)
Inverse HHI across industries × $\mathbf{1}[t < 2003]$		0.000	0.002***
		(0.292)	(2.793)
Inverse HHI across industries × $\mathbf{1}[t \geq 2003]$		-0.001*	-0.002***
		(-1.964)	(-2.957)
MBA STEM Ratio × $\mathbf{1}[t < 2003]$			-0.003***
			(-3.977)
MBA STEM Ratio × $\mathbf{1}[t \geq 2003]$			0.000
			(0.373)
Equity to Total Pay Ratio × $\mathbf{1}[t < 2003]$	0.024***	0.022***	0.020***
	(5.614)	(3.883)	(3.149)
Equity to Total Pay Ratio × $\mathbf{1}[t \geq 2003]$	0.010	-0.033	-0.054*
	(1.062)	(-1.513)	(-1.718)
$\mathbf{1}[t \geq 2003]$	-0.096***	-0.132***	-0.065
	(-3.598)	(-4.773)	(-0.679)
Observations	87	87	51
R-squared	0.660	0.660	0.827
Controls	Yes	Yes	Yes

Table 6. Cross-Sectional Determinants of Executive Mobility

This table presents logit regression estimation results for the determinants of executive mobility in the cross-section of firms from 1921 through 2011. 1(Move) is an indicator that is equal to one in year t if a CEO moves to another firm by year $t+1$ or $t+2$, and zero otherwise. A move is defined as a CEO who worked at a firm in year $t-2$ or $t-1$ moves to another firm in year t. $\mathbb{1}[Turnover]$ is an indicator that is equal to one in year t if a CEO leaves a firm by year t+1 or t+2, and zero otherwise. Average Industry ROA is the annual average of firm-level ROAs at the two-digit SIC industry level. Stddev of Industry ROA is the annual standard deviation of firm-level ROAs at the two-digit SIC industry level. All firm characteristics are defined in the Appendix. Panels A and C are on the full sample, and Panel B is on the sample in which there is CEO turnover in year t+1 or year t+2 ($\mathbb{1}[Turnover] = 1$). All variables are Winsorized at the 1% and 99% levels. Numbers in parentheses are t-statistics based on standard errors double clustered at the two-digit SIC industry and year levels.

Panel A. Determinants of CEO Mobility (Full Sample)

	(1)	(2)	(3)
		1(Move)	
ROA	-0.284^{**}	-0.309^{*}	-0.282^{**}
	(-2.36)	(-1.89)	(-2.20)
Tobin's q	-0.055^{***}	-0.054^{***}	-0.057^{***}
	(-2.99)	(-2.93)	(-3.11)
log(Total Assets)	0.029^{***}	0.029^{***}	0.031^{***}
	(3.96)	(7.38)	(4.85)
CEO Tenure	-0.087^{***}	-0.088^{***}	-0.087^{***}
	(-6.26)	(-6.32)	(-6.28)
Average Industry ROA	-1.547^{***}		-1.129
	(-2.95)		(-1.25)
Std. Dev. of Industry ROA		0.877^{***}	0.406
		(2.94)	(0.86)
Pseudo R^2	0.04	0.04	0.04
Observations	123,084	123,084	123,084
Year fixed effects	Y	Y	Y

Panel B. Determinants of CEO Mobility (Turnover Sample)

	(1)	(2)	(3)
	1(Move)		
ROA	−0.137**	−0.137***	−0.132***
	(−2.55)	(−2.59)	(−2.61)
Tobin's q	−0.057***	−0.057***	−0.059***
	(−2.87)	(−2.81)	(−2.97)
log(Total Assets)	−0.009	−0.010	−0.008
	(−0.77)	(−0.96)	(−0.73)
CEO Tenure	−0.073***	−0.074***	−0.073***
	(−6.28)	(−6.35)	(−6.29)
Average Industry ROA	−1.196**		−0.858
	(−2.16)		(−1.01)
Std. Dev. of Industry ROA		0.709**	0.330
		(2.30)	(0.77)
Pseudo R^2	0.04	0.04	0.04
Observations	26,636	26,636	26,636
Year fixed effects	Y	Y	Y

Panel C. Determinants of CEO Turnover (Full Sample)

	(1)	(2)	(3)
	1(Turnover)		
ROA	−0.504***	−0.511***	−0.507***
	(−7.15)	(−7.33)	(−7.21)
Tobin's q	0.004	0.004	0.004
	(1.22)	(1.14)	(1.15)
log(Total Assets)	0.076***	0.076***	0.076***
	(6.97)	(7.10)	(7.08)
CEO Tenure	−0.005	−0.005	−0.005
	(−1.35)	(−1.35)	(−1.35)
Average Industry ROA	−0.282		−0.072
	(−1.38)		(−0.42)
Std. Dev. of Industry ROA		0.231*	0.196*
		(1.75)	(1.95)
Pseudo R^2	0.01	0.02	0.02
Observations	123,084	123,084	123,084
Year fixed effects	Y	Y	Y