CEO labor market incentives and accounting quality: The unintended consequences of trade secret regulation*

Cristina Grande-Herrera†
Universidad Carlos III de Madrid

January 2019

Abstract

I examine the impact of a decrease in the pool of replacement CEOs. By integrating the staggered enactment of the Uniform Trade Secrets Act with the pre-existing pool of talent, I develop a novel firm and time specific measure of changes in the pool of replacement CEOs. I find that decreases in this pool lead to longer tenure, lower forced turnover, and higher compensation for incumbent CEOs, and lower financial reporting quality and narrative disclosure quality. Decreases in the pool are also associated with lower CEO-firm match, lower firm efficiency, lower performance and higher over-investment. The results are robust to alternative measures of decreases in the pool of talent and to controlling for additional trade secrets protection measures. My collective findings indicate that labor market institutions are important drivers of firm outcomes and accounting quality.

Keywords: Pool of Replacement CEOs, Managerial Labor Markets, Financial Reporting Quality, Uniform Trade Secrets Act.

JEL classification: G30; J21; K11

---

*I appreciate helpful comments and suggestions from my advisors Beatriz García Osma and Encarna Guillamón Saorín as well as from Siddharth Bhambhwani, Juan Manuel García Lara, Miguel Minutti-Meza, Dhananjay Nanda, Neus Palomeras, Josep Tribó, Antonio B. Vázquez, and seminar participants at University of Miami Business School, the 2018 AAA Doctoral Consortium, the XIV International Accounting Symposium, and the 2018 IE Doctoral Colloquium. I acknowledge financial support from Universidad Carlos III de Madrid, the Spanish Ministry of Innovation and Science (ECO2016-77579), FEDER (UNC315-EE-3636), and ASEPUC.

†Department of Business Administration. Universidad Carlos III de Madrid. Calle Madrid 126, 28903 Getafe, Madrid (Spain). Tel. +34 91 624 9772. Email: cgrande@emp.uc3m.es.

1 Introduction

I examine how CEO labor market incentives influence financial reporting quality. In particular, I study the real and accounting consequences of a decrease in the pool of replacement CEOs. For this purpose, I develop a firm-specific, time-varying measure of CEO labor market incentives by integrating the staggered enactment of the Uniform Trade Secrets Act (UTSA, henceforth) with the pool of existing talent in each industry. Using this proxy, I study whether decreases in the pool of replacement CEOs impact on incumbent CEO entrenchment levels and its effect on financial reporting quality.

UTSA aims to protect firms' competitive advantage, by means of protecting their proprietary information, i.e. trade secrets, from rivals (Barney, 1991; Grant, 1996; Kogut and Zander, 1992). UTSA lowers uncertainty on the legal protection afforded to trade secrets, limiting information misappropriation (Samuels and Johnson, 1990). Trade secrets –commonly referred to as the *jewel crown*– (Jorda et al., 2007; Castellaneta et al., 2017), are an important source of firm risk and, if disclosed, can lead to significant impairments in competitive advantage and economic losses (Klasa et al., 2018), which have been estimated to be as high as $50 billion annually (PriceWaterhouseCooper, 2002). Given their economic relevance, it is not surprising that trade secrets litigation is on the rise both in state and federal courts (Almeling et al., 2010, 2011).

Although UTSA only pursues firms' competitive advantage protection, I argue that it impacts an important labor market institution: the pool of replacement CEOs. This is because after the enactment of UTSA firms can more easily litigate against top management team members that disclose firm trade secrets, as well as against any firm that hires these departing executives. Thus, greater trade secrets protection reduces the mobility of incumbent CEOs and of other top executives (supply side), as well as lowers the proba-

bility that they receive offers from other firms (demand side). Overall, this means that by increasing litigation risk for managers in possession of trade secrets and proprietary information, UTSA may reduce both the availability and attractiveness of labor-market opportunities (Castellaneta et al., 2017).

I expect that the effects of UTSA will be particularly pervasive on industry-level labor markets, creating frictions at the industry level. Greater trade secrets protection increases the proprietary cost of disclosure (Li et al., 2018), limits the information flows from other firms, and increases information asymmetry (Glaeser, 2018). Top executives, such as CEOs, are likely to have industry-relevant knowledge as well as privileged access to proprietary information (Andrews, 1987). Therefore, within-industry top executives form up the pool of talent from which replacement CEOs are drawn when boards of directors seek to appoint a new CEO. These managers also experience the greatest increase in litigation risk when UTSA is enacted, which becomes particularly problematic given the rise in externally appointed CEOs noted in Murphy and Zábojník (2007), who argue that the increasing importance of external relationships with different stakeholders means boards put more weight on external rather than internal skills.

Driven by UTSA, I predict that decreases in the pool of replacement CEOs have unintended consequences on managerial labor market characteristics and key firm outcomes. In particular, it is likely that the talent drain increases incumbent CEO tenure and compensation, as firms have fewer options to replace them. As noted, greater trade secret protection reduces information flows and increases within-industry information asymmetry (Li et al., 2018; Glaeser, 2018). When labor market shifts increase CEO entrenchment, and managers who are not fulfilling their duties face a lower quality information environment, I expect to observe decreases in financial reporting quality, leading to poor subsequent decision-making and performance. As an alternative explanation, firms may

not have incentives to hire executives with trade secrets information (demand side). This is because, under UTSA, firms can take to court both the executives with the trade secrets information as well as the firm hiring them.[1] In this situation, I would not expect to find an increase in the incumbent CEO level of entrenchment generated by a decrease in the pool of replacement CEOs.

By focusing on the labor market consequences of UTSA, this is among the first studies to evaluate the impact of labor market institutions on financial reporting quality, *ceteris paribus* other mechanisms of corporate governance. While I examine a number of different financial reporting quality metrics, prior work on entrenchment usually focuses on earnings management, with mixed theoretical views. On the one hand, the *quiet life* perspective (Bertrand and Mullainathan, 2003) would predict lower earnings management, if managers are no longer concerned with beating earnings targets. On the other hand, the *opportunistic* or *expropiation* perspective would predict that entrenched managers who operate in poor quality information environments may engage in earnings management, for example, to increase the profits from their insider-trading activities (Beneish and Vargus, 2002).

To test my predictions and shed light on these contrasting views, I create a firm-specific, time-varying measure of the annual decrease in the pool of replacement CEOs by integrating the staggered enactment of UTSA with the existing within-industry pool of potential new CEOs (*Pool Decrease*). In particular, my proxy captures, for each firm, the annual percentage of the within-industry pool of talent that is impaired, i.e. of firms belonging to the same industry that are incorporated in states with UTSA.[2] This

[1] For instance, in the court case *Diomed, Inc., Diomed Holdings, Inc., and Diomed Limited v. Vascular Solutions, Inc. and Nancy Arnold (2006)*, the defendants are both a company and an executive.

[2] I use the state of incorporation considering the *Internal-Affairs Doctrine* which states that firms' issues such as voting rights of shareholders, distributions of dividends or corporate property (which includes intellectual property and trade secrets) are determined in accordance with the law of the state in which the company is incorporated. More information can be found at: *https* :

percentage is then multiplied by the quartile of one over the total pool of top management team members available in the industry. This measure follows the quasi-experimental shift share research designs used in previous literature (Borusyak et al., 2018). The intuition underlying *Pool Decrease* is that a firm experiences a stronger decrease in its potential pool of replacement CEOs as more firms in the same industry are incorporated in states where UTSA is enacted, particularly, when the number of individuals forming the available pool of talent is small. The use of the quasi-natural experiment provided by the staggered adoption of UTSA in 48 U.S. states and the District of Columbia, reduces endogeneity concerns as (1) firms cannot control the state of incorporation of other firms in their industry; (2) UTSA was enacted by policy-makers without considering the specific economic and political situation in each state (Png, 2017); and (3) the focus of the study is on the unintended consequences of UTSA over managerial labor markets.

I implement a difference-in-difference research design and use a large sample of U.S. firms from the period 1980 to 2016. I report two key findings. First, validating that *Pool Decrease* reflects managerial labor market frictions, the results indicate that incumbent CEOs have longer tenure, lower forced turnover, lower sensitivity of turnover to firm performance, and benefit from higher compensation as a consequence of the exogenous decrease in the pool of replacement CEOs. This is as expected, given that when firms have lower options to replace their incumbent CEOs, the demand for new CEOs rises above the supply, leading to an increase in prices (McConnell et al., 2017). It is also in line with Donatiello et al. (2018) who argue that managerial compensation has increased in recent years because of the limited number of managers who are qualified (and available) to run large public companies. Second, decreases in the pool of replacement CEOs lead to lower financial reporting quality and worse narratives. This is shown to be particularly true

$//definitions.uslegal.com/i/internal-affairs-doctrine/$

in settings characterized by having a higher ex-ante likelihood of being in possession of trade secrets, such as in technological firms and in firms with higher competition.

In additional analyses, I also find that decreases in the pool of replacement CEOs generate lower firm efficiency and impair CEO-firm match. To proxy for firm efficiency, I use the proxy developed by Demerjian et al. (2012). To measure CEO-firm match, I regress firm efficiency on firm and CEO characteristics and an UTSA enactment indicator. My measure of CEO-firm match are the CEO fixed effects coefficients from this regression. I also find that the subsample of low talented outsider CEOs from companies without the UTSA benefit greatly from the shock. Other additional analyses show that the talent drain leads to a deterioration in future firm performance and to over-investment, in line with the *opportunistic* view of entrenchment. These results are consistent with Ma and Pan (2017) who show that unobservable inadequacy in CEO-firm match affects firm performance and corporate policies.

I perform four robustness checks. First, I create an alternative measure of *Pool Decrease* that accounts for the ability of the individual executives affected by the passage of UTSA. This refined measure explicitly considers the talent drain. The results obtained using this proxy confirm that impairments in the pool of talent negatively impact financial reporting quality. Second, I run the model including leads and lags of UTSA adoption by firms in the same industry and find that my main results are not anticipated by firms. This is as expected, as it is unlikely that managers engaging in trade secrets misappropriation stop because they are concerned that UTSA will be enacted. Indeed, a misappropriation occurred before UTSA enactment, cannot be prosecuted under UTSA.[3] Third, I run placebo tests where UTSA enactment is randomly assigned and find that the t-statistics

[3] In particular, the Michigan UTSA establishes the following: *This act takes effect October 1, 1998 and does not apply to misappropriation occurring before the effective date. With respect to a continuing misappropriation that began before the effective date, this act does not apply to the continuing misappropriation that occurs after the effective date* (448 MI. Trade & Commerce 1901-1910).

from the simulated financial reporting quality regressions are normally distributed. Finally, I control for additional trade secrets protection regulations (Inevitable Disclosure Doctrine and Non-competition Agreements) and the main results remain unchanged.

My study contributes to previous research in several aspects. I create a novel firm-specific, time-varying measure of changes in the pool of replacement CEOs by integrating the staggered enactment of the Uniform Trade Secrets Act with the pre-existing pool of talent. This allows me to provide evidence on how institutional changes in managerial labor markets affect financial reporting quality and the information environment. To the best of my knowledge, this is the first study showing that an increase in trade secrets protection impacts CEO labor markets and financial reporting quality. Previous accounting literature commonly assumes that managerial labor markets are competitive and efficient, i.e., frictionless, (e.g., Gabaix and Landier, 2008). The economic literature is interested in studying the behavior of the labor markets (both employment and unemployment) developing mostly analytical models to understand them and their frictions and potential consequences Rogerson et al. (2005). However, these papers normally concentrate on labor market in general, this is, including any type of employee (e.g., Mortensen and Pissarides, 1994), but I empirically analyze a friction in the managerial labor market and its consequences in terms of the incumbent CEO level of entrenchment and financial reporting quality.

In addition, my study contributes to the growing line of research studying the unexpected consequences of regulation, and add to a number of prior studies, such as, for example, Leuz et al. (2008), Autor et al. (2007) or Palia (2000).[4] Therefore, my findings

[4] Leuz et al. (2008) demostrate the unintended consequences of Sarbanes-Oxley Act (SOX) on SEC deregistrations by providing evidence that after SOX a significant number of firms go dark. Autor et al. (2007) shows that mandated employment protection (measured through the wrongful-discharge US laws) reduce firms' productivity as it distorts production choices. Palia (2000) shows that more regulated industries attract worse (i.e., CEOs with lower education levels) CEOs as they can extract less benefits

are relevant for both firms and policy-makers, as I provide evidence on the unintended consequences over managerial labor markets and financial reporting quality of a set of laws introduced to boost innovation (Png, 2017) and protect firms' competitive advantage.

The remainder of the paper is structured as follows. Section 2 presents the hypotheses, sections 3 and 4 describe the methods, data and main results. Sections 5 and 6 present additional analyses and robustness checks and, finally, section 7 concludes.

2 Prior Research and Hypotheses Development

2.1 Labor Market Institutions: The Pool of Replacement CEOs

A fundamental institution in managerial labor markets is the pool of replacement CEOs (e.g., Hermalin and Weisbach, 2017). This pool consists of all existing CEOs, internal and external top management team members, employees and other experts with the required skills, social networks, institutional knowledge and availability to be appointed by the board of directors as the next CEO. The pool of available talent influences, for example, the probability that incumbent executives receive competing job offers from other firms, which, in turn, influences CEO compensation (Gao et al., 2015).

Both hiring and firing a CEO are important tasks of boards of directors (Gao et al., 2017). Management and industry expertise are critical for successful executives (Donatiello et al., 2018), but the matching process necessary to successfully appoint a new executive is a risky endeavour, as it requires identifying the appropriate candidate from the talent pool. Choosing the wrong CEO may have significant consequences over firm investment, financial, and organization practices (Bertrand and Schoar, 2003), and lead to significant replacement costs. Indeed, anecdotal evidence suggests that forced CEO

from their human capital skills.

turnovers may lower shareholder value by approximately 112 billion dollars.[5]

When boards of directors consider hiring a new top executive (in particular, a new CEO), they face a number of dilemmas, but as noted in Jongjaroenkamol and Laux (2017) a particularly relevant one is: should they appoint an insider or an outsider? Even though internally appointed managers possess a deep knowledge of the firm and its products, supply chain, or corporate culture, increasingly, firms appoint external CEOs (see Figure 1) (Zajac, 1990; Parrino, 1997; Farrell and Whidbee, 2003; Graham et al., 2018).[6] These outsiders have differential knowledge, skills and networks that are particularly valuable in firms that require a *fresh* view or structural changes. For example, Helmich (1974) and Helmich and Brown (1972) show that firms' rates of growth and organizational change after choosing a new CEO are larger when she is an outsider. The increasing importance of externally appointed CEOs links with the shareholder-rights movement beginning in the late 80's which has forced CEOs to consider stakeholders' needs. Stakeholder-relation and communicating skills are general and not firm-specific, lowering insiders' value. Murphy and Zábojník (2007) show that in environments where the supply of CEOs is relatively elastic, an increase in the importance of external managerial ability makes boards value external CEOs more which reflects on a positive impact on their compensation. A further element explaining the increasing appointment of external CEOs is the shift towards more independent boards of directors, as firms with a high percentage of outsider directors in the board are more likely to hire external CEOs (Borokhovich et al., 1996).

In response to this shift towards external appointments, top managers have become more mobile across sectors,[7] their business skills are more diverse and the percentage of

[5] The study by PwC's Strategy& on CEO succession planning "The cost of failed CEO succession planning" can be found at *https://www.strategyand.pwc.com/reports/cost-failed-ceo-succession-planning*

[6] This is consistent with findings in Friedrich (2016) who uses an European sample and shows that, in most industries, boards appoint more external CEOs.

[7] External CEOs usually demand additional compensation to offset the mid-career changing firm risk (Cadman et al., 2016).

CEOs who possess an MBA has raised (Schoar, 2007; Murphy and Zábojník, 2004).

But, how are these external CEOs hired? Prior literature sometimes assumes the existence of a competitive and flexible managerial labor market (i.e., frictionless). For instance, Gabaix and Landier (2008) develop an analytical and frictionless model in which the best CEOs run the largest companies. In their model, CEOs have different skills and are matched to firms in a frictionless assignment model, leading to perfect CEO-firm matches. Jenter et al. (2016) define such matches in frictionless managerial labor markets: *If there were another CEO candidate who would improve firm value net of the compensation required to hire him, he would have already been hired* (page 7). However, in practice, there are frictions that disrupt the CEO-firm match and lower shareholder value. In a seminal paper, Johnson et al. (1985) analyze fifty-three announcements of unexpected executive deaths and show evidence of negative stock price reactions that depend on executive characteristics such as age, tenure and replacement costs. These replacement costs, in turn, are associated with executives' talent and decision-making responsibilities. Johnson et al. (1985) interpret these negative reactions as evidence against the existence of a frictionless labor market, as otherwise, shareholder wealth would be independent of managerial continuation or termination because there would be perfect substitutes in the managerial labor maket.[8] Terviö (2008) argues that in a frictionless managerial labor market environment, some systemic failures and agency problems are ignored. These elements are, for example, the *skimming* compensation view of Bertrand and Mullainathan (2001) or managerial *empire-building* theories (Jensen, 1986).[9]

Against this backdrop, I analyze frictions in the managerial labor market generated by trade secrets regulation enactment. In particular, I focus on a plausible exogenous decrease

[8] See also, for additional evidence on unexpected CEOs deaths Worrell et al. (1986) or Salas (2010).

[9] The *skimming compensation view* argues that the increase in managerial compensation in recent years is explained by the increase in managerial entrenchment as well as by a loosening of social norms against excessive pay.

in the pool of replacement CEOs driven by UTSA staggered enactment. These frictions are relevant as firms' talent pools (including both internal and external candidates) are likely to be, overall, small. For example, in a survey to board members of Fortune 250 firms, Donatiello et al. (2018) find that 73% of surveyed directors agree that fewer than 5 people (including insiders and outsiders) qualify to be a good CEO of their company. In this scenario, any reductions in the pool of replacement CEOs would be dramatic for the firm.

2.2 The Universal Trade Secrets Act

Trade secrets were in origin governed by common law (Castellaneta et al., 2017). The seminal court case *Peabody v. Norfolk* in the state of Massachusetts dates from 1868.[10] In 1979, the National Conference of Commissioners on Uniform State Laws published the Uniform Trade Secrets Act,[11] creating a legal framework that protects trade secrets and punishes their misappropriation (Samuels and Johnson, 1990).[12] Trade secrets protection is part of the corporation property which, according to the *Internal-Affairs Doctrine*, must be determined in accordance with the law of the state of incorporation. Since it was first published, UTSA was enacted in 38 states and the District of Columbia between 1981 and 1990, and in another 10 states between 1991 and 2013.[13]

[10] Later, in 1939, the Restatement (First) of Torts (Section 757, Comment b) defines a trade secret as follows: *A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers.*

[11] In August 1985 the National Conference of Commissioners on Uniform State Laws introduced amendments to remove technical deficiencies but maintaining the original philosophy of the Act (Lydon, 1987).

[12] Some important trade secrets court cases would be *Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470 (1974)* or *Aronson v. Quick Point Pencil Co., 99 S.Ct. 1096, 201 U.S. 1 (1979).*

[13] Appendix II presents the US map of the states' adoption of UTSA and Appendix III shows the states that have incorporated the UTSA, the year and the statute that contains the law. By 2018, only New York has not enacted the UTSA as Massachusetts enacted it during 2018: *https://www.bna.com/massachusetts-adopts-uniform-n73014481815/*

UTSA has three main objectives: (1) create common definitions of trade secrets and trade secrets misappropriation; (2) create a uniform legal framework for every state; and (3) provide a uniform statute of impediments for non-contractual theories of liability based on the misappropriation of trade secrets (Lydon, 1987).

For a piece of information to be the subject of trade secret protection, UTSA establishes that the information must be secret, create economic value thanks to its secrecy status, it is not easily ascertainable by others, and also, that firms make reasonable efforts to protect its secrecy. Reflecting trade secrets relevance for firms, the U.S. Chamber of Commerce estimates that every year firms loose around $50 billion given proprietary information and intellectual property misappropriation (PriceWaterhouseCooper, 2002).[14]

Trade secrets misappropriation can occur without secrets being used or disclosed (Pooley, 1997), and thus, even though UTSA does not forbid or impose direct restrictions on managerial mobility, it clearly affects the probability that executives accept positions at rival companies, as it significantly increases managerial litigation risk. This is because trade secrets are key to retain the firm competitive advantage (Jorda et al., 2007; Castellaneta et al., 2017), and so their detection and protection is part of boards' fiduciary duties, as their disclosure may generate important economic losses (Klasa et al., 2018). In fact, in the case of CEOs fraudulent use of firms trade secrets, even if the board fails to take action, shareholders can directly initiate a derivative action to legally claim what the companys board failed to defend.[15]

[14] Their survey also highlights that the most common types of trade secrets are related to firms customers, strategic plans and financial information.

[15] Examples about these cases can be found at: $http://www.jerryburleson.com/minority-shareholder-rights/shareholder-derivative-actions/$

2.3 Managerial Labor Market Incentives and Financial Reporting Quality

While the objective of UTSA is to implement a framework to fight against misappropriation of trade secrets, thereby protecting firms competitive advantage, I argue that it may affect other firm-level dimensions. For instance, Castellaneta et al. (2017) show that UTSA has a positive effect on market value in industries where skilled workers have higher mobility, and a negative effect in industries with higher uncertainty and poor investment. I expect that a further consequence of UTSA is that it shrinks the managerial talent pool.

This contraction in the pool can be explained by three reasons. First, top management team members are likely to have the greatest information on firm trade secrets, being the better informed agents. They are, thus, also the most likely targets of litigation associated with trade secret protection.[16] This increase in litigation risk for managers is predicted to reduce their mobility (i.e., reduce the supply of managerial talent). Consistent with this view of litigation risk increase, Almeling et al. (2010, 2011) document that litigation due to trade secrets protection has become more pervasive both state and federal courts, signalling that UTSA is actively enforced.

Second, UTSA permits suing not only the employees but also the firms that misappropriate the trade secret, i.e., it impacts the demand side. While a risk-taking executive with highly valuable institutional knowledge may still be willing to accept an offer from a rival firm, competing firms would be less likely to hire managers of firms in states that have enacted UTSA, *vis-a-vis* those that have not. This lowers the relative attractiveness

[16] Other employees, not currently in the top management team of any firm, are unlikely to be considered by boards when looking to appoint a new CEO. The labor market for these middle managers and entry level employees could also be affected by UTSA, but these employees may have non-disclosure agreements in their contracts regardless of UTSA. This is less likely for top management team members and CEOs, who increasingly have implicit rather than explicit contracts (Gillan et al., 2009).

of these managers in labor markets and the value of their outside option. Thus, a plausible consequence is that when firms affected by UTSA want to hire new executives, they may have to offer higher wages to (on average) lower quality executives.

Finally, the labor market will be negatively impacted because trade secret protection decreases the incoming information from other companies. Glaeser (2018) and Li et al. (2018) show that trade secret protection leads to lower disclosure of firm proprietary information and higher information asymmetry. In particular, Li et al. (2018) state that information gathering is harder to achieve when there are limitations to employees' labor market mobility. This is also consistent with the evidence in Gao et al. (2015), who show that managerial job hopping transfers information on outside option values of the remaining managerial team members.

Therefore, an unintended consequence of UTSA is that it likely affects managerial labor markets by reducing both (1) firm's options to change their incumbent CEO by an external one, and (2) executives availability and mobility. Indeed, by improving the legal framework to deal with trade secrets misappropriation, the enactment of UTSA progressively affects firms in the industry, reducing the availability and attractiveness of new labor opportunities for *all* executives in the industry. This decrease in the pool of replacement CEOs particularly affects the supply of managerial talent, draining the talent pool, with consequences for a number of firm-level outcomes.

First, the shortage of replacement CEOs is likely to increase managerial entrenchment as it becomes harder to find suitable executives to replace incumbent ones. There is evidence that confirms this view, showing that some executives are *irreplaceable* or very dificult to replace (Donatiello et al., 2018). Acharya et al. (2016) develop an analytical model in which managerial entrenchment increases because of an increase in competition for talent in the job market. This is the setting investigated in the current work, where the

supply of CEOs is lower than the demand, generating greater competition for talent among firms. This is expected to have a number of consequences for labor market characteristics, such as prolonging CEO tenure, and lowering the sensitivity of CEO turnover to poor performance. In addition, because the demand for executive talent is higher than the supply, prices (i.e. wages) are likely to increase. The labor demand is negatively sloped because a rise in wage rate reflects on firms' costs which also influences their selling prices. While the labor supply (i.e., amount of potential new CEOs) is positively sloped. Thus, the first hypothesis is formally stated as follows:

Hypothesis 1 *Decreases in the pool of replacement CEOs lead to increases in managerial entrenchment.*

A question of interest is how this talent pool drain impacts financial reporting quality, understood as the precision with which financial reporting reflects the real information about firm operations (Biddle et al., 2009).[17]

Under H1, I expect higher CEO entrenchment. This means that market discipline over managers likely decreases. Prior literature provides arguments and evidence of both positive and negative effects of CEO entrenchment on financial reporting quality. This prior work usually equates settings in which executives have greater power (are more entrenched) with situations where boards of directors are weak, i.e. poor monitors of managerial decision making. Against that background, more powerful executives may be associated with higher financial reporting quality, in terms of lower earnings management activities, for at least two reasons. First, they may prefer to enjoy the *quiet life* (Hicks, 1935; Bertrand and Mullainathan, 2003). This would lead to lower opportunism if entrenched managers prefer to avoid difficult decisions and costly efforts. In addition, if

[17] This definition is consistent with the FASB Statement of Financial Accounting Concepts No. 1 of 1978 which establishes that financial reporting is to inform every investor (both present and potential) to make rational investment decisions after determining expected firms' cash flows.

entrenched CEOs avoid intense monitoring and scrutiny from boards, they may become more long-term oriented, avoiding myopic decision-making and growing less concerned with short-term earnings goals.[18] This view is consistent with Di Meo et al. (2017) who show that entrenched managers engage less in earnings management to meet short-term financial reporting goals. They argue that these executives have a long-term view and are less likely to take decisions that can negatively affect firm future value.

The alternative view to the *quiet life* arguments is the *opportunistic* or *expropriation* view. Entrenched CEOs are likely to attempt to extract rents and expropriate shareholder wealth (Fama and Jensen, 1983; Shleifer and Vishny, 1997), for example, by staying in the job even if they do not have the required skills. This is likely in this setting, as decreases in the pool of talent are likely to lower CEO-firm match, increasing the likelihood of appointing CEOs that do not have the required skills. This *expropriation* view would predict that entrenched managers are willing to engage in costly earnings management to, for example, obtain outside funding to invest in pet projects or to grow the firm beyond its optimal size. A second important consideration is that the labor market friction originates from the enactment of trade secret protection regulation. The direct effect of this type of regulation is, as documented in Glaeser (2018) and Li et al. (2018), an increase in information asymmetry and a reduction in the information flows from other companies in the industry. It is then likely that CEOs may attempt to benefit from their increased power and the higher information asymmetry to extract rents and engage in sub-optimal decision-making. Then, low financial reporting quality *via* earnings management or low quality narratives becomes a useful instrument, for example, to obtain greater profitability from their insider-trading activities (Beneish and Vargus, 2002).

[18] Although not directly testing this hypothesis, the work of Faleye et al. (2011) is consistent with the view that intense board monitoring may put pressure on managers to concentrate in short-term goals instead of in long-term ones.

Therefore, the extent to which decreases in the talent pool have financial reporting quality consequences is an empirical question of interest. I test the following hypothesis:

Hypothesis 2 *Decreases in the pool of replacement CEOs lead to decreases in financial reporting quality.*

As noted above, prior literature usually equates managerial entrenchment with weak governance (Zhao and Chen, 2008), where managerial power *vis-a-vis* board power is endogenous (Hermalin and Weisbach, 2017). A novel element in my setting is that I focus on an exogenous change in labor markets that increases CEO power, *ceteris paribus* board characteristics. This provides a unique setting to re-examine whether increases in entrenchment impact on financial reporting quality.

3 Empirical Constructs

I study the effect of a decrease in the pool of replacement CEOs on executives labor market characteristics and financial reporting quality. In particular, I analyze how the enactment of UTSA in the state of incorporation of firms in the same industry affects incumbent CEOs level of entrenchment and firms' financial reporting quality.

To test my predictions, I run the following model:

$$Dependent\ Variable_{ijt} = \alpha_i + \alpha_t + \beta Pool\ Decrease_{ijt} + \gamma^{'} X_{ijt} + \epsilon_{ijt} \tag{1}$$

where i indexes firms, j industry, and t years. α_i corresponds to firm fixed effects and α_t is year fixed effects. The main variable of interest in model (1) is *Pool Decrease*. To construct *Pool Decrease*, I first measure the percentage of firms in the same industry that

are incorporated in states with the UTSA (*Percentage of firms*).[19] Second, I multiply this percentage by the quartile of one divided by the total number of top management team members in all the firms in the industry (quartile of one divided by *Talent Pool* where *Talent Pool* is *Total Firms* multiplied by *Total Executives*). *Pool Decrease* is constructed following the quasi-experimental shift share research designs (Borusyak et al., 2018). *Percentage of firms* represents the observed shock and the quartile of one divided by *Total Executives* is the shock exposure weight.[20] To construct *Total Executives*, I use ExecuComp database as it contains all the firms' executives in the top management team.[21] I use the inverse of the total number of top management team members in firms from the same industry to consider that the shock is likely higher for lower pools. That is, when 50% of top management team members belonging to a given industry are less willing to move to a firm seeking to appoint a new CEO, the effect is likely higher in pools that were originally composed of 30 people than in pools of 300 people.[22]

To test H1, as *Dependent Variable* I use *CEO Tenure*, *Forced Turnover*, *CEO Pay Slice*, *Salary*, *Bonus* and *Total Compensation*. All variables definitions can be found in Appendix I. To test H2, I use seven proxies for financial reporting quality (*FRQ 1*, *FRQ 2*, *AQWi*, *AQ*, *Fog*, *Bog* and *Tone*). The four first are accruals quality measures and the last three are narrative disclosure measures. In particular, *FRQ 1* and *FRQ 2* are the residuals from the Dechow et al. (1995) and from the Jones (1991) model, respectively, adding lagged

[19] I use SIC2 for industry classification. If I use the Fama and French 12 or 48 industry classification to construct the variable *Pool Decrease*, the main results do not change.

[20] More examples of papers using shift share research designs are Hornbeck and Moretti (2018) or Diamond (2016).

[21] To maximize sample size, missing data are replaced with the average number of top management team members (i.e., 6 executives).

[22] A real numerical example in my sample would be the following: Firm X belongs to the chemical industry (SIC-2 28) and is incorporated in Delaware. In year 2000, for this industry (and including firm X) there are 55.31% of companies incorporated in a state that have enacted UTSA. This company belongs to the first quartile of 1/ *Talent Pool* where *Talent Pool* in year 2000 for Firm X is 2,368 people. *Pool Decrease* for firm X and year 2000 equals to 0.5531*1 = 0.5531.

ROA as suggested by Kothari et al. (2005).[23] *FRQ 1* and *FRQ 2* are multiplied by minus one to reflect that higher values indicate lower financial reporting quality. Total accruals are calculated using balance sheet items to retain observations before 1987.[24] The third proxy ($AQWi$) is calculated following Biddle et al. (2009), and is the accruals quality measure proposed by Wysocki (2009). It is the ratio between the standard deviations of the residuals (from year t-5 to t-1) from the simpler to the full model. The simpler model is the regression of working capital accruals on current cash flows. The full model is the regression of working capital accruals on lagged, current and future cash flows. AQ is the standard deviation of the firm-level residuals from the Dechow et al. (1995) model from year t-5 to year t-1. It is calculated following Biddle et al. (2009) and multiplied by minus one so that higher values indicate lower financial reporting quality. The narrative measures are *Fog*, *Bog* and *Tone*. In particular, *Fog* is the readability measure, Fog index, elaborated by Li (2008). *Bog* is the Bog Index elaborated by Bonsall et al. (2017). This measure provides more comprehensive factors than Fog index and is calculated with a pre-programmed algorithm which avoids researcher discretion when calculating it. Finally, *Tone* is disclosure tone which is positive minus negative words scaled by total words. I use the 2014 updated version of the Loughran and McDonald (2015) word list.[25] More positive tone relates with lower financial reporting quality. In this line, Huang et al. (2014) who show that managers may use optimistic tone to influence investors' perceptions about firm's fundamentals.

[23] I use the signed values of the residuals because using the absolute value of discretionary accruals can bias the results increasing the likelihood of rejecting the null hypothesis of no earnings management (Hribar and Nichols, 2007).

[24] Total accruals are calculated following Dechow et al. (1995) as follows: change in total current assets - change in cash/cash equivalents - change in current liabilities + change in short-term debt included in current liabilities - depreciation and amortization expense and all scaled by lagged total assets. Using Compustat database the cashflow from operations data is available only from year 1987 and my period of study starts in 1980. This is important as UTSA was enacted for first time in 1981.

[25] I download the 10-K reports from EDGAR and count the number of positive, negative and total words using a *php* algorithm.

Under H1, it is expected that β is positive (negative) when the dependent variable is *CEO Tenure* (*Forced Turnover*). This is consistent with the argument that when firms have a lower pool of replacement CEOs, incumbent CEOs become more entrenched. I also expect that β is positive when the dependent variables are *CEO Pay Slice*, *Salary*, *Bonus* or *Total Compensation* showing increases in CEO compensation when the CEO's demand is higher than the supply. This result would also be consistent with higher incumbent CEO entrenchment. The alternative view would be that firms are not willing to hire executives from firms with UTSA given their own litigation risk. Under this view, CEOs' supply would be higher than the demand and β should be negative. H1 helps to validate that *Pool Decrease* represents a friction in the managerial labor market.

Under H2, I expect a negative and significant β showing that a decrease in the pool of replacement CEOs has a negative effect on firms' financial reporting quality. In developing H2, I also discussed the alternative view, that greater entrenchment may lead to a *quiet life* approach to financial reporting. Under that view, β should be positive or not significant.

X is a vector of firm and CEO controls. In particular, the firm controls are *Firm Size*, *ROA*, *MTB* and *Leverage*, as larger and better performing firms are likely to attract more talented CEOs (Gabaix and Landier, 2008; Terviö, 2008; Pan, 2017). As CEO characteristics I include *CEO Age* and *Outsider CEO*. Older CEOs may be more entrenched and perform differently. In this line, Li et al. (2017) show that CEOs' investment strategies are linked to their age. In addition, outsider CEOs are different from internally chosen ones as they do not possess internal firm information and may behave differently than insider CEOs. In particular, externally appointed CEOs may have different tenure and salaries than internal ones (Cadman et al., 2016).

In the models analyzing financial reporting quality, I also control for *Early Years* as CEOs may behave differently early in their careers to construct a good reputation and be

able to stay longer in the job, lowering financial reporting quality through higher accrual-based earnings management (Ali and Zhang, 2015). Finally, I also include *Cycle*, *REM*, *Audit Tenure* and *Big8* as controls. *Cycle* accounts for firms' accounting flexibility. Firms with longer operating cycles have larger accruals and longer periods for accruals to reverse so they have more room to manipulate (Zang, 2012). *REM* is added to account for the findings in Zang (2012) that managers adapt the level of accrual manipulation depending on the level of realized real earnings management. *Audit Tenure* proxies for the level of auditor scrutiny. *Big8* takes into account that firms audited by a large auditor are less likely to manage accruals. These controls are relevant when analyzing financial reporting quality as stated in Zang (2012). Finally, in a recent paper, Chen et al. (2018b) analyze the common procedure of using as dependent variable the residuals from Jones (1991) type models to study earnings management, and argue that a double step of calculating the residual and then using it as the dependent variable in a different regression may generate biased coefficients and incorrect standard errors. To account for this potential problem and obtain unbiased estimators, in untabulated results, I incorporate as controls the variables of the first-stage regression estimated to obtain the financial reporting quality measures in the second-stage regression and the main results remain unchanged.

4 Results

4.1 Sample and Descriptive Evidence

The sample contains firm-year observations from BoardEx database. Financial and accounting data comes from Compustat and returns from CSRP. Auditor data comes from Audit Analitics, and top management team members and CEO characteristics from ExecuComp. CEO ability and firm efficiency are made available by Demerjian et al. (2012).

I drop financial (SIC2 60-69), utilities (SIC2 40-49) and public administration (SIC2 99) firms and obtain a final sample of 45,391 firm-year observations, representing 4,096 firms and 9,439 CEOs for the period 1980 to 2016.

Table 1 Panel A shows the descriptive statistics for the main variables. The mean of *Percentage of firms* is 0.42 which means that, on average, 42% of same-industry firms have incorporated UTSA. The variable *Talent Pool* is calculated as *Total Firms* (total firms in the same industry) multiplied by *Total Executives* (total number of top management team members in each company from the same industry). The talent pool has a median value of 827 executives, with a minimum of 3 and a maximum of 5,388.[26] Given that the average firm in the sample has six executives (the CEO and five top management team members, commonly including the Chief Financial Officer [CFO], the Chief Operational Officer [COO], the Chief Technology Officer [CTO], the Chief Administrative Officer [CAO], and the Chief Informational Officer [CIO]), this means that, for the average firm, there are 138 firms belonging to the same industry from which to draw talent, in addition to five insiders that could also potentially substitute the incumbent CEO.[27]

Table 1 Panel B shows that, when the percentage of firms from the same industry incorporated in UTSA states is higher than 50%, 75% or 90%, the number of CEOs appointed from the same industry is lower. This is consistent with litigation risk discouraging top managers to join companies in industries incorporated in UTSA states. This also links with UTSA lowering the mobility of executives. Panel C shows that, overall, and consistent with Figure 1, firms increasingly hire outsider CEOs even after the passage of UTSA, although this effect disappears at the highest level of impairment in the pool of

[26] The minimum of 3 executives corresponds to the *Retail Trade* industry where there are small firms. In particular, this observation corresponds to a firm in the lowest quartile of firm size in my sample. The maximum of 5,388 executives corresponds to the *Services* industry. In particular, this corresponds to a firm which size is in the third quartile of the firm size distribution in my sample.

[27] See Menz (2012) for a review of top management team members studies.

talent. This suggests that when the drain in the pool is extreme, boards search within the firm and hire their own insiders. Overall, the univariate evidence indicates that decreases in the pool of talent lead boards to seek outsider CEOs from firms that they may have not considered previously. Whilst before boards may have preferred to appoint knowledgeable managers from the same industry, the UTSA-related pool impairment seems to limit the appointment of same-industry CEOs, as expected.

As previously discussed, the identified impairment in the pool of replacement CEOs is likely to reduce the mobility of those executives with better access to trade secrets information (i.e., the most talented). Thus, a plausible consequence is that less informed (less talented) CEOs are hired. I look at this issue in Panel D of Table 1, where I formally model the likelihood of having outsider *vs.* insider CEOs following previous literature (Murphy and Zábojník, 2004; Jongjaroenkamol and Laux, 2017), and split CEOs depending on whether they come from the same industry or not, and whether they are classified as highly talented of not, using the Demerjian et al. (2012) talent measure. If *Pool Decrease* captures a friction that reduces the mobility of highly able executives with access to trade secrets, low talented managers in unrelated industries may be indeed the "winners" under this law, benefiting from having greater access to top executive positions.

Panel D shows a positive and significant relationship between *Pool Decrease* and *Outsider CEO* (Column 1). This is consistent with the univariate results in Panel C, the graphical evidence in Figure 1, and the results in previous literature showing that there has been an increase in external CEO appointments during the different years. Columns 2 through 6 provide evidence by grouping CEOs depending on whether they belong to the same industry and are classified as high or low talent. There is no significant relationship between *Pool Decreases* and outsider CEOs coming from the same industry (column 2), but, as expected, there appears to be an increase in the appointment of low talented out-

sider CEOs (column 3) and low talented outsider CEOs coming from the same industry (column 4). Columns 5 and 6 also show a positive and statistically significant relationship between *Pool Decrease* and outsider CEOs from different industries and low talented outsider CEOs from different industries, respectively. This evidence would suggest that boards are more likely to hire low talented CEOs after the shock.

Table 2 shows the correlation matrix. The correlations between *Pool Decrease* and the variables measuring entrenchment (*CEO Tenure*, *CEO Pay Slice*, *Salary* and *Total Compensation*) are positive and statistically significant. Regarding financial reporting quality, I find that most of them have a positive correlation with *Pool Decrease* but only *AQWi* and *AQ* are statistically significant. *Bog* has a negative and significant correlation with *Pool Decrease*. The largest correlations are between *Leverage* and *MTB* (corr=0.420) and between *Firm Size* and *Big8* (corr=0.390). This is expected as *Leverage* is calculated as total debt scaled by book value of equity which would be mechanically positively correlated with market-to-book ratio, and larger firms are likely to have a Big 8 auditor. Given the size of these correlations, it is unlikely that multicollinearity is an issue in my setting (Allison, 1998).

4.2 Main Results

Table 3 shows the results of testing H1. I find that *Pool Decrease* leads to longer *CEO Tenure* (Panel A), and lower *Forced Turnover* (Panel B). Regarding the sensitivity of CEO turnover to changes in firm performance and following Gao et al. (2017) and Ertimur and Patrick (2018), Panel C shows that *Pool Decrease*ChangRet* is negative and statistically significant, indicating a lower sensitivity of CEO turnover to changes in firm performance after the decrease in the pool of talent. Results are robust to the use of different proxies to measure firm performance. Thus, *Pool Decrease* is associated with longer incumbent

CEO tenure, lower probability of being forcefully fired and lower sensitivity of turnover to performance.[28] This suggests greater CEO entrenchment. In Panels B and C the coefficients on *CEO Age* and *Outsider CEO* are systematically positive. This is as expected given that boards are more likely to remove older CEOs, and also, that external CEOs are subject to greater board scrutiny because of the higher information asymmetry regarding their firm-specific skills (Palomino and Peyrache, 2013), and thus, are also more likely to be forcefully fired.

Table 3 Panel D shows the effects over CEO compensation. *Pool Decrease* positively impacts *CEO Pay Slice*. This means that incumbent CEOs of firms that experience a decrease in the pool of replacement CEOs have higher compensation with respect to the top five executives in their company. I also find a positive and significant relationship between *Pool Decrease* and *Salary*. Again, consistent with Palomino and Peyrache (2013), the coefficient of *Outsider CEO* is positive in these regressions. This is explained by outsider CEOs receiving a higher compensation than internally appointed ones, to compensate for the higher risk of greater board monitoring and greater risk of being dismissed early.

Overall, these results validate my *Pool Decrease* proxy as identifying a friction in managerial labor markets. The evidence indicates a decrease in market monitoring over incumbent CEOs, leading to greater entrenchment, as predicted under H1. Decreases in the pool of replacement CEOs appear to reduce executives' incentives to move, thereby increasing incumbent CEOs power as board struggle to find options to replace her.

In my second set of main analyses, I study whether this managerial job market friction affects firms' financial reporting and narrative disclosure quality. Table 4 shows that *Pool Decrease* has a negative and significant relationship with the four different proxies for financial reporting quality and a positive and significant relationship with *Fog*, *Bog*

[28] Untabulated results show that if ROA is used (instead of returns) to construct the variable *Forced Turnover*, my main results remain unchanged.

and *Tone*. In particular, the evidence reported systematically reveals a deterioration in the firm information environment, as all four proxies of accruals quality are negatively associated with *Pool Decrease* (see columns 1 through 4). The evidence also indicates a deterioration in the quality of firms' narratives, with the complexity of 10-K disclosures increasing after experiencing an impairment in the pool of talent (*Fog* and *Bog* are positively associated with *Pool Decrease* in columns 5 and 6, respectively), and the use of more positive tone in narratives (column 7). These results link with Lo et al. (2017) who show that firms with lower readability are more likely to manage earnings.

To better understand the effects of *Pool Decrease* over financial reporting quality, and given that I have argued that trade secret protection impairs the pool of talent, I repeat the analyses of Table 4 separately for samples where I expect this impairment to be greater: in technological firms and in firms operating in more competitive environments. Table 5 Panels A and B shows that the effects are concentrated in the subsamples of technological firms and of more competitive firms (as mueasured using the Herfindahl index). These are the firms that are more likely to have trade secrets, and thus, be more affected by UTSA. I construct the subsample of technological firms following Png (2017) and Hecker (1999).[29] Technological firms and those operating in more competitive industries are in constant change and are more likely to need to replace their CEOs. For my sample, the average forced turnover for high (low) technological firms is 0.060 (0.047), while the average forced turnover for high (low) competitive firms is 0.053 (0.041). These differences are statistically significant at the 1% level.

Untabulated results also show that the effect of *Pool Decrease* is higher in the subsample of firms with lower CEO entrenchment and lower governance controls. Firms with lower CEO entrenchment are those in the lower quintiles of the E-index elaborated by

[29] I exclude SIC3 372, 376 and 381 following Brown et al. (2009).

Bebchuk et al. (2008). Firms with lower governance are those in the lower quintiles of the G-index created by Gompers et al. (2003). This is consistent with my results that *Pool Decrease* generates an increase in CEO entrenchment, and thus, that the most affected companies are those with lower pre-*Pool Decrease* entrenched and monitored CEOs.

Overall, the results in Tables 4 and 5 indicate that decreases in the pool of replacement CEOs leads to lower financial reporting quality, as predicted under H2. In particular, results are aligned with the *expropriating* view of entrenched CEOs as incumbent CEOs engage in activities that reduce their firm's financial reporting quality. The results reported in this section strongly suggest that impairments in the pool of replacement CEOs affect executives labor market characteristics and firms' financial reporting quality.

5 Additional Analyses

5.1 CEO-Firm Match, Future Performance and Potential "Winners"

Thus far, the results indicate that the shock generates greater CEO entrenchment and a greater probability of hiring low talented outsider CEOs. This is suggestive of firms and boards encountering greater restrictions and limited options to replace their incumbent CEOs. Thus, I expect that talent pool impairments may (i) affect CEO-Firm match, as it is less likely that firms find a CEO that perfectly *matches* their expectations, and also, (ii) to the extent that CEOs and firms are not well matched, firm efficiency may decrease. A final related consequence is (iii) that low ability executives may reap the benefits of this friction, being considered for CEO appointments when they would have otherwise not been short-listed for those positions.

To measure *Firm Efficiency*, I use the proxy developed by Demerjian et al. (2012).[30] Then, I create the *CEO-Firm match* variable by regressing *Firm Efficiency* on several firm and CEO characteristics. In particular, I use the variables that Demerjian et al. (2012) use to obtain their managerial ability proxy (*Firm Age*, *Firm Market Share*, *Cash Availability*, *Life Cycle*, *Operational Complexity* and *Foreign Operations*), and I also add *UTSA*, *Outsider CEO* and *CEO Age*. See Appendix I for all variable definitions. The coefficient on the CEO fixed effects from this regression is my proxy for *CEO-Firm match*. Manager fixed effects reflect specific CEO characteristics associated with firm strategic decisions and investment (Bertrand and Schoar, 2003). CEO-firm match has a mean of 0.025 (0.001) before (after) the decrease in the pool of replacement CEOs. Using this proxies, Table 6 shows that *Pool Decrease* has a negative and significant relationship with both current and future *CEO-Firm match* and *Firm Efficiency*, as expected.

Given this evidence on lower firm efficiency and lower CEO-Firm matches, it appears sensible that future firm performance will be lower in firms suffering from pool decreases. Table 7 confirms this view and shows that *Pool Decrease* leads to lower industry-adjusted future firm performance. I use industry-adjusted performance as there exists a momentum effect in industry components (Moskowitz and Grinblatt, 1999). In addition, industry-adjusted firm performance is free from the effect of industry-specific characteristics and only depends on firm-specific characteristics.

As noted above, to the extent that the shock affects managerial labor markets, "winners" and "losers" may emerge. In essence, certain executives may be better off after the impairment in the pool of replacement CEOs, such as, for example, top manager team members in companies without the law. In particular, I am interested in the low talented ones, as boards may consider hiring them after the shock, when they would not have

[30] I use the updated 2017 version of the Demerjian et al. (2012). However, the authors explicitly request to be cited by the paper of 2012.

considered them previously. Table 8 shows the relationship between *Pool Decrease* and *CEO Tenure* and *Forced Turnover* for subsamples of plausible "winners." I create two proxies. *Winners 1* is an indicator variable that equals 1 when the outsider CEO comes from a firm without UTSA and 0 otherwise. This first dummy does not account for managerial talent. *Winners 2* is an indicator variable that equals 1 when the outsider CEO is low talented and comes from a firm without UTSA and 0 otherwise. The results show that these low talented CEOs from firms without the law benefit from the managerial job market friction. Overall, I find that these CEOs have higher tenure and lower forced turnover than other CEOs. However, these results should be interpreted with caution as the number of observations is greatly reduced due to data constraints.

5.2 "Expropriation" *versus* "quiet life" effects: Over-investment

To provide further evidence on the "expropriation" *versus* "quiet life" consequences of CEO entrenchment, I follow Biddle et al. (2009) and investigate over-investment. CEOs who are dedicated to a quiet life would be unlikely to over-invest, as this requires effort in raising funds, taking decisions and following up on project development. Also, Biddle et al. (2009) show that firms with better financial reporting quality engage in less over-investment, as financial reporting quality acts as a disciplining mechanism. As I find that the pool of CEOs decrease generates lower financial reporting quality, this may lead to greater over-investment. I construct three measures of over-investment (*Overinv Firm*, *Overinv Year* and *Overinv Industry*). Table 9 shows that *Pool Decrease* is related to higher over-investment. This is consistent with the idea that entrenched CEOs exploit their position to potentially engage in pet projects, trophy acquisitions or to build the firm beyond its optimal size.

6 Robustness Checks

6.1 Pool Decrease in Terms of Managerial Ability Drain

I create an alternative pool decrease proxy called *Pool Decrease Ability* which is a firm-specific, time-varying measure that captures changes in the pool of highly able replacement CEOs, taking into account only those firms in the same industry that incorporate UTSA and have managers in the top tercile of ability,[31] as measured by the Demerjian et al. (2012) proxy. Pool drain in terms of ability is likely to affect firms as they have less potential new CEOs with high ability in the managerial job market to replace their incumbent CEO.

Table 10 shows the results. The relationship between *Pool Decrease Ability* and financial reporting quality is statistically significant for most of the financial reporting ability measures. I do not find statistical significance for *FRQ 1*, *AQWi* but their signs are negative as expected. The *Fog* coefficient is not statistically significant but is positive as expected.

6.2 Parallel Trends and Pacebo Test

To ensure the effects are driven by the decrease in the pool of replacement CEOs, and following previous research such as Bertrand and Schoar (2003) or Flammer and Kacperczyk (2016), I construct a leads and lags model. Figure 2 graphically shows (at 95% confidence level) that the main results are not anticipated by firms which is crucial for the validity of the identification strategy. This is consistent with the previous argumentation that UTSA establishes that trade secrets misappropriation previous to UTSA enactment cannot be legally pursued (448 MI. Trade & Commerce 1901-1910). Bertrand et al. (2004) show

[31] Results do not vary if we use the top quartile or the top decile of managerial ability.

that diffenrence in differences analyses in long time series may lead to an overestimation of t-statistics and significance levels when observations are correlated within each unit. To address this problem and following previous research such as Bertrand et al. (2004) or Guo and Masulis (2015), I run placebo tests with 5,000 repetitions where the UTSA enactment year is randomly assigned. Untabulated results show that the t-statistics from the simulated financial reporting quality regressions follow a normal distribution.

6.3 Extra Controls: IDD and NCAs

Beyond UTSA, the Inevitable Disclosure Doctrine (IDD, hereafter) and the inclusion of Noncompetition Agreements (NCAs, hereafter) in contracts also protect firms from trade secrets misappropriation. IDD is a doctrine and not a law as it derives from trade secret law and emerges from a number of US court decisions. Under IDD it is assumed that an employee would not be able to conduct their duties at a rival company without disclosing former firms' trade secrets, i.e., it would be "inevitable" to disclose them. Although the evidence suggests this doctrine is not always followed even in States where the precedent exists, it obviously facilitates winning court cases that involve trade secrets misappropriation allegations (Klasa et al., 2018; Li et al., 2018). In addition, Gao et al. (2018) show that firms under IDD decrease upward earnings management to retain employees. In addition to IDD, contracts may include NCAs. These agreements are also known as *covenants not to compete* and for example, do not allow employees to join or create a rival company. In a recent paper, Chen et al. (2018a) show that Non-compete covenants affect firms' contractual relations. In particular, the author shows that firms subject to these agreements have lower discretionary expenditures and lower future performance. These agreements are fairly common even when their enforceability appears to be generally low (Garmaise, 2011; Starr et al., 2018).

To ensure *Pool Decrease* does not capture the incidence of IDD or NCAs, I run a robustness test where I include *IDD* and *NCA* to my models. *IDD* is an indicator variable that equals one if the company is headquartered in a state with IDD by year t and later and zero otherwise. Appendix IV shows the state, year and court case of IDD adoption. I use the headquarter state following previous literature and because IDD are court decisions specifically located in certain states. To account for NCAs, I follow Garmaise (2011) and construct a "Noncompetition Agreement Enforceability Index." Appendix V provides the details. *NCA* ranges from zero to twelve and indicates the headquarter states' agreement in noncompetition enforceability. Table 11 shows that the main results remain unchanged when *IDD* and *NCA* are included. In fact, some results are stronger and, in most cases, *IDD* and *NCA* are not significant. Untabulated results show that if I include as controls the percentage of firms in the same industry that have enacted the IDD and have noncompetition agreements the results for labor market effects also remain unchanged.

7 Summary and Conclusions

I show that a decrease in the pool of replacement CEOs introduces frictions in managerial labor markets and affects financial reporting quality. In particular, I show that the decrease in the pool of replacement CEOs increases the incumbent CEO entrenchment and lowers financial reporting and narrative disclosure quality. I also show that this pool decrease relates with lower CEO-firm match, lower firm efficiency, worse future firm performance and higher over-investment decisions. The results are robust to the use of alternative measures for the decrease in the pool of replacement CEOs, the lead and lags model and to the inclusion of alternative trade secrets protection controls.

This study has important implications for companies, inverstors and regulators. First, this is the first paper analysing a shock to the managerial labor market that generates a friction through the pool of replacement CEOs decrease. I show that the pool of replacement CEOs is relevant for firms and that its deterioration has undesired effects in companies. Second, it contributes to the literature of unintended regulations effects (e.g., Leuz et al., 2008). UTSA appears to protect firms competitive advantage through trade secrets misappropriation protection. However, I show that this has unexpected and negative effects on firms through a decrease in the pool of replacement CEOs.

APPENDIX I: Variables Definition

VARIABLES	DEFINITION	SOURCE
Pool Decrease	It its the percentage of firms by industry-year incorporated in states that have enacted the UTSA (*Percentage of firms*) multiplied by the quartile of one over the total number of top management team members in the industy (*Talent Pool*).	COMPUSTAT, UTSA, ExecuComp and BoardEx
CEO Tenure	Number of years the CEO has been in office.	BoardEx
Aggregated Tenure	Aggregated CEO tenure in period t+1, t+2 and t+3.	BoardEx
Forced Turnover	Indicator variable that equals 1 if a firm is in the bottom returns quartile in the year preceding the CEO turnover.	BoardEX and CRSP
Aggregated Forced Turnover	Aggregated *Forced Turnover* in period t+1, t+2 and t+3.	BoardEx and CRSP
CEO Pay Slice	Percentage that the total CEO compensation represents over the compensation of the top five executives in the company.	ExecuComp
Salary	CEOs' salary.	ExecuComp
Bonus	CEOs' bonus.	ExecuComp
Total Compensation	Natural logarithm of salary, bonus, other annual, total value of restricted stock granted, total value of stock options granted (using Black-Scholes), long-term incentive payouts and all other total.	ExecuComp
FRQ 1	Abnormal discretionary accruals following Dechow et al. (1995). It is multiplied by minus one which indicates that higher values of the measure relate with lower financial reporting quality.	COMPUSTAT
FRQ 2	Abnormal discretionary accruals following Jones (1991) and controlling by lagged ROA as suggested by Kothari et al. (2005). It is multiplied by minus one which indicates that higher values of the measure relate with lower financial reporting quality.	COMPUSTAT
AQWi	Modified version for the accruals quality measure as proposed by Wysocki (2009). It is the ratio between the standard deviations of the residuals (from year t-5 to t-1) from the simpler to the full model. The simpler model is the regression of working capital accruals on current cash flows. The full model is the regression of working capital accruals on lagged, current and future cash flows.	COMPUSTAT
AQ	It is the standard deviation of the firm-level residuals from the Dechow et al. (1995) model from year t-5 to year t-1. It is multiplied by minus one which indicates that higher values of the measure relate with lower financial reporting quality.	COMPUSTAT
Fog	Fog index which is a financial statement readability measure.	Li (2008)
Bog	Bog index which is a financial statement readability measure.	Bonsall et al. (2017)
Tone	Disclosure tone calculated as the difference between the total number of positive and negative words divided by total number of words in each firm-year 10-K report.	Loughran and McDonald word list and *php algorithm.*
Percentage of firms	Percentage of firms by industry-year incorporated in states that have enacted the UTSA	Compustat, UTSA and BoardEx
Talent Pool	Total number of top management team members in each industry and year.	BoardEx and ExecuComp
Total firms	Total number of firms in each industry.	BoardEx
Total Executives	Total number of top management team members in each firm.	ExecuComp
Returns	Contemporaneous annual stock returns calculated using CRSP monthly return data.	CRSP

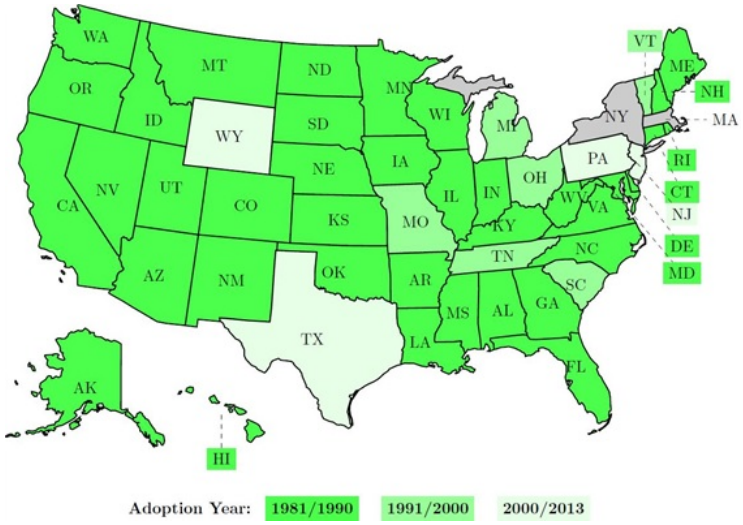
APPENDIX I (Continuation)

VARIABLES	DEFINITION	SOURCE
CEO-firm match	It is the coefficient of the CEO fixed effects in a model in which I regress the firm efficiency measure from Demerjian et al. (2012) on several firm and CEO characteristics.	COMPUSTAT, BoardEx and Demerjian et al. (2012)
Firm Efficiency	Firm efficiency measure from Demerjian et al. (2012).	Demerjian et al. (2012)
Firm Size	Natural logarithm of firms total assets.	COMPUSTAT
ROA	Firms return on assets calculated as income before extraordinary items scaled by total assets.	COMPUSTAT
Low Manipulation	It is a variable that accounts for accrual-based firm's manipulation. It is the abnormal discretionary accruals measure following Dechow et al. (1995).	COMPUSTAT
Winners 1	Indicator variable that equals 1 when the outsider CEO comes from a firm without UTSA and 0 otherwise.	BoardEx
Winners 2	Indicator variable that equals 1 when the outsider CEO's managerial ability is lower than the sample median and comes from a firm without UTSA and 0 otherwise.	BoardEx
ChangRet	Change in Returns from period t-1 to t.	CRSP
AdjRet	Industry-adjusted returns. It is calculated substracting the industry-year average returns from each return observation.	CRSP
ChangAdjRet	Change in industry-adjusted returns from period t-1 to t.	CRSP
AdjROA	Industry-adjusted ROA. It is calculated substracting the industry-year average ROA from each ROA observation.	COMPUSTAT
MTB	Market-to-book ratio. Firms market value divided by book value of equity.	COMPUSTAT
Leverage	Firms leverage calculated as total long term and current liabilities scaled by book value of equity.	COMPUSTAT
CEO Age	It is the age of the CEO. For regressions it is calculated as the natural logarithm of CEO age.	BoardEx
Outsider CEO	CEOs external appointment. Indicator variable that equals 1 when the incoming CEO is an outsider.	BoardEx
Outsider Same Industry	Indicator variable that equals 1 if the CEO is an outsider who comes from the same industry and 0 otherwise.	BoardEx
Outsider Low Talent	Indicator variable that equals 1 if the CEO is an outsider and is below the CEO ability median and 0 otherwise.	BoardEx and Demerjian et al. (2012)
Outsider Low Talent Same Industry	Indicator variable that equals 1 if the CEO is an outsider who is below the CEO ability median and comes from the same industry and 0 otherwise.	BoardEx and Demerjian et al. (2012)
Outsider Diff Industry	Indicator variable that equals 1 if the CEO is an outsider who comes from a different industry and 0 otherwise.	BoardEx
Outsider Low Talent Diff Industry	Indicator variable that equals 1 if the CEO is an outsider below the CEO ability median and comes from a different industry and 0 otherwise.	BoardEx and Demerjian et al. (2012)
Early Years	Indicator variable that equals 1 if the CEO is in the first three years of tenure and 0 otherwise.	BoardEx
Cycle	Firms operating cycle. It is calculated as the days receivable plus the days inventory subtracting the days payable at the beginning of the year following Dechow (1994) and Zang (2012).	COMPUSTAT
REM	Real earnings management proxy calculated as abnormal production minus abnormal discretionary expenses following Zang (2012). Abnormal production and abnormal discretionary expenses are calculated following Roychowdhury (2006).	COMPUSTAT
Audit Tenure	Proxy for auditor scrutiny calculated as an indicator variable that equals 1 if the number of years the auditor has been auditing the firm is greater than the median in the sample of eight years and 0 otherwise.	Audit Analytics
Big8	Indicator variable that equals 1 if a firms auditor belongs to one of the Big 8 (or Big 6, Big 5, Big 4 in the recent years) and 0 otherwise.	Audit Analytics
Pool Decrease 50	Indicator variable that equals 1 when the variable *Percentage of firms* is equal or higher than 0.5 and 0 otherwise.	COMPUSTAT, UTSA

APPENDIX I (Continuation)

VARIABLES	DEFINITION	SOURCE
Pool Decrease 75	Indicator variable that equals 1 when the variable *Percentage of firms* is equal or higher than 0.75 and 0 otherwise.	COMPUSTAT, UTSA
Pool Decrease 90	Indicator variable that equals 1 when the variable *Percentage of firms* is equal or higher than 0.9 and 0 otherwise.	COMPUSTAT, UTSA
UTSA	Indicator variable that equals 1 when a firm is incorporated in a state that has enacted the Uniform Trade Secrets Act and 0 otherwise.	COMPUSTAT
Investment	This is calculated as follows: (research and development expenditure + capital expenditure + acquisition expenditure - cash receipts from sale of property, plant and equipment) * 100. This is scaled by lagged total assets.	COMPUSTAT
Capex	This is calculated as (capital expenditures*100)/lagged property, plant and equipment.	COMPUSTAT
Non-capex	This is calculated as follows: (research and development expenditure + acquisition expenditure) * 100 and everything scaled by lagged total assets.	COMPUSTAT
Overinv Firm	Ranked value based on the ranked deciles of cash and leverage. Leverage is multiplied by -1 before ranking for both variables to have a positive relationship with the likelihood of over-investment.	COMPUSTAT
Overinv Year	For each year, I regress the average of Investment, Capex and Non-Capex on sales growth. I calculate the deciles of the residual of the model and rank it to vary from 0 to 1.	COMPUSTAT
Overinv Industry	For each industry-year, I regress the average of Investment, Capex and Non-Capex on industry-year sales growth. I calculate the deciles of the residual of the model and rank it to vary from 0 to 1.	COMPUSTAT
Pool Decrease Ability	It its the percentage of firms by industry-year incorporated in states that have enacted the UTSA (*Percentage of firms*) that are part of industries in the top tercile of managerial ability multiplied by the quartile of one over the total number of top management team members in the industy (*Talent Pool*).	COMPUSTAT, UTSA, ExecuComp and BoardEx and Demerjian et al. (2012)
IDD	Indicator variable that equals 1 if the company is headquartered in a state that has passed the Inevitable Disclosure Doctrine by year t and later and 0 otherwise.	COMPUSTAT and Klasa et al. (2018)
NCA	It is the Noncompetition Agreement Enforceability Index. It ranges from 0 to 12 and indicates the headquarter states agreement in noncompetition enforceability.	COMPUSTAT and Garmaise (2011)

APPENDIX II: Uniform Trade Secrets Act Map



The map shows the different states that have adopted the UTSA from 1981 to 2013. The specific year of adoption for each US state and the statute can be found in Appendix III.

APPENDIX III: Uniform Trade Secrets Act

State	Year	Statute
Alabama	1987	27 AL. COMMERCIAL LAW & CONSUMER PROTECTION 8.27.1-8.27.6
Alaska	1988	45.50 AK. COMPETITIVE PRACTICES & REGULATION OF COMPETITION 45.50.910-45.50.945
Arizona	1990	44 AZ. UNIFORM TRADE SECRETS ACT 44.401-44.407
Arkansas	1981	75 AR. UNFAIR PRACTICES 4.75.601-4.75.607
California	1985	5 CA. UNIFORM TRADE SECRETS ACT 3426.1-3426.11
Colorado	1986	74 CO. UNIFORM TRADE SECRETS ACT 7.74.101-7.74.110
Connecticut	1983	625 CT. UNIFORM TRADE SECRETS ACT 35.50-35.58
Delaware	1982	20 DE. TRADE SECRETS 2001-2009
District of Columbia	1989	4 DC. TRADE SECRETS 36.401-36.410
Florida	1988	688 FL. UNIFORM TRADE SECRETS ACT 688.001-688.009
Georgia	1990	1 GA. SELLING & OTHER TRADE PRACTICES 10.1.760-10.1.767
Hawaii	1989	26 HI. TRADE REGULATION & PRACTICE 482B.1-482B.9
Idaho	1981	8 ID. IDAHO TRADE SECRETS ACT 48.801-48.803
Illinois	1988	140 IL. ILLINOIS TRADE SECRETS ACT 765.351-765.359
Indiana	1982	3 IN. TRADE SECRETS 24.2.3.1-24.2.3.1.8
Iowa	1990	550 IA. TRADE SECRETS 550.1-550.8
Kansas	1981	60 KS. KANSAS UNIFORM TRADE SECRETS ACT 60.3320-60.3330
Kentucky	1990	365 KY. UNIFORM TRADE SECRETS ACT 880-900
Louisiana	1981	13A LA. UNIFORM TRADE SECRETS ACT 51.1431-51.1439
Maine	1987	302 ME. UNIFORM TRADE SECRETS ACT 1541-1548
Maryland	1989	11 MD. TRADE REGULATION 11.1201-11.1209
Massachusetts (*)	Not Enacted	–
Michigan	1998	445 MI. TRADE & COMMERCE 445.1901-445.1910
Minnesota	1981	325C MN. UNIFORM TRADE SECRETS ACT 325C.01-325C.08
Mississippi	1990	26 MS. MISSISSIPPI UNIFORM TRADE SECRETS ACT 75.26.1-75.26.19
Missouri	1995	417 MO. TRADEMARKS, NAMES AND PRIVATE EMBLEMS 417.450-417.467
Montana	1985	14 MT. UNFAIR TRADE PRACTICES & CONSUMER PROTECTION 30.14.401-30.14.409
Nebraska	1988	87 NE. TRADE PRACTICES 87.501-87.507
Nevada	1987	600A NV. TRADE SECRETS (UNIFORM ACT) 600A.010-600A.100
New Hampshire	1990	350B NH. UNIFORM TRADE SECRETS ACT 350B.1-350B.9
New Jersey	2012	161 NJ. NEW JERSEY TRADE SECRETS ACT 1-10
New Mexico	1989	57 NM. TRADE PRACTICES & REGULATIONS 57.3A.1-57.3A.7
New York	Not Enacted	–
North Carolina	1981	66 NC. COMMERCE & BUSINESS 66.152-66.162
North Dakota	1983	47.25.1 ND. TRADE SECRETS 47.25.1.01-47.25.1.08
Ohio	1994	1333 OH. TRADE PRACTICES 1333.61-1333.69
Oklahoma	1986	78 OK. TADEMARKS & LABELS 85-95
Oregon	1988	646 OR. TRADE PRACTICES & ANTITRUST REGULATION 646.461- 646.475
Pennsylvania	2004	12 PA. COMMERCE & TRADE 5301-5308
Rhode Island	1986	6.41 RI. UNIFORM TRADE SECRETS ACT 6.41.1-6.41.11
South Carolina	1992	8 SC. TRADE SECRETS 39.8.1-39.8.9
South Dakota	1988	37.29 SD. UNIFORM TRADE SECRETS ACT 37.29.1-37.29.11
Tennessee	2000	25 TN. TRADE PRACTICES 47.25.1701-47.25.1709
Texas	2013	134A TX. TRADE SECRETS 134A.001-134A.008
Utah	1989	24 UT. UNIFORM TRADE SECRETS ACT 13.24.1-13.24.9
Vermont	1996	143 VT. TRADE SECRETS 4601-4609
Virginia	1986	26 VA. UNIFORM TRADE SECRETS ACT 59.1.336-59.1.343
Washington	1982	19.108 WS. UNIFORM TRADE SECRETS ACT 19.108.010-19.108.930
West Virginia	1986	47 WV. REGULATION OF TRADE 47.22.1-47.22.10
Wisconsin	1986	134 WI. MISCELLANEOUS TRADE REGULATIONS 134.90
Wyoming	2006	24 WY. UNIFORM TRADE SECRETS ACT 40.24.101-40.24.110

This table lists the different US states that have incorporated the UTSA from 1981 to 2016. *Source: annotated states regulation.*
(*) The state of Massachusetts has adopted the UTSA in 2018 but it is not part of the sample.

APPENDIX IV: Inevitable Disclosure Doctrine

State	Precedent-Setting Case(s)	Date	Decision
Arkansas	*Southwestern Energy Co. v. Eickenhorst, 955 F. Supp. 1078 (W.D. Ark. 1997)*	3/18/1997	Adopt
Connecticut	*Branson Ultrasonics Corp. v. Stratman, 921 F. Supp. 909 (D. Conn. 1996)*	2/28/1996	Adopt
Delaware	*E.I. duPont de Nemours & Co. v. American Potash & Chem. Corp., 200 A.2d 428 (Del. Ch. 1964)*	05/05/1964	Adopt
Florida	*Fountain v. Hudson Cush-N-Foam Corp., 122 So. 2d 232 (Fla. Dist. Ct. App. 1960)*	07/11/1960	Adopt
	Del Monte Fresh Produce Co. v. Dole Food Co. Inc., 148 F. Supp. 2d 1326 (S.D. Fla. 2001)	5/21/2001	Reject
Georgia	Essex Group Inc. v. Southwire Co., 501 S.E.2d 501 (Ga. 1998)	6/29/1998	Adopt
Illinois	*Teradyne Inc. v. Clear Communications Corp., 707 F. Supp. 353 (N.D. 111. 1989)*	02/09/1989	Adopt
Indiana	Ackerman v. Kimball Intl Inc., 652 N.E.2d 507 (Ind. 1995)	07/12/1995	Adopt
Iowa	Uncle Bs Bakery v. ORourke, 920 F. Supp. 1405 (N.D. Iowa 1996)	04/01/1996	Adopt
Kansas	Bradbury Co. v. Teissier-duCros, 413 F. Supp. 2d 1203 (D. Kan. 2006)	02/02/2006	Adopt
Massachusetts	Bard v. Intoccia, 1994 U.S. Dist. LEXIS 15368 (D. Mass. 1994)	10/13/1994	Adopt
Michigan	*Allis-Chalmers Manuf. Co. v. Continental Aviation & Eng. Corp., 255 F. Supp. 645 (E.D. Mich. 1966)*	2/17/1966	Adopt
	CMI Intl, Inc. v. Intermet Intl Corp., 649 N.W.2d 808 (Mich. Ct. App. 2002)	4/30/2002	Reject
Minnesota	Surgidev Corp. v. Eye Technology Inc., 648 F. Supp. 661 (D. Minn. 1986)	10/10/1986	Adopt
Missouri	*H&R Block Eastern Tax Servs. Inc. v. Enchura, 122 F. Supp. 2d 1067 (W.D. Mo. 2000)*	11/02/2000	Adopt
New Jersey	*Natl Starch & Chem. Corp. v. Parker Chem. Corp., 530 A.2d 31 (N.J. Super. Ct. 1987)*	4/27/1987	Adopt
New York	Eastman Kodak Co. v. Powers Film Prod., 189 A.D. 556 (N.Y.A.D. 1919)	12/05/1919	Adopt
North Carolina	Travenol Laboratories Inc. v. Turner, 228 S.E.2d 478 (N.C. Ct. App. 1976)	6/17/1976	Adopt
Ohio	Procter & Gamble Co. v. Stoneham, 747 N.E.2d 268 (Ohio Ct. App. 2000)	9/29/2000	Adopt
Pennsylvania	*Air Products & Chemical Inc. v. Johnson, 442 A.2d 1114 (Pa. Super. Ct. 1982)*	2/19/1982	Adopt
Texas	Rugen v. Interactive Business Systems Inc., 864 S.W.2d 548 (Tex. App. 1993)	5/28/1993	Adopt
	Cardinal Health Staffing Network Inc. v. Bowen, 106 S.W.3d 230 (Tex. App. 2003)	04/03/2003	Reject
Utah	*Novell Inc. v. Timpanogos Research Group Inc., 46 U.S.P.Q.2d 1197 (Utah D.C. 1998)*	1/30/1998	Adopt
Washington	Solutec Corp. Inc. v. Agnew, 88 Wash. App. 1067 (Wash. Ct. App. 1997)	12/30/1997	Adopt

This table lists a setting of previous legal cases where US state courts decided to adopt the Inevitable Disclosure Doctrine (IDD). There are also thre cases (Florida, Michigan and Texas) in which courts rejected IDD after adopting it. *Source: Klasa et al. (2018).*

APPENDIX V: Noncompetition Enforceability Index

State	Score	State	Score
Alabama	5	Missouri	7
Alaska	3	Montana	2
Arizona	3	Nebraska	4
Arkansas	5	Nevada	5
California	0	New Hampshire	2
Colorado	2	New Jersey	4
Connecticut	3	New Mexico	2
Delaware	6	New York	3
DC	7	North Carolina	4
Florida 1992-1996	7	North Dakota	0
Florida 1997-2004	9	Ohio	5
Georgia	5	Oklahoma	1
Hawaii	3	Oregon	6
Idaho	6	Pennsylvania	6
Illinois	5	Rhode Island	3
Indiana	5	South Carolina	5
Iowa	6	South Dakota	5
Kansas	6	Tennessee	7
Kentucky	6	Texas 1992-1994	5
Louisiana 1992-2001, 2004	4	Texas 1995-2004	3
Maine	4	Utah	6
Maryland	5	Virginia	3
Massachusetts	6	Washington	5
Michigan	5	West Virginia	2
Minnesota	5	Wisconsin	3
Mississippi	4	Wyoming	4

Source: Garmaise (2011). Garmaise (2011) follows Malsberger (2004) to evaluate the states' agreement in noncompetition enforceability. The evaluation is based on 12 questions and thresholds applied to assess the noncompetition enforceability agreement in each state (Garmaise, 2011). Each state receives 1 point for each question if its laws exceed the threshold. The questions and thresholds are the following:

Question 1. Is there a state statute of general application that governs the enforceability of covenants not to compete? Threshold 1. States that enforce noncompetition agreements outside a sale-of-business context receive a score of 1.

Question 2. What is an employers protectable interest and how is it defined? Threshold 2. States in which the employer can prevent the employee from future independent dealings with all the firms customers, not merely with the customers with whom the employee had direct contact, receive a score of 1.

Question 3. What must the plaintiff be able to show to prove the existence of an enforceable covenant not to compete? Threshold 3. Laws that place greater weight on the interests of the firm relative to those of the former employee are above the threshold. For example, a law that requires that the contract be reasonably protective of the firms business interests and only meet the condition of not being unreasonably injurious to the employees interests would receive a score of 1.

Question 4. Does the signing of a covenant not to compete at the inception of the employment relationship provide sufficient consideration to support the covenant? Threshold 4. States for which the answer to Question 4 is clearly Yes are above the threshold.

Question 5. Will a change in the terms and conditions of employment provide sufficient consideration to support a covenant not to compete entered into after the employment relationship has begun? Threshold 5. States for which the answer to Question 5 is clearly Yes are above the threshold.

Question 6. Will continued employment provide sufficient consideration to support a covenant not to compete entered into after the employment relationship has begun? Threshold 6. States for which the answer to Question 6 is clearly Yes are above the threshold.

Question 7. What factors will the court consider in determining whether time and geographic restrictions in the covenant are reasonable? Threshold 7. Jurisdictions in which courts are instructed not to consider economic or other hardships faced by the employee are above the threshold.

Question 8. Who has the burden of proving the reasonableness or unreasonableness of the covenant not to compete? Threshold 8. States in which the burden of proof is clearly placed on the employee are above the threshold.

Question 9. What type of time or geographic restrictions has the court found to be reasonable? Unreasonable? Threshold 9. Jurisdictions in which 3-year statewide restrictions have been upheld receive a score of 1.

Question 10. If the restrictions in the covenant not to compete are unenforceable because they are overbroad, are the courts permitted to modify the covenant to make the restrictions more narrow and to make the covenants enforceable? Threshold 10. States for which the answer to Question 10 is clearly Yes are above the threshold.

Question 11. If the employer terminates the employment relationship, is the covenant enforceable? Threshold 11. States for which the answer to Question 11 is clearly Yes are above the threshold.

Question 12. What damages may an employer recover and from whom for breach of a covenant not to compete? Threshold 12. If, in addition to lost profits, there is a potential for punitive damages against the former employee, the state receives a score of 1. States that explicitly exclude consideration of the reasonableness of the contract from the calculation of damages are also above the threshold.

References

Acharya, V., Gabarro, M., Volpin, P., 2016. Competition for managers and corporate governance. Working Paper .

Ali, A., Zhang, W., 2015. Ceo tenure and earnings management. Journal of Accounting and Economics 59, 60–79.

Allison, P. D., 1998. Multiple Regression Analysis. A Primer.

Almeling, D. S., Snyder, D. W., Sapoznikow, M., McCollum, W., Weader, J., 2010. A statistical analysis of trade secret litigation in state courts. Gonzaga Law Review 45, 291–334.

Almeling, D. S., Snyder, D. W., Sapoznikow, M., McCollum, W., Weader, J., 2011. A statistical analysis of trade secret litigation in state courts. Gonzaga Law Review 46, 57–101.

Andrews, K. R., 1987. The concept of corporate strategy. Irwin, Homewood .

Autor, D. H., Kerr, W. R., Kugler, A. D., 2007. Does employment protection reduce productivity? Evidence from US states. The Economic Journal 117, 189–217.

Barney, J. B., 1991. Firm resources and sustained competitive advantage. Journal of Management 17, 99–120.

Bebchuk, L., Cohen, A., Ferrel, A., 2008. What matters in corporate governance? The Review of Financial Studies 22, 783–827.

Beneish, M. D., Vargus, M., 2002. Insider trading, earnings quality, and accrual mispricing. The Accounting Review 77, 755–791.

Bertrand, M., Duflo, E., Mullainathan, S., 2004. How much should we trust difference in difference estimates? Quarterly Journal of Economics 119, 249–275.

Bertrand, M., Mullainathan, S., 2001. Are CEOs rewarded for luck? The ones without principles are. Quarterly Journal of Economics 116, 901–932.

Bertrand, M., Mullainathan, S., 2003. Enjoying the quiet life? Coporate governance and managerial preferences. Journal of Political Economy 111, 1043–1075.

Bertrand, M., Schoar, A., 2003. Managing with style: The effect of managers on firm policies. The Quarterly Journal of Economics 118, 1169–1208.

Biddle, G. C., Hilary, G., Verdi, R. S., 2009. How does financial reporting quality relate to investment efficicency? Journal of Accounting and Economics 48, 112–131.

Bonsall, S. B., Leone, A., Miller, B. P., 2017. A plain English measure of financial reporting readability. Journal of Accounting and Economics 63, 329–357.

Borokhovich, K. A., Parrino, R., Trapani, T., 1996. Outside directors and CEO selection. Journal of Financial and Quantitative Analysis 31, 337–355.

Borusyak, K., Hull, P., Jaravel, X., 2018. Quasi-experimental shift-share research designs. Working Paper .

Brown, J. R., Fazzari, S. M., Petersen, B. C., 2009. Financing innovation and growth: Cash flow, external equity and the 1990s R&D boom. Journal of Finance 64, 151–185.

Cadman, B. D., Campbell, J. L., Klasa, S., 2016. Are ex ante CEO severance pay contracts consistent with efficient contracting? Journal of Financial and Quantitative Analysis 51, 737–769.

Castellaneta, F., Conti, R., Kacperczyk, A., 2017. Money secrets: How does trade secret legal protection affect firm market value? Evidence from the Uniform Trade secret Act. Strategic Management Journal 38, 834–853.

Chen, T., Zhang, G., Zhou, Y., 2018a. Enforceability of non-compete covenants, discretionary investments and financial reporting practices: Evidence from a natural experiment. Journal of Accounting and Economics 65, 41–60.

Chen, W., Hribar, P., Melessa, S., 2018b. Incorrect inferences when using residuals as dependent variables. Journal of Accounting Research 50, 751–796.

Dechow, P. M., 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. Journal of Accounting and Economics 18, 3–42.

Dechow, P. M., Sloan, R. G., Sweeney, A. P., 1995. Detecting earnings management. The Accounting review 70, 193–225.

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

Di Meo, F., Garcia Lara, J. M., Surroca, J. A., 2017. Managerial entrenchment and earnings quality. Journal of Accounting and Public Policy 36, 399–414.

Diamond, R., 2016. The determinants and welfare implications of US workers' diverging location choices by skill: 1980-2000. American Economic Review 106, 479–524.

Donatiello, N., Larcker, D. F., Tayan, B., 2018. CEO talent: A dime a dozen, or worth its weight in gold? European Financial Management 24, 301–308.

Ertimur, Y., Patrick, P., 2018. Investor-driven governance standards and firm value. Working Paper .

Faleye, O., Hoitash, R., Hoitash, U., 2011. The costs of intense board monitoring. Journal of Financial Economics 101, 160–181.

Fama, E. F., Jensen, M. C., 1983. Separation of ownership and control. Journal of Law and Economics 26, 301–325.

Farrell, K. A., Whidbee, D. A., 2003. Impact of firm performance expectations on CEO turnover and replacement decisions. Journal of Accounting and Economics 36, 165–196.

Flammer, C., Kacperczyk, A., 2016. The impact of stackeholder orientation on innovation: Evidence from a natural experiment. Management Science 62, 1982–2001.

Friedrich, B., 2016. Internal labor markets and the competition for managerial talent. Working Paper .

Gabaix, X., Landier, A., 2008. Why has CEO pay increased so much? The Quarterly Journal of Economics 123, 49–100.

Gao, H., Harford, J., Li, K., 2017. CEO turnover-performance sensitivity in private firms. Journal of Accounting and Economics 52, 583–611.

Gao, H., Luo, J., Tang, T., 2015. Effects of managerial labor market on executive compensation: Evidence from job-hopping. Journal of Accounting and Economics 59, 203–220.

Gao, H., Zhang, H., Zhang, J., 2018. Employee turnover likelihood and earnings management: Evidence from the inevitable disclosure doctrine. Review of Accounting Studies 23, 1424–1470.

Garmaise, M. K., 2011. Ties that truly bind: Noncompetition agreements, executive compensation and firm investment. The Journal of Law, Economics & Organization 27, 376–425.

Gillan, S. L., Hartzell, J. C., Parrino, R., 2009. Explicit versus Implicit Contracts: Evidence from CEO Employment Agreements. The Journal of Finance 64, 1629–1655.

Glaeser, S., 2018. The effects of proprietary information on corporate disclosure and transparency: Evidence from trade secrets. Journal of Accounting and Economics 66, 163–193.

Gompers, P., Ishii, J., Metrick, A., 2003. Corporate governance and equity prices. Quarterly Journal of Economics 18, 107–156.

Graham, J. R., Kim, H., Leary, M. T., 2018. CEO-Board Dynamics. Working Paper .

Grant, R. M. R., 1996. Toward a knowledge-based theory of the firm. Strategic Management Journal 17, 109–122.

Guo, L., Masulis, R. W., 2015. Board structure and monitoring: New evidence from CEO turnovers. The Review of Financial Studies 28, 2770–2811.

Hecker, D., 1999. High-technology employment: A broader view. Monthly Labor Review 122, 18–28.

Helmich, D. L., 1974. Organizational growth and succession patterns. Academy of Management Journal 17, 771–775.

Helmich, D. L., Brown, W. B., 1972. Successor type and organizational change in the corporate enterprise. Administrative Science Quarterly 17, 371–381.

Hermalin, R. B. A., Weisbach, M. S., 2017. The role of boards of directors in corporate governance: A conceptual framework and survey. Journal of Economic Literature 48, 58–107.

Hicks, J. R., 1935. Annual survey of economic theory: The theory of monopoly. Econometrica 3, 1–20.

Hornbeck, R., Moretti, E., 2018. Who benefits from productivity growth? Direct and indirect effects of local TFP growth on wages, rents and inequality. Working Paper .

Hribar, P., Nichols, C., 2007. The use of unsigned earnings quality measures in tests of earnings management. Journal of Accounting Research 45, 1037–1053.

Huang, X., Teoh, S. H., Zhang, Y., 2014. Tone management. The Accounting Review 89, 1083–1113.

Jensen, M. C., 1986. Agency costs of free cash flow, corporate finance and takeovers. American Economic Review 76, 323–329.

Jenter, D., Matveyev, E., Roth, L., 2016. Good and bad CEOs. Working Paper .

Johnson, W. B., Magee, R. P., Nagarajan, N. J., Newman, H. A., 1985. An analysis of the stock price reaction to sudden executive deaths: Implications for the managerial labor market. Journal of Accounting and Economics 7, 151–174.

Jones, J. J., 1991. Earnings Management During Import Relief Investigations. Journal of Accounting Research 29, 193–228.

Jongjaroenkamol, P., Laux, V., 2017. Insider versus outsider CEOs, executive compensation and accounting manipulation. Journal of Accounting and Economics 63, 253–261.

Jorda, K. F., Krattiger, A., Mahoney, R. T., Nelsen, L., Thomson, J. A., Bennett, A. B., Kowalski, S. P., 2007. Trade secrets and trade-secret licensing. Intellectual property management in health and agricultural innovation: a handbook of best practices 1 and 2, 1043–1057.

Klasa, S., Ortiz-Molina, H., Serfling, M., Srinivasan, S., 2018. Protection of trade secrets and capital structure decisions. Journal of Financial Economics 128, 266–286.

Kogut, B., Zander, U., 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. Organization Science 3, 383–397.

Kothari, S. P., Leone, A. J., Wasley, C. H., 2005. Performance matched discretionary accruals. Journal of Accounting and Economics 39, 163–197.

Leuz, C., Triantis, A., Wang, T. Y., 2008. Why do firms go dark? Causes and economic consequences of voluntary SEC deregistrations. Journal of Accounting and Economics 45, 181–208.

Li, F., 2008. Annual report readability, current earnings and earnings persistence. Journal of Accounting and Economics 45, 221–247.

Li, X., Low, A., Makhija, A. K., 2017. Career concerns and the busy life of the young CEO. Journal of Corporate Finance 47, 88–109.

Li, Y., Lin, Y., Zhang, L., 2018. Trade secrets law and corporate disclosure: Causal evidence on the proprietary cost hypothesis. Journal of Accounting Research 56, 265–308.

Lo, K., Ramos, F., Rogo, R., 2017. Earnings management and annual report readability. Journal of Accounting and Economics 63, 1–25.

Loughran, T., McDonald, B., 2015. The use of word lists in textual analysis. The Journal of Behavioral Finance 16, 1–11.

Lydon, J. C., 1987. The deterrent effect of the uniform trade secrets act. Journal of the Patent and Trademark Office Society 69, 427–444.

Ma, M., Pan, J., 2017. Firm-manager match and executive compensation. Working Paper Harvard University.

Malsberger, B., 2004. Covenants not to compete: A state-by-state survey. BNA Books.

McConnell, C. R., Brue, S. L., Macpherson, D. A., 2017. Contemporary labor economics. McGrawHill Editions.

Menz, M., 2012. Functional Top Management Team Members: A review, synthesis and research agenda. Journal of Management 38, 45–80.

Mortensen, D. T., Pissarides, C. A., 1994. Job creation and job destruction in theory of unemployment. Review of Economic Studies 61, 397–415.

Moskowitz, T. J., Grinblatt, M., 1999. Do industries explain momentum? Journal of Finance 54, 1249–1290.

Murphy, K. J., Zábojník, I., 2004. CEO pay and appointments: A market-based explanation for recent trends. The American Economic Review 94, 192–196.

Murphy, K. J., Zábojník, I., 2007. Managerial capital and the market of CEOs. Working Paper .

Palia, D., 2000. The impact of regulation on CEO labor markets. RAND Journal of Economics 31, 165–179.

Palomino, F., Peyrache, E., 2013. Internal versus external CEO choice and the structure of compensation contracts. Journal of Financial and Quantitative Analysis 48, 1301–1331.

Pan, Y., 2017. The determinants and impact of Executive-Firm matches. Management Science 63, 185–200.

Parrino, R., 1997. CEO turnover and outside succession: A cross-sectional analysis. Journal of Financial Economics 46, 165–197.

Png, I. P., 2017. Law and innovation: Evidence from state trade secrets laws. Review of Economics and Statistics 99, 167–179.

Pooley, J., 1997. Trade secrets. Law Journal Press.

PriceWaterhouseCooper, 2002. Trends in Proprietary Information Loss: Survey Report. PricewaterhouseCoopers, U.S. Chamber of Commerce, ASIS Foundation.

Rogerson, R., Shimer, R., Wright, R., 2005. Search-theoretic models of the labor market: A survey. Journal of Economic Literature 43, 959–988.

Roychowdhury, S., 2006. Earnings management through real activities manipulation. Journal of Accounting and Economics 42, 335–370.

Salas, J. M., 2010. Entrenchment, governance and the stock price reaction to sudden executive deaths. Journal of Banking and Finance 34, 656–666.

Samuels, L. B., Johnson, B. K., 1990. Uniform trade secrets act: The states' response. Creighton Law Review 24, 49–98.

Schoar, A., 2007. CEO careers and style. Working Paper 24.

Shleifer, A., Vishny, R., 1997. A survey of corporate governance. The Journal of Finance 52, 737–783.

Starr, E., Prescott, J., Bishara, N., 2018. Noncompetes in the u.s. labor force. U of Michigan Law Econ Research Paper No.18-013 .

Terviö, M., 2008. The difference that CEOs make: An assigment model approach. American Economic Review 98, 642–668.

Worrell, D. L., Davidson III, W. N., R., C. P., Garrison, S. L., 1986. Management turnover through deaths of key executives: Effects on investor wealth. The Academy of Management Journal 29, 674–694.

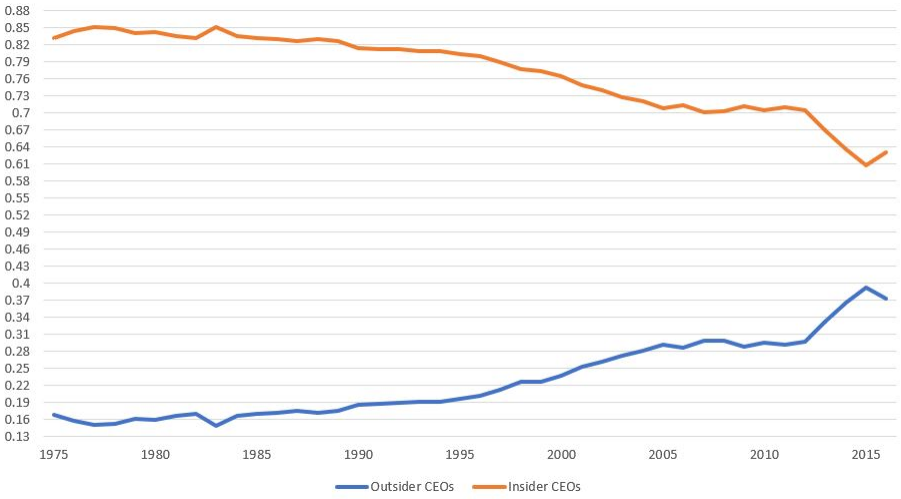
Wysocki, P. D., 2009. Assessing earnings and accruals quality: US and international evidence. Working Paper .

Zajac, E. J., 1990. Ceo selection succession, compensation and firm performance: A theoretical integration and empirical analysis. Strategic Management Journal 11, 217–230.

Zang, A., 2012. Evidence on the trade-off between real activities manipulation and accrual-based earnings management. The Accounting Review 87, 675–703.

Zhao, Y., Chen, K. H., 2008. Staggered boards and earnings management. The Accounting Review 83, 1347–1381.

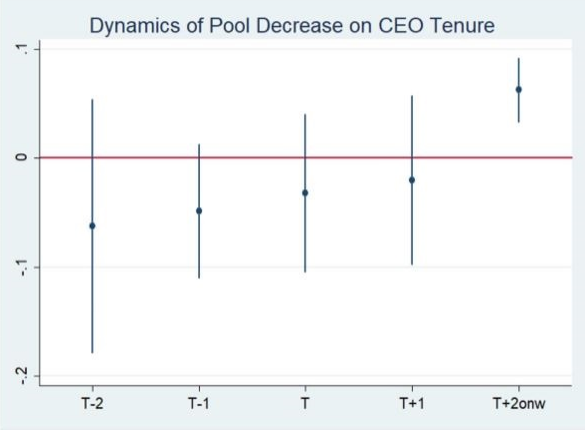
Figure 1: Outsider CEOs over time

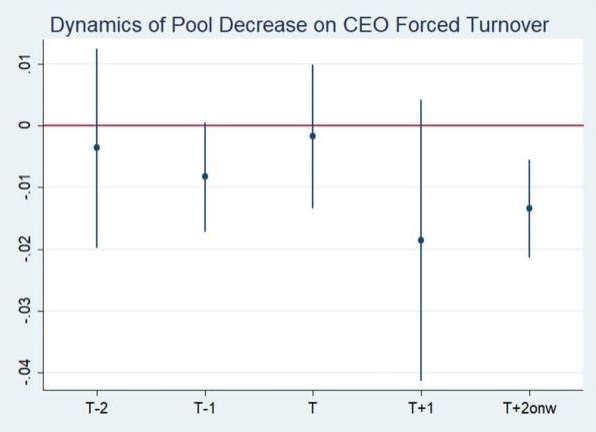


This Figure shows the time trend of the average of externally and internally appointed CEOs over the sample period.

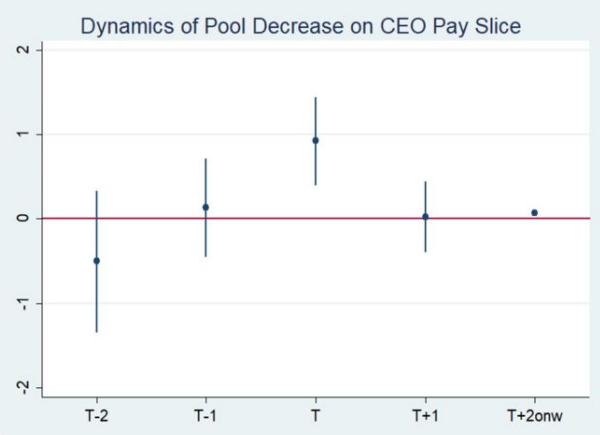
Figure 2: Parallel Trends

These two graphs shows the dynamics of Pool Decrease on CEO Tenure and CEO Forced Turnover in period t+1.





These two graphs shows the dynamics of Pool Decrease on CEO Pay Slice and CEO salary in period t+1.



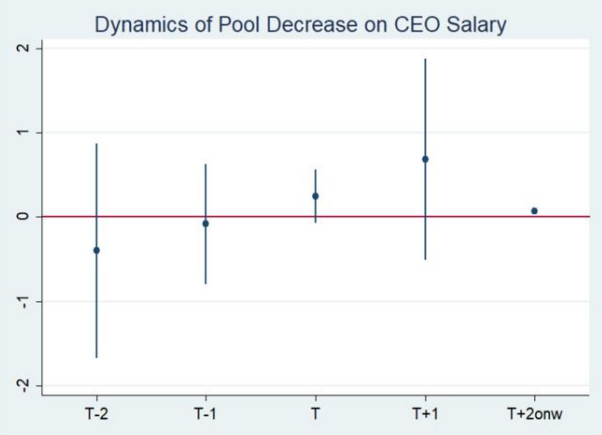


Figure 2 (Continuation)

These seven graphs show the dynamics of Pool Decrease on the different proxies of Financial Reporting Quality.

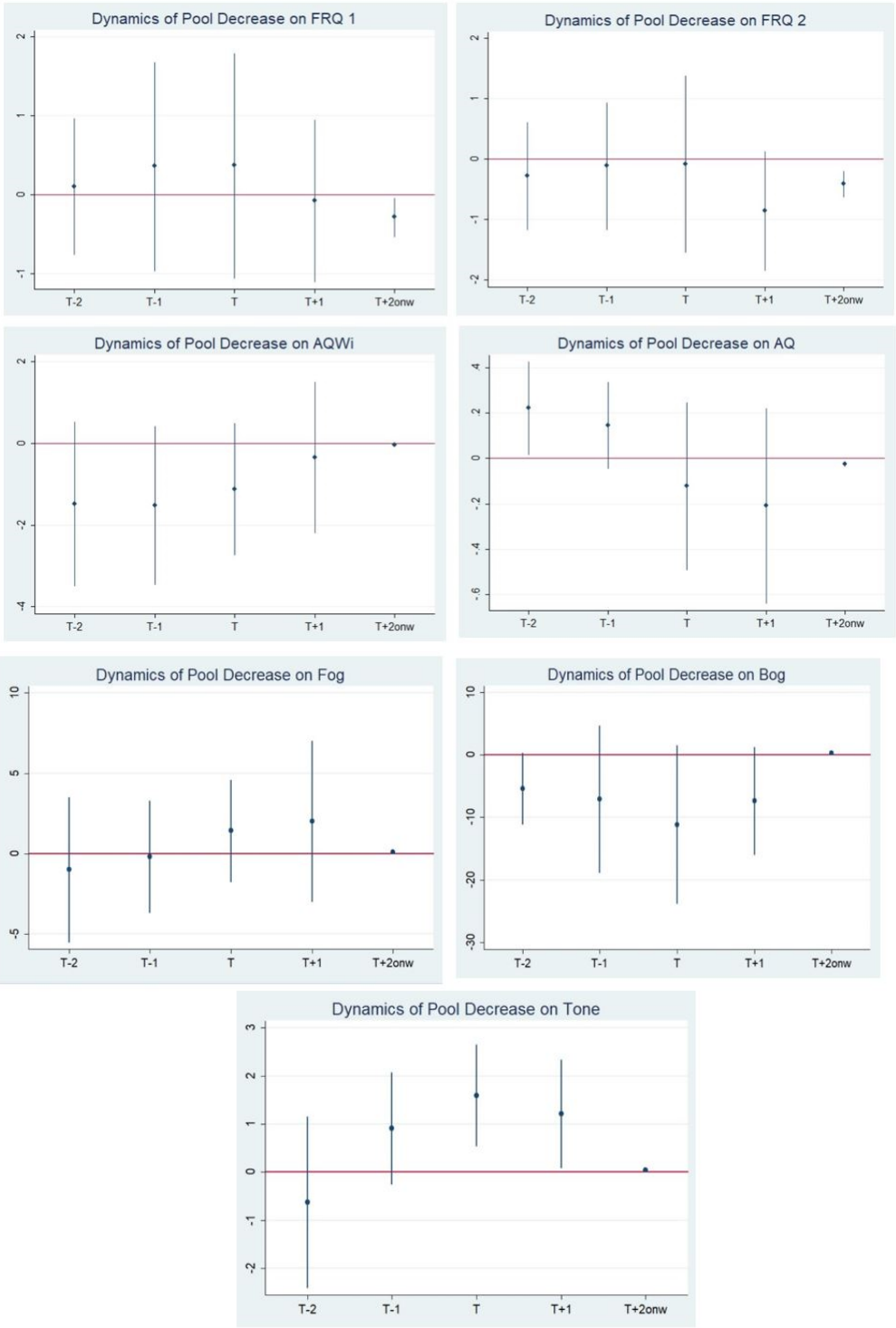


Table 1: Descriptive Statistics

PANEL A: Full Sample

	N	Mean	STD	Min	Q1	Median	Q3	Max
Pool Decrease	45,391	0.981	0.577	0	0.569	0.861	1.240	4
Percentage of Firms	45,391	0.420	0.148	0	0.338	0.419	0.518	1
Talent Pool	45,391	827	771	3	186	540	1344	5388
Total Firms	45,391	138	126	1	31	92	226	463
Total Executives	45,391	5.975	0.762	1	6	6	6	14
CEO Tenure	40,517	6.824	6.675	1	2	5	9	62
Forced Turnover	45,391	0.051	0.221	0	0	0	0	1
CPS	16,154	0.71	0.47	0.06	0.44	0.62	0.84	3.12
Salary	16,291	693	340	31	441	648	906	1800
Bonus	16,291	402	719	0	0	50	503	4063
Total Compensation	16,182	4813	5439	210	1352	2927	6049	30566
FRQ 1	43,285	-0.004	0.103	-0.398	-0.047	-0.004	0.040	0.378
FRQ 2	43,645	-0.002	0.123	-1.486	-0.044	-0.002	0.040	1.282
AQWi	34,662	1.071	0.812	0.011	0.848	1.002	1.162	87.116
AQ	34,645	-0.303	0.441	-5.488	-0.303	-0.150	-0.086	-0.003
Fog	15,710	19.508	1.693	0.905	18.526	19.351	20.252	41.845
Bog	33,055	83.535	7.816	48	79	84	89	140
Tone	9,258	-0.659	0.543	-4.596	-0.991	-0.637	-0.282	2.229
CEO-Firm match	34,240	-0.001	0.109	-0.194	-0.068	-0.016	0.039	0.442
Firm Efficiency	42,529	0.323	0.165	0	0.229	0.280	0.368	1
Firm Size	45,391	5.766	2.068	1.070	4.276	5.735	7.223	11.474
ROA	45,391	-0.060	0.641	-78.174	-0.045	0.033	0.076	5.677
MTB	45,391	3.119	4.496	-9.835	1.231	2.105	3.682	27.64
Leverage	45,391	0.588	1.857	-6.819	0.007	0.262	0.728	14.63
CEO Age	45,391	3.975	0.161	3.091	3.871	3.989	4.078	4.564
Outsider CEO	45,391	0.254	0.435	0	0	0	1	1

PANEL B: Pool Decrease and CEOs from the same industry

	Both external and internal CEOs			*Only external CEOs*		
	Group	Mean	Difference	Group	Mean	Difference
Pool Decrease 50	0	0.512	0.070***	0	0.523	0.091***
	1	0.444		1	0.432	
Pool Decrease 75	0	0.490	0.085***	0	0.491	0.026
	1	0.405		1	0.465	
Pool Decrease 90	0	0.490	0.111***	0	0.491	0.094**
	1	0.379		1	0.397	

PANEL C: Pool Decrease and Outsider CEOs

	Group	Mean	Difference
Pool Decrease 50	0	0.249	-0.028***
	1	0.277	
Pool Decrease 75	0	0.258	-0.062***
	1	0.320	
Pool Decrease 90	0	0.258	0.026
	1	0.284	

Table 1 (Continuation)

PANEL D: Outsider CEO

	(1) Outsider	(2) Outsider Same Industry	(3) Outsider Low Talent	(4) Outsider Low Talent Same Industry	(5) Outsider Diff Industry	(6) Outsider Low Talent Diff Industry
Pool Decrease	0.025**	0.012	0.027***	0.013**	0.012**	0.014*
	(2.634)	(1.356)	(3.851)	(2.580)	(2.232)	(2.003)
Firm Size	0.002	-0.003	0.001	0.002	0.005*	-0.000
	(0.542)	(-0.767)	(0.330)	(0.850)	(1.954)	(-0.131)
ROA	-0.015***	0.006	-0.074***	-0.025***	-0.022***	-0.049***
	(-2.999)	(1.428)	(-7.293)	(-3.703)	(-7.106)	(-11.533)
MTB	-0.000	0.000	-0.002***	-0.001***	-0.000	-0.001*
	(-0.210)	(0.053)	(-4.539)	(-6.030)	(-0.458)	(-1.906)
Leverage	-0.000	-0.000	0.004***	0.002***	-0.000	0.002***
	(-0.093)	(-0.026)	(4.631)	(3.695)	(-0.086)	(3.404)
CEO Age	-0.230***	-0.093***	-0.102***	-0.053***	-0.137***	-0.048**
	(-7.475)	(-4.299)	(-4.712)	(-3.368)	(-6.753)	(-2.351)
Low Manipulation	-0.000*	-0.000	0.001***	0.001***	-0.000*	0.000***
	(-1.690)	(-0.196)	(6.905)	(5.827)	(-1.734)	(3.701)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	28,331	28,331	28,331	28,331	28,331	28,331
Adj. R-sqr.	0.756	0.777	0.535	0.520	0.718	0.544

This table shows the descriptive statistics of the main variables of this study (Panels A, B and C). Panel D shows the relationship between the decrease in the pool of replacement CEOs and different outsider indicator variables that account for externally appointed CEOs from the same and different industries and with low talent (t-statistics are in parenthesis). The sample comprises 28,331 firm-year observations for the period 1980-2016. The number of observations corresponds to the remaining sample of the main analyses when all the controls are included. All variables are defined in Appendix I.

Table 2: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Pool Decrease	1													
(2) CEO Tenure	**0.017**	1												
(3) Forced Turnover	*0.009*	-0.021	1											
(4) CPS	**0.060**	0.016	-0.011	1										
(5) Salary	**0.157**	0.006	-0.011	**0.239**	1									
(6) Bonus	**-0.068**	**0.032**	*-0.016*	**0.194**	**0.292**	1								
(7) Total Compensation	**0.031**	**-0.031**	*-0.016*	**0.448**	**0.550**	**0.398**	1							
(8) FRQ 1	0.008	**-0.022**	**0.014**	**-0.025**	-0.013	-0.008	-0.001	1						
(9) FRQ 2	0.004	**-0.015**	0.008	**-0.023**	**-0.020**	-0.001	0.014	0.915	1					
(10) AQWi	**0.018**	-0.008	-0.005	0.000	**0.025**	0.003	*0.020*	0.001	0.003	1				
(11) AQ	**0.199**	**0.103**	**-0.015**	-0.006	**0.231**	**0.050**	0.011	0.006	**0.017**	**0.020**	1			
(12) Fog	0.005	-0.008	-0.009	0.018	**0.031**	-0.000	**0.051**	-0.001	-0.001	-0.003	**-0.045**	1		
(13) Bog	**-0.078**	**-0.073**	**0.054**	**0.036**	0.014	**-0.135**	**0.089**	0.009	0.008	-0.007	**-0.174**	**0.254**	1	
(14) Tone	-0.006	**0.074**	**-0.064**	-0.003	**-0.032**	**0.091**	**-0.057**	**-0.044**	*-0.021*	*0.026*	**0.077**	**-0.108**	**-0.331**	1

This table shows the Pearson correlation coefficients. All variables are defined in Appendix I. Bold (italic) numbers indicate statistical significance at 1% (5%). All the continuous variables are winsorized at the 1% and 99% to mitigate the effect of outliers.

Table 3: Pool of replacement CEOs Decrease, CEO Tenure, CEO Forced Turnover and CEO Compensation

PANEL A: CEO's Tenure

	(1) CEO Tenure	(2) CEO Tenure$_{t+1}$	(3) CEO Tenure$_{t+2}$	(4) Aggregated Tenure
Pool Decrease	0.055***	0.059***	0.072***	0.162***
	(3.820)	(3.543)	(3.778)	(2.769)
Firm Size	0.036***	0.027***	0.012	0.025
	(4.175)	(2.901)	(1.263)	(0.757)
ROA	0.002	0.030***	0.045***	0.206***
	(0.535)	(3.769)	(3.453)	(3.814)
MTB	0.002	0.002***	0.004***	0.009***
	(1.535)	(2.936)	(5.223)	(3.932)
Leverage	-0.000	-0.004	-0.008***	-0.010
	(-0.066)	(-1.398)	(-2.846)	(-1.215)
CEO Age	3.085***	1.835***	1.183***	3.887***
	(26.712)	(22.828)	(16.259)	(21.551)
Outsider CEO	-0.046	-0.009	-0.009	-0.024
	(-1.538)	(-0.448)	(-0.405)	(-0.387)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	40,481	36,449	32,748	27,411
Adj. R-sqr.	0.516	0.437	0.411	0.545

PANEL B: CEO's Forced Turnover

	(1) Forced Turnover	(2) Forced Turnover$_{t+1}$	(3) Forced Turnover$_{t+2}$	(4) Aggregated Forced Turnover
Pool Decrease	-0.009***	-0.013***	-0.012***	-0.019***
	(-3.963)	(-2.858)	(-2.986)	(-2.803)
Firm Size	-0.004***	0.004***	0.010***	0.020***
	(-3.039)	(3.648)	(8.258)	(5.713))
ROA	-0.005**	-0.008***	-0.001	-0.015**
	(-2.040)	(-3.911)	(-0.410)	(-2.337)
MTB	-0.003***	-0.002***	0.000	0.000
	(-11.709)	(-9.094)	(-0.211)	(0.806)
Leverage	0.003***	0.002***	0.001**	-0.001
	(4.535)	(4.766)	(2.112)	(-1.236)
CEO Age	0.087***	0.077***	0.065***	0.099***
	(13.258)	(8.349)	(5.034)	(4.193)
Outsider CEO	0.020***	0.025***	0.012**	0.042***
	(5.019)	(4.790)	(2.390)	(3.361)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	45,391	40,608	36,346	32,214
Adj. R-sqr.	0.073	0.085	0.078	0.261

Table 3 (Continuation)

PANEL C: Sensitivity of Turnover to Firm Performance				
	(1) Forced Turnover$_{t+1}$	(2) Forced Turnover$_{t+2}$	(3) Forced Turnover$_{t+1}$	(4) Forced Turnover$_{t+2}$
Pool Decrease	-0.022***	-0.015***	-0.022***	-0.015***
	(-3.976)	(-3.338)	(-4.042)	(-3.328)
Pool Decrease*ChangRet	(-5.701)	(0.424)		
	(0.008)	(0.014)		
ChangRet	-0.169***	-0.006		
	(-17.540)	(-0.523)		
ChangAdjRet			-0.171***	-0.005
			(-17.941)	(-0.390)
Pool Decrease* ChangAdjRet			-0.042***	0.006
			(-5.409)	(0.358)
Firm Size	-0.001	0.008***	-0.001	0.008***
	(-0.442)	(4.618)	(-0.339)	(4.629)
MTB	-0.003***	0.000	-0.003***	0.000
	(-5.356)	(0.899)	(-5.288)	(0.895)
Leverage	0.003***	0.001	0.003***	0.001
	(3.992)	(1.544)	(3.961)	(1.536)
CEO Age	0.095***	0.078***	0.095***	0.078***
	(7.716)	(5.237)	(7.715)	(5.238)
Outsider CEO	0.037***	0.018***	0.037***	0.018***
	(7.023)	(3.670)	(6.977)	(3.667)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	31,559	28,226	31,559	28,226
Adj. R-sqr.	0.117	0.082	0.116	0.082
PANEL D: CEO's Compensation				
	(1) CEO Pay Slice	(2) Salary	(3) Bonus	(4) Total Compensation
Pool Decrease	0.080***	0.067***	-0.078	0.018
	(5.764)	(4.065)	(-0.955)	(0.757)
Firm Size	0.036***	0.175***	0.090**	0.384***
	(5.257)	(22.448)	(2.529)	(41.385)
ROA	0.046**	0.107***	1.767***	0.356***
	(2.406)	(3.080)	(9.070)	(6.487)
MTB	0.007***	0.006***	0.055***	0.038***
	(5.528)	(8.055)	(10.208)	(15.999)
Leverage	-0.015***	-0.019***	-0.132***	-0.063***
	(-10.808)	(-9.244)	(-8.790)	(-18.972)
CEO Age	-0.051*	0.160***	0.389	-0.058
	(-1.719)	(4.910)	(1.132)	(-1.164)
Outsider CEO	0.029**	0.027*	0.484***	0.015
	(2.206)	(1.697)	(7.534)	(0.967)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	16,112	16,251	16,251	16,142
Adj. R-sqr.	0.273	0.588	0.533	0.662

This table shows the relationship between the decrease in the pool of replacement CEOs and CEOs' tenure, CEOs' forced turnover, sensitivity of turnover to firm performance and compensation. Panel A shows the relationship between *Pool Decrease* and CEO Tenure. The dependent variables are in logarithm. Panel B shows the relationship between *Pool Decrease* and CEO Forced Turnover. Panel C shows the relationship between *Pool Decrease* and sensitivity of turnover to firm performance. Panel D shows the relationship between *Pool Decrease* and CEO compensation. Dependent variables in columns (2), (3) and (4) of Panel C are in logarithm. All variables are defined in Appendix I. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Pool of replacement CEOs Decrease and Financial Reporting Quality

	(1) FRQ 1	(2) FRQ 2	(3) AQWi	(4) AQ	(5) Fog	(6) Bog	(7) Tone
Pool Decrease	-0.270**	-0.404***	-0.023**	-0.041***	0.088**	0.338***	0.048**
	(-2.163)	(-3.770)	(-2.252)	(-5.298)	(2.369)	(3.042)	(2.596)
Cycle	-0.005***	-0.007***	0.000	0.000	- 0.000	-0.001***	0.000
	(-8.427)	(-10.827)	(-0.105)	(-0.201)	(-0.318)	(-5.003)	(0.235)
REM	-1.678***	-2.873***	0.041**	-0.022**	0.025	0.300***	-0.033
	(-7.862)	(-8.713)	(2.248)	(-2.662)	(0.820)	(2.806)	(-1.304)
Audit Tenure	0.173	0.040	0.021***	0.067***	-0.052	-0.390***	-0.020
	(1.114)	(-0.249)	(-2.699)	(6.011)	(-1.503)	(-5.176)	(-1.498)
Big8	-0.188	-0.188	0.032	-0.039***	0.008	0.909***	0.089*
	(-1.327)	(-1.111)	(0.715)	(-3.518)	(0.142)	(6.590)	(1.867)
Firm Size	-0.165	0.298	-0.009*	-0.031***	-0.054	0.220***	0.081***
	(-0.934)	(1.372)	(-1.887)	(-3.624)	(-1.560)	(3.300)	(8.323)
ROA	-2.121***	-2.767***	0.008***	0.003	-0.039***	-0.232***	0.147***
	(-6.402)	(-10.287)	(4.791)	(0.758)	(-2.984)	(-5.956)	(4.159)
MTB	-0.059***	-0.015	0.002***	-0.004***	-0.010**	-0.011	0.008***
	(-3.887)	(-0.665)	(3.182)	(-6.989)	(-2.641)	(-1.197)	(4.454)
Leverage	0.018	-0.045	-0.003*	0.005***	0.041***	0.069***	-0.018***
	(0.566)	(-1.173)	(-1.694)	(5.334)	(4.372)	(3.018)	(-5.629)
CEO Age	0.001	-0.444	0.038	0.172***	0.040	-0.607	-0.043
	(0.002)	(-0.439)	(1.376)	(7.184)	(0.335)	(-1.592)	(-0.823)
Outsider CEO	-0.100	-0.211	0.041***	0.015*	0.075**	0.113	0.003
	(-0.545)	(-1.087)	(5.588)	(1.986)	(2.418)	(1.310)	(0.113)
Early Years	0.073	0.036	0.01	-0.015***	0.012	0.028	-0.062***
	(0.998)	(0.470)	(1.605)	(-4.372)	(0.419)	(0.491)	(-3.618)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	40,085	40,085	32,648	32,634	14,909	30,951	8,762
Adj. R-sqr.	0.089	0.086	0.216	0.633	0.274	0.780	0.639

This table shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality considering both financial (Columns 1, 2, 3 and 4) and disclosure measures (Columns 5, 6 and 7). Dependent variables *FRQ 1* and *FRQ 2* are multiplied by 100 to ease the coefficients interpretation. All variables are defined in Appendix I. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Pool of Replacement CEOs Decrease by Subsamples

PANEL A: Subsample of high and low technological firms

	High technological firms							*Low technological firms*						
	(1) FRQ 1	(2) FRQ 2	(3) AQWi	(4) AQ	(5) Fog	(6) Bog	(7) Tone	(8) FRQ 1	(9) FRQ 2	(10) AQWi	(11) AQ	(12) Fog	(13) Bog	(14) Tone
Pool Decrease	-0.998***	-1.040***	0.019	-0.090***	0.183	0.641**	-0.044	-0.237*	-0.332**	-0.037***	-0.009	0.062	0.156	0.061***
	(-3.811)	(-2.754)	(0.748)	(-3.179)	(0.941)	(2.164)	(-1.297)	(-1.684)	(-2.618)	(-2.922)	(-1.660)	(0.875)	(1.159)	(3.600)
CYCLE	-0.005***	-0.007***	0.000	0.000	0.000	0.002***	-0.000	-0.005***	-0.008***	0.000	-0.000**	0.000	0.000	0.000
	(-6.655)	(-8.802)	(1.029)	(0.718)	(0.800)	(7.515)	(-1.041)	(-6.090)	(-7.695)	(-0.932)	(-2.515)	(-0.708)	(-0.791)	(0.933)
REM	-1.830***	-3.369***	0.010*	-0.028*	-0.028	-0.402***	0.065***	-1.616**	-2.387***	0.088*	0.005	-0.02	0.052	-0.009
	(-2.745)	(-4.511)	(1.824)	(-1.892)	(-0.930)	(-3.407)	(5.079)	(-2.457)	(-4.740)	(1.825)	(0.391)	(-0.292)	(0.277)	(-0.235)
Audit Tenure	-0.141	-0.409	-0.009	0.110***	0.021	0.709***	-0.007	0.366***	0.182	-0.022**	0.026	0.063	0.141	-0.007
	(-0.599)	(-1.616)	(-0.450)	(9.777)	(0.446)	(5.100)	(-0.346)	(3.334)	(1.546)	(-2.312)	(3.928)	(1.157)	(0.932)	(1.613)
BIG8	-0.786**	-0.879**	-0.001	-0.017	0.155	-1.098***	-0.178	0.062	0.165	0.047	-0.011	-0.088	-0.558***	-0.026
	(-2.562)	(-2.698)	(-0.067)	(-0.847)	(1.449)	(-2.917)	(-1.686)	(0.236)	(0.649)	(0.602)	(-1.256)	(-1.028)	(-2.915)	(-0.714)
Firm Size	0.198	0.890***	0.005	-0.047***	0.121**	-0.267**	-0.071***	-0.388***	-0.114	-0.028***	-0.018**	-0.015	-0.294***	-0.091***
	(0.671)	(2.971)	(1.556)	(-4.175)	(2.574)	(-2.501)	(-6.279)	(-2.992)	(-0.709)	(-2.780)	(-2.084)	(-0.510)	(-4.390)	(-5.033)
ROA	-1.726***	-2.365***	0.005***	0.007*	0.005	0.163***	-0.052***	-4.291***	-5.060***	0.010	-0.018	0.094***	0.594***	-0.344***
	(-5.575)	(-7.718)	(3.288)	(1.712)	(0.395)	(8.277)	(-3.733)	(-8.175)	(-5.017)	(1.318)	(-1.537)	(3.818)	(4.415)	(-7.143)
MTB	-0.121***	-0.116**	0.001	-0.002**	0.007	0.002	-0.004**	0.034	0.125***	0.004***	-0.002***	0.013***	0.040***	-0.010***
	(-3.707)	(-2.573)	(0.854)	(-2.102)	(1.425)	(0.196)	(-2.137)	(1.410)	(4.066)	(2.821)	(-5.193)	(3.030)	(3.989)	(-2.958)
Leverage	0.121*	0.136*	0.000	0.002	-0.020**	0.008	0.010	-0.087***	-0.203***	-0.003	0.003***	-0.049***	-0.123***	0.020***
	(1.902)	(1.749)	(-0.336)	(1.017)	(-2.292)	(0.266)	(1.463)	(-3.559)	(-6.798)	(-1.595)	(4.838)	(-4.392)	(-4.848)	(2.825)
CEO Age	-1.086	-1.125	-0.014	0.213***	-0.149	-0.729	-0.088	0.881**	0.329	0.089*	0.112***	0.017	1.199***	0.128**
	(-0.648)	(-0.591)	(-0.473)	(4.887)	(-0.585)	(-0.854)	(-1.354)	(2.260)	(0.602)	(1.752)	(7.573)	(0.073)	(2.949)	(2.273)
Outsider CEO	0.541	0.455	0.017	0.031*	0.069	0.085	-0.105**	-0.534***	-0.689***	0.061***	-0.003	-0.159***	-0.310**	0.051*
	(1.486)	(1.645)	(1.097)	(1.766)	(1.446)	(0.488)	(-2.135)	(-3.227)	(-2.921)	(4.255)	(-0.617)	(-3.154)	(-2.249)	(1.769)
Early Years	0.030	0.014	-0.008*	-0.034***	-0.002	-0.103	0.016	0.117	0.074	0.021**	-0.003	-0.022	0.006	0.084***
	(0.196)	(0.087)	(-1.945)	(-5.958)	(-0.031)	(-1.289)	(0.764)	(1.386)	(0.706)	(2.606)	(-0.832)	(-0.794)	(0.092)	(5.365)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	14,877	14,877	12,367	12,363	4,926	11,941	2,716	25,208	25,208	20,281	20,271	9,983	19,010	6,046
Adj.R-sqr.	0.065	0.065	0.039	0.614	0.249	0.745	0.659	0.113	0.111	0.271	0.62	0.286	0.747	0.620

Table 5 (Continuation)

PANEL B: Subsample of high and low compentition

	High competition firms							*Low competition firms*						
	(1) FRQ 1	(2) FRQ 2	(3) AQWi	(4) AQ	(5) Fog	(6) Bog	(7) Tone	(8) FRQ 1	(9) FRQ 2	(10) AQWi	(11) AQ	(12) Fog	(13) Bog	(14) Tone
Pool Decrease	-0.415**	-0.482**	-0.019	-0.048***	0.039	0.466***	0.040*	-0.031	-0.275	-0.071***	-0.004	0.176	-0.074	0.063
	(-2.043)	(-2.535)	(-1.417)	(-6.043)	(0.845)	(4.341)	(1.976)	(-0.065)	(-0.617)	(-4.118)	(-1.378)	(1.553)	(-0.370)	(1.014)
Cycle	-0.005***	-0.007***	0.000	0.000	0.000	0.001***	0.000	-0.022***	-0.025***	0.000	0.000	0.002***	0.002	-0.001**
	(-7.845)	(-10.206)	(-0.106)	(-0.341)	(-0.002)	(5.859)	(0.679)	(-5.072)	(-5.708)	(-0.543)	(1.104)	(4.086)	(0.806)	(-2.643)
REM	-1.633***	-2.908***	0.043**	-0.022**	-0.016	-0.258**	0.053**	-2.797***	-2.936***	0.013	0.006	0.074	-0.213	-0.153***
	(-6.475)	(-8.005)	(2.521)	(-2.496)	(-0.603)	(-2.502)	(2.037)	(-4.397)	(-6.520)	(0.562)	(1.376)	(0.401)	(-0.580)	(-2.979)
Audit Tenure	0.154	-0.057	-0.018**	0.070***	0.041	0.348***	0.025	-0.015	-0.086	0.005	0.017***	0.084	0.347	-0.007
	(0.903)	(-0.319)	(-2.027)	(6.458)	(0.990)	(5.165)	(1.654)	(-0.108)	(-0.583)	(0.305)	(4.777)	(0.592)	(1.058)	(-0.331)
Big8	-0.116	-0.158	0.02	-0.022**	0.031	-0.777***	-0.070*	0.358	0.272	0.353**	0.004	-1.026	0.027	-0.076
	(-0.824)	(-0.919)	(0.394)	(-2.341)	(0.547)	(-5.352)	(-1.720)	(0.514)	(0.228)	(2.545)	(0.466)	(-1.400)	(0.027)	(-0.967)
Firm Size	-0.234	0.337	-0.015***	-0.040***	0.052	-0.269***	-0.109***	-0.164	0.132	0.046	-0.009**	-0.006	-0.048	0.004
	(-1.017)	(1.253)	(-2.777)	(-4.066)	(1.574)	(-3.682)	(-10.083)	(-0.551)	(0.369)	(1.340)	(-2.184)	(-0.042)	(-0.186)	(0.141)
ROA	-2.092***	-2.764***	0.009***	0.004	0.042***	0.235***	-0.100***	-11.743***	-9.337***	-0.091	0.084**	-0.218	4.456***	-1.457***
	(-6.656)	(-10.344)	(5.077)	(1.022)	(2.894)	(6.213)	(-3.775)	(-4.241)	(-4.694)	(-0.590)	(2.565)	(-0.265)	(2.985)	(-7.173)
MTB	-0.066***	-0.025	0.003***	-0.004***	0.007*	0.002	-0.008***	0.100*	0.141***	0.002	-0.002***	0.021*	0.096***	-0.002
	(-4.135)	(-1.086)	(3.657)	(-6.806)	(1.857)	(0.178)	(-4.381)	(1.717)	(2.773)	(0.604)	(-3.958)	(2.000)	(4.343)	(-0.439)
Leverage	0.032	-0.033	-0.002	0.006***	-0.035***	-0.072***	0.020***	-0.233**	-0.263**	-0.009*	0.002**	-0.056***	-0.058	0.003
	(1.166)	(-0.895)	(-1.371)	(5.058)	(-3.529)	(-2.831)	(6.599)	(-2.381)	(-2.735)	(-1.968)	(2.358)	(-3.033)	(-1.643)	(0.453)
CEO Age	-0.299	-0.78	0.033	0.190***	0.036	0.383	-0.043	-0.023	-0.296	0.138	-0.002	-0.698	1.445	0.173*
	(-0.358)	(-0.738)	(1.310)	(7.806)	(0.274)	(0.687)	(-0.940)	(-0.032)	(-0.389)	(0.958)	(-0.135)	(-1.251)	(0.831)	(1.979)
Outsider CEO	-0.195	-0.258	0.049***	0.009	-0.085*	-0.179**	-0.025	0.236	0.014	-0.005	0.01	-0.143	-0.043	0.034
	(-1.072)	(-1.370)	(5.875)	(1.667)	(-1.688)	(-2.100)	(-0.892)	(1.488)	(0.091)	(-0.224)	(0.868)	(-1.477)	(-0.096)	(1.104)
Early Years	0.081	0.071	0.002	-0.015***	-0.025	-0.011	0.055***	-0.011	-0.143	0.027	-0.005**	0.019	0.134	0.078**
	(1.086)	(0.955)	(0.250)	(-3.814)	(-0.878)	(-0.187)	(3.581)	(-0.074)	(-0.978)	(1.277)	(-2.614)	(0.469)	(1.268)	(2.399)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	34,988	34,988	28,523	28,509	12,554	27,037	6,604	4,959	4,959	4,009	4,009	2,293	3,747	2,113
Adj. R-sqr.	0.083	0.08	0.212	0.629	0.26	0.786	0.666	0.151	0.134	0.249	0.53	0.366	0.783	0.632

Panel A shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality for the subsample of high technological firms (Columns 1, 2, 3, 4, 5, 6 and 7) and for the subsample of low technological firms (Columns 8, 9, 10, 11, 12, 13 and 14). Panel B shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality for the subsample of firms with high (Columns 1, 2, 3, 4, 5, 6 and 7) and low (Columns 8, 9, 10, 11, 12, 13 and 14) competence using the Herfindahl index. Dependent variables *FRQ 1* and *FRQ 2* are multiplied by 100 to ease the coefficients interpretation. All variables are defined in Appendix I. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 6: Pool of Replacement CEOs Decrease, CEO-firm Match and Firm Efficiency

	(1) CEO-firm match	(2) CEO-firm match$_{t+1}$	(3) CEO-firm match$_{t+2}$	(4) Firm Efficiency	(5) Firm Efficiency$_{t+1}$	(6) Firm Efficiency$_{t+2}$
Pool Decrease	-0.007***	-0.005***	-0.003	-0.005**	-0.006**	-0.010***
	(-5.067)	(-2.982)	(-1.027)	(-2.114)	(-2.061)	(-3.122)
Firm Size	0.005***	0.005***	0.005***	0.042***	0.030***	0.024***
	(7.624)	(6.239)	(5.649)	(31.614)	(15.093)	(12.034)
ROA	0.014***	0.012***	0.007***	0.051***	0.015***	0.010***
	(6.091)	(4.086)	(3.409)	(7.532)	(3.799)	(3.157)
MTB	0.001***	0.001***	0.001***	0.003***	0.004***	0.002***
	(8.638)	(9.663)	(9.029)	(10.759)	(13.229)	(8.909)
Leverage	-0.002***	-0.002***	-0.002***	-0.005***	-0.005***	-0.003***
	(-6.875)	(-10.008)	(-10.348)	(-13.346)	(-12.048)	(-6.519)
CEO Age	0.017**	0.015**	0.012	0.006	0.011*	0.014**
	(2.242)	(2.161)	(1.467)	(1.331)	(1.701)	(2.253)
Outsider CEO	-0.016***	-0.009***	-0.007**	-0.003	-0.005**	-0.004
	(-6.755)	(-4.096)	(-2.637)	(-1.232)	(-2.598)	(-1.195)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	34,221	30,585	27,366	42,457	38,410	34,533
Adj. R-sqr.	0.84	0.838	0.841	0.643	0.634	0.636

This table shows the relationship between the decrease in the pool of replacement CEOs and current and future *CEO-Firm match* and *Firm Efficiency*. All variables are defined in Appendix I. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 7: Pool of Replacement CEOs Decrease and Future Firm Performance

	(1) AdjROA	(2) AdjROA$_{t+1}$	(3) AdjROA$_{t+2}$	(4) AdjRet	(5) AdjRet$_{t+1}$	(6) AdjRet$_{t+2}$
Pool Decrease	-0.023***	-0.026***	-0.028***	-0.002	-0.005*	-0.003*
	(-10.422)	(-8.036)	(-8.157)	(-0.808)	(-1.939)	(-1.872)
Firm Size	0.089***	0.007**	-0.010***	-0.006***	-0.013***	-0.009***
	(12.365)	(2.016)	(-3.051)	(-6.717)	(-15.787)	(-8.420)
Returns	0.023***	0.044***	0.013***			
	(2.731)	(7.056)	(3.270)			
ROA				0.009*	-0.002	0.010***
				(1.801)	(-0.376)	(4.193)
MTB	0.006***	0.003***	0.000	0.003***	-0.001***	-0.001***
	(6.689)	(5.627)	(-0.390)	(18.099)	(-4.479)	(-4.291)
Leverage	-0.010***	-0.007***	0.001	-0.004***	0.001	0.002***
	(-8.765)	(-6.225)	(0.449)	(-10.038)	(1.111)	(4.341)
CEO Age	-0.028*	0.006	0.009	-0.006	0.000	-0.007
	(-1.850)	(0.509)	(1.021)	(-1.101)	(-0.065)	(-1.031)
Outsider CEO	-0.025***	-0.009	0.006	-0.001	-0.001	0.004
	(-6.749)	(-1.497)	(1.050)	(-0.316)	(-0.306)	(1.609)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	39,549	35,397	31,666	39,549	36,233	32,588
Adj. R-sqr.	0.442	0.437	0.461	0.018	0.014	0.017

This table shows the relationship between the decrease in the pool of replacement CEOs and current and future firm performance measured using industry-adjusted ROA (Columns 1, 2 and 3) and industry-adjusted Returns (Columns 4, 5 and 6). All variables are defined in Appendix I. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 8: Pool Decrease by "Winners" Subsamples

PANEL A: CEO Tenure

	Winners 1 = 1	*Winners 2 = 1*	*Winners 1 = 0*	*Winners 2 = 0*
	(1) CEO Tenure	(2) CEO Tenure	(3) CEO Tenure	(4) CEO Tenure
Pool Decrease	0.069	0.339***	0.061***	0.065***
	(0.580)	(4.482)	(4.496)	(4.261)
Firm Size	0.169***	0.316*	0.022*	0.026**
	(6.097)	(1.910)	(1.819)	(2.400)
ROA	0.223	0.163	0.030**	0.031***
	(0.981)	(0.528)	(2.649)	(2.712)
MTB	0.000	0.015**	0.003	0.003
	(0.035)	(2.274)	(1.348)	(1.337)
Leverage	0.029***	-0.011	-0.001	-0.001
	(3.405)	(-0.588)	(-0.344)	(-0.369)
CEO Age	3.673***	3.935***	3.160***	3.150***
	(3.558)	(4.850)	(23.886)	(24.375)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	591	198	34,555	34,938
Adj. R-sqr.	0.777	0.780	0.518	0.519

PANEL B: CEO Forced Turnover

	Winners 1 = 1	*Winners 2 = 1*	*Winners 1 = 0*	*Winners 2 = 0*
	(1) Forced Turnover	(2) Forced Turnover	(3) Forced Turnover	(4) Forced Turnover
Pool Decrease	-0.075***	-0.097*	-0.011***	-0.011***
	(-4.476)	(-2.032)	(-4.710)	(-4.353)
Firm Size	-0.048***	0.005	-0.003**	-0.003**
	(-11.243)	(0.196)	(-2.020)	(-2.031)
ROA	0.000	0.228***	-0.032***	-0.033***
	(0.001)	(3.062)	(-11.569)	(-11.398)
MTB	-0.003	-0.005**	-0.003***	-0.003***
	(-0.670)	(-2.390)	(-11.177)	(-10.494)
Leverage	-0.003	-0.001	0.003***	0.003***
	(-0.741)	(-0.060)	(4.795)	(4.838)
CEO Age	0.186***	0.631	0.083***	0.082***
	(4.158)	(1.228)	(10.769)	(10.243)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	652	210	38,904	39,337
Adj. R-sqr.	0.176	0.207	0.074	0.074

This table shows the relationship between the decrease in the pool of replacement CEOs and *CEO Tenure* and *Forced Turnover* by "Winners" subsamples. All variables are defined in Appendix I. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 9: Pool of Replacement CEOs Decrease and Firm Over-investment

	(1) Overinv Firm	(2) Overinv Year	(3) Overinv Industry	(4) Overinv Firm	(5) Overinv Year	(6) Overinv Industry
Pool Decrease	0.060	0.022**	0.005	0.127*	0.019***	0.016**
	(0.902)	(2.232)	(0.941)	(1.748)	(2.842)	(2.498)
Firm Size	-0.570***	-0.112***	-0.011***	-0.393***	-0.021***	-0.001
	(-14.257)	(-32.531)	(-4.858)	(-9.532)	(-5.734)	(-1.342)
ROA	0.240***	-0.011***	0.004	0.164***	-0.068***	0.008***
	(4.607)	(-3.931)	(1.523)	(5.247)	(-5.497)	(3.297)
MTB	0.155***	0.009***	0.001***	0.252***	0.014***	0.001**
	(13.196)	(9.878)	(2.984)	(14.608)	(13.417)	(2.566)
Leverage	-0.386***	-0.020***	0.000	-0.648***	-0.029***	0.000
	(-8.768)	(-9.510)	(-0.601)	(-9.373)	(-12.919)	(-0.959)
CEO Age	-0.381	0.092***	0.016	-0.475***	-0.032	0.005
	(-1.601)	(6.684)	(1.309)	(-3.638)	(-1.474)	(0.969)
Outsider CEO	-0.173**	0.01	-0.014***	-0.151	-0.005	-0.008***
	(-2.688)	(1.661)	(-2.732)	(-1.439)	(-0.578)	(-3.640)
Firm FE	YES	YES	YES	NO	NO	NO
Industry FE	NO	NO	NO	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	3,202	1,496	3,180	12,961	6,772	12,870
Adj. R-sqr.	0.555	0.625	0.637	0.618	0.605	0.676

This table shows the relationship between the decrease in the pool of replacement CEOs and firm over-investment decisions. Over-investment proxies are calculated following Biddle et al. (2009). All variables are defined in Apenddix I. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 10: Alternative Measure of Pool of replacement CEOs Decrease

	(1) FRQ 1	(2) FRQ 2	(3) AQWi	(4) AQ	(5) Fog	(6) Bog	(7) Tone
Pool Decrease Ability	-0.183	-0.255***	-0.013	-0.014***	0.017	0.160**	0.035***
	(-1.600)	(-2.900)	(-0.923)	(-3.649)	(0.441)	(2.157)	(2.977)
Cycle	-0.005***	-0.007***	0.000*	-0.000	0.000	0.001***	-0.000
	(-8.298)	(-10.710)	(1.736)	(-0.087)	(0.302)	(5.073)	(-0.528)
REM	-1.657***	-2.858***	0.040**	-0.023**	-0.025	-0.301***	0.033
	(-7.903)	(-8.821)	(2.203)	(-2.679)	(-0.796)	(-2.811)	(1.319)
Audit Tenure	0.177	-0.040	-0.019**	0.068***	0.051	0.399***	0.019
	(1.101)	(-0.238)	(-2.312)	(6.113)	(1.394)	(5.293)	(1.410)
Big8	-0.186	-0.185	0.029	-0.040***	0.000	-0.939***	-0.089*
	(-1.285)	(-1.046)	(0.686)	(-3.599)	(0.007)	(-6.625)	(-1.766)
Firm Size	-0.156	0.315	-0.009*	-0.031***	0.057	-0.216***	-0.080****
	(-0.917)	(1.468)	(-1.927)	(-3.587)	(1.622)	(-3.130)	(-8.484)
ROA	-2.122***	-2.775***	0.008***	0.003	0.039***	0.229***	-0.145***
	(-6.387)	(-10.248)	(4.732)	(0.751)	(2.918)	(6.054)	(-4.241)
MTB	-0.057***	-0.013	0.002***	-0.004***	0.010***	0.010	-0.008***
	(-3.683)	(-0.567)	(3.193)	(-6.715)	(2.835)	(1.104)	(-4.507)
Leverage	0.018	-0.047	-0.003*	0.005***	-0.043***	-0.067***	0.017***
	(0.533)	(-1.168)	(-1.833)	(5.110)	(-4.562)	(-2.937)	(5.665)
CEO Age	-0.028	-0.487	0.032	0.174***	-0.037	0.604	0.041
	(-0.032)	(-0.471)	(1.164)	(7.127)	(-0.293)	(1.557)	(0.759)
Outsider CEO	-0.103	-0.218	0.042***	0.015*	-0.072**	-0.107	-0.003
	(-0.534)	(-1.054)	(5.772)	(1.958)	(-2.330)	(-1.216)	(-0.124)
Early Years	0.077	0.043	0.010*	-0.014***	-0.010	-0.018	0.062***
	(1.040)	(0.558)	(1.729)	(-4.177)	(-0.341)	(-0.333)	(3.549)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	39,551	39,551	32,379	32,365	14,812	30,636	8,691
Adj. R-sqr.	0.088	0.085	0.218	0.633	0.275	0.780	0.638

This table shows the relationship between the decrease in the pool of replacement CEOs and financial reporting quality usinag an alternative proxy for decrease in the pool of replacement CEOs (*Pool Decrease Ability*) that accounts for firms' talent loss. All variables are defined in Apenddix I. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 11: IDD and NCA

PANEL A: CEO Tenure				
	(1) CEO Tenure	(2) CEO Tenure$_{t+1}$	(3) CEO Tenure$_{t+2}$	(4) Aggregated Tenure
Pool Decrease	0.051***	0.055***	0.068***	0.154**
	(3.308)	(3.063)	(3.375)	(2.455)
IDD	0.033	0.046	0.056	0.099
	(0.744)	(1.140)	(1.111)	(0.767)
NCA	0.012***	0.008*	0.006	0.015
	(4.251)	(1.734)	(1.471)	(1.424)
Firm Size	0.038***	0.028***	0.013	0.025
	(4.320)	(2.901)	(1.370)	(0.809)
ROA	0.001	0.031***	0.044***	0.200***
	(0.346)	(3.544)	(3.214)	(3.582)
MTB	0.002	0.002**	0.004***	0.008***
	(1.460)	(2.554)	(5.204)	(3.632)
Leverage	-0.000	-0.004	-0.008***	-0.010
	(-0.043)	(-1.450)	(-2.989)	(-1.229)
CEO Age	3.072***	1.825***	1.176***	3.850***
	(27.444)	(23.683)	(16.801)	(21.142)
Outsider CEO	-0.048*	-0.011	-0.012	-0.036
	(-1.716)	(-0.582)	(-0.516)	(-0.573)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	39,749	35,793	32,159	26,917
Adj. R-sqr.	0.516	0.437	0.412	0.546
PANEL B: Forced Turnover				
	(1) Forced Turnover	(2) Forced Turnover$_{t+1}$	(3) Forced Turnover$_{t+2}$	(4) Aggregated Forced Turnover
Pool Decrease	-0.009***	-0.013***	-0.012***	-0.018***
	(-3.910)	(-2.775)	(-3.036)	(-2.802)
IDD	-0.010***	-0.010***	-0.008*	-0.023**
	(-3.570)	(-3.696)	(-1.963)	(-2.297)
NCA	-0.000	-0.001	-0.001	0.000
	(-0.096)	(-1.103)	(-0.909)	(0.105)
Firm Size	-0.004***	0.004***	0.010***	0.021***
	(-2.712)	(3.457)	(7.451)	(6.478)
ROA	-0.005**	-0.009***	-0.001	-0.015**
	(-2.067)	(-3.303)	(-0.417)	(-2.251)
MTB	-0.003***	-0.002***	0.000	0.000
	(-11.933)	(-8.662)	(-0.180)	(0.974)
Leverage	0.003***	0.002***	0.001**	-0.001
	(4.710)	(4.725)	(2.058)	(-1.583)
CEO Age	0.086***	0.077***	0.064***	0.097***
	(12.523)	(8.069)	(4.822)	(4.025)
Outsider CEO	0.020***	0.024***	0.013**	0.041***
	(4.944)	(4.834)	(2.376)	(3.422)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	44,602	39,905	35,718	31,664
Adj. R-sqr.	0.073	0.085	0.079	0.262

Table 11 (Continuation)

PANEL C: CEO Compensation				
	(1) CEO Pay Slice	(2) Salary	(3) Bonus	(4) Total Compensation
Pool Decrease	0.077***	0.064***	-0.039	0.007
	(5.502)	(3.452)	(-0.478)	(0.393)
IDD	0.026**	0.006	0.056	-0.031
	(2.181)	(0.426)	(0.468)	(-1.458)
NCA	0.007***	0.000	-0.009	0.008
	(3.057)	(-0.033)	(-0.720)	(1.381)
Firm Size	0.038***	0.176***	0.082**	0.386***
	(5.965)	(19.950)	(2.551)	(42.873)
ROA	0.045**	0.109***	1.761***	0.353***
	(2.293)	(3.121)	(8.794)	(6.366)
MTB	0.008***	0.007***	0.057***	0.038***
	(5.682)	(8.094)	(9.647)	(14.711)
Leverage	-0.015***	-0.019***	-0.134***	-0.063***
	(-10.609)	(-9.047)	(-8.295)	(-18.990)
CEO Age	-0.059**	0.152***	0.412	-0.071
	(-2.204)	(4.436)	(1.212)	(-1.524)
Outsider CEO	0.028**	0.026	0.499***	0.013
	(2.072)	(1.582)	(8.507)	(0.832)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	15,864	15,999	15,999	15,891
Adj. R-sqr.	0.273	0.588	0.533	0.660

Table 11 (Continuation)

	(1) FRQ 1	(2) FRQ 2	(3) AQWi	(4) AQ	(5) Fog	(6) Bog	(7) Tone
Pool Decrease	-0.215*	-0.362***	-0.024**	-0.043***	0.087**	0.359***	0.040**
	(-1.829)	(-3.357)	(-2.207)	(-5.257)	(2.252)	(3.190)	(2.246)
IDD	0.065	0.147	-0.000	-0.002	-0.071	-0.604**	0.017
	(0.240)	(0.579)	(-0.010)	(-0.146)	(-1.169)	(-2.403)	(0.726)
NCA	-0.121***	-0.091***	-0.004	0.009***	0.034***	0.135	-0.020***
	(-3.546)	(-2.729)	(-0.620)	(3.902)	(2.736)	(1.489)	(-3.532)
Cycle	-0.005***	-0.007***	0.000	0.000	0.000	0.001***	0.000
	(-8.230)	(-10.500)	(-0.111)	(-0.216)	(0.324)	(5.381)	(0.013)
REM	-1.734***	-2.928***	0.041**	-0.023***	-0.025	-0.297***	0.034
	(-8.137)	(-9.300)	(2.232)	(-2.713)	(-0.831)	(-2.803)	(1.332)
Audit Tenure	0.171	-0.046	-0.022**	0.068***	0.053	0.398***	0.021
	(1.108)	(-0.292)	(-2.646)	(6.460)	(1.490)	(5.243)	(1.491)
Big8	-0.072	-0.051	0.034	-0.042***	-0.009	-0.928***	-0.085*
	(-0.501)	(-0.284)	(0.724)	(-4.140)	(-0.149)	(-7.745)	(-1.801)
Firm Size	-0.194	0.282	-0.010*	-0.031***	0.054	-0.223***	-0.082***
	(-1.033)	(1.260)	(-2.001)	(-4.001)	(1.484)	(-3.396)	(-8.697)
ROA	-2.099***	-2.748***	0.008***	0.003	0.038***	0.231***	-0.143***
	(-6.436)	(-10.220)	(4.988)	(0.671)	(3.010)	(6.214)	(-4.166)
MTB	-0.061***	-0.015	0.002***	-0.004***	0.010**	0.012	-0.007***
	(-3.859)	(-0.669)	(3.814)	(-7.387)	(2.623)	(1.146)	(-4.730)
Leverage	0.023	-0.041	-0.003*	0.005***	-0.040***	-0.068***	0.017***
	(0.683)	(-0.989)	(-1.946)	(6.969)	(-4.440)	(-2.979)	(6.193)
CEO Age	0.072	-0.361	0.037	0.174***	-0.039	0.640	0.040
	(0.080)	(-0.335)	(1.326)	(7.547)	(-0.318)	(1.579)	(0.807)
Outsider CEO	-0.126	-0.227	0.041***	0.014*	-0.076**	-0.115	-0.006
	(-0.717)	(-1.184)	(5.260)	(1.799)	(-2.269)	(-1.404)	(-0.205)
Early Years	0.060	0.013	0.011	-0.015***	-0.011	-0.020	0.062***
	(0.803)	(0.174)	(1.546)	(-4.064)	(-0.357)	(-0.375)	(3.630)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	39,449	39,449	32,127	32,114	14,776	30,627	8,660
Adj. R-sqr.	0.089	0.085	0.215	0.630	0.274	0.780	0.639

This table shows the main regressions with IDD and NCA as controls. All variables are defined in Appendix I. Models are estimated using firm and year fixed effects. Standard errors are clustered by incorporation state and t-statistics are in parenthesis. All the continuous variables are winsorized at 1% and 99% to mitigate the effect of outliers. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.