Set in Stone: The Persistence and Origin of Corporate Culture*

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Abstract

We examine the evolution of corporate culture and trace its origin, differentiating the values and norms prevailing within a company from the preferences of corporate insiders. Leveraging one of the largest panel data sets on corporate culture, we first show that corporate culture is fairly stable: Firms with a strong (weak) culture tend to remain so for the subsequent decade. We then show that the majority of the variation in corporate culture is driven by time-invariant firm fixed effects, largely attributed to a firm's culture formed around its initial public offering. Employing a rich set of founder, founding time, and founding location characteristics to explain a firm's early culture, we show that a founder's cultural heritage, the business environment at the start of a founder's career or at a firm's founding, a founder's birthplace, and a firm's founding location all have significant influences on its early culture. Finally, we provide some suggestive evidence on the presence of CEO-firm matching on cultural values as a possible mechanism underlying the persistence in culture. We conclude that the early culture of a firm, influenced by its founder, founding time, and founding location, is behind the persistence in corporate culture.

Keywords: Corporate Culture, Founders, CEOs, Cultural Heritage, Business Cycles, Ethnic Diversity, Total Frontier Experience, Earnings Calls, Employee Reviews.

JEL classification: *G30, G32, G34, G41, M14*

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"Don't Change Corporate Culture-Use It!...

Culture—no matter how defined—is singularly persistent."

Peter Drucker, The Wall Street Journal, March 28, 1991

1 Introduction

A growing body of research has established that corporate culture explains mergers and acquisitions, corporate risk-taking, frauds, among other business outcomes (Fahlenbrach et al., 2012; Ahern et al., 2015; Braguinsky and Mityakov, 2015; Guiso et al., 2015b; Liu, 2016; Pan et al., 2017, 2020). Graham et al. (2022a) report that 91% of North American CEOs and CFOs consider culture highly important to their firms, with 79% ranking culture as a "top 5" factor affecting firm value. Despite its importance, corporate culture remains under-studied in the finance literature; many questions remain unanswered. For example, is corporate culture persistent, or is it malleable and subject to change? If it is persistent, what mechanisms sustain it over time? Answers to these questions have direct implications for firm value, corporate policy, and employee treatment. This paper seeks to address these questions and more by leveraging one of the largest panel data sets on corporate culture and by differentiating the values and norms prevailing within a company from the preferences of corporate insiders.

Corporate culture is "*a set of norms and values that are widely shared and strongly held throughout the organization*"(O'Reilly and Chatman, 1996). Kreps (1990) and Van den Steen (2010a) argue that shared beliefs and values among members of an organization lead to more delegation, less monitoring, higher satisfaction, and higher effort, with implications for firm performance. Who is responsible for corporate culture? The management literature has long posited that CEOs are change agents who can break from an existing culture and build a new one (Donaldson and Lorsch, 1983; Schein, 1983; Kotter and Heskett, 1992). Bertrand and Schoar (2003), Pan et al. (2020), and Schoar et al. (2024) show that CEOs significantly influence firm policies and risk profiles. Given that CEOs come and go, this literature thus predicts that corporate culture evolves with people who are in charge; corporate culture is

not static, but influenced by a firm's leaders.

What are the mechanisms through which corporate culture influences behaviors within a company? According to Schneider (1987), a key attribute of corporate culture is that it arises from the attraction-selection-attrition process. Hackman (1992) suggests that corporate culture could also have a direct effect on individual behavior through organizational norms; in economic terms, this is the treatment effect of culture. Combining both mechanisms, Van den Steen (2010b) posits that through employer screening, employee self-sorting, and on-the-job learning, culture persists despite turnover. Using cultural background information on key company insiders to proxy for corporate culture, Liu (2016) finds that corporate culture operates both as a selection mechanism – employers prefer to hire like-minded employees – and by having a direct influence on individual behavior – employees change behavior in order to conform to organizational norms. Using a founder's cultural heritage as a proxy for her preferences, Pan et al. (2017) present suggestive evidence that a firm's founders contribute to the persistent commonality in risk attitudes of its leadership team. This strand of the literature seems to suggest that corporate culture is relatively stable due to selection and treatment and that founders play a key role in the formation of culture. It is worth noting that the majority of existing studies employ measures of corporate insiders' preferences and values to proxy for corporate culture. As a result, these studies are unable to differentiate a firm's values and norms (i.e., corporate culture) from its insiders' preferences, which may result in noisy inferences.

Our culture data set comes from Li et al. (2021), who develop a semi-supervised machine learning method to construct a culture dictionary motivated by Guiso et al. (2015b) and use that dictionary to measure culture based on earnings call transcripts. Our sample comprises 55,377 firm-year observations for 6,917 companies over the period from 2002 to 2021.

Using the largest panel data set possible to study culture, we begin by examining the evolution of corporate culture. Firms are first sorted annually into quartiles based on their culture scores. We then track the average culture scores of these groups over the subsequent

ten years. Our analysis uncovers several interesting patterns. First, at the time of group formation, the differences in culture scores across quartiles are substantial. Over time, culture scores exhibit convergence; however, this convergence is incomplete, and significant differences persist even after a decade. Second, most of this convergence takes place in the first few years after the formation of the group, after which the scores tend to stabilize. These findings suggest that corporate culture comprises both a short-term component that adjusts relatively quickly and a long-term component that preserves persistent differences across firms.

As our sample begins in 2002, when the culture measure became available, we address concerns about sample selection by conducting a number of robustness checks. We employ several subsamples, including those that did initial public offerings (IPOs) after 2002; those continuously listed in the stock market from 2002 to 2021; and those that went public between 2002 and 2011, allowing for a full ten years of observations. Across these subsamples, the patterns of convergence and persistence are consistent with the full-sample results, suggesting that our findings are not driven by firms' life cycles or sample selection at the start of our sample period.

To isolate the persistent component of corporate culture, we construct an alternative measure of "unexplained corporate culture." This measure is based on the residuals from cross-sectional regressions of culture scores on firm-specific factors, including size, profitability, tangibility, market-to-book ratio, and industry fixed effects. By controlling for observable firm characteristics, we focus on the portion of culture scores unexplained by these factors. The analysis reveals that the patterns of convergence and persistence in unexplained culture scores closely mirror those observed with raw culture scores. While the range of culture scores narrows over time, significant differences persist even a decade after group formation. This persistence highlights the presence of firm-specific factors that influence culture beyond what can be explained by observable firm characteristics.

To quantify the persistence in corporate culture and identify its key drivers, we conduct a variance decomposition analysis. This exercise attributes the variation in corporate culture

to firm-specific factors, CEO-specific factors, and year effects. We show that firm fixed effects explain the majority of the variation in corporate culture, accounting for 88%, compared to 11% for CEO fixed effects and 1% for year fixed effects. As a comparison, we note that firm fixed effects explain 63% of the variation in sales and 54% in capital expenditures. This comparison highlights the persistence in corporate culture as a firm attribute. To disentangle firm and CEO fixed effects, we employ a subsample of CEOs who transition between firms. In this "CEO movers" sample, firm fixed effects explain up to 95% of the variation in corporate culture, while CEO fixed effects account for just 1%. In supplemental analysis, we track firms' culture scores around CEO turnover events, and find that although these events are often associated with a temporary increase in event firms' culture scores, these changes are transitory. Over time, the culture scores of event firms revert to their levels before the CEO turnover event. The cumulative findings suggest that corporate culture is primarily a product of firm-specific factors rather than individual CEO characteristics.

Building on this evidence of persistence in corporate culture, we examine the role of a firm's early culture in shaping its long-term trajectory. We use the culture score at the time of a firm's IPO as a proxy for its early culture and examine its predictive power for future culture scores. We find that a firm's early culture is a strong determinant of its future culture, even after controlling for a comprehensive set of firm characteristics and event-driven factors. In terms of economic significance, a one standard-deviation increase in a firm's early culture score corresponds to a 0.462 standard-deviation increase in its future culture scores. These findings remain when we use alternative measures of a firm's early culture, such as the average culture score over the first three years post-IPO, or when we restrict the sample to firms that go public within ten years of their founding. By focusing on periods closer to the time of a firm's founding, we mitigate concerns that a firm's culture at the time of its IPO may not fully capture its culture at the founding. Across all specifications, a firm's early culture emerges as a significant factor predicting its long-term cultural values.

One possible explanation for the significant influence of a firm's early culture on the

future trajectory of corporate culture may stem from founders' ongoing involvement in their companies. To explore this possibility, we identify and exclude firm-year observations in our sample whose founders currently serve as CEOs or board members. We find that the impact of a firm's early culture on its future cultural values remains, suggesting that it is the culture prevailing in a firm's early days, rather than the ongoing active involvement of its founders, that influences a firm's culture today.

Next, we examine whether and how a firm's founders and founding environment influence its early culture. To hand collect founder, founding year, and founding location information, we limit the sample for this analysis to S&P 1500 constituent firms over our sample period 2002-2021. Given that it takes time for a firm from its IPO to join S&P 1500 and that our culture data set is based on earnings calls starting in 2002, we proxy a firm's early culture using its first ever culture observation in our culture data set to maximize our founder sample for this analysis.

Founders, as the architect of a firm's business strategy, play a central role in defining the appropriate attitudes and behaviors inside the company that they found. We consider three founder-related factors: cultural heritage, early career experience during recessions, and exposure to ethnic diversity in their formative years.

Following Liu (2016), Du et al. (2017), and Nguyen et al. (2018), we use a founder's last name to measure her cultural heritage, and Hofstede's uncertain avoidance index for each country (Hofstede, 1980, 2001) to capture an individual's attitudes toward risk and uncertainty Pan et al. (2017, 2020). We show that founders from societies with high levels of uncertainty avoidance tend to establish a stronger corporate culture than founders from societies with low levels of uncertainty avoidance. Following Schoar and Zuo (2017), we construct a founder recession indicator. We find that founders who began their careers during recessionary periods tend to develop a weak corporate culture, which could be due to their emphasis on resource preservation and operational efficiency over promoting appropriate behaviors and attitudes in the workplace during tough times. Motivated by Yonker (2017),

Pan et al. (2020), and Duchin et al. (2021) who show the importance of birthplace environment in shaping an individual's values and preferences, we explore whether and how the birthplace environment of a founder affects her firm's early culture. We posit that founders raised in ethnically diverse communities are exposed to a mix of perspectives, traditions, and practices that foster respect, collaboration, and innovation, resulting in firms that they founded to have a strong culture. Consistent with our conjecture, we find that founders grew up in more racially diverse communities are associated with a strong culture in firms that they founded.

We also explore the role of a firm's founding environment, including the general economic conditions at the time of its establishment and founding location characteristics. We posit that economic pressures during a firm's founding, such as a recession, compel it to prioritize short-term survival over investment in long-term intangible assets such as corporate culture. Similar to the role of a founder's early exposure to ethnic diversity, locations with ethnic diversity provide a more diverse workforce with different perspectives, traditions, and practices. The legacy of the American frontier experience emphasizes rugged individualism, self-reliance, and independence (Bazzi et al., 2020). While this historical context has been shown to be associated with promoting determination and resilience, it is also associated with individual antipathy to government, by extension to informal constraints such as corporate culture. Consistent with our conjectures, we find that a firm's founding environment, captured by its exposure to recessions, or frontier experience is negatively and significantly, whereas its founding location's ethnic diversity is positively and significantly, associated with its first culture score in our data set.

One possible explanation for the significant role of firm fixed effects in explaining the variation in corporate culture is the cultural alignment between a CEO and the firm she joins (Hackman, 1992). Liu (2016) finds that corruption culture persists because firms with a corruption culture attract like-minded individuals. Pan et al. (2017) suggest that the commonality in risk attitudes of executives could be due to the selection of those executives with similar preferences. Both papers employ insiders' values and preferences as a proxy

for corporate culture. Schoar et al. (2024) highlight the general challenge in examining CEO-firm matching. Our culture data set allows us to differentiate between values and norms prevailing within a company from a CEO's preferences, thus providing a clean setting to examine CEO-firm matching that is not possible prior to our study. Utilizing 2,942 CEO turnover events from the ExecuComp database over the period 2002–2021, we find that there is a positive and significant association between a firm's pre-turnover culture and the UAI value of the new CEO it hires, controlling for the UAI value of the departing CEO and firm characteristics. As far as we can tell, this is the first clean evidence on CEO-firm matching, as a potential explanation for the persistence in corporate culture.

We conduct a number of supplemental analyses. First, to ensure that our main findings on the persistence in culture are not driven by how corporate culture is measured, we employ two alternative measures of corporate culture based on employee reviews from Glassdoor and CEOs' last names. Our main findings remain. Second, we show that firms with large cultural changes are associated with increased top management turnover and employee turnover, decreased profitability, and elevated risks, including stock crash risk and financial distress risk. These findings underscore the role of a stable corporate culture in sustaining firm performance and mitigating risks.

By systematically analyzing these determinants, our study provides a framework for understanding how a firm's early culture is formed. We show that corporate culture is not simply a byproduct of firms' life cycles or market forces; rather, it is deeply rooted in the values and experiences of its founders and its founding environment.

Our paper contributes to the burgeoning finance literature on corporate culture (Cronqvist et al., 2022; Fahlenbrach et al., 2012; Ahern et al., 2015; Braguinsky and Mityakov, 2015; Guiso et al., 2015b; Liu, 2016; Pan et al., 2017, 2020; Grennan, 2019; Graham et al., 2022a,b). Although studies such as Guiso et al. (2015b) and Graham et al. (2022a,b) demonstrate that shared beliefs among employees create a corporate culture that significantly influences firm value. We know little about the formation of corporate culture and how it evolves over

time. Using a cross-validated measure for corporate culture, our study is among the first to document the persistence of corporate culture over time and to systematically examine the determinants of a firm's early culture. Our paper is closely related to two prior studies that employ corporate insiders' cultural heritage, as captured by their last names to proxy for corporate culture. Liu (2016) provides suggestive evidence that the persistence in corruption culture is driven by both assortative hiring and post-hiring treatment. Pan et al. (2017) emphasize the role of founders in shaping a firm's culture. The key difference of our paper from those prior studies is that our corporate culture measure allows us to differentiate the values and norms within a company from the preferences of corporate insiders and to study the role of CEO-firm matching in the persistence of corporate culture.

Our paper also contributes to the literature on management style and managers' life/career experiences shaping that style. Existing research has shown that top executives differ in their management styles, and these differences account for a significant share of the variation in real corporate outcomes (Bertrand and Schoar, 2003; Malmendier and Tate, 2005; Malmendier et al., 2011; Graham et al., 2013; Benmelech and Frydman, 2015; Dittmar and Duchin, 2016; Liu, 2016; Pan et al., 2017; Schoar and Zuo, 2017; Yonker, 2017; Pan et al., 2020; Duchin et al., 2021; Schoar et al., 2024). Yonker (2017), Pan et al. (2020), and Duchin et al. (2021) further note that an individual's birthplace influences her values and preferences. Unlike those papers cited above, we find a contrasting pattern for corporate culture. Our analyses reveal that firm-specific factors—rooted in their founders and founding environment—explain the majority of the variation in corporate culture, with CEOs playing a minimal role. Our findings challenge the prevailing view on the role of CEOs in changing organizational culture and underscore the importance of a firm's early culture in driving long-term firm behavior and performance.

2 Literature Review and Conceptual Framework

Corporate culture is a system of shared beliefs and values within an organization (Crémer, 1993; Lazear, 1995; O'Reilly and Chatman, 1996; Van den Steen, 2010b). According to Kreps

(1990), corporate culture is "*how things are done, and how they are meant to be done in the organization.*" A growing body of finance research has shown that corporate culture exerts its influence in all aspects of a firm's operations, ranging from risk management, mergers and acquisitions, to risk-taking, and unethical behaviors (Cronqvist et al., 2022; Ahern et al., 2015; Braguinsky and Mityakov, 2015; Guiso et al., 2015b; Liu, 2016; Pan et al., 2017, 2020). In a series of surveys and interviews with CEOs and CFOs, Graham et al. (2022a,b) note that the majority of executives consider corporate culture to be a key value driver in their companies.

Despite its importance, corporate culture remains under-explored in the finance literature; one possible reason is that culture is a nebulous concept that is hard to measure – most of the cited work above employs proxies for corporate culture (Liu, 2016; Pan et al., 2017, 2020) or constructs their measure using values promoted on companies' websites (Guiso et al., 2015b) or values discussed by employees (Li et al., 2024).

Who is responsible for corporate culture? The management literature posits that CEOs are change agents who can break from an existing culture and build a new one (Donaldson and Lorsch, 1983; Schein, 1983; Kotter and Heskett, 1992). Based on surveys and interviews with top executives, Graham et al. (2022a,b) report that the current CEO is seen as the most influential person responsible for setting a firm's current culture. Relatedly, using large panel data sets in different corporate finance settings, Bertrand and Schoar (2003), Pan et al. (2020), and Schoar et al. (2024) show that CEOs significantly influence firm policies and risk profiles. Given that CEOs are not in charge forever but experience turnover, this literature thus predicts that corporate culture is not static but changes with a firm's leaders.

What are the mechanisms through which corporate culture influences behaviors within a company? In an influential article by organizational psychologist Schneider (1987) titled "*The people make the place,*" he posits that founders determine a firm's culture and strategy through an attraction-selection-attrition cycle. In other words, the people who are attracted to, selected by, and remain in an organization determine its culture. Different firms attract,

select, and retain different kinds of employees, and it is the outcome of the attraction-selection-attrition cycle that determines why firms look and behave differently from each other. One implication of this view of corporate culture is that it is difficult to change culture.

In addition to the above selection mechanism, Hackman (1992) posits that corporate culture could also have a direct effect on individual behaviour through organizational norms. Specifically, organizational norms are enforced by members of an organization through rewards and punishment. To punish a non-compliant employee, other employees may distance themselves socially from that employee, withhold information or support that would help advance the employee's career. Under the pressure of organizational norms, even if an employee does not agree with the norm, she may behave consistently with the prevailing norm to fit in (as Kreps (1990) succinctly summarized, cited above). In economic terms, this is the treatment effect of culture. Van den Steen (2010b) concludes that through employer screening, employee self-sorting, and on-the-job learning, culture persists despite turnover. This strand of the literature suggests that corporate culture is relatively stable due to selecting the right people to hire (i.e., selection or sorting) and nudging non-compliant employees to conform (i.e., treatment) and that founders play a key role in the formation of culture.

The empirical evidence on the formation and evolution of corporate culture is suggestive. Using cultural background information on key company insiders to proxy for corporate culture, and focusing on the role of corruption culture in corporate misconduct, Liu (2016) provides novel granular evidence on both the selection and treatment channels through which culture operates. Using a founder's cultural heritage as a proxy for her preferences and focusing on the formation of corporate risk culture, Pan et al. (2017) highlight the role of selection (assortative matching) in explaining the persistent commonality in risk attitudes inside firms. It is worth noting that both papers do not focus on the same research questions as ours, and that the majority of existing studies use measures of corporate insiders' preferences and values to proxy for corporate culture. As a result, these studies cannot differentiate a firm's values and norms (i.e., corporate culture) from its insiders' preferences, which poses a

challenge to study the role of CEO-firm matching in explaining persistent corporate culture.

3 Sample and Variable Construction

3.1 Sample formation

Our sample consists of firms in the CRSP-Compustat database with data on culture scores from Li et al. (2021) over the period from 2002 to 2021. We require firm-year observations to have non-missing data for culture scores and all relevant control variables. We obtain financial and accounting information from Compustat, CEO turnover and compensation information from the ExecuComp database, institutional ownership data from Thomson Reuters' 13f filings, board information from BoardEx, and mergers and acquisitions (M&As) and seasoned equity offerings (SEOs) from SDC Platinum. Our final sample consists of 55,377 firm-year observations, representing 6,917 unique firms.

For the analyses of variance decomposition and the determinants of a firm's early culture, we impose additional sample and data requirements. First, we focus on S&P 1500 firms, as our primary data source for CEO characteristics and turnover events is the ExecuComp database, which provides comprehensive data for those firms. Second, we require information about founder names, birth dates, birthplaces, and firm founding locations, which we manually collect from various sources (see Section 3.2 for the detailed description). Third, we require firm founding dates and IPO dates, obtained from Jay Ritter's website and supplemented by SDC.[1] For the determinants of a firm's early culture analyses, our final sample consists of 1,476 founders for 1,135 unique firms. The detailed description of our sample construction is provided in Appendix Table A.1.

3.2 Key variable construction

3.2.1 Corporate culture measures

Our measure of corporate culture is from the data set provided by Li et al. (2021), who uses the Q&A section of earnings calls to capture the values and norms prevailing within a company. Li et al. (2021) develop a semi-supervised machine learning method to construct

[1]We thank Jay Ritter for sharing this information on his website: https://site.warrington.ufl.edu/ritter/ipo-data/.

a culture dictionary and use that dictionary to quantify a firm's culture in five dimensions following Guiso et al. (2015b): innovation, integrity, quality, respect, and teamwork. We use the aggregate score of these five cultural values as our measure of corporate culture.

Ideally, a firm's early culture should be assessed at the time of its founding. Due to the fact that our culture data—earnings call transcripts only became available since 2002—and that the majority of firms in our sample were established before 2002, it is not possible to have data on sample firms' culture scores in their founding years.[2] Instead, we resort to measuring a firm's early culture at the time of its IPO, which typically occurs relatively early in its life cycle.

We use three measures to capture corporate culture at the time of a firm's IPO: (1) *Culture IPO*, the culture score of a firm in the year of its IPO; (2) *Culture first IPO3y*, the culture score of a firm based on its first non-missing culture score during the first three years post-IPO; and (3) *Culture avg IPO3y*, the average culture score of a firm over its first three years following the IPO.

To study the role of founders and founding environment in culture formation, we limit the sample to S&P 1500 constituent firms and hand collect related data items. Given that it takes time for a publicly listed firm to join S&P 1500 and that our culture data set is based on earnings calls starting in 2002, we proxy a firm's early culture using its first ever culture observation in our culture data set, *Culture first obs*. By construction, this proxy is predisposed to reduce the chance that we find any significant association between a firm's founder and founding characteristics and values and norms measured at a point in time when many of those founders are long gone.

[2]Out of the 6,917 unique firms in our sample, only 880 firms were founded since 2002. Among these firms, 544 firms have culture data and the average difference between founding year and IPO year is less than 10 years. Since our founder sample is limited within S&P 1500 firms, only 20 out of the 544 firms have founder and founding information.

3.2.2 Founder characteristics

We manually collect and construct a data set of founders and cofounders for 2,802 S&P 1500 firms over the period from 2002 to 2021.[3] We utilize public information from multiple sources to determine founders and cofounders of a company. First, we search for founder or cofounder information on a company's official website, company-histories.com, crunchbase.com, and fundinguniverse.com. Second, we conduct a Google search using company name combined with the word "founder." In cases of conflicting information, we prioritize the Google search results.[4] In the end, we identify 3,881 founders for 2,389 firms, and 954 of these firms have at least two founders. In other words, our sample firms on average have 1.6 founders. By comparison, the founder sample in Pan et al. (2017) on average has 1.4 founders.

To determine whether a CEO in our firm-year sample is a founder or cofounder of a company, we match the CEO information in the ExecuComp database with our manually constructed founder data set. We cross-check our founder CEO data with the Lee et al. (2017) sample over the period from 2008 to 2012. We are able to verify 289 out of the 295 founder CEOs in their sample and also have nine more founder CEOs than what they have. These statistics help to ensure the quality of our manual search.

We next collect founders' biographical information. Following Liu (2016) and Nguyen et al. (2018), we use historical census records from 1850 to 1940 in the Integrated Public Use Microdata Series (IPUMS) to match a founder's last name to her country of ancestry. These records represent the complete set available to the public in which respondents' names are disclosed since they are no longer subject to the 72-year confidentiality rule.[5] First, we restrict the data set to first generation immigrants whose country of birth is outside of the United

[3]ExecuComp covers constituent firms of S&P 1500 over time. It retains some firms as they were dropped from small-cap, mid-cap, and large-cap subindexes and adds firms when they were included in those indices.

[4]Founder information can also be inferred from the title variable in ExecuComp. However, we note that ExecuComp significantly under-identify founder CEOs; approximately half of the founder CEOs are misclassified as non-founders in ExecuComp. As a result, we do not use ExecuComp to identify founders; instead, we only use it to identify CEOs.

[5]Only one percent of the records are currently available. Liu (2016) acquires additional access to 100% of the records in the 1880, 1920, 1930, and 1940 waves through the Minnesota Population Center, while using one percent of the records in other waves.

States. Second, we link each unique surname from census records to its most frequently associated country of birth. We require each unique surname have a a dominant country of origin (i.e., an origin with a frequency weight of more than 50%). This process allows us to match 97.2% of founder last names in our sample to at least one country of ancestry, allowing us to assign Hofstede's national culture scores to those countries.[6] Following Pan et al. (2017, 2020), we use the UAI under Hofstede's national cultural framework (Hofstede, 1980, 2001) as a summary measure of an individual's cultural heritage. The UAI, according to Hofstede, measures "*to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, and different from usual.*" For each founder, we take the highest value of the UAI values associated with a list of countries that a founder might be from. We rescale the raw UAI value to be between 0 and 1. We end up with 3,733 founders in 2,336 firms with information on their country of origin.

Following Bernile et al. (2017), we gather founder birth-rated information from sources including Marquis Who's Who, the Standard and Poor's Register of Directors and Executives, the U.S. Executive Compensation database via Lexis-Nexis, NNDB.com, and Google searches. We are able to obtain birth dates for 1,682 founders and birthplace information for 1,648 founders. After excluding foreign-born founders, we retain a sample of 1,320 U.S.-born founders in 1,039 firms.[7]

Following Schoar and Zuo (2017), we construct a recession founder indicator, *Founder work recession*. This indicator variable takes the value of one if a founder's first job started in

[6]We could not find a matched record in the IPUMS for 17 observations, and a dominant country of origin for 84 observations. We further lose 7 founders from Cuba, Haiti, and Syria because these countries are outside of Hofstede's culture data coverage (of 111 countries).

[7]We are able to obtain biographical information for 1,320 U.S.-born founders out of our sample of 3,881 founders, representing a 34% (1,320 out of 3,881) share, which is higher than the 22% (1,508 out of 6,804) share reported in Bernile et al. (2017). The difference in data availability could be due to the fact that we focus on founders of firms ever included in the S&P 1500 index, who tend to have a higher visibility than CEOs whom Bernile et al. (2017) focus on. Bernile et al. (2017) report the top ten states in which CEOs were born (in descending order): New York (1), Illinois (3), Pennsylvania (6), Ohio (4), California (2), Massachusetts (5), New Jersey (11), Texas (7), Missouri (13), and Iowa (22). The numbers in parentheses are the rankings of the top states in which founders in our sample were born. While not directly comparable, this ranking tabulation does provide some assurance of the quality of our founder sample.

a recession, defined according to the National Bureau of Economic Research (NBER) business cycle dating data set, and zero otherwise. After merging the sample of 1,682 founders in 1,280 firms with information on their founder's birth year with the NBER business cycle dating data set that started in 1967, we end up with 1,590 founders in 1,223 firms with information on the recession founder indicator. We note that 18.4% of the founders in our sample started their careers during recessions.[8]

Next, we merge data on a founder's birthplace with location-specific variables at the time of her birth. We consider two aspects: ethnic diversity and the influence of frontier culture in the county where a founder was born. We measure ethnic diversity using the Herfindahl-Hirschman Index (HHI) of racial diversity in a founder's birth county, based on data from the U.S. Census. The census identifies five racial groups: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. To assess the extent to which a founder's birthplace county was exposed to the frontier culture, we use the county-level measure of total frontier experience (TFE) from Bazzi et al. (2020). Our variable, *Founder birthplace TFE*, is the number of years scaled in decades between 1790 and 1890 when a founder's birthplace county was within 100 km of the frontier line and its population density was below 6 people per square mile. The final sample with information on the founder characteristics consists of 802 firms associated with 987 founders.

3.2.3 Founding characteristics

As discussed earlier, we obtain a firm's founding date from Jay Ritter's website, supplemented by SDC. We have founding date information for 2,788 firms in our sample.

To capture economic conditions at the time of a firm's founding, we construct a recession firm indicator, *Founding recession*. This indicator variable takes the value of one if a firm was founded in a recession, defined according to the NBER business cycle dating data set, and zero otherwise. We end up with 2,738 firms with such information available.

[8]This figure, 18.4%, is lower than the 21% reported in Schoar and Zuo (2017). The difference could be driven by our different samples; we focus on founders, while Schoar and Zuo (2017) focus on CEOs.

To determine a firm's founding location, we start with a comprehensive search across various sources, including company-histories.com, crunchbase.com, fundinguniverse.com, and a company's official website. When these sources fall short, we supplement our search with a Google search, combining company name with the phrase "founding location." This search process results in 1,729 firms with founding location information at the county level, 132 at the state level, and 99 at the country level, out of our initial sample of 2,802 firms. We then merge a firm's founding location with its founding date to construct measures of ethnic diversity and total frontier experience for a firm's founding county.[9]

Definitions of variables are provided in Appendix Table A.2.

3.3 Summary statistics

Panel A of Table 1 presents summary statistics. On average, firms have a culture score of 14.897. At the time of their IPOs, the average culture score is 15.125. Given that there are fewer observations of culture score derived from earnings calls at the time of a firm's IPO, we use two alternative measures to assess a firm's culture around its IPO: (1) the culture score of a firm at IPO based on the first non-missing culture score during the first three years following its IPO; and (2) the culture score of a firm at IPO based on the average non-missing culture score in the first three years after the IPO. We show that the mean value of the former is 14.938, and the mean value of the latter is 14.774.

Panel B of Table 1 reports the summary statistics of founder, founding year, and founding location characteristics, together with our measure for a firm's early culture. The mean value of *Culture_first obs* is 13.611. On average, founders have a UAI score of 0.481. We note that 43.4% of the founders started their first job during a recession, and that 40.4% of the firms were founded in a recession year. Regarding ethnic diversity, the birthplaces of founders exhibit high diversity, with an average HHI value at 0.132, while firms' founding locations exhibit moderate diversity, with an average HHI value at 0.203. These numbers are comparable to that in Pan et al. (2017) who calculate the birthplace race HHI for a sample

[9]Merging the founder and founding environment data sets would result in a much smaller sample.

of CEOs at the city level (their average ethnic HHI value is 0.204). On average, the counties where founders were born have 0.906 decades of total frontier experience, and the counties where firms were founded have 0.752 decades of total frontier experience.

4 The Evolution of Corporate Culture

4.1 Raw culture scores

We start our analysis by exploring the evolution of corporate culture in our sample firms. Following Lemmon et al. (2008), we first divide firms into quartiles at the end of each fiscal year based on their culture scores, denoted as *Very High*, *High*, *Medium*, and *Low*. The year of group formation is designated as event year 0. For each group, we then calculate the average culture scores over the subsequent ten years, maintaining a consistent group composition, with the exception of those firms that exit the sample. This sorting and averaging procedure is repeated annually throughout the sample period, resulting in a total of 20 sets of event-year averages, one for each fiscal year.

Panel A of Figure 1 plots the average culture scores of our four firm groups in "event time." The sample (All Firms) comprises 55,377 firm-year observations from 6,917 companies over the period from 2002 to 2021. We make the following observations. First, when groups are formed, there are significant variations in culture scores, with a maximum difference of up to 14.228 between the *Very High* and *Low* groups. Note that the sample mean of corporate culture is 14.897, so such a difference is economically significant. Second, the culture scores of these groups tend to slowly converge over time. For example, after ten years, the average culture score for the *Very High* group decreases from 22.992 to 20.090, while the average score for the *Low* group increases from 8.764 to 11.971. Third, the majority of this convergence occurs within the first few years after group formation, as shown by the flattening slopes of the lines. Finally, even though the culture scores of each group get closer to one another, they remain significantly different after ten years. The average scores for the *Very High*, *High*, *Medium*, and *Low* groups in year ten are 20.090, 16.205, 14.082, and 11.971, respectively, leading to an average difference of 2.706 across the groups.

This difference is still substantial, especially compared to the average within-firm standard deviation of culture scores at 5.932. This initial analysis suggests that culture scores consist of a short-term component that gradually converges over time and a long-term component that maintains persistent differences between groups.

One potential concern regarding the interpretation of Panel A is the influence of sample selection. Specifically, our data on culture scores became available starting 2002. In that year, firms may be at different stages of their life cycles, which could confound the process of group formation. To address this concern, we conduct several additional analyses.

First, we employ a subsample of firms that did an IPO after 2002. Panel B of Figure 1 plots average culture scores for these IPO firms, consisting of 19,095 firm-year observations from 3,377 firms. We see only minimal differences between IPO firms and the full sample in terms of the evolution of their culture scores. This suggests that the patterns observed in the full sample, as shown in Panel A, are not significantly influenced by the inclusion of IPO firms.

Second, we employ a subsample of firms with non-missing data on corporate culture for the entire 2002-2021 period. Specifically, we select firms that meet the following criteria: (1) its IPO occurred prior to 2002; (2) it was still listed by the end of 2021. These criteria ensure that these firms maintain a presence in the stock market with no entry or exit during the sample period. Note that some firms may not have a complete 20-year time series due to missing data for culture in a specific firm-year. For example, a firm might have culture data available for the period 2002–2018 but lack culture data for 2019, with data resuming in 2020-2021. We refer to this subsample as "Survivors" with no entry or exit during our sample period, resulting in 22,887 firm-year observations from 1,532 firms. We observe a consistent pattern in Panel C, similar to that in Panel A. Appendix Figure A.1 plots average culture scores in event time limiting to firms with complete 20 years of culture data. We show consistent patterns, noting that the sample size drops significantly.

Third, we employ a subsample of firms that went public between 2002 and 2011, allowing

us to have a full ten years of observation of their culture data. The sample consists of 13,417 firm-year observations for 1,803 firms. Figure D reveals patterns similar to those observed in Panel A.

Overall, these additional analyses provide further support for our main findings that there is a persistent component in corporate culture, unaffected by sample selection.

4.2 Unexplained culture scores

Another concern about interpreting Figure 1 is that sorting firms based on their culture scores may simply capture cross-sectional variations in the underlying factors related to corporate culture that are also persistent over time. For example, large and old firms tend to stay large over time, and large and old firms tend to have a strong culture (Van den Steen, 2010b). To address this concern, we adopt an alternative sorting procedure based on culture scores unexplained by firm characteristics. By sorting on the unexplained portion of culture scores and plotting the raw culture scores over time, had we observed the same persistence in culture, it would have not been driven by firm characteristics as we had removed them in our sorting variable.

We first estimate in each year a cross-sectional regression of culture scores on one-year lagged determinants of culture identified by prior work (Schein, 1985; Van den Steen, 2010b; Grennan, 2019; Li et al., 2021; Li et al., 2024). For firm characteristics, we include $Firm\ size$, measured by the natural logarithm of total assets, and $Firm\ age$, measured by the natural logarithm of the number of years since IPO, as larger and older firms tend to exhibit strong culture and persistence (Van den Steen, 2010b). We also consider firm operating performance metrics, such as ROA and $Sales\ growth$, as well as financial performance metrics such as the market-to-book ratio (M/B). Poor performance may indicate a mismatch between a firm's culture and its environment, potentially prompting cultural changes (Schein, 1985). Additionally, we include asset tangibility and book leverage, as firms with more tangible assets (leverage) might place less emphasis on culture. Corporate governance, such as shareholder monitoring, may also impact the extent of cultural change (Grennan,

2019). We include *Institutional ownership*, measured by the percentage of shares owned by institutional investors. Li et al. (2021) suggest that corporate culture may be influenced by major corporate events. So we also include the number of major corporate events (M&As and SEOs) experienced by a firm since IPO.

An attractive feature of our approach is that by estimating the regression each year, we allow the marginal effects of each factor to vary over time. Specifically, we regress culture scores on firm characteristics as follows:

$$Culture_{i,t} = \alpha_t + \beta_t X_{i,t-1} + Industry\ FE + \epsilon_{i,t}, \tag{1}$$

where i indexes firms; t indexes years; $X_{i,t-1}$ denotes a set of one-year lagged control variables, i.e., $Firm\ size$, $Ln(Firm\ age)$, $Sales\ growth$, $Leverage$, M/B, ROA, $Tangibility$, $Institutional\ ownership$, and event-driven controls such as $Num\ M\&As$ and $Num\ SEOs$. $Industry\ FE$ represents the Fama and French 38 industry fixed effects.

We then sort firms into four groups based on the residuals from this regression, which we term *Unexplained culture,* and track the average raw culture scores of each group over the subsequent ten years.

Figure 2 plots average culture scores of the four groups in "event time" sorted on the residual culture scores. We note that the patterns are nearly identical to those presented in Figure 1. Panel A shows that culture scores still vary over a substantial range (approximately 11) in the year of group formation, suggesting that most of the variation in culture scores is captured in the residuals from the regression specification in Equation (1).

Moreover, while the spread in average culture scores across groups in each event year has decreased, significant differences persist for most subsequent years. For instance, even ten years after group formation, the average culture score for the *Low* group remains significantly below those of all other groups. Additionally, the average culture score of the $Very\ High$ group remains significantly different from that of the $Medium$ group. These differences are

economically significant, with the range in culture scores between the $Very\ High$ and Low groups in event year ten equal to 50% of the initial range. Thus, even after accounting for the observable heterogeneity associated with known determinants of culture, cultural differences remain highly persistent across firms.

In summary, Figure 1 shows that while there is some convergence in the short run, differences in culture scores across firms remain highly persistent. Figure 2 further suggests that known firm characteristics do not explain a substantial portion of the variation in culture scores. These findings point to the existence of a significant yet unidentified permanent component in a firm's culture. In the following sections, we try to quantify the economic importance of this permanent component in culture and explore its origin.

5 The Economic Importance of Persistence in Corporate Culture

5.1 Variance decomposition

A key feature of Figures 1 and 2 is the persistence in corporate culture over time. To understand what drives this persistence, we perform a variance decomposition analysis. We begin with a nonparametric variance decomposition of corporate culture. Specifically, we compute the within- and between-firm variation of corporate culture. We find that within-firm variation helps to explain 19.03% and between-firm variation helps to explain 80.96% of the total variation in corporate culture. This result suggests that corporate culture varies significantly more across firms, rather than within firm over time.

Next, we turn to a parametric framework to determine how much of the variation in corporate culture can be explained by the known factors and how much is due to unobserved differences specific to individual firms (firm fixed effects) and their CEOs (CEO fixed effects). Panel A of Table 2 presents the results using the full sample. The analysis breaks down the extent to which changes in corporate culture can be attributed to firms, CEOs, and other relevant factors. Each column in the table represents a different model of corporate culture. The numbers in the table above the adjusted R^2 row show the percentage of the total Type III partial sum of squares explained by each factor in the model. We calculate

these percentages by dividing the partial sum of squares for each factor by the aggregate partial sum of squares across all factors in the model. This allows us to see how much each factor contributes to the overall explanation. Columns (1), (2), and (3) of Panel A examine firm, CEO, and year fixed effects, respectively. Since all variation is attributed to a single factor, the explanatory power of that factor is 100%. The adjusted R^2 captures how well each model explains the variation in corporate culture. We show that firm, CEO, and year fixed effects account for 61%, 60%, and 4% of the variation in corporate culture, respectively.

In columns (4) and (5), we add firm characteristics. We note that those characteristics have little explanatory power for corporate culture. Consistent with the findings in columns (1)-(2), we show that firm fixed effects and CEO fixed effects play a significant role in explaining corporate culture, with 98% and 98%, respectively, of the explained sum of squares attributed to those fixed effects. To better understand the difference between firm and CEO fixed effects, we include both in the same model in column (6). We find that CEO fixed effects account for 12% of the variation in corporate culture, while firm fixed effects account for a much larger portion, 88%. When we further include year fixed effects in column (7), the findings largely remain, showing that firm fixed effects are considerably more important than CEO and year fixed effects, accounting for 88% compared to 11% and 1%, respectively, of the variation in corporate culture.

In the full sample shown in Panel A, most CEOs work for only one company and some companies have only one CEO during our sample period. This could lead to some overlapping explanatory power between firm fixed effects and CEO fixed effects. To disentangle these effects, we use a subsample of firms whose CEOs have served as a CEO in different companies. Following Schoar et al. (2024), we identify executives who have worked in two or more firms ("movers") within the ExecuComp universe. We require these movers have worked for at least three years in each firm to have sufficient time to "leave their mark" on those companies. If a firm employs a mover in any year during our sample period, we retain all observations for that firm. Different from Schoar et al. (2024), we only keep executives with their last

position as a CEO, as we focus on CEOs' effect on corporate culture and they focus on top executives' effect on systematic risk. Our initial sample comprises 117 CEO-to-CEO movers, which is comparable to the 132 CEO-to-CEO movers studied by Schoar et al. (2024). We further require both receiving and departing firms have corporate culture data. We end up with 235 CEO movers associated with 122 unique firms. Panel B presents the results. We show that firm fixed effects are the most important factor contributing to the variation in corporate culture. Importantly, the analysis reveals that firm fixed effects have an even stronger explanatory power for culture than that reported in Panel A. In column (7), we show that CEO fixed effects only account for 1% of the variation in corporate culture, while firm fixed effects account for 95%, compared to 11% and 88%, respectively in column (7) of Panel A.

As a comparison, Panel C of Table 2 presents the results of a variance decomposition for other corporate policies using the same sample as in Panel A. Column (1) shows that firm fixed effects explain 63% of the variation in sales, which is more than that explained by CEO fixed effects. Column (2) shows firm fixed effects explain 54% and CEO fixed effects 45% of the variation in capital expenditures. Column (3) indicates that firm fixed effects account for 62% of the variation in ROA, while CEO fixed effects account for 33%. These ratios are similar to the findings in Li et al. (2024). In columns (4) and (5), we replicate the analysis in Lemmon et al. (2008) and find similar results. Columns (6)-(7) show that firm fixed effects account for 61% (66%) of the variation in cash holdings (R&D), while CEO fixed effects account for 37% (33%). Overall, we find that firm fixed effects explain a much higher share of the variation in corporate culture compared to their role in other corporate policies.

In summary, Table 2 shows that firm fixed effects largely explain the variation in corporate culture, suggesting that those fixed effects could be behind the persistence in culture.

5.2 The role of a firm's early culture

While the variance decomposition results discussed above show that firm fixed effects significantly contribute to the persistence in corporate culture, we acknowledge that firm

fixed effects encompass all unobserved, time-invariant firm characteristics, and would like to make some progress to shed light on the nature of those fixed effects. Motivated by seminal work on the origin of corporate culture (Schein, 1985; Guiso et al., 2015a,b), we conjecture that a firm's culture today is heavily influenced by its founding principles and values. For this analysis, we use cultural scores around a firm's IPO to proxy for its culture in the early years of its development, and our sample comprises firms that did their IPO in 2002 or after (so we have their culture data).

We run the following lead-lag regression of culture scores:

$$Culture_{i,t} = \alpha + \gamma CultureIPO_i + \beta X_{i,t-1} + Industry\ FE + v_t + \varepsilon_{i,t}, \tag{2}$$

where i indexes firms; t indexes years; $X_{i,t-1}$ denotes a set of one-year lagged control variables. $CultureIPO_i$ is firm i's culture at the time of its IPO, $Industry\ FE$ represents the Fama and French 38 industry fixed effects, and v_t are year fixed effect. The coefficient of interest is γ, which captures the influence of a firm's culture score at the time of IPO on its future culture scores.

Panel A of Table 3 presents the regression results. In column (1), we estimate the regression using *Culture IPO* as the main independent variable, controlling for industry fixed effects. We find that the culture score at the time of a firm's IPO is positively and significantly related to its future culture scores. In terms of economic significance, a one-standard-deviation increase in a firm's IPO culture score corresponds to a 0.605 standard-deviation increase in its future culture scores (0.535 x 6.706/5.932, where 6.706 (5.932) is the standard deviation of $Culture\ IPO$ ($Culture$) in the regression sample). In column (2), after including a set of control variables and year fixed effects, *Culture IPO* remains highly significant. Moreover, we show that firm age, sales growth, and M/B are positively and significantly, whereas leverage, ROA, and tangibility are negatively and significantly, associated with culture scores. We further note that after including the control variable, the economic magnitude of a firm's

early culture on future culture moderately decreases from a 0.605 to 0.462 standard-deviation increase in future culture scores (0.409 x 6.706/5.932, where 6.706 (5.932) is the standard deviation of *Culture IPO* (*Culture*) in the regression sample). Nonetheless, a firm's early culture remains the single most important determinant of its future culture scores in this specification. Specifically, comparing the adjusted R^2 in columns (1) and (2), the variable *Culture IPO* along with industry fixed effects help explain 46.7% of the variation in culture scores, while adding a set of control variables only increases the adjusted R^2 to 53.7%. These results are consistent with those presented in Figure 2, and the regression specification above offers a more stringent test of the persistence in cultural differences as the firm-level determinants (other than a firm's early culture) change over time. The findings above point to the importance of a firm's early culture as a determinant of its future culture. As robustness checks, we also use *Culture first IPO3y* and *Culture avg IPO3y* as alternative proxies for a firm's culture score at the time of its IPO, and obtain consistent results, suggesting that a firm's culture at the time of its IPO is a strong predictor of its future culture.

One potential concern of the above analysis is that, while culture evolves slowly over time, a firm's culture at the time of its IPO may not fully represent its culture at the founding. To address this concern, we impose an additional requirement that firms must go public within ten years of their founding. This requirement allows us to use a firm's culture score at the time of its IPO as a more reliable proxy for its early culture at the time of founding.[10] Panel B presents the results. We show that a firm's early culture significantly drives its future culture, despite a drop in sample size.

5.3 Founders serving as CEOs or board members

In the analysis above, we require our sample firms went public after 2002 (so we have data on their culture scores). It is possible that some founders are still serving as executives in the company that they founded. This raises the possibility that the strong explanatory power of

[10]We use ten years as the cut-off point as this represents the median gap between a firm's founding year and its IPO year for our sample firms. While requiring a shorter gap between a firm's founding year and its IPO year could yield a better proxy, such a requirement would substantially reduce our sample size, as firms typically need time to grow and reach a scale that is beneficial for them to go public.

a firm's early culture on its future culture may be due to a founder's ongoing active role in the company rather than the early culture itself.

To explore this possibility, we first identify founders who are still serving as CEOs or board members in the company that they founded. We determine whether a CEO or a board member is a founder or cofounder of a company by matching CEO names in the ExecuComp database and director names in the BoardEx database with our manually constructed founder data set. We then exclude these firm-year observations from our sample and re-run the regressions in Table 3. Table 4 presents the results. The number of observations decreases from 6,670 in our initial sample to 6,011, suggesting that approximately 10% of the founders hold CEO or director positions in the company that they founded. Despite the reduced sample size, the strong explanatory power of a firm's early culture for its future culture remains, suggesting that the active presence of founders is not the primary driver of our findings. This implies that a firm's early culture plays an important role in shaping its future culture, independent of founders' ongoing involvement.

5.4 Cultural changes around CEO turnover

As supplemental evidence for the persistence in culture, we examine the impact of CEO turnover events on corporate culture in Appendix Figure A.2. Using a dynamic difference-in-differences specification, we estimate the effects of a CEO turnover event on corporate culture over both the pre- and post-turnover event periods by running the following regression:

$$Culture_{i,t} = \alpha + \sum_{k\in[-4,8],k\neq-1} Treat_i * Year_k + \beta X_{i,t-1} + \eta_i + v_t + \epsilon_{i,t}, \tag{3}$$

where i indexes firms; t indexes years; $X_{i,t-1}$ represents a set of one-year lagged control variables; η_i is firm fixed effects; and v_t is year fixed effects. $Treat_i$ is an indicator variable that takes the value of one if a company has changed its CEO, and zero otherwise. $Year_k$ is an indicator variable that captures the temporal effects, with k indicating the year relative to the turnover event in year 0. We exclude year 0 in the regression as it is a transition year

and we use year -1 as the benchmark.

We find no significant change in culture scores during the three years preceding a CEO turnover event. However, there is a significant increase in culture scores immediately following the turnover. More importantly, our results show that the effects of CEO changes on corporate culture are temporary, with culture scores eventually reverting to their level prior to the turnover, suggesting the persistence in culture.

To further assess the impact of founder CEOs, we compare the effects of founder CEO turnover events with those of non-founder CEO turnover events on corporate culture in Appendix Figure A.3. In Panel A, we estimate the dynamic effect of founder CEO turnover on corporate culture using Equation 3. We find no significant impact on corporate culture when an incoming CEO takes over the position immediately after a founder, suggesting that founders might intentionally select CEOs who exhibit cultural alignment with their company. In Panel B, we report the results for non-founder CEO turnover. Consistent with Appendix Figure A.2, a non-founder CEO turnover leads to significant cultural changes in the first and second years, followed by a complete reversal in the third year.

In conclusion, our empirical analysis indicates that a firm's early culture is central to its future cultural trajectory, independent of a founder's ongoing involvement. The significance of a firm's early culture suggests that a firm's cultural characteristics are deeply rooted and persist over time, even with leadership changes.

6 The Origin of Corporate Culture

6.1 The impact of founder characteristics on the origin of a firm's culture

Founders embody the initial vision, values, and beliefs upon which a company is built. According to Schein (1983), founders act as culture carriers, transmitting their beliefs and norms to employees and shaping the organizational culture from the inception. We consider three founder characteristics that may be transmitted to a firm's early culture: the cultural heritage of a founder, the recession exposure of a founder, and the ethnic diversity of a founder's birthplace.

For this analysis, we employ a sample of firms ever included in the S&P 1500 index and use the first available observation of corporate culture in our data set to proxy for a firm's early culture, $Culture\ first\ obs$.[11]

Cultural heritage significantly influences an individual's preferences and values (Guiso et al., 2006). Founders carry the imprint of their cultural background, including values, beliefs, and behaviors ingrained by their native societies. Building on the seminal work of Hofstede (1980, 2001) and studies by Pan et al. (2017, 2020), we explore the influence of a founder's cultural heritage measured by UAI on corporate culture.

Business operations often face substantial uncertainty. Corporate culture can serve as an informal institution to handle unforeseen events, guiding behavior and decision-making in the absence of explicit rules (Kreps, 1990). Therefore, founders' attitudes toward uncertainty could have a significant impact on an organization's culture and firm policies. On the one hand, founders from high UAI societies might want to reduce anxiety and uncertainty, and thus are incentivize to build a strong culture. On the other hand, such founders may prefer rigid structures and formalized processes to address uncertainty over investing in intangible assets such as corporate culture. The role of a founder's cultural heritage on the culture of the firm that she founded, is ultimately an empirical question.

Recessions can change founders' perceptions of business risks and opportunities, leading them to prioritize stability and cost control over innovation and growth. Founders entering the job market during a recession may instill a more cautious and risk-averse culture within their companies, emphasizing resource preservation and cost-cutting measures (Schoar and Zuo, 2017). Alternatively, the challenges of a recession may propel founders to embrace change and encourage their firms to think creatively to navigate uncertain economic landscape, resulting

[11] Our sample for analyzing founder and founding characteristics is drawn from S&P 1500 firms, the majority of which completed their IPOs well before the beginning year of culture measure (2002). The availability of detailed biographical data on founders—including full names, birth dates, and birthplaces—imposes significant constraints on the final sample size. There are only 193 firms in our sample with a full set of founder characteristics that had an IPO since 2002. Therefore, we do not use the culture score at a firm's IPO for the analysis in this section.

in a culture that prioritizes innovation, adaptability, and growth.[12]

Following Schoar and Zuo (2017), we define *Founder work recession* as an indicator variable that takes the value one if there is a recession in the calendar year when a founder turns 24, based on the NBER business cycle dating database.

Alesina and La Ferrara (2005) highlight a diverse ethnic mix in a country (or a city) brings about variety in abilities and experiences, fostering creativity and innovation. Hunt and Gauthier-Loiselle (2010) find that immigrants significantly boost innovation by introducing diverse perspectives and complementary skills, which stimulate creativity and inventive activities among native workers. Similarly, we conjecture that founders from ethnically diverse regions are likely to have developed a good understanding of different cultural norms, perspectives, and practices, which help them build a more inclusive, adaptable, and innovative culture in firms that they founded.

We measure the ethnic diversity in a founder's birthplace, *Founder birthplace race HHI*, using the HHI of racial diversity in the county where a founder was born. We use census records in each county to construct the measure that is closest to a founder's birth year.

According to Bazzi et al. (2020), the American frontier experience has left a lasting legacy of rugged individualism. The frontier attracted individuals who were inherently individualistic and refined those traits through their experiences in an environment that emphasized self-sufficiency and minimal government intervention. The frontier's unique conditions required settlers to be highly independent and resourceful, often working alone rather than in cooperative teams. This focus on independence and personal achievement can lead to less emphasis on teamwork, mutual respect, and collaboration in these communities. We conjecture that founders raised in such communities are more likely to prioritize self-reliance and individual achievement, resulting in a weak culture in firms that they founded. We obtain our measure for *Founder birthplace TFE* by merging the total frontier experience

[12]Schoar and Zuo (2017) further distinguish between the "general recession channel" and the "firm-specific channel" via changes in labor markets, finding that firm-specific effects explain an important fraction of the general cohort effect. We do not separate these two effects, as both could contribute to founders' perceptions of business risk.

data set from Bazzi et al. (2020) with our founder birthplace data.

Table 5 presents the results. In column (1), we regress a firm's *Culture first obs* on its founder's cultural heritage, *Founder UAI*, controlling for firm characteristics known to be correlated with corporate culture. We show that a founder's uncertainty avoidance score is positively and significantly associated with the early culture score of the firm that she founded. In column (2), we show that founders who began their careers during recessions are associated with founding firms with low early culture scores, reflecting a more risk-averse stance. In column (3), we show that founders born in highly diverse counties are associated with founding firms with high early culture scores. We find no significant association between a founder's birthplace TFE and the early culture of firms that they founded in column (4), suggesting that founders' exposure to the frontier legacy of rugged individualism plays no role in their design of organizational culture. Column (5) presents the results for an encompassing specification. We note that our main findings remain.

Liu (2016) provides some suggestive evidence on the role of corporate insiders in forming a corruption culture. To examine whether corporate insiders have any influence on a firm's culture in its early years, we expand the analysis in Table 5 by including the first observation available for the UAI of the CEO, the UAI of non-CEO executives, and the UAI of board members. Appendix Table A.3 presents the results. We note that only the UAI of a firm's founder, rather than that of then-CEO or then-insiders, is positively and significantly associated with the early culture of the firm that she founded.

In summary, we find that a firm's early culture is greatly influenced by its founder's cultural heritage and early life/work experiences.

6.2 The impact of founding characteristics on the origin of a firm's culture

The founding characteristics of a firm, including its geographic location and the economic conditions at the time of its establishment, may influence its culture. These characteristics are important aspects of the initial environment in which a company operates, influencing the values, norms, and behaviors that guide how a firm functions internally, how employees

interact, and how an organization evolves.

Founding a company during a recession can have a detrimental effect on its culture due to significant economic pressures from the outset. In such challenging times, companies are often forced to concentrate on survival, cost-cutting, and immediate financial concerns (Schoar and Zuo, 2017). This focus on short-term objectives can divert attention and resources away from the establishment of shared values and norms. As a result, firms founded during recessions may have a weak culture.

When a company is founded in a location with high ethnic diversity, this environment fosters collaboration and adaptability, as individuals from different backgrounds bring diverse ideas and approaches to problem-solving. However, firms located in regions with high ethnic diversity may face obstacles in fostering a strong corporate culture due to communication barriers and cultural clashes. The role of founding location's ethnic diversity in a firm's early culture is an empirical question.

The American frontier experience (Bazzi et al., 2020), which emphasizes individualism, self-reliance, and independence, while promoting resilience and determination, can lead to challenges in establishing a strong culture. Traits like individual achievement and autonomy can make it difficult to focus on collaboration and shared organizational values. Employees may prioritize personal goals over collective ones, leading to a weak culture. We thus conjecture that firms founded in locations with more exposure to the frontier experience are associated with a weak early culture.

To address potential multicollinearity problems, instead of using the raw culture scores, we regress $Culture\ first\ obs$ on *Founder UAI*, and save the residual *res Culture first obs*. By construction, the residuals are orthogonal to a founder's cultural heritage. We then regress *res Culture first obs* on the founding characteristics. Table 6 presents the results. Consistent with our conjecture, we find that firms founded during recessions are associated with low *res Culture first obs* scores; firms founded in counties with high ethnic diversity are associated with high *res Culture first obs* scores; and firms founded in locations with high TFE are

associated with low *res Culture first obs* scores.

In summary, we show that the founding characteristics of a firm play an important role in shaping its early culture. The timing and location of a firm's founding capture the conditions and pressures faced by the organization in its early days, shaping values and norms.

7 Additional Investigation

7.1 Assortative matching between CEOs and Firms

One potential explanation for the significant influence of firm fixed effects on corporate culture is assortative matching between CEOs and firms (Hackman, 1992; Van den Steen, 2010b). Incoming CEOs may possess cultural traits aligned with the firms they join, which could attenuate the prominence of CEO fixed effects. This section investigates the role of selection, specifically, assortative matching, in explaining the persistence in corporate culture.

Our sample comprises 2,942 CEO turnover events from the ExecuComp database over the period 2002–2021, with available data on corporate culture scores and CEO UAI values. Following the framework in Section 6.1, UAI proxies for risk and uncertainty preferences rooted in a CEO's cultural heritage. Under selection, we expect firms with high culture scores are matched with CEOs with high UAI values.

Table 7 presents the results. Column (1) regresses incoming CEO UAI on lagged corporate culture scores. Firms with stronger pre-turnover cultures are significantly associated with hiring CEOs exhibiting higher UAI, consistent with selection. Column (2) include pre-turnover firm characteristics to account for business-specific heterogeneity; our main findings remain. Column (3) adds industry fixed effects to address potential industry-level preferences for CEO risk attitudes, yielding qualitatively unchanged estimates.

Columns (4)–(6) extend the analysis by controlling for the departing CEO's UAI, as departing CEOs often influence succession. While the departing CEO's UAI is positively correlated with the incoming CEO's UAI, this relationship becomes statistically insignificant after including industry fixed effects. Importantly, the positive and significant association between corporate culture and incoming CEO UAI remain across all specifications, underscoring

the robustness of the selection effect.

Collectively, these results provide some suggestive evidence that assortative matching between CEOs and firms could be one mechanism underlying the persistence in corporate culture.

7.2 Alternative corporate culture measures

To address the concern that our key findings of the persistence in corporate culture are due to the way we measure culture using earnings call transcripts, we employ an alternative measure of culture, based on employee reviews on *Glassdoor*, a major career intelligence website where employees can write anonymous reviews about their firms. Recent research (e.g., Li et al., 2024) suggests that the language in employee reviews reflects the shared values and norms of organizational members.

We begin with our full sample and match them with firms on Glassdoor. Since former employees tend to be dissatisfied with their employers and may leave biased reviews, we exclude reviews from former employees. This yields a sample of 2,340,693 employee reviews corresponding to 3,601 unique firms and 27,335 firm-year observations spanning from 2008, the launch year of Glassdoor, to 2021, the end of our sample period. Moreover, Glassdoor requires employees to provide both positive ("pros") and negative ("cons") comments about their employers to access the website's content. To avoid the confounding effect of negative sentiment, we focus on the "pros" sections in our analysis.[13] Appendix Table A.4 lists steps taken to form the sample using the Glassdoor review data set.

Following Li et al. (2021), we employ the culture dictionary derived from semi-supervised machine learning techniques applied to earnings call transcripts. This dictionary encompasses the cultural values of innovation, integrity, quality, respect, and teamwork. To measure corporate culture based on employee reviews, we process each review using this culture dictionary and compute corporate cultural value scores through the term frequency-inverse document frequency (tf-idf) weighting scheme. We then take the average of these scores for

[13] In untabulated tests, we further use the score in the "pros" section minus that in the "cons" section to construct a net score. The results remain qualitatively the same.

each firm-year. To validate this measure, we analyze the correlations between cultural values derived from employee reviews and those obtained from earnings calls. We observe positive correlations between these two measures, indicating that different data sources consistently capture these cultural traits.

Next, we repeat the variance decomposition analysis using this alternative culture measure. Similar to Table 2, we investigate how much of the variation in employee-review-based culture is explained by known factors and how much is due to unobserved differences specific to individual firms (firm fixed effects) and their CEOs (CEO fixed effects). Appendix Table A.5 Panel A presents variance decomposition results for the full sample of firms, and Panel B presents variance decomposition results for a subsample of firms whose CEOs have worked in two or more firms. Consistent with our main findings, firm fixed effects significantly contribute to the persistence in corporate culture, accounting for 89% of the variation in the full sample and 93% in the "CEO movers" sample. These findings suggest that corporate culture is deeply embedded within firms and is not easily influenced by changes in leadership.

We examine the role of a firm's early culture using employee review data. Appendix Table A.6 reports the results. We find consistent evidence that a firm's early culture plays a significant role in shaping future culture. These findings further confirm that a firm's culture at the time of its IPO continues to influence its culture in subsequent years, underscoring the enduring impact of early cultural values.

Following Pan et al. (2017), we use the CEO UAI as an alternative measure of corporate risk culture. Appendix Figure A.4 shows that a firm's risk culture is persistent. Appendix Table A.7 further confirms that a firm's risk culture at the time of its IPO continues to influence its risk culture in subsequent years.

Overall, using alternative culture measures based on employee reviews from Glassdoor and corporate insiders' cultural heritage provides further support for our main findings that corporate culture is persistent.

7.3 The economic consequence of non-persistent corporate culture

So far, we establish that corporate culture is persistent and significantly influenced by a firm's founders and founding characteristics. This raises a natural question: Why do firms maintain a fairly stable culture? While this paper does not aim to provide a comprehensive answer to this question, we explore the impacts of a non-persistent culture. We would like to clarify that our focus is not on evaluating the normative aspects of having a strong culture; rather, we are interested in the consequences of firms with a fast changing culture.

According to Graham et al. (2022a), corporate executives describe culture as "a belief system," "a coordination mechanism," and "an invisible hand," suggesting that corporate culture influences various dimensions of a firm's operations. In our empirical analysis of the impact of cultural change on firm outcomes, we measure, *Cultural change*, as the standard deviation of culture scores over the past three years. All explanatory variables are lagged by one period. Additionally, firm and year fixed effects are included to control for firm-specific time-invariant factors and year-specific factors, respectively.

We begin by examining the potential impacts of cultural change on top management turnover. Using the ExecuComp database, we define *TMT turnover* as an indicator variable that takes the value of one if any of the top five executives leaves a firm in a year, and zero otherwise. Appendix Table A.8 column (1) presents the results. We show that cultural change significantly increases the likelihood of top management turnover. This finding is consistent with Kotter and Heskett (1992), who posits that substantial cultural shifts can cause a misalignment between executives' values and the new corporate culture, leading to the former's departure.

Next, we investigate the effect of cultural change on rank-and-file employee turnover. Given the limitations in tracking individual employee movements, we estimate employee turnover by calculating the difference between the number of employees at the beginning and end of a year, dividing by the number of employees at the beginning of a year, and then multiplying by 100. Our measure likely provides a conservative estimate of total turnover,

offering a lower bound on employee exits. Column (2) presents the results. We note that employees are more likely to depart from firms with big cultural changes.

We then analyze the impact of cultural change on operational efficiency. Column (3) presents the results. We find that big cultural changes are negatively and significantly associated with firms' ROA, suggesting that frequent cultural shifts adversely affect operational efficiency.

We also evaluate the risks associated with cultural change. Following Chen et al. (2001), we measure stock crash risk by the negative third moment of firm-specific weekly returns, adjusted by the standard deviation of these returns raised to the third power. Column (4) shows a positive and significant association between a firm's cultural change and its stock crash risk.

Finally, we examine the effect of cultural change on firms' distress risk. We first calculate the expected default risk (EDF) for each firm every month. If a firm's EDF exceeds the 90th percentile of its firm-month cohort, that firm-month is classified as distressed. If a firm has more than six distressed months in a year, the distress indicator takes the value of one, and zero otherwise. Column (5) presents the results. We show that big cultural changes increase a firm's distress risk, underscoring the positive correlation between big cultural changes and heightened firm risk.

Overall, we conclude that there are significant adverse effects of a non-persistent culture on firm performance, highlighting the importance of maintaining a stable culture.

8 Conclusion

In this paper, we examine the evolution of corporate culture and trace its origin, differentiating the values and norms prevailing within a company from the preferences of corporate insiders. Our culture data set comes from Li et al. (2021) who employ machine learning methods to score culture based on earnings call transcripts.

Leveraging one of the largest panel data sets on corporate culture, we first show that corporate culture is fairly stable: Firms with a strong (weak) culture tend to remain so for

the subsequent decade. We then show that the majority of the variation in corporate culture is driven by time-invariant firm fixed effects, largely attributed to a firm's culture formed around its initial public offering. To ensure that our main findings are not driven by how culture is measured, we employ two alternative culture data sets based on Glassdoor employee reviews (Li et al., 2024) and corporate insiders' cultural heritage (Liu, 2016; Pan et al., 2017, 2020), and our main findings remain.

Employing a rich set of founder, founding time, and founding location characteristics to explain a firm's early culture, we show that a founder's cultural heritage, the business environment at the start of a founder's career or at a firm's founding, a founder's birthplace, and a firm's founding location all have significant influences on its early culture. Finally, we show that assortative matching between CEOs and their firms on cultural values might be one mechanism underlying the persistence in corporate culture.

Our research contributes to a better understanding of the fundamental drivers behind the persistent nature of corporate culture. The early cultural values, influenced by founders and founding environment, serve as a bedrock for long-term cultural stability. Future research can delve deeper into the mechanisms that fortify corporate culture over time.

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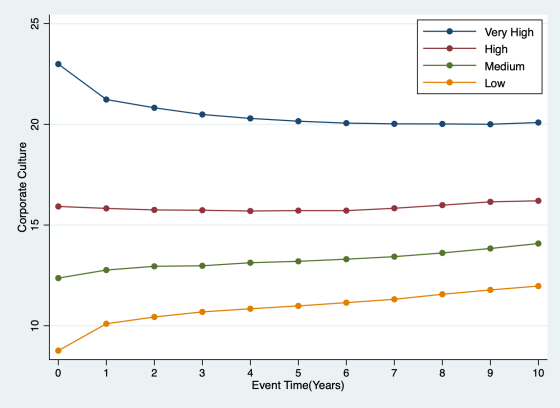
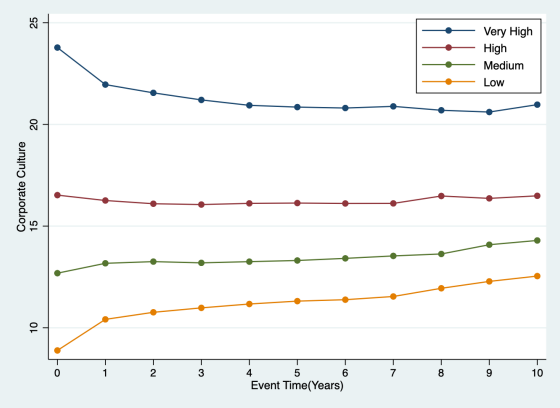
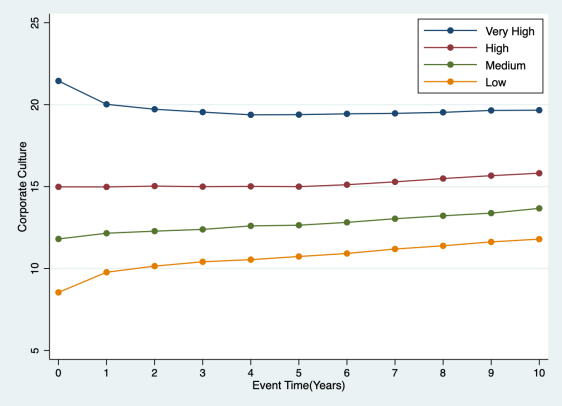
Figure 1: Average Culture Scores of Culture Groups in Event Time



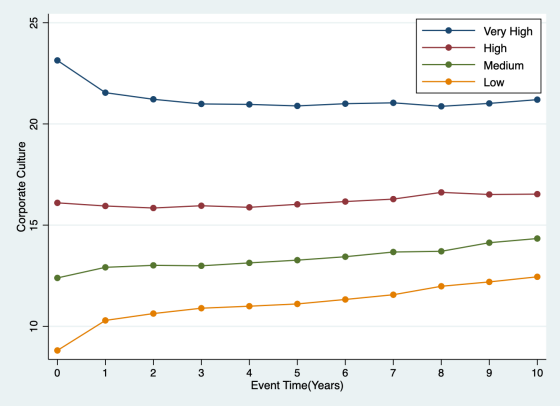
Panel A: All Firms



Panel B: Firms Going Public (2002-2021)



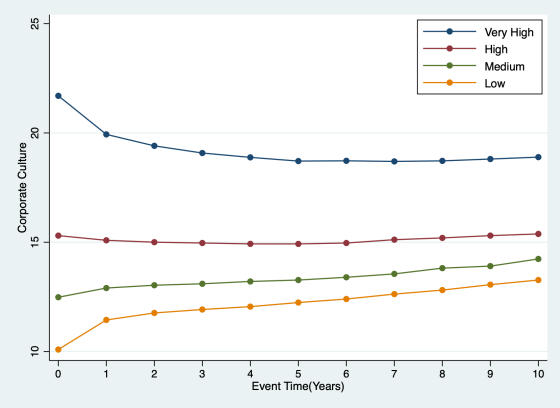
Panel C: Survivors



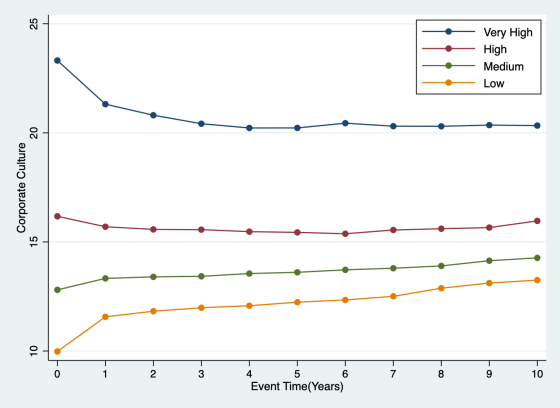
Panel D: Firms Going Public (2002-2011)

This figure plots the evolution of corporate culture using raw culture scores to sort. The full sample consists of firms in the CRSP-Compustat database with data on culture scores from 2002 to 2021. Each panel presents the average culture score of four firm groups in event time, where year zero is the group formation period. We form four groups by ranking firms based on their culture scores. Holding the group fixed for the next ten years, we compute the average culture score for each group. We repeat this process of sorting and averaging for each fiscal year in our sample period. After performing this sorting and averaging for each fiscal year from 2002 to 2021, we further average the average culture scores across "event years" to obtain the lines in each figure. Panel A presents the results for the full sample. This sample consists of 55,377 firm-year observations, corresponding to 6,917 unique firms. Panel B presents the results for the sample of firms that went public between 2002 and 2021. This sample consists of 19,095 firm-year observations, corresponding to 3,377 firms. Panel C presents the results for the sample of firms that survive throughout the sample period. To form the sample, we require a firm have its IPO before 2002, and remain listed by 2021. We do not have a balance panel because some firms miss culture scores. This sample consists of 22,887 firm-year observations, corresponding to 1,532 firms. Panel D presents the results for the sample of firms that went public between 2002 and 2011 so that we have at least ten years of culture data. This sample consists of 13,417 firm-year observations, corresponding to 1,803 firms.

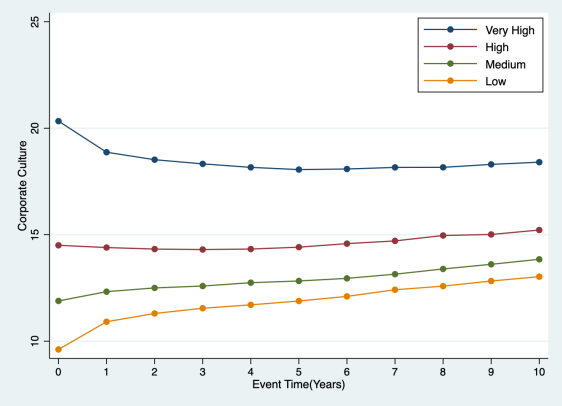
Figure 2: Average Culture Scores of Unexplained Culture Groups in Event Time



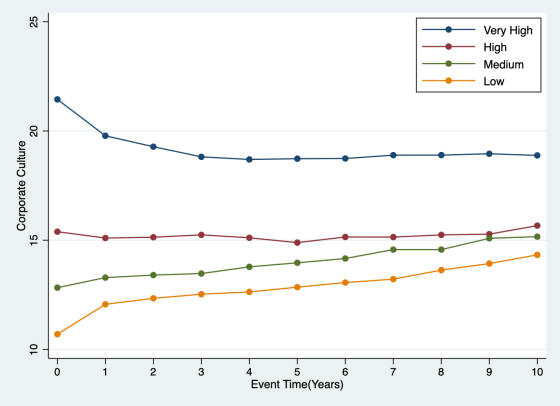
Panel A: All Firms



Panel B: Firms Going Public (2002-2021)



Panel C: Survivors



Panel D: Firms Going Public (2002-2011)

This figure plots the evolution of corporate culture using unexplained culture scores to sort. The full sample consists of firms in the CRSP-Compustat database with data on culture scores from 2002 to 2021. Each panel presents the average culture score of four firm groups in event time, where year zero is the group formation period. We form four groups by ranking firms based on their unexplained culture scores according to Equation (1). Holding the group fixed for the next ten years, we compute the average culture score for each group. We repeat this process of sorting and averaging for each fiscal year in our sample period. After performing this sorting and averaging for each fiscal year from 2002 to 2021, we further average the average culture scores across "event years" to obtain the lines in each figure. Panel A presents the results for the full sample. This sample consists of 47,069 firm-year observations, corresponding to 6,029 unique firms. Panel B presents the results for the sample of firms that went public between 2002 and 2021. This sample consists of 12,534 firm-year observations, corresponding to 2,274 firms. Panel C presents the results for the sample of firms that survive throughout the sample period. To form the sample, we require a firm have its IPO before 2002, and remain listed by 2021. We do not have a balance panel because some firms miss culture scores or do not have information on control variables. This sample consists of 20,818 firm-year observations, corresponding to 1,490 firms. Panel D presents the results for the sample of firms that went public between 2002 and 2011 so that we have at least ten years of culture data. This sample consists of 11,120 firm-year observations, corresponding to 1,580 firms.

Table 1: Summary Statistics

Panel A: Firm Characteristics

	Obs.	Mean	Median	SD	P25	P75
Culture	55,377	14.897	13.791	5.932	10.627	17.997
Culture IPO	6,670	15.125	13.993	6.706	10.398	18.416
Culture first IPO3y	13,248	14.938	13.929	6.341	10.236	18.315
Culture avg IPO3y	11,275	14.774	13.767	5.562	10.574	17.880
Total assets	55,377	5358.723	583.302	17880.910	144.767	2449.602
Firm size	55,377	6.442	6.369	2.076	4.975	7.804
Firm age	55,377	18.657	14.000	17.098	6.000	25.000
Ln(Firm age)	55,377	2.609	2.708	0.903	1.946	3.258
Sales growth	55,377	0.132	0.073	0.374	-0.025	0.201
Leverage	55,377	0.225	0.196	0.196	0.042	0.357
M/B	55,377	1.924	1.434	1.410	1.070	2.192
ROA	55,377	0.071	0.095	0.162	0.031	0.149
Tangibility	55,377	0.237	0.138	0.246	0.047	0.358
Institutional ownership	55,377	0.630	0.706	0.313	0.405	0.879
Num M&As	55,377	2.357	1.000	3.247	0.000	3.000
Num SEOs	55,377	1.771	1.000	2.467	0.000	3.000

Panel B: Founder/Founding Characteristics

	Obs.	Mean	Median	SD	P25	P75
Culture first obs	1,476	13.611	12.598	5.087	9.845	16.324
Founder characteristics						
Founder UAI	1476	0.481	0.350	0.162	0.350	0.650
Founder work recession	1476	0.434	0	0.496	0	1
Founder birthplace race HHI	991	0.132	0.083	0.120	0.036	0.211
Founder birthplace TFE	987	0.902	0.600	1.073	0.000	1.400
Founding characteristics						
Founding recession	1,462	0.404	0	0.491	0	1
Founding local race HHI	856	0.203	0.201	0.122	0.092	0.345
Founding local TFE	854	0.752	0.500	0.918	0.000	1.000

The table presents the summary statistics. The sample consists of 55,377 firm-year observations (corresponding to 6,917 firms) in the CRSP-Compustat database with data on culture scores from 2002 to 2021. Panel A reports the summary statistics for firm characteristics. Panel B reports the summary statistics for founder/founding characteristics. Variable definitions are provided in Appendix Table A.2.

Table 2: Variance Decomposition

Panel A: All Firms

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)	Culture (7)
Firm FE	1.00	.	.	0.98	.	0.88	0.88
CEO FE	.	1.00	.	.	0.98	0.12	0.11
Year FE	.	.	1.00	0.01	0.01	.	0.01
Firm size	.	.	.	0.00	0.00	.	.
Ln(Firm age)	.	.	.	0.00	0.00	.	.
Sales growth	.	.	.	0.00	0.00	.	.
Leverage	.	.	.	0.00	0.00	.	.
M/B	.	.	.	0.00	0.00	.	.
ROA	.	.	.	0.00	0.00	.	.
Tangibility	.	.	.	0.00	0.00	.	.
Institutional ownership	.	.	.	0.00	0.00	.	.
Num M&As	.	.	.	0.00	0.00	.	.
Num SEOs	.	.	.	0.00	0.00	.	.
Industry FE	.	.	.	.	0.01	.	.
Adj. R^2	0.61	0.60	0.04	0.67	0.66	0.74	0.74

Panel B: Firms with CEOs Who Have Worked in Two or More Firms

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)	Culture (7)
Firm FE	1.00	.	.	0.97	.	0.99	0.95
CEO FE	.	1.00	.	.	0.90	0.01	0.01
Year FE	.	.	1.00	0.03	0.07	.	0.04
Firm size	.	.	.	0.00	0.00	.	.
Ln(Firm age)	.	.	.	0.00	0.00	.	.
Sales growth	.	.	.	0.00	0.00	.	.
Leverage	.	.	.	0.00	0.00	.	.
M/B	.	.	.	0.00	0.01	.	.
ROA	.	.	.	0.00	0.00	.	.
Tangibility	.	.	.	0.00	0.00	.	.
Institutional ownership	.	.	.	0.00	0.00	.	.
Num M&As	.	.	.	0.00	0.00	.	.
Num SEOs	.	.	.	0.00	0.01	.	.
Industry FE	.	.	.	.	0.00	.	.
Adj. R^2	0.73	0.59	0.07	0.77	0.66	0.74	0.77

Panel C: Impact of Different Fixed Effects on Firm Policies (All Firms)

	Sales (1)	Capex (2)	ROA (3)	Book Leverage (4)	Market Leverage (5)	Cash (6)	R&D (7)
Firm FE	0.63	0.54	0.62	0.89	0.88	0.61	0.66
CEO FE	0.35	0.45	0.33	0.10	0.11	0.37	0.33
Year FE	0.02	0.01	0.05	0.01	0.01	0.02	0.01
Adj. R^2	0.91	0.84	0.73	0.79	0.81	0.74	0.93

The table presents a variance decomposition using several different model specifications, with adjusted R^2 at the bottom. *Firm FE* are firm fixed effects. *CEO FE* are CEO fixed effects. *Year FE* are fiscal year fixed effects. We compute the Type III partial sum of squares for each effect in the model and then normalize each estimate by the sum across the effects, forcing each column to sum to one. For example, in column (4) of Panel A, 1% of the explained sum of squares can be attributed to *Year FE*. Panel A presents the results for the full sample. This sample consists of 55,377 firm-year observations, corresponding to 6,917 unique firms. Panel B presents the results for a sample of firms whose CEOs have worked in two or more firms. This sample consists of 1,085 firm-year observations, corresponding to 122 unique firms and 235 unique CEOs. Panel C presents the results of a variance decomposition using firm policies for the full sample. Variable definitions are provided in Appendix Table A.2.

Table 3: The Effect of Early Culture on Future Culture

Panel A: All Firms

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)
Culture IPO	0.535***	0.409***				
	(0.026)	(0.026)				
Culture first IPO3y			0.551***	0.442***		
			(0.018)	(0.019)		
Culture avg IPO3y					0.736***	0.634***
					(0.021)	(0.023)
Firm size		0.030		-0.002		0.056
		(0.103)		(0.067)		(0.064)
Ln(Firm age)		0.706***		0.590***		0.661***
		(0.217)		(0.154)		(0.200)
Sales growth		0.040*		-0.004*		-0.002
		(0.020)		(0.002)		(0.002)
Leverage		-1.541**		-1.985***		-1.605***
		(0.602)		(0.410)		(0.405)
M/B		0.699***		0.551***		0.448***
		(0.095)		(0.062)		(0.060)
ROA		-2.233***		-2.435***		-1.538***
		(0.759)		(0.482)		(0.483)
Tangibility		-3.093***		-2.429***		-1.968***
		(0.729)		(0.483)		(0.467)
Institutional ownership		-0.422		-0.408*		-0.362*
		(0.317)		(0.209)		(0.207)
Num MAs		-0.043		-0.048		-0.038
		(0.074)		(0.045)		(0.047)
Num SEOs		-0.076		-0.072*		-0.041
		(0.059)		(0.040)		(0.038)
Constant	8.157***	8.973***	7.636***	8.771***	4.978***	5.324***
	(0.382)	(0.942)	(0.266)	(0.617)	(0.302)	(0.703)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
No. of firms	1236	1236	2387	2387	2090	2090
Obs.	6670	6670	13248	13248	11275	11275
Adj. R^2	0.467	0.537	0.454	0.512	0.515	0.557

Panel B: Firms Going Public within Ten Years of Founding

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)
Culture IPO	0.519***	0.390***				
	(0.042)	(0.045)				
Culture first IPO3y			0.548***	0.453***		
			(0.031)	(0.032)		
Culture avg IPO3y					0.735***	0.645***
					(0.038)	(0.038)
Firm size		0.451*		0.193		0.172
		(0.238)		(0.184)		(0.173)
Ln(Firm age)		0.797**		1.042**		1.489***
		(0.389)		(0.407)		(0.531)
Sales growth		0.034*		-0.004		-0.002
		(0.020)		(0.003)		(0.003)
Leverage		-3.697***		-3.044***		-2.535***
		(1.210)		(0.842)		(0.784)
M/B		0.607***		0.501***		0.422***
		(0.164)		(0.099)		(0.088)
ROA		-2.188		-1.946**		-1.071
		(1.432)		(0.918)		(0.887)
Tangibility		-4.386***		-3.422***		-3.298***
		(1.633)		(1.098)		(1.021)
Institutional ownership		-1.252**		-1.027**		-1.107**

Table 3 – Continued

		(0.594)		(0.477)		(0.495)
Num M&As		0.034		-0.055		-0.077
		(0.315)		(0.150)		(0.136)
Num SEOs		-0.267**		-0.224**		-0.222**
		(0.126)		(0.098)		(0.093)
Constant	9.298***	8.850***	8.485***	8.322***	5.491***	4.581***
	(0.699)	(1.829)	(0.513)	(1.268)	(0.616)	(1.475)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
No. of firms	427	427	828	828	721	721
Obs.	2220	2220	4287	4287	3606	3606
Adj. R^2	0.524	0.593	0.493	0.547	0.547	0.593

This table examines the role of corporate culture at the time of a firm's IPO on its future culture using different specifications. Panel A presents the results using the full sample (All Firms). Panel B presents the results using a subsample of firms that went public within the ten years of its founding. *Culture IPO* is the culture score of a firm in the year of its IPO. *Culture first IPO3y* is the culture score using the first non-missing culture score during the first three years post-IPO. *Culture avg IPO3y* is the average culture score over the first three years following a firm's IPO. *Industry FE* are industry fixed effects based on the Fama and French 38-industry classification. *Year FE* are fiscal year fixed effects. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Table 4: Firms without Founders as CEOs or Board Members

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)
Culture IPO	0.534***	0.400***				
	(0.026)	(0.026)				
Culture first IPO3y			0.549***	0.432***		
			(0.018)	(0.019)		
Culture avg IPO3y					0.724***	0.610***
					(0.020)	(0.022)
Firm size		-0.019		-0.040		0.023
		(0.091)		(0.063)		(0.061)
Ln(Firm age)		0.487**		0.495***		0.515**
		(0.198)		(0.155)		(0.204)
Sales growth		0.048***		-0.003		-0.002
		(0.018)		(0.002)		(0.002)
Leverage		-1.726***		-1.950***		-1.590***
		(0.577)		(0.410)		(0.413)
M/B		0.628***		0.505***		0.412***
		(0.092)		(0.062)		(0.064)
ROA		-2.107***		-2.358***		-1.567***
		(0.723)		(0.485)		(0.500)
Tangibility		-3.545***		-2.767***		-2.235***
		(0.685)		(0.473)		(0.479)
Institutional ownership		-0.467		-0.455**		-0.389*
		(0.320)		(0.218)		(0.216)
Num M&As		-0.083		-0.067		-0.049
		(0.056)		(0.041)		(0.044)
Num SEOs		-0.044		-0.057		-0.026
		(0.056)		(0.039)		(0.038)
Constant	8.048***	10.017***	7.583***	9.457***	5.074***	6.237***
	(0.386)	(0.845)	(0.267)	(0.584)	(0.289)	(0.650)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
No. of firms	1167	1167	2267	2267	1972	1972
Obs.	6011	6011	12003	12003	10172	10172
Adj. R^2	0.483	0.554	0.459	0.517	0.510	0.552

This table conducts a robustness check on the impact of corporate culture at the time of a firm's IPO on its future culture. We require a firm's founder is neither the CEO nor a member of the board of directors in any firm-year over the sample period. *Culture IPO* is the culture score of a firm in the year of its IPO. *Culture first IPO3y* is the culture score using the first non-missing culture score during the first three years post-IPO. *Culture avg IPO3y* is the average culture score over the first three years following a firm's IPO. *Industry FE* are industry fixed effects based on the Fama and French 38-industry classification. *Year FE* are fiscal year fixed effects. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Table 5: The Determinants of Early Culture–Founder Characteristics

	Culture first obs (1)	Culture first obs (2)	Culture first obs (3)	Culture first obs (4)	Culture first obs (5)
Founder UAI	1.775**				1.219***
	(0.747)				(0.326)
Founder work recession		-0.900***			-1.114***
		(0.246)			(0.297)
Founder birthplace race HHI			2.401**		2.051*
			(1.032)		(1.089)
Founder birthplace TFE				-0.090	-0.007
				(0.136)	(0.139)
Ln(Assets)	-0.084	-0.086	-0.104	-0.116	-0.072
	(0.077)	(0.076)	(0.094)	(0.094)	(0.094)
Ln(Firm age)	-0.626***	-0.607***	-0.538***	-0.548***	-0.475***
	(0.110)	(0.110)	(0.132)	(0.132)	(0.132)
Sales growth	0.002***	0.002***	0.002*	0.002*	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Leverage	-2.599***	-2.555***	-1.817**	-1.777**	-1.735**
	(0.655)	(0.653)	(0.801)	(0.802)	(0.795)
M/B	0.539***	0.528***	0.456***	0.462***	0.426***
	(0.068)	(0.068)	(0.075)	(0.075)	(0.075)
ROA	-6.717***	-6.618***	-5.730***	-6.053***	-5.984***
	(1.079)	(1.076)	(1.322)	(1.326)	(1.315)
Tangibility	-1.859***	-1.920***	-1.036	-1.122	-1.061
	(0.590)	(0.588)	(0.692)	(0.694)	(0.688)
Institutional ownership	-0.734	-0.732	-0.749	-0.691	-0.481
	(0.541)	(0.540)	(0.663)	(0.666)	(0.662)
Num M&As	-0.014	-0.018	-0.058	-0.055	-0.077
	(0.043)	(0.043)	(0.050)	(0.050)	(0.050)
Num SEOs	-0.085	-0.091*	-0.090	-0.089	-0.096
	(0.053)	(0.053)	(0.059)	(0.059)	(0.058)
Constant	16.229***	17.489***	18.744***	16.879***	17.923***
	(0.776)	(0.646)	(1.118)	(0.809)	(1.290)
Obs.	1476	1476	991	987	987
Adj. R^2	0.166	0.170	0.131	0.127	0.143

This table examines how founders influence their firms' early culture. *Cuture first obs* is the first non-missing culture score for a firm in our sample. *Founder UAI* is Hofstede's uncertainty avoidance index value in a founder's country of origin. *Founder work recession* is an indicator variable that takes the value of one if a founder's first job began during a recession, and zero otherwise. *Founder birthplace race HHI* is the Herfindahl-Hirschman index of racial diversity in the county where a founder was born. *Founder birthplace TFE* is the number of years between 1790 and 1890 when the county of a founder's birthplace was within 100 km of the frontier line and its population density was below 6 people per square mile. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Table 6: The Determinants of Early Culture–Founding Characteristics

	res Culture first obs	res Culture first obs	res Culture first obs	res Culture first obs
	(1)	(2)	(3)	(4)
Founding recession	-0.787***			-0.841**
	(0.256)			(0.369)
Founding place race HHI		0.043***		0.034**
		(0.015)		(0.015)
Founding place TFE			-0.276**	-0.262**
			(0.130)	(0.113)
Ln(Assets)	-0.073	0.006	0.038	0.016
	(0.077)	(0.109)	(0.109)	(0.110)
Ln(Firm age)	-0.562***	-0.419**	-0.458***	-0.340**
	(0.112)	(0.169)	(0.169)	(0.172)
Sales growth	0.002**	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Leverage	-2.517***	-2.093**	-2.379***	-2.189**
	(0.658)	(0.867)	(0.868)	(0.873)
M/B	0.514***	0.473***	0.488***	0.443***
	(0.069)	(0.080)	(0.080)	(0.080)
ROA	-6.545***	-5.551***	-5.930***	-5.199***
	(1.085)	(1.298)	(1.296)	(1.306)
Tangibility	-1.846***	-2.203***	-2.607***	-2.330***
	(0.592)	(0.845)	(0.837)	(0.848)
Institutional ownership	-0.852	-0.842	-0.951	-1.025
	(0.545)	(0.700)	(0.705)	(0.702)
Sum(M&As)	-0.018	0.022	0.016	0.010
	(0.043)	(0.062)	(0.063)	(0.062)
Sum(SEOs)	-0.074	-0.261***	-0.264***	-0.266***
	(0.054)	(0.094)	(0.094)	(0.094)
Constant	3.650***	1.998**	3.186***	2.626***
	(0.653)	(0.917)	(0.883)	(0.959)
Observations	1462	856	854	849
Adj. R^2	0.160	0.146	0.140	0.150

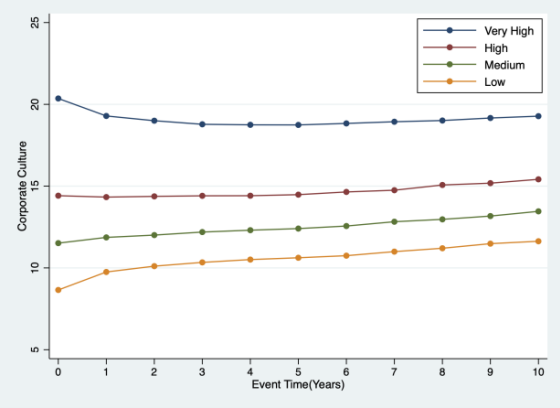
This table examines how firms' founding characteristics influence their early culture. *res Culture first obs* is the unexplained component from the regression of *Culture first obs* on $Founder\ UAI$. *Founding recession* is an indicator variable that takes the value of one if a firm was founded during a recession, and zero otherwise. $Founding\ place\ race\ HHI$ is the Herfindahl-Hirschman Index measuring racial diversity in the county where a firm was founded. $Founding\ place\ TFE$ is the number of years between 1790 and 1890 when a firm's founding county was within 100 km of the frontier line and its population density was below 6 people per square mile. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Table 7: Matching Between CEOs and Firms

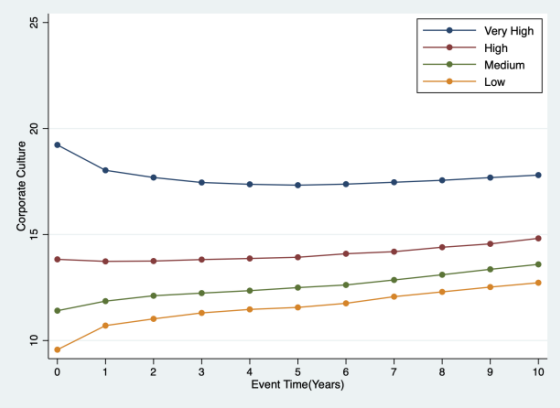
	Incoming CEO UAI (1)	Incoming CEO UAI (2)	Incoming CEO UAI (3)	Incoming CEO UAI (4)	Incoming CEO UAI (5)	Incoming CEO UAI (6)
Culture before turnover	0.147**	0.130**	0.148**	0.145**	0.130**	0.148**
Departing CEO UAI				0.035*	0.031*	0.024
				(0.019)	(0.019)	(0.019)
Ln(Asset)		-0.189	-0.190		-0.181	-0.190
		(0.212)	(0.236)		(0.212)	(0.236)
Ln(Firm age)		0.121	0.039		0.112	0.038
		(0.420)	(0.442)		(0.420)	(0.442)
Sales growth		3.132**	3.154**		3.153**	3.162**
		(1.333)	(1.343)		(1.333)	(1.343)
Leverage		-0.427	-1.324		-0.456	-1.302
		(1.945)	(2.022)		(1.944)	(2.022)
M/B		-0.637**	-0.660**		-0.647**	-0.667**
		(0.319)	(0.329)		(0.319)	(0.329)
ROA		3.917	4.027		3.914	4.077
		(3.384)	(3.494)		(3.383)	(3.494)
Tangibility		-3.812**	-2.263		-3.705**	-2.172
		(1.571)	(2.284)		(1.572)	(2.285)
Institutional ownership		2.213	2.526*		2.217	2.527*
		(1.448)	(1.490)		(1.448)	(1.490)
Num M&As		0.042	0.067		0.035	0.062
		(0.098)	(0.103)		(0.098)	(0.103)
Num SEOs		-0.069	-0.110		-0.069	-0.110
		(0.132)	(0.146)		(0.132)	(0.146)
Constant	48.129***	49.250***	48.861***	46.448***	47.682***	47.670***
	(0.937)	(2.342)	(2.431)	(1.307)	(2.524)	(2.609)
Obs.	2942	2915	2904	2942	2915	2904
Adj. R^2	0.002	0.005	0.004	0.002	0.006	0.004

This table examines matching between CEOs and firms on cultural values. The sample consists of 2,942 CEO turnover events from 2002 to 2001. *Incoming CEO UAI* is the uncertainty avoidance index value of the incoming CEO, multiplied by 100. *Culture before turnover* is the culture score of the firm in the year before the CEO turnover event. *Departing CEO UAI* is the uncertainty avoidance index value of the CEO who left the firm, multiplied by 100. *Industry FE* are industry fixed effects based on the Fama and French 38-industry classification. *Year FE* are fiscal year fixed effects. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Figure A.1: Average Culture Scores in Event Time: Firms with Complete 20 Years of Culture Data



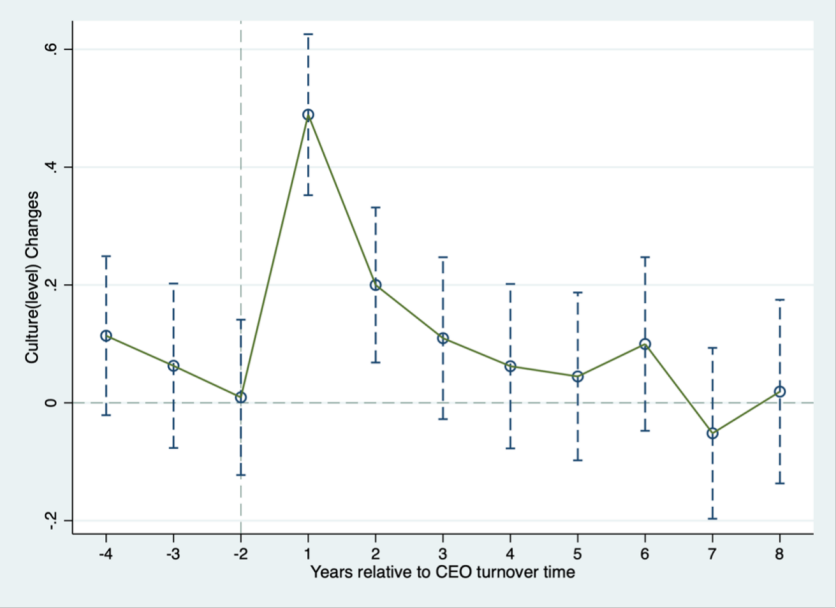
Panel A: Raw Culture Groups



Panel B: Unexplained Culture Groups

This figure plots the evolution of corporate culture for the sample of firms with complete 20 years of culture data. The sample consists of firms in the CRSP-Compustat database with data on culture scores from 2002 to 2021. Each panel presents the average culture score of four firm groups in event time, where year zero is the group formation period. We form four groups by ranking firms based on their culture scores. Holding the group fixed for the next ten years, we compute the average culture score for each group. We repeat this process of sorting and averaging for each fiscal year in our sample period. After performing this sorting and averaging for each fiscal year from 2002 to 2021, we further average the average culture scores across "event years" to obtain the lines in each figure. Panel A presents the results using raw culture scores to sort. This sample consists of 12,800 firm-year observations, corresponding to 640 unique firms. Panel B presents the results using unexplained culture scores to sort. This sample consists of 10,260 firm-year observations, corresponding to 513 firms.

Figure A.2: The Dynamic Effect of CEO Turnover on Corporate Culture



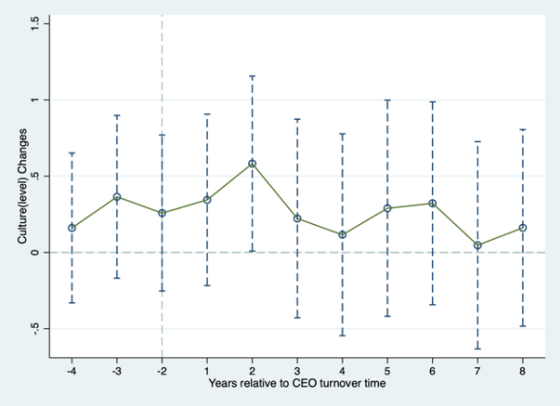
This figure presents the dynamic effect of CEO turnover on corporate culture. The sample consists of 2,693 CEO turnover events from 2002 to 2001, including 14 founder-to-founder events (i.e., a founder CEO is replaced by another founder), 220 founder-to-non-founder events (i.e, a founder CEO is replaced by a non-founder), 78 non-founder-to-founder events (i.e., a non-founder CEO is replaced by a founder), and 2,381 non-founder-to-non-founder events (i.e., a non-founder CEO is replaced by another non-founder). We examine the dynamics of corporate culture in the (-4, +8) year window around a CEO turnover event. Year 0 refers to the year in which a CEO turnover occurs. We exclude Year 0, as it is the transition year. We use a firm's culture score in Year t-1 as the benchmark. The regression model is as follows:

$$Culture_{i,t} = \alpha + \sum_{k\in[-4,8],k\neq-1} Treat_i * Year_k + \beta X_{i,t-1} + \eta_i + v_t + \epsilon_{i,t},$$

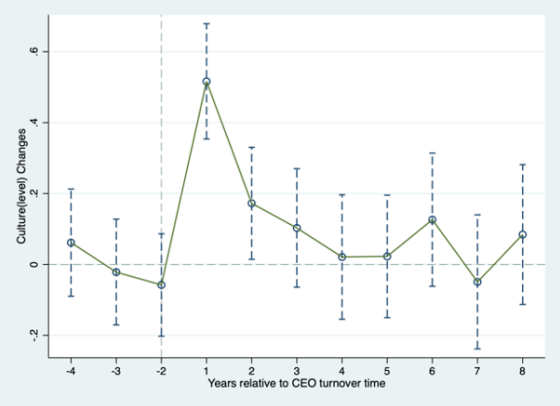
where i indexes firm; t indexes year; $X_{i,t-1}$ is a set of one-year lagged control variables; η_i are firm fixed effects; and v_t are year fixed effects. $Treat_i$ is an indicator variable that takes the value of one if a firms has a CEO turnover event, and zero otherwise. $Year_k$ is an indicator variable that captures temporal effects. k is the selected event period. The solid line represents the parameter estimates. The surrounding dashed lines represent 95% confidence intervals.

Figure A.3: The Dynamic Effect of Founder CEO vs. Non-founder CEO Turnover on Corporate Culture

Panel A: Founder CEO Turnover



Panel B: Non-founder CEO Turnover

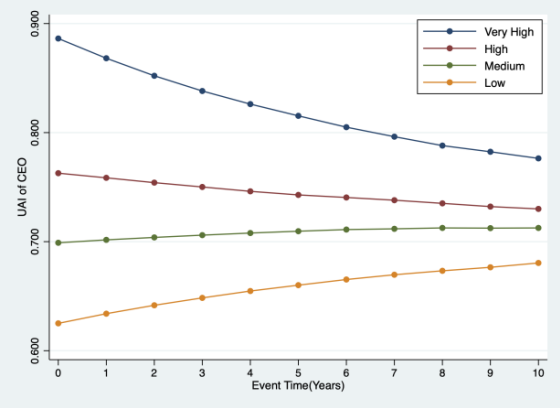


This figure compares the dynamic effect of founder CEO vs. non-founder CEO turnover on corporate culture. We examine the dynamics of corporate culture in the (-4, +8) year window around a CEO turnover event. Year 0 refers to the year in which a CEO turnover occurs. We exclude Year 0 as it is the transition year. We use $year_{t-1}$ as the benchmark period. Panel A presents the results using the founder CEO turnover sample. It consists of 220 founder-to-non-founder events (i.e, a founder CEO is replaced by a non-founder). Panel B presents the results using the non-founder CEO turnover sample. It consists of 2,381 non-founder-to-non-founder events (i.e, a non-founder CEO is replaced by another non-founder). The regression model is as follows:

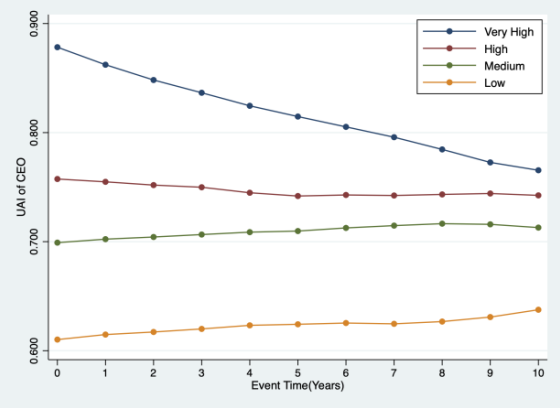
$$Culture_{i,t} = \alpha + \sum_{k\in[-4,8],k\neq-1} Treat_i * Year_k + \beta X_{i,t-1} + \eta_i + v_t + \epsilon_{i,t},$$

where i indexes firm; t indexes year; $X_{i,t-1}$ is a set of one-year lagged control variables; η_i are firm fixed effects; and v_t are year fixed effects. $Treat_i$ is an indicator variable that takes the value of one if a company has a CEO turnover event, and zero otherwise. $Year_k$ is an indicator variable that captures temporal effects. k is the selected event period. The solid line represents the parameter estimates. The surrounding dashed lines represent 95% confidence intervals.

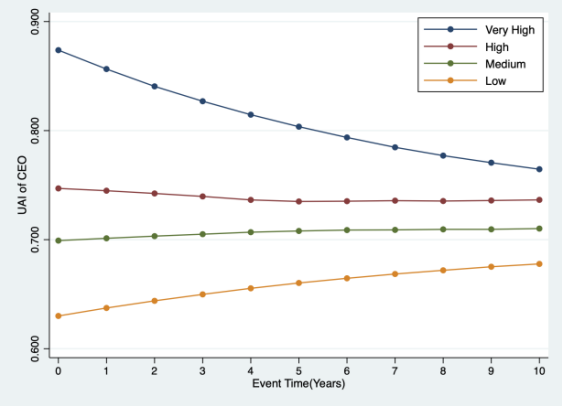
Figure A.4: Average UAI of CEO UAI Groups in Event Time



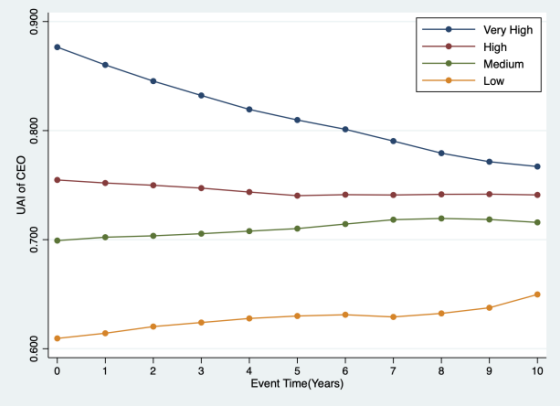
Panel A: All Firms



Panel B: Firms Going Public (2002-2021)



Panel C: Survivors



Panel D: Firms Going Public (2002-2011)

This figure plots the evolution of corporate culture using CEO uncertainty avoidance index (UAI) as alternative measure. The full sample consists of firms in the ExecuComp database with data on CEO UAI from 2002 to 2021. Each panel presents the average CEO UAI of four firm groups in event time, where year zero is the group formation period. We form four groups by ranking firms based on their CEO UAI. Holding the group fixed for the next ten years, we compute the average CEO UAI for each group. We repeat this process of sorting and averaging for each fiscal year in our sample period. After performing this sorting and averaging for each fiscal year from 2002 to 2021, we further average the average CEO UAI across "event years" to obtain the lines in each figure. Panel A presents the results for the full sample. This sample consists of 38,449 firm-year observations, corresponding to 3,105 unique firms. Panel B presents the results for the sample of firms that went public between 2002 and 2021. This sample consists of 8,793 firm-year observations, corresponding to 942 firms. Panel C presents the results for the sample of firms that survive throughout the sample period. To form the sample, we require a firm have its IPO before 2002, and remain listed by 2021. We do not have a balance panel because some firms miss CEO UAI values. This sample consists of 19,871 firm-year observations, corresponding to 1,078 firms. Panel D presents the results for the sample of firms that went public between 2002 and 2011 so that we have at least ten years of culture data. This sample consists of 6,551 firm-year observations, corresponding to 563 firms.

Table A.1: Sample Formation

				# Observation	Note
Start with culture score data by Li et al. (2021) from 2002 to 2021				8,995 firms	
Keep S&P 1500 firms (ExecuComp 2002 to 2021)				2,802 firms	S&P 1500 firms are our base sample to manually collect founder and founding information.
	(1) Firms with founder information			2,389 firms with 3,881 founder names (954 firms have at least two founders)	Some firms have multiple founders.
		(1.1) Founder national cultural values		2,336 firms with 3,773 founder names. 1,135 firms with 1,476 founders in the regression sample	merge with IPUMS census data to infer a founder's country of origin and then further match with Hofstede's national culture data.
		(1.2) Founder birth year; work year = birth year + 24		1,280 firms with 1,682 founders	
			(1.2.1) Founder work year with NBER recession indicator	1,223 firms with 1,590 founders. 1,135 firms with 1,476 founders in the regression sample	NBER recession data is from 1967.
		(1.3) Founder birthplace		1,039 firms with 1,320 county-level locations (additionally 66 state-level and 262 foreign locations). 987 firms in the regression sample	
	(2) Firms with founding information				
		(2.1) Founding year		2,788 firms	From Jay Ritter's website/SDC.
			(2.1.1) Founding recession with NBER recession indicator	2,738 firms. 1,462 firm in the regression sample	NBER recession data is from 1967.
		(2.2) Founding location		1,729 county-level locations (additionally 132 state-level and 99 foreign locations). 856 firm in the regression sample	

This table lists steps taken to form different samples used in our analysis. We start with firm-year culture score data provided by Li et al. (2021) from 2002 to 2021 and drop observations with missing control variables from Compustat, CRSP, ExecuComp, SDC, and Thomson Reuters 13F. To collect founder information, we limit to S&P 1500 firms in ExecuComp, and end up with 2,802 firms, representing about a third of 8,995 firms with culture score data. We use Crunchbase.com, company-histories.com, fundinguniverse.com, company websites, and Google search for the names of a firm's founders. Following Bernile et al. (2017), we obtain CEO biographical information from Marquis Who's Who, Standard and Poor's Register of Directors and Executives, and the US Executive Compensation database on Lexis-Nexis, NNDB.com, and Google searches. We collect a firm's founding location data from Lexis-Nexis and Google searches. We obtain a firm's founding date from Jay Ritter's website, supplemented by SDC.

Table A.2: Variable Definitions

Variable	Definition	Source
Corporate culture measures		
Culture	Aggregate culture score across five cultural dimensions: innovation, integrity, quality, respect, and teamwork.	Li et al. (2021)
Culture IPO	Aggregate culture score of a firm in the year of its IPO (IPO).	Li et al. (2021)
Culture avg IPO3y	Average culture score over the first three years following a firm's IPO.	Li et al. (2021)
Culture before turnover	Aggregate culture score of the firm in the year before the turnover event.	Li et al. (2021)
Cultural change	Standard deviation of a firm's culture scores over the past three years.	Li et al. (2021)
Culture first IPO3y	Culture score based on the first non-missing culture score during the first three years post-IPO.	Li et al. (2021)
Culture first obs	First non-missing culture score for a firm.	Li et al. (2021)
Res Culture first obs	Residual from the regression of *Culture first obs* on Hofstede's cultural dimension: Uncertainty Avoidance.	Li et al. (2021)
Founder characteristics		
Founder UAI	Uncertainty avoidance index in a CEO's (largest) country of origin. It is standardized to have a mean of zero and a standard deviation of one. UAI indicates "to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations."	Hofstede cultural values
Founder UAI (raw)	Uncertainty avoidance index divided by 100 in a CEO's (largest) country of origin.	Hofstede cultural values
Founder birthplace TFE	The frontier experience (TFE) is the number of years scaled in decades between 1790 and 1890 when a founder's birthplace county was within 100 km of the frontier line and its population density was below 6 people per square mile	Bazzi et al. (2020)
Founder birthplace race HHI	The Herfindahl-Hirschman Index measuring racial diversity in a founder's birthplace county.	US Census
Founder work recession	An indicator variable that takes the value of one if a founder's first job started in a recession, defined according to the National Bureau of Economic Research (NBER) business cycle dating, and zero otherwise.	NBER
Founding characteristics		
Founding place TFE	The number of years scaled in decades between 1790 and 1890 when a firm's founding county was within 100 km of the frontier line and its population density was below 6 people per square mile	Bazzi et al. (2020)
Founding place race HHI	The Herfindahl-Hirschman Index measuring racial diversity in a firm's founding county.	US Census
Founding recession	An indicator variable that takes the value of one if a firm was founded in a recession, defined according to the NBER business cycle dating, and zero otherwise.	NBER
Insiders characteristics		
Board UAI first obs	The average uncertainty avoidance index of the board members (excluding top executives) for a firm in the year we have the first non-missing culture score for a firm in the entire sample.	Hofstede cultural values
CEO UAI	Uncertainty avoidance index of a CEO for a firm in a given year.	Hofstede cultural values
CEO UAI IPO	Uncertainty avoidance index of a CEO for a firm in the year of its IPO.	Hofstede cultural values
CEO UAI first IPO3y	The first non-missing uncertainty avoidance index of a CEO for a firm during the first three years post-IPO.	Hofstede cultural values
CEO UAI avg IPO3y	The average uncertainty avoidance index of the CEOs over the first three years following a firm's IPO.	Hofstede cultural values
CEO UAI first obs	The uncertainty avoidance index of a CEO for a firm in the year we have the first non-missing culture score for a firm in the entire sample.	Hofstede cultural values
EXEC UAI first obs	The average uncertainty avoidance index of the top executives (excluding CEO) for a firm in the year we have the first non-missing culture score for a firm in the entire sample.	Hofstede cultural values
Incoming CEO UAI	The uncertainty avoidance index value of the incoming CEO.	Hofstede cultural values
Departing CEO UAI	The uncertainty avoidance index value of the departing CEO.	Hofstede cultural values
Firm characteristics		
Crash risk	The negative skewness of firm-specific weekly returns over the fiscal year.	CRSP

Table A.2 – Continued

Distress	An indicator variable that takes the value of one if a firm is classified as distressed in a given year, determined by the expected default frequency ranked in the top decile for at least six months within the year, and zero otherwise.	CRSP and Compustat
Employee turnover rate	The percentage change in employee count relative to the total number of employees, multiplied by 100.	Compustat
Firm size	The natural logarithm of total assets, inflation-adjusted to 1984 dollar values.	Compustat
Independent director ratio	Number of independent directors on a board divided by the total number of directors.	BoardEx
Institutional ownership	Fraction of shares outstanding held by institutional investors	Thomson Reuters (13f)
Leverage	Book value of debt divided by total assets.	Compustat
Ln(CEO age)	Natural logarithm of a CEO's age.	ExecuComp
Ln(CEO tenure)	Natural logarithm of a CEO's tenure with a firm.	ExecuComp
Ln(Firm age)	Natural logarithm of a firm's age since its founding.	Compustat
M/B	Market value of equity divided by book value of equity.	Compustat
Male CEO	An indicator variable that takes the value of one if a CEO is a male, and zero otherwise.	ExecuComp
Num M&As	The number of mergers and acquisitions conducted by a firm up to the fiscal year.	SDC
Num SEOs	The number of seasoned equity offerings executed by a firm up to the fiscal year.	SDC
ROA	Earnings before interest, tax, and depreciation divided by total assets.	Compustat
Sales growth	Annual growth rate of sales revenue.	Compustat
Tangibility	Property, plant, and equipment divided by book assets.	Compustat
TMT turnover	An indicator variable that takes the value of one if any of the top five managers exit a firm within the fiscal year, and zero otherwise.	ExecuComp

All continuous variables are winsorized at the 1st and 99th percentiles.

Table A.3: The Determinants of Early Culture–Founder vs. Insiders

	Culture first obs	Culture first obs	Culture first obs
	(1)	(2)	(3)
Founder UAI	0.562***	0.529***	0.546***
	(0.167)	(0.166)	(0.205)
CEO UAI first obs	-0.119	-0.105	-0.129
	(0.161)	(0.160)	(0.186)
EXEC UAI first obs	0.117	0.081	-0.038
	(0.164)	(0.162)	(0.188)
Board UAI first obs	0.106	0.086	0.283
	(0.200)	(0.198)	(0.233)
Founder work recession		-1.373***	-1.418***
		(0.307)	(0.357)
Founder birth race HHI			2.549*
			(1.350)
Founder birthplace TFE			0.134
			(0.172)
Ln(Assets)	-0.093	-0.082	-0.014
	(0.098)	(0.097)	(0.113)
Ln(Firm age)	-0.738***	-0.676***	-0.583***
	(0.137)	(0.136)	(0.156)
Sales growth	0.189	0.241	0.050
	(0.458)	(0.453)	(0.599)
Leverage	-2.207**	-2.057**	-1.750*
	(0.886)	(0.878)	(1.031)
M/B	0.842***	0.808***	0.720***
	(0.118)	(0.117)	(0.145)
ROA	-7.844***	-8.053***	-7.322***
	(1.691)	(1.675)	(2.097)
Tangibility	-1.201	-1.495*	-0.240
	(0.782)	(0.777)	(0.897)
Institutional ownership	-0.401	-0.370	-0.277
	(0.718)	(0.710)	(0.839)
Num M&As	0.006	-0.007	-0.065
	(0.051)	(0.051)	(0.059)
Num SEOs	-0.058	-0.062	-0.083
	(0.062)	(0.061)	(0.065)
Constant	16.378***	16.893***	17.997***
	(0.931)	(0.928)	(1.526)
Obs.	918	918	645
Adj. R^2	0.175	0.192	0.159

This table compares how founders vs. insiders influence their firms' early culture. *Cuture first obs* is the first non-missing culture score for a firm in our sample. *Founder UAI* is Hofstede's UAI value in a founder's country of origin. *CEO UAI first obs* is the UAI value of a firm's CEO in the year we have the first non-missing culture score for that firm in the culture data set *EXEC UAI first obs* is the average UAI value of a firm's top executives (excluding its CEO) in the year we have the first non-missing culture score for that firm in the culture data set. *Board UAI first obs* is the average UAI value of a firm's board members (excluding its top executives) in the year we have the first non-missing culture score for that firm in the culture data set. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Table A.4: Sample Formation Using Employee Reviews

	# of reviews	# of firms	# of firm-year obs.
Glassdoor employee reviews	13,150,185	64,721	367,710
Remove reviews from former employees	7,498,466	55,712	280,445
Match with CUSIP	4,989,215	10,734	85,853
Match with Compustat-CRSP merged data	2,340,693	3,601	27,335
Obtain culture scores using methodology by Li et al. (2021)		3,108	20,732
Remove observations with missing control variables		3,000	19,962
Final sample		**3,000**	**19,962**

This table describes the sample formation process using employee reviews to score culture.

Table A.5: Variance Decomposition Using Glassdoor Culture Scores

Panel A: All Firms

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)	Culture (7)
Firm FE	1.00			0.98		0.89	0.89
CEO FE		1.00			0.95	0.11	0.10
Year FE			1.00	0.01	0.01		0.01
Firm size				0.00	0.00		
Ln(Firm age)				0.00	0.00		
Sales growth				0.00	0.00		
Leverage				0.00	0.00		
M/B				0.00	0.00		
ROA				0.00	0.00		
Tangibility				0.00	0.00		
Institutional ownership				0.00	0.00		
Num MAs				0.00	0.00		
Num SEOs				0.00	0.00		
Industry FE					0.02		
Adj. R^2	0.36	0.39	0.02	0.39	0.42	0.40	0.40

Panel B: Firms with CEOs Who Have Worked in Two or More Firms

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)	Culture (7)
Firm FE	1.00			0.91		1.00	0.93
CEO FE		1.00			0.71	0.00	0.00
Year FE			1.00	0.06	0.05		0.07
Firm size				0.00	0.01		
Ln(Firm age)				0.00	0.02		
Sales growth				0.00	0.00		
Leverage				0.00	0.01		
M/B				0.00	0.01		
ROA				0.00	0.00		
Tangibility				0.01	0.02		
Institutional ownership				0.00	0.05		
Num MAs				0.01	0.01		
Num SEOs				0.00	0.00		
Industry FE					0.10		
Adj. R^2	0.31	0.12	0.00	0.31	0.19	0.30	0.32

This table presents a variance decomposition using Glassdoor culture scores, with adjusted R-squares at the bottom. *Firm FE* are firm fixed effects. *CEO FE* are CEO fixed effects. *Year FE* are fiscal year fixed effects. We compute the Type III partial sum of squares for each effect in the model and then normalize each estimate by the sum across the effects, forcing each column to sum to one. For example, in the model (4) of Panel A, 1% of the explained sum of squares can be attributed to *Year FE*. Panel A presents the results for the full sample. This sample consists of 19,962 firm-year observations, corresponding to 3,000 unique firms. Panel B presents the results for a sample of firms whose CEOs have worked in two or more firms. This sample consists of 546 firm-year observations, corresponding to 81 unique firms and 172 unique CEOs. Variable definitions are provided in Appendix Table A.2.

Table A.6: The Effect of Early Culture on Future Culture Using Glassdoor Culture Scores

	Culture (1)	Culture (2)	Culture (3)	Culture (4)	Culture (5)	Culture (6)
Culture IPO	0.345***	0.229**				
	(0.095)	(0.110)				
Culture first IPO3y			0.392***	0.235***		
			(0.087)	(0.087)		
Culture avg IPO3y					0.401***	0.250**
					(0.100)	(0.100)
Firm size		-0.182		-0.187		-0.301
		(0.362)		(0.284)		(0.312)
Ln(Firm age)		-1.071		-0.911		-1.067
		(1.368)		(0.806)		(0.942)
Sales growth		-2.304		0.513**		0.571**
		(2.091)		(0.205)		(0.261)
Leverage		-6.476*		-3.747		-2.103
		(3.553)		(2.460)		(2.519)
M/B		0.068		0.295		0.310
		(0.242)		(0.190)		(0.194)
ROA		-13.901**		-12.789***		-11.937***
		(5.637)		(4.200)		(4.125)
Tangibility		-2.316		-4.320		-5.529*
		(2.850)		(2.801)		(3.056)
Institutional ownership		0.949		-0.227		-0.223
		(1.860)		(1.308)		(1.391)
Num M&As		-0.238		-0.229		-0.244
		(0.156)		(0.168)		(0.172)
Num SEOs		-0.098		-0.014		-0.007
		(0.161)		(0.145)		(0.146)
Constant	20.833***	29.307***	20.381***	28.595***	20.274***	29.324***
	(1.541)	(4.873)	(1.341)	(3.384)	(1.516)	(3.743)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
No. of firms	103	103	231	231	216	216
Obs.	580	580	1350	1350	1191	1191
Adj. R^2	0.125	0.159	0.076	0.106	0.086	0.110

This table examines the role of a firm's early culture in its future culture using Glassdoor culture scores. The sample consists of firm-year observations with non-missing Glassdoor culture scores in the CRSP-Compustat database from 2008 to 2021. *Culture IPO* is the culture score of a firm in the year of its IPO. *Culture first IPO3y* is the culture score using the first non-missing culture score during the first three years post-IPO. *Culture avg IPO3y* is the average culture score over the first three years following a firm's IPO. *Industry FE* are industry fixed effects based on the Fama and French 38-industry classification. *Year FE* are fiscal year fixed effects. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Table A.7: The Effect of Early Culture on Future Culture–Using CEO UAI for Risk Culture

	CEO UAI (1)	CEO UAI (2)	CEO UAI (3)	CEO UAI (4)	CEO UAI (5)	CEO UAI (6)
CEO UAI IPO	0.642***	0.632***				
	(0.044)	(0.042)				
CEO UAI first IPO3y			0.605***	0.606***		
			(0.034)	(0.034)		
CEO UAI avg IPO3y					0.674***	0.671***
					(0.032)	(0.032)
Ln(Assets)		0.016		0.013		0.008
		(0.028)		(0.023)		(0.022)
Ln(Firm age)		-0.062		0.042		0.037
		(0.064)		(0.069)		(0.067)
Sales growth		0.035		0.002		0.002
		(0.047)		(0.029)		(0.029)
Leverage		0.315		-0.044		-0.093
		(0.231)		(0.157)		(0.151)
M/B		-0.012		0.009		0.008
		(0.023)		(0.030)		(0.030)
ROA		0.449		0.368		0.333
		(0.297)		(0.274)		(0.271)
Tangibility		-0.526**		-0.122		-0.075
		(0.231)		(0.187)		(0.185)
Institutional ownership		0.039		0.099		0.105
		(0.128)		(0.101)		(0.100)
Num M&As		-0.018		-0.007		0.001
		(0.016)		(0.013)		(0.012)
Num SEOs		-0.050***		-0.031**		-0.022*
		(0.019)		(0.015)		(0.013)
Constant	0.016	0.117	0.061**	-0.148	0.059**	-0.130
	(0.039)	(0.205)	(0.030)	(0.209)	(0.029)	(0.207)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
No. of firms	295	295	540	540	540	540
Obs.	1918	1918	3759	3759	3759	3759
Adj. R^2	0.387	0.406	0.371	0.375	0.424	0.426

This table conducts a robustness check on the impact of corporate culture at the time of a firm's IPO on its future culture, using an alternative measure of corporate culture. The sample consists of firm-year observations with non-missing CEO culture heritage in the CRSP-Compustat database from 2001 to 2021. *CEO UAI* is the uncertainty avoidance index of a CEO for a firm in a given year. *CEO UAI IPO* is the uncertainty avoidance index of a CEO for a firm in the year of its IPO. *CEO UAI first IPO3y* is the first non-missing uncertainty avoidance index of a CEO for a firm during the first three years post-IPO. *CEO UAI avg IPO3y* is the average uncertainty avoidance index of the CEOs over the first three years following a firm's IPO. *Industry FE* are industry fixed effects based on the Fama and French 38-industry classification. *Year FE* are fiscal year fixed effects. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.

Table A.8: The Real Effects of Cultural Change

	TMT turnover	Employee turnover rate	ROA	Crash risk	Distress
	(1)	(2)	(3)	(4)	(5)
Cultural change	0.010***	0.371***	-0.002***	0.004*	0.004***
	(0.003)	(0.096)	(0.000)	(0.002)	(0.001)
Firm size	0.058***	5.659***	-0.006***	0.104***	0.021***
	(0.010)	(0.347)	(0.001)	(0.006)	(0.004)
Ln(Firm age)	-0.003	1.577***	0.000	-0.031***	0.016**
	(0.014)	(0.513)	(0.002)	(0.009)	(0.006)
Sales growth	-0.000***	-0.001	-0.000	-0.000**	0.000
	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)
Leverage	-0.016	8.989***	0.038***	-0.063***	0.195***
	(0.039)	(1.329)	(0.005)	(0.023)	(0.018)
M/B	-0.001	-3.562***	0.013***	0.057***	-0.007***
	(0.005)	(0.175)	(0.001)	(0.003)	(0.001)
ROA	-0.052	-17.316***	0.389***	0.205***	-0.213***
	(0.054)	(1.892)	(0.016)	(0.031)	(0.021)
Tangibility	0.041	18.466***	0.006	-0.037	0.141***
	(0.059)	(2.306)	(0.009)	(0.039)	(0.028)
Institutional ownership	0.002	-1.392**	-0.000	0.034***	-0.015
	(0.023)	(0.608)	(0.002)	(0.012)	(0.012)
Num M&As	0.019**	-4.932***	0.001	0.007	0.014***
	(0.009)	(0.373)	(0.001)	(0.006)	(0.003)
Num SEOs	0.002	-3.257***	-0.001	0.017**	0.009*
	(0.014)	(0.473)	(0.002)	(0.008)	(0.005)
Constant	0.117	-43.912***	0.057***	-0.743***	-0.164***
	(0.078)	(2.704)	(0.011)	(0.044)	(0.032)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Obs.	24,704	44,860	46,350	42,458	42,414
Adj. R^2	0.078	0.191	0.780	0.058	0.277

This table examines firm outcomes associated with large cultural changes. *Culture change* is the rolling standard deviation of culture scores over a three-year period. *TMT turnover* is an indicator variable that takes the value of one if one of the top five executives leaves a firm in a year, and zero otherwise. *Employee turnover rate* is the change in the number of employees scaled by the number of employees and multiplied by 100. *Crash risk* is the negative conditional skewness of firm-specific weekly returns over a fiscal year. *Distress* is an indicator variable that takes the value of one if a firm is in financial distress in a year, and zero otherwise. The standard errors are clustered at the firm level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix Table A.2.