

Looking in the Rear View Mirror: The Effect of Managers' Professional Experience on Corporate Cash Holdings^{*}

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Abstract

This paper examines how CEOs' prior work experiences affect firms' financial policies. Using employment data on more than 8,500 CEOs, we study the effect of being previously employed at a firm that faced financial difficulties on the decision to hold more cash. Our identification strategy exploits exogenous CEO turnovers and past employment in other firms and in roles other than the CEO. We find that firms run by CEOs who experienced financial difficulties are more conservative and hold substantially more cash. The results are stronger in poorly governed firms and are associated with a lower marginal value of cash. We find similar, yet weaker effects for CFOs.

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Recent financial research provides evidence that past experiences impact financial decision making. Malmendier and Nagel (2011) show that individual experiences from growing up in the Great Depression influence future investment decisions; Malmendier and Tate (2005) and Malmendier, Tate and Yan (2011) show that firms run by managers who grew up in the Great Depression are averse to debt, while those run by managers with military experience have higher leverage. Despite these effects, we know relatively little about how managers' *professional* experience affects corporate financial decisions, whether it improves or impairs judgment and what consequences it has on firm value. Compared to other life experiences, professional experiences may exert different or greater influence on decision making because they are typically more frequent and recent, and they directly inform managers about the implications of corporate decision making. In this paper, we examine the role of managers' professional experience in one of the most debated corporate policies in recent years – cash holdings.

The importance of experience in decision making is demonstrated in the psychology literature (Nisbett and Ross (1980)). Studies show that experience may lead individuals to make decisions that differ from those based on expected utility theory because they only have access to samples of past outcomes and not the full outcome distributions (e.g., Hertwig et al. (2004), Hertwig and Erev (2009), and Hertwig (2012)). The sampling variability inherent in learning by experience can produce risk averse or risk seeking behavior (Marsh (1996), Denrell and Marsh (2001), and Denrell (2007)). Accordingly, we investigate the effect of CEOs' professional experiences at other firms that faced financial difficulties on corporate cash policies. Cash policy offers an ideal setting to explore the impact of professional experience on managers' risk tolerance since the primary reason firms hold cash is to buffer against future shortfalls.

To understand the impact of managers' professional experience on corporate cash policy, we consider three hypotheses. The first view, which we label the *excess cash* hypothesis, posits that a CEO

that experienced financial difficulties in the past overestimates the likelihood and adverse implications of financial distress and increases cash holdings to hedge against their occurrence. This hypothesis predicts higher cash holdings in firms run by CEOs that experienced financial difficulties, which cannot be explained by the firm's economic indicators and the precautionary savings motive. This hypothesis is consistent with the "hot stove" effect described in Denrell and Marsh (2001), which predicts that bad outcomes lead a risk-neutral decision maker to become more risk averse. Under this view, the effects are expected to be stronger in poorly governed firms and the value of cash holdings is expected to be lower.

The second hypothesis, which we label the *recalibration* hypothesis, posits that CEOs, in general, tend to be overconfident and underestimate risk, and consequently hold less cash than they should according to the precautionary savings motive. This view is consistent with the Hubris hypothesis introduced by Roll (1984) and with recent evidence provided by Ben David, Graham, and Harvey (2012). According to this hypothesis, CEOs that experienced financial difficulties recalibrate their underestimation of the likelihood and implications of financial difficulties and perceive them to be more important compared to managers that did not experience such difficulties. While this hypothesis also predicts higher cash holdings, it implies that the effects of CEOs' professional experience would be weaker in poorly governed firms and that the value of cash holdings would not be any lower.

A third possibility is that professional experiences of CEOs play little role in corporate cash policies. Under this null hypothesis, managers choose cash levels based solely on firm characteristics. This may occur because managers' views are unaffected by their past experiences or because career concerns of managers (e.g., Fama (1980)) and governance mechanisms render the effects of managerial professional experience insignificant. This hypothesis predicts no relation between CEOs' professional experiences and cash policies and is consistent with optimal cash holdings driven by the firm's fundamentals.

To test these hypotheses, we track the employment history of over 8,500 CEO using data from Execucomp and Boardex to determine if the CEO was previously employed by a firm that experienced financial difficulties. We construct four measures of financial difficulties based on financial constraints and adverse shocks to the firm's cash flows and stock returns. These definitions are motivated by the precautionary savings motive, which suggests that the primary benefit of cash reserves is to alleviate financial constraints and hedge against adverse shocks (e.g., Almedia et al (2004) and Faulkender and Wang (2006)). Based on each of the four measures, we define a *Professional experience* indicator that equals one if the manager was employed by a firm that experienced financial difficulties. To separate CEO effects from firm effects, we require the professional experience to take place at a different firm than the current firm. Depending on the measure employed, 3.1 to 14.1 percent of the CEOs in our sample experienced financial difficulties. In addition to these measures, we create a composite index equal to one if any of the four measures equals one.

The empirical results illustrate the importance of professional experiences in shaping CEOs' financial decision-making. We find that firms run by CEOs who were previously employed at a firm that experienced financial difficulties have a cash-to-assets ratio that is 3.1 to 4.4 percentage points higher compared to firms whose CEOs did not experience financial difficulties. These results hold after controlling for firm characteristics that proxy for the precautionary savings motive and excluding multinational firms that may have cash trapped overseas for tax purposes (Foley et al. (2007)).

One potential concern with our analysis is that firms may choose the CEO because she has experience running a firm that had financial difficulties. In this case, the positive relation between cash holdings and professional experience may capture a selection effect as opposed to a treatment effect. Our empirical design allows us to address this identification challenge in three ways. First, we control for firm characteristics, such as financial constraints, that may lead the firm to prefer a manager with

experience at a constrained firm. Second, we posit that if a CEO is chosen based on past experience, the importance of her experience is contingent on her being the CEO when the experience occurred. We therefore redefine our experience measures to exclude any past experience in the role of CEO. We find that firms run by CEOs with non-CEO experience of financial difficulties have cash-to-assets ratios that are 2.3 to 4.0 percentage points higher.

Third, we estimate the effect of professional experience around CEO turnovers, examining all turnovers as well as a subset that represent natural causes (death or illness), planned retirements, or scheduled succession plans. This identification strategy addresses the concern that some CEO turnovers may be caused by poor performance or financing difficulties, which may impact the firms' need for cash holdings and confound our empirical inference. Our empirical results indicate that in the year following CEO turnovers, CEOs with professional experience at firms that faced financial difficulties increase their firm's cash-to-assets ratio by 1.3 to 2.5 percentage points.

The results so far indicate prior experience at a firm that faced financial difficulties leads managers to pursue more conservative cash policies. To further explore the effect of conservatism and managers' beliefs, we also relate our measures of professional experience to measures of CEO conservatism and early-life experience employed in previous studies. First, following Graham and Narasimhan (2004), Schoar (2007), Malmendier and Tate (2005), Malmendier, Tate and Yan (2011), and Malmendier and Nagel (2011), we argue that managers who grew up during the Great Depression are more conservative and have less faith in external capital markets. We measure Depression experience using birth years in the decade leading up to the Great Depression, controlling for CEO age. Second, similar to Malmendier, Tate and Yan (2011) and Malmendier and Tate (2008), we create a complementary measure of CEO conservatism based on press portrayals. Third, we draw upon the stock option-based measures proposed by Malmendier and Tate (2005), Hirshleifer et al. (2010), Campbell et

al. (2011), and Malmendier, Tate and Yan (2011). We define a CEO as conservative if she follows a conservative portfolio strategy that exercises at-the-money or slightly in-the-money options and does not hold deep in-the-money options, controlling for CEO stock ownership and lagged stock returns. Lastly, we consider the effect of the CEO's gender. Barber and Odean (2001) and Weber, Blais, and Betz (2002) provide evidence that men are likely to take greater risk relative to females in a wide range of activities (see Byrnes, Miller, and Schafer (1999) and Eckel and Grossman (2008) for a review of the literature). Using these alternative measures, we find that conservative CEOs hold between 1.7 and 3.5 percentage points more cash-to-assets than other firms. These results support the interpretation of our previous findings and suggest that CEO conservatism significantly influences cash policy.

Our analysis thus far focuses on CEOs, but not CFOs. As a result, our findings allow for two interpretations: (1) CEOs directly determine cash policy, or (2) CFOs determine cash policy, but their decisions are positively correlated with CEO traits. While most previous studies of CEO traits did not separate these possible interpretations, one advantage of our empirical design is that we can construct our measures of professional experience for CFOs and distinguish these alternative explanations. We recreate our measures of experience and find that 2.6 to 13.9 percent of the CFOs in our sample worked at a firm that experienced financial difficulties. When we relate the measures to cash holdings, we find that, after controlling for CEO professional experience, CFO professional experience is associated with 1.2 to 1.8 percentage points more cash.

Higher cash holdings in firms operated by managers that experienced financial difficulties are consistent with both the excess cash and the recalibration hypotheses. To distinguish between these views, we study the firm's corporate governance and value of cash holdings. We employ several measures of governance, including the G-Index (Gompers et al. (2003)) and E-Index (Bebchuk et al. (2009)) of shareholder rights, board size, and board independence. Our results suggest that the effect of

professional experience on firms' cash holdings is stronger at poorly governed firms. Specifically, we find that a decline of one standard deviation in the quality of corporate governance is associated with an increase of 1.8 to 2.2 percentage points in cash holdings due to the CEO's professional experience. Further, we find that professional experience has a positive and significant effect after controlling for governance.

To examine the value implications of professional experience, we follow the methods in Faulkender and Wang (2006) and Dittmar and Mahrt-Smith (2007). Specifically, we investigate the relation between cash holdings and excess stock returns to determine the marginal value of a dollar of cash in firms run by CEOs that were employed at firms that faced financial difficulties. We find that professional experience implies a reduction of 10.6 to 18.2 cents in the value of an added dollar of cash. These findings collectively support the excess cash hypothesis, under which professional experience of financial difficulties pushes managers to be overly conservative and hold too much cash.

Our paper contributes to two literatures. This paper is the first to examine the effect of managers' professional experience on financial decision-making. In doing so, we extend the behavioral corporate finance literature that shows the importance of early-life experiences. We find that professional experiences shape the way managers make future financial decisions in ways that cause the firm to deviate from what is predicted based on standard economic models and firm characteristics. Further, by linking professional experience to measures of managerial conservatism, we confirm the importance of managerial traits on the firm's financial policy.

This paper also contributes to the literature on corporate cash policy, which is an important and widely debated topic. Firms hold unprecedented, increasing levels of cash (Bates et al. (2009)), which are frequently discussed in both the academic literature and the business press. In 1980, firms held \$234.6 billion (in 2011 dollars) in cash, amounting to 12% of assets. By 2011, the amount of cash grew

to \$1,500 billion, or 22% of assets. While managers argue that this cash is needed and the precautionary savings motive, first introduced by Keynes (1936), explains much of the cash policy of firms (e.g., Lins et al. (2010), Campello et al. (2011), Opler et al. (1999), Almeida et al. (2004)), some suggest that managers are overly conservative in their decision to hold high levels of cash. For example, the article “Blame fear, not greed, as firms hoard cash”, published in the *Wall Street Journal* on July 1, 2012, argues that: “... Here's one way to explain the record stacks of cash that companies have amassed: Just as courage imperils life, fear protects it. Actually, that line is said to be Leonardo da Vinci's. But if you spend any time with chief financial officers, you'll hear the same admonition in one form or another.... And, despite what some suggest, it doesn't appear to be guided by greed or complacency. Instead, fear rules the day. Arguably too much so.”¹

The paper proceeds as follows. Section I describes the data. Section II examines the impact of managers' professional experience on corporate cash policy. Section III provides robustness tests and extensions. Section IV studies corporate governance and the value of cash. Section V concludes.

I. Sample and Data

A. Firms

We begin constructing our sample with 11,578 industrial firms in the CRSP/Compustat file over 1980-2011. Industrial firms are defined as companies with SIC codes outside the ranges 4900-4949 (utilities) and 6000-6999 (financials). We exclude firms that are not incorporated in the U.S. and those that do not have securities assigned a CRSP security code of 10 or 11. For the relatively few firms that change their fiscal year during our sample period, we keep the most recent fiscal year convention.

¹ Another *Wall Street Journal* article “Cautious Companies Stockpile Cash” on December 6, 2012, quotes La-Z-Boy Chief Executive Kurt Darrow: “We want to keep probably a little more cash on hand than maybe some of our shareholders would appreciate, but we want to keep our financial flexibility... At this point, you might just call us a little conservative.”

Since we are interested in studying the role of CEOs' professional experiences in corporate cash policies across firms, we exclude firms whose CEO is missing from Execucomp or BoardEx. We also require that the CEOs have nonmissing data on previous employment and that their prior employers appear on Compustat.

Our final sample includes 5,498 firms and 52,017 firm-year observations. We report summary statistics in Table 1. We winsorize variables at the 1st and 99th percentiles to lessen the influence of outliers. Our main variable of interest is a firm's cash holdings, defined as the ratio of cash and short term investments to book assets. Table 1 shows that cash ratios have a pooled mean of 22.0%, a pooled standard deviation of 23.8%, and a pooled median of 12.5%, suggesting that the distribution of cash is highly skewed even after controlling for size. Table 1 also shows that the average firm has a cash flow-to-assets ratio of -2.6% and a market-to-book ratio of 2.2. Further, 39.2% of the firm-year observations in our sample have positive foreign income. We use the foreign income dummy in subsequent tests to exclude from the sample multinational firms, which experienced an increase in abnormal cash holdings (Pinkowitz, Stulz, and Williamson (2012)), and may have large cash balances trapped overseas for tax reasons (Foley et al. (2007)).

We also compare the firms in our sample to the full sample of industrial firms in the CRSP/Compustat file. Table 1 reports tests of differences in means across the two samples. The differences in average cash-to-assets ratios between the two samples are insignificant at conventional levels. Similarly, the differences in average industry cash flow volatility, cash flow-to-assets, and market-to-book across the two samples are indistinguishable from zero at conventional levels. The firms in our sample, however, appear to be larger on average. This is not surprising since managers from larger firms are more likely to be included in the Execucomp and BoardEx databases. The tests also suggest that the firms in our sample are more likely to be multinational (significant at the 10% level).

Overall, this evidence suggests that our sample firms are representative of the entire Crsp/Compustat sample in terms of their cash policies and determinants, albeit tend to be larger firms.

B. Managers

Our sample of executives consists of 14,097 individuals. This group includes 8,522 CEOs and 5,575 CFOs who served at our sample firms between 1980 and 2011. To collect employment information on CEOs and CFOs, we use the following databases: Execucomp and BoardEx. For each executive in our sample, we collect all available information on her employment history, including the identity of previous employers, dates of employment, and the role title. We then match the prior employers to Compustat firms and use Compustat data to construct our measures of professional experience at firms that faced financial difficulties.

Panel A of Table 2 shows summary statistics for our sample of managers. An average CEO is 49.5 years old, has a firm tenure of 8.5 years, and owns 2.4% of the shares. The vast majority (97.4%) of CEOs are male. An average CFO is slightly younger (46.5 years old), has a firm tenure of 7.9 years, and owns 1.6% of the shares. There are substantially more female CFOs than female CEOs: 7.6% of CFOs are female.

C. Measures of Past Professional experience

Individual experiences have been shown to impact decision making (Nisbett and Ross (1980)) and produce deviations from expected utility theory when they do not provide information on the full outcome distributions (e.g., Hertwig et al. (2004), Hertwig and Erev (2009), and Hertwig (2012)). If individuals learn by experience, the sampling variability of their experiences may influence their attitudes toward risk and consequently their choices. The “hot stove” effect, studied by Marsh (1996),

Denrell and Marsh (2001), and Denrell (2007), predicts that infrequent bad outcomes may lead a risk-neutral agent to make risk-averse choices. Accordingly, we argue that past employment at a firm that faced financial difficulties may lead CEOs to pursue more conservative cash policies.

Our main focus is on the professional experience of the CEO, since the ultimate responsibility for the firm's financial strategy rests with the CEO. However, we also study the experience of the CFO, who may assist the CEO with financing decisions. In contrast to prior studies, we focus on professional experiences rather than life experiences such as military service and growing up during the Great Depression. We do so because professional experiences are typically more frequent and recent, and therefore may exert greater influence on decision making. Further, they occur in a similar corporate setting and therefore likely comprise the most relevant experiences for CEO learning.

To measure CEOs' professional experience, we track the employment history of the CEO using data from Execucomp and Boardex to determine if the CEO was previously employed by a firm (other than her current employer) that experienced financial difficulties. We restrict our attention to previous employment to separate CEO effects from firm effects. To further control for firm effects, our tests also control for firm-level time-varying determinants of cash policy. Our measures of professional experience are based on the full set of information we have available for each manager. For robustness and completeness, we employ four measures of financial difficulties.

The first two measures focus on financial constraints. We argue that managers that experienced financial constraints may overestimate their likelihood and implications. Consequently, these managers may decide to hold more cash relative to managers that did not experience financial constraints, since cash can mitigate the adverse implications of financial constraints, which include underinvestment, financial distress, and bankruptcy.

Specifically, our first measure is based on a firm's bond ratings. Following Almeida, Campello, and Weisbach (2004), we retrieve data on firms' bond ratings and categorize those firms that never had their public debt rated during our sample period as financially constrained. Observations from those firms are only assigned to the constrained subsample in years when the firms report positive debt. Related approaches for characterizing financial constraints are used by Whited (1992), Kashyap et al. (1994), and Gilchrist and Himmelberg (1995). The advantage of this measure is that it gauges the market's assessment of a firm's credit quality. Managers who previously worked at a firm that was categorized as financially constrained during their employment are defined as having past experience at a constrained firm. Panel B of Table 2 shows that 13.0% of the CEOs in our sample experienced financial difficulties according to this measure.

Our second measure of financial constraints is based on a firm's size and age. Hadlock and Pierce (2010) categorize financial constraints based on qualitative information from financial filings, and propose a measure of financial constraints that is based on firm size and age. Specifically, they create the following index of financial constraints, which they call the size-age or SA index:

$$SA \text{ index} = -0.737 \cdot \text{Size} + 0.043 \cdot \text{Size}^2 - 0.040 \cdot \text{Age}$$

where size is the log of inflation-adjusted book assets and age is the number of years the firm has been on Compustat with a nonmissing stock price. We calculate the SA index for the *entire* sample of industrial firms on Compustat (which also includes firms missing from Execucomp and BoardEx), and sort all firm-year observations into annual deciles based on the SA index. Each year, we define firms in the most constrained decile as financially constrained and all other firms as unconstrained. This way, we restrict our attention to severe financial constraints, which are more likely to impact the CEO's decision making. Once again, managers who previously worked at a firm that was categorized as financially

constrained during their employment are defined as having past experience at a constrained firm. Panel B of Table 2 shows that 3.1% of the CEOs experienced financial constraints according to this measure.

Our two remaining measures of experience focus on adverse shocks to a firm's operating cash flows and stock returns, respectively. We argue that managers that experienced extreme negative shocks to their firms' revenues and stock returns, which likely hampered their ability to access external financing and may have led to financial difficulties, underinvestment, and even distress, value cash holdings more and therefore decide to build greater cash reserves in their future roles as managers.

Specifically, we define a firm's operating cash flow as earnings before interest, taxes, depreciation, and amortization (ebitda) divided by total book assets. We sort all industrial firms on Compustat into annual deciles based on operating cash flow and categorize firms in the lowest decile each year as experiencing financial difficulties. Similarly, we calculate a firm's annual stock return and sort all industrial firms on Compustat into annual deciles based on their stock returns and categorize firms in the lowest decile each year as experiencing financial difficulties. We define managers who previously worked at a firm that was in the lowest decile during their employment as having past experience of financial difficulties. Panel B of Table 2 shows that 5.7% (14.1%) of the CEOs in our sample experienced financial difficulties according to the cash flow-based (stock return-based) measure.

In addition to these measures, we create a composite index which is equal to one if any of the experience measures is equal to one. Panel B of Table 2 shows that 23.1% of the CEOs in our sample experienced financial difficulties according to the composite index.

One concern with the measures of professional experience is that firms may choose to hire a new CEO to maintain higher cash balances based on her experience. Under this view, a firm's higher cash holdings may reflect a choice made by the board of directors or the firm's shareholder rather than a CEO effect. To separate a treatment effect from a selection effect, we recreate our measures of professional

experience based on prior employment in roles other than the CEO. Thus, we define a CEO as having experienced financial difficulties if her prior employers experienced financial difficulties while she was employed in lower-ranked roles. We argue that it is less likely that a CEO is selected based on her experience in mid-level management roles to implement a conservative cash policy.

To construct these alternative measures, we use the same four definitions of financial difficulties described above, but define a CEO as having experienced financial difficulties if she experienced them in roles other than the CEO and *did not* experience them as a CEO. Panel B of Table 2 also reports the summary statistics for this alternative definition. As expected, this more restrictive definition yields a lower frequency of CEOs' experience of financial difficulties. The frequency ranges from 2.6% to 13.0% based on the individual measures, and is 21.3% for the composite index.

II. CEO Professional Experience and Cash Holdings

We begin our analysis by presenting evidence on the relation between CEOs' professional experiences and firm's cash holdings. Table 3 presents results of panel regressions of corporate cash holdings, defined as cash divided by assets, on the professional experience of the CEO and a set of firm-level controls. To control for industry-level characteristics and time effects, all regressions include 2 digit SIC industry fixed effects and year fixed effects. We cluster standard errors at the firm level.

In addition to the measures of the CEO's professional experience, we also include proxies for the firm's precautionary demand for cash. In particular, the existing literature on corporate cash holdings proposes that the predominant motivation to hold cash dates back to Keynes' (1936) and Miller and Orr's (1966) precautionary savings motive. According to this motive, firms hold liquid assets to hedge against future states of nature in which adverse cash flow shocks, coupled with external finance frictions, may lead to underinvestment or default. The empirical predictions of this theory suggest that firms with lower cash flows, higher cash flow volatility, better investment opportunities, and lower

credit ratings will hold more cash. Opler et al. (1999) and papers that follow find empirical support for these predictions. We include these variables in our regressions to control for the precautionary savings motive implied by the firms' financial indicators. We also control for the firm's size since prior research (e.g., Opler et al. (1999)) shows there are economies of scale in cash policy. In later analysis, we will also control for the effect of being a multinational firm and corporate governance.

The empirical results in Panel A of Table 3 indicate a positive relation between cash holdings and CEOs' prior experience at firms that faced financial difficulties as captured by the variable *Professional experience*. This relation is consistently significant at the 1% level across all measures of financial difficulties. The economic magnitudes are substantial and comparable in size across all columns: professional experience at a firm with financial difficulties is associated with a 3.1 to 4.4 percentage point increase in the firm's cash holdings. For a manager overseeing a firm with mean characteristics, this effect is associated with an extra \$16.7 - \$23.7 million in cash holdings (in 2011 dollars).

Our evidence suggests that a manager's experience at firms that faced financial difficulties captures a significant effect beyond the firm's precautionary savings motive. As expected, analysis of the other control variables suggests that firms with higher cash flow volatility, firms with lower cash flows, firms with higher market-to-book ratios (our proxy for investment opportunities), firms with lower bond ratings, and smaller firms, hold more cash. These results are consistent with the precautionary savings motive and with previous research (e.g., Opler et al. (1999)).

One concern with the empirical approach in Panel A is that the CEO's professional experience is incorporated into her hiring by the firm's board of directors or shareholders. It is therefore possible that the CEO is hired to increase the firm's cash holdings because of her professional experience at firms that faced financial difficulties. If board members are concerned about the firm's expected financial strength,

they may select a CEO experienced at running a firm that faced financial difficulties. Under this view, our estimates capture the forward-looking hiring decision made by the firm, or the endogenous matching between the CEO and the firm (selection), and not a direct effect of the CEO's professional experience (treatment).

To address this identification challenge, we recreate our measures of a CEO's professional experience using prior employment in non-CEO roles. By doing so, we exclude cases in which the CEO is hired based on her experience in running firms that faced financial difficulties. The modified measures exclude from the analysis CEOs that experienced financial difficulties as CEOs in different companies, and focus on CEOs that experienced financial difficulties in lower-rank roles.

Panel B of Table 3 reports the results of these analyses. The empirical results in Panel B continue to indicate a positive relation between cash holdings and CEOs' prior experience of financial difficulties in non-CEO roles. This relation is consistently significant at the 1% level across all measures of financial difficulties. The economic magnitudes are substantial and comparable in size across all columns: professional experience of financial difficulties is associated with a 2.3 to 4.0 percentage point increase in the firm's cash holdings. For a manager overseeing a firm with mean characteristics, this effect is associated with an extra \$12.4 - \$21.6 million in cash holdings (in 2011 dollars).

To further isolate the treatment effect of the manager's professional experience, we focus on CEO turnovers, a setting in which the CEO's employment history experiences a shock as a result of the CEO change. An important issue in this analysis is that some CEO turnovers may be driven by a change in the firm's investment opportunities or by the poor performance of the departing CEO, which may confound our tests. To mitigate this concern, we use a subset of CEO turnovers that are unlikely to be associated with managerial performance or a change in investment opportunities. In particular, we focus on the CEO turnovers that meet one of the following conditions:

- 1) The departing CEO dies, departs due to an illness, or is at least 60 years old.
- 2) The media article or the firm's press release explicitly states that the CEO change is part of the firm's succession plan.

These turnovers occur either unexpectedly or as part of the firm's management succession plan, and hence are unlikely to be caused by underperformance or capital misallocation. To classify CEO turnovers, we follow the approach of Huson, Parrino, and Starks (2001) and read the article in *The Wall Street Journal* and the firm's press release associated with the CEO change for the specific reasons given for the turnover. We also collect information on the CEO's age at the time of the turnover from BoardEx. We find that 67.3% of CEO turnovers in our sample satisfy these criteria, consistent with the frequency of voluntary CEO turnovers estimated in the literature (e.g., Yermack (2006), Falato, Li, and Milbourn (2011), Jenter and Kanaan (2012)).

Table 4 reports estimates from first-difference regressions in which the dependent variable is the annual change in the firm's cash holdings for firm-year observations in which the CEO has changed from the previous year. In panel A, we use all CEO turnover events. In panel B, we report results for the subset of CEO turnovers that represent natural causes (death or illness), planned retirements, or succession plans, as defined above.

The results in Table 4 show that when a firm with a manager that did not experience financial difficulties is replaced with a CEO that experienced financial difficulties, the firm increases its cash reserves. These results are statistically significant at the 5% level or better across all measures of financial difficulties and hold with similar magnitudes and significance levels for the subset of CEO turnovers unrelated to performance (panel B).

The economic magnitudes in Table 4 suggest that during the year following the CEO's appointment, cash holdings increase by 1.3 to 2.5 percentage points for the full sample of turnovers, and

by 1.8 to 2.6 percentage points for the subset of turnovers that represent natural causes (death or illness), planned retirements, or succession plans. These estimates are smaller than the estimates provided by the panel regressions results in Table 3. One possible interpretation is that CEOs continue to build up their firms' cash reserves in subsequent years following their appointment.

III. Robustness and Extensions

A. Alternative Measures of CEO Conservatism

Our findings thus far suggest that CEOs with professional experience of financial difficulties run firms with higher cash-to-assets ratios. Furthermore, these CEOs increase the firm's cash holdings after they are appointed as CEOs. These results hold for a number of different measures of financial difficulties and are robust to different definitions of professional experiences, including those in roles other than the CEO, and to different subsamples of CEO turnovers, including those that represent natural causes (death or illness), planned retirements, or succession plans

We argue that a CEO's prior employment at a firm that experienced financial difficulties affects her corporate cash policies because it changes her perception of the likelihood and implications of financial difficulties and therefore pushes her to be more conservative in her financial decision making. In this subsection, we examine the association between the measures of professional experience and CEO conservatism, and test whether conservative CEOs indeed hold more cash. Specifically, we examine the effect of managerial conservatism on corporate cash holdings employing several measures of CEO conservatism from previous research. To construct measures of CEO conservatism, we collect information on CEOs' stock options, gender, and age from BoardEx and Execucomp, as well as information on CEOs' media portrayals. Next, we describe the construction of the measures.

For our first set of measures of CEO conservatism, we draw upon the stock option-based measures proposed by Malmendier and Tate (2005), Hirshleifer et al. (2011), Campbell et al. (2011), and Malmendier, Tate, and Yan. (2011). These papers define CEOs as optimistic if the CEOs hold stock options that are deep in-the-money (e.g., more than 67% in the money, i.e., the stock price exceeds the exercise price by more than 67%), recognizing that risk-averse executives typically hold undiversified portfolios and should exercise options early if they are rational expected utility maximizers.

Based on the logic that optimistic CEOs hold options too long (i.e., they let options go too deep in the money before exercising them), we define a conservative CEO as one who exercises stock options with low average moneyness and does not hold other exercisable options with high average moneyness. Such a CEO follows a conservative portfolio strategy relative to other CEOs, which exercises at-the-money or slightly in-the-money options and does not hold deep in-the-money options. This approach is similar to that of Campbell et al. (2011).

Similar to previous studies (e.g., Campbell et al. (2011)), the data that we use do not have option-grant-specific exercise prices. We therefore follow these studies and compute option moneyness by estimating the average exercise price of the aggregated options.² The average percent moneyness of the exercised options equals the per-option value realized from exercising divided by the estimated average exercise price.³

Following prior work, we require that CEOs exhibit the relevant exercise behavior at least twice in the sample period and classify them as conservative beginning with the first time they exhibit this

² Specifically, we compute the realizable value per option as the total realizable value of the exercisable options divided by the number of exercisable options. We then subtract the per-option realizable value from the stock price at the fiscal year end to obtain an estimate of the average exercise price of the options. The average percent moneyness of the options equals the per-option realizable value divided by the estimated average exercise price. Note that we include only exercisable options.

³ To compute the percentage moneyness of the exercised options, we first compute a per-option value realized from exercising as the total value realized from exercising stock options divided by the number of options exercised. The estimated average exercise price of the exercised options is the stock price at the fiscal year end minus the per-option value realized from exercising.

behavior. For robustness, we use different thresholds of moneyness to define CEO conservatism. *Stock options_20%* is an indicator equal to 1 if a CEO exercises stock options that are less than 20% in the money and does not hold other exercisable options that are greater than 20% in the money. *Stock options_30%* is defined analogously using a cutoff point of 30% moneyness. In our sample, the *Stock options_20%* indicator equals 1 for 6.7% of the CEOs. The *Stock options_30%* indicator equals 1 for 8.7% of the CEOs.

Our second measure is motivated by existing evidence that early-life experiences shape individual preferences and beliefs (e.g., Malmendier, Tate, and Yan (2011) and Malmendier and Nagel (2011)). As a measure of an early-life experience, we focus on the Great Depression as a formative past experience that may change the beliefs or the preferences of the CEO. We define CEOs born between 1920 and 1929 as Depression CEOs. Our focus on the Great Depression is motivated by existing evidence that suggests that the Depression experience discourages individuals from participating in capital markets (Graham and Narasimhan (2004), Schoar and Zou (2012), and Malmendier and Nagel (2011)). We hypothesize that Depression CEOs have less faith in external capital markets and will therefore lean excessively on internal financing and cash. In our sample, 7.0% of the CEOs are Depression CEOs.

Our third measure follows Malmendier, Tate, and Yan (2011) and Malmendier and Tate (2008), and uses the perception of outsiders, as captured by CEO characterizations in the business press. We collect annual data on the press coverage of CEOs in *The Wall Street Journal*, *The New York Times*, *Business Week*, *Financial Times*, and *The Economist*. We count the total number of articles referring to the CEO using the words “confident” or “confidence”; “optimistic” or “optimism”; and “reliable,” “cautious,” “practical,” “frugal,” “conservative,” or “steady.” We construct an indicator of CEO conservatism that compares the number of past articles using the terms (a) “confident” or “confidence”

or (b) “optimistic” or “optimism” to the number of past articles that portray the CEO as (c) not “confident,” (d) not “optimistic,” or (e) “reliable,” “cautious,” “conservative,” “practical,” “frugal,” or “steady”. We set the indicator equal to 1 if $(c) + (d) + (e) > (a) + (b)$. We address possible bias due to differential coverage by controlling for the total number of articles.⁴ In our sample, the *media* indicator equals 1 for 10.9% of the CEOs.

Our last measure of CEO conservatism is an indicator equal to 1 if the CEO is a female and 0 otherwise. This measure is motivated by several studies that show that men are likely to take greater risk relative to females in a wide range of activities. Barber and Odean (2001) and Weber, Blais, and Betz (2002), for example, show that financial risk taking differs by gender. Byrnes, Miller, and Schafer (1999) and Eckel and Grossman (2008) provide a review of the literature on differential risk taking by gender. In our sample, 2.6% of the CEOs are females.

To compare our measures of professional experience with measures of conservatism, we report the pairwise correlations between the different measures in Panel A of Table 5. According to Table 5, the pairwise correlations between our measures of professional experience and previous measures of CEO conservatism are mostly positive. Collectively, these correlations suggest that professional experiences of financial difficulties are associated with CEOs’ conservatism, as measured by prior research. These correlations, however, also suggest that our measures are different from the measures in previous research since they are generally lower than 10%. Next, we examine the relation between firms’ cash policies and the alternative measures of CEO conservatism.

Panel B of Table 5 reports the results of panel regressions explaining firms’ cash-to-assets ratios with the different measures of CEO conservatism, controlling for the firm’s precautionary savings motive and size, as in Table 3. In addition to this set of controls, we also control for the CEO’s age in

⁴ Specifically, press stories may be biased towards positive (or negative) news. Thus, CEOs who are often in the press may be more likely to be characterized as optimistic (or conservative). To address this concern, we regress our media indicator on the total number of articles over the same period as the media measure, and use the regression residual in our analysis.

the Depression CEO regression to separate the effect of the Depression cohort from the effect of older age. Following Malmendier, Tate, and Yan (2011), we also control for the CEO's stock ownership and lagged stock returns in the stock option exercising regressions.

The empirical results indicate that across all the aforementioned measures, CEO conservatism is positively and significantly associated with higher corporate cash holdings. The slope coefficients are statistically significant at the 5% level or better. The economic magnitudes are consistent across the different measures and are smaller compared to those found for the measures of professional experience. A firm operated by a Depression CEO holds 1.7 percentage point more cash, whereas a firm run by a CEO with a conservative stock option exercising strategy holds 2.9 percentage points more cash. Similarly, the media-based measure of CEO conservatism is associated with 2.2 percentage points more cash, and female CEOs hold 3.3 percentage points more cash.

Taken together, the results in this subsection indicate that professional experience at a firm that faced financial difficulties is positively associated with CEO conservatism. More importantly, these results provide more support for our hypothesis that conservative CEOs hold more cash.

B. Multinational Firms

Prior research has shown that in addition to the precautionary savings motive, tax considerations are also an important determinant of the cash policies of U.S. multinational firms. In particular, Foley, Hartzell, Titman, and Twite (2007) find that U.S. multinational firms hold cash in their foreign subsidiaries because of the tax costs associated with repatriating foreign income. Furthermore, Pinkowitz, Stulz, and Williamson (2012) find that the increase in abnormal cash holdings over the last decade is concentrated in U.S. multinational firms. This evidence suggests that multinational firms may be holding more cash because they face a different set of motives and implications.

If multinational firms hire CEOs that experienced financial difficulties to manage their higher cash ratios, our measures of professional experience may be correlated with multinational firms and therefore capture a selection effect and not a treatment effect. To address this concern, we follow a conservative, nonparametric approach and remove all multinational firms from our sample. We define multinational firms as firms that report positive foreign income on their balance sheet. This approach removes 38.2% of the firm-year observations in our sample and has the advantage of not restricting the effect of multinational firms to take any particular functional form (e.g., linear).

Table 6 reports the results of panel regressions of corporate cash holdings on the professional experience of the CEO and a set of firm-level controls, estimated for nonmultinational firms only. To control for industry-level characteristics and time effects, all regressions include industry and year fixed effects. We cluster standard errors at the firm level.

The empirical results in Table 6 indicate that the positive relation between cash holdings and CEOs' professional experience is robust to excluding multinational firms. As in Table 3, which reports the results for the full sample of firms, this relation is consistently significant at the 1% level across all measures of financial difficulties. The economic magnitudes are substantial and comparable in size across all columns: professional experience at a firm that faced financial difficulties is associated with a 3.2 to 4.2 percentage points increase in the firm's cash holdings.

C. CFO Professional Experience

So far the analysis has focused on the professional experience of the CEO. The results indicate a CEO effect on financial policies, and allow for two interpretations: (1) CEOs directly determine financial policies, or (2) CFOs determine financial policies, but their decisions are positively correlated with CEO traits. In this subsection, we distinguish between the two interpretations by directly

considering the effect of the professional experience of the CFO. To measure these professional experiences, we use the same methodology as in our main analysis.

To study the professional experience of CFOs, we recreate our measures of professional experience at firms that faced financial difficulties for the 5,575 CFOs in our sample. As Table 2 shows, we find that 2.6% to 13.9% of the CFOs in our sample were previously employed by firms that faced financial difficulties.

In Table 7, we estimate panel regressions of corporate cash holdings on the professional experience of the CFO, controlling for the professional experience of the CEO and a set of firm-level controls similar to that in Table 3. This approach allows us to compare the incremental effects of the professional experiences of both the CEO and the CFO on the firm's cash policy. To control for industry-level characteristics and time effects, all regressions include industry and year fixed effects. Standard errors are clustered at the firm level.

The empirical results in Table 7 indicate that the firm's cash holdings are positively related to the professional experiences of both the CEO and the CFO, after controlling for the firm's precautionary savings motive and size. For CEOs, this relation is consistently significant at the 1% level across all measures of financial difficulties; for CFOs, it is significant at the 5% level or better across all columns.

The economic magnitudes are substantial and comparable in size across all columns. Furthermore, the slope coefficients on the CEO's professional experience are on average 2 to 3 times larger than the coefficients on the CFO's experience. In particular, the economic magnitudes for the CEO are virtually identical to those reported in Table 3: the CEO's professional experience of financial difficulties is associated with an increase of 2.1 to 3.8 percentage points in the firm's cash holdings. A CFO's experience at firms that faced financial difficulties is associated with an additional increase of 1.2 to 1.8 percentage point in the firm's cash holdings. These findings suggest that the professional experiences of

the CEO and the CFO have distinct effects on the firm's cash policy. Furthermore, they suggest that the CEO's professional experience exerts greater influence on a firm's cash policy relative to the CFO's experience.

This evidence corroborates the findings in Graham, Harvey, and Puri (2010), who show that the primary financial decision-making authority rests with the CEO rather than the CFO. Consistent with this premise, we find that the professional experiences of the CFOs have weaker effects on cash policies both in terms of the magnitude and in terms of the statistical significance.

Our evidence on CFOs' professional experience also complements recent studies that investigate the influence of CFOs on firms' financial policies. Ben-David, Graham and Harvey (2007, 2012) examine CFO decision making using survey data. Malmendier and Zheng (2012) examine the impact of both CEOs' and CFOs' overconfidence on corporate decision making. Similar to our findings, these studies show that both the CEO and the CFO impact the firm's financial decisions.

IV. Professional Experience, Corporate Governance, and Value

The evidence thus far indicates that managers with professional experience at firms that faced financial difficulties hold more cash. These findings are consistent with both the *excess cash* hypothesis and the *recalibration* hypothesis.

The *excess cash* hypothesis posits that a CEO that experienced financial difficulties in the past overestimates the likelihood and adverse implications of financial distress. This hypothesis predicts higher cash holdings in firms operated by CEOs that experienced financial difficulties, which cannot be explained by the firm's economic indicators and the precautionary savings motive. In other words, the CEO's past experience leads her to become overly conservative. Under this view, the effects of CEOs'

professional experience are expected to be stronger in poorly governed firms, and the value of cash holdings in their firms is expected to be lower.

The *recalibration* hypothesis posits that CEOs, in general, tend to be overconfident and underestimate risk, consistent with Ben David, Graham, and Harvey (2012). According to this hypothesis, CEOs with professional experience at a firm that faced financial difficulties recalibrate their underestimation of the likelihood and implications of financial difficulties and perceive them to be more important compared to managers that did not experience financial difficulties. They therefore increase the cash holdings in their firms and come closer to holding the optimal level of cash implied by their firm's precautionary demand for cash. Thus, this hypothesis also predicts higher cash holdings in firms operated by CEOs that experienced financial difficulties. However, the effects of CEOs' professional experience are expected to be weaker in poorly governed firms, and the value of cash holdings in their firms is not expected to be lower.

In this section, we distinguish between these hypotheses by studying corporate governance and the value of cash holdings. If professional experiences fuel excess cash, they are likely to have a stronger effect when corporate governance is poor and have a negative effect on the value of cash. On the other hand, if professional experiences foster an optimal increase in cash holdings (*recalibration hypothesis*), they are less likely to dominate when corporate governance is poor and should not hurt the value of cash holdings.

To disentangle the two hypotheses, we first interact CEOs' professional experiences with measures of corporate governance. Then, we test whether the marginal value of a dollar in cash is lower or higher if the CEO experienced financial difficulties before.

A. Corporate Governance

In this subsection, we test whether the association between professional experience and cash holdings varies with corporate governance. To test this association, we follow Harford et al. (2008) and use a number of corporate governance measures to gauge the severity of the firm's agency problems. In particular, we include the *G-index* (Gompers et al. (2003)) and *E-index* (Bebchuk et al. (2009)) of antitakeover provisions. We also consider the impact of the board of directors using both board size and board independence. We measure board size as the number of directors on the board. We measure board independence as the ratio of independent directors to total directors.

Table 8 presents the results of pooled regressions in which the dependent variable is the firm's cash-to-assets ratio. For brevity, we report the results for the composite index of professional experiences, but the results persist across the individual measures of professional experiences. The independent variable of interest is the interaction term between the composite index of professional experience and corporate governance. This term captures whether the association between professional experiences and cash holdings varies with the quality of corporate governance. Other independent variables include the index of professional experience, corporate governance, and the same set of controls as in our main analysis. As before, we include year and industry fixed effects, and cluster the standard errors at the firm level.

The coefficient on the interaction term between CEOs' professional experience and corporate governance is positive and significant across all measures of corporate governance. This evidence suggests that professional experiences have a stronger effect on cash holdings in firms with more severe agency problems. The interaction term is consistently significant at the 1% level and the economic magnitudes are substantial and comparable in size across all columns: a decline of one standard deviation in the quality of corporate governance implies an additional increase of 1.8 to 2.2 percentage

points in cash holdings due to the CEO's professional experience of financial difficulties. For a manager overseeing a firm with mean characteristics, this effect is associated with an extra \$9.7-\$11.9 million in cash holdings per year (in 2011 dollars).

The empirical specification in Table 8 also allows us to directly control for managerial incentives. Agency theory offers diverging views on the relation between cash holdings and agency problems. On the one hand, agency-driven managers may value the flexibility and insulation from capital market discipline that cash holdings provide (Jensen (1986)). It is therefore possible that when the firm generates excess cash flow, these managers stockpile some of it, preferring to hold large cash reserves (Dittmar, Mahrt-Smith, and Servaes (2003); Gao et al. (2012)). Under this view, poor corporate governance leads to excessive cash reserves. On the other hand, agency-driven managers may choose to increase the scope of their firm (empire-building), invest in pet projects, and spend money on perks, in which case they will spend excess cash flow when it is generated (e.g., Jensen and Meckling (1976)). This preference implies, in turn, that poorly governed firms hold less cash.

The empirical results in Table 8 support the latter prediction. The coefficients on the G-index, E-index, and board size are all negative, thus suggesting that poorly governed firms hold less cash. These findings are consistent with the evidence in Harford et al. (2008), who show that firms with agency conflicts hold less cash. The coefficient on board independence is statistically insignificant at conventional levels. Importantly, the results in Table 8 show that the effect of professional experience continues to hold after controlling for corporate governance. These findings indicate that professional experience has a distinct influence on corporate cash holdings, different from the effects of the agency problems considered in prior research.

Overall, the evidence in this section documents a stronger effect of professional experiences on cash policies when corporate governance is weak and provides empirical support for the *excess cash* hypothesis. Next, we analyze the impact of professional experience on the value of cash.

B. The Value of Cash

To study the value implications of CEOs' professional experiences, we examine the relation between the variation in managers' professional experiences across firms and the marginal value of their cash holdings. To test this, we follow the methods in Faulkender and Wang (2006) and Dittmar and Mahrt-Smith (2007) and investigate the relation between cash holdings and excess stock returns in firms run by CEOs with professional experiences of financial difficulties. These methods estimate the value of a marginal dollar of cash inside the firm.

Specifically, we estimate a model similar to column 1 in Table 2 of Faulkender and Wang (2006). The dependent variable is a stock's excess return over the fiscal year, defined as a stock's return during the fiscal year less the return on the matching Fama and French (1993) size and book-to-market portfolio. At the beginning of each year, we match every firm into one of the 25 size and book-to-market portfolios, and compute the excess return as the difference between the stock's return and the return on the matched portfolio. This model generates estimates of the increase in market value resulting from an increase in cash.

While we only report the regression coefficients on the change in cash reserves ($\Delta Cash$), the *Professional experience* dummy, and the interaction term $\Delta Cash \times Professional\ experience$, the regressions also include a set of independent variables that comprise firm-specific factors that control for sources of value other than cash that may be correlated with cash holdings. These include interest expense, total dividends, market leverage, net financing, changes in earnings, changes in total assets net

of cash, and changes in R&D expenditures. Both the dependent and independent variables are standardized by the lagged market value of equity. The value of cash is determined by the coefficients on the ratio of the change in cash to lagged market value. Since both dependent and independent variables are divided by lagged market value of equity, these coefficients measure the change in value due to a one-dollar change in cash. Faulkender and Wang (2006) show that the marginal value of a dollar of cash is \$0.94.

In our analysis, we build on these previous studies and investigate how the value of a dollar of cash varies with managers' professional experience. The results are presented in Table 9. We find that the value of an additional dollar of cash is significantly lower for firms run by managers with professional experience at firms that faced financial difficulties. Specifically, the estimated coefficients on the interactions of CEO professional experience with the change in cash are negative and statistically significant at the 1 percent level. The magnitudes are also economically significant. We find that a CEO's professional experience implies a 10.6 to 18.2 cents reduction in the value of an added dollar in cash. Given our finding that these managers hold more cash, this result is consistent with Faulkender and Wang (2006), which shows that the value of a dollar of cash is decreasing in the level of cash held by the firm. These results indicate that though these managers hold high levels of cash, the value and thus the need for a marginal dollar in cash is significantly lower in their firms.

In summary, the effect of professional experiences on the firm's value of cash and the interaction between experience and governance is consistent with the *excess cash* hypothesis, which implies that the CEO's past experience of financial difficulties leads her to overestimate the likelihood and implications of financial difficulties and therefore hold more cash than the optimal level of cash. The effect of prior employment at firms that faced financial difficulties is stronger when governance is weak and the

marginal value of a dollar of cash is lower when the CEO experienced financial difficulties during her professional career.

V. Conclusion

We know relatively little about how managers' professional experience affects corporate financial decisions. In this paper, we examine how managers' prior employment experience at firms that faced financial difficulties affects their corporate savings decision. Our findings indicate that firms operated by CEOs who experienced financial difficulties at another firm have higher cash holdings, beyond what can be explained by standard empirical cash models. Furthermore, these cash holdings have significantly lower values, suggesting that managers are holding more cash than needed.

This paper contributes to two strands of literature. First, it provides novel evidence on the effect of managers' professional experiences on corporate financial policies. Existing evidence focuses on early-life and personal experiences, whereas our study is the first to study the role of more recent experiences during the course of managers' professional careers. This setting might prove an important source of influence on managers' decision making because of the time proximity of these experiences and their greater degree of relevance to the type of decision making required from corporate managers.

Second, this paper contributes to the literature on corporate cash holdings. Firms are holding unprecedented levels of cash that are difficult to explain using the standard firm-level determinants of cash holdings. While the precautionary savings motive is an important determinant of a firm's cash holdings, our paper shows that managerial traits associated with past experience have strong incremental explanatory power for cash holdings. Further, contrary to prior studies, it is not the agency conflicts of managers that cause these firms to deviate from the optimal level of cash holdings but rather managerial

beliefs. Thus, this paper provides a novel explanation for why some firms hold high levels of cash – their managers are overly conservative.

Our paper has several additional implications. First, it puts forth a possible explanation for why managers' and investors' views diverge. In particular, while shareholders are often unhappy with the accumulation of corporate cash reserves due to potential agency costs and the double taxation of corporate cash holdings, some managers still choose to accumulate large cash reserves. This issue has been often discussed in the business press (see, for example, the article “Time to get off your cash? – Companies are content to sit on their cash hoards, but investors are losing patience. What’s a CFO to do?”, published in *CFO Magazine* on July 15, 2010.) Our paper suggests that managers' personal beliefs lead them to mistakenly assess that they are justified in accumulating cash from a precautionary savings motive perspective, in spite of shareholders' concerns.

Second, if overly conservative managers accumulate enormous cash balances at the expense of undertaking positive net present value investments, they might be hurting economic growth and job creation. These issues have also caught the attention of the business press (e.g., “Don't expect economic boost from cash-rich companies,” *The Financial Times*, January 3, 2012), as well as policy makers (“Obama Will Tell Chamber Businesses to Put Cash to Use for Jobs,” *BusinessWeek*, February 7, 2011).

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Appendix: Variable Definitions

Note: Compustat data items are given in parentheses

A. Firm-level variables

Board independence is the ratio of independent directors to total directors

Board size is the number of directors on the board

Cash is cash + short term investments (che) divided by total assets (at).

Cash Flow is measured as earnings (ebitda) less interest and taxes (txt+xint), divided by total assets (at)

Cash flow volatility is the 10-year rolling window median volatility of cash flow/assets across 2 digit SIC industries

CEO ownership is the ratio of CEO insider holdings of common stocks to the total shares outstanding

Credit Rating is a dummy variable equal to one if the firm has a credit rating on Compustat

E-Index is an alternative antitakeover index to the G-Index, which is based on a subsample of relevant variables shown by Bebchuk, Cohen, and Ferrell (2009) to impact shareholder value

Equity issue is the cash proceeds from share issuance

Excess return is a stock's return during the fiscal year less the return on the matching Fama and French (1993) size and book-to-market portfolio. At the beginning of each year, we match every firm into one of the 25 size and book-to-market portfolios, and compute the excess return as the difference between the stock's return and the return on the matched portfolio.

Foreign income dummy is an indicator variable equal to 1 if the firm reported nonmissing pretax foreign income (pifo).

G-Index is the Gompers, Ishii, and Metrick (2003) index of shareholder rights, backfilled with the most recent observation to maximize the number of observations.

Market to book is the market value of assets, defined as total assets (at) minus book equity (ceq) plus market value of equity (csho*prcc), divided by total assets (at).

Size is the natural logarithm of the book value of total assets (at).

B. Manager-level variables

Professional experience (bond ratings) is an indicator equal to 1 if the manager worked at firm that never had its public debt rated during our sample period while it reported positive debt.

Professional experience (Hadlock and Pierce) is an indicator equal to 1 if the manager worked at firm that belonged to the most constrained decile of Compustat firms based on the Hadlock and Pierce (2010) index of financial constraints.

Professional experience (cash flow) is an indicator equal to 1 if the manager worked at firm that belonged to the lowest decile of Compustat firms based on annual operating cash flows.

Professional experience (stock returns) is an indicator equal to 1 if the manager worked at firm that belonged to the lowest decile of Compustat firms based on annual stock returns.

Professional experience (composite index) is the maximum of the four Experience variables: Experience (bond ratings), Experience (Hadlock and Pierce), Experience (cash flow), Experience (stock returns).

Note: We recalculate each the experience measures excluding prior employment experience as the CEO of another firm

Stock options_20% is an indicator equal to 1 for CEOs who exercise stock options that are less than 20% in the money and do not hold other exercisable options that are greater than 20% in the money. CEOs are required to exhibit this exercise behavior at least twice in the sample period and are classified as conservative beginning with the first time they do

Stock options_30% is defined analogously for a threshold of 30% in the money options.

Depression CEO is an indicator equal to 1 for CEOs born between 1920 and 1929.

Media-based Conservatism is an indicator that compares the number of media articles using the terms (a) “confident” or “confidence” or (b) “optimistic” or “optimism” to the number of past articles that portray the CEO as (c) not “confident,” (d) not “optimistic,” or (e) “reliable,” “cautious,” “conservative,” “practical,” “frugal,” or “steady”. We set the indicator equal to 1 if (c) + (d) + (e) > (a) + (b). We address possible bias due to differential coverage by controlling for the total number of articles in the selected publications.

Female CEO is an indicator equal to 1 if the CEO is a woman.

Table 1
Summary Statistics

This table presents summary statistics for firm-level variables used in the analyses. The full sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on total assets and cash. The sample used in the analyses comprises the subset of firm-year observations for which we have available information about the CEO's prior employment. *Cash* is cash and short term investments. Industry *cash flow volatility* is the 10-year rolling window median volatility of cash flow/assets across 2 digit SIC industries. *Market-to-book* is measured as the book value of total assets minus book value of equity plus market value of equity divided by total assets. *Size* is the natural logarithm of the book value of total assets. *Cash flow/assets* is measured as earnings less interest and taxes, divided by total assets. *Foreign income dummy* is an indicator equal to 1 if the firm reported nonmissing positive pretax foreign income.

Variable	Mean	Median	Std. Dev.	Full sample mean	Difference-in-means	t-statistic
Cash/assets	0.220	0.125	0.238	0.216	-0.004	0.975
Industry cash flow volatility	0.075	0.066	0.041	0.065	-0.010	0.013
Cash flow/assets	-0.026	0.038	0.229	-0.028	-0.002	1.606
Market-to-book	2.193	1.585	1.766	2.048	-0.145	1.233
Size	5.694	5.586	1.942	5.190	-0.504	9.490
Foreign income dummy	0.392	0.000	0.488	0.321	-0.071	1.942

Table 2
Managers

This table presents information about the 8,522 CEOs and 5,575 CFOs in our sample. Panel A provides summary statistics about managers' age, gender, tenure and stock ownership. Panel B describes the measures of managers' professional experience at firms with financial difficulties. *Professional experience (bond ratings)* is an indicator equal to 1 if the manager worked at firm that never had its public debt rated during our sample period while it reported positive debt. *Professional experience (Hadlock and Pierce)* is an indicator equal to 1 if the manager worked at firm that belonged to the most constrained decile of Compustat firms based on the Hadlock and Pierce (2011) index of financial constraints. *Professional experience (cash flow)* is an indicator equal to 1 if the manager worked at firm that belonged to the lowest decile of Compustat firms based on annual operating cash flows. *Professional experience (stock returns)* is an indicator equal to 1 if the manager worked at firm that belonged to the lowest decile of Compustat firms based on annual stock returns. *Professional experience (composite index)* is the maximum of the four Experience variables: *Professional experience (bond ratings)*, *Professional experience (Hadlock and Pierce)*, *Professional experience (cash flow)*, *Professional experience (stock returns)*. For each measure of professional experience, we also calculate a corresponding measure of employment history that excludes past employment as the CEO of other firms and label this measure "*Professional experience excluding CEO.*"

Panel A: Summary statistics

Variable	Mean	Median	Std. Dev.
CEOs			
Age	49.529	50.000	7.880
Female	0.026	0.000	0.160
Tenure	8.480	6.000	7.310
Stock ownership	0.024	0.007	0.056
CFOs			
Age	46.506	46.000	7.354
Female	0.076	0.000	0.265
Tenure	7.910	5.000	7.025
Stock ownership	0.016	0.002	0.028

Panel B: Professional experience

Indicator	CEO	CFO
Professional experience (bond ratings)	12.980%	13.591%
Professional experience (Hadlock and Pierce)	3.087%	2.624%
Professional experience (cash flow)	5.669%	5.781%
Professional experience (stock returns)	14.109%	13.884%
Professional experience (composite index)	23.127%	22.276%
Professional experience excluding CEO (bond ratings)	11.471%	13.522%
Professional experience excluding CEO (Hadlock and Pierce)	2.584%	2.593%
Professional experience excluding CEO (cash flow)	4.948%	5.755%
Professional experience excluding CEO (stock returns)	13.042%	13.832%
Professional experience (composite index)	21.275%	22.194%

Table 3
CEOs' Professional Experience and Cash Holdings

This table presents evidence on the relation between the professional experience of the CEO and the ratio of firm-level cash reserves to book assets. The key variable of interest is *Professional experience*, defined as an indicator equal to 1 if the CEO worked at another firm that experienced financial difficulties. We use four measure of financial difficulties based on bond ratings, the Hadlock and Pierce (2011) index of financial constraints, adverse cash flow shocks, and adverse shocks to the firm's annual stock return. We also calculate a composite index of *Professional experience*, defined as the maximum of these four measures. In Panel A, the measures of *Professional experience* all include prior employment as the CEO of other firms, whereas Panel B only includes non-CEO roles. The table presents estimates from panel regressions. The sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on the CEO's prior employment. All variable definitions are given in the Appendix. All the regressions include year and industry fixed effects. Intercept and fixed effects are not shown. The standard errors (in brackets) are heteroskedasticity consistent and clustered at the firm level. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: Professional experience including CEO roles

Measure of professional experience	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Composite index of professional experience
Model	(1)	(2)	(3)	(4)	(5)
Professional experience	0.032*** [0.005]	0.037*** [0.012]	0.044*** [0.009]	0.031*** [0.005]	0.042*** [0.004]
Industry cash flow volatility	0.738*** [0.089]	0.738*** [0.089]	0.708*** [0.088]	0.740*** [0.089]	0.735*** [0.089]
Cash flow/assets	-0.142*** [0.009]	-0.142*** [0.009]	-0.137*** [0.008]	-0.141*** [0.009]	-0.139*** [0.009]
Market-to-book	0.036*** [0.001]	0.036*** [0.001]	0.036*** [0.001]	0.036*** [0.001]	0.036*** [0.001]
Credit ratings	-0.194*** [0.025]	-0.193*** [0.025]	-0.189*** [0.025]	-0.191*** [0.025]	-0.193*** [0.025]
Size	-0.028*** [0.001]	-0.028*** [0.001]	-0.029*** [0.001]	-0.029*** [0.001]	-0.029*** [0.001]
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	51,866	51,866	51,866	51,866	51,866
R-Squared	0.441	0.441	0.445	0.442	0.441

Panel B: Professional experience excluding CEO roles

Measure of professional experience	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Composite index of professional experience
Model	(1)	(2)	(3)	(4)	(5)
Professional experience	0.023*** [0.006]	0.038*** [0.013]	0.040*** [0.010]	0.031*** [0.005]	0.036*** [0.005]
Industry Cash flow volatility	0.724*** [0.089]	0.732*** [0.088]	0.710*** [0.088]	0.738*** [0.089]	0.721*** [0.088]
Cash flow/assets	-0.143*** [0.009]	-0.142*** [0.009]	-0.137*** [0.009]	-0.141*** [0.009]	-0.140*** [0.008]
Market-to-book	0.036*** [0.001]	0.036*** [0.001]	0.036*** [0.001]	0.036*** [0.001]	0.036*** [0.001]
Credit ratings	-0.190*** [0.025]	-0.192*** [0.025]	-0.187*** [0.025]	-0.185*** [0.025]	-0.190*** [0.025]
Size	-0.029*** [0.001]	-0.028*** [0.001]	-0.029*** [0.001]	-0.029*** [0.001]	-0.029*** [0.001]
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	41,981	41,981	41,981	41,981	41,981
R-Squared	0.443	0.441	0.443	0.444	0.444

Table 4
Professional Experience: CEO Turnover

This table presents estimates from first-difference regressions, in which the dependent variable is the annual change in the ratio of firm-level cash reserves to book assets, for firm-year observations where the CEO has changed from the previous year. Panel A includes all CEO turnovers. Panel B corresponds to turnovers in which the CEO departed as part of a succession plan, due to health reasons (including deaths), or retired at the age of 60 or older. The sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on the CEO's prior employment. All variable definitions are given in the Appendix. All the regressions include year and industry fixed effects. Intercept and fixed effects are not shown. The standard errors (in brackets) are heteroskedasticity consistent and clustered at the firm level. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: All CEO turnovers

Measure of professional experience	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Composite index of professional experience
Model	(1)	(2)	(3)	(4)	(5)
Δ Professional experience	0.019** [0.009]	0.025** [0.011]	0.021** [0.010]	0.013** [0.006]	0.021** [0.008]
Δ Industry Cash flow volatility	1.665*** [0.201]	1.665*** [0.207]	1.664*** [0.198]	1.662*** [0.212]	1.662*** [0.210]
Δ Cash flow/assets	0.167*** [0.010]	0.165*** [0.011]	0.168*** [0.014]	0.171*** [0.014]	0.166*** [0.012]
Δ Market-to-book	0.013*** [0.001]	0.013*** [0.001]	0.016*** [0.001]	0.019*** [0.001]	0.014*** [0.001]
Δ Credit ratings	-0.419*** [0.056]	-0.394*** [0.051]	-0.402*** [0.053]	-0.441*** [0.065]	-0.411*** [0.061]
Δ Size	-0.620*** [0.036]	-0.620*** [0.044]	-0.614*** [0.046]	-0.639*** [0.058]	-0.623*** [0.041]
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	3,048	3,048	3,048	3,048	3,048
R-Squared	0.257	0.257	0.262	0.261	0.258

Panel B: Succession/Health/Age-Related CEO turnovers

Measure of professional experience	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Composite index of professional experience
Model	(1)	(2)	(3)	(4)	(5)
Δ Professional experience	0.021*** [0.005]	0.026*** [0.003]	0.020*** [0.006]	0.018*** [0.005]	0.026*** [0.007]
Δ Industry Cash flow volatility	1.849*** [0.623]	1.822*** [0.624]	1.835*** [0.628]	1.823*** [0.624]	1.850*** [0.631]
Δ Cash flow/assets	0.038 [0.025]	0.037 [0.025]	0.038 [0.026]	0.039 [0.028]	0.038 [0.025]
Δ Market-to-book	0.014*** [0.004]	0.014*** [0.004]	0.014*** [0.004]	0.014*** [0.004]	0.014*** [0.004]
Δ Credit ratings	-0.359* [0.185]	-0.356* [0.184]	-0.359* [0.187]	-0.358* [0.186]	-0.360* [0.185]
Δ Size	-0.438*** [0.046]	-0.439*** [0.049]	-0.440*** [0.053]	-0.439*** [0.048]	-0.436*** [0.046]
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	2,051	2,051	2,051	2,051	2,051
R-Squared	0.226	0.225	0.232	0.231	0.226

Table 5
Measures of CEO Conservatism

This table considers measures of CEO conservatism based on early-life experiences (the Great Depression), stock options exercising, media coverage, and gender. Panel A provides the pair-wise correlations between the measures of professional experience and the measures of CEO conservatism. Panel B provides estimates from panel regressions of the relation between CEO conservatism and the ratio of firm-level cash reserves to book assets. *Depression CEO* is an indicator equal to 1 for CEOs born between 1920 and 1929. *Stock options_20%* is an indicator equal to 1 for CEOs who exercise stock options that are less than 20% in the money and do not hold other exercisable options that are greater than 20% in the money. CEOs are required to exhibit this exercise behavior at least twice in the sample period and are classified as conservative beginning with the first time they do. *Stock options_30%* is defined analogously for a threshold of 30% in the money options. *Media-based Conservatism* is an indicator that compares the number of media articles using the terms (a) “confident” or “confidence” or (b) “optimistic” or “optimism” to the number of past articles that portray the CEO as (c) not “confident,” (d) not “optimistic,” or (e) “reliable,” “cautious,” “conservative,” “practical,” “frugal,” or “steady”. We set the indicator equal to 1 if (c) + (d) + (e) > (a) + (b). We address possible bias due to differential coverage by controlling for the total number of articles in the selected publications. *Female CEO* is an indicator equal to 1 if the CEO is a woman. The sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on the CEO’s prior employment. All variable definitions are given in the Appendix. All the regressions include year and industry fixed effects. Intercept and fixed effects are not shown. The standard errors (in brackets) are heteroskedasticity consistent and clustered at the firm level. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Panel A: Pairwise correlations

	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Depression CEO	Stock options_20%	Stock options_30%	Media-based conservatism
Professional experience (bond ratings)	1.000							
Professional experience (cash flow)	0.298	1.000						
Professional experience (stock returns)	0.236	0.251	1.000					
Professional experience (Hadlock and Pierce)	0.261	0.412	0.130	1.000				
Depression CEO	0.005	0.007	-0.003	0.012	1.000			
Stock options_20%	0.032	0.041	0.062	0.016	-0.008	1.000		
Stock options_30%	0.019	0.032	0.056	0.012	-0.007	0.885	1.000	
Media-based conservatism	0.139	0.116	0.153	0.097	0.041	0.058	0.053	1.000

Panel B: Regression evidence

Measure of conservatism	Depression CEO	Stock options_20%	Stock options_30%	Media-based conservatism	Female CEO
Model	(1)	(2)	(3)	(4)	(5)
Conservative CEO	0.017** [0.008]	0.035*** [0.008]	0.029*** [0.006]	0.022*** [0.006]	0.033** [0.014]
Industry Cash flow volatility	0.673*** [0.082]	0.641*** [0.096]	0.643*** [0.096]	0.670*** [0.083]	0.748*** [0.089]
Cash flow/assets	-0.138*** [0.008]	-0.158*** [0.016]	-0.158*** [0.016]	-0.141*** [0.008]	-0.144*** [0.009]
Market-to-book	0.035*** [0.001]	0.037*** [0.002]	0.037*** [0.002]	0.036*** [0.001]	0.036*** [0.001]
Credit ratings	-0.179*** [0.024]	-0.247*** [0.030]	-0.247*** [0.030]	-0.188*** [0.024]	-0.192*** [0.025]
Size	-0.028*** [0.001]	-0.022*** [0.002]	-0.022*** [0.002]	-0.028*** [0.001]	-0.028*** [0.001]
CEO age	-0.002*** [0.000]				
CEO stock ownership		0.000** [0.000]	0.000** [0.000]		
Lagged stock return		0.000 [0.000]	0.000 [0.000]		
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	56,750	24,505	24,505	38,740	51,866
R-Squared	0.442	0.425	0.424	0.439	0.441

Table 6
CEOs' Professional Experience: Excluding Multinational Firms

This table presents estimates from panel regressions, in which the dependent variable is the annual ratio of firm-level cash reserves to book assets. Multinational firms, defined as firms that reported positive pretax foreign income, are excluded from the analysis. The sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on the CEO's prior employment. All variable definitions are given in the Appendix. All the regressions include year and industry fixed effects. Intercept and fixed effects are not shown. The standard errors (in brackets) are heteroskedasticity consistent and clustered at the firm level. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Measure of professional experience	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Composite index of professional experience
Model	(1)	(2)	(3)	(4)	(5)
Professional experience	0.032*** [0.007]	0.036*** [0.014]	0.042*** [0.011]	0.037*** [0.006]	0.037*** [0.006]
Industry Cash flow volatility	0.853*** [0.127]	0.857*** [0.126]	0.813*** [0.125]	0.860*** [0.126]	0.854*** [0.126]
Cash flow/assets	-0.117*** [0.010]	-0.119*** [0.010]	-0.113*** [0.010]	-0.117*** [0.010]	-0.114*** [0.010]
Market-to-book	0.031*** [0.001]	0.031*** [0.001]	0.031*** [0.001]	0.031*** [0.001]	0.031*** [0.001]
Credit ratings	-0.160*** [0.032]	-0.158*** [0.032]	-0.155*** [0.032]	-0.156*** [0.032]	-0.159*** [0.032]
Size	-0.030*** [0.002]	-0.029*** [0.002]	-0.029*** [0.002]	-0.030*** [0.002]	-0.030*** [0.002]
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	31,526	31,526	31,526	31,526	31,526
R-Squared	0.477	0.476	0.480	0.478	0.479

Table 7**CFO's Professional Experience**

This table presents estimates from panel regressions, in which the dependent variable is the annual ratio of firm-level cash reserves to book assets. The key variables of interest are the *CEO's Professional experience* and the *CFO's Professional experience*, defined analogously for CEOs and CFOs based on the measures of financial difficulties described in Table 3 and the Appendix. The sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on the CEO's and the CFO's prior employment. All variable definitions are given in the Appendix. All the regressions include year and industry fixed effects. Intercept and fixed effects are not shown. The standard errors (in brackets) are heteroskedasticity consistent and clustered at the firm level. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Measure of professional experience	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Composite index of professional experience
Model	(1)	(2)	(3)	(4)	(5)
CEO professional experience	0.031*** [0.006]	0.023*** [0.012]	0.038*** [0.009]	0.035*** [0.006]	0.021*** [0.004]
CFO professional experience	0.018** [0.008]	0.013** [0.006]	0.013* [0.007]	0.012** [0.006]	0.012* [0.007]
Industry Cash flow volatility	0.566*** [0.106]	0.558*** [0.106]	0.530*** [0.106]	0.575*** [0.106]	0.730*** [0.088]
Cash flow/assets	-0.142*** [0.009]	-0.144*** [0.009]	-0.138*** [0.009]	-0.141*** [0.009]	-0.141*** [0.009]
Market-to-book	0.035*** [0.001]	0.035*** [0.001]	0.035*** [0.001]	0.035*** [0.001]	0.036*** [0.001]
Credit ratings	-0.264*** [0.028]	-0.269*** [0.028]	-0.263*** [0.028]	-0.262*** [0.028]	-0.200*** [0.025]
Size	-0.024*** [0.002]	-0.024*** [0.002]	-0.024*** [0.002]	-0.025*** [0.002]	-0.029*** [0.001]
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	43,256	43,256	43,256	43,256	43,256
R-Squared	0.441	0.44	0.444	0.441	0.444

Table 8
CEOs' Professional Experience and Corporate Governance

This table presents estimates from panel regressions, in which the dependent variable is the annual ratio of firm-level cash reserves to book assets. The key variables of interest are the *CEO's Professional experience index*, *Governance*, and their interaction term: *Professional experience index* x *Governance*. *Professional experience index* is a composite index of Professional experience, defined as the maximum of the four measures: *Experience (bond ratings)*, *Experience (Hadlock and Pierce)*, *Experience (cash flow)*, *Experience (stock returns)*. *Governance* is one of the following measures. *G-Index* is the Gompers, Ishii, and Metrick (2003) index of shareholder rights, backfilled with the most recent observation to maximize the number of observations. *E-Index* is an alternative antitakeover index, which is based on a subsample of relevant variables shown by Bebchuk, Cohen, and Ferrell (2009) to impact shareholder value. *Board size* is the number of directors on the board. *Board independence* is the ratio of independent directors to total directors. The sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on the CEO's prior employment. All variable definitions are given in the Appendix. All the regressions include year and industry fixed effects. Intercept and fixed effects are not shown. The standard errors (in brackets) are heteroskedasticity consistent and clustered at the firm level. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Measure of governance	G-index	E-index	Board size	Board independence
Model	(1)	(2)	(3)	(4)
Professional experience index	0.036** [0.017]	0.039*** [0.014]	0.033** [0.013]	0.023** [0.011]
Governance	-0.006*** [0.001]	-0.011*** [0.003]	-0.007*** [0.001]	-0.005 [0.013]
Professional experience index X Governance	0.008*** [0.002]	0.013** [0.006]	0.006** [0.003]	-0.082*** [0.018]
Industry Cash flow volatility	0.880*** [0.128]	0.353** [0.138]	0.518*** [0.118]	0.568*** [0.116]
Cash flow/assets	-0.145*** [0.021]	-0.174*** [0.021]	-0.132*** [0.022]	-0.147*** [0.021]
Market-to-book	0.034*** [0.002]	0.036*** [0.002]	0.038*** [0.002]	0.038*** [0.002]
Credit ratings	-0.237*** [0.032]	-0.204*** [0.037]	-0.262*** [0.035]	-0.276*** [0.035]
Size	-0.013*** [0.002]	-0.029*** [0.002]	-0.008*** [0.003]	-0.014*** [0.003]
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
N Observations	15,647	15,647	51,866	51,866
R-Squared	0.402	0.468	0.458	0.451

Table 9**CEO's Professional Experience and the Value of Cash**

This table presents estimates from panel regressions explaining annual stock returns. The dependent variable is a firm's *excess return*, defined as a stock's return during the fiscal year less the return on the matching Fama and French (1993) size and book-to-market portfolio. At the beginning of each year, we match every firm into one of the 25 size and book-to-market portfolios, and compute the excess return as the difference between the stock's return and the return on the matched portfolio. $\Delta Cash$ is the change in cash from year $t-1$ to year t . Following Faulkender and Wang (2006), all regressions control for the changes in earnings, net assets (total assets minus cash), R&D expenditures, interest expense, total dividends, as well as leverage, net debt and equity issuance, and lagged cash (unreported). The sample consists of all industrial firms in the Compustat/Crsp file from 1980 to 2011, with non-missing observations on the CEO's prior employment. All variable definitions are given in the Appendix. The standard errors (in brackets) are heteroskedasticity consistent and clustered at the firm level. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Measure of professional experience	Professional experience (bond ratings)	Professional experience (Hadlock and Pierce)	Professional experience (cash flow)	Professional experience (stock returns)	Composite index of professional experience
Model	(1)	(2)	(3)	(4)	(5)
$\Delta Cash$	0.888*** [0.053]	0.863*** [0.085]	0.864*** [0.089]	0.928*** [0.092]	0.903*** [0.108]
Professional experience	-0.023 [0.094]	-0.012 [0.112]	-0.027 [0.088]	-0.011 [0.078]	-0.024 [0.057]
$\Delta Cash$ X Professional experience	-0.182*** [0.041]	-0.106* [0.059]	-0.149*** [0.040]	-0.148*** [0.037]	-0.169*** [0.039]
Controls	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
N Observations	41,681	41,681	41,681	41,681	41,681
R-Squared	0.574	0.574	0.574	0.576	0.577