Executive Compensation and Deployment of Corporate Resources: Evidence from Working Capital

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ABSTRACT

Firms provide compensation incentives to alleviate managerial slack in the deployment of corporate resources to working capital. We find that such compensation incentives come primarily in the form of short-term bonus payments for working capital reductions. Firms in non-competitive industries, lacking external market discipline on managers through product market competition, are heavy users of working capital incentives. So are financially constrained firms for which working capital reductions represent an internal opportunity to avoid costly external finance. Our work points to an important purpose that short-term bonus payments serve in executive compensation.

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"If I then look at an update on working capital, many of you know I'm a really big fan of cash. I like cash a lot. We put a lot of focus on that this year -- in 2012 I should say. And approximately 25% of the bonus, the financial component of the bonus was tied to working capital improvement last year. This year, we're actually going to increase that. It's going to be about a third this year. So we're going to have equal between driving top-line operating profit and cash. So we made some improvements here, 12 days working capital overall. The key is to make sure we make it sustainable." Kimberly Ross, Executive Vice President & Chief Financial Officer, Avon Products Inc.[1]

Working capital is not only a critical factor of production but also a substantial resource commitment for firms. In the aggregate, resource commitments to net working capital comprise 22% of aggregate net assets held by S&P 1500 firms as of 2012, and have averaged 28% over the period 1992-2012. In this paper, we examine how firms induce disciplined deployment of such substantial amounts of corporate resources through use of managerial incentives.[2]

A long tradition in finance and economics recognizes managerial compensation as an important internal governance device to alleviate managerial slack (Jensen and Meckling, 1976). Unless managers receive proper incentives that align their interests with those of shareholders, managerial preferences for the "quiet life" (Hicks, 1935, Bertrand and Mullainathan, 2003) may

[1] Fair Disclosure Wire transcript from Consumer Analyst Group of New York Conference on February 21, 2013.

[2] One practitioner study points to $1.3 trillion worth of managerial slack in working capital management for top 2,000 companies in the U.S. and Europe (Ernst & Young, 2014 Working Capital Management Report).

lead to avoidance of personally difficult decisions and effort in managing corporate resources. By most practitioner accounts, disciplined working capital management is difficult (Ek and Guerin, 2011). Eliminating excess inventory, improving collections from customers, and negotiating favorable payment terms with suppliers require serious effort and coordination among different functional groups in large organizations. In addition, success or failure in this context is an unlikely source of reputational motivation for managers (Holmstrom, 1999). Markets are typically focused on earnings, and disciplined working capital management rarely attracts personally valuable media attention for managers (Malmendier and Tate, 2009).

Our baseline estimates show that firms recognize the potential for managerial slack in working capital management and reward top managers with short-term bonus payments for overseeing reductions in working capital. Our estimates also show that working capital incentives are stronger for chief executive officers (CEOs) and chief financial officers (CFOs) than they are for other executives.

We then study distinct product market and firm financial conditions under which firms use working capital incentives. Consistent with the notion that incentives are especially important when managers face less competition in product markets and enjoy greater slack as a result, we find that managers, in particular CEOs, receive stronger working capital incentives when they run businesses in industries with less competition. That is, firms rely more heavily on internal incentive contracts to provide discipline when external market pressures that limit managerial slack through product market competition are weaker. Although the relationship

between product market competition and managerial slack is ambiguous theoretically – negative in Hart (1983) and positive in Scharfstein (1988) – recent empirical work is supportive of the idea that product market competition reduces managerial slack (Giroud and Mueller, 2010) and forces improvements in management practices (Bloom and Van Reenen, 2007, and Bloom, Propper, Seiler, and Van Reenen, 2014).

We also study the relationship between firm financial constraints and use of working capital incentives. Because management attention is a limited resource (Simon, 1955) one would expect firms to set priorities, and financially constrained firms to prioritize tasks related to financial management. While disciplined working capital management represents an internal opportunity to reduce the need for costly external finance for all firms, the opportunity is more valuable for financially constrained firms because external finance is more costly for them. Supporting this view, we find that financially constrained firms provide their executives, in particular CFOs, with stronger working capital incentives than unconstrained firms do.

Most of the data for our analyses are from Standard & Poor's ExecuComp database for executive compensation and Compustat database for financial statement and credit rating data. We also use measures of product market competition based on textual analysis of product descriptions in annual Form 10-Ks that firms file with the U.S. Securities and Exchange Commission (SEC) (Hoberg and Phillips, 2014, and Hoberg, Phillips and Prabhala, 2014).

We estimate panel regressions with firm and time fixed effects and firm-specific control variables that are standard in the empirical literature on executive compensation (see Jensen and

Murphy, 1990, Core and Guay, 1999, Bertrand and Mullainathan, 2001, and Coles, Daniel, and Naveen, 2006, among others). The sensitivity of different components of executive pay to changes in working capital, which we sometimes refer to as "pay for working capital performance," is our main regression coefficient estimate of interest.

Our estimates imply that CEOs and CFOs receive roughly 9 to 11 percent additional bonus pay for one standard deviation reduction in industry-adjusted working capital. Depending on the extent of insulation from product market competition and the severity of financial constraints, our baseline estimates for CEOs and CFOs respectively increase to as much as 30 and 20 percent extra bonus pay.

Our work contributes to several strands of literature in corporate finance. First, our work is related to a stream of empirical papers on managerial preferences for the "quiet life." Using passage of state-level anti-takeover laws, Bertrand and Mullainathan (2003) show that managers are reluctant to make difficult decisions – whether they are about negotiating wages, or closing old plants and starting new ones. Such preferences also give rise to managerial slack in the form of greater selling, general and administrative expenses and cost of goods sold, particularly in industries featuring less competition (Giroud and Mueller, 2010). We contribute to this line of work by showing that firms in more concentrated industries use incentives more intensely to counter "quiet life" preferences in working capital management. Our evidence can also be viewed as an attempt by firms in non-competitive industries to provide substitute discipline internally when it is lacking externally.

Our work is also related to studies on financial constraints (Fazzari, Hubbard, and Petersen, 1988) that build on the idea of costly external finance (Stiglitz and Weiss, 1981, and Myers and Majluf, 1984). A long tradition recognizes working capital as both an important and a liquid stock of internal capital (Smith, 1776, and Dewing, 1941), which in principle firms can tap to avoid external frictions. Indeed, financially constrained firms have been shown to reverse working capital to smooth investment in physical capital (Fazzari and Petersen, 1993) and to build up cash holdings in a precautionary manner (Almeida, Campello, and Weisbach, 2004). We deepen this literature with our focus on incentives. Our results highlight how managerial objectives and incentives likely are set differently depending on firm financial constraints with impact on both real and financial corporate outcomes. Financially constrained firms use sharper managerial incentives to reduce working capital, consistent with those firms having more to gain from generating internal funds to avoid costly external finance.

Finally, our work contributes to the literature on executive compensation, which predominantly studies equity-based pay. Although it is true that changes in managerial wealth due to changes in bonus compensation pale in comparison to changes in managerial wealth due to changes in the value of stock and options holdings, bonuses can still efficiently guide managerial behavior. In particular, bonuses can be tied to accounting performance metrics such as working capital ratios, which managers know with high precision how their actions will affect (Murphy and Jensen, 2011). In this respect, our paper provides a contrast to Grinstein and Hribar (2004) who show that bonuses fail to induce good M&A decisions and that those payments

rather reflect managerial power. In a recent paper using cash windfalls from repatriation of foreign earnings following the American Jobs Creation Act of 2004, Cheng, Harford, Hutton, and Shipe (2014) show that managers received greater bonuses.

The rest of the paper proceeds as follows. Section I describes our sample, data sources and empirical strategy. Section II presents our baseline estimates on working capital incentives. Section III investigates the use of working capital incentives under different product market and firm financial conditions. Section IV concludes.

I. Data and Empirical Strategy

A. Sample and Data Sources

Our sample consists of firms in the Standard & Poor's (S&P) ExecuComp database from 1992 to 2012. ExecuComp provides annual executive compensation data from DEF14A proxy statements for firms in the S&P 1500. Following previous research, we exclude regulated utilities and financial firms. We obtain stock price and return data from the Center for Research in Security Prices (CRSP) and financial statement data from S&P Compustat.

We consider all executives in ExecuComp, but some of our analyses focus on subsamples of CEOs, CFOs, and other executives. To identify the executive type, we use identification flags and the annual title field in ExecuComp. For CEOs, a CEO flag is available for the entire period. However, there are some cases for which the CEO flag is missing, in particular at the beginning of the sample period. For cases with missing CEO flag (about 10% of firm-year observations),

we assign the role of CEO to the executive with the highest total compensation, as it is common in the literature.

For CFOs, the CFO flag is populated after 2006. Before 2006, we conduct a text search for "CFO," "finance," and "financial" in the annual title string to identify CFOs. In case an executive is identified as both CFO and CEO of a company in a given year, we place that executive in the CEO subsample to avoid overlap between the CEO and CFO subsamples.[3] Our final sample includes 2,533 unique firms and 31,539 unique executives. The number of unique CEOs and CFOs are 5,671 and 5,085, respectively.

B. Empirical Strategy

Following the extant literature on executive compensation, our empirical strategy relies on ex-post observed levels of compensation and performance – we estimate the sensitivity of different components of realized compensation to realized working capital performance. Alternatively, one might imagine using information provided in annual proxy statements about ex-ante incentive plans. However, in practice, such information about incentive plans is provided ex post. The disclosure convention creates discretion in labeling some compensation as performance-based even when that compensation would have been awarded regardless of performance (see Grinstein and Hribar, 2004, for a similar point regarding M&A bonuses).

Specifically, we estimate the following regression specification:

$$Y_{ijt} = \alpha_j + \alpha_t + \beta \times NWC_{jt} + \gamma \times X_{jt} + \varepsilon_{ijt} \quad (1)$$

where the dependent variable is compensation that executive i receives from firm j for year t. We consider different components of compensation, namely salary, bonus, and equity-based pay

[3] In total, there are 54 cases in which an executive is identified as both CFO and CEO.

in the form of stock and options, and use the natural logarithm transform to estimate the performance elasticity of compensation.[4]

α_j and α_t are firm and year fixed effects, respectively. Year fixed effects absorb aggregate trends in compensation. Firm fixed effects help mitigate concerns about omitted variable biases due to time-invariant firm-level unobservable factors.

NWC_{jt} is net working capital of firm j in year t. We use net working capital (inventories plus receivables minus payables) because shareholders care about net resource commitments to working capital. We scale net working capital by sales as it is standard, and further adjust for the median net working capital ratio in the industry (following 49 Fama-French industry definitions) to allow for time-varying industry effects in the setting of working capital targets for managers. The regression coefficient β measures the strength of working capital incentives.

We control for time-varying firm characteristics and various performance measures X_{jt} described below. ε_{ijt} is an error term. We report robust standard errors that are heteroskedasticity-consistent and clustered at the firm level.

Following the extant literature on executive compensation (see Jensen and Murphy, 1990, Core and Guay, 1999, Bertrand and Mullainathan, 2001, and Coles, Daniel, and Naveen, 2006, among others), we employ a large set of firm characteristics and performance measures as control variables: *Firm size*, the book value of total assets in natural logarithm form; *Sales growth*, the growth rate of firm sales from previous year; *ROA*, operating income before depreciation, divided by total assets; *ROA growth*, the growth rate in *ROA* from previous year;

[4] We measure equity-based pay as total compensation minus salary and bonus. Total compensation includes salary, bonus, value of stock option grants, value of restricted stock grants, long-term incentive payouts, and other annual compensation. We obtain similar results with a more direct measure of equity-based pay defined as grant-date value of stock and options awards, but the sample size is considerably smaller due to missing data.

Stock return, annual stock return; *Margin*, operating income before depreciation, divided by sales; and *Margin growth*, the growth rate in *Margin* from previous year; *Institutional ownership*, percentage of shares owned by institutions; *Book leverage*, total debt divided by total assets; *Firm risk*, standard deviation of daily stock returns; *Loss dummy*; indicator variable for negative earnings; *Acquisition dummy*; indicator variable for a significant acquisition. Detailed variable definitions are in Appendix.

C. Summary Statistics

Table I reports summary statistics on executive compensation in Panel A. The average bonus is about $193,450 in our sample of 172,250 executive-year observations. For a given year, the bonus represents on average 24.10% of an executive's total cash compensation (bonus plus salary). Equity-based pay (sum of restricted stock and option grants) is the largest component of executive compensation with an average value of about $1,372,420 and an average share of 49.24% in total compensation. The average CEO bonus is roughly triple the average CFO bonus. However, the fraction of bonus in total cash compensation is comparable between CEOs and CFOs. For all executive types, the median bonus is substantially lower than the average, indicating a positively skewed distribution.

Summary statistics on firm-level variables are reported in Panel B. On average, the ratio of net working capital to sales is 18.94%. Adjusting for industry peers, the average net working capital ratio is 1.65%. Firms in our sample are profitable with an average and median ROA of 14.01% and 14.03%, respectively, though the percentage of firm-year observations with negative

earnings at 19.18% is not negligible. Institutions are significant owners at 58.20%. On average, 9.43% of sample firms undertake at least one significant M&A deal in a given year.

D. Product Market Competition and Financial Constraints

We use several proxies for product market competition and firm financial constraints to shed light on the circumstances under which working capital incentives are used more or less intensely to alleviate managerial slack in working capital management.

D.1. Product Market Competition Proxies

To measure the extent of product market competition, we use three text-based proxies from Hoberg and Phillips (2014), and Hoberg, Philipps, and Prabhala (2014). The first proxy is the Herfindahl-Hirschman index (HHI) of industry concentration using the text-based network industry classification (TNIC) available in the Hoberg and Phillips data library.[5] The TNIC scheme identifies for each firm a distinct set of rival firms based on firm-by-firm pairwise similarity scores of product descriptions in annual 10-K filings – product descriptions are legally required to be accurate by SEC regulations. Hoberg and Phillips (2014) show that their dynamic text-based approach is better than static industry classification schemes such as the North American Industry Classification System (NAICS) or the Standard Industrial Classification System (SIC) at explaining across-industry variation in key firm characteristics such as profitability and sales growth. TNIC data are available from 1996 to 2011.

[5] Last accessed on November 5, 2014 at http://alex2.umd.edu/industrydata/

Our second proxy is the Hoberg and Phillips (2014) total firm product similarity index, again based on firm-by-firm pairwise similarity scores. For each firm in a given year, the index is computed as the sum of all pairwise similarities between the firm and all other firms in that year. Hoberg and Phillips (2004) show that managers of firms with a higher index value are far more likely to discuss competitive pressures in the Management Discussion & Analysis section of the corresponding 10-K filing.

Our third proxy is the product market fluidity measure developed by Hoberg, Phillips, and Prabhala (2014). The measure captures emerging product market threats from other firms. The fluidity variable is available in the Hoberg and Phillips data library from 1997 to 2011.

D.2. Financial Constraints Proxies

The literature offers many different measures of firm financial constraints. We use four common measures: the Kaplan-Zingales (KZ) index (Kaplan and Zingales, 1997), the Whited-Wu (WW) index (Whited and Wu, 2006), the size-age (SA) index (Hadlock and Pierce, 2010), and credit ratings. (See Appendix A.3 for details on index construction.)

We classify firms as financially constrained and unconstrained following the same procedure as in Almeida, Campello, and Weisbach (2004). Each year, firms in the top tercile of the financial constraints index (KZ index, WW index or SA index) form the constrained sample, and firms in the bottom tercile form the unconstrained sample. The procedure allows firm financial constraints to change over the sample period. With credit ratings, we classify a firm as

financially constrained in a given year if the firm has no credit rating information in Compustat for that year.[6]

II. Baseline Estimates

We begin our analysis by estimating working capital incentives for all executives. As described in Section I.B, β in Equation (1) provides an estimate of working capital incentives while controlling for firm and year fixed effects and a large set of time-varying firm characteristics and performance measures.

Table II reports the results. We consider all three components of executive compensation, namely bonus, salary and equity-based pay in the form of stock and options, to provide a comprehensive array of estimates. In column 1, bonus pay in natural logarithm form is the dependent compensation variable.[7] The coefficient estimate on industry-adjusted net working capital to sales ratio is negative (-0.6708) and statistically significant at the 1% level. The estimate implies that executives receive about 8 percent greater bonus pay for a one standard deviation reduction in industry-adjusted net working capital to sales ratio. By comparison, executives receive about 34 percent greater bonus pay for a one standard deviation increase in ROA.

[6] Faulkender and Petersen (2006) show that rated firms have greater access to debt financing than nonrated firms.

[7] Because there are cases in which bonus is zero, we add one unit of compensation, i.e. $1,000, before computing the natural logarithm as it is commonly done in the literature. We treat salary and equity-based pay similarly. We obtain qualitatively similar results without the log transformation.

Next, we consider salary and equity-based pay in natural logarithm form in columns 2 and 4, respectively. Contrary to our finding for bonus pay, we find little sensitivity of salary pay to changes in working capital – the coefficient estimate (-0.0992) is statistically significant at the 1% level, but the absolute magnitude is small relative to that for bonus pay. Interestingly, we find no statistically reliable sensitivity of equity-based pay to changes in working capital.

For robustness, we also consider the fraction of bonus pay in total cash compensation (bonus and salary) and the fraction of equity-based pay in total compensation (bonus, salary, and stock and options) in columns 3 and 5, respectively. The results again show that firms provide working capital incentives primarily in the form of short-term bonus payments, and not in salary and equity-based pay.

Because many practitioner accounts portray management responsibility for strategic and financial performance of working capital as resting with CEOs and CFOs, respectively, we split the sample by executive type in Table III. Panel A presents regression estimates for CEOs, Panel B for CFOs, and Panel C for other executives. In all three panels for bonus pay, coefficient estimates on industry-adjusted net working capital to sales ratio are negative and statistically significant at the 5% level. Working capital incentives for CFOs (-0.8697) are stronger than those for CEOs (-0.7742) and other executives (-0.6242). For CEOs and CFOs, only the bonus component of compensation exhibits pay for working capital performance. The small sensitivity of salary pay to working capital reductions (column 2 in Table II) appears to be confined to executives other than CEOs and CFOs.

For the most part, the literature studies CEO compensation. Our coefficient estimates for control variables in Panel A of Table III for CEOs are largely consistent with previously reported estimates (see Jensen and Murphy, 1990, Core and Guay, 1999, Bertrand and Mullainathan, 2001, and Coles, Daniel, and Naveen, 2006 among others). We find that firm size, sales growth, ROA, stock return, acquisition dummy (Grinstein and Hribar, 2004) and institutional ownership (Hartzell and Starks, 2003) are positively associated with CEO compensation. We also find that book leverage is negatively associated with both short-term (bonus) and long-term (equity) compensation. An interesting result in Table III is that executive bonuses for completing M&A transactions are larger for CEOs than they are for CFOs and other executives. CEOs receive about 15% greater bonus pay after significant M&A transactions – compared to 11% for CFOs and 7% for other executives – consistent with the importance of CEO incentives in large M&A transactions compared to lower ranked executives.[8]

III. Product Market Competition and Financial Constraints

Our results thus far show that firms recognize the potential for managerial slack in working capital management, and provide compensation incentives in the form of short-term bonus payments to executives for overseeing reductions in working capital. We now turn our

[8] Our results are unaffected if we increase the threshold in deal size from $100 million to $1 billion used by Grinstein and Hribar (2004).

attention to product market and firm financial conditions under which firms use working capital incentives.

A. Product Market Competition

An often expressed idea in economics is that product market competition raises the bar for firm survival and that pressure serves as an important source of discipline on managers, who may otherwise mismanage corporate resources. That is, product market competition reduces managerial slack. Building on this idea in the context of working capital management, we study whether the use of working capital incentives by firms depends on product market competition.

In Table IV, we report results using three different proxies for product market competition based on textual analysis of product descriptions in annual 10K filings (Hoberg and Phillips, 2014; and Hoberg, Phillips and Prabhala, 2014). We rank firms based on industry HHI using TNIC industries (Panel A), product market similarity (Panel B), and product market fluidity (Panel C) each year. We then form two subsamples using firms in the bottom and top terciles according to each competition measure. High HHI, low product similarity, and low product market fluidity identify instances of low product market competition.

For brevity, we report only bonus regressions because the results in Table III show that other components of executive compensation do not exhibit much sensitivity to changes in working capital. Likewise, we do not report coefficient estimates on control variables as they are similar to those reported in Table III.

The first and last four columns in Table IV contain results for subsamples of low and high product market competition, respectively. Columns 1 and 5 report results for the full sample of executives, columns 2 and 6 for CEOs, columns 3 and 7 for CFOs, and columns 4 and 8 for other executives.

We find statistically significant working capital incentives only in subsamples of low product market competition. In addition, estimated magnitudes of working capital incentives are as much as five times greater in columns 1-4 (low product market competition) than they are in columns 5-8 (high product market competition). Working capital incentives are particularly strong for CEOs of firms facing low product market competition. Such CEOs receive as much as 30% greater bonus pay for a one standard deviation reduction in industry-adjusted net working capital to sales ratio. Firms facing low product market competition also give their CFOs strong working capital incentives. However, for one proxy out of three, the estimate is not statistically significant (Panel C).

The results on product market competition and working capital incentives in Table IV are consistent with the view that product market competition and executive compensation are substitute corporate governance mechanisms. When low product market competition creates conditions for high managerial slack, firms respond by giving strong compensation incentives to motivate executives who are entrusted with managing large amounts of corporate resources.

B. Financial Constraints

Working capital is an important internal source of funds for financially constrained firms facing high costs of external finance. Fazzari and Petersen (1993) show that financially constrained firms reverse working capital to smooth fixed investment. Almeida, Campello, and Weisbach (2004) show that financially constrained firms have a tendency to add to precautionary cash holdings from working capital.

Disciplined working capital management to make such benefits possible is hard, however; not least because firms have priorities other than financial matters vying for limited management attention (Simon, 1955). We therefore test whether the use of working capital incentives depend on firm financial constraints.

In Table V, we report results using four different proxies for firm financial constraints: the Kaplan-Zingales (KZ) index (Kaplan and Zingales, 1997) in Panel A, the Whited-Wu (WW) index (Whited and Wu, 2006) in Panel B, the size-age (SA) index (Hadlock and Pierce, 2010) in Panel C, and credit ratings in Panel D. We follow Almeida, Campello, and Weisbach (2004) to classify firms as financially constrained and unconstrained based on index values. With credit ratings, we use the existence of a credit rating to classify firms as financially constrained and unconstrained (Faulkender and Petersen, 2006).

The structure of Table V follows that of Table IV. The first and last four columns contain results for financially constrained and unconstrained subsamples, respectively. For brevity, we

report coefficient estimates on industry-adjusted net working capital to sales ratio in bonus regressions only.

The results in Table V generally suggest that financially constrained firms use stronger working capital incentives than unconstrained firms do. For unconstrained firms, the sensitivity of executive bonuses to changes in working capital is lower in absolute value and only marginally significant in four specifications out of 16.

Perhaps the most striking pattern in Table V is that working capital incentives for CFOs are significantly stronger at financially constrained firms than they are at unconstrained firms. The estimates are also economically meaningful – CFOs at financially constrained firms receive as much as 19% greater bonus pay for a one standard deviation reduction in industry-adjusted net working capital to sales ratio.

IV. Conclusion

Firms commit substantial resources to net working capital, on average amounting to 28% of aggregate net assets held by S&P 1500 firms over the period 1992-2012. In this paper, we study whether and to what extent firms provide compensation incentives to alleviate managerial slack in the deployment of such substantial amounts of corporate resources.

Using data from ExecuComp, we estimate the sensitivity of different components of executive pay to changes in working capital. We find that short-term bonus payments increase

with working capital reductions whereas salary and equity-based pay show little or no sensitivity to changes in working capital.

We then study product market and financial conditions under which firms use working capital incentives. We obtain consistent results using different proxies for product market competition and financial constraints. Firms facing low product market competition provide strong working capital incentives to their CEOs, consistent with a heightened need to alleviate increased managerial slack under such conditions. Financially constrained firms provide strong working capital incentives to their CFOs, consistent with large benefits from disciplined working capital management for such firms.

Our results establish an important role for short-term bonus payments in executive compensation. Rewards based on accounting metrics such as net working capital to sales ratio, which managers know with precision how their actions will affect, may guide managerial behavior more efficiently than rewards based on stock prices.

Appendix. Variable Definitions

All names in parentheses refer to Compustat item names.

A.1. Compensation variables

Bonus: Cash bonus (BONUS) compensation earned by the executive during the fiscal year in thousands of dollars. As a dependent variable, a unit of compensation, i.e. $1,000, is added before computing the natural logarithm.

Salary: Cash salary (SALARY) compensation earned by the executive during the fiscal year in thousands of dollars. As a dependent variable, a unit of compensation, i.e. $1,000, is added before computing the natural logarithm.

Bonus ratio: Ratio of *Bonus* to sum of *Salary* and *Bonus*.

Equity: Total compensation (TDC1) minus *Salary* and *Bonus*. As a dependent variable, a unit of compensation, i.e. $1,000, is added before computing the natural logarithm.

Equity ratio: Ratio of *Equity* to total compensation (TDC1), which includes salary, bonus, value of stock option grants, value of restricted stock grants, long-term incentive payouts, and other annual compensation.

A.2. Firm characteristics

NWC: Net working capital, computed as inventories (INVT) plus receivables (RECT) minus accounts payable (AP).

NWC/sales: *NWC* divided by sales (SALE).

NWC/sales, ind. adj.: *NWC/sales* minus the median NWC/sales in the industry. Industry definitions follow the Fama-French 49-industry classification.

Firm size: Total assets (AT). Regressions use the natural logarithm of the variable.

Sales growth: Annual growth rate in sales (SALE).

ROA: Operating income before depreciation (OIBDP) divided by total assets (AT).

ROA growth: Annual growth rate in *ROA*.

Stock return: Annual stock return from CRSP.

Margin: Operating income before depreciation (OIBDP) divided by sales (SALE).

Margin growth: Annual growth rate in *Margin*.

Acquisition dummy: Indicator variable equal to one if the firm has completed at least one significant acquisition, defined as deal size over US$ 100 million and relative deal size over 1%, during the year and zero otherwise. The sample of acquisitions is restricted to control transactions in which the acquirer's ownership in the target firm before the deal is below 50% and over 90% after the deal. There are no restrictions on the nationality of the target or its public/private status. The sample is from Thomson Reuters SDC database.

Institutional ownership: Fraction of firm's equity owned by institutional investors based on Thomson Reuters Institutional Holdings database.
Leverage: Total long-term debt (DLTT) and debt in current liabilities (DLC) divided by total assets (AT).
St. dev. stock returns: Standard deviation of daily stock returns.
Loss dummy: Indicator variable equal one if net income (NI) is negative and zero otherwise.

A.3. Financial constraints measures

KZ index
The Kaplan-Zingales financial constraints index, following the estimates in Table 9 in Lamont, Polk, and Saá-Requejo (2001) for ordered logit from Kaplan and Zingales (1997):

$$-1.002\ \textit{Cash Flow}/K + 0.283\ Q + 3.139\ \textit{Debt}/\textit{Capital} - 39.368\ \textit{Dividend}/K - 1.315\ \textit{Cash}/K,$$

where *Cash Flow* is income before extraordinary items (IB) plus depreciation and amortization (DP); *K* is property, plant, and equipment (PPENT); *Q* is total assets (TA) plus market value of equity minus book value of equity (CEQ) minus deferred taxes (TXDB), divided by total assets (TA); *Debt* is sum of long-term debt (DLTT) and debt in current liabilities (DLC); *Capital* is *Debt* plus book value of equity (CEQ); *Dividend* is common dividends (DVC) plus preferred dividends (DVP); *Cash* is cash and short-term investments (CHE).

WW index
The Whited-Wu financial constraints index, following Equation (13) in Whited and Wu (2006):

$$-0.091\ CF - 0.062\ DIVPOS + 0.021\ TLTD - 0.044\ LNTA + 0.102\ ISG - 0.035\ SG,$$

where *CF* is the ratio of cash flow to total assets; *DIVPOS* is dividend payer dummy, *TLTD* is the ratio of the long-term debt to total assets; *LNTA* is the natural log of total assets; *ISG* is the firm's three-digit industry sales growth; and *SG* is firm sales growth.

SA index
The size-age index of Hadlock and Pierce (2010):

$$-0.737\ Size + 0.043\ Size^2 - 0.040\ Age,$$

where *Size* is the log of inflation adjusted (to 2004) book assets, and *Age* is the number of years the firm has been on Compustat with a non-missing stock price. *Size* is replaced with log ($4.5 billion) and *Age* with 37 years if the actual values exceed these thresholds.

References

Almeida, Heitor, Murillo Campello, and Michael S. Weisbach, 2004. The cash flow sensitivity of cash. Journal of Finance 59, 1777-1804.

Bertrand, Marianne, and Sendhil Mullainathan, 2001. Are CEOs rewarded for luck? The ones without principals are. Quarterly Journal of Economics 116, 901-932.

Bertrand, Marianne, and Sendhil Mullainathan, 2003. Enjoying the quiet life? Corporate governance and managerial preferences. Journal of Political Economy 111, 1043-1075.

Bloom, Nicholas, and John Van Reenen, 2007. Measuring and explaining management practices across firms and countries. Quarterly Journal of Economics 122, 1351-1408.

Bloom, Nicholas, Carol Propper, Stephan Seiler, and John Van Reenen, 2014. The impact of competition on management quality: Evidence from public hospitals. Unpublished working paper, Stanford University.

Cheng, Yingmei, Jarrad Harford, Irena Hutton, and Stephan Shipe, 2014. The compensation benefits of corporate cash holdings. Unpublished working paper, University of Washington.

Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen, 2006. Managerial incentives and risk-taking. Journal of Financial Economics 79, 431-468.

Core, John, and Wayne Guay, 1999. The use of equity grants to manage optimal equity incentive levels. Journal of Accounting and Economics 28, 151-184.

Dewing, Arthur S., 1941. The financial policy of corporations. The Ronald Press Company.

Ek, Ron, and Stephen Guerin, 2011. Is there a right level of working capital? Journal of Corporate Treasury Management 4, 137-149.

Faulkender, Michael, and Mitchell A. Petersen, 2006. Does the source of capital affect capital structure? Review of Financial Studies 19, 45-79.

Fazzari, Steven M., R. Glenn Hubbard, and Bruce C. Petersen, 1988. Financing Constraints and Corporate Investment. Brookings Papers on Economic Activity 1, 141-195.

Fazzari, Steven M., and Bruce C. Petersen, 1993. Working capital and fixed investment: New evidence on financing constraints. RAND Journal of Economics 24, 328-342.

Giroud, Xavier, and Holger M. Mueller, 2010. Does corporate governance matter in competitive industries? Journal of Financial Economics 95, 312-331.

Grinstein, Yaniv, and Paul Hribar, 2004. CEO compensation and incentives: Evidence from M&A bonuses. Journal of Financial Economics 73, 119-143.

Hadlock, Charles J., and Joshua R. Pierce, 2010. New evidence on measuring financial constraints: Moving beyond the KZ index. Review of Financial Studies 23, 1909-1940.

Hart, Oliver D., 1983. The market mechanism as an incentive scheme. Bell Journal of Economics 14, 366-382.

Hartzell, Jay C., and Laura T. Starks L.T., 2003. Institutional investors and executive compensation. Journal of Finance 58, 2351-2374.

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

Hoberg, Gerard, and Gordon Phillips, 2014. Text-based network industries and endogenous product differentiation. Unpublished working paper, University of Southern California.

Hoberg, Gerard, Gordon Phillips, and Nagpurnanand Prabhala, 2014. Product market threats, payouts, and financial flexibility. Journal of Finance 69, 293-324.

Holmstrom, Bengt, 1999. Managerial incentive problems: A dynamic perspective. Review of Economic Studies 66, 169-182.

Jensen, Michael C., and William H. Meckling, 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3, 305-360.

Jensen, Michael C., and Kevin J. Murphy, 1990. Performance pay and top-management incentives. Journal of Political Economy 98, 225-264.

Kaplan, Steven N., and Luigi Zingales, 1997. Do investment–cash flow sensitivities provide useful measures of financial constraints? Quarterly Journal of Economics 112, 159-216.

Lamont, Owen, Christopher Polk, and Jesus Saá-Requejo, 2001. Financial constraints and stock returns. Review of Financial Studies 14, 529-554.

Malmendier, Ulrike, and Geoffrey Tate, 2009. Superstar CEOs. Quarterly Journal of Economics 124, 1593-1638.

Murphy, Kevin J, and Michael C. Jensen, 2011. CEO bonus plans: And how to fix them. Unpublished working paper, University of Southern California.

Myers, Stewart C, and Nicholas S. Majluf, 1984. Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics 13, 187-221.

Scharfstein, David, 1988. Product-market competition and managerial slack. RAND Journal of Economics 19, 147-155.

Simon, Herbert A., 1955. A behavioral model of rational choice. Quarterly Journal of Economics 69, 99-118.

Smith, A., 1776. An inquiry into the nature and causes of the wealth of nations. University of Chicago Press.

Stiglitz, Joseph E., and Andrew Weiss, 1981. Credit rationing in markets with imperfect information. American Economic Review 71, 393-410.

Whited, Toni, and Guojun Wu, 2006. Financial constraints risk. Review of Financial Studies 19, 531-559.

Table I. Summary Statistics

This table reports summary statistics for the main sample. The sample includes non-financial and non-regulated U.S. firms from the S&P 1500 index with data available in the ExecuComp, CRSP, and Compustat databases for the period 1992-2012. Variable definitions are in Appendix.

	Mean	Median	St. dev.	N
Panel A. Executive compensation				
All executives				
Bonus	193.45	65.00	353.23	172,250
Salary	368.06	301.23	237.96	172,250
Bonus ratio	24.10%	23.08%	22.82%	171,858
Equity	1,372.42	500.84	2,457.11	152,866
Equity ratio	49.24%	52.96%	27.95%	152,738
CEOs				
Bonus	416.68	134.47	716.97	29,501
Salary	627.90	569.17	337.28	29,501
Bonus ratio	26.72%	26.08%	25.82%	29,365
Equity	3,028.35	1,267.18	4,641.04	28,894
Equity ratio	54.19%	60.42%	29.46%	28,842
CFOs				
Bonus	140.03	49.73	227.45	21,713
Salary	340.52	308.98	158.63	21,713
Bonus ratio	21.35%	17.08%	22.14%	21,697
Equity	1,048.36	549.78	1,435.35	21,555
Equity ratio	52.67%	57.23%	25.70%	21,547
Other executives				
Bonus	152.20	62.00	250.48	121,036
Salary	310.81	270.00	180.19	121,036
Bonus ratio	23.95%	23.43%	22.09%	120,796
Equity	989.50	394.94	1,678.51	102,410
Equity ratio	47.12%	50.16%	27.72%	102,342
Panel B. Firm characteristics				
NWC/sales	18.94%	17.58%	13.59%	29,049
NWC/sales, ind. adj.	1.65%	0.00%	11.79%	29,049
Total assets	4,263.21	945.47	10,219.46	29,492
Sales growth	13.92%	8.94%	28.98%	28,823
ROA	14.01%	14.03%	10.45%	29,404
ROA growth	–1.56%	–0.11%	86.26%	28,738
Stock return	11.28%	3.52%	55.98%	28,803
Margin	14.02%	13.64%	18.00%	29,389
Margin growth	–2.51%	0.62%	83.31%	28,719
Institutional ownership	58.20%	65.22%	31.21%	29,501
Leverage	21.28%	19.50%	18.23%	29,372
St. dev. stock return	2.93%	2.60%	1.40%	29,486
Acquisition dummy	9.43%			29,501
Loss dummy	19.18%			29,501

Table II. Baseline Estimates

This table reports fixed-effects compensation regressions for the sample of top executives for the period 1992-2012. The sample includes non-financial and non-regulated U.S. firms from the S&P 1500 index with available observations in the ExecuComp, CRSP, and Compustat databases. Variable definitions are in Appendix. Column headings refer to the dependent variable. Robust standard errors are clustered at the firm level and shown below coefficient estimates within brackets. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	ln(Bonus)	ln(Salary)	Bonus ratio	ln(Equity)	Equity ratio
NWC/sales, ind. adj.	–0.6708***	–0.0992***	–0.0770***	–0.0874	0.0157
	[0.2502]	[0.0342]	[0.0217]	[0.1674]	[0.0248]
Firm size	0.1812***	0.1512***	0.0167***	0.5136***	0.0520***
	[0.0407]	[0.0057]	[0.0037]	[0.0259]	[0.0040]
Sales growth	0.4023***	–0.0708***	0.0539***	0.1032**	0.0295***
	[0.0511]	[0.0072]	[0.0049]	[0.0435]	[0.0063]
ROA	3.2625***	0.3126***	0.3600***	1.6569***	0.1474***
	[0.3465]	[0.0482]	[0.0315]	[0.2458]	[0.0352]
ROA growth	–0.1008***	0.0314***	–0.0138***	–0.0643*	–0.0167***
	[0.0379]	[0.0053]	[0.0036]	[0.0359]	[0.0048]
Stock return	0.3192***	0.0047*	0.0313***	0.0108	–0.0099***
	[0.0204]	[0.0025]	[0.0019]	[0.0173]	[0.0025]
Margin	–0.6614***	–0.1382***	–0.0746***	–0.3492**	–0.0199
	[0.2316]	[0.0288]	[0.0201]	[0.1504]	[0.0215]
Margin growth	0.1803***	–0.0335***	0.0220***	0.0539	0.0143***
	[0.0391]	[0.0053]	[0.0036]	[0.0369]	[0.0049]
Acquisition dummy	0.0915**	–0.0011	0.0070**	0.0323	0.0035
	[0.0382]	[0.0043]	[0.0034]	[0.0264]	[0.0040]
Institutional ownership	0.2265**	0.0376***	0.0196**	0.3480***	0.0480***
	[0.0935]	[0.0133]	[0.0084]	[0.0610]	[0.0094]
Leverage	–0.5630***	–0.0294	–0.0640***	–0.5699***	–0.0767***
	[0.1508]	[0.0195]	[0.0131]	[0.1001]	[0.0154]
St. dev. stock return	–5.6201***	–0.7715***	–0.2723*	4.4830***	1.0964***
	[1.7930]	[0.2285]	[0.1586]	[1.3328]	[0.2029]
Loss dummy	–0.4400***	–0.0258***	–0.0323***	–0.0484*	0.0008
	[0.0415]	[0.0048]	[0.0035]	[0.0256]	[0.0039]
Firm fixed effects	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Adjusted R-squared	49.0%	45.2%	48.4%	43.2%	39.9%
Fisher statistic	153.44	232.74	132.96	117.024	108.96
p-value	0.00	0.00	0.00	0.00	0.00
Observations	164,831	164,831	164,475	146,577	146,459

Table III. Baseline Estimates by Executive Type

This table reports fixed-effects compensation regressions for subsamples of CEOs (Panel A), CFOs (Panel B), and other executives (Panel C) for the period 1992-2012. The sample includes non-financial and non-regulated U.S. firms from the S&P 1500 index with available observations in the ExecuComp, CRSP, and Compustat databases. Variable definitions are in Appendix. Column headings refer to the dependent variable. Robust standard errors are clustered at the firm level and shown below coefficient estimates within brackets. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. CEOs

	ln(Bonus)	ln(Salary)	Bonus ratio	ln(Equity)	Equity ratio
NWC/sales, ind. adj.	–0.7610**	–0.0745	–0.0887***	–0.0971	0.019
	[0.3339]	[0.0656]	[0.0287]	[0.2531]	[0.0360]
Firm size	0.1565***	0.1875***	0.0125***	0.5256***	0.0460***
	[0.0558]	[0.0111]	[0.0048]	[0.0382]	[0.0055]
Sales growth	0.5572***	–0.1036***	0.0709***	0.1321**	0.0303***
	[0.0763]	[0.0161]	[0.0069]	[0.0623]	[0.0085]
ROA	4.3730***	0.4319***	0.4461***	1.4769***	0.074
	[0.4819]	[0.0936]	[0.0426]	[0.3739]	[0.0492]
ROA growth	–0.2017***	0.0384***	–0.0235***	–0.1261**	–0.0227***
	[0.0588]	[0.0105]	[0.0055]	[0.0514]	[0.0068]
Stock return	0.4220***	–0.0098*	0.0412***	0.0473*	–0.0071**
	[0.0284]	[0.0056]	[0.0025]	[0.0256]	[0.0035]
Margin	–1.0247***	–0.1607***	–0.1012***	–0.1754	0.0103
	[0.3089]	[0.0497]	[0.0267]	[0.2309]	[0.0291]
Margin growth	0.3015***	–0.0408***	0.0321***	0.0943*	0.0169**
	[0.0616]	[0.0108]	[0.0057]	[0.0524]	[0.0070]
Acquisition dummy	0.1484***	0.0223***	0.0093*	0.0405	–0.0004
	[0.0562]	[0.0083]	[0.0048]	[0.0369]	[0.0054]
Institutional ownership	0.3109**	0.0944***	0.0279**	0.4426***	0.0562***
	[0.1331]	[0.0249]	[0.0115]	[0.0849]	[0.0123]
Leverage	–0.6455***	–0.0336	–0.0726***	–0.6855***	–0.0804***
	[0.2098]	[0.0424]	[0.0178]	[0.1431]	[0.0206]
St. dev. stock return	–9.8657***	–2.1436***	–0.5082**	1.1402	0.8034***
	[2.5080]	[0.4680]	[0.2144]	[2.0093]	[0.2802]
Loss dummy	–0.6103***	–0.0325***	–0.0442***	–0.0736*	0.0018
	[0.0605]	[0.0091]	[0.0050]	[0.0396]	[0.0058]
Firm fixed effects	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Adjusted R-squared	50.3%	70.9%	50.9%	50.1%	42.7%
Fisher statistic	125.20	98.28	112.39	73.18	76.33
p-value	0.00	0.00	0.00	0.00	0.00
Observations	28,160	28,160	28,036	27,635	27,586

Panel B. CFOs

	ln(Bonus)	ln(Salary)	Bonus ratio	ln(Equity)	Equity ratio
NWC/sales, ind. adj.	–0.8787**	–0.0299	–0.1040***	0.2308	0.0531
	[0.3471]	[0.0420]	[0.0291]	[0.2239]	[0.0352]
Firm size	0.1058*	0.1445***	0.0099*	0.5350***	0.0636***
	[0.0578]	[0.0074]	[0.0052]	[0.0344]	[0.0056]
Sales growth	0.3601***	–0.0735***	0.0455***	0.1418**	0.0330***
	[0.0751]	[0.0096]	[0.0069]	[0.0591]	[0.0087]
ROA	2.4178***	0.2226***	0.2786***	1.7161***	0.2194***
	[0.4682]	[0.0588]	[0.0413]	[0.3553]	[0.0525]
ROA growth	–0.1199**	0.0229***	–0.0119**	–0.0519	–0.0131*
	[0.0592]	[0.0076]	[0.0051]	[0.0470]	[0.0069]
Stock return	0.2971***	–0.0005	0.0293***	0.0157	–0.0069*
	[0.0295]	[0.0037]	[0.0026]	[0.0249]	[0.0037]
Margin	–0.3157	–0.1382***	–0.0437	–0.389	–0.0387
	[0.3120]	[0.0358]	[0.0266]	[0.2519]	[0.0354]
Margin growth	0.1962***	–0.0231***	0.0204***	0.0456	0.0120*
	[0.0593]	[0.0077]	[0.0051]	[0.0479]	[0.0069]
Acquisition dummy	0.1097**	–0.0029	0.0096**	0.0321	0.004
	[0.0506]	[0.0062]	[0.0044]	[0.0342]	[0.0054]
Institutional ownership	0.1852	0.0124	0.0213*	0.2787***	0.0405***
	[0.1326]	[0.0180]	[0.0117]	[0.0810]	[0.0128]
Leverage	–0.4588**	0.0008	–0.0554***	–0.4674***	–0.0753***
	[0.2059]	[0.0261]	[0.0180]	[0.1343]	[0.0212]
St. dev. stock return	–2.7277	–0.2901	–0.1309	3.6647**	0.9671***
	[2.4273]	[0.3123]	[0.2096]	[1.6784]	[0.2635]
Loss dummy	–0.3376***	–0.0038	–0.0233***	–0.0607	–0.0016
	[0.0558]	[0.0068]	[0.0046]	[0.0370]	[0.0058]
Firm fixed effects	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Adjusted R-squared	52.8%	75.3%	53.1%	48.6%	42.6%
Fisher statistic	95.64	128.15	87.12	55.24	53.83
p-value	0.00	0.00	0.00	0.00	0.00
Observations	20,944	20,944	20,929	20,801	20,793

Panel C. Other executives

	ln(Bonus)	ln(Salary)	Bonus ratio	ln(Equity)	Equity ratio
NWC/sales, ind. adj.	–0.6120**	–0.1195***	–0.0696***	–0.1409	0.0086
	[0.2508]	[0.0369]	[0.0221]	[0.1760]	[0.0253]
Firm size	0.2085***	0.1557***	0.0195***	0.5125***	0.0514***
	[0.0389]	[0.0062]	[0.0036]	[0.0273]	[0.0041]
Sales growth	0.3690***	–0.0682***	0.0509***	0.0779	0.0283***
	[0.0496]	[0.0077]	[0.0048]	[0.0473]	[0.0068]
ROA	3.1538***	0.2970***	0.3539***	1.6871***	0.1523***
	[0.3393]	[0.0522]	[0.0312]	[0.2503]	[0.0357]
ROA growth	–0.0680*	0.0316***	–0.0112***	–0.0489	–0.0158***
	[0.0387]	[0.0066]	[0.0037]	[0.0387]	[0.0052]
Stock return	0.2966***	0.0058**	0.0292***	–0.0037	–0.0115***
	[0.0205]	[0.0028]	[0.0019]	[0.0189]	[0.0027]
Margin	–0.6487***	–0.1349***	–0.0744***	–0.4017***	–0.0257
	[0.2249]	[0.0316]	[0.0198]	[0.1537]	[0.0218]
Margin growth	0.1437***	–0.0338***	0.0193***	0.0438	0.0140***
	[0.0402]	[0.0066]	[0.0038]	[0.0396]	[0.0054]
Acquisition dummy	0.0746**	–0.0077	0.0060*	0.0304	0.0046
	[0.0375]	[0.0051]	[0.0034]	[0.0288]	[0.0042]
Institutional ownership	0.2014**	0.0243*	0.0162**	0.3280***	0.0465***
	[0.0896]	[0.0140]	[0.0083]	[0.0645]	[0.0097]
Leverage	–0.5644***	–0.0377*	–0.0641***	–0.5598***	–0.0763***
	[0.1469]	[0.0207]	[0.0127]	[0.1064]	[0.0160]
St. dev. stock return	–5.2214***	–0.5483**	–0.258	5.5531***	1.2004***
	[1.7625]	[0.2473]	[0.1577]	[1.3719]	[0.2107]
Loss dummy	–0.4151***	–0.0222***	–0.0307***	–0.027	0.0022
	[0.0413]	[0.0053]	[0.0035]	[0.0271]	[0.0041]
Firm fixed effects	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Adjusted R-squared	48.8%	52.7%	47.6%	44.5%	39.6%
Fisher statistic	145.97	198.79	123.56	105.38	100.11
p-value	0.00	0.00	0.00	0.00	0.00
Observations	115,727	115,727	115,510	98,141	98,080

Table IV. Product Market Competition

This table reports fixed-effects bonus regressions for all executives (columns 1 and 5) and subsamples of CEOs (columns 2 and 6), CFOs (columns 3 and 7), and other executives (columns 4 and 8). The dependent variable is log of bonus in all specifications. We use three text-based product market competition proxies from Hoberg and Phillips (2014) and Hoberg, Philipps, and Prabhala (2014): HHI of industry concentration using TNIC industries, product market fluidity, and product similarity. Low product market fluidity, low product similarity and high HHI identify low product market competition. We form subsamples of low and high competition using top and bottom terciles. Variable definitions are in Appendix. Robust standard errors are clustered at the firm level and shown below coefficient estimates within brackets. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. HHI, industry concentration

	Low competition				High competition			
	All (1)	CEOs (2)	CFOs (3)	Others (4)	All (5)	CEOs (6)	CFOs (7)	Others (8)
NWC/sales, ind. adj.	–1.355**	–1.773**	–1.392*	–1.222**	–0.546	–0.343	–0.934	–0.550
	[0.592]	[0.872]	[0.835]	[0.579]	[0.492]	[0.713]	[0.654]	[0.490]
Control variables	yes	yes	yes	yes	Yes	yes	yes	Yes
Firm fixed effects	yes	yes	yes	yes	Yes	yes	yes	Yes
Year fixed effects	yes	yes	yes	yes	Yes	yes	yes	Yes
Adjusted R-squared	51.8%	49.6%	53.6%	51.7%	51.3%	51.0%	53.1%	50.6%
Fisher statistic	59.43	48.25	36.11	53.65	55.10	39.96	31.69	52.02
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	42,566	7,256	5,788	29,522	42,778	7,207	5,836	29,735

Panel B. Product market similarity

	Low competition				High competition			
	All (1)	CEOs (2)	CFOs (3)	Others (4)	All (5)	CEOs (6)	CFOs (7)	Others (8)
NWC/sales, ind. adj.	–1.891***	–2.521***	–1.515*	–1.773***	–0.459	–0.485	–0.389	–0.472
	[0.592]	[0.887]	[0.813]	[0.576]	[0.416]	[0.625]	[0.591]	[0.418]
Control variables	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R-squared	52.0%	50.9%	54.4%	52.3%	48.6%	48.8%	51.5%	47.8%
Fisher statistic	66.94	53.00	41.38	61.66	52.74	38.17	28.09	49.43
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	43,308	7,309	5,858	30,141	41,825	7,152	5,714	28,959

Panel C. Product market fluidity

	Low competition				High competition			
	All (1)	CEOs (2)	CFOs (3)	Others (4)	All (5)	CEOs (6)	CFOs (7)	Others (8)
NWC/sales, ind. adj.	–1.300**	–1.684*	–0.940	–1.275**	–0.277	–0.324	0.230	–0.362
	[0.629]	[0.972]	[0.869]	[0.614]	[0.405]	[0.628]	[0.610]	[0.407]
Control variables	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R-squared	54.4%	53.1%	56.5%	54.4%	49.5%	48.2%	51.1%	49.0%
Fisher statistic	88.66	63.60	55.42	81.51	48.69	31.62	21.96	46.71
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	40,769	6,929	5,637	28,203	39,210	6,679	5,455	27,076

Table V. Financial Constraints

This table reports fixed-effects bonus regressions for all executives (columns 1 and 5) and subsamples of CEOs (columns 2 and 6), CFOs (columns 3 and 7), and other executives (columns 4 and 8). The dependent variable is log of bonus in all specifications. We use four different financial constraint proxies: the Kaplan-Zingales (KZ) index (Kaplan and Zingales, 1997), the Whited-Wu (WW) index (Whited and Wu, 2006), the size-age (SA) index (Hadlock and Pierce, 2010), and the existence of credit rating. In Panels A-C, we use top and bottom terciles of the corresponding financial constraints index to form subsamples of constrained and unconstrained firms, respectively. In Panel D, constrained firms are firms with no credit rating. Variable definitions are in Appendix. Robust standard errors are clustered at the firm level and shown below coefficient estimates within brackets. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. KZ index

	Constrained firms				Unconstrained firms			
	All (1)	CEOs (2)	CFOs (3)	Others (4)	All (5)	CEOs (6)	CFOs (7)	Others (8)
NWC/sales, ind. adj.	–0.864*	–0.574	–1.646**	–0.743	–0.776*	–0.966	–0.570	–0.755*
	[0.480]	[0.709]	[0.724]	[0.473]	[0.421]	[0.600]	[0.607]	[0.438]
Control variables	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R-squared	47.1%	45.5%	47.7%	47.2%	55.5%	56.6%	61.0%	54.9%
Fisher statistic	46.14	31.56	25.58	44.47	52.57	39.32	32.05	49.98
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	51,052	8,671	6,616	35,765	49,929	8,665	6,272	34,992

Panel B. WW index

	Constrained firms				Unconstrained firms			
	All (1)	CEOs (2)	CFOs (3)	Others (4)	All (5)	CEOs (6)	CFOs (7)	Others (8)
NWC/sales, ind. adj.	–0.790**	–0.580	–1.086**	–0.784**	–0.212	–0.729	–0.061	–0.108
	[0.339]	[0.471]	[0.469]	[0.349]	[0.456]	[0.639]	[0.662]	[0.451]
Control variables	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R-squared	43.3%	45.4%	44.8%	42.1%	55.7%	56.6%	61.0%	55.3%
Fisher statistic	49.43	36.50	24.26	46.09	73.20	60.05	45.71	71.20
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	52,533	9,398	6,828	36,307	57,403	9,389	7,058	40,956

Panel C. SA index

	Constrained firms				Unconstrained firms			
	All (1)	CEOs (2)	CFOs (3)	Others (4)	All (5)	CEOs (6)	CFOs (7)	Others (8)
NWC/sales, ind. adj.	–0.597*	–0.640	–0.977*	–0.523	–0.788*	–1.262*	–0.677	–0.673
	[0.349]	[0.508]	[0.567]	[0.357]	[0.471]	[0.659]	[0.676]	[0.465]
Control variables	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R-squared	48.8%	50.1%	50.1%	48.3%	53.1%	54.7%	57.6%	52.7%
Fisher statistic	35.90	28.39	16.69	34.12	77.43	64.93	46.89	73.71
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	50,247	8,984	6,520	34,743	58,781	9,653	7,312	41,816

Panel D. Credit rating

	Constrained firms				Unconstrained firms			
	All (1)	CEOs (2)	CFOs (3)	Others (4)	All (5)	CEOs (6)	CFOs (7)	Others (8)
NWC/sales, ind. adj.	–0.693**	–0.593	–1.044**	–0.675**	–0.377	–0.782	–0.327	–0.262
	[0.316]	[0.433]	[0.435]	[0.317]	[0.367]	[0.534]	[0.540]	[0.363]
Control variables	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R-squared	47.8%	49.8%	51.6%	47.1%	52.2%	53.3%	56.1%	51.9%
Fisher statistic	75.43	58.66	43.02	70.92	98.27	80.99	58.51	94.07
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	86,385	15,232	11,009	60,144	78,446	12,928	9,935	55,583