

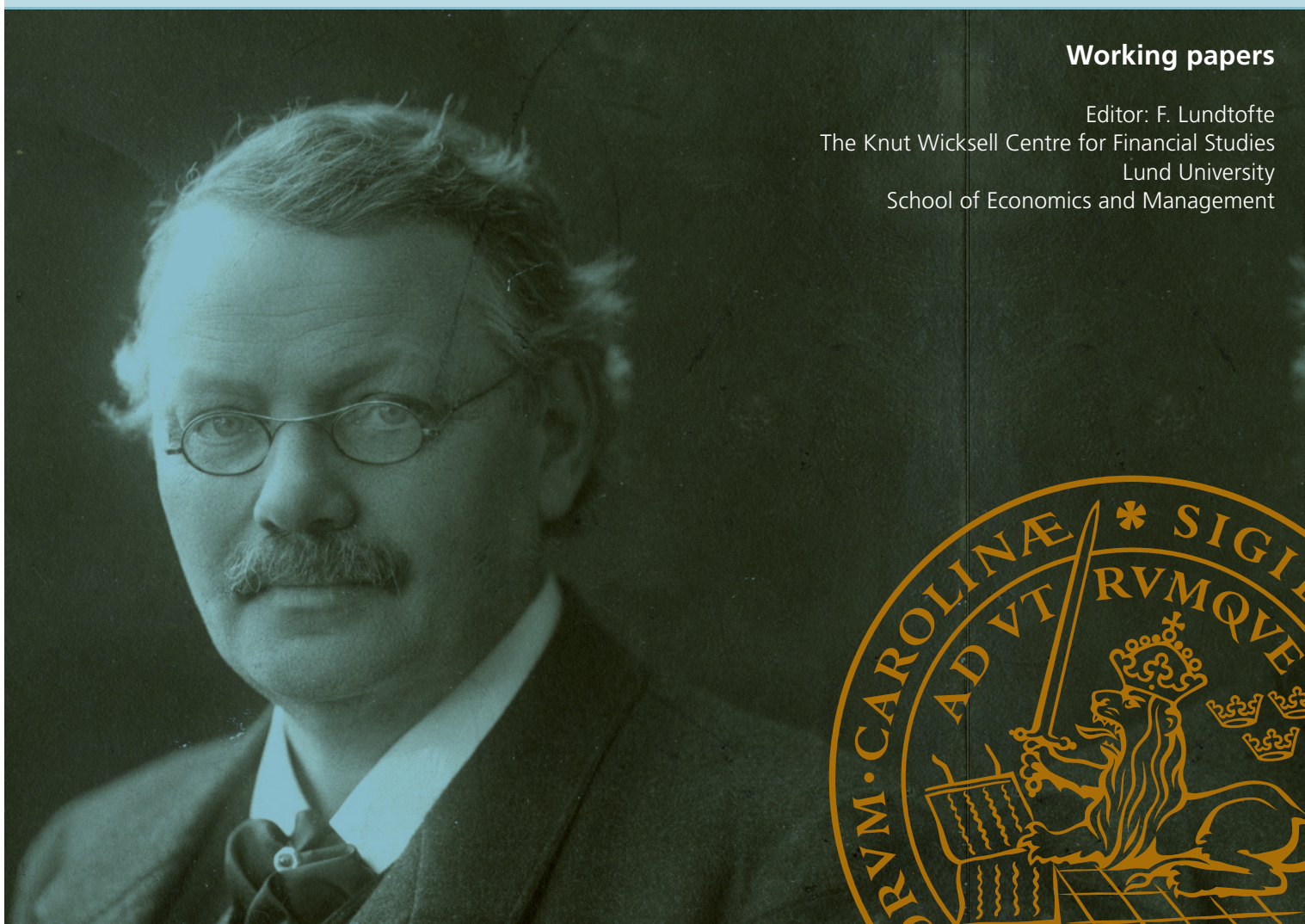
A Tide of Cash: Corporate Governance and the Management of Large Cash Windfalls

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A Tide of Cash: Corporate Governance and the Management of Large Cash Windfalls

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Abstract

In this paper we revisit the contentious issue of whether corporate governance arrangements influence corporate cash holdings. We use the exogenous cash windfalls in the oil industry during the 2000s to test the power of three governance dimensions (managerial entrenchment, board independence and ownership) in explaining differences in cash management policies. Between 2000 and 2008 the oil price successively reached new record levels, and by 2008 its yearly average had increased by more than 200% compared to the 2000-2003 period, resulting in substantial cash windfalls in oil firms. We document that firms with a classified board have higher cash holdings. They also return less money to shareholders through share repurchases and have lower investment rates. Importantly, the tendencies to underinvest and withhold share repurchases got stronger over time as the cash windfalls materialized in the industry. In the years 2007-2008, when oil prices and share repurchases peaked, firms with a classified board engaged less in repurchases and increased cash holdings compared to other firms. Classified-board firms also exhibit a higher cash-sensitivity to lagged windfalls. Overall, the analysis in this paper provides strong support for the managerial risk aversion-theory of excess cash holdings, and suggests that a classified board is the key governance-characteristic associated with a conservative cash management policy.

Key words: Corporate governance, staggered board, cash holdings, corporate investment

JEL code: G30, G32

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1. Introduction

This paper begins with the following two questions: Which firms are, following a large and exogenous cash windfall, more prone to maintain a large cash balance, as opposed to returning excess cash to shareholders? More specifically, which corporate governance attributes can be linked to the above decisions? We argue that the large cash windfalls in the oil industry during the 2000s make for an ideal laboratory setting for studying the cash-governance relationship. During this decade the oil price successively set new record highs, and reached levels that would have been unthinkable to managers in the industry only a few years earlier. Compared to its 2000-2003 levels, by 2006 the yearly average oil price had increased by more than 100% and by 2008 by more than 200%. Due to the record oil prices, the oil industry experienced huge cash windfalls. For example, in the first quarter 2008 Exxon Mobil posted the largest quarterly profit ever recorded in U.S. history. In the latter part of the decade, aggregate cash holdings in the industry were over 400% above what they had been in the early years of the decade.

In short, during the 2000s firms in the oil and gas industry experienced a substantial, positive, and exogenous shock to their cash management systems. We posit that this is a useful setting for investigating the relevance of corporate governance in explaining cash management policies. To paraphrase the famous investor Warren Buffet: “When a tide of cash comes in, you can see who clings to it.” By choosing oil and gas firms we also benefit from the relative transparency and homogeneity of a US commodity industry following a research tradition found in, for example, Tufano (1996) and Jin and Jorion (2004). Furthermore, by building our empirical design around the exogenous windfall we alleviate some of the reverse causality-concerns that are present in studies of the relationship between corporate governance and cash (see Harford et al, 2008). We construct a balanced sample of 73 oil and gas firms between 2000 and 2008, for which we are able to use a unique hand-collected dataset covering three important

dimensions of corporate governance: managerial entrenchment (classified boards¹ and shareholder rights plans²), board independence (CEO-Chairman separation and the fraction of non-executive directors on the board) and ownership (inside ownership and institutional block-holding).

The present inquiry should be seen in the context of theories about what constitutes an optimal level of cash in firms. According to these theories, cash holdings are a double-edged sword. On the one hand, they award financially constrained firms with strategic flexibility to mitigate underinvestment problems from excessively costly or inaccessible external financing (Denis and Sibilkov, 2010). On the other hand, as Myers and Rajan (1998) argue, liquid assets can be turned into private benefits at lower cost than other assets. Self-interested managers may prefer to hoard cash to reduce the company's risk and provide discretion for future spending (Jensen, 1986; Jensen and Meckling, 1976). In the finance literature, good corporate governance is considered shareholders' defense against inefficient cash hoarding. According to the standard view, agency costs related to excessive cash accumulation can be reduced by monitoring managers' decisions, or by providing incentives to take decisions that are in the best interest of shareholders. Supporting this view, Dittmar and Mahrt-Smith (2007) and Liu and Mauer (2011) find that the market value of cash is higher in firms with good governance.

¹ A classified (or 'staggered') board is one in which only a fraction, usually a third, of directors stand for re-election each year, as opposed to re-electing the entire board annually. A classified board therefore makes it more difficult for a potential acquirer to replace directors and gain control over the board.

² Also known as a "poison pill".

We first document that cash holdings are higher in firms that have a classified board. The numbers are striking. For the full sample having a classified board increases cash holdings by 39%, holding other factors constant. For the sub-sample of firms with total assets above the industry median, for which the cash windfalls were the most pronounced, the corresponding number is 113%. These findings are significant at the 1%-level and robust across model specifications. Consistent with these results, we find that firms with a classified board return less money to shareholders through share repurchases, which was the preferred way of returning cash to shareholders in the latter part of the sample period. Moreover, firms with a classified board also have lower investment rates. In this regression we include variables that control for the firm's investment opportunities, suggesting that classified boards are associated with underinvestment. This is consistent with Faleye (2009), who finds that firms with a classified board are associated with less strategic risk-taking, as measured by investments in R&D and other company-specific long-term assets. Importantly, both the tendency to underinvest and engage less in share repurchases intensify over time as the cash windfalls materialized. This suggests that the association does not simply reflect simultaneity or reverse causality, but that classified boards were a cause of the different cash management policies observed.

We focus in particular on the years 2007 and 2008. Those were the years when share buybacks reached their peak. The buybacks were largely a response to the cash accumulations that took place mainly in 2004 to 2005, when cash levels in the industry surged, as well as the peaking oil price in 2007 and 2008. So, these years are decisive in terms of answering the two questions posed at the outset of this paper. We find that in the two years 2007-2008 the tendency of firms with a classified board to withhold share repurchases is amplified. Partly as a consequence, classified-board firms increased their higher cash holdings relative to the other firms in the

industry in these years. Further corroborating the notion that firms with classified boards have more conservative cash policies, we find that the sensitivity of cash to past windfalls, i.e. the propensity to save, is higher in these firms. Taken together, the evidence tells a consistent story, and suggests a very clear answer to the question we address in this paper: having a classified board is the single most powerful governance-related predictor of the decision whether to keep excess cash within the firm or return it to shareholders.

The analysis in this paper provides strong support for the managerial risk aversion-theory of excess cash holdings (“the flexibility hypothesis”), according to which corporate managers derive utility from the flexibility and freedom from capital market discipline that comes from holding cash (Easterbrook, 1984; Jensen, 1986; Harford et al, 2008).³ Having a classified board, according to our results, bestows greater possibilities on firms to pursue such conservative cash policies. The “spending-hypothesis” (Jensen, 1986; Stulz, 1990; Harford et al, 2008) is not supported by the data, since firms with classified board invest less than the level suggested by fundamentals. Nor do we find any convincing *ceteris paribus*-evidence that firms with a classified board engage more frequently in acquisitions.

Our findings relate primarily to the literature on the cash-governance relationship. Dittmar, Mahrt-Smith, and Servaes (2003) and Lins and Kalcheva (2007) look at this question using data from multiple countries with different levels of shareholder protection. Harford, Mansi, and Maxwell (2008), on the other hand, use US data to hold constant the country-level legal setting. In this paper we extend this research by focusing on a single industry, thereby holding the industry setting constant. Previous research is contradictory in important respects. Whereas the international evidence suggest cash holdings decrease in shareholder rights, Harford et al find

that for US firms cash holdings are negatively related to their measure of managerial entrenchment. In contrast to Harford et al our main entrenchment variable (classified boards) has a positive sign. We believe our result is more in line with what theory predicts, and we are also able to document the channels through which this higher cash holding comes about (by underinvesting and returning less money to shareholders through share repurchases).

The findings in this paper are also contribute to the corporate governance literature more generally in that we identify classified boards as the single most useful governance-related predictor of various financial policies. Bebchuk, Coates, and Subramanian (2002) forcefully argue that classified boards constitute the most effective antitakeover mechanism, because it requires a hostile bidder to wait at least a year to obtain a control since two general meetings are needed to replace a majority of the board members. Bebchuk and Cohen (2005) find that classified boards, after controlling for the other provisions included in the G-index, are associated with significant reductions in firm value (as measured by Tobins Q). Faleye (2007) find that there are significant negative stock market reactions to announcements that a company will introduce a classified board. Ultimately, such market views must reflect some perceived suboptimal corporate policies. Our study provides an illustration of some of the mechanisms that motivate the negative market sentiment.

This paper proceeds as follows. Section 2 introduces the sample and provides descriptive statistics. Section 3 is an analysis of the determinants of cash holdings. Section 4 instead looks at the determinants payout policies. Section 5 contains an analysis of the determinants of investment policies. Section 6 analyzes whether firms with classified boards were associated with leverage reductions. Section 7 investigates the windfall sensitivity of cash. Section 8

explores the association between institutional ownership and cash holdings. Section 9 concludes the paper.

2. Sample, variables and descriptive statistics

2.1 Sample description

The sample in this study consists of US firms in the oil and gas industry (SIC codes 1311 and 2911) between 2000 and 2008.⁴ During this period the oil price successively reached new record levels, creating enormous cash windfalls for the oil industry. The oil price between the 1st quarter 2000 and the 3rd quarter 2008 is shown in Figure 1. Figure 2 illustrates the effect this had on the industry's cash holdings and the amount of money returned to equity investors, which is usually considered an indicator of surplus cash.⁵ Panel A shows the industry's aggregate cash balance and payout (in billion USD). Panel B shows the same numbers deflated by total assets in the same year. As is evident from Figure 2, cash balances in absolute terms increased several hundred percent in the sample period, to which oil firms responded by returning substantial amounts of cash to shareholders. In 2008, the industry returned an amount corresponding to 8% of assets in that year. To preserve space, we will not further describe the details of the increase and its consequences. The reader is referred to Jankensgård and Andrén (2013) for a more detailed account.

[INSERT FIGURE 1 ABOUT HERE]

[INSERT FIGURE 2 ABOUT HERE]

⁴ SIC code 1311 represents oil and gas exploration, whereas code 2911 covers companies in petroleum refining. Both these segments experienced massive cash windfalls due to the rise in the oil price. Firms in 2911 typically have substantial oil assets. For example, Exxon Mobil, Chevron, and ConocoPhillips are in the 2911 segment.

⁵ The payout-variable is defined as share repurchases plus total cash dividend paid.

To be eligible for inclusion in the sample a firm had to be listed on a stock exchange and have total assets exceeding \$1m in all years. While these requirements introduce a survival bias, we believe the benefit of having a largely balanced panel is far greater. Balancing the sample reinforces the quasi-natural experiment aspect of the study as we are able to study the impact of the exogenous windfall on the same set of firms. To address outlier concerns firms with negative equity were excluded since these firms tend to produce extreme values for many financial ratios. To further reduce the impact of outliers we follow Carpenter and Guariglia (2008) and exclude firm-years in which the investment-to-asset-ratio exceeds one.⁶ The final sample consists of 73 firms (540 firm-year observations). Data on financial variables is obtained from Datastream. Corporate governance data is hand-collected from proxy statements and 10-K filings.

2.2 Variables

2.2.1 Cash holdings

We define cash as cash and cash equivalents divided by total assets. To account for the positive skew in this variable we use the natural logarithm of cash in all regressions.⁷ The log-transformation also has the benefit of allowing interpretations of coefficients in percentage terms. As an alternative, we carry out regressions in which cash (and the relevant controls) are deflated using net assets, defined as total assets less cash and cash and cash equivalents (Opler et al, 1999). The main results are unaffected by this choice.

⁶ This filter addresses the extreme values that are caused by large acquisitions. Since Datastream does not track stock-financed acquisitions it is not possible to create a direct filtering rule based on actual acquisitions.

⁷ Since in two firm-years cash was zero we added 1 to cash and cash equivalents for all firms before taking the logarithm.

2.2.3 Managerial entrenchment

Firms can reduce the threat of being taken over by another firm by adopting anti-takeover provisions. There exist a large number of such provisions, which has prompted researchers to use indexes that aggregate them into a single number (e.g. Gompers, Ishii, and Metrick, 2003). However, Bebchuk et al (2009) show that a small group of provision accounts for nearly all the explanatory power of the larger indexes, whereas the majority of provisions are inconsequential. In particular, whether or not a firm has a classified board stands out as the single most important such provision. A classified, or staggered, board structure is one in which only a part of the board members, usually a third, stand for election each year. Shareholders thus cannot oust the whole board at the same time, which is possible when all directors are elected each year. Though classified boards may be beneficial to shareholder in particular circumstances (Wilcox, 2002), the extant empirical evidence suggests that classified board has a detrimental effect on firm value (e.g. Bebchuk and Cohen, 2005).

A second type of entrenchment variable extensively used in the literature is the existence of a shareholder rights plan, commonly referred to as a “poison pill” (Bebchuk et al, 2009). Once any outside shareholder reaches a predetermined threshold level of ownership (commonly 10-15%) such a rights plan triggers the issuance of shares to existing shareholders on terms that are so favorable so as to guarantee a substantial dilution of the bidding investor’s stake.

We create two dummy variables targeting management entrenchment. The first takes the value one if the firm has a classified board, and the second takes the value one if the firm has a shareholder rights plan in place.

2.2.4 Board characteristics

A second category of variables that measure the quality of a firm's corporate governance relates to the structure and composition of the firm's board of directors. According to Hermalin and Weisbach (2003), the board of directors can be viewed as part of a market solution to the various agency problems that afflict organizations. In other words, the board is supposed to monitor executive management. However, CEOs have incentives to "capture" and control the board, in which case the board's ability to adequately perform its monitoring role is undermined. Two board characteristics stand out in the literature as the theoretically most defensible measures of the degree of "board capture": CEO-Chairman duality and the fraction of outside directors on the board. It is commonly argued that when the chairmanship of the board and the position as CEO are held by the same individual management has 'de facto control'.⁸ In a similar vein, to exercise effective control the board members should be independent of the CEO (Hermalin and Weisbach, 2003).

In this paper we use the ratio of non-executive officers to the total number of directors to measure the independence of the directors. We also code an indicator variable that takes the value one when the CEO is also the chairman of the board.

2.2.5 Ownership

The third category of corporate governance-aspects covered in this paper is ownership. Managerial ownership is generally considered to align the interests of executive officers with those of the shareholders, and is commonly used in empirical research as a measure of the degree of agency problems in a firm (e.g. Lins and Kalcheva, 2007). Similarly, the incentive to monitor management generally increases in the level of non-managerial ownership, as does the

⁸ See Brickley, Coles, and Jarrell (1997) for an analysis of this line of argumentation. These authors present counterarguments and empirical evidence that at least partly refute this view.

(majority) shareholders' ability to impose its will on management (Shleifer and Vishny, 1986). One category of owners that has generated substantial interest among researchers over the last couple of decades is institutional owners, reflecting the increase of assets under management by such firms. Previous research has shown that institutional ownership has important relations to other aspects of corporate governance (Chung and Zhang, 2011).

We define institutional ownership as the sum of the shares held by institutional investors above a 5%-threshold, divided by the total number of shares.⁹ We define inside ownership as the number of shares beneficially held by all executive officers and directors, divided by total shares.

2.2.6 Control variables

The selection of control variables presented below largely follows Opler et al (1999). For a more detailed discussion of the theoretical motivation of each of these controls the reader is referred to the Opler et al paper. We exclude spending on research and development (R&D), however, which is typically a minor expenditure in oil and gas firms and therefore infrequently reported as a separate item. Furthermore, Opler et al has a variable called 'Industry sigma', which is the volatility of cash flow in the particular industry a firm belongs to. Since we focus on firms belonging to a single industry we do not include such a measure. Another difference is that we do not include net working capital as a separate variable. To obtain a more parsimonious model we define cash flow as the change in cash flow from operations as reported in the cash flow statement. This is a comprehensive measure of operating cash flows that includes the impact from changes in net working capital.

⁹ For robustness we also compute block ownership as the sum of non-managerial ownership above the 5% threshold. We do not tabulate the results from alternative regressions in which this variable replaces institutional block ownership. The results are generally very similar.

Size is measured as the log of total assets. We compute leverage as the sum of short- and long term debt divided by total assets. Investment opportunities are proxied by Tobins Q, here computed as total assets *minus* book value of equity *plus* market value of equity, then divided by total assets. Cash flow, capital expenditure, and acquisitions are all deflated by beginning-of-year total assets. Finally, we include a dividend dummy that takes the value one if the firm has paid a dividend in the year.

2.3 Descriptive statistics

The mean, median, standard deviation, 25th percentile, and 75th percentile are reported in Table 1.

[INSERT TABLE 1 ABOUT HERE]

For comparison of the governance-variables we rely primarily on Harford et al (2008) who use a broad sample of US firms (1872 firms from the period 1993-2004). To measure shareholder rights Harford et al (2008) use the entrenchment indexes developed in Gompers et al (2003) and Bebchuk et al (2009). We do not use any such index in this paper, but rather focus on the two entrenchment variables that the literature has singled out as the two most important provisions: classified boards and shareholder rights plans (see Bebchuk et al, 2002).

Compared to Harford et al (2008), boards are smaller in our sample (a mean of 7.662 vs. 9.38 directors), which is largely explained by the fact that the median firm in the oil and gas industry is smaller compared to a broad sample. Oil and gas firms exhibit a lower degree of classified boards (0.39 vs. 0.60). This is initially surprising, but can be explained by a salient feature of corporate governance in the oil and gas industry, namely the high fraction of inside ownership

(a median value of 0.097 vs. 0.007 in the broad sample). High inside ownership makes classified boards less necessary since officers and directors can block takeover attempts and resist proxy fights. Some caution is warranted in interpreting the size of this difference, however. We measure inside ownership as the total fraction owned by executive officers and directors, whereas Harford et al's measure targets the ownership of the top-5 officers. Our measure of institutional ownership also has lower median values (0.101 vs. 0.619). However, we cannot infer much about the actual difference because our definition only includes institutional blockholding (exceeding 5%) whereas their figure represents the total fraction owned by institutions. We are also prevented from meaningful comparisons between board independence because their variable is based on the independent of directors according to the definition of independence concerning US stock exchanges, whereas we are limited to the fraction of non-executive directors.¹⁰ We also observe that in 64% of companies the CEO is also the chairman, which is somewhat below the 75-80% average in US firms (Dey, Engel, and Liu, 2011).

Harford et al (2008) document strong interrelationships between corporate governance arrangements, and a strong size-effect on governance-variables. To explore this issue in a parsimonious manner we create the variables 'entrenchment' and 'independent'. Entrenchment is a variable that takes the value one if the firm has either a classified board or a shareholder rights plan in place. Independent is an indicator variable that takes the value one if the firm has separated the CEO and chairman roles *and* does not have more than one executive officer on the board. The purpose behind these transformations is to obtain parsimonious summary measures of two of the aspects of corporate governance addressed in this study: managerial

¹⁰ An independent director is one who does not have a material or pecuniary relationship with the company, for example a business relationship or family ties. The New York Stock Exchange and Nasdaq have similar definitions.

entrenchment and board independence.¹¹ Institutional ownership, inside ownership, and the log of total assets (size) are defined as in sections 2.2.5 and 2.2.6. We estimate an OLS-model with entrenchment as dependent. Size and the other three governance characteristics are independents. The purpose of this exercise is to obtain ceteris paribus-estimates of the relationships and their signs, and we do not mean to imply that causality necessarily runs in this direction. The results are not tabulated, but show that, ceteris paribus, entrenchment is positively associated with size; positively with board independence, and negatively with inside ownership, all significant at the 1% level. The only variable that is not significant is institutional ownership (the p-value is 0.316).

3. Cash holdings and corporate governance

In this section we present results from a multivariate analysis of cash holdings. The empirical approach is to explain the level of cash holdings using corporate governance variables, controlling for financial status, investment opportunities, and other factors identified in the literature as relevant explanatory factors. In all model specifications we include firm fixed effects and report T-statistics based on heteroscedasticity-robust standard errors. To account for the time aspect we use a variable labeled ‘Time’, which is zero in 2000, one in 2001 and so on.¹²

Model 1 in Table 2 reports the results from the base regression. Model 2 re-estimates this regression using a sample restricted to firms for which total assets exceeds the industry median.

Using only the largest firms sample improves the homogeneity of the sample even further, and

¹¹ The correlation between classified boards and shareholders rights plan is 0.33 and significant at the 1% level. The correlation between the share of executives on the board and CEO-chairman separation is 0.13 and significant at the 1% level.

¹² The purpose of using this variable instead of a traditional period dummy variable is that we want, as part of our analysis, to investigate if the relationship between corporate governance and cash holding changes over time. Such an interaction can be carried out much more parsimoniously with a time trend-variable.

the cash windfalls that resulted from the higher energy prices were much more pronounced in these firms (see Jankensgård and Andréén, 2013). For the full sample the adjusted R-squared is around 0.68, which can be compared to the 0.47 obtained in Harford et al's broad sample of firms.

[INSERT TABLE 2 ABOUT HERE]

In both the full and restricted sample, cash is significantly related to classified board, shareholder rights plan, and institutional ownership. The level of cash holdings is positively associated with classified boards and institutional ownership. Somewhat surprisingly, however, classified boards and shareholder rights plan have different signs (more on this later). One notable difference between the full and restricted sample is that for large firm, the share of executive directors is positively related to cash holdings, whereas it is not significant in the full sample. As for the control variables, Tobins Q, cash flow, and the time trend are significant and have a positive sign, whereas capital expenditure and leverage are significant with a negative sign. All of the signs on these coefficients are as expected by economic theory, and are similar to those obtained in Harford et al (2008).

As previous research has pointed out, any empirical investigation on the relationship between corporate governance and cash will need to consider the potential simultaneity and reverse causality between these variables. For example, if firms that prefer to keep high cash levels adopt anti-takeover measures the causality runs the other way. The firm fixed effects included in our model capture firm heterogeneity, but we also follow Harford et al (2008) and estimate the model including lagged cash holdings as an explanatory variable. By including lagged cash we are holding the beginning-of-year level constant, and thus effectively analyzing the change

in cash holdings, which is less susceptible to reverse causation. Model 3 in Table 2 reports the results from the regression including lagged cash. Results are largely unaffected.

To further address potential endogeneity we also utilize the fact that the oil and gas industry experienced a ‘wall of cash’ around 2004, as energy prices saw massive increases and the availability of both internal and external capital became abundant (Jankensgård and Andrén, 2013). It is reasonable to assume that governance arrangements do not respond immediately to changes in external markets, and that one therefore can pose the question as one involving how corporate governance contributed to the management of the large cash windfalls that occurred in this period.¹³ In Models 4 and 5 in Table 2 we estimate the model including an interaction term between the time-trend variable and classified board and institutional ownership respectively. We choose to interact with these variables because they are significant in the base regression (Model 1). Models 4 and 5 show that the tendency for institutional ownership to be associated with higher cash holdings increases over the sample period, whereas the interaction term with classified board is insignificant.

Shareholder rights plan is significant the base regressions, yet we do not pursue this relationship further in terms of interaction with other variables in this paper.¹⁴ We concede that the theory is unclear on this issue, but find this an exciting line of inquiry for future research.¹⁵ Bebchuk et

¹³ For the variables classified board, shareholder rights plan, Chairman = CEO, and executive directors (%) this assumption is supported by the data, as their average levels do not noticeably change throughout the period. For inside ownership a significant decrease can be observed, whereas for institutional ownership there is an increase, albeit a smaller one, over the period.

¹⁴ It should be noted that the result with regard to classified boards is robust to the exclusion of shareholder rights plan from the model.

¹⁵ One possibility that can be pursued in future research is that different configurations of these arrangements lead to different preferences in terms of cash management. In an untabulated regression with leverage as dependent variable, and corporate governance, size, lagged financial variables and lagged leverage as independents, we find that having a shareholder rights plan is negatively associated with changes in leverage (significant at the 1%-level). That is, it would appear, based on this finding, as if firms with a shareholder rights plan in place, holding other corporate governance characteristics constant, prefer to pay down debt and reduce leverage over holding large cash positions.

al (2002) do identify different roles for these variables in that a shareholder rights plan can be reversed by the board of directors, which an acquiring firm can replace given that they obtain sufficient voting power. If the firm has a classified board, on the other hand, it cannot easily be replaced unless the board is sympathetic to the acquisition, and the potential acquirer consequently cannot remove the shareholder rights plan if the board resists.¹⁶ If the result with regard to shareholder rights plans holds in other samples, the inclusion of this variable in the entrenchment-indexes used in previous research would provide a possible explanation for the positive relationship that Harford et al (2008) find between shareholder rights and cash holdings.¹⁷

4. Corporate governance and payout policy

In the previous section classified boards and institutional ownership were shown to be positively associated with higher cash holdings. A cash position that is higher than that indicated by economic fundamentals can come about in various ways. In this and the following section we will, following Harford et al (2008), focus on two policies that have a direct impact on firms' observed level of cash holdings over time: capital expenditure levels and the payout policy. In this section we deal with the latter use of funds and carry out a set of regressions using three different measures of a firm's payout policy: dividends, share repurchases, and a new variable labeled 'Total payout', which is defined as the sum of dividends paid and share repurchases.

¹⁶ Bebchuk et al (2002) point out that the combination of a classified board and a poison pill is the most effective in blocking hostile takeovers. In an unreported regression we therefore include an interaction term between these variables in our base regression (Model 1 in Table 3), but it is not statistically significant.

¹⁷ When we create an equally-weighted entrenchment-index that sums the indicator variables shareholder rights plan and classified boards, the new variable indeed has a negative sign, which is consistent with Harford et al (2008).

We perform regressions on dividend and share repurchases separately as previous research has shown that these alternative mechanisms for returning capital to the firm's owners fulfill different functions. Briefly stated, share repurchases are a more flexible form of payout, whereas dividends are generally considered 'sticky', which makes managers more reluctant to initiate them in the first place (Lintner, 1956; Skinner, 2008). In our sample dividends is the dominant mechanism for returning capital in the first period of the sample (2000-2004) but thereafter increase only modestly. Share repurchases, on the other hand, are infrequently used prior to 2004, but then surpass dividends in 2004 and onwards, suggesting that managers in the oil and gas industry may have initially been in doubt as to whether the sharp prices in energy prices were sustainable, and therefore unwilling to commit to higher dividend levels.¹⁸

As control variables in the payout regressions we include Tobins Q, as previous research has shown that a firm's payout policy is systematically related to its investment opportunities (Denis and Osobov, 2008). The lower the firm's expected funding need related to investment opportunities, as proxied by Q, the more cash it can safely return to its owners, other things being equal. Research has also shown that size is typically an important determinant of payout policies (DeAngelo, DeAngelo and Stulz, 2006).¹⁹ We also include variables targeting the firm's financial resources (cash, leverage, and cash flow) since a stronger financial position normally enables a firm to maintain a higher payout ratio.²⁰ The financial variables are lagged one period to reflect that dividend policy is normally decided with respect to the previous year's

¹⁸ An alternative explanation involves market timing considerations. Share repurchases are generally viewed as preferable when management thinks the company's share is undervalued (Vermaelen, 1981). Given the sharp increases in oil and gas prices, as well as in the share prices of oil and gas companies, during especially the latter half of the sample period, this explanation seems less likely.

¹⁹ DeAngelo et al's main finding is that payout policy is explained by retained earnings as a share of total equity, which is the variable they use to test their "life-cycle"-hypothesis. In unreported regressions we include this variable. It is not significant at conventional levels in any regression.

²⁰ Research on the determinants on payout policy typically uses profitability, measured as net income divided by assets, rather than cash flow. These two variables are highly correlated in our sample and the choice is inconsequential for our conclusions.

performance. All models contain firm fixed-effects, a time trend-variable, and are reported using heteroskedasticity-robust t-statistics.

[INSERT TABLE 3 ABOUT HERE]

Table 3 reports the results. Models 1-3 show the results for the base model with different measures of payout policy as dependent variable (dividend, share repurchases, and total payout, respectively). Neither classified boards nor institutional ownership appear to explain a firm's dividend level (Model 1). Instead, shareholder rights plan, chairman-CEO duality, and inside ownership are statistically significant. As in Harford et al (2008), dividends increase in the level of inside ownership. Dividends are also higher in firms in which the CEO and the chairman of the board is the same person. For shareholder rights plan the sign is also positive, which, while certainly not conclusive in any sense, is consistent with the finding in the previous section that this category of firms are associated with lower cash positions.

When share repurchase is the dependent variable (Model 2) classified board is significant at the 1%-level. It has a negative sign, suggesting that firms that have classified boards were more conservative in returning capital through share repurchases. The time trend is also strongly significant, reflecting the overall surge in share repurchases during the sample period. Interestingly, *ceteris paribus* large firms pay back less through share repurchases, a finding which is consistently negative across model specifications. When we combine dividends and share repurchases into total payout-measure (Model 3) classified boards are no longer significant at conventional levels (p-value 0.107). When we use the sample restricted to large firms (Model 4), still using total payout as dependent, classified board comes out significant at the 5%-level, again with a negative sign. When we interact classified boards with the time trend

variable using the full sample (Model 5) the interaction term is statistically significant, which suggests that the tendency for this category of firms to under-payout was exacerbated over the sample period.

The coefficient on classified boards in Models 1-5 may be so small as to raise doubts about the economic significance of this variable. The small coefficient on this variable (and indeed most other independents) may be a consequence of the dependent variables being truncated at the value zero. That is, there is a large fraction of firms not paying a dividend or making repurchases in any given year. To pursue this issue we estimate a Tobit-model censored at zero with total payout as dependent. Now the coefficient on classified boards is 0.015, which is an economically more meaningful number (it is significant at the 1%-level). To further check the robustness of this result we run a probit-model to gauge the probability that a firm returns money to its shareholders (either through dividends or share repurchases). Again, the sign is negative and the statistical significance is at the 1%-level.

5. Corporate governance and investment

Our main findings in Section 3 were that cash holdings are positively related to institutional ownership and classified boards. In the previous section we have seen that classified boards are strongly and negatively related to payout. The fact that entrenched firms, as measured by classified boards, pay out less than what the fundamentals indicate is, however, consistent with both the spending and flexibility hypotheses. In our search for clues we now turn our attention to the firms' investment policy and carry out regression in which the dependent variable is investment in fixed assets ('Capex'). In this case the spending and flexibility hypotheses generate different predictions: according to the latter, the firm will underinvest and pile up cash, whereas according to the spending hypothesis it will overinvest.

As suggested in the previous paragraph, in analyzing the relationship between investment and corporate governance one has to think about what constitutes a sensible benchmark level of investment. Strictly speaking, governance variables are only relevant to the extent they explain deviations from this benchmark level indicated by economic fundamentals. The most salient such fundamental variable in the literature is the firm's investment opportunity set, which in empirical investigations is usually proxied by beginning-of-period Tobins Q. Since investment opportunities are likely to be systematically related to firm size, we include this variable. We also include cash flow, since the empirical literature has documented a relationship between corporate investment and cash flow. This literature, which began with Fazzari, Hubbard, and Petersen (1988), has firmly established that firms' investment is sensitive to the availability of internal cash flow even when Tobins Q is included in the model.²¹ To sum up then, the variables Tobins Q, size, and cash flow are used as controls to indicate the fundamental level of investment. To keep the exposition tractable, interaction terms (with the time trend-variable) are only considered for the variables that were found to be significant in explaining cash holdings (classified boards and institutional holdings). For the interaction term to be included in the regressions presented in this section we furthermore require the variable to be significant in explaining the level of investment in our basic regression of corporate investment.

[INSERT TABLE 4 ABOUT HERE]

²¹ The interpretation of this investment-cash flow sensitivity is disputed, however (see, for example, Kaplan and Zingales, 1997). One methodological problem is that Tobins Q may not adequately control for investment opportunities, in which case the investment-cash flow relationship may be driven by the fact that increases in cash flow may also signal increased investment opportunities. For our analysis here this is not an issue. In fact, it even works to our advantage, since our objective is not to study the investment-cash flow sensitivity but rather control for the firm's investment opportunities to the extent possible.

The results are reported in Table 4. As before, all models contain firm fixed effects and are reported with heteroskedasticity-robust T-statistics. Model 1 uses the full sample, whereas Model 2 is estimated on the sample restricted to firms whose total assets exceed the industry median. Tobins Q, cashflow, and size are significant on either the 1% or 5%-level in both cases with the expected signs.

Among the governance variables, only classified boards are significant. It is significant at the 1%-level in the full sample, and at the 5% level in the sample consisting of only the largest firms. The sign on classified board is negative. We thus have evidence suggesting that firms with classified boards systematically underinvest relative to the expected level in this particular industry.²² What is more, Model 3 in Table 4 suggests that this tendency to underinvest has intensified over the sample period, which, as noted, coincided with a sharp increase in energy prices and a corresponding influx of cash in oil and gas companies.

Previous research has also investigated if corporate governance influences spending on acquisitions (Harford, 1999). If firms with a classified board have a stronger propensity to acquire other firm this would support the spending hypothesis. To pursue this question we perform two sets of regressions (not tabulated). In the first we estimate a probit-model of the probability of engaging in acquisitions, and in the second we use a tobit-model, with acquisition spending censored at zero as the dependent variable. In none of these regressions do classified boards show a statistically significant impact.

²² The term 'underinvestment' should be used somewhat cautiously, however. As pointed out by Bergstresser (2006), if the industry as a whole suffers from agency costs of overinvestment, any negative deviation from a predicted level in a regression could in fact indicate the presence of a lesser agency problem and a more optimal investment-behavior.

6. The years 2007 and 2008: Keep or distribute the excess cash?

From section 3 we know that firms with a classified board have higher cash positions. In the previous two sections the data showed that the tendency for firms with a classified board to underinvest and under-payout has gotten stronger over time. However, cash holdings in these firms have not seen a corresponding increase over the sample period. One potential explanation for this is that free cash flow was used for leverage reductions. From a managerial risk aversion point-of-view, increasing cash and reducing leverage are two alternative, though not fully equivalent, ways of achieving a lower risk profile. This explanation has some merit. We estimate two untabulated firm-fixed effects regressions in which leverage is the dependent variable. The first has classified board, other governance variables, and other controls as independents. In the second, we add an interaction term between classified board and the deterministic time variable. Without the interaction term classified board is wholly insignificant. When the interaction term is added classified board becomes significant with a positive sign. The interaction term is negative and significant at the 1%-level. This suggests that firms with classified boards have decreased leverage throughout the sample period, which provides a partial explanation why cash holdings have not increased. Since firms with classified boards have higher cash holdings already, it is possible that the marginal value of additional cash is relatively lower for these firms and that leverage reduction is the preferred way of reducing risk.

However, rather than looking at this question in terms of a gradual increase over the entire sample period, we an alternative approach is to focus on the years in which firms started distributing excess cash in earnest. As can be viewed from Figure 2, 2007 and 2008 were the years in which the industry as a whole initiated a large-scale distribution of excess cash to shareholders. The prior years, 2004 and 2005, had seen an upward shift in the level of cash

holdings. This accumulation occurred because the price increases happened relatively suddenly, and firms' investment plans could not be altered so quickly. That major payouts to shareholders did not happen until 2007 may be related to managers' being uncertain about the new situation and whether the price increases would be persistent. Obviously, the years 2007 and 2008 were also the ones in which prices were the highest, for the first time surpassing \$100.

We argue that, in terms of answering the question posed initially in this paper about the decision to hang on to or pay out excess cash, the years 2007 and 2008 are when things came to a head. We therefore investigate if the cash holdings and payouts to shareholders were different for staggered boards in these years. *POST* is defined as a dummy variable that takes the value 1 in 2007 and 2008, zero otherwise. *POST* then replaces the deterministic time dummy in Model 1 in Table 2.²³ As expected, *POST* is positive and highly significant. In the next step, *POST* is interacted with classified boards. The interaction term is significant at the 1% level. *POST* itself is only barely significant (p-value 0.0935) suggesting that for firms that do not have a classified board the cash holdings in 2007 and 2008 are not much higher than in the previous years. That a stronger propensity to withhold payouts to shareholders is at least part of the explanation for this result is confirmed when *POST* replaces the deterministic time trend in the models with share repurchases and total payout as dependents (apart from this, the model specification is the same as in Table 3). In both these models the interaction term between *POST* and classified board is negative and significant at the 1% level.

7. Classified boards and the windfall sensitivity of cash

To gain further insights into the role of classified boards in shaping cash management-policies, we consider an analysis in the spirit of Almeida, Campbell, and Weisbach (2004), who argue

²³ Not tabulated but available from the authors on request.

that the firm's propensity to save cash out of its cash flow is a measure of its demand for liquidity. We define Windfall as the difference between a firm's cash flow and capital expenditure. Then we include this variable, lagged one period, and interact it with the variable classified boards. We repeat this analysis for successively shorter periods (Models 2 and 3, excluding observations prior to 2004 and 2006 respectively) to gauge how the sensitivity of cash to windfalls develops over the sample period as liquidity became increasingly abundant. Table 5 reports the results. As can be seen, the interaction is significant in the base regression and in Model 3, with the sensitivity much stronger in the latter part of the sample. These results suggest that firms with a classified board have a higher propensity to save out of windfalls, and provide an indication that this propensity became more marked in the latter part of the period. These results are robust to a variety of model specifications, for example including lagged values of cash as independent variable. As further evidence of this tendency, in untabulated regressions we document that the sensitivity of share buybacks to lagged windfalls is negatively related to having a classified board. This interaction term is significant at the 1%-level.

[INSERT TABLE 5 ABOUT HERE]

8. Inside ownership and cash holdings

So far we have found evidence that both classified boards and institutional ownership are associated with higher levels of cash. When we investigate two potential mechanisms through which this could come about – investment in fixed assets and payout policy – we find that firms with classified boards have underinvested and pursued a more conservative share repurchase policy. For firms with a high level of institutional ownership, we have not been able to detect any such influence on these policies. Thus, the question of why firms with institutional

ownership have higher cash holdings, and which policies lead to this outcome, remain unanswered.

To gain some insights into what explains the higher cash holdings in firms with institutional ownership we have investigated whether debt management policies are different in these firms. Regressing leverage on governance variables, size, financial variables, and lagged leverage we find that changes in leverage are positively related to institutional ownership (significant at the 1%-level). Increasing leverage can indeed lead to higher cash holdings, but it begs the question of why this leverage increase occurs in the first place. One policy variable that could drive leverage is acquisitions. Using a probit-model we seek to assess the determinants of the probability that a firm is involved in an acquisition in a given year. In this regression institutional ownership is positively related to the probability of being an acquirer (again significant at the 1%-level). This suggests that the leverage increases may have been driven by acquisition activity. One possible interpretation of this is that the higher cash holdings in firms with institutional block-holding have served as a buffer to protect against the increased risk associated with acquisitions.

9. Conclusions

Previous work on the corporate governance-cash relationship has used either international data sets (Dittmar, Mahrt-Smith, and Servaes, 2003; Lins and Kalcheva, 2007) or a sample of US firms (Harford et al, 2008). In this paper we extend this line of research by carrying out a single industry study. The US oil and gas industry offers a transparent and relatively homogenous sample of firms, thereby reducing the noise that is caused by different industry settings in a broad sample. Furthermore, during the sample period (2000-2008) the oil price successively reached new record levels, resulting in substantial cash windfalls in the oil industry. This

exogenous shock to the cash management systems of these firms offers a useful setting for testing the relationship between governance and cash holdings, and it also alleviates some of the reverse causality concerns that normally afflict cash-governance studies.

We find that cash holdings, after controlling for fundamental factors, are positively related to classified boards and institutional block ownership. For firms with classified boards, the higher cash position comes about due to a tendency to underinvest and return less money through shareholders (particularly through share repurchases). What is more, these tendencies have intensified over time as the cash windfalls materialized, suggesting that the causality goes from classified boards to larger cash positions and not the other way around. These findings with regard to classified boards support the managerial risk version-theory of excess cash holdings.

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APPENDIX

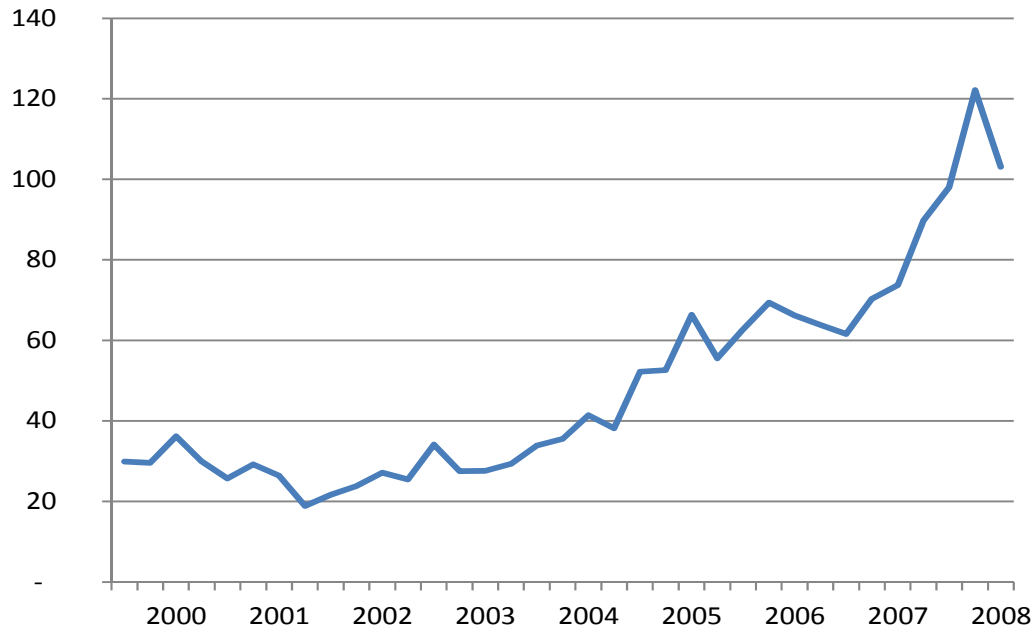


Fig.1. This graph shows the price of oil (West Texas Intermediate, nominal prices) between 1st quarter 2008 and the 3th quarter of 2008. In early 2004 the price of oil started a general rise that was to last until the final quarter of 2008, when the price fell as a consequence of the financial crisis that erupted that year. However, even after the drop in the last quarter the oil price remained well above the long-term average prior to 2004.

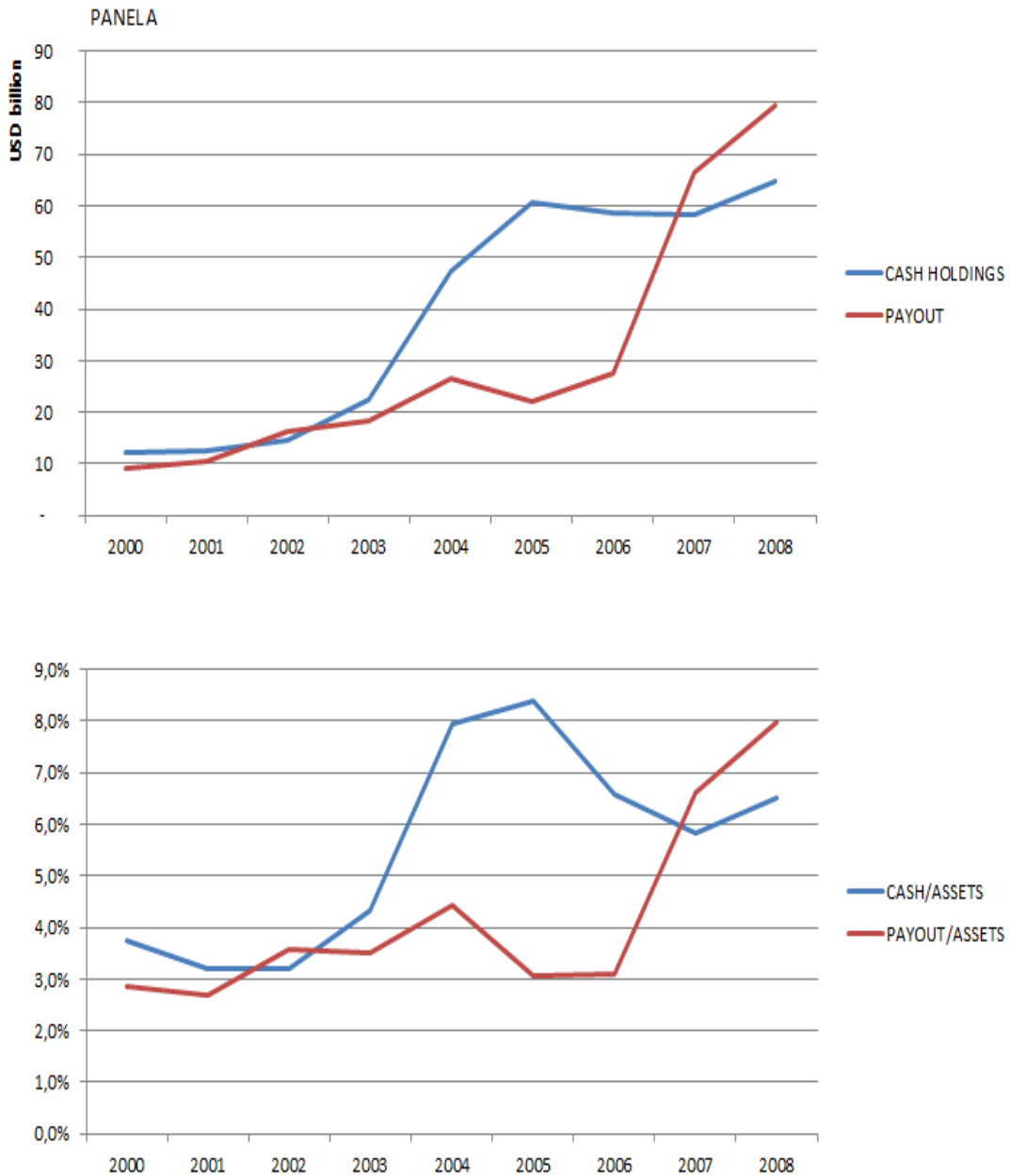


Fig.2. This graph shows the price of oil (West Texas Intermediate, nominal prices) between 1st quarter 2008 and the 3th quarter of 2008. In early 2004 the price of oil started a general rise that was to last until the final quarter of 2008, when the price fell as a consequence of the financial crisis that erupted that year. However, even after the drop in the last quarter the oil price remained well above the long-term average prior to 2004.

Table 1

Sample statistics

This table shows summary statistics for the sample. The sample consists of 540 firm-year observations (73 firms) in the US oil and gas industry between 2000 and 2008. The variables are the log of cash plus one, divided by total assets (Cash Holdings), a dummy signaling a classified board (Classified Board), a dummy signaling a shareholder rights plan (Shareholder Rights Plan), the number of directors on the board (Board Size), the ratio of executive directors to total number of directors (Executive Directors), a dummy signaling if the CEO is also the chairman of the board (Chairman = CEO), the number of shares held by institutions, with stakes in excess of 5%, divided by the total number of shares (Institutional Ownership), the number of shares beneficially held by the firm's executive officers and directors divided by the total number of shares (Inside Ownership), total assets in million USD (Assets), the sum of short- and long term debt divided by total assets (Leverage), total assets minus book equity plus market equity, then divided by total assets (Tobins Q), operating cash flow divided by assets (Cash Flow/Assets) and investment in fixed assets divided by assets (Capex/Assets).

	Mean	Median	Standard deviation	25 th percentile	75 th percentile
Cash Holdings	0.113	0.038	0.157	0.012	0.144
Classified Board	0.374	0.000	0.484	0.000	1.000
Rights Plan	0.401	0.000	0.491	0.000	1.000
Board Size	7.938	8.000	2.770	6.000	10.000
Executive Directors (%)	0.224	0.167	0.153	0.111	0.286
Chairman = CEO	0.641	1.000	0.480	0.000	1.000
Institutional Ownership	0.130	0.101	0.140	0.000	0.221
Inside Ownership	0.182	0.097	0.206	0.030	0.268
Assets (\$MM)	10022	490	30997	40	3918
Leverage	0.212	0.207	0.154	0.084	0.316
Tobins Q	1.755	1.464	1.332	1.172	1.939
Cash Flow/Assets	0.206	0.203	0.149	0.132	0.277
Capex/Assets	0.241	0.199	0.190	0.106	0.326

Table 2

Determinants of the level of cash

This table reports the results from an analysis of the relationship between cash holdings, corporate governance, and financial control variables. The variables are the log of cash plus one, divided by total assets (Cash Holdings), a dummy signaling a classified board (Classified Board), a dummy signaling a shareholder rights plan (Shareholder Rights Plan), the number of directors on the board (Board Size), the ratio of executive directors to total number of directors (Executive Directors), a dummy signaling if the CEO is also the chairman of the board (Chairman = CEO), the number of shares held by institutions, with stakes in excess of 5%, divided by the total number of shares (Institutional Ownership), the number of shares beneficially held by the firm's executive officers and directors divided by the total number of shares (Inside Ownership), the log of total assets (Size), the sum of short- and long term debt divided by total assets (Leverage), total assets minus book equity plus market equity, then divided by total assets (Tobins Q), operating cash flow divided by assets (Cash Flow/Assets) and investment in fixed assets divided by total assets (Capex/Assets), and a dividend indicator that takes the value one if the firm has paid a dividend in the year (Dividend Indicator). Time is deterministic time trend that takes the value 0 in 2000, 1 in 2001 and so on. Model 1 is the base model estimated on the full sample. Model 2 uses the same independent variables but is estimated on a sample restricted to firms with total assets exceeding the industry median. Model 3 includes lagged cash holdings as an independent variable so that the model effectively predicts changes in cash. Model 4 adds an interaction term between Classified Board and Time to the base model. Model 5 adds an interaction term between Institutional Ownership and Time to the base model. T-statistics based on heteroskedasticity-robust standard errors are reported in parenthesis. Superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All models contain firm fixed effects and an intercept (not reported).

Dependent variable: Log((Cash+1)/Assets)	(1)	(2)	(3)	(4)	(5)
Cash Holdings (t-1)			0.048 (0.893)		
Classified Board	0.392*** (2.7)	1.131*** (4.1)	0.372** (2.3)	0.389** (2.0)	0.470*** (3.1)
Rights plan	-0.474*** (2.6)	-0.528** (2.6)	-0.441*** (2.6)	-0.474*** (2.6)	-0.468*** (2.9)
Executive Directors (%)	0.168 (0.3)	1.370*** (3.9)	0.181 (0.3)	0.169 (0.3)	0.197 (0.3)
Chairman = CEO	0.049 (0.3)	0.056 (0.2)	0.039 (0.3)	0.049 (0.3)	0.042 (0.3)
Institutional Ownership	0.007* (1.9)	0.011** (2.1)	0.008* (1.9)	0.007* (2.0)	-0.001 (0.2)
Inside Ownership	0.004	-0.004	0.003	0.004	0.005*

	(1.3)	(0.7)	(1.2)	(1.4)	(1.9)
Size	-0.243	-0.247	-0.224	-0.243	-0.281
	(1.0)	(0.4)	(0.8)	(1.0)	(1.1)
Leverage	-1.090***	-1.262	-1.054***	-1.089***	-1.053***
	(4.5)	(1.5)	(4.2)	(4.8)	(4.0)
Tobins Q	0.091***	0.091	0.085***	0.091***	0.092***
	(3.5)	(0.3)	(3.1)	(3.5)	(3.2)
Cash Flow/Assets	0.815***	2.408***	0.821***	0.816***	0.813***
	(3.2)	(3.8)	(3.2)	(3.2)	(3.3)
Capex/Assets	-0.775***	-1.465	-0.794***	-0.775***	-0.762***
	(4.2)	(1.9)	(4.2)	(4.3)	(4.1)
Dividend indicator	0.162	0.175	0.143	0.161	0.144
	(0.9)	(0.5)	(0.7)	(0.9)	(0.8)
Time	0.095**	0.105	0.090**	0.095**	0.066
	(2.2)	(1.1)	(2.0)	(2.1)	(1.5)
Time * Classified Board				0.000	
				(0.025)	
Time * Institution					0.002***
					(3.751)
Firm-Year Observations	548	292	548	548	548
Adj. R-Sqr	0.679	0.495	0.679	0.679	0.681

Table 3

Determinants of payout policies

This table reports the results from an analysis of the relationship between payout policy, corporate governance, and financial control variables. Three different measures of payout are used as independent variable: dividends, share repurchases, and total payout (dividends + share repurchases). All payout measures are normalized with total assets. The other variables are a dummy signaling a classified board (Classified Board), a dummy signaling a shareholder rights plan (Shareholder Rights Plan), the number of directors on the board (Board Size), the ratio of executive directors to total number of directors (Executive Directors), a dummy signaling if the CEO is also the chairman of the board (Chairman = CEO), the number of shares held by institutions, with stakes in excess of 5%, divided by the total number of shares (Institutional Ownership), the number of shares beneficially held by the firm's executive officers and directors divided by the total number of shares (Inside Ownership), the log of total assets (Size), the sum of short- and long term debt divided by total assets (Leverage), total assets minus book equity plus market equity, then divided by total assets (Tobins Q), operating cash flow divided by assets (Cash Flow/Assets), and the log of cash plus one, divided by total assets (Cash/Assets). Time is deterministic time trend that takes the value 0 in 2000, 1 in 2001 and so on. Model 1 is the base model estimated on the full sample. Model 2 uses the same independent variables but is estimated on a sample restricted to firms with total assets exceeding the industry median. Model 3 includes lagged cash holdings as an independent variable so that the model effectively predicts changes in cash. Model 4 adds an interaction term between Classified Board and Time to the base model. Model 5 adds an interaction term between Institutional Ownership and Time to the base model. T-statistics based on heteroskedasticity-robust standard errors are reported in parenthesis. Superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All models contain firm fixed effects and an intercept (not reported).

Dependent variable:	Share				
	Dividend	repurchase	Payout	Payout	Payout
	/ Assets	/ Assets	/ Assets	/ Assets	/ Assets
	(1)	(2)	(3)	(4)	(5)
Classified Board	0.004 (1.0)	-0.007*** (4.0)	-0.003 (1.0)	-0.015*** (7.8)	0.002 (0.4)
Rights plan	0.005*** (4.3)	-0.003 (1.0)	0.001 (0.3)	-0.004 (0.9)	0.002 (0.5)
Executive Directors	-0.015 (1.3)	-0.006 (1.5)	-0.022 (1.4)	-0.030 (1.1)	-0.023 (1.4)
Chairman = CEO	0.002*** (2.8)	0.001 (1.6)	0.003** (2.5)	0.004** (2.1)	0.004*** (2.8)
Institutional Ownership	0.000 (0.9)	-0.000 (1.2)	-0.000 (0.9)	-0.000 (1.0)	-0.000 (0.9)
Inside Ownership	0.000** (2.3)	0.000 (1.4)	0.000*** (3.7)	0.000*** (5.0)	0.000*** (3.8)
Size	-0.001 (1.4)	-0.001** (2.4)	-0.003** (2.1)	-0.010*** (3.0)	-0.003** (2.2)
Tobins Q	0.000	-0.000	-0.000	0.002	-0.000

	(0.6)	(0.6)	(0.2)	(0.8)	(0.4)
Cash flow(t-1)/Assets	0.005**	0.006***	0.012***	0.041***	0.012***
	(2.2)	(3.1)	(2.7)	(2.7)	(2.7)
Leverage(t-1)	0.001	0.000	0.001	0.004	0.000
	(0.3)	(0.1)	(0.2)	(0.3)	(0.0)
Cash(t-1)/Assets	0.000***	0.000	0.001***	0.000	0.001***
	(3.4)	(1.0)	(2.8)	(0.7)	(2.7)
Time	0.000	0.001***	0.002***	0.004***	0.002***
	(1.5)	(6.7)	(4.2)	(5.2)	(3.8)
Time * Classified board					-0.000*
					(1.901)
Firm year	493	493	493	255	493
Adj R-SQR	0.651	0.351	0.609	0.587	0.609

Table 4

Determinants of investments in fixed assets

This table reports the results from an analysis of the relationship between investment in fixed assets (“Capex”), corporate governance, and variables that control for investment opportunities. The variables are Capex divided by total assets, a dummy signaling a classified board (Classified Board), a dummy signaling a shareholder rights plan (Shareholder Rights Plan), the number of directors on the board (Board Size), the ratio of executive directors to total number of directors (Executive Directors), a dummy signaling if the CEO is also the chairman of the board (Chairman = CEO), the number of shares held by institutions, with stakes in excess of 5%, divided by the total number of shares (Institutional Ownership), the number of shares beneficially held by the firm’s executive officers and directors divided by the total number of shares (Inside Ownership), total assets minus book equity plus market equity, then divided by total assets (Tobins Q), operating cash flow divided by total assets (Cash Flow/Assets), and the log of total assets (Size). Model 1 is the base model estimated on the full sample. Model 2 uses the same independent variables but is estimated on a sample restricted to firms with total assets exceeding the industry median. Model 3 adds an interaction term between Classified Board and Time to the base model. T-statistics based on heteroskedasticity-robust standard errors are reported in parenthesis. Superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All models contain firm fixed effects and an intercept (not reported).

Dependent variable: Capex/Total Assets	(1)	(2)	(3)
Classified Board	-0.068*** (2.6)	-0.041** (2.5)	-0.026 (0.8)
Rights plan	-0.011 (0.6)	0.005 (0.3)	-0.006 (0.3)
Executive Directors	0.032 (0.4)	0.000 (0.0)	0.015 (0.2)
Chairman = CEO	-0.003 (0.2)	0.009 (0.8)	-0.000 (0.0)
Institutional Ownership	-0.000 (0.9)	-0.000 (0.1)	-0.000 (0.8)
Inside Ownership	0.001 (1.6)	-0.001* (1.6)	0.001 (1.6)
Tobins Q (-1)	0.055*** (8.5)	0.106*** (5.4)	0.055*** (8.6)
Cash Flow/Assets	0.136*** (3.0)	0.222** (2.5)	0.136*** (3.0)
Size	0.091*** (6.4)	0.110*** (6.5)	0.092*** (6.5)
Time	-0.011*** (3.7)	-0.020*** (5.7)	-0.008*** (3.0)

Time * Classified board			-0.007*** (3.7)
Firm year	548	292	548
Adj R-SQR	0.604	0.633	0.606

Table 5

The cash-windfall sensitivity

This table reports the results from an analysis of the sensitivity of cash holdings to lagged cash windfalls. The variables are the log of cash plus one, divided by total assets (Cash Holdings), Cash Flow less Capex, divided by assets (Windfall), a dummy signaling a classified board (Classified Board), a dummy signaling a shareholder rights plan (Shareholder Rights Plan), the number of directors on the board (Board Size), the ratio of executive directors to total number of directors (Executive Directors), a dummy signaling if the CEO is also the chairman of the board (Chairman = CEO), the number of shares held by institutions, with stakes in excess of 5%, divided by the total number of shares (Institutional Ownership), the number of shares beneficially held by the firm's executive officers and directors divided by the total number of shares (Inside Ownership), the log of total assets (Size), the sum of short- and long term debt divided by total assets (Leverage), total assets minus book equity plus market equity, then divided by total assets (Tobins Q), operating cash flow divided by assets (Cash Flow/Assets) and investment in fixed assets divided by total assets (Capex/Assets), and a dividend indicator that takes the value one if the firm has paid a dividend in the year (Dividend Indicator). Time is deterministic time trend that takes the value 0 in 2000, 1 in 2001 and so on. Model 1 contains lagged windfalls with no interaction term. Model 2 interacts the windfall variable with classified boards. Model 3 repeats this analysis except that the sample period has 2004 as starting year. Model 4 is based on a sample with 2006 as starting year. T-statistics based on heteroskedasticity-robust standard errors are reported in parenthesis. Superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. All models contain firm fixed effects and an intercept (not reported).

Dependent variable: Log((Cash+1)/Assets)	(1)	(2)	(3)	(4)
Classified Board	0.351* (1.7)	0.400* (1.9)	0.339 (1.0)	0.467 (0.9)
Rights plan	-0.492*** (-3.8)	-0.478*** (-3.8)	-0.413*** (-2.7)	-0.241 (-1.0)
Executive Directors (%)	-0.172 (-0.2)	-0.184 (-0.2)	-1.734*** (-2.9)	-3.191*** (-3.2)
Chairman = CEO	0.046 (0.2)	0.066 (0.3)	-0.19 (-0.4)	0.382 (0.6)
Institutional Ownership	0.005 (1.2)	0.005 (1.3)	0.017** (2.5)	0.023* (2.8)
Inside Ownership	0.002 (0.5)	0.004 (0.7)	-0.00 (-0.0)	0.003 (0.2)
Size	-0.238 (-0.9)	-0.239 (-0.9)	0.0119 (0.0)	0.5791 (0.9)
Leverage	-1.296*** (-4.0)	-1.269*** (-3.6)	-1.436** (-2.1)	-3.039** (-2.5)

Tobins Q	0.095*	0.104**	0.054	0.063
	(1.9)	(2.0)	(0.7)	(0.3)
Dividend indicator	0.166	0.176	-0.06	-0.62**
	(0.9)	(1.0)	(-0.2)	(-2.3)
Time	0.096**	0.097**	0.028	0.163***
	(2.4)	(2.5)	(1.0)	(2.7)
Windfall(-1)	0.053	-0.21	0.379	0.983
	(0.1)	(-0.4)	(0.6)	(1.2)
Classified board * Windfall(-1)		0.717**	0.961	1.697***
		(2.3)	(1.6)	(6.0)
Firm-Year Observations	482	482	350	209
Adj. R-Sqr	0.671	0.671	0.657	0.683

A Tide of Cash: Corporate Governance and the Management of Large Cash Windfalls

HÅKAN JANKENSGÅRD | NICLAS ANDRÉN

In this paper we revisit the contentious issue of whether corporate governance arrangements influence corporate cash holdings. We use the exogenous cash windfalls in the oil industry during the 2000s to test the power of three governance dimensions (managerial entrenchment, board independence and ownership) in explaining differences in cash management policies. Between 2000 and 2008 the oil price successively reached new record levels, and by 2008 its yearly average had increased by more than 200% compared to the 2000-2003 period, resulting in substantial cash windfalls in oil firms. We document that firms with a classified board have higher cash holdings. They also return less money to shareholders through share repurchases and have lower investment rates. Importantly, the tendencies to underinvest and withhold share repurchases got stronger over time as the cash windfalls materialized in the industry. In the years 2007-2008, when oil prices and share repurchases peaked, firms with a classified board engaged less in repurchases and increased cash holdings compared to other firms. Classified-board firms also exhibit a higher cash-sensitivity to lagged windfalls. Overall, the analysis in this paper provides strong support for the managerial risk aversion-theory of excess cash holdings, and suggests that a classified board is the key governance-characteristic associated with a conservative cash management policy.

Key words: Corporate governance, staggered board, cash holdings, corporate investment

JEL code: G30, G32

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