Working Paper SERIES

Troubled Asset Relief Program's Impact on Earnings Informativeness: A Study of Compensation Contracts

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ABSTRACT

In late 2008, Congress signed the Emergency Economic Stabilization ACT (EESA) into law in order to help bring financial stability into the U.S. economy. The Troubled Asset Relief Program (TARP), which was a part of EESA, was developed specifically to deal with the uncertainty in the U.S. financial institutions. TARP required firms to adhere to specific compensation requirements or face direct costs. We examine if the compensation restrictions that TARP placed on compensation affected the weight investors attach to firms' earnings. We find that firms that pay their CEOs above the TARP threshold show higher earnings informativeness. We also find that firms that decrease total compensation during their participation in TARP produce more informative earnings, relative to firms that do not decrease total compensation. Separating total compensation into its cash and performance-based components, we find that firms have higher earnings informativeness when they increase (decrease) cash (performance) compensation during TARP. However, earnings informativeness decreases as a whole during and after TARP relative to pre-TARP earnings informativeness. Lastly, we find that firms that pay their CEOs above the threshold set by the U.S. Treasury show higher performance based on accounting measures during their participation in TARP.

INTRODUCTION

In this study, we examine how the executive compensation restrictions imposed by the Troubled Asset Relief Program affected the earnings informativeness of participating financial institutions. Our goal is to provide evidence about the effects of TARP's compensation regulations and their effect in the information included in earnings announcements. Although TARP's original intent in restricting compensation was to remove excess managerial risk taking, its intent was not to ban all risk taking activities. A potentially unintended consequence of TARP's compensation restrictions was to limit financial institutions' ability to properly align managers' and shareholders' interests through compensation contracts. Therefore, we focus on documenting the extent to which TARP's compensation restrictions affected investor's perception of managerial performance.

In 2007, the subprime crisis sent shock waves through the United States' economy causing investors to question the stability of U.S. financial institutions. During the economic turmoil, different constituencies blamed executive compensation schemes that promoted excessive managerial risk-taking behavior that result on managers' maximizing their personal wealth at the expense of firms' shareholders (BGFRS 2009). In response to these and numerous political pressures, Congress signed the Emergency Economic Stabilization Act (EESA) into law on October 3, 2008. The Troubled Asset Relief Program (TARP), a part of EESA, was developed specifically to deal with the perceived uncertainty of U.S. financial institutions and provided a response to the public outcry by shareholders and regulators that excessive executive compensation may have induced the risk-seeking behavior.

The financial crisis and enactment of TARP (as well as follow-up regulations) allowed firms to seek financial assistance from the U.S. Treasury. Firms wanting to participate had to abide by TARP's regulations including those related to executive compensation. The restrictions had a direct effect on the structure of executive compensation contracts, thus limiting firms' ability to establish

contracts that allowed proper incentive alignment between shareholders and executives. Agency theory predicts that properly established compensation contracts reduce the divergences between managers and shareholders by aligning incentives resulting in a reduction of agency costs (Holmstron 1979; Grossman and Hart 1983). On the other hand, not properly motivating managers may reduce the incentive to make value enhancing risky decisions. Therefore, the effect of TARP's executive compensation restrictions on firm performance is an important empirical question for regulators and investors alike.

We argue that the perceived earnings informativeness reflects management's ability to provide value relevant information about their firm's performance. In theory, the value relevance of financial information should be higher when agency conflicts between shareholders and managers are minimized (Warfield et al. 1995) as a result of efficient contracting. On the other hand, poorly established contracts may induce managerial rent extraction at the detriment to the principal (Jensen and Meckling 1978). Thus, if manager's incentives are misaligned with those of the shareholders they may not have incentives to communicate their firms' prospects to investors (or work hard enough to gather information) resulting in lower financial (earnings) statement quality. Lower financial statements (earnings) quality will either generate uncertainty in the capital markets or decrease firm value (Imhof and Lobo, 1992). It is also possible that not properly communicated firm's prospects will result in potential shareholders giving up a valuable investment opportunity.

We use financial institutions' CEOs' compensation data before, during, and after their participation in TARP to investigate investors' perception of financial institutions performance conditional on whether or not CEO's received compensation above the regulatory threshold. We use an ERC model to test the effects of TARP compensation restrictions on firms' earnings informativeness. Efficient contracting theory suggests a positive effect on the interaction between earnings surprise and CEO pay over the TARP threshold while the financial institution was

participating in TARP if the market perceives that the CEO's talent deserves a high salary even after considering contracting restrictions are in place. On the other hand, rent extraction theory suggests that pay their CEO's above the stated threshold would have a negative interaction for CEOs receiving a salary above TARP's salary limit.

We find that firms that paid their CEOs above the threshold set by the U.S. Treasury, have higher earnings informativeness while participating in TARP. We further examine if firms that changed their compensation packages impacted earnings informativeness while participating in TARP. We find that firms that decreased total compensation while participating in TARP have higher earnings informativeness. However, earnings informativeness decreases as a whole relative to pre-TARP earnings informativeness. We also find that firms that increased cash compensation and decreased performance compensation while participating in TARP have higher earnings informativeness. Lastly, we examine whether the higher earnings informativeness associated with CEOs receiving higher cash compensation results in higher accounting performance. We find that firms electing to pay salaries above the threshold set by the U.S. Treasury have higher performance relative to the median performance of the industry. Our results indicate that CEOs' compensation was tied to their performance and ability while their firms participated in TARP. Overall, our results suggest that TARP positive impact on earnings informativeness depends on the compensation package offered to the firms' CEO.

Our study contributes to the literature by providing evidence regarding the impact of restrictions on CEO compensation packages. In particular, we provide evidence indicating that that firms compensation packages during period of high political scrutiny may affect firms' earnings informativeness. We also document that firms tradeoff direct and indirect costs to be able to retain talent that can help the firm to endure periods of financial hardship and political scrutiny.

The rest of the paper is structured as follows. We first provide background information about the financial crisis and TARP, which is followed by a discussion of the previous literature that we use to develop our hypotheses. Section three presents our method and data selection criteria. Section four provides results and section 5 concludes.

BACKGROUND AND MOTIVATION

In 2007, the subprime crisis sent shock waves through the United States economy causing investors to question the stability of U.S. financial institutions. The Levin-Coburn Report (U.S. Senate 2011) stated the financial crisis could be attributed to "high risk lending, regulatory failures, inflated credit ratings, and poor quality financial products."[1] A popular explanation for the worst recession since the Great Depression of 1930's is that it was partially driven by "corporate greed and executive compensation gone haywire" (Leader 2010). Different constituencies blamed executive compensation schemes that promoted managerial risk-seeking behavior to maximize personal rather than shareholder wealth, resulting in shareholders carrying significant amount risk due to managerial actions.

On October 3, 2008, Congress signed the Emergency Economic Stabilization Act (EESA) into law in response to the financial crisis and the numerous political pressures that it generated. The Troubled Asset Relief Program (TARP), a part of EESA, was developed specifically to deal with the perceived uncertainty of U.S. financial institutions.[2] It also provided a response to the public outcry by shareholders and regulators that executives were receiving excessive compensation that could have induced the risk-seeking behavior.

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[1] http://www.hsgac.senate.gov//imo/media/doc/Financial_Crisis/FinancialCrisisReport.pdf?attempt=2
[2] The regulation was further amended with the American Reinvestment and Recovery Act (ARRA) of 2009. Effective June 15, 2009, the Interim Final Ruling by U.S. Treasury provided guidance over section 111 of EESA. The ARRA regulation superseded all previous TARP regulations.

The financial crisis and the enactment of EESA's follow up regulations allowed firms to obtain financial assistance from the U.S. Treasury through TARP. To draw upon the available funds firms agreed to abide to TARP regulations including those related to executive compensation. It is not unusual for regulators to try to restrict top executive compensation contracts in times of economic uncertainty. The TARP's restrictions on executive compensation had a direct effect on the structure of compensation contracts and included: 1) limits on executive compensation designed to prevent excess risk taking, 2) a provision for recovery of any and all variable incentive compensation (claw-back provision), 3) a prohibition against golden parachute payments, 4) an imposition of the use of restricted stock as a variable compensation component, and 5) a prohibition against compensation plans that encouraged earnings manipulation (Board of Governor of the Federal Reserve System, 2009; hereafter BGFRS). In addition, financial institutions were required to forgo a federal income tax deduction for fixed compensation above $500,000.[3]

Although the aforementioned regulations tried to address the general public's concerns about excessive compensation and its connection to managers' risky behavior, the intention may have not succeeded. Researchers have established that firms respond to changes in regulation by redesigning compensation contracts and structures (e.g. Perry and Zenner 2001). Rose and Wolfram (2000) cast doubt on the effectiveness of regulations designed to limit compensation. Perry and Zenner (2001) found that real compensation levels have increased despite tax legislation 162(m) limiting the federal tax deduction to $1 million dollars on non-performance compensation. They concluded that compensation committees take into account regulatory environment when setting compensation packages. More recently, Dittman et al. (2011) suggest that restrictions may have unintended consequences such as a reduction in risk-taking incentives diminishes because of a lack

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[3] Currently, Internal Revenue Code Section 162(m)(5) allows up-to $1 million in federal income tax deduction for compensation untied to firm performance to the top five executives of a corporation.

of upside potential.[4] They also argue the importance of properly structuring compensation plans given that variable compensation components create risk-taking incentives whereas the fixed component attracts more talented senior management but lacks performance incentives. Both are necessary to attract and retain managerial talent willing to make decisions that will increase shareholder wealth. Accordingly, an unintended consequence of TARP's compensation restrictions may have been the inability of financial institutions to properly incentivize executives to make decisions that maximize shareholders' wealth. This is consistent with the existing theories, which predict that well designed compensation contracts reduce agency costs by aligning the interests of managers and shareholders (Holmstron 1979; Grossman and Hart 1983). Therefore, TARP restrictions on executive compensation may have significantly affected financial institutions' ability to use compensation contracts to align shareholders' and managers' incentives.

Failure of financial institutions to provide the right incentive structure for their executives may have had an adverse effect on their performance. If a CEO has nothing to gain, contractually, from making risky decisions, he/she may forgo opportunities that may enhance firm value risky decisions have the potential to enhance or destroy firm value. It is unlikely that a manager will make such decisions unless there is the potential for higher earnings and that the compensation contract reflects a compensation increase if an increase in firm value is realized. For example, Dechow (1994) maintains that earnings are one of the most commonly used performance measures in compensation contracts. Therefore, a reduction in performance by managers would be reflected in the quality of reported earnings. Since compensation contracts are, to varying degrees, based on firm earnings, the quality of earnings informativeness is paramount in helping stakeholders form an opinion about managerial performance and a firm's values (Sloan, 1993).

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[4] Dittman et al. (2011) also maintain that firm volatility is negatively affected since compensation restrictions result in insufficient risk taking.

We argue that TARP's restrictions on executive compensation may have affected the informativeness of earnings in two ways. First, if the regulation was effective in curtailing manager's risky behavior and better align manager's and shareholder's interests then we may observe earnings that are more informative for those firms that strictly abided by the regulations guidelines. On the other hand, we may observe less informative earnings for those firms that continued to pay salaries above the limit established by the regulation if managers were able to extract rents from their firms.

On the other hand, while TARP attempted to restrict managerial rent extraction (the moral hazard problem), it may actually impede stockholders' ability to offer appropriate contracts to induce CEOs to make value-maximizing decisions. A firm that follows the compensation regulations in TARP may not motivate their managers to make appropriate firm wealth maximizing decisions leading to lower performance and less informative earnings because they lack information about future cash flows. However, if shareholders elect to continue to provide compensation to their CEO above the specified limit of TARP, it may provide the proper incentive to make value-maximizing decisions, which would be communicated through more informative earnings announcements.

METHOD

To test the impact of TARP regulation on earnings informativeness of financial institutions, we employ an Earnings Response Coefficient (ERC) model. We use the ERC model because it provides a powerful test of the contracting and political cost hypotheses (Kothari 2001). The ERC model estimates the correlation between cumulative abnormal returns (CAR) and quarterly earnings surprise (ES) and it is specified as follows:

$$CAR = \propto_0 + \beta_1 ES + \varepsilon \qquad (1)$$

where *CAR* is the measure of cumulative abnormal returns, and *ES* is the quarterly earnings surprise measure. The coefficient on *ES* (the ERC measure) captures the association between firms' earnings surprise and their abnormal returns (i.e., perceived earnings informativeness). The current literature

discusses two different measures of the ERC model: the long-window and the short-window approach. The long-window or association approach provides information on whether and how quickly earnings surprises are absorbed into security prices; however, it does not provide any causal relation between price movements (Kothari 2001).[5] The short-window or event study approach provides support for price movements around the announcement of quarterly earnings. However, it is not necessarily able to capture all the information in earnings announcements.[6] The main difference between the approaches is when value-relevant information is incorporated into stock returns. We implement both methods to better understand the effects of TARP's limitations on executive compensation.

The long-window approach suggests that earnings information is incorporated over the period being evaluated. Our measurement window is the three-month window starting two months before the end of the fiscal quarter to one month after the end of the fiscal quarter following Baber, Krishnan, and Zhang (2008). We measure cumulative abnormal returns as firm return minus the CRSP value-weighted return over the same window. The quarterly earnings surprise for the long-run approach (L_ES) is measured as quarterly earnings per share minus the previous year's quarterly earnings per share deflated by the beginning quarter's stock price.

The short-window approach (event study) measures cumulative abnormal returns (S_CAR), defined as firm's return minus the CRSP value-weighted market return, over a three-day window around the quarterly earnings announcement (t-1, t, t+1), where t is the earnings announcement date. The short window earnings surprise (S_ES) is measured as the quarterly earnings minus the median analyst earnings forecast 90 days before the earnings announcement deflated by the stock price at the beginning of the quarter.

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[5] The association approach does not provide causal relation because it presumes that investors have other sources of information over the period that is compounded into the security price (Kothari, 2001).
[6] Ball and Brown (1968) test market efficiency and find that market reaction to good and bad news results in a post earnings announcement drift, thus not all information is imputed into the security price at the time of the announcement.

Effect of Cash Compensation Deduction Limit on Firms ECR

TARP directly impacted the level of cash compensation a financial institution's CEOs could receive during their participation in the program. TARP not only disallowed bonuses, but also put restrictions on the allowable Federal income tax deduction for cash compensation above $500,000. If firms continued to pay their CEO above the specified limit set by the U.S. Treasury, it may have resulted in higher earning informativeness if it was associated with firms' retaining or providing the proper incentives to their CEOs to take decisions that are in the best interest of their shareholders.. Earnings may be less informative if investors perceive that the CEO extracts rent from the shareholders and the U.S. Treasury.

We examine if firms who select to pay their CEOs above the specified limit set by the U.S. Treasury resulted in more or less informative earnings. Employing equation (1) and adding variables of interest, as well as control variables results in the following equation.

$$CAR = \propto_0 + ES(\beta_1 + \beta_2 ABOVE + \beta_3 IN + \beta_4 IN * ABOVE + \beta_5 AFTER) + \beta_6 BM + \beta_7 BETA + \beta_8 SIZE + \beta_9 LOSS + \beta_{10} FOUQTR + \beta_{11} LEV + \beta_{12} CHG_{CEO} + \beta_{13} ABOVE + \beta_{14} IN + \beta_{15} IN * ABOVE + \beta_{16} AFTER + \varepsilon \qquad (2)$$

where *CAR* and *ES* are defined as above, *IN* is defined as one if a commercial bank is currently participating in TARP, and zero otherwise. *AFTER* takes the value one if the commercial bank exited TARP, and it is zero otherwise. *ABOVE* is takes the value one if the firm paid their CEO above $500,000 in the current year, and zero otherwise.[7] We include various control variables that could influence firms' ERC due to an omitted correlated variable. The book to market ratio (*BM*) is included to control for firm specific growth and is measured at the beginning of the quarter (Collins and Kothari 1989). We include firm specific *BETA*s measured over a 200-day window ending on the day of earnings announcement. *BETA* is included to control for systematic risk (Easton and Zmijewski 1989). Firm size (*SIZE*) is include to control for private pre-disclosure information,

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[7] We divide the CEO annual cash compensation by four to get quarterly cash compensation.

measured as the natural log of market value of common equity computed at the beginning of the quarter, and a dummy variable for when a firm has reports a loss (*LOSS*) (Collins and Kothari 1989; Hayn 1995). We include CHG_CEO to control for changes in compensation packages that CEOs may receive during the sample period. It is defined as an indicator variable that takes the value of one if the firm changed CEOs during the quarter and zero otherwise. The variable *FOUQTR* is included to control for the fourth quarter reported earnings (Salamon and Stober, 1994). Finally, we include LEV, the debt to asset ratio measured at the beginning of the quarter (Baber, Krishnan, and Zhang, 2008).

The coefficient β_1 is the mean ERC for the financial institution, before they entered into or exited TARP. The coefficient β_3 explains the incremental effect on the ERC for the financial institutions while participating in TARP. A positive coefficient of β_3 would indicate that earnings are more informative while the firm is participating in TARP than before participating in TARP and would be consistent with TARP's regulations curving rent extraction by managers and reducing the uncertainty about the quality of earnings reported by the firm. A negative coefficient of β_3 would suggest that TARP's regulations had a negative effect on earnings informativeness probably due to the increased costs of compliance or the uncertainty about whether or not firms will improve their situation with the participation on the program.

The coefficient β_5 provides insight about the earnings informativeness for firms that exit TARP. A negative coefficient of β_5 would indicate less informative earnings for firms after existing TARP, implying that the uncertainty about earnings quality decreases once government monitoring ceases. However, a positive coefficient of β_5 would indicate an increase in earnings informativeness after firms exit TARP, which would be consistent with firms stabilizing their financial situation as a result of participating in TARP.

Our variable of interest is the three-way interaction between *ES*, *IN* and *ABOVE*, which provides insight about how the market perceives earnings surprises while the firm was participating in TARP and the CEO was earning salaries above the $500,000 limit. A positive coefficient of β_4 would be consistent with earnings that are more informative for firms that continued to pay their CEOs above the limit. Conversely, a negative coefficient of β_4 indicates a decrease in earnings informativeness when firms decide to pay their CEOs the Treasury limit. A positive coefficient of β_4 would be consistent with firms paying their CEO above the $500,000 limit to retain talent, while a negative coefficient would be consistent with market participants interpreting the excess pay as rent extraction by the CEO. The total mean earnings informativeness of firms that decided to pay their CEOs above the specified limit set by the Treasury is the sum of the coefficients $\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5$.

Effect of Change in Total Compensation on ERC

TARP did not only set limitations on senior executive compensation, but also increased the political pressure on financial institutions over the compensation contracts they offered to their executives. To avoid the political scrutiny, a board of directors may reduce CEO compensation during TARP and increase CEO compensation thereafter. Studies have found that many executives undervalue their compensation due to concerns about political scrutiny (Lewellen et al. 1995; Murphy 1996; Yermack 1998). The BGFRS (2009) press release suggests that the current compensation packages were flawed and may have resulted in the financial crisis due to inappropriate risk taking. This conclusion put significant pressure on firms operating under TARP to justify their executives' compensation. Consequently, firms may elect to reduce total CEO compensation while in TARP, potentially resulting in a misalignment of CEO compensation and the level of risk taking necessary to maximize firm value. Under these circumstances, earnings informativeness would be lower since CEOs have no incentive to make risk decisions that could

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potentially maximize firm value. This would be validated if we observe an increase in firm earnings informativeness combined with an increase in cash compensation informativeness upon exiting TARP. However, if the earnings informativeness continued to decrease after firms exited TARP, it may suggest that the firm left the program too early, which could indicate a desire of the CEO to reengage in rent extracting behavior.

If firms participating in TARP show an increase in earnings informativeness, it would suggest that the regulations had a positive effect on aligning of shareholders' and management' objectives. This would be further confirmed with an increase in earnings informativeness after firms exited. On the other hand, if earnings informativeness decreases after leaving TARP, it would suggest that CEOs were able to reengage in rent extraction behavior. We specify the following model to test the above impact of regulation on the change in compensation level:

$$CAR = \propto_0 + ES(\beta_1 + \beta_2 CHG\_COMP + \beta_3 IN + \beta_4 IN * CHG\_COMP + \beta_5 AFTER +$$
$$+ \beta_6 AFTER * CHG\_COMP) + \beta_7 BM + \beta_8 BETA + \beta_9 SIZE + \beta_{10} LOSS + \beta_{11} FOUQTR +$$
$$\beta_{12} LEV + \beta_{13} CHG\_CEO + \beta_{14} CHG_{COMP} + \beta_{15} CHG\_COMP * IN + \beta_{16} AFTER +$$
$$\beta_{17} CHG\_COMP * AFTER + \varepsilon$$
$$(3)$$

where the variables included in the equation are defined as before except for *CHG_COMP*.[8]

CHG_COMP is defined as the change in total compensation from t – t-1.[9] We are interested in analyzing β_4 and β_6 from equation 3. The coefficient β_4 and β_6 represent a three-way interaction term that includes two continuous variables, ES and CHG_COMP. A positive impact on the slope of the linear equation indicates that earnings are more informative when firms select to change total compensation upwards for the CEO while under TARP. On the other hand, a negative impact on the slope indicates that earnings are less informative when firms change total compensation upwards. Following a similar logic, a positive impact on the slope of equation 3 suggests that

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[8] We also examine the change in cash compensation and performance compensation.
[9].CHG_COMP is calculated as the LN(TDC1)-LN(TDC!_!), we use the natural log because TDC1 is not linear distributed.

earnings are more informative after TARP. A negative impact would indicate that earnings are less informative after leaving TARP.

To summarize, we are primarily interested on whether earnings informativeness increased or decreased while financial institutions participated in TARP and after they exited. The results would indicate whether or not the TARP regulation has a positive impact on aligning managers' and shareholders' objectives while participating in the program and whether or not such behavior continued upon exiting the program. Documenting that firms experienced a decrease in earnings informativeness during TARP and an increase afterwards would suggest that the change in total compensation could affect the firm's ability to properly compensate managers to take actions that would increase firm value..   Lastly, if the coefficients are statistically insignificant, it suggests that TARP regulation had no effect on earnings informativeness if the change in total compensation is taken into account.

Effect of Excessive Compensation on ERC

An argument often mentioned as the main cause of the financial crises was excessive risk taking on the part of executives in order to maximize their compensation, which then ultimately lead to executives receiving excessive compensation. We examine whether or not CEOs continued to receive excess compensation while participating and after exiting TARP and its impact, if any, on the financial institution's earnings informativeness. We use Core et al. (1999) model to measure excessive compensation:

$$LN(Comp) = \beta_0 + \beta_1 ROA + \beta_2 RET + \beta_3 LOG(ASSETS) + \beta_4(MB) + \beta_5 \sigma ROA + \beta_6 \sigma RET + \varepsilon \quad (4)$$

where ROA is return on Assets, RET is return of the firm,[10] LOG(ASSET) is the log of assets, MB is market to book value. The variables $\sigma ROA \ and \ \sigma RET$ are the standard deviation of ROA and

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[10] Return is calculated as: ret=(prcc_f+DVPSX_F)/AJEX/(lag(prcc_f)/lag(ajex))-**1**;

RET, respectively, over a five-year period.[11] The residuals from equation 4 are included in the

following model as a proxy for excess compensation to examine earnings informativeness when a

CEO received excess compensation during and after participating in TARP. The model is as follows:

$$CAR = \propto_0 + ES(\beta_1 + \beta_2 EXCESS\_COMP + \beta_3 IN + \beta_4 IN * EXCESS\_COMP + \beta_5 AFTER + \\ + \beta_6 AFTER * EXCESS\_COMP) + \beta_7 BM + \beta_8 BETA + \beta_9 SIZE + \beta_{10} LOSS + \beta_{11} FOUQTR + \\ \beta_{12} LEV + \beta_{13} CHG\_CEO + \beta_{14} EXCESS\_COMP + \beta_{15} EXCESS\_COMP * IN + \beta_{16} AFTER + \\ \beta_{17} EXCESS\_COMP * AFTER + \mathcal{E} \qquad\qquad (5)$$

where the above variables are the same as previously defined except for *EXCESS_COMP*.

EXCESS_COMP is defined as the excess compensation in model (4). Following a similar approach

as in the previous models, we are interested in β_4 and β_6 for equation 5. As discussed previously, the

coefficients of β_4 and β_6 represents a three-way interaction variable that includes two continues

variables (ES and EXCESS_COMP), which cannot be interpreted impact of the coefficients without

taking a partial derivative with respect to ES. First, discussing the impact of EXCESS_COMP while

a firm is in TARP. If a positive impact on the slope of equation 5 is observed indicates that earnings

are more informative with CEO receiving excess compensation while in TARP. This is consistent

with the argument that CEOs are being paid appropriately with respect to their ability. On the other

hand, a negative impact on the slope of the equation 5 with respect to ES taking into account

EXCESS_COMP indicates that earnings being less informative when CEOs receives excess

compensation, consistent with rent extracting.

Next, the impact of excess compensation on firm's earnings informativeness after TARP, we

take into account β_6 impact on the slope of equation 5 with respect to ES and EXCESS_COMP

after TARP. A positive would suggest that earnings are more informative after TARP. A negative

impact on the slope indicates earnings informativeness decreasing after leaving TARP, suggesting

that rent extraction behavior is taking place.

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[11] The model is measured by year.

We are primarily interested whether or not earnings informativeness increased when CEOs received excess compensation during and after TARP. If earnings informativeness was increasing during TARP and continued to increase while receiving excess compensation, it suggests that excess compensation does not induce unnecessary risk, but induces better performance by the CEO that results in earnings that are more informative. Conversely, if firms experienced a decrease in earnings informativeness during TARP but an increase afterwards, it suggests that the firm's inability to provide proper excess compensation in order for the CEO to make appropriate risk maximizing decisions. If the earnings informativeness continues to decrease after TARP, it would imply that firms still had less informative earnings, which could be a sign of rent extraction. Lastly, if the coefficients are statistically insignificant would suggest that TARP regulation had no impact on earnings informativeness in the change in total compensation is taken into account.

DATA AND DESCRIPTIVE STATISTICS

The sample consists of financial institutions that received TARP funds. Our sample period is from 2007 to 2011. We select 2007 as the base year (one year before TARP) and our last year is 2011, the last year with available data (Execucomp). We obtain or stock returns and earnings forecasts from CRSP and IBSE, respectively. Firm's financial information is obtained from Compustat. The total sample consists of 1833 quarterly observations. The short window approach ends up with a final sample of 1700 (-133) after the exclusion of missing variables, while the long window approach has a final sample of 1701 (-132) after the elimination of missing observations. The performance sample has a final sample of 1675 observations. The sample selection process is presented in Table 1.

Univariate Results:

Table 2 presents the descriptive statistics for the sample of financial institutions. The average cumulative abnormal return is -0.013 for the long window and 0.007 for the short window. The

average earnings surprise is 0.004 for the long window and -0.002 for the short window. The average

CEO total compensation during the sample period is $3,919,000 with an average salary (i.e., fixed

cash compensation) of $816,000. The average change in total compensation is 8.1 percent; the

average change in cash compensation is 8.5 percent and the average change in performance based

compensation -2.29 percent. This descriptive evidence suggests even though firms increased total

compensation over the sample period there were offsetting effects from increases in cash

compensation versus reductions in performance-based compensation.

RESULTS

Effects of Cash Compensation Deduction Limit on Firms ERC

As we previously discussed, TARP placed restrictions on the fixed component of senior

management compensation requiring firms to forgo the allowable taxable deduction above $500,000.

To test the effect of the limitation on fixed component of compensation, we estimate equation 2

and present the results in table 3, Panel A for the long- and short-window approach. The first

column shows the variables names, while the second and third provides the estimated coefficient

and p-value, respectively, for the long-window approach. The last two columns provide the

coefficient and p-value for the short-window approach. The two approaches show similar results.

The earnings informativeness for financial institutions before entering into TARP is

provided by β_1, which is positive and significant for both long (coefficient 1.388, p-value < 0.01)

and short window (coefficient 4.350, p-value < 0.01) approach's. The impact on earnings

informativeness due to TARP is provided in β_3, which is negative and statistically significant for

both long (coefficient -1.258, p-values < 0.01) and short (coefficient -4.286, p-value = 0.019)

window measures of ERC. This implies that firms participating in TARP experienced a reduction in

earnings informativeness. The coefficient β_5 provides information about firms' earnings

informativeness after exiting TARP. The coefficients are negative for both measures of ES, but only

statistically significant for the short window (coefficient -0.760, p-value < 0.01). This suggests a reduction in earnings informativeness for firms that exited TARP.

Our variable of interest is the interaction between earnings surprise (ES) and excess compensation over the Treasury limit while the firm participated in TARP, which is captured by β_4, The coefficient are positive and statistically significant for both the long window (coefficient 1.251, p-value = 0.005) and the short window (coefficient 3.974, p-valur = 0.016) tests. This suggests that institutions that continued to pay their CEOs above the specified $500,000 limit reported more informative earnings informativeness relative to those that strictly abided by the Treasury limit. This result implies that compensation committees forgo the tax benefit from the excess salary over the $500,000 to elicit better performance from their CEOs.

Panels B (long window) and C (short window) in Table 3 report the results for our test of the overall effect that TARP had on the salary component of compensation. We observe variation in financial institutions' earnings informativeness depending on whether firms paid their CEOs above the $500,000 limit before they enter into TARP.[12] This is shown in both approaches with the coefficient β_2 being negative and statistically significant for both long and short measures, p-value < 0.01 and p-value =0.019, respectively. This result suggests that firms, which paid above the $500,000 limit had lower earning informativeness prior to entering TARP. As firms entered and took part in TARP, earnings informativeness decreases, which is shown with $\beta_1 + \beta_2$ being smaller than β_1 and statistically significant for the long window (p-value <0.01). When taking into account CEO's that received a fixed salary amount above the $500,000 had a positive and statistically significant effect on earnings informativeness. This is a positive and statistically significant for the short window approach with the effect of $\beta_2 + \beta_4$ being greater than 0, p-value =0.088. This is

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[12] The Treasury limit of $500,000 for the fixed compensation had no impact before TARP but it does allow to compare the earnings informativeness of firms that paid above the $500,000 limit relative to firms that did not pay above the limit while participating in TARP.

further shown with β_4 (shown previously) being statistically positive. The impact after TARP is statistically significant at the one percent level for the short window approach. Therefore, suggesting that firms exiting TARP had a negative total impact of earnings informativeness with a value of -.696 and -.0553 with the former representing earnings informativeness when ES includes the variable ABOVE on the impact of earnings informativeness. [13]

Results in Table 3 indicate that earnings informativeness increased for firms that selected to forgo the tax benefits associated with paying their CEOs salaries of over $500,000 during their participation in TARP. We interpret the results as follows. First, firms may have decided to provide fixed compensation above the $500,000 limit while still reducing CEOs' overall compensation to promote better incentives to align CEOs interests with those of shareholders. Alternatively, political pressure may also have contributed may have incentivized CEOs receiving salaries above the limit to improve their performance to avoid shareholders and corporate activist's criticism. Our tests cannot distinguish between these explanations, but both imply that firms that paid their CEOs over the limit had a positive effect on their earnings informativeness.

Effect of Change in Total Compensation on ERC

The above results provide support that firms that continued to pay their CEO's above the threshold, reported more informative earnings. The univariate results show that, on average, total compensation for CEOs in our sample was increasing. We examine what effect that changes in CEO compensation had on earnings informativeness.

Results in Table 4, Panel A show that the coefficients of $\beta_1, \beta_3,$ and β_5 are similar those documented in Table 3 for the ERC's tests examining the salary component of compensation. The coefficient β_2 (CHG_COMP*ES) presents different results when compared to those presented on

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[13] We do not interact ABOVE with AFTER*ES because after firms select to leave TARP have no restrictions on the fix pay limits.

the estimation of equation 2. Results for the long window approach suggest that prior to entering TARP, changing CEO compensation resulted in more informative earnings.[14] The coefficient is positive and statistically significant (0.704, p-value = 0.058). The coefficient β_4 shows the effect of the change in total compensation while the firms participated in TARP and it is positive and statistically significant (-1.323, p-value = 0.034); the coefficient for the short window approach fails to achieve significance at conventional levels (-1.392, p-value = 0.104). The coefficient β_6 provides results for firms that change their compensation after TARP; the results show a significant negative coefficient for both the long and short window estimations 10 percent level.

Table 3, Panel B provides graphical representation of the impact of the change in total compensation on earnings informativeness with both the long and short window approaches presenting similar patterns on the total impact of change in total compensation on earnings informativeness. The graphs suggest that earnings informativeness increase with respect to the change in total compensation in the pre-TARP period. On the other hand, the graphs suggest that firms experienced a decrease in earnings informativeness as total compensation increased. Furthermore, the decrease seems to persist after firms exited TARP.

Our results suggest that, on average, firms that increased total compensation while participating in TARP experienced a negative effect on earnings informativeness. The result provides somewhat a contradictory result from the analyses on CEO salary level presented in Table 3. We also document that the negative impact on earnings informativeness related to an increase in CEO's total compensation persist after firms exit TARP.

TARP further placed restrictions on the type of performance based compensation packages that could be offered to executives with the purpose of discouraging excessive risk taking behavior.

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[14] This is shown with the partial derivative having a positive impact on the equation 3.

To further test the impact of change on CEO compensation we separate total compensation its cash component (i.e., salary and bonus) and stock based components and present the results table 5 and 6, respectively.

Results for the change in cash compensation suggest similar effects as those for the total compensation model with the coefficients of β_1, and β_3 showing similar signs as those presented in table 4 (i.e., positive, and negative, respectively). Only the short window model provides statistical significant results for β_3. The coefficient of interest β_4 is positive and statistically insignificant at conventional levels for both measures of ES.

The coefficients β_4 and β_6 are coefficients of the three-way interaction terms and we report the graphical representation of The results in Table 5, Panel B. Examining the impact of CHG_CASH_COMP during the pre-TARP period suggests that, on average, earnings informativeness is decreases for firms that increase the cash component of compensation on both specifications (i.e., the long and short window approach). Firms electing to change cash compensation upwards increase earnings informativeness while subject to TARP restrictions (positive slope). TARP earnings informativeness is less informative compared to the pre-TARP period except for firms that showed large changes in cash compensation. These firms experience a more positive ERC relative to the pre-TARP period. The impact of CHG_CASH_COMP when firms exit TARP provides mixed results. The graphs indicate that an increase in cash compensation generate a negative effect in earnings informativeness for short window approach, while the long window approach suggests a positive effect

Next, we examine the effect of the change of performance (stock) compensation on earnings informativeness. Results in Table 6, Panel A indicate that the coefficients β_1, β_2, and β_3 are similar to those reported for the total change in compensation. The coefficient of interest, β_4, is negative

but only statistically significant at conventional level for the long window approach (-0.513, p-value = 0.09). The coefficient β_6 is statistically insignificant for both measures of ERC.

The overall impact of change in performance compensation on earnings informativeness is shown graphically in Table 6, Panel B. The earning informativeness is positive and significant before firms enter into TARP with an increase in performance compensation. Examining the effect on earnings informativeness during TARP suggests a decrease in earnings informativeness with an increase in performance compensation. The total impact of earnings informativeness can be described as follows: while firms are participating in TARP, they have less informative earnings relative to pre-TARP period. Lastly, we find that firms' earnings informativeness continues to decrease after exiting TARP.

Summarizing the results of change in CEO compensation suggests that financial institutions that elected to increase their CEO compensation while in TARP experienced lower ERCs. We also find evidence indicating that firms that increased cash compensation during TARP show higher earnings informativeness. However, the evidence indicates that electing to increase performance compensation during TARP affect earnings informativeness negatively. These results suggest that firms may benefit from electing to reduce their CEO's total compensation and that it is the performance compensation component that should be reduced. A reduction in the performance compensation component may be accompanied by an increase in cash component. We further find a negative impact towards earnings informativeness when firms elect to increase total and performance compensation post-TARP. The overall results suggest that CEO compensation packages affect earnings informativeness, thus aligning managerial and shareholders objectives.

Effect of Excess Compensation on ERC

Financial institutions were heavily scrutinized because of the sizable amounts that CEOs were receiving in compensation before the financial crisis. We examine the impact of excess compensation on earnings informativeness. Results in Table 7 indicate different results with respect to excess compensation depending on the test window horizon. The coefficient for β_4 is positive and statistically insignificant for both long (0.031, p-value = 0.906) and short (0.118, p-value = 0.807) approaches at the conventional levels, our primary variable of interest. The coefficient for β_6 receiving excess compensation after exiting TARP provides mixed results with a negative (positive) coefficient for short window (long window) approach.

Our results suggest that, on average, firms participating in TARP experienced a decrease in earnings informativeness relative to the pre-TARP period as result of excess CEO compensation. In the post-TARP period, the results relating to earnings informativeness with respect of increase in excess compensation are somewhat mixed, but the overall results is still consistent with firms having lower earnings informativeness in the post-TARP period relative to pre- and in-TARP periods with respect to an increase in excess compensation. Based on our results, we are able to conclude that TARP regulation had an impact on earnings informativeness with respect to CEO's receiving excess compensation.

Do Higher Salaries lead to better performance?

The above results imply that CEO compensation affects earnings informativeness. More specifically, results suggest that receipt of salaries above the limit set by the U.S. Treasury have made earnings more informative. We analyze if the higher ERCs result from CEOs ability to generate high profits compared to other firms in the same industry. Firms may elect to provide high salaries to their CEOs during a time of high political scrutiny to be able to retain more talented CEOs. Firms with talented CEOs will be able to generate higher performance over average firms in the

same industry. Thus, if the CEO performs better, higher earnings informativeness may ensue. To test our assertion, we construct the following model.

$$Performance\ Measure = \gamma_0 + \gamma_1 IN * SALARY + \gamma_2 AFTER * SALARY + \gamma_3 OUTSIDDR + \gamma_4 CEOOWN + \gamma_5 BETA + \gamma_6 BM + \gamma_7 SIZE + \gamma_8 SALARY + \gamma_9 IN + \gamma_{10} AFTER + \gamma_{11} LAG\_PEFORMANCE + \varepsilon$$

where *Performance Measure* is the firm performance measure (ROA, ROE, or RET) adjusted for the median firm performance of the industry. This provides information about firms' performance relative to the industry's performance. The model includes the variables CEOOWN captures CEOs' interest in firm performance. A high stake in the firm should motivate CEOs to take decisions that will increase the value of their stockholdings and those of the shareholders. Other control variables in the models are measured as was previously discussed.

The variable γ_8 measures the effect that a salary above \$500,000 may have on the performance of the firm prior to entering TARP. The coefficient of interest is γ_1, which captures the impact on firms that pay their CEO above \$500,000 and participate in TARP. The predicted sign of γ_1 is positive and would be consistent with firms that pay salaries in excess could induce high efforts from their CEOs. A negative coefficient of γ_8 and a positive coefficient of γ_1 is positive would suggest that the TARP restrictions had a positive impact on aligning the CEO and shareholders objectives. The coefficient γ_2 measures performance for firms that pay salaries above the stated threshold while in TARP. If firms present higher earnings performance while participating in TARP but lower performance afterwards then it would suggest that TARP restrictions had a positive impact in aligning CEOs and shareholders interests that is lost once the firm leaves the program. On the other hand, a positive γ_2 would suggest a persistent effect of TARP on firm performance even after the firm exited the program.

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The results are provided in Table 8. We first examine the coefficient γ_8, which related to the salary above \$500,000 during the pre-TARP period. The coefficient is negative and statistically insignificant for both performance measures. This indicates that firms performance is not affected by the decision to pay their CEO above \$500,000 before entering TARP. The variable of interest γ_1 (IN*ABOVE) is positive and statistically significant for all three accounting performance measures. The result suggests that firms who elect to pay their CEOs salaries above the threshold had higher performance. The variable γ_3 is positive (negative) and statistically insignificant for ROA and ROE (RET) measures of firm performance. Thus, providing support that the impact of TARP compensation restrictions is not lost after firms exit the program.

In summary, the results suggest that TARP had a positive impact on firms' ability to realign CEO and shareholders objectives with respect to current performance. Firms that selected to pay salaries above the threshold have higher firm performance. The results also support our previous assertion that firms that elected to pay their CEO above the specified limit showed a higher level of earnings informativeness.

CONCLUSION

We study the impact of compensation restrictions on the earnings informativeness for firms receiving TARP funds. Our results are robust and show that firms have an incentive to pay their CEOs above the limit set by the Treasury department. We further test if changes in total, cash, and performance compensation components affected earnings informativeness. We find that earnings informativeness increased during TARP when total CEO compensation was reduced. However, earnings informativeness is still lower than pre-TARP earnings informativeness. On the other hand, we also find that earnings informativeness increase when the cash compensation component increased. The increase is still lower than the pre-TARP period earnings informativeness and largely for firms that change the cash compensation component. When we examine changes in

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performance compensation, we find that earnings informativeness decreased compared to the pre-TARP period. We also test if excess compensation received during TARP reduced earning informativeness. Our results suggest that earnings informativeness is lower during TARP than pre-TARP period but earnings informativeness increases as excess compensation increased. On the other hand, the post-TARP impact show mixed results but we can still show that that post-TARP earnings informativeness is lower relative to pre- and in- TARP earnings informativeness.

Lastly, we examine if financial institutions that elected to continue to pay their CEOs' a salaries above the $500,000 threshold while in TARP was due to CEO ability. We found that firms that pay above the threshold showed higher earnings informativeness. Firms that pay their CEO above the threshold have higher firm performance compared to those that do not. The results suggest that CEOs that receive a salary above the limit during TARP are paid for talent since they have a higher firm performance compared to the industry.

Our results, taken as a whole, suggest that TARP affected earnings informativeness. Earnings informativeness increased for financial institutions that elected to pay above the $500,000 during the program, even though they had to forgo the federal tax deduction. These firms also had a higher accounting performance; implying that firms were willing to incur direct costs in order to retain CEO talent. Lastly, our results suggest that firms that have difference compensation packages before, during and after TARP resulting in different earnings informativeness.

Our results are not without limitations; first, our measures of earnings informativeness are not without measurement error. However, we reduce this type of error by using different specifications. We assume that CEO compensation is consistent for the entire year, which may be an issue with respect to performance compensation. Finally, our sample is limited to data available in ExecuComp, which is biased toward larger firms. Even with these limitations, our results still provide important results concerning the impact that regulations have on CEO compensation.

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Table 1	
Panel A- Sample Selection	
Panel A: Sample	
Merge Compustat, ExecuComp, IBSE, and CRSP	65712
- Delete observations with Fiscal Year <2006 and SIC Code >6200 and < 6000	-64106
Final sample	1882
Long Window	
-Delete missing values	-181
Test sample	1701
Short Window	
-Delete missing values	-182
Test Sample	1700
Performance	
-Delete missing values	-313
Test sample	1675

Table 1

Variable Name	Definition
Dependent	
CAR	Cumulative abnormal return calculated by the short or long window. Abnormal return is computed as the difference between the firm's earnings and the CRSP market value weighted return. The short window cumulative abnormal return (S_CAR) is computed as the sum of the abnormal return over a three-day window around the earnings announcement (-1, 0, +1). The long window cumulative abnormal return is calculated as the sum of returns over 90 days starting 60 days prior to the earnings announcement and ending 30 days after the earnings announcement.
ROA	is (income before extraordinary items divided by total assets)- median ROA of the industry
RET	is ((Price close quarter + Div per Share)/ Cumulative Adjustment Factor by Ex-Date/(Price close quarter t-1 + Div per Share t-1)-1) - median RET of the industry
ROE	is (income before extraordinary items divided by common ordinary equity)- median ROE of the industry
Independent	
ES	Earnings surprise calculated by the short or long window. Earnings surprise is calculated for the short window (S_ES) as the difference between the reported quarterly earnings minus the median forecast earnings 90 days prior to the earnings announcement. The earnings for the long window (L_ES) is computed as the difference the quarterly earnings minus the quarterly earnings from the same quarter of the previous year.
IN	is a dummy variable representing 1 if the firm is currently under the TARP restrictions and 0 otherwise.
AFTER	is a dummy variable representing 1 if the firm was previously under TARP restrictions but has left the program (paid back the TARP funds) and 0 otherwise.
BM	is the book to market ratio measured at the start of the quarter.
BETA	is measured firm specific over 200 days prior to the earnings announcement period.
LOSS	takes the value of 1 if the firm reports a quarterly earnings loss, otherwise 0.
FOUQTR	takes the value of 1 if the earnings are for the fourth quarter, otherwise 0.
LEV	is the debt to asset ratio at the start of the quarter.
ABOVE	equals 1 if the CEO receives more than $500,000, otherwise 0.
CHG_CEO	equals 1 if the CEO left the company during that quarter, otherwise 0.
CHG_COMP	is the percent change in total compensation (TDC1) measured as the log value of total compensation minus previous years log value of total compensation.
CHG_CASH_COMP	is the percent change in cash compensation (Salary + bonus) measured as the log value of cash compensation minus previous years log value of cash compensation.
CHG_PERF_COMP	is the percent change in performance compensation (tdc1-salary-othann-othcomp-pension_chg) measured as the log value of performance compensation minus previous years log value of performance compensation.

EXCESS_COMP	is calculated by equation (4), that measures total compensation, thus, taking the residual provides an estimation of excess compensation.				
CEOOWN	is the ratio of shares owned by the CEO divided by the common shares outstanding				
LAG_ROA	is the lag value (income before extraordinary items divided by total assets)- median ROA of the industry				
LAG_RET	is the lag vlaue ((Price close quarter + Div per Share)/ Cumulative Adjustment Factor by Ex-Date/(Price close quarter t-1 + Div per Share t-1)-1) - median RET of the industry				
LAG_ROE	is the lag value (income before extraordinary items divided by common ordinary equity)- median ROE of the industry				

Table 2					
Descriptive Statistics					
Variable	Mean	Std Dev	Q1	Median	Q3
ROA	0.004	0.009	0.001	0.002	0.003
ROE	0.018	0.056	0.010	0.022	0.033
RET	-0.018	0.221	-0.136	-0.024	0.089
L_CAR	-0.013	0.223	-0.127	-0.030	0.083
S_CAR	0.007	0.089	-0.031	0.002	0.044
L_ES	0.004	0.172	-0.007	0.000	0.005
S_ES	-0.002	0.077	-0.001	0.000	0.002
BETA	1.370	0.426	1.080	1.330	1.590
LOSS	0.165	0.372	0.000	0.000	0.000
SIZE	7.760	1.510	6.680	7.380	8.690
BM	0.841	0.554	0.523	0.731	1.010
Total Compensation	3919.000	5325.000	1065.000	1989.000	4689.000
SALARY	816.000	551.000	514.000	725.000	950.000
CHG_COMP	0.081	0.795	-0.158	0.028	0.294
CHG_CASH_COMP	0.085	0.751	0.000	0.030	0.141
CHG_PERF_COMP	-0.023	3.910	-0.239	0.000	0.335
EXCESS_COMP	0.035	0.648	-0.411	0.013	0.435
CEOOWN	14.900	35.300	1.620	4.460	13.900

Please refer to Table 1, Panel B, for Variable definitions

Table 3: Regression of the Effects of Cash Compensation Deduction Limit on Firms ERC

Panel A

	Results for Level of Salary			
	Long Window ERC		Short Window ERC	
	Coefficient	p-value	Coefficient	p-value
Constant	0.048	0.137	0.029	0.064
ES	1.388	0.002	4.350	0.009
ES*ABOVE	-1.221	0.006	-3.831	0.019
ES*IN	-1.258	0.004	-4.286	0.010
ES*ABOVE*IN	1.251	0.005	3.974	0.016
ES*AFTER	-0.114	0.197	-0.760	0.001
BM	0.066	0.001	0.007	0.264
BETA	-0.016	0.462	-0.003	0.624
SIZE	-0.005	0.086	-0.002	0.154
LOSS	-0.061	0.001	-0.020	0.015
FOUQTR	-0.004	0.722	0.008	0.127
LEV	-0.028	0.148	-0.016	0.006
CHG_CEO	-0.029	0.212	-0.006	0.583
ABOVE	-0.022	0.098	0.005	0.349
IN	-0.085	0.001	-0.007	0.643
ABOVE*IN	0.040	0.170	-0.009	0.582
AFTER	-0.040	0.001	-0.013	0.007
F-Value	9.36	0.001	5.8	0.001
R²	0.0506		0.0842	

The dependent variable is cumulative abnormal return (CAR) and is calculated for a long and short window approach. The abnormal returns is the difference between the firm's earnings and the CRSP market value weighted return and is computed as a long and short window approach. The long window cumulative abnormal return is calculated as the sum of returns over 90 days starting 60 days prior to the earnings announcement and ending 30 days after the earnings announcement. The short window cumulative abnormal return (S_CAR) is computed as the sum of the abnormal return over a three-day window around the earnings announcement (-1, 0, +1). The earnings surprise (ES) is calculated for the long or short window approach; with the short window (S_ES) as the difference between the reported quarterly earnings minus the median forecast earnings 90 days prior to the earnings announcement. The earnings for the long window (L_ES) is computed as the difference the quarterly earnings minus the quarterly earnings from the same quarter of the previous year. Please see Table 1(Panel B) for other variable definitions. The model estimated with OLS regression with coefficients p-values are adjusted using cluster standard errors to correct for heteroskedasticity and time series correction. The long (short) window approach has 1701 (1700) observations from 2007-2011 (quarterly data).

Table 3, Panel B

			Long Window ERC				
ABOVE		ERC BEFORE		ERC IN		ERC AFTER	
	0	β_1	1.388 / 0.0018	$\beta_1 + \beta_3$	0.130 / 0.004	$\beta_1 + \beta_3 + \beta_5$	0.016 / 0.860
	1	$\beta_1 + \beta_2$	0.167 / 0.017	$\beta_1 + \beta_2 + \beta_3 + \beta_4$	0.160 / 0.001	$\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5$	0.046 / 0.634
Difference		β_2	-1.221 / 0.0064	$\beta_2 + \beta_4$	0.030 / 0.610	$\beta_2 + \beta_4$	0.030 / 0.610
Impact of TARP				$\beta_3 + \beta_4$	-0.007		

Table 3, Panel C

	Short Window ERC					
ABOVE		ERC BEFORE		ERC IN		ERC AFTER
0	β_1	4.350 0.009	$\beta_1 + \beta_3$	0.064 0.279	$\beta_1 + \beta_3 + \beta_5$	-0.696 0.001
1	$\beta_1 + \beta_2$	0.519 0.002	$\beta_1 + \beta_2 + \beta_3 + \beta_4$	0.207 0.002	$\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5$	-0.553 0.001
Difference	β_2	-3.831 0.020	$\beta_2 + \beta_4$	0.143 0.088	$\beta_2 + \beta_4$	0.143 0.088
Impact of TARP			$\beta_3 + \beta_4$	-0.312 0.041		

Table 4: Regression of the Effect of Change in Total Compensation on ERC
Panel A

Results for Change in Total Compensation				
	Long Window ERC		Short Window ERC	
	Coefficient	p-value	Coefficient	p-value
Constant	0.039	0.239	0.031	0.056
ES	0.399	0.007	0.838	0.004
ES*CHG_COMP	0.704	0.058	-0.020	0.337
ES*IN	-0.248	0.091	-0.660	0.016
ES*CHG_COMP*IN	-1.323	0.034	-1.392	0.104
ES*AFTER	-0.229	0.234	0.024	0.973
ES*CHG_COMP*AFTER	-1.570	0.054	-12.188	0.053
BM	0.069	0.000	0.004	0.516
BETA	-0.014	0.548	-0.001	0.894
SIZE	-0.007	0.021	-0.002	0.143
LOSS	-0.068	0.000	-0.021	0.009
FOUQTR	0.001	0.944	0.008	0.113
LEV	-0.022	0.189	-0.013	0.064
CHG_CEO	-0.017	0.478	-0.002	0.824
CHG_COMP	-0.078	0.046	0.006	0.873
IN	-0.056	0.000	-0.014	0.039
CHG_COMP*IN	0.197	0.141	1.462	0.081
AFTER	-0.037	0.000	-0.013	0.004
CHG_COMP*AFTER	-0.031	0.641	0.042	0.142
F-Value	7.560	0.001	4.280	0.001
R^2	0.049		0.070	

The dependent variable is cumulative abnormal return (CAR) and is calculated for a long and short window approach. The abnormal returns is the difference between the firm's earnings and the CRSP market value weighted return and is computed as a long and short window approach. The long window cumulative abnormal return is calculated as the sum of returns over 90 days starting 60 days prior to the earnings announcement and ending 30 days after the earnings announcement. The short window cumulative abnormal return (S_CAR) is computed as the sum of the abnormal return over a three-day window around the earnings announcement (-1, 0, +1). The earnings surprise (ES) is calculated for the long or short window approach; with the short window (S_ES) as the difference between the reported quarterly earnings minus the median forecast earnings 90 days prior to the earnings announcement. The earnings for the long window (L_ES) is computed as the difference the quarterly earnings minus the quarterly earnings from the same quarter of the previous year. Please see Table 1(Panel B) for other variable definitions. The model estimated with OLS regression with coefficients p-values are adjusted using cluster standard errors to correct for heteroskedasticity and time series correction. The long (short) window approach has 1701 (1700) observations from 2007-2011 (quarterly data).

Table 4, Panel B

S_CAR

CHG_COMP

-.4   -.2   0   .2   .4

BEFORE TARP — — IN TARP
- - - AFTER TARP

L_CAR

CHG_PERF_COMP

-1   -.5   0   .5   1

BEFORE TARP — — IN TARP
- - - AFTER TARP
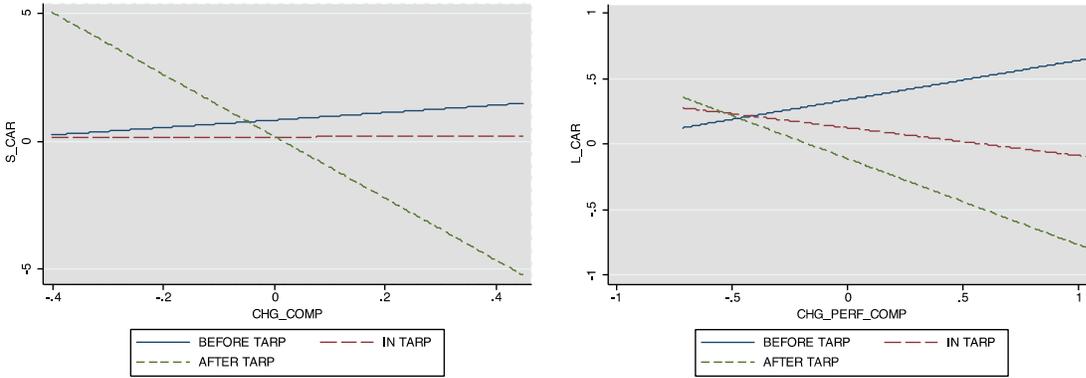
Table 5: Regression of the Effect of Change in Cash Compensation on ERC

Panel A

Results for Change in Cash Compensation				
	Long Window ERC		Short Window ERC	
	Coefficient	p-value	Coefficient	p-value
Constant	0.040	0.213	0.031	0.054
ES	0.226	0.051	0.711	0.002
ES*CHG_CASH_COMP	-0.510	0.493	-0.631	0.791
ES*IN	-0.083	0.500	-0.603	0.007
ES*CHG_CASH_COMP*IN	0.489	0.517	1.274	0.595
ES*AFTER	-0.135	0.348	0.193	0.804
ES*CHG_CASH_COMP*AFTER	0.630	0.468	-10.637	0.156
BM	0.066	0.000	0.006	0.365
BETA	-0.017	0.456	-0.001	0.850
SIZE	-0.006	0.028	-0.002	0.137
LOSS	-0.069	0.000	-0.020	0.012
FOUQTR	0.000	0.983	0.008	0.142
LEV	-0.020	0.211	-0.013	0.086
CHG_CEO	-0.018	0.450	-0.002	0.847
CHG_CASH_COMP	0.024	0.676	-0.010	0.649
IN	-0.056	0.000	-0.013	0.086
CHG_CASH_COMP*IN	0.090	0.462	-0.025	0.695
AFTER	-0.041	0.000	-0.013	0.005
CHG_CASH_COMP*AFTER	-0.058	0.432	0.018	0.601
F-Value	15.540		17.120	0.001
R²	0.044		0.073	

The dependent variable is cumulative abnormal return (CAR) and is calculated for a long and short window approach. The abnormal returns is the difference between the firm's earnings and the CRSP market value weighted return and is computed as a long and short window approach. The long window cumulative abnormal return is calculated as the sum of returns over 90 days starting 60 days prior to the earnings announcement and ending 30 days after the earnings announcement. The short window cumulative abnormal return (S_CAR) is computed as the sum of the abnormal return over a three-day window around the earnings announcement (-1, 0, +1). The earnings surprise (ES) is calculated for the long or short window approach; with the short window (S_ES) as the difference between the reported quarterly earnings minus the median forecast earnings 90 days prior to the earnings announcement. The earnings for the long window (L_ES) is computed as the difference the quarterly earnings minus the quarterly earnings from the same quarter of the previous year. Please see Table 1(Panel B) for other variable definitions. The model estimated with OLS regression with coefficients p-values are adjusted using cluster standard errors to correct for heteroskedasticity and time series correction. The long (short) window approach has 1701 (1700) observations from 2007-2011 (quarterly data).
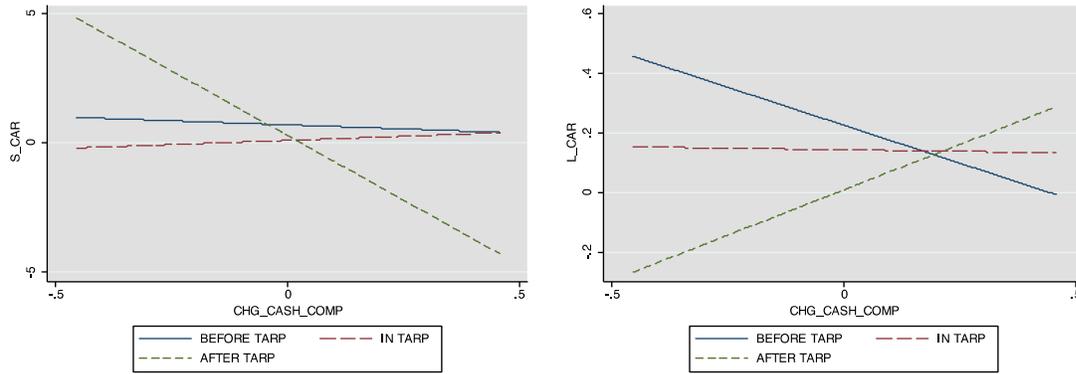
Table 5, Panel B

Table 6: Regression of the Effect of Change in Performance Compensation on ERC
Panel A

Results for Change in Performance Compensation				
	Long Window ERC		Short Window ERC	
	Coefficient	p-value	Coefficient	p-value
Constant	0.041	0.212	0.028	0.079
ES	0.341	0.031	0.723	0.002
ES*CHG_PERF_COMP	0.300	0.262	0.964	0.664
ES*IN	-0.215	0.177	-0.587	0.008
ES*CHG_PERF_COMP*IN	-0.513	0.090	-1.323	0.551
ES*AFTER	-0.237	0.194	-0.955	0.001
ES*CHG_PERF_COMP*AFTER	-0.444	0.476	-1.176	0.648
BM	0.065	0.001	0.008	0.228
BETA	-0.016	0.479	-0.002	0.793
SIZE	-0.006	0.025	-0.002	0.186
LOSS	-0.066	0.001	-0.021	0.009
FOUQTR	-0.003	0.788	0.008	0.123
LEV	-0.021	0.194	-0.012	0.071
CHG_CEO	-0.018	0.442	-0.003	0.799
CHG_PERF_COMP	-0.022	0.280	0.001	0.927
IN	-0.052	0.001	-0.015	0.023
CHG_PERF_COMP*IN	0.009	0.896	0.016	0.497
AFTER	-0.042	0.001	-0.014	0.005
CHG_PERF_COMP*AFTER	0.019	0.666	0.022	0.225
F-Value	11.820		7.420	0.001
R²	0.045		0.063	

The dependent variable is cumulative abnormal return (CAR) and is calculated for a long and short window approach. The abnormal returns is the difference between the firm's earnings and the CRSP market value weighted return and is computed as a long and short window approach. The long window cumulative abnormal return is calculated as the sum of returns over 90 days starting 60 days prior to the earnings announcement and ending 30 days after the earnings announcement. The short window cumulative abnormal return (S_CAR) is computed as the sum of the abnormal return over a three-day window around the earnings announcement (-1, 0, +1). The earnings surprise (ES) is calculated for the long or short window approach; with the short window (S_ES) as the difference between the reported quarterly earnings minus the median forecast earnings 90 days prior to the earnings announcement. The earnings for the long window (L_ES) is computed as the difference the quarterly earnings minus the quarterly earnings from the same quarter of the previous year. Please see Table 1(Panel B) for other variable definitions. The model estimated with OLS regression with coefficients p-values are adjusted using cluster standard errors to correct for heteroskedasticity and time series correction. The long (short) window approach has 1701 (1700) observations from 2007-2011 (quarterly data).
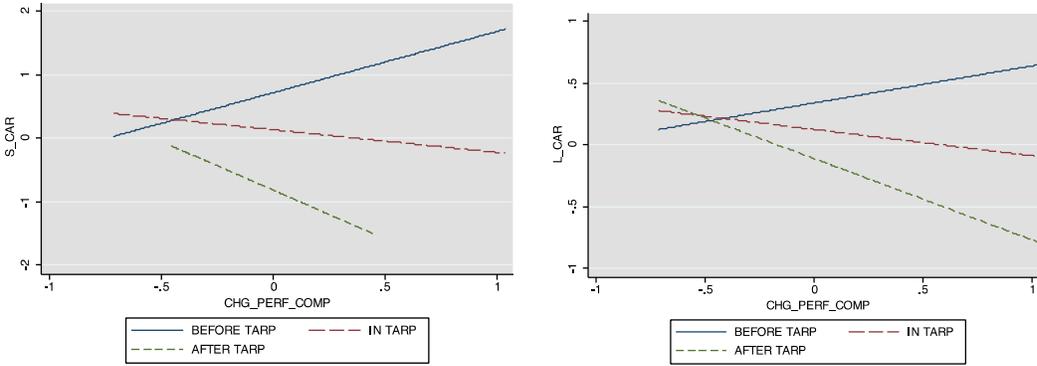
Table 6, Panel B

S_CAR

CHG_PERF_COMP

BEFORE TARP —— IN TARP
AFTER TARP

L_CAR

CHG_PERF_COMP

BEFORE TARP —— IN TARP
AFTER TARP

Table 7: Regression results for Higher Salaries lead to better performance

	Results for Change in Excess Compensation			
	Long Window ERC		Short Window ERC	
	Coefficient	p-value	Coefficient	p-value
Constant	0.033	0.342	0.031	0.082
ES	0.215	0.075	0.668	0.000
ES*EXCESS_COMP	-0.009	0.972	0.028	0.954
ES*IN	-0.076	0.535	-0.486	0.008
ES*EXCESS_COMP*IN	0.031	0.906	0.118	0.807
ES*AFTER	-0.112	0.462	-2.017	0.044
ES*EXCESS_COMP*AFTER	0.042	0.883	-1.959	0.263
BM	0.065	0.001	0.008	0.175
BETA	-0.002	0.921	0.000	0.952
SIZE	-0.007	0.011	-0.003	0.109
LOSS	-0.076	0.001	-0.019	0.018
FOUQTR	0.003	0.764	0.007	0.252
LEV	-0.018	0.258	-0.013	0.063
CHG_CEO	-0.016	0.518	-0.004	0.726
EXCESS_COMP	0.004	0.626	-0.003	0.483
IN	-0.050	0.001	-0.016	0.014
EXCESS_COMP*IN	0.005	0.815	0.001	0.928
AFTER	-0.040	0.001	-0.009	0.047
EXCESS_COMP*AFTER	-0.020	0.255	-0.003	0.659
F-Value	8.990	0.001	15.780	0.001
R^2	0.045		0.070	

The dependent variable is cumulative abnormal return (CAR) and is calculated for a long and short window approach. The abnormal returns is the difference between the firm's earnings and the CRSP market value weighted return and is computed as a long and short window approach. The long window cumulative abnormal return is calculated as the sum of returns over 90 days starting 60 days prior to the earnings announcement and ending 30 days after the earnings announcement. The short window cumulative abnormal return (S_CAR) is computed as the sum of the abnormal return over a three-day window around the earnings announcement (-1, 0, +1). The earnings surprise (ES) is calculated for the long or short window approach; with the short window (S_ES) as the difference between the reported quarterly earnings minus the median forecast earnings 90 days prior to the earnings announcement. The earnings for the long window (L_ES) is computed as the difference the quarterly earnings minus the quarterly earnings from the same quarter of the previous year. Please see Table 1(Panel B) for other variable definitions. The model estimated with OLS regression with coefficients p-values are adjusted using cluster standard errors to correct for heteroskedasticity and time series correction. The long (short) window approach has 1594 (1593) observations from 2007-2011 (quarterly data).
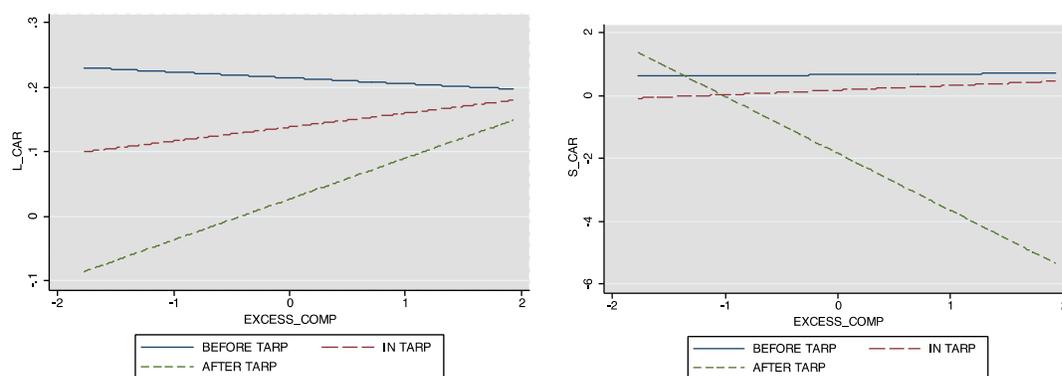
Table 7, Panel B

L_CAR

EXCESS_COMP

BEFORE TARP — — — IN TARP
- - - - AFTER TARP

S_CAR

EXCESS_COMP

BEFORE TARP — — — IN TARP
- - - - AFTER TARP

Table 8
Results for Accounting Performance Measures

	ROA		RET		ROE	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Constant	0.002	0.109	0.082	0.009	0.019	0.018
IN*ABOVE	0.002	0.012	0.070	0.035	0.019	0.056
AFTER*ABOVE	-0.002	0.402	0.020	0.433	-0.003	0.763
CEOOWN	0.000	0.442	0.000	0.139	0.000	0.599
BETA	-0.001	0.020	-0.068	0.001	-0.007	0.013
BM	-0.001	0.001	0.052	0.003	-0.023	0.001
SIZE	0.000	0.328	-0.003	0.345	0.000	0.978
SALARY	-0.001	0.192	0.000	0.968	-0.002	0.513
IN	0.000	0.566	-0.054	0.079	-0.010	0.296
AFTER	0.003	0.268	-0.038	0.087	0.008	0.391
LAG_ROA	0.677	0.001	-	-	-	-
LAG_RET	-	-	-0.058	0.030	-	-
LAG_ROE	-	-	-	-	0.366	0.001
F-Value	27.860	0.001	4.650	0.001	17.390	0.001
R²	0.600		0.497		0.299	

The dependent variable is the accounting performance measure (ROA, RET, and ROE), which is computed as quarterly accounting performance adjusted for the industry median performance for the year and quarter of the firm. Please see Table 1 (Panel B) for other definitions of variables. The model is estimated with OLS regression. The coefficients p-values are two tailed and are adjusted using cluster standard errors to correct for heteroskedasticity and time series correction.