Managerial Compensation in Multi-division Firms.

*Shashwat Alok[†]

and

Radhakrishnan Gopalan[‡]

Abstract

Using hand collected data on division manager (DM) pay contracts, we document that DM pay is related to the performance of both her division and the other divisions in the firm. There is substantial heterogeneity in DM pay-for-performance. DM pay for her division's performance is lower in industries with less informative accounting earnings. DM pay is more sensitive to other divisions' performance if her division is related to the rest of the firm, if her division has fewer growth opportunities and receives less capital from the rest of the firm. Consistent with optimal contracting view, DMs receive greater pay for other divisions' performance in better governed firms. Overall, our evidence suggests that DM compensation is structured taking into account the information and agency problems in multi-division firms.

JEL Classification:G30, J33

Introduction

Managerial decision making in multi-division firms (conglomerates from now) vis-a-vis single division firms has been of significant research interest (see Stein (2003) and Maksimovic and Phillips (2007) for surveys). Of particular interest is whether asymmetric information and agency problems between the conglomerate's headquarters and the manager of a division can result in inefficient managerial behavior (see Stein (2002) and Stein (2003)). A properly designed incentive contract for the divisional manager (DM from now) can potentially minimize distortions in managerial decisions. For the most part, due to lack of data, the literature on conglomerates has not studied if and how firms use incentive contracts for DMs to minimize agency costs. The objective of this paper is to fill this gap. We obtain data on DM pay for over 4,000 division-years to document the structure of DM pay and its variation across divisions and firms.

Incentive contracting for DMs is unique for two reasons. First, there is lack of market based measures of performance such as stock prices. This constraints the contracts to be based on accounting measures, which may be less informative about true performance. This also limits what one can learn about DM pay from the vast literature on CEO compensation that focuses on stock price linked pay. Second, the divisions of a conglomerate may be linked with one another. Such links can be real as in when divisions sell to a common customer (Hoberg and Phillips (2012)) or financial as in when divisions share a common pool of capital (Maksimovic and Phillips (2002)). The actions of the DM can thus not only directly affect the value of her division but also indirectly affect the value of other divisions in the firm. This may necessitate linking DM pay to the performance of both her division and the other divisions. This will occur even in situations where the performance of the other divisions does not provide incremental information about DM effort (Holmstrom (1979)) and will ensure that the DM takes into account the externality of her actions. We refer to this as the *Externality hypothesis*. The DM pay for other divisions' performance could vary with the nature and extent of relatedness of the divisions and their level of investment opportunities.

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We contrast the predictions of the *Externality hypothesis* with those of the more standard *Risk hypothesis* (Holmstrom (1979)), which predicts that to the extent the DM directly controls only the performance of her division, she should obtain pay only for her division's performance. If anything, to the extent that the performance of other divisions informs the headquarters about common risk factors, optimal risk sharing would call for relative performance evaluation and hence a negative relationship between DM pay and the performance of other divisions.

The unique aspect of our paper is the data that combines DM pay with information about the performance of the divisions in her firm. This allows us to measure the extent to which DM pay varies with the performance of both her division and the other divisions within the firm.[1] This allows us to estimate how the link between DM pay and divisional performance varies across divisions and firms. These estimates help us distinguish between the *Risk hypothesis* and the *Externality hypothesis.*

We obtain our data by hand matching two commonly used databases, ExecuComp and Compustat business segment files. ExecuComp provides compensation data for the top five highest paid executives of S&P 1500 firms. Along with their compensation, ExecuComp also provides the executive's designation, which reveal some of them to be a high ranking official in a division. For example, the designation of "Mr. Arun Sobti" in "ADC Telecommunications Inc" for the year 2000 is "President-Broadband Access & Transport Group". We hand match all designations in ExecuComp with names of divisions from Compustat business segment files. This provides us with a matched sample of DM compensation (from ExecuComp) and division performance (from Compustat business segment files). Our sample only includes DMs who are among the top-five highest paid executives in their firm. Such executives manage the more important or larger divisions within a firm. While on the one hand it is useful to focus on the managers of larger divisions, on the other hand this limits the generalizability of the results to managers of less important divisions.

We begin our empirical analysis by relating DM pay to the performance of her division

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[1] Aggarwal and Samwick (2003) also estimate DM pay-for-performance. We discuss their paper in greater detail in Section 1.

and that of the other divisions in the firm. We use the return on assets (ROA), which we calculate as the ratio of operating profits over book value of total assets as our measure of performance. Our analysis of actual pay contracts shows that conglomerates typically use profit based performance goals to design DM pay (see Section 4). We find evidence for significant pay-for-performance for DMs. For the average DM in our sample, a 1% increase in divisional ROA is associated with a .311% increase in DM total pay. Given the mean division size and DM pay in our sample, this translates into a $0.84 increase in DM pay for every $1,000 increase in annual divisional profits.

Consistent with the *Externality hypothesis*, we find that in our full sample, DM pay is positively related to the performance of the other divisions in the firm. Consistent with the DM having a greater influence over her division's performance, DM-pay is more sensitive to her division's performance than the performance of the other divisions. Specifically a 1% increase in the ROA of the other divisions is associated with only a 0.22% increase in DM pay.

We employ two industry-level proxies for accounting informativeness to estimate its effect on DM pay-for-performance. The first is the volatility of accounting profits of all single segment firms in the industry, with a higher volatility indicating less informative accounting performance (Lambert and Larcker (1987), Bushman et al. (1996) and Baginski et al. (2004)). Our second proxy is the extent to which accounting profits are related to contemporaneous stock returns. We measure this by regressing stock returns on accounting profits for all single segment firms within an industry (Kothari (2001), Ball et al. (2000) and Bushman et al. (2004)) and classify industries with above median regression coefficient as having more informative accounting profits. Consistent with the *Risk hypothesis*, we find that DM pay for her division's performance in industries with more informative accounting profits is twice that in industries with less informative accounting profits. The lower pay for performance for DMs in industries with less informative accounting performance may be an important cost of conglomeration.

To test predictions of the *Externality hypothesis*, we construct two measures of relatedness. Our first measure classifies divisions in firms with another division in the same

3-digit SIC code industry as being related to the rest of the firm. For our second measure, we estimate the degree of complementarity of the industries in which the divisions of a conglomerate are present (Hoberg and Phillips (2012)). The degree of complementarity between any two industries is the extent of similarity in their customer profiles. We obtain an industry's customer profile using the 1992 industry-level input-output tables for the U.S. economy.[2] We construct the firm-level measure of relatedness as the asset weighted average level of complementarity of all the non-primary divisions of the firm with the primary (or largest) division (Fan and Lang (2000)). Consistent with the *Externality hypothesis*, we find that DMs of divisions that are related to the rest of the firm obtain greater pay for the other divisions' performance. When we differentiate between short-term and long-term pay, we find that even short-term pay (salary and bonus) of a DM is related to the performance of other related divisions in the firm. This ensures that the correlations we document are not just a mechanical effect of better overall firm performance increasing the stock price and hence the grant date fair value of stock awards. To the best of our knowledge, we are the first to document this. We further expand on the *Externality hypothesis* below.

Information and agency problems within conglomerates can sometimes lead to sub-optimally high capital allocation to a division with poor investment opportunities (Scharfstein and Stein (2000)). Such distortions can be minimized by linking the pay of a low-growth-opportunity division's manager to the performance of the other divisions in the firm. Consistent with this conjecture, we find that DMs of divisions with low growth opportunities obtain higher pay for other divisions' performance.[3] When we differentiate between periods of industry distress and normal times, we find that DM pay in the distressed division is more sensitive to the performance of the non-distressed divisions. While such pay arrangements may facilitate transfer of capital out of the divisions with fewer investment opportunities into ones with better opportunities, they may also be a sign of agency problems in the firm

where pay does not decrease when performance (read prospect) declines.[4]

To distinguish the optimal contracting explanation from the rent extraction explanation (Core et al. (1999)), we analyze how the sensitivity of DM's pay to other divisions' performance varies with the strength of corporate governance within the firm[5]. We use three alternative measures for corporate governance. These are the two indices of take-over protection as proposed in Bebchuk et al. (2009) and Gompers et al. (2003) respectively and the proportion of institutional shareholding in the firm. We find that DMs receive greater pay for other divisions' performance in firms with fewer anti-takeover provisions and higher institutional ownership. This is inconsistent with a rent extraction explanation.

Summarizing, our evidence is consistent with the thesis that DM incentive contracts are designed to overcome information and agency problems within conglomerates. The robust positive relationship between DM pay and the performance of other divisions that we document highlights the limitations of the *Risk hypothesis* as a description of pay design for DMs. The cross-sectional patterns in pay for other division performance that we document highlights that conglomerates do take into account the need for DMs to co-operate with one another in designing their pay arrangements. This needs to be given sufficient importance by studies on potential distortions in capital allocation in conglomerates. A final caveat about our study is that since we lack exogenous instruments for own division and other division performance, what we document are some very interesting cross-sectional patterns in the association between division performance and DM pay that are consistent with the predictions of theory.

The rest of the paper is organized as follows. In the next section we discuss the related literature. In Section 2 we develop the hypotheses. In Section 3 we describe our empirical specification, key variables and discuss sample selection issues. Section 4 describes the data and provides the summary statistics. In Section 5 we discuss our empirical results and Section 6 concludes.

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[4]The lower sensitivity of DM-pay to the performance of her division during periods of industry distress is also consistent with the asymmetric benchmarking of CEO pay as shown in Garvey and Milbourn (2003) and also with performance measures being less informative during times of distress.

[5]We are unable to further condition this test to periods when a division's industry is in distress because of lack of sufficient number of observations.

1 Related Literature

Conglomeration can have both a bright and a dark side. On the bright side, conglomerates can create value by redeploying capital from low growth divisions to high growth divisions (Stein (1997)). Indeed, Maksimovic and Phillips (2002) provide some supportive evidence. However, conflicts of interest between rent-seeking DMs and CEO can hinder such capital reallocation (see Scharfstein and Stein (2000) and Rajan et al. (2000)). Our results indicate that DM incentive contracts may be an important tool conglomerates employ to overcome such conflicts and achieve efficient capital allocation.

Hoberg and Phillips (2012) find that conglomerates choose to operate in industry segments that exhibit higher degree of asset complementarity that can generate product-market synergies. Such synergies can only be realized if the DMs of different divisions efficiently cooperate with one other. Cooperation across divisions can be encouraged by linking DM pay to the performance of the other divisions (Auriol et al. (2002)). Indeed, we find that pay for other divisions' performance is greater for DMs of divisions in firms in which there is a higher degree of complementarity across divisions.[6]

The closest papers to our study are Cichello et al. (2008), Blackwell et al. (1994), Wulf (2002) and Aggarwal and Samwick (2003). Cichello et al. (2008) find division ROA to be most closely tied to turnover and promotions of DMs. While they find evidence of relative performance evaluation (RPE) in promotion decisions, they do not find a similar effect for turnover decisions. In contrast, Blackwell et al. (1994), find that turnovers rather than promotions are based on RPE in multi-bank holding companies in Texas. In contrast, we focus on the structure of DM compensation contracts and do not find much evidence for RPE.

Among 131 multi-division firms for the year 1993, Wulf (2002) finds that the sensitivity of divisional investment to divisions' performance is lower (higher) when DMs have higher (lower) pay for firm performance. Lacking pay for individual DMs, she uses the average

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[6]Han et al. (2009) analyze the role of tournament incentives and capital allocation in conglomerates and argue that when promotion decisions are based on divisional performance, career concerns may lead the DMs to shift resources from their most efficient use towards riskier activities.

DM level pay to represent the pay of the largest division's manager. Unlike Wulf (2002), we employ a large panel of DM pay contracts from 708 firms to document how DM pay varies in the cross-section and through time and thus test a number of different hypothesis.

Aggarwal and Samwick (2003) examine the effect of executive rank on the sensitivity of pay to performance (PPS). They document that PPS is highest for CEOs, followed by other C-suite executives who they term as "oversight executives" and is lowest for managers with divisional oversight. They also find that pay of the division manager is sensitive to both firm and divisional sales growth.

In contrast to Aggarwal and Samwick (2003) our main focus is to understand how DM compensation is structured to overcome the information and agency problems between conglomerate headquarters and the DMs. In light of this, our main tests document how the sensitivity of DM pay to the performance of her division and other divisions varies across divisions and across firms depending on the extent of information and agency problems. As discussed above, our tests highlight substantial heterogeneity in the structure of DM pay. Another important difference between the papers is that while we use ROA as a measure of division performance, Aggarwal and Samwick (2003) use sales growth. Our analysis of actual pay contracts obtained from Incentive Lab indicate that for a subsample of the DMs in our sample, about 68% of DM-year pay contracts make pay contingent on a measure of profitability while only 15% of the DM-year contracts link pay to a sales based metric.[7]

The next section discusses our main hypotheses.

2   Hypotheses

In this section we outline the hypothesis that have predictions relevant for our setting. We group the hypothesis into: *Risk hypothesis* and *Externality hypothesis*.

Holmstrom (1979) predicts that an agent's pay should only depend on performance measures that are informative about her actions. To the extent the performance of the

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[7]The summary statistics on which this claim is based is not reported in the paper for the sake of brevity. However, the same is reported in the Internet Appendix (IA).

division under the manager's direct control is likely to be more informative about her actions, "informativeness principle" of Holmstrom (1979) implies that her pay should be more sensitive to such actions. We refer to this as the *Risk hypothesis*. The *Risk hypothesis* predicts that DM pay should be related to her division's performance. Since accounting based measures of divisional performance are typically noisy, the *Risk hypothesis* also predicts lower pay-for-divisional performance in industries with less informative accounting profits. A division's performance may be affected by both DM's effort and exogenous factors – say market conditions – outside her control. If a conglomerate's divisions are related and thus subject to similar risk factors, the performance of other divisions will reveal information about the exogenous factors. Holmstrom (1979) predicts that in such cases, it is optimal to reward the DM for divisional performance relative to the performance of the other divisions.

Externality hypothesis is based on the idea that divisions within a conglomerate are often linked. The links can be real as in when divisions produce complementary products (Hoberg and Phillips (2012)), or be financial as in when divisions share a common pool of capital (Maksimovic and Phillips (2002)). The actions of the DM can thus affect the value of not only her division but also the other divisions in the firm. This would call for linking DM pay to the performance of both her division and the other divisions in the firm. The pay for other divisions' performance should vary with the nature and extent of relatedness of the divisions. Note that the *Externality hypothesis* would call for linking managerial pay to other division's performance even if it does not provide incremental information about her effort. Say if the other division's performance is perfectly negatively correlated with own division's performance it is not likely to provide incremental information about the agent's effort. Even in this case, the firm will link DM pay to other division's performance to make sure she internalizes the externality of her effort. Maximizing own division's performance may not maximize firm value in the setting.

Information and agency problems within conglomerates can lead to sub-optimally high capital allocation to a division with poor investment opportunities (see Rajan et al. (2000), Scharfstein and Stein (2000)). The conglomerate can minimize such distortions by linking the pay of a low-growth-opportunity division's manager to the performance of the other di-

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visions in the firm. On the other hand, Anctil and Dutta (1999) argue that DMs of divisions that are investing and expanding fast may have greater ability to affect the performance of other divisions. Thus Anctil and Dutta (1999) predict greater pay for other divisions' performance for DMs of high growth divisions.

If DMs obtain private benefits from managing larger divisions, conglomerate CEOs can reward DMs by linking capital allocation to prior divisional performance. To the extent pay and capital allocation are substitute incentive mechanisms, we should expect lower pay-for-division performance in divisions that get more capital from the head-quarters.

3 Empirical design, key variables and sample selection

3.1 Empirical design and key variables

We are interested in understanding how DM pay is related to the performance of her division and that of the other divisions in the firm. To achieve this, we estimate variants of the following model.

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\begin{aligned}
\text{Log(Total compensation)}_{ijt} \;=\;\; & \alpha + \beta_1 \times \text{Division ROA}_{jt} + \beta_2 \times \text{Other division ROA}_{it} \\
& + \gamma \times Z_{ijt} + \mu_t + \varepsilon_{ijt},
\end{aligned}
\tag{1}
$$

where subscript i refers to the firm, subscript j refers to the division and subscript t refers to time in years. The dependent variable *Total compensation*$_{ijt}$ is the sum of annual salary, bonus, present value of stock awards, present value of stock option awards, other annual compensation, long-term incentive payouts, and other cash payouts. We use the log transformation of compensation to mitigate the effect of outliers. *Division ROA* (*Other division ROA*) is the return on assets of the division (other divisions). We calculate *ROA* as the ratio of operating profits over total assets. In the case of other divisions, we aggregate their operating profits and their total assets in calculating their ROA. These performance measures are winsorized at 1% level to mitigate the effect of outliers.

To test how DM pay-for-performance varies with the extent to which a division is related to the rest of the firm, we employ two measures of relatedness. Our first measure identifies divisions in firms with another division in the same three digit SIC code industry as being related to the rest of the firm. Our second measure is constructed from the industry input-output tables for the U.S. economy. Using the 1992 tables available at the Bureau of Economic Analysis website (http://www.bea.gov /industry/io_benchmark.htm), for each industry 'i', we calculate the dollar value of output used by industry $k \in K$ ($Input_{ik}$), where K represents the set of all industries. For any pair of industries 'i' and 'j', we compute the degree of complementarity as the correlation between $Input_{ik}$ and $Input_{jk}$, for all $k \in K$. A large correlation indicates similarity in the final consumers of industries 'i' and 'j'. We then construct the firm-level measure of relatedness as the asset weighted average level of complementarity between the non-primary divisions and the primary division. We classify the largest division of a conglomerate as its primary division.

To test how DM pay-for-performance varies with the informativeness of accounting earnings, we employ two industry-level measures of accounting informativeness.[8] The historic volatility of accounting earnings of firms within an industry (Lambert and Larcker (1987), Bushman et al. (1996) and Baginski et al. (2004)) and the value relevance of earnings, which we measure as the extent to which accounting earnings are related to contemporaneous stock returns (Lambert and Larcker (1987), Bushman et al. (1996) and Baginski et al. (2004)). We obtain this measure by regressing annual stock returns of all firms in an industry on their annual earnings per share. The coefficient estimate is referred to as the value relevance of accounting earnings. To test our prediction we divide our sample into divisions with high and low levels of accounting informativeness and estimate equation (1) in the subsamples and compare our estimates of β_1 and β_2 across the two subsamples. Note that this is equivalent to estimating equation (1) with a full set of interaction terms between, *High information*, a dummy variable that identifies industries with more informative accounting profits and all the independent variables and testing for significance of

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[8]Accounting quality likely varies across firms within an industry. Moreover, a firm may know more about the true accounting quality of its divisions. However, in the absence of data on firm's internal assessment of the accounting quality of its divisions, we have to rely on industry-level measures of accounting quality. We acknowledge that our proxies are at best noisy measures of the accounting quality of a division.

the coefficients on *High information× Division ROA* and *High information× Other division ROA*. We employ a similar procedure to test all our cross-sectional predictions.

To investigate if DM pay is structured to encourage cross-subsidization across divisions, we use three alternative measures of divisional investment opportunities: industry market to book ratio, industry sales growth and instances of industry distress that we identify using the procedure in Titman and Wessels (1988). We classify industries with above median market to book ratio or sales growth as having more investment opportunities.

In all our regressions we control for firm size using, *Log(Total assets)*, division size using *Log(Division assets)*, and time fixed effects. The standard errors in all our regressions are robust to heteroscedasticity and are clustered at the individual firm level.

Although we estimate specifications with firm and industry-year fixed effects, to the extent we lack exogenous instruments for own division's and other divisions' performance, we will not be able to make any causal statements about how performance affects pay. While the cross-sectional tests we perform do offer some evidence of systematic variation in pay-for-performance as predicted by theory, these estimates can also potentially be biased by omitted variables and reverse causality. Hence we are cautious to note that what we document are some interesting patterns in the association between division performance and DM pay that are consistent with what one would expect from theory.

4   Data and summary statistics

4.1   Data

The data for our paper is obtained from five standard sources. Stock returns and firm financial data are from CRSP-Compustat merged database. Financial data for individual business divisions are from Compustat business segment files. The data on division manager compensation and designation is collected from ExecuComp and Def 14A proxy statement files. Our sample period extends from 1992-2009.

ExecuComp provides the annual compensation of the top five highest paid executives for all S&P 1500 firms. Along with their compensation, ExecuComp also provides the executive's designation, which sometimes reveal them to be a high ranking official in a division. We hand match the division name as indicated in the executive's designation with names of divisions from Compustat business segment files to obtain a matched sample of DM compensation and division performance. From the overall sample, we retain divisions in firms with a minimum of two divisions resulting in 6,747 individual division-year observations. From this sample, we drop division-year observations with missing values of operating profits (1371 observations), missing/negative values of total assets (533 observations), negative sales (9 observations) and divisions for which SIC codes are not reported in Compustat (17 observations). This leaves us with 4,326 observations. Since our tests rely on relating DM to pay to the performance of both their division and that of other division year observations, we also drop those division-year observations for which information on operating profits or assets of other divisions within a firm are missing (246 observations). Our final sample consists of 4,080 division-years with 1,856 unique DMs in 1,497 different divisions across 708 firms.

4.2   Summary statistics

In panel A of table 1, we provide the summary pay characteristics of DMs in our sample. In the first panel we provide the pay characteristics of the DMs of divisions with positive sales while in the second panel we provide the pay characteristics of DMs with missing sales. We find that both total compensation and the various components of compensation are not statistically significantly different across the two panels. We also find that the DMs of divisions with positive sales are slightly older than DMs of divisions with missing sales. Although the bulk of DM compensation comprises of the present value of stock and option grants – whose value varies with firm performance – this by itself does not imply that DMs obtain significant pay-for-firm performance. To the extent the number of stock and option grants varies with division performance, firms may be using these grants to reward DMs for superior division performance. In such cases, the choice between stock and bonus (cash)

may only indicate a choice of the "currency" used to reward the DM. This is especially the case if these awards have a short-vesting period (Gopalan et al. (2013)). Hence we rely on our regressions that relate DM total compensation to division and firm performance to tease out the actual pay-for-performance for DMs.

In panel B of table 1, we provide the summary financial characteristics of the divisions in our sample. The mean *Log(Division assets)* of our sample is 6.43, which translates into a book value of division assets of $620.17 million. The median value of *Log(Division assets)* is comparable to the mean value. In comparison, the mean value of *Log(Other division assets)* – the natural logarithm of the book value of total assets of all the other divisions in the firm – is 7.06. Thus the size of the division for which we have DM pay is comparable to the size of the rest of the firm. Since our sample firms have three divisions on average, we likely have pay characteristics of the DM of the largest division. This is not surprising because the DM of the largest division is more likely to be among the top five highest paid executives in the firm. Our sample comprises of the larger firms in Compustat. The mean value of *Log(Total assets)* of our sample is 7.75 as compared to 5.66 for all firms in Compustat. We find that the divisions in our sample are on average profitable as seen from the mean value of *Division ROA* of 0.14. Our divisions also tend to be more profitable than the rest of the firm as can be seen by comparing the mean value of *Division ROA* to that of *Other division ROA*. The divisions for which we have pay data are also growing fast (mean value of *Division sales growth* is 0.13), but the rest of the firm appears to be growing at a faster rate (mean value of *Other division sales growth* is 0.19). The divisions in our sample have growth opportunities as seen from the mean value of *Industry market to book* of 1.61. We classify about 22.4% of the division-years in our sample as distressed as can be seen from the mean value of *Distress*.

We employ three alternative measures of corporate governance. The first one is the entrenchment index proposed in Bebchuk et al. (2009), *E-index* with a higher value indicating weaker governance. The average value of *E-index* for the firms in our sample is 2.77. Our second measure of governance is the *G-index* proposed in Gompers et al. (2003) which works similar to the *E-index*. The average value of *G-index* for our sample firms is

10.31. Our third measure of corporate governance is the aggregate shareholding of the ten largest institutional shareholders of the firm (*Institutional holding*). To the extent that institutional owners have both greater ability and incentives to monitor firm performance, we expect firms with greater institutional ownership to have stronger governance. The mean value of *Institutional holding* for our sample firms is 0.31.

5   Empirical results

5.1   DM pay-for-performance

We estimate our baseline specification (1) for the full sample and present the results in table 2. The dependent variable is *Log(Total compensation)*. Focusing on column (1), the positive and significant coefficient on *Division ROA* indicates that DMs obtain pay for their division's performance. This is consistent with *Risk hypothesis.* We also find that the coefficient on *Other division ROA* is also positive but not significant. From the coefficients on the control variables, we find that managers of larger divisions and those in bigger firms obtain higher total compensation.

In column (2), we repeat our test after including firm fixed effects and find that the coefficient on both *Division ROA* and *Other division ROA* is positive and significant. Comparing column (2) to column (1) we find that the coefficient on *Other division ROA* is higher and its standard error is lower in column (2). Thus once we control for firm fixed effects, our results are consistent with the *Externality hypothesis*. Consistent with DMs having a greater influence on their division's performance, we find that the pay for own division's performance is greater than the pay for other divisions' performance. The coefficient on *Division ROA* in column (2) indicates that a 1% increase in divisional ROA is associated with a 0.311% increase in DM pay. Given the average value of division total assets and DM compensation in our sample this translates into a $0.84 increase in DM pay for every $1,000 increase in annual divisional profits. The coefficient on *Other division ROA* in column (2) indicates that a 1% increase in other divisions' ROA is associated with a 0.22% increase in

DM pay. In dollar terms, a $1,000 increase in the profits of the other divisions is associated with a $0.38 increase in DM pay.

To ensure that our estimates are robust to time-varying industry shocks, in column (3), we repeat our tests after simultaneously controlling for both firm and industry-year fixed effects and obtain qualitatively similar results.

Given that we have pay characteristics of the manager of the largest division, one concern with our tests would be the extent to which *Division ROA* and *Other division ROA* are correlated and hence our ability to independently estimate pay for own division and other division performance. However, in the full sample, the correlation between *Division ROA* and *Other division ROA* is modest at 0.269. This helps us allay any concerns of multi-collinearity.[9]

5.1.1 Long-term vs Short-term Pay

In the next set of tests, we look at the individual pay components to see if there is any systematic pattern in how they are employed to align DM incentives. Specifically, we distinguish between short-term (salary + bonus) and long-term (option grants+restricted stock grants + other long term incentive payouts) components of DM pay and estimate their sensitivity to performance. Stock based long-term awards may better align the interests of the DM with that of maximizing firm value because changes in firm performance are likely to directly impact their value.

From column (1) of table 2, panel B, we find that short-term component of DM pay loads positively on *Division ROA*. However, the loading of short-term component of DM-pay on *Other division ROA* is statistically indistinguishable from zero. In columns (2) and (3), we repeat these tests after controlling for firm and industry-year fixed effects and obtain

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[9]Further to ensure that multi-collinearity between *Division ROA* and *Other division ROA* is not clouding our inferences, we estimate the variance inflation factor (VIF) which measures the increase in variance of estimated coefficient due to collinearity. The VIF in our sample is 1.08 which is considered small. According to the standard rule of thumb (see Obrien (2007)), a VIF greater than ten is considered a cause for concern. Further in our sample, the lowest Eigen value is 0.422 and the condition number based on Eigen values is 2.082. An Eigen value close to zero or a very high condition number, say greater than thirty, implies a high degree of linear-dependency between the two variables.

qualitatively similar results. In columns (4) to (6), we repeat these tests for long-term component of DM pay. Focusing on these columns, we find that the long term-component of DM pay loads positively on both *Division ROA* and *Other division ROA* once we control for firm and industry-year fixed effects (columns (5) and (6)). Taken together, these results suggest that while firms use short-term awards to reward DMs for division performance, they use long-term stock and option grants to align the incentives of DMs with that of maximizing overall firm value.

5.1.2 Other concerns and robustness

We now discuss some potential concerns with our baseline tests and our approach at mitigating these concerns. If the number of stock and option grants are persistent through time (Shue and Townsend (2015)), the firm's stock return may create a spurious positive correlation between DM pay and division profitability. An increase in division profitability may increase the firm's stock price which in turn may increase the pay of DM. While on the one hand, such an increase in pay may be just reward for the increase in division profitability, the positive correlation between pay and profitability may be unintended and not a result of externalities across divisions. To control for this, first, we repeat our tests after controlling for stock return in table 3, column (1). We find that our results remain robust and the coefficient estimates obtained from these tests are qualitatively similar to the ones reported in table 2, panel A. Second, in column (2), we repeat our baseline tests after explicitly controlling for the rigidity of option grants. This variable is motivated by Shue and Townsend (2015). Since successive year pay information is not available for a large number of DMs in our sample, we construct this measure by focusing on the option grants to the CEO. We classify a DM-year as involving rigid grants, if the firm's CEO obtains the same number of option grants as the previous year. The idea is that persistence in the structure of DM and CEO pay should be similar and thus if the firm's CEO obtains rigid grants, it is likely that the DM may also obtain rigid grants. We find that controlling for rigidity does not materially affect our results.

Apart from pay-for-performance incentives, firms may also employ promotion-based

tournament incentives to motivate division managers (Kale et al. (2009)). To the extent performance based compensation and promotion based incentives are substitutes, firms may use promotion-based incentives when performance measures are noisy. Thus, the absence of pay-for-performance by itself does not imply weak incentives for the DM. To account for potentially confounding effects of tournament incentives on our estimates, we repeat all our tests after explicitly controlling for such incentives measured as the logarithm of difference in total compensation received by the CEO and second-highest paid C-suite executive within a firm (*Log(Pay gap)* from now) (Kale et al. (2009); Kini and Williams (2012)). Since this potentially measures the reward from being promoted to CEO, it is commonly used as a proxy for promotion based incentives.[10] Column (3) of table 3 reports the results from these tests. We find that our results are qualitatively unchanged (the coefficient estimates are similar to those reported in table 2). Further, in columns (4) and (5), we split our sample into divisions in firms with above and below median value of *Log(Pay gap)* to analyze whether the relationship between DM pay and performance is different between the two subsamples. From the rows titled Δ *Division ROA* and Δ *Other Division ROA* we find that the coefficients are statistically indistinguishable between the two columns.

Note that the coefficient on *Other Division ROA* is insignificant in both the High- and Low-pay gap subsamples both because of small sample sizes (relative to the number of coefficients we estimate) and because our later tests show that pay for other division's performance is only significant if the other divisions are related to a manager's own division or if there are differences in investment opportunities. To the extent the use of tournament incentives is not correlated with these characteristics, we may not obtain a significant relationship between DM pay and the performance of other divisions in the sub-samples.

Summarizing, our evidence shows that DMs receive pay for both their own division's performance and for the performance of the other divisions in the firm. This result is robust to controlling for stock returns, pay rigidity and tournament incentives.

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[10]There is some controversy about the use of *Pay gap* as a measure of tournament incentives. Masulis and Zhang (2013) argues that the compensation gap between the CEO and other C-suite executives may reflect productivity differentials while Bebchuk et al. (2011) argues that it is a measure of the CEOs ability to extract rents.

5.2 DM pay-for-performance and relatedness of divisions

In table 4, we estimate how DM pay-for-performance varies with the degree of relatedness of the divisions in the firm. We classify divisions in firms with another division in the same 3-digit SIC code industry as being related to the rest of the firm and estimate equation (1) in the two subsamples of related (column (1)) & unrelated divisions (column (2)). Note that, in these tests we not only estimate twice the number of coefficients as in our level tests but also have less than 2-3 observations per firm in each subsample. Given the persistence in executive pay for a given firm, we are unable to rely only on within firm variation to estimate our coefficients. Hence we do not include firm fixed effects in these tests. To this extent, our results derive both from within firm and across firm variation in the dependent and independent variables.

The evidence in columns (1) and (2) indicate that consistent with *Externality hypothesis* and inconsistent with RPE, DM pay is positively related to the other divisions' performance especially if her division is related to the rest of the firm. The loading on *Other division ROA* in column 1 is statistically significant at the 1% level and the coefficient in column 2 is not statistically different from zero. From the row titled Δ *Other division ROA* we find that the coefficient on *Other division ROA* is significantly different between columns (1) and (2). In unreported tests we find that our results are robust to defining relatedness at 2-digit SIC code level.

An interesting aspect of our results is that the coefficient on *Other division ROA* is larger than the coefficient on *Division ROA* in column (1). Taking into account the mean value of *Other division ROA* and *Division ROA*, our results in column (1) imply that the DM obtains \$ 0.69 (\$ 0.86) higher total compensation for every \$1000 increase in *Division ROA* (*Other division ROA*). Thus in firms with related divisions, DMs seem to obtain greater pay for other divisions' performance than their own division's performance. While surprising at first blush, this result is consistent with the predictions in Che and Yoo (2001) who show that such contracts are optimal in a setting where there exists greater synergy across

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divisions that repeatedly interact with one another.[11]

In columns (3) and (4), we use our second measure of relatedness. As mentioned before, we construct a firm-level measure of relatedness as the asset weighted average level of relatedness of the non-primary divisions of a conglomerate to its primary division. The results from columns (3) and (4) show that DM pay is significantly related to the performance of other divisions only in the firms with related divisions. From the row titled Δ *Other division ROA* we find that the coefficient on *Other division ROA* is significantly different between columns (3) and (4).

In panel B of table 4, we seek to analyze whether firms with related divisions differ in terms of structuring the long-term and short-term components of DM pay. We find that both the short-term and long-term components of DM pay load positively on *Other division ROA* for related divisions (columns (1) and (5)). The coefficient estimates translate into $0.13 increase in short-term pay and $0.88 increase in long-term pay for every $1,000 increase in the profits of the other divisions. Thus DM pay-for-performance sensitivity of short-term pay is almost 15% of that of the long-term pay for DMs of related divisions. Although the loading of long-term pay on other divisions' performance is significant (at 10% level) even for the subsample of unrelated divisions (column (6)), the coefficient on *Other division ROA* in column (5) is five times that in column (6). Moreover, the coefficient estimates across the two subsamples are significantly different from one another for both short-term and long-term pay (see row titled Δ *Other division ROA*).

Note, that the above analysis further alleviates the concern that the relationship between DM pay and other divisions' performance is possibly driven by multi-year stock or option grants. First, even the short-term (cash) component of DM pay loads positively on other division's ROA only for related divisions. Second, the sensitivity of long-term compensation to other division performance is significantly different across related and unrelated divisions. It is not obvious why the persistence/rigidity in the number of stock or option grants should

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[11]Che and Yoo (2001) show that the optimal compensation contract in such a setting entails a lower pay for individual performance and greater pay for collective performance (what they call "joint performance evaluation"). This is sustained by a credible Nash threat where a DM punishes other DMs for shirking by shirking himself resulting in lower compensation for all DMs. Such a threat is only credible in a repeated game setting, that is when there is long-term relationship between divisions.

vary with division relatedness.[12]

Summarizing our results in table 4 are consistent with *Externality hypothesis* in that DMs obtain greater pay for other divisions' performance when their division is related to the other divisions in the firm.

5.3 Pay for division and firm performance and accounting informativeness

In table 5, we analyze the effect of accounting informativeness on the structure of DM pay. We use the volatility of earnings of firms in an industry as our first measure of accounting informativeness and divide our sample into divisions in industries with above and below median earnings volatility and estimate equation (1) in the two subsamples (column (1) & column (2)). The results indicate that consistent with *Risk hypothesis*, DM pay for divisional performance is indeed lower (higher) for divisions in industries with high (low) earnings volatility. The DM pay for division performance in industries with more informative accounting profits is approximately twice that in industries with less informative accounting profits. Interestingly, we do not find any significant difference in pay for other divisions' performance across the two subsamples. From the row titled Δ *Division ROA* we find that the coefficients on *Division ROA* are significantly different across columns (1) and (2).

In the next two columns, we use the value relevance of accounting earnings as our measure of earnings informativeness, divide our sample into divisions in industries with above and below median earnings value relevance and estimate equation (1) within the two subsamples. Our results indicate that DM pay for divisional performance is greater for divisions in industries with more informative earnings. Here again the coefficient in column (3) is more than twice as large as that in column (4), and the difference is significant at less than ten percent level.

In summary, our results in table 5 offer significant support for *Risk hypothesis* and

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[12]In unreported tests, we do not find any significant difference in the extent of rigidity in CEO pay across firms with related and unrelated divisions.

highlight an important cost of conglomeration. Conglomerates with divisions in industries with less informative accounting profits offer lower pay-for-performance to the DM. To the extent pay-for-performance is useful in providing incentives for the DM, this may be costly for the firm.[13]

5.4 DM pay-for-performance and division investment opportunities

In table 6, we estimate the effect of division investment opportunities on DM pay-for-performance. In columns (1) and (2), we split our sample into divisions in industries with above and below median industry market to book ratio and estimate DM pay-for-performance within the two subsamples.

Our results from columns (1) and (2) show that consistent with the idea of encouraging capital flow from low growth divisions to high growth divisions, DMs of divisions in industries with low market to book do get significantly greater pay for other divisions' performance as compared to DMs of divisions in industries with high market to book ratio. In fact, we do not find any evidence of pay for other divisions' performance among divisions in industries with high market to book ratio. We also find that the coefficient on *Other division ROA* is significantly different across the two subsamples. This result highlights that conglomerates design DM incentive contract so that managers of divisions with low investment opportunities will care about the performance of divisions with better investment opportunities. This in turn may facilitate capital reallocation within the conglomerate.

In columns (3) and (4), we repeat our tests using past division sales growth as a measure of investment opportunities. Here again we find that pay for other divisions' performance is significantly higher in divisions with low past sales growth rate.

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[13]In tests reported in the IA to this paper, we examine the implication of interaction between the risk and externality hypothesis for DM pay. Specifically, we analyze whether DM pay loads more heavily on other related division's performance if that division's performance is a more precise signal of managerial effort. Consistent with this idea, we find that DM's pay is more sensitive to other related divisions' ROA when the other division has low volatility relative to the DM's division. Please refer to IA for a detailed discussion of these results.

5.5 DM pay-for-performance and industry distress

Gopalan and Xie (2011) show that conglomerate divisions in distress have higher cash flows and R&D expenditure but similar levels of investments as compared to single division firms. The similar level of investments between distressed conglomerate divisions (despite having higher cash flows) and single segments firms may be due to cash transfers out of the distressed division. The distressed division's manager can be incentivized to go along with such transfers by linking her pay to the performance of the non-distressed divisions. Alternatively, if the higher R&D investment in distressed conglomerate-divisions is due to cash support from the non-distressed divisions, the DMs of these divisions can be made to support such transfers if their pay is linked to the performance of the distressed division.

To analyze the impact of financial distress on DM pay, we classify an industry at the 3-digit SIC code level to be in distress if the median two-year stock return of all single segment firms is less than -30% (see Opler and Titman (1994) and Gopalan and Xie (2011)). Formally, we estimate equation 1 for the subsample of divisions in distressed and non-distressed industries.

Column (1) of Table 7 reports the results for the subsample of distressed divisions in firms in which at least one other division is also in distress while column (2) reports the results for the subsample of distressed divisions in firms in which none of the other divisions are in distress. Likewise, in column (3) (column (4)) we report the results for subsample of non-distressed divisions in firms with, at least one (no) distressed division.

The first result from our tests is lower pay for own division's performance during distress periods (columns (1) and (2)) as compared to during non-distress periods (columns (3) and (4)). This is consistent with the large literature on asymmetric-benchmarking in CEO compensation which documents lower CEO pay-for-performance during industry downturns as compared to during industry upturns (see Garvey and Milbourn (2003)).

Focusing on columns (1) and (2), our results indicate greater pay for other divisions' performance for DMs of distressed divisions when none of the other divisions in the firm are in distress. This is consistent with the idea that DMs of distressed divisions are cross-

subsidized in pay possibly to encourage them to transfer capital to non-distressed divisions.

From columns (3) and (4), we find that DMs of non-distressed divisions receive greater pay for other division's performance only when other divisions are not in distress. Thus DMs of non-distressed divisions are not penalized for the poor performance of the distressed division.

In panel B of table 7, we analyze whether pay for performance sensitivity of short-term and long-term components of DM pay varies with industry conditions. Consistent with the asymmetric benchmarking literature, we find that both short-term and long-term pay do not load on division performance during times of industry distress (columns (1) and (2)). Consistent with encouraging executives of distressed divisions to transfer capital to non-distressed divisions, we find that long-term component of DM pay is positively related to other divisions' performance when other divisions are not in distress (column (6)).

When we focus on executives of non-distressed divisions in firms with distressed other divisions, we find that both short-term and long-term pay loads negatively on other divisions' performance, although the loading for long-term pay is not statistically significant. This again is inconsistent with pay for other divisions' performance being mechanically driven by pay rigidity. We find that pay for other divisions' performance systematically varies across divisions consistent with the predictions of theory. Finally, we find that both short-term and long-term pay exhibit positive and statistically significant coefficients on own and other divisions' performance only when none of the divisions within the firm are in distress.

Overall, the results in this section provide evidence consistent with *Externality hypothesis*.

5.6 DM pay-for-performance and divisional subsidy

In table 8, we investigate the effect of divisional subsidy on DM pay-for-performance. To do this, in columns (1) and (2), we split our sample into divisions with above and below median value of *subsidy* and repeat our tests. We find greater pay-for-performance in divisions with less subsidy. This is consistent with pay and capital being substitute incentive mechanisms.

Interestingly, we also find that there is significant pay for other division performance only for divisions with low subsidy. This indicates that conglomerates link the pay of DMs of divisions with low subsidy to the performance of the other divisions so as to align their incentives with the whole firm. However, due to noise in our estimates, we find that the coefficient on *Other division ROA* is not significantly different between column (1) & (2).

To better distinguish between divisions receiving and transferring capital, in unreported tests we split our sample into divisions with negative (transferring capital) and positive subsidy (receiving capital) and obtain results that are quantitatively and qualitatively similar to those reported in columns (1) and (2).

5.7   DM pay-for-performance and corporate governance

A higher pay for other divisions performance especially if asymmetric could indicate rent extraction by the DM (Bebchuk and Fried (2004)). To distinguish the optimal contracting explanation from the rent extraction explanation, in table 9, we analyze how DM-pay-for performance varies with the quality of corporate governance in the firm. In columns, (1) and (2) we use *Institutional holding* as a measure of governance, divide our sample into firms with above and below median value of *Institutional holding* and repeat our tests. As mentioned before, we expect firms with higher institutional ownership to have stronger governance We find that firms with higher *Institutional holding* offer greater pay for other divisions' performance. This is inconsistent with pay for other division performance implying rent extraction by the manager. Further, from the row titled Δ *Other division ROA*, we find that the coefficient on *Other division ROA* is significantly different across the two columns. In unreported tests, we repeat our estimation based on proportion of shares held by all institutions and obtain results similar to the ones reported.

In columns (3) and (4), we divide our sample into firms with above and below median value of *E-index* and again find greater pay for other divisions' performance among DMs in firms with lower *E-index*. Note that a higher value of *E-index* indicates a firm with weaker corporate governance. However, from the row titled Δ *Other Division ROA* we find that

the coefficients are not significantly different between the two columns.

In columns (5) and (6), we divide our sample into firms with above and below median value of *G-index* and again find greater pay for other divisions' performance among DMs in firms with lower *G-index*. This again is inconsistent with the rent extraction story.

6 Conclusion

In this paper we use a large sample of division manager incentive contracts to document the structure of DM pay and the extent to which it varies with division performance and across firms. The unique aspect of our paper is our ability to combine DM pay data with the performance of both her division and the other divisions in the firm. This allows us, for the first time in literature, to measure the extent of pay-for-performance for DMs.

DMs obtain significant pay for own division's performance. A $1,000 increase in the profits of her division is associated with $0.84 increase in DM pay. The sensitivity of DM-pay to divisional performance is decreasing in the precision of the performance measure. This highlights an important cost of conglomeration. DMs of divisions with less investment opportunities obtain greater pay for other divisions' performance. Along similar lines, we find that DMs of distressed divisions receive greater pay for other division's performance when other divisions are not in distress. This is likely to align their interest with the rest of the firm and enable the firm to shift capital towards the other divisions.

Consistent with the idea of encouraging DMs to cooperate and exploit potential synergies from working together, we find that DMs of divisions that are related to other divisions obtain greater pay for other divisions' performance. DM pay is more sensitive to the performance of the other divisions in firms with stronger corporate governance.

Overall, our analysis sheds light on the role of DM compensation contracts in helping mitigate agency conflicts in conglomerates and also highlights some of the constraints on the contracting environment.

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Table 1: **Summary Statistics**
This table reports the summary statistics of the key variables used in our analysis. Panel A reports pay characteristics of DMs in are sample. Panel B reports division and industry financial characteristics for our sample. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files.

<div align="center">Panel A: Division manager compensation</div>

Matched subsample				
Variable	N	Mean	Median	Std. Dev.
Total compensation	4080	1672.868	995.638	3261.495
Salary	4080	359.714	324.19	180.124
Bonus	4080	240.757	116.834	896.729
Stock grants	4080	264.341	0	798.182
Stock option grants	4080	537.041	164.157	2549.380
LTIP	4080	173.884	0	530.604
Age	1612	51.922	52	6.573
Sample - Missing sales				
Total compensation	2154	1987.546	1190.553	2536.913
Salary	2154	379.475	338.589	177.212
Bonus	2154	260.818	97.499	564.466
Stock grants	2154	369.154	0	1079.710
Stock option grants	2154	632.751	231.562	1247.666
LTIP	2154	231.569	0	745.462
Age	977	50.573	50	6.655

Panel B: Division and industry characteristics

Variables	N	Mean	Median	Std. Deviation
Log(Division assets)	4080	6.433	6.392	1.551
Log(Other division assets)	4080	7.064	6.986	1.639
Log(Total assets)	4080	7.748	7.608	1.441
Division ROA	4080	0.142	0.124	0.202
Other division ROA	4080	0.113	0.106	0.179
Division capital expenditure	3734	0.059	0.042	0.064
Other division capital expenditure	3734	0.056	0.04	0.054
Division sales growth	3549	0.133	0.07	0.513
Other division sales growth	3496	0.193	0.074	0.693
Ind. market to book	3861	1.613	1.453	0.626
Earnings volatility	3728	0.280	0.145	0.933
Distress	3997	0.224	0.000	0.417
E-Index	2875	2.770	3.000	1.117
G-Index	3148	10.306	10.000	2.456
Institutional holding	4080	0.309	0.345	0.187

Table 2: **Panel A: DM pay-for-performance**

This table reports the results of a panel data regression of DM and CEO compensation on division and other divisions' ROA. Specifically, we estimate the following panel regression model:

$$y_{ijt} = \alpha + \beta_1 \times \text{Division ROA}_{jt} + \beta_2 \times \text{Other division ROA}_{it} + \beta_3 \times Log(Total\ assets)_{it} +$$

$$\beta_4 \times Log(Division\ assets)_{jt} + \text{Time FE} + \text{Firm FE}$$

where the dependent variable y is *DM compensation*. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	DM		
	(1)	(2)	(3)
Division ROA	0.423***	0.311***	0.336***
	(0.086)	(0.086)	(0.089)
Other division ROA	0.170	0.224**	0.235***
	(0.109)	(0.087)	(0.091)
Log(Division assets)	0.074***	0.103***	0.108***
	(0.019)	(0.014)	(0.017)
Log(Total assets)	0.316***	0.236***	0.270***
	(0.022)	(0.049)	(0.058)
Constant	3.385***	3.900***	3.942***
	(0.211)	(0.313)	(0.420)
Year FE	Yes	Yes	Yes
Firm FE	No	Yes	Yes
Industry X Year FE	No	No	Yes
Observations	4080	4080	4080
R-squared	0.507	0.789	0.846

Table 2: **Panel B: DM pay-for-performance (Short-term vs Long-term Pay)**
This table reports the results of a panel data regression of DM compensation on division and other divisions'
ROA. Specifically, we estimate the following panel regression model:

$$y_{ijt} = \alpha + \beta_1 \times \text{Division ROA}_{jt} + \beta_2 \times \text{Other division ROA}_{it} + \beta_3 \times Log(Total\ assets)_{it} +$$

$$\beta_4 \times Log(Division\ assets)_{jt} + \text{Time FE} + \text{Firm FE}$$

where the dependent variable y is *Short-term DM compensation* in columns (1), (2) & (3) and *Long-term
DM compensation* in columns (4), (5) & (6). All variables are defined in detail in appendix A. The data
covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is
from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual
files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*)
denote statistical significance at 1%, 5%, and 10% levels respectively.

	Short-term pay			Long-term pay		
	(1)	(2)	(3)	(4)	(5)	(6)
Division ROA	0.321***	0.209***	0.189***	0.674***	0.511***	0.542**
	(0.070)	(0.061)	(0.059)	(0.141)	(0.188)	(0.224)
Other division ROA	0.064	0.029	0.098	0.340	0.658**	0.568**
	(0.059)	(0.058)	(0.069)	(0.255)	(0.275)	(0.262)
Log(Division assets)	0.048***	0.062***	0.053***	0.120***	0.154***	0.176***
	(0.013)	(0.011)	(0.011)	(0.034)	(0.035)	(0.042)
Log(Total assets)	0.202***	0.106***	0.110***	0.473***	0.390***	0.445***
	(0.019)	(0.035)	(0.042)	(0.040)	(0.121)	(0.152)
Constant	4.033***	4.711***	4.417***	0.259	0.665	5.452***
	(0.156)	(0.246)	(0.332)	(0.458)	(0.816)	(1.306)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	Yes	No	Yes	Yes
Industry X Year FE	No	No	Yes	No	No	Yes
Observations	4080	4080	4080	4080	4080	4080
R-squared	0.435	0.778	0.847	0.350	0.626	0.713

Table 3: **DM pay-for-performance (Controlling for Option Grant Rigidity, Stock Return and Tournament Incentives)**
This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA. Specifically, we estimate the following panel regression model:

$$y_{ijt} = \alpha + \beta_1 \times \text{Division ROA}_{jt} + \beta_2 \times \text{Other division ROA}_{it} + \beta_3 \times Log(Total\ assets)_{it} +$$

$$\beta_4 \times Log(Division\ assets)_{jt} + \beta_5 \text{Grant Rigidity or Stock Return or Log(Pay Gap)} + \text{Time FE} + \text{Firm FE}$$

where the dependent variable y is *DM compensation*. In columns (1), (2) and (3), we control for stock return, option grant rigidity and Log(pay gap) respectively. In column (4) (column (5)), we report the results for subsample of divisions in firms with Log(Pay gap) above (below) the median. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Full Sample			High Pay gap	Low pay gap
	(1)	(2)	(3)	(4)	(5)
Division ROA	0.321***	0.336***	0.330***	0.458***	0.321***
	(0.087)	(0.088)	(0.089)	(0.095)	(0.109)
Other division ROA	0.220**	0.235***	0.234***	0.136	0.101
	(0.092)	(0.091)	(0.090)	(0.160)	(0.124)
Stock Return	0.028				
	(0.035)				
Option Grant Rigidity		0.067			
		(0.048)			
Log(Pay Gap)			0.009*		
			(0.005)		
Log(Division assets)	0.110***	0.108***	0.108***	0.066***	0.075***
	(0.017)	(0.017)	(0.017)	(0.022)	(0.023)
Log(Total assets)	0.272***	0.270***	0.269***	0.263***	0.307***
	(0.058)	(0.058)	(0.058)	(0.026)	(0.036)
Constant	3.942***	3.938***	3.877***	3.835***	3.442***
	(0.428)	(0.415)	(0.416)	(0.228)	(0.189)
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	No	No
Industry X Year FE	Yes	Yes	Yes	No	No
Observations	4056	4080	4080	2072	2008
R-squared	0.846	0.846	0.847	0.491	0.407
Δ Division ROA				0.136	
				(0.129)	
Δ Other Division ROA				0.035	
				(0.197)	

Table 4: **Panel A: DM pay-for-performance and Division Relatedness**

This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA for the subsamples based on segment's relatedness to other divisions. The specification is the same as that in Table 2, column (1). y is *DM compensation*. In column (1) (column (2)), we report the results for subsample of divisions with number of other divisions in the firm in the same 3-digit SIC code industry $> (\leq)$ 1, and in column (3) (column (4)), we report the results for subsample of divisions in firms with the value of complementarity measure above (below) the median. Δ Division ROA and Δ Other division ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Related	Not Related	High complementarity	Low complementarity
	(1)	(2)	(3)	(4)
Division ROA	0.256*	0.457***	0.423***	0.382**
	(0.134)	(0.100)	(0.107)	(0.149)
Other division ROA	0.600***	0.089	0.315***	-0.002
	(0.165)	(0.109)	(0.108)	(0.152)
Log(Division assets)	0.049	0.081***	0.053**	0.105***
	(0.038)	(0.021)	(0.026)	(0.029)
Log(Total assets)	0.379***	0.301***	0.340***	0.291***
	(0.041)	(0.025)	(0.031)	(0.029)
Constant	2.820***	3.460***	3.049***	3.659***
	(0.205)	(0.222)	(0.223)	(0.294)
Observations	662	3418	2010	1998
R-squared	0.617	0.491	0.484	0.546
Δ Division ROA	-.201		.041	
	(.164)		(.183)	
Δ Other division ROA	.511***		.317*	
	(.195)		(.183)	

Table 4: **Panel B: Short-term vs Long-term Pay and Division Relatedness**

This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA for the subsamples based on segment's relatedness to other divisions. The specification is the same as that in Table 2, column (1). y is *Short-term DM compensation* in columns (1), (2), (3) & (4) and *Long-term DM compensation* in columns (5), (6), (7) & (8). In column (1) (column (2)), we report the results for subsample of divisions with number of other divisions in the firm in the same 3-digit SIC code industry > ($\leq$) 1, and in column (3) (column (4)), we report the results for subsample of divisions in firms with the value of complementarity measure above (below) the median. The subsamples for columns (5), (6), (7) & (8) are defined analogously. Δ Division ROA and Δ Other division ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Short-term Pay				Long-term Pay			
	Related	Not Related	High complementarity	Low complementarity	Related	Not Related	High complementarity	Low complementarity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Division ROA	0.247***	0.336***	0.282***	0.353***	0.475**	0.705***	0.712***	0.591***
	(0.074)	(0.042)	(0.053)	(0.053)	(0.237)	(0.124)	(0.156)	(0.161)
Other division ROA	0.260**	0.027	0.128**	-0.011	1.062***	0.219*	0.456**	0.191
	(0.103)	(0.045)	(0.063)	(0.054)	(0.329)	(0.132)	(0.187)	(0.165)
Log(Division assets)	0.014	0.058***	0.023*	0.084***	0.131**	0.118***	0.107***	0.140***
	(0.020)	(0.010)	(0.013)	(0.012)	(0.064)	(0.029)	(0.038)	(0.038)
Log(Total assets)	0.222***	0.195***	0.216***	0.179***	0.535***	0.459***	0.501***	0.446***
	(0.022)	(0.011)	(0.014)	(0.013)	(0.069)	(0.031)	(0.041)	(0.040)
Constant	4.118***	4.021***	3.870***	4.183***	-0.463	0.392	-0.313	0.744*
	(0.435)	(0.102)	(0.149)	(0.126)	(1.395)	(0.299)	(0.441)	(0.384)
Observations	662	3418	2010	1998	662	3418	2010	1998
R-squared	0.464	0.435	0.383	0.507	0.396	0.346	0.324	0.391
Δ Division ROA	-.089		-.072		-.231		.121	
	(.127)		(.145)		(.264)		(.226)	
Δ Other division ROA	.233**		.239*		.843**		.265	
	(.118)		(.083)		(.350)		(.249)	

Table 5: **DM pay-for-performance and Accounting Informativeness**

This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA. The specification is the same as that in Table 2, column (1). In column (1) (column (2)), we report the results for subsample of divisions in industries with earnings volatility above (below) the median, and in column (3) (column (4)), we report the results for subsample of divisions in industries with earnings coefficient above (below) the median. Δ Division ROA and Δ Other division ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	High earnings Volatility	Low earnings Volaitility	High earnings Coefficient	Low earnings Coeffcient
	(1)	(2)	(3)	(4)
Division ROA	0.292***	0.613***	0.597***	0.269**
	(0.087)	(0.175)	(0.136)	(0.120)
Other division ROA	0.038	0.193*	0.092	0.197
	(0.112)	(0.111)	(0.126)	(0.143)
Log(Division assets)	0.064***	0.086***	0.064**	0.086***
	(0.023)	(0.028)	(0.029)	(0.024)
Log(Total assets)	0.362***	0.284***	0.294***	0.342***
	(0.031)	(0.025)	(0.029)	(0.030)
Constant	3.231***	3.433***	3.727***	2.748***
	(0.309)	(0.234)	(0.251)	(0.246)
Observations	1923	1963	1935	1963
R-squared	0.542	0.516	0.501	0.532
Δ Division ROA	-.321*		.328*	
	(.186)		(.185)	
Δ Other division ROA	-.155		-.105	
	(.110)		(.189)	

Table 6: **DM pay-for-performance and Divisional Investment Opportunities**

This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA for the subsamples based on segment's growth potential. The specification is the same as that in Table 2, column (1). y is *DM compensation*. In column (1) (column (2)), we report the results for subsample of divisions in industries with Ind. market to book above (below) the median, and in column (3) (column (4)), we report the results for subsample of divisions with sales growth above (below) the median. Δ Division ROA and Δ Other division ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	High Ind. MTB	Low Ind. MTB	High Sales Growth	Low Sales Growth
	(1)	(2)	(3)	(4)
Division ROA	0.307***	0.510***	0.689***	0.316***
	(0.116)	(0.131)	(0.139)	(0.118)
Other division ROA	0.007	0.261*	0.071	0.281**
	(0.103)	(0.158)	(0.146)	(0.116)
Log(Division assets)	0.093***	0.059**	0.111***	0.043*
	(0.024)	(0.025)	(0.029)	(0.024)
Log(Total assets)	0.343***	0.310***	0.295***	0.337***
	(0.032)	(0.027)	(0.032)	(0.027)
Constant	2.959***	3.379***	3.548***	3.173***
	(0.265)	(0.273)	(0.296)	(0.213)
Observations	1896	1965	1761	1788
R-squared	0.539	0.516	0.532	0.512
Δ Division ROA	-.203		.374**	
	(.169)		(.167)	
Δ Other division ROA	-.254*		-.210*	
	(.151)		(.120)	

Table 7: **Panel A: DM pay-for-performance and Industry Condition**

This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA for the subsamples based on industry conditions. The specification is the same as that in Table 2, column (1). *y* is *DM compensation*. In columns (1), and (2), we focus on the managers of divisions that are in distressed industries. We then further split this sample into two depending on whether another division in the firm is in distress (column (1)) or not (column (2)). Similarly, in columns (3), and (4), we focus on pay for performance of division managers of non-distressed divisions within a firm and again further split this sample into two depending on whether another division in the firm is in distress (column (3)) or not (column (4)). Δ Division ROA and Δ Other division ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Own Distressed Other Distressed	Own Distressed Other Non-Distressed	Own Non-Distressed Other Distressed	Own Non-Distressed Other Non-Distressed
	(1)	(2)	(3)	(4)
Division ROA	0.005	0.186	0.697***	0.718***
	(0.106)	(0.261)	(0.203)	(0.117)
Other division ROA	-0.020	1.011**	-0.219*	0.396***
	(0.133)	(0.396)	(0.121)	(0.107)
Log(Division assets)	0.046	-0.014	0.189***	0.070***
	(0.034)	(0.074)	(0.039)	(0.021)
Log(Total assets)	0.376***	0.414***	0.224***	0.320***
	(0.041)	(0.080)	(0.042)	(0.025)
Constant	3.006***	3.836***	4.102***	3.341***
	(0.179)	(0.311)	(0.237)	(0.239)
Observations	666	186	534	2475
R-squared	0.580	0.532	0.559	0.499
Δ Division ROA	-.182		-.021	
	(.269)		(.218)	
Δ Other division ROA	-1.031**		-.615**	
	(.218)		(.513)	

Table 7: **Panel B: Short-term vs Long-term Pay and Industry Condition**

This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA for the subsamples based on industry conditions. The specification is the same as that in Table 2, column (1). *y* is *Short-term DM compensation* in columns (1), (2), (3) & (4) and *Long-term DM compensation* in columns (5), (6), (7) & (8). In columns (1), and (2), we compare pay (Short-term) for performance of division managers of divisions that are in distressed industries when another division in the firm is also in distress (column (1)) and when none of the other divisions in the firm are in distress (column (2)). Similarly, in columns (3), and (4), we focus on pay for performance of division managers of non-distressed divisions within a firm and again further split this sample into two depending on whether another division in the firm is in distress (column (3)) or not (column (4)). The subsamples for columns (5), (6), (7) & (8) are defined analogously. Δ Division ROA and Δ Other division ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Short-term Pay				Long-term Pay			
	Own Distressed Other Distressed	Own Distressed Other Non-Distressed	Own Non-Distressed Other Distressed	Own Non-Distressed Other Non-Distressed	Own Distressed Other Distressed	Own Distressed Other Non-Distressed	Own Non-Distressed Other Distressed	Own Non-Distressed Other Non-Distressed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Division ROA	0.030	0.194	0.333***	0.522***	0.041	0.177	1.448***	1.112***
	(0.090)	(0.144)	(0.124)	(0.100)	(0.208)	(0.507)	(0.461)	(0.207)
Other division ROA	0.021	0.138	-0.151*	0.173**	0.050	1.747**	-0.329	0.715***
	(0.072)	(0.246)	(0.088)	(0.079)	(0.428)	(0.811)	(0.275)	(0.245)
Log(Division assets)	0.050*	0.070*	0.089***	0.035**	0.130*	-0.013	0.378***	0.090**
	(0.026)	(0.040)	(0.028)	(0.016)	(0.073)	(0.140)	(0.075)	(0.040)
Log(Total assets)	0.185***	0.179***	0.182***	0.220***	0.465***	0.607***	0.237***	0.520***
	(0.031)	(0.049)	(0.032)	(0.023)	(0.083)	(0.159)	(0.081)	(0.044)
Constant	4.140***	4.853***	4.533***	3.966***	0.165	0.157	1.487***	0.009
	(0.145)	(0.261)	(0.203)	(0.183)	(0.332)	(0.988)	(0.516)	(0.523)
Observations	666	186	534	2475	666	186	534	2475
R-squared	0.436	0.512	0.493	0.441	0.372	0.407	0.400	0.349
Δ Division ROA	-.164		-.189		-.137		.335	
	(.165)		(.150)		(.530)		(.480)	
Δ Other division ROA	-.1173		-.323***		-1.697*		-1.044***	
	(.246)		(.112)		(.871)		(.360)	

Table 8: **DM pay-for-performance and Divisional Subsidy**

This table reports the results of a panel data regression of DM compensation on division and other divisions' ROA for the subsamples based on segment investments. The specification is the same as that in Table 2, column (1). y is *DM compensation*. In column (1) (column (2)), we report the results for subsample of divisions with divisional subsidy above (below) the median and in column (3) (column (4)), we report the results for subsample of divisions with positive (negative) divisional subsidy. Δ Division ROA and Δ Other division ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	High subsidy	Low subsidy	Positive subsidy	Negative subsidy
	(1)	(2)	(3)	(4)
Division ROA	0.146	0.658***	0.088	0.680***
	(0.119)	(0.152)	(0.120)	(0.152)
Other division ROA	0.135	0.295**	0.118	0.312**
	(0.197)	(0.134)	(0.197)	(0.131)
Log(Division assets)	0.066***	0.139***	0.075***	0.133***
	(0.023)	(0.028)	(0.025)	(0.027)
Log(Total assets)	0.313***	0.297***	0.309***	0.302***
	(0.026)	(0.032)	(0.027)	(0.031)
Constant	3.371***	3.553***	3.347***	3.492***
	(0.235)	(0.291)	(0.249)	(0.288)
Observations	1702	1728	1623	1807
R-squared	0.494	0.548	0.499	0.553
Δ	-.512***		-.592**	
	(.194)		(.195)	
Δ Other division ROA	-.160		(-.194)	
	(.239)		(.239)	

Table 9: **DM pay-for-performance and Corporate Governance**
This table reports the results of a panel data regression of DM compensation on division and other divisions'
ROA for the subsamples based on corporate governance indices and institutional ownership. The specification
is the same as that in Table 2, column (1). y is *DM compensation*. Δ Division ROA and Δ Other division
ROA are the difference in coefficient estimates for the subsamples. All variables are defined in detail in
appendix A. The data covers the period 1992-2009. The compensation data is from Execucomp, segment
level financial data is from the Compustat Business Segment files and firm-level data is from the Compustat
Industrial Annual files. The standard errors are robust to heteroskedasticity and clustered at the firm level.
(***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	High Inst. Own	Low Inst. Own	Low E-index	High E-index	Low G-index	High G-index
	(1)	(2)	(3)	(4)	(5)	(6)
Division ROA	0.392***	0.442***	0.468***	0.336**	0.283**	0.541***
	(0.084)	(0.140)	(0.145)	(0.146)	(0.117)	(0.161)
Other division ROA	0.410***	0.030	0.299*	0.097	0.269**	0.044
	(0.108)	(0.128)	(0.171)	(0.179)	(0.128)	(0.188)
Log(Division assets)	0.095***	0.055*	0.060**	0.084***	0.089***	0.070**
	(0.022)	(0.029)	(0.029)	(0.032)	(0.026)	(0.034)
Log(Total assets)	0.291***	0.334***	0.323***	0.321***	0.310***	0.328***
	(0.024)	(0.035)	(0.034)	(0.042)	(0.029)	(0.045)
Constant	4.071***	3.181***	4.558***	3.075***	3.218***	3.300***
	(0.310)	(0.214)	(0.175)	(0.274)	(0.426)	(0.276)
Observations	2032	2048	1159	1716	1650	1498
R-squared	0.529	0.502	0.607	0.438	0.571	0.456
Δ Division ROA	-.050		-.132		-.258	
	(.160)		(206)		(.198)	
Δ Other division ROA	.380**		.202		(.225)	
	(.164)		(.247)		(.227)	

Appendix A: Variable Definitions

- *Complementarity*: A firm level measure of overlap in the final consumers of goods produced by primary and secondary divisions of a firm, where primary division is defined as the division with largest asset base.

- *Distress*: A dummy variable that takes the value one during a year if the median two-year stock return of all single segment firms in that division's 3-digit SIC industry is less than -30%.

- *Division ROA*: The ratio of division's operating profits over total assets of the division. This variable is winsorized at 1% level to mitigate the effect of outliers. This is estimated using variables *ops* and *at* from Compustat historical segment files as $\frac{ops}{at}$.

- *Earnings Coefficient*: The coefficient estimate obtained from linear regression of stock returns on change in ROA for all stand alone firms in the division's 3-digit SIC industry.

- *Earnings Coefficient indicator*: A firm level dummy variable that takes the value 1 for conglomerates with above median value of asset-weighted average *earnings coefficient* of the conglomerate segments.

- *Earnings Volatility*: The standard deviation of operating income after depreciation of all stand alone firms in the division's 3-digit SIC industry. This is estimated using variables from Compustat fundamentals annual files as the standard deviation of $\frac{oiadp}{at}$.

- *Earnings Volatility indicator*: A firm level dummy variable that takes the value 1 for conglomerates with above median value of asset-weighted average *earnings volatility* of the conglomerate segments.

- *High complementarity*: A dummy variable that identifies firms with above median *complementarity*.

- *High E-index*: A dummy variable that identifies firms with above median value of E-index (Bebchuk et al. (2009)) in our sample.

- *High earning vol*: Dummy variable that takes the value one for divisions in industries with above median *Earnings volatility*

- *High earnings coeff*: Dummy variable that takes the value one for divisions in industries with above median *Earnings Coefficient*

- *High G-index*: A dummy variable that identifies firms with above median value of G-index (Gompers et al. (2003)) in our sample.

- *High Ind. MTB*: Dummy variable that takes the value one for divisions in industries with above median *Ind. market to book*. The market-to-book ratio is estimated using variables from Compustat fundamentals annual files as $\frac{csho \times prcc_f}{ceq}$.

- *High Institutional Ownership*: A dummy variable that identifies firm-years with above median *Institutional Ownership* in our sample.

- *High sales growth*: Dummy variable that takes the value one for divisions with above median *Segment Sales growth*.

- *High Subsidy*: A dummy variable that identifies divisions with the value of subsidy (computed using the procedure outlined in Billett and Mauer (2003)) above the sample median.

- *Industry Earnings volatility indicator*: A firm level dummy variable that takes the value 1 for conglomerates with above median value of asset-weighted average earnings volatility of the conglomerate segments.

- *Ind. market to book*: The median Ind. market to book of all stand alone firms in the division's 3-digit SIC code industry during the year.

- *Institutional Ownership*: Total proportion of shares outstanding held by the ten institutional investors with the largest holding of the firm's shares.

- *Log(Division assets)*: Natural log of the value of total assets of the division. This is estimated using the variable *at* from Compustat historical segment files as $Log(1 + at)$.

- *Log(Pay gap)*: Natural log of the difference in total compensation received by the CEO and second-highest paid C-suite executive within a firm.

- *Log(Total assets)*: Natural log of the value of total assets of the conglomerate. This is estimated using the variable *at* from Compustat fundamentals annual file as $Log(1 + at)$.

- *Other division ROA*: For each division of the firm we calculate the ratio of sum total of *Division ROA* of all other divisions in the firm to sum total of *Total Assets* of all other divisions. This variable is winsorized at 1% level to mitigate the effect of outliers.

- *Positive Subsidy*: A dummy variable that identifies divisions that receive subsidy (computed using the procedure outlined in Billett and Mauer (2003)).

- *Related*: A dummy variable that takes the value one if the number of other divisions in the same 3-digit SIC code industry is greater than one.

- *Segment Sales growth*: Percentage annual change in division sales. This is estimated using the variable *sale* from Compustat historical segment files as $\frac{sale - lag.sale}{sale}$.

- *Total compensation*: It is the sum of annual salary, bonus, present value of stock awards, present value of stock option awards, other annual compensation, long-term incentive payouts, and other cash payouts. *Short-term compensation* is defined as the sum of salary and bonus while *long-term compensation* is the sum total of value of option grants, restricted stock grants and other long term incentive payouts.