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"CEO Pay-for-Complexity and Opaque Multinational Diversification"

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CEO Pay-for-Complexity and Opaque Multinational Diversification

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ABSTRACT

We develop measures of multinational enterprise (MNE) opacity that capture relatively intense diversification into countries classified as (1) tax-havens (2) having small GDP (3) having a high-corrupt index and (4) having a weak rule of law. We first establish that CEO pay is, on average, increasing in the extent of multinational diversification, consistent with intuition documented in prior work that more complex firms are matched to higher ability CEOs, which in turn requires a pay premium. But we then document that CEO pay is *decreasing* in multinational diversification when the diversification is opaque, despite the fact that the opacity adds complexity to the firm. Additionally, in general, for high levels of multinational diversification, pay is explicitly designed so as not to provide rewards for multinational opacity. An implication of our findings is that private benefits likely exist for CEOs who diversify highly multinational-diverse firms in an opaque manner or further diversify firms already opaque.

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1. Introduction

This study investigates whether the CEO pay premium for managing complex firms is increasing or decreasing in settings where complexity can be classified as opaque.[1] Prior work documents that a significant determinant of the level of CEO pay is the extent to which a firm is diversified across multiple industrial segments.[2] Intuitively, more complex firms are matched with higher ability CEOs, and to attract such CEOs, the firm must pay such CEOs relatively more. While evidence has not been explicitly documented in prior empirical work, similar intuition applies to the setting of multinational diversification.

Expansions across international borders, however, may create opportunities for CEOs to extract private benefits or divert rents. In some cases, the costs to the firm of rent diversion can outweigh the benefits to the firm of multinational expansion (Desai and Dharmapala 2006).[3] If the expansion is not firm-value-adding, the CEO may have incentives to make the nature of the expansion opaque.[4] From a contracting perspective, it is unclear then whether contract designers would reward such opaque expansions. Further, it is unclear whether prior research documenting higher levels of pay for more complex firms would apply if the increased complexity increases firm opacity and creates opportunities for the CEO to extract rents.

Using industrial segment disclosures, we first replicate, in a more recent time period, the Rose and Shepard (1997) finding of a CEO pay premium associated with more

[1] In conceptual terms, throughout this study we classify multinational diversification as *opaque* if a firm's stakeholders find it relatively difficult to detect a managerial diversion of private benefits.

[2] For example, Rose and Shepard (1997) document evidence that CEOs who operate in firms with two lines of business average a premium of 12% of salary and bonus and 14% of total compensation over CEOs who operate in firms with a single line of business.

[3] A recent anecdote illustrating such behavior is the case of the Wyly brothers who were subject to SEC investigations over the trading of shares and alleged ill-gotten gains from complicated offshore entities designed to avoid U.S. securities legislation (Scannell 2010) .

[4] For example, when the firm's expansion is opaque, the CEO can exploit (with a lower probability of detection) private benefits that may be available.

intense industrial diversification. Next, using international segment disclosures, we construct an analogous diversification measure reflecting complexity based on multinational expansion. We then include this measure in a multivariate regression of the level of CEO pay on economic determinants identified in prior work, including the industrial diversification measure. Controlling for the industrial diversification premium and standard economic determinants of CEO pay levels, we find evidence of a CEO pay premium increasing in multinational diversification.

We interpret the economic significance of this finding as follows. For a firm with a one standard deviation increase in multinational diversification, the CEO receives a 2.37% percent increase in current pay. For the average executive, this translates into an increment in current pay of $20,000. Moreover, a one standard deviation increase in multinational diversification increases total compensation by 5.39 percent. This translates into a total compensation increment of $119,000, ceteris paribus.

We next use regulatory disclosures about the countries in which the firm operates subsidiaries (provided in Exhibit 21 of the annual 10K reports of US firms) to construct four separate measures of multinational opacity. First, we measure tax haven intensity by counting the number of subsidiaries located in tax havens and dividing by the total number of the firm's material subsidiaries. For the cross-section of firm-year observations, we then identify the highest decile of tax haven intensity as a proxy for MNE opacity. Although there are likely tax benefits to the firm of locating in tax haven countries, those benefits are not always value-adding (Desai and Dharmapala 2006; Morck and Yeung 1991). For example, if locating operations in tax havens creates opacity designed to hide income from taxing authorities, it may also create opacity that could be used by management to divert the firm's resources for management's personal purposes. In addition, if cash is "trapped" in foreign countries because of the concurrence of a lack of investment opportunities in tax haven countries and a penalty tax for repatriating cash back to the United States, then the international expansion may reduce firm value relative

to domestic investment opportunities (Foley et al. 2007). Thus we expect that firms with intense tax have operations may in fact have CEOs that are acting in their own self interest and in conflict with shareholder interests.

Our second measure of MNE opacity focuses conceptually on the size of the country's product market. Intuitively, we conjecture that countries with the smallest GDP are least likely to have opportunities for market growth for the firm. Thus, we implicitly assume an important reason for why the CEO chooses to expand into such countries is that there may be greater opportunities for managerial rent diversion. For each year, we identify the GDP for each country in which our sample firms have material subsidiaries. We then identify in each year countries in the lowest quartile of GDP. Finally, we classify an opaque diversification as one in which the firm operates in the 95th percentile or above of their total percentage of subsidiaries in the smallest GDP countries.

Our third measure considers a corruption index in each country. Intuitively, highly corrupt markets create greater firm complexity and a higher ability CEO is likely necessary to navigate such markets. But at the highest level of expansions into such markets, we conjecture that there may also be greater opportunities for managerial rent diversion. For each year, we rank countries according to the corruption index. We then identify by year the countries in the most corrupt quartile of the corruption index. Next, we classify an opaque diversification as one in which the firm operates in the 90th percentile or above of their total percentage of subsidiaries in countries classified in the most corrupt quartile of the corrupt index.

Our final measure of MNE opacity is theoretically motivated similarly to, and constructed identically as the third measure, except it replaces the corruption index with a rule of law index; opaque diversifications are assumed to be characterized by intensity of material subsidiary locations in the weakest quartile of the rule of law index.

After constructing these measures, we regress CEO current pay and total pay separately on standard economic determinants, both industrial and multinational

diversification, an indicator variable for MNE opacity, and an interaction of multinational diversification and the opacity indicator variable. If the MNE opacity is no different to other types of international expansion, the coefficient on the interaction should be statistically insignificant. If the MNE opacity creates incremental complexity and a matching of higher CEO ability is required to manage such a setting, then the coefficient on the interaction will be positive. If the MNE opacity represents an expansion that contract designers view as non-value adding, the coefficient will be negative.

We find that the coefficient on the interaction between MNE opacity and multinational diversification is consistently negative. The negative coefficient is statistically significant in 7 of the 8 cases. Thus, at a conceptual level, the pay-for-complexity relation is significantly weaker for firms with evidence of MNE opacity. Our evidence suggests that not only is the pay-for-complexity relation weakened, on average the premium becomes a pay "penalty" for the CEO, where the firm has existing high levels of multinational diversification or existing multinational diversification that is opaque. For example, consider two firms at the same level of multinational diversification, with one firm classified as having an unusually high concentration of subsidiaries in highly corrupt countries; the other not so. The CEO of the former firm would receive both a current and total pay penalty while the CEO of the latter firm would receive both a current and total pay premium, ceteris paribus.

The evidence in this study has implications for governance of multinational firms. Despite evidence that CEO pay contracts are, on average, designed to discourage opaque multinational diversification, evidence seems to suggest that such forms of diversification persist. This implies that for a CEO to expand the firm into countries in which explicit disincentives are included in the compensation contract for doing so, there exists rent diversion opportunities or potentially private benefits to the CEO for the international expansion. This creates a demand for alternative forms of governance mechanisms to alleviate remaining agency problems.

The paper is organized as follows. The next section develops competing hypotheses about the role of MNE opacity in the pay-for-complexity relation. Section 3 details the sample selection procedures and provides descriptive statistics on the variables of interest. Section 4 discusses our empirical methods and results. Section 5 concludes.

2. Hypothesis Development

The role of a firm's complexity in determining CEO pay levels is well documented in prior work. For example, Rose and Shepard (1997) measure the diversification of a firm's activities based on the number of, and sales within, disclosed industrial segments of multi-segment firms. They find their diversification measure to be a significant determinant of CEO pay, incremental to standard economic determinants of CEO pay levels, such as firm size, firm performance, uncertainty about CEO ability, and the industry in which the firm operates.[5] The intuition for the diversification pay premium is that higher CEO ability is matched to more complex firms and rewarded accordingly.[6]

In this study, we build on the conceptual intuition that CEO pay is increasing in the complexity of a firm as a reward for higher ability. In particular, we examine whether diversification of the firm's operations across international borders yields a similar CEO pay premium to that arising from diversification by way of industrial segments.

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[5] Subsequent literature has shown that diversification effects are also related to the fixed effects on return on assets (Bertrand and Schoar 2003), corporate governance (Bushman et al. 2004), and board size (Yermack 1996).

[6] An alternative explanation for the observed cross-sectional pay premium for diversification is that an entrenched CEO demands a premium for managing a diversified firm, irrespective of the level of the CEO's ability. This view is consistent with earlier research that documents a significantly positive relation between diversification and executive compensation, which suggested considerable motivation for managers to engage in mergers and acquisitions (Ramaswamy et al. 2002). However, Rose and Shepard (1997) show support for the ability-matching explanation and refute the entrenchment explanation for the diversification premium in two ways. First, they present evidence that the CEO pay premium for diversification is consistent irrespective of the level of CEO tenure, suggesting that an entrenched CEO does not drive the level of the premium. Second, they show that new CEOs hired at already diversified firms earn more than incumbent CEOs who diversify their firms, suggesting that a pay premium doesn't exist for entrenched CEOs who diversify the firm's operations.

Moreover, we investigate whether the established positive relation between CEO pay and firm complexity holds for multinational diversification that can be identified as opaque.

We operationalize diversification across international borders by constructing a Herfindahl measure of sales within geographic segments disclosed in firms' annual 10K reports, conceptually similar to the way in which diversification across industrial segments is measured in prior work (e.g., Rose and Shepard, 1998). We next build on prior work that documents tax-related effects of firms disclosing the country locations of material subsidiaries in their annual 10K report (Dyreng and Lindsey 2009). Identifying the location of material foreign subsidiaries, we create several measures of multinational opacity based on whether the firm expands into countries that are tax havens, have small GDP, have high corruption, or have a weak rule of law. The subsections below present this study's hypotheses.

2.1 THE CEO PAY EFFECT OF MULTINATIONAL DIVERSIFICATION

Prior work establishes that CEO pay is increasing in the diversification of the firm's activities across multiple business segments (Rose and Shepard, 1997). Assuming that managing diverse activities requires higher ability than managing a focused activity, diversifying across different types of production functions increases the complexity associated with managing the firm. It is therefore intuitive to observe a CEO pay premium based on that increased complexity.

We argue that locating subsidiaries in multiple foreign countries increases the complexity of a CEO's task, relative to the case where the firm is completely domestic, even if it operates in multiple industrial segments. Thus, we contend that this multinational measure of diversification captures a different economic construct than industrial diversification. Holding all else equal, a firm that diversifies through locating material subsidiaries in foreign countries faces different economic constraints than a firm that diversifies by creating business segments domestically.

There exist at least three types of differing economic constraints. First, by crossing international borders, there is a greater likelihood that the firm encounters language barriers, which may require CEO abilities that differ from the setting where the CEO manages completely English-speaking operations. Second, compared to the US, the legal environment and the level of corruption is likely to differ significantly in many foreign countries, which presents new types of risk the CEO must manage. Third, the distance between the location of the firm's headquarters and most foreign countries presents new challenges that the CEO must manage; for example, to what extent does the CEO allocate scarce time to travelling to the foreign subsidiary offices?

We predict that the accumulation of these economic constraints will require the matching of a higher ability CEO with the task to manage the MNE, independent of whether the firm is diversified across industrial segments. Formally, our first hypothesis is:

H1: Holding constant the level of industrial diversification, CEO pay is increasing in the extent of multinational diversification.

In summary, to the extent that these economic constraints in multinational expansion increase the complexity of the CEO task, we expect that a CEO who manages a MNE will receive a pay premium for managing a MNE, over and above any pay premium received for industrial diversification.

2.2 MULTINATIONAL OPACITY

Does a positive relation always exist between CEO pay and complexity as measured by multinational diversification? Prior work suggests that managers have greater opportunities to divert the firm's resources for their personal use or extract private benefits by expanding into countries where it is more difficult to monitor the manager's actions (Desai and Dharmapala 2006). This may be costly to the firm and could outweigh the benefits from expansion into international markets.

Under what conditions would the costs of multinational diversification outweigh

the benefits? When the expansion is difficult to monitor for both shareholders and those who govern the firm, a greater likelihood exists for costs to exceed benefits. At a conceptual level, we label such expansions as opaque and the more opaque the international expansion, the greater the level of MNE opacity.[7]

The contracting implications of MNE opacity are unclear. On the one hand, opaque multinational diversification is likely to be associated with an even larger pay premium than in the case of an expansion without opacity. This is because the economic costs of an opaque MNE expansion will likely include investing in understanding and operating within the constraints of unfamiliar taxation legislation, foreign corruption, and weak legislative enforcement contexts. In turn, this means that the complexity in which the firm operates is likely exacerbated. In other words, an opaque expansion into a country creates greater marginal complexity for the firm than a non-opaque expansion. If this is true and complexity is matched to CEO ability, then it is conceivable that MNE opacity will attract an even higher pay premium than the average international expansion. In formal terms, we hypothesize:

H2a: The positive relation between CEO pay and the extent of multinational diversification is increasing in MNE opacity.

On the other hand, a competing hypothesis is that contract designers seek to build explicit terms into the CEO pay contract to discourage multinational expansions that create opportunities for the CEO to expropriate resources from the firm. In other words, contract designers may create disincentives for a CEO to increase multinational opacity. This can be achieved by offering a reduced level of CEO pay in the presence of MNE opacity, relative to CEO pay in the presence of more transparent international expansions. Stated formally, we hypothesize:

H2b: The positive relation between CEO pay and the extent of multinational diversification is

[7] We operationalize multinational opacity in detail in the next Section.

decreasing in MNE opacity.

In effect, if the H2b prediction holds, then the pay-for-complexity relation that holds (on average) will reverse for MNEs the more that foreign expansion of the firm signifies opacity. A critical assumption underpinning this competing hypothesis is that despite the relatively lower level of pay, the CEO still derives utility from opaque expansions that outweigh the relative loss in explicit pay. This assumption is necessary because if the disincentives served the purpose of eliminating MNE opacity, we would be unable to test empirically the predicted H2b relation. We contend that the utility the CEO derives from an opaque expansion represent private benefits that are not captured in explicit pay.

3. Data and Empirical Design

3.1 Data Sources and Sample Selection

We obtain data for our empirical tests for the 1992 to 2008 fiscal period from the following sources:

- Execucomp, which contains data on CEO salary and bonus, total compensation, age, and CEO appointment and termination dates, for S&P 1500 firms.
- Compustat/CRSP, which contains financial, returns, industry segment, and industry identification data.
- 10-K reports at http://sec.gov, which provide disclosures of the country names in which firms locate material subsidiaries.
- BoardEx, which contains data on CEO birthyear (for missing age variables in Execucomp), the identification of whether an executive is a founder or co-founder (under "Role Description"), and whether an executive was hired from outside the firm for executives currently included in the BoardEx dataset.

- Field-Ritter dataset of company founding dates, as used in Field and Karpoff (2002) and Loughran and Ritter (2004), which contains corporate founding dates for identifying founders not included in the BoardEx dataset.[8,9]
- World Bank Worldwide Governance indicators dataset for corruption and rule of law variables.[10]
- GlobalPolicy.org listing of countries identified as tax havens.[11]

Our sample selection procedure is presented in Table 1. To be included in our sample, we first require that a firm-year observation initially must be accessible in Execucomp, which imposes that the firm is listed in the S&P 1500 for any specific firm-year. We then require that firms have the segment data necessary to calculate our measures of diversification. Next, financial and return information must be available in Compustat/CRSP for the current and the prior two prior fiscal years. Finally, data must be available to calculate the remaining control variables.

We also impose two further data restriction. First,the requirement to include two years of lagged data in the regressions requires the deletion of observations where CEO tenure is less than three years. Second, we follow Appendix, Table A1 from Rose and Shepard (1997) for our construction of weighted industry effects. For the remaining dataset, we hand collect missing control variable data (e.g., missing CEO appointment dates in Execucomp, which are necessary to calculate the tenure variable) to the extent possible using Hoovers and other online data sources. Our final sample for all empirical tests (except Table 2, Panel A) contains 15,875 firm-year observations, which represent 2,363 unique firms and 3,861 unique CEOs.

The resulting sample covers the fiscal years 1992 to 2008. In contrast, Rose and

[8] See http://bear.cba.ufl.edu/ritter/FoundingDates.htm for further details.
[9] These are typically executives who founded companies and departed their founded firm before the 2000 year (a current cutoff point for BoardEx data).
[10] See http://info.worldbank.org/governance/wgi/sc_country.asp and Kaufmann et al. (2009) for further details.
[11] See http://www.globalpolicy.org/component/content/article/172/30128.html for further details.

Shepard (1997) uses a dataset from *Forbes'* annual CEO compensation survey over 1985-1990. Thus, the present sample offers an opportunity to test whether the empirical findings in the earlier study hold in a more recent sample of firm-year compensation outcomes.

3.2 VARIABLE MEASUREMENT AND DESCRIPTIVE STATISTICS

We report in Table 2 univariate statistics for all variables and in Table 3 bivariate correlations between each of the variables.

3.2.1 Dependent Variables

Throughout our tests we use two dependent variables, *LNCURRENT* and *LNTOTAL*.[12] First, to investigate whether our results hold for short-term compensation (*LNCURRENT*), we use the natural logarithm of the total of salary and bonus for a specific year. Second, our empirical tests consider overall annual compensation (*LNTOTAL*). We use the total compensation for each CEO as defined by Execucomp (*TDC1* in the Execucomp database), which includes the value of salary, bonus, other annual compensation, the value of restricted stock granted, long-term incentive plan payouts, and the value of stock options granted during the fiscal year. Means (medians) of the two dependent variables are 6.756 (6.758) for *LNCURRENT* and 7.699 (7.653) for *LNTOTAL*. Because of the skewness in the distribution of the raw current and total compensation variables we use the natural logarithm of the raw values in our tests below.

3.2.2 Diversification Measures

Our measure of industrial diversification (*DIVERSE*) is constructed in the same way as Rose and Shepard (1997). Based on the Compustat Industry Segment dataset classification of a four-digit SIC code to each reported segment, we are able to count the number of industrial segments reported by each firm. We then extract revenues for each of the reported industrial and geographic segments, respectively. Our measure of

[12] Specific definitions of all empirical variables are contained in the Appendix.

multinational diversification (*GEODIVERSE)* is constructed using a similar procedure based on the number of, and sales reported in each of, the international geographic segments disclosed in the Compustat Industry Segment dataset.[13] We detail the specific construction of these measures in the Appendix. Both diversification measures are constructed to increase nonlinearly in the number of segments, holding constant the variance of the segment size. The measures also decrease in the variance of segment shares, holding constant the number of segments.

Table 1 shows that the mean value of *DIVERSE* in our 1992-2008 sample is 0.17, which is somewhat lower than the mean of the *DIVERSE* measure of 0.32 in the 1985-1990 time period covered in Rose and Shepard (1997). However, for firms operating in more than one business segment, the mean of *DIVERSE* (untabulated) is 0.40 (standard deviation of 0.20), which compares more favorably to the Rose and Shepard (1997) benchmark of 0.48 (standard deviation of 0.19) for the corresponding subsample with only multiple business segments. We report a mean (median) of 0.26 (0.21) for *GEODIVERSE*, implying that firms on average in our sample diversify more geographically than they do industrially.

3.2.3 Opacity Measures

Conceptually, our measures of opacity are intended to capture contexts in which the firm is confronted with distinctly high levels of economic constraints from multinational diversification. To capture these constraints, we measure how intensively subsidiaries are located in countries that are tax havens, in countries with relatively high corruption, in countries where the rule of law is relatively weak, and in countries with relatively low opportunities for market growth.

Our proxies for opacity are based on the following three main arguments. First, locating in a tax haven may not be value-adding for the MNE if the required corporate

[13] In our final dataset, our sample firms have 754 unique segments that Compustat classifies as a "GEOSEG." Of these 754, all but 18 (2.39%) are identifiable as foreign (i.e., non-US) geographic segments.

structure creates opacity designed to hide income from the taxing authorities. (Desai and Dharmapala 2006; Morck and Yeung 1991). If the opacity is severe enough, managers will also be able to hide their actions from shareholders or other firm monitors and extract rents from the firm. In addition,, an international expansion into a tax haven may reduce firm value relative to domestic investment opportunities because investment opportunities in tax haven countries may be limited and repatriating cash back to the United States attracts a penalty tax (Foley et al. 2007). A particularly high concentration of subsidiaries in tax havens is thus assumed to be suggestive of possible CEO self-interest, at the expense of the shareholders of the firm.

Second, we assume that expansions into extremely small product markets have a greater probability of low growth opportunities for the firm and therefore instead have a greater probability that they create private benefits for a self-interested CEO. Thus, we assume an important reason for why a firm might have a high concentration of subsidiaries in the smallest GDP countries is that there may be greater opportunities for managerial rent diversion.

Third, highly corrupt markets or relatively lawless jurisdictions create greater firm complexity. In theory, a higher ability CEO is matched to manage operations in such complex markets. However, we conjecture a particularly high concentration of subsidiaries in either the most corrupt or the least lawful countries suggests a shareholder wealth-reduction motive for the subsidiary locations. Instead, there may be greater opportunities for a CEO to extract private benefits.

Based on these assumptions, we measure multinational opacity in four ways, as follows:[14]

i. *MANYHAVEN:* We use Exhibit 21 annual 10K data and globalpolicy.org classifications to count for each firm-year the number of subsidiaries located in tax

[14] See Appendix for further and more specific details on the calculation of each of these variables.

havens. We then divide by the total number of the firm's material subsidiaries. We next identify the highest decile of tax haven intensity in our sample of firms as a first proxy for MNE opacity.

ii. *MANYSMALLGDP:* For each year, we identify the GDP for each country in which our sample firms have material subsidiaries. We next identify in each year countries in the lowest quartile of GDP. We then classify an opaque diversification as one in which the firm operates in the 95th percentile or above of their total percentage of subsidiaries in the smallest GDP countries.

iii. *MANYCORRUPT:* For each year, we rank countries according to the control of corruption index (hereafter, corruption index) from the Worldwide Governance Indicators dataset. We then identify by year the countries in the most corrupt quartile of the corruption index. Next, we classify an opaque diversification as one in which the firm operates in the 90th percentile or above of their total percentage of subsidiaries in countries classified in the most corrupt quartile of the corrupt index.

iv. *MANYLOWLAW:* This measure is constructed in the same way as the *MANYCORRUPT* measure, except it replaces the corruption index with a rule of law index from the Worldwide Governance Indicators dataset; opaque diversifications are assumed to be characterized by intensity of material subsidiary locations in the weakest quartile of rule of law countries.

The Table 3 univariate correlations show that each of the opacity variables are positively correlated with the level of pay ($p<.05$). This is consistent with the intuition that when opacity is viewed in isolation, it proxies for complexity, for which pay levels on average are higher.

4. Empirical Results

4.1 EMPIRICAL MODEL

We base our empirical model on the baseline specification in Rose and Shepard (1997), which estimates an OLS regression of the level of CEO pay as a function of various economic determinants and industry/year fixed effects. Our objective is to benchmark our empirical results to prior work; the variables we include in the empirical specifications as controls for economic determinants of pay levels thus primarily follow those used in Rose and Shepard (1997). We use Rose and Shepard (1997) to identify the standard economic determinants of the level of pay because *DIVERSE* is a particular variable of interest in our study and our aim is to ensure our control variables (including *DIVERSE)* behave as they do in prior work.

Rose and Shepard (1997) construct their main industrial diversification measure using a Herfindahl approach based on relative industry segment sales (*DIVERSE*).[15] We estimate the incremental effect of multinational diversification over this industrial diversification measure. For multinational diversification we equivalently construct a Herfindahl measure based on the relative sales in geographic regions (*GEODIVERSE).*[16]

To the Rose and Shepard (1997) baseline specification, we add a control for the Tobin's Q, which is a proxy for growth opportunities, which in turn have been shown in other compensation studies to be a significant determinant of CEO pay (e.g., Bushman et al. 1996).[17] Consequently, our baseline OLS specification is:

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[15] Rose and Shepard (1997) also use the number of industrial segments as a more limited explanatory variable. We do the same and find our inferences are unchanged.

[16] We also construct, and use instead of *GEODIVERSE* in the regressions, a measure based on the number of countries in which the firm operates a material subsidiary. Inferences are unchanged using the alternative measure.

[17] Other minor differences in our specifications relate to (1) the CEO tenure variable and (2) the exclusion of contemporaneous market returns. First, due to the skewness of the distribution of tenure, we transform the CEO tenure variable using the natural logarithm. Rose and Shepard (1997) include the raw values of tenure in their specification. While the coefficient on tenure does not consistently load as statistically significant in the Rose and Shepard (1997) regressions, in our tests, the coefficient on *LNTENURE* is positive and significant in relation to *LNCURRENT*, as expected. Second, we exclude

$$COMP_{it} = \beta_0 + \beta_1 DIVERSE_{it} + \beta_2 GEODIVERSE_{it} + \sum_{k} \beta_k CONTROL_{it}^{k} + \epsilon, \qquad (1)$$

Where $COMP_{it}$= $LNCURRENT_{it}$ or $LNTOTAL_{it,}$ and $CONTROL_{it}^{k}$ is a vector of k control variables. These variables are drawn from prior research and include proxies for firm size, firm performance, CEO characteristics, industry fixed effects, and fiscal-year fixed effects. All variable definitions are provided in the Appendix. Because of the likely presence of outliers in our sample, we estimate robust regressions that control for outliers. Accordingly, while each of the baseline regressions uses the entire sample of 15,875 observations, approximately 200-300 observations are automatically dropped in each of our robust regressions because of undue statistical influence in both dependent and independent variables. In all regressions, we also estimate robust standard errors (to control for heterogeneity and non-normality in the residuals) and cluster the standard errors by CEO (to control for non-independence of error terms within CEO groupings).

Our second empirical model extends equation (1) and tests the competing hypotheses H2a and H2b. We separately include our measures of opacity, together with the measure of opacity multiplied by the *GEODIVERSE* measure. That is, we estimate:

$$\begin{aligned} COMP_{it} = {} & \gamma_0 + \gamma_1 DIVERSE_{it} + \gamma_2 GEODIVERSE_{it} + \gamma_3 OPAQUE_{it} \\ & + \gamma_4 OPAQUE_{it} * GEODIVERSE_{it} + \sum_{k} \gamma_k CONTROL_{it}^{k} + u_{it}, \end{aligned} \qquad (2)$$

where $OPAQUE_{it}$ is one of our four proxies for international opacity, and all other variables are as defined in equation (1).

The sign of the coefficient on the interaction term (i.e. γ_4) yields inferences on whether the positive relation between pay and multinational diversification is stronger or weaker (or insignificantly different to the average relation) for firms with higher levels of opacity.

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contemporaneous market returns from our specification because of the mechanical relation between total compensation and the returns for the current year.

4.2 RESULTS OF TESTS OF H1

Results from estimating the empirical specification in equation (1) are displayed in Table 4. The coefficient on *DIVERSE* is significantly positive (p<.01) in all specifications in which *DIVERSE* is included, which replicates the main cross-sectional empirical result documented in Rose and Shepard (1997). We next turn to H1. Using both *LNCURRENT* and *LNTOTAL* as separate dependent variables, we find consistent support for H1: the coefficient on *GEODIVERSE* is positive and significant (p<.01) both without the *DIVERSE* variable as a control (Models 2 and 4) and incremental to including *DIVERSE* as a control (Models 3 and 6). With minor exceptions, coefficients on all control variables are significant in the expected direction.[18] Results in Panel B, where industrial diversification and multinational diversification are alternatively measured using the number of industrial segments and countries respectively, yield identical inferences.

The results are also economically significant. For example, in Model 3 the results indicate that a firm with a one standard deviation in the *GEODIVERSE* value yields a 2.37% percent increase in salary. For the average executive, this translates into a base current pay increase of $20,000. Moreover, Model 6 suggests that a one standard deviation increase in the *GEODIVERSE* value increases total compensation by 5.39 percent. This translates into a total compensation increment of $119,000, ceteris paribus.

4.3 RESULTS OF TESTS OF H2

Table 5 reports the main results from a test of H2. The table reports interactions between our measures of *GEODIVERSE* and our opacity measures. In each case, a positive coefficient on the interaction would indicate incremental complexity and a

[18] The coefficients on lagged accounting rates of return (i.e., *ACCROR_1* and *ACCROR_2*) are negative and significant in both the *LNSALARY* and *LNTOTAL* regressions likely because of the high correlation between contemporaneous and one-period-lagged accounting returns. The coefficient on the variance of returns is significantly negative for *LNCURRENT* and significantly positive for *LNTOTAL* compensation regressions, consistent with returns volatility negatively affecting short-term pay but being associated with higher total compensation.

further pay premium (i.e., support for H2a), while a negative coefficient on the interaction would suggest the opposite effect – that the pay for complexity is weaker with opacity (i.e., support for H2b).

The results in Table 5 show a positive average effect on pay for the measures of opacity, consistent with higher complexity leading to higher pay, over and above the average pay premium for multinational diversification. However, the marginal effects via the interactions suggest the sensitivity of pay to multinational diversification is weakened by the multinational opacity. For 7 of 8 possible interaction coefficients, the sign is significantly negative (two-tailed tests) for both current and total compensation.[19]

Moreover, in 6 of 8 cases, the significantly negative interaction coefficient dominates the coefficient for the main effect of *GEODIVERSE*. Accordingly, the pay premium becomes a relative pay penalty. For example, for two firms at the same level of multinational diversification, a firm classified as *MANYCORRUPT* would yield the CEO a current pay and total pay penalty, while a firm not classified as *MANYCORRUPT* would yield the CEO a current and total pay premium, ceteris paribus.

The results thus provide strong support for H2b: that the pay for complexity relation is weaker for firms that have high levels of opacity. The evidence that pay is significantly lower for CEOs in firms with multinational opacity implies that CEOs are likely able to extract private benefits from the multinational diversification greater than or equal to the relative loss in explicit pay.

5. Conclusion

Recent work establishes a relation between the way in which MNEs locate material

[19] The only insignificant interaction is between *GEODIVERSE* and *MANYHAVEN* for total compensation. Given the convincing nature of the other 7 interactions, it may be that our measurement of *MANYHAVEN* may suffer from being a proxy for opacity that is too crudely measured. Alternatively, the result is consistent with the possibility that for some firms CEOs receive a pay premium but for other firms the CEO is provided with disincentives to expand into a large number of tax haven countries. Accordingly, the effects offset to yield an insignificant coefficient.

subsidiaries in foreign countries and the corporate tax rates applied to the consolidated income of the MNEs (Dyreng and Lindsey 2009). This suggests that multinational diversification is part of an important strategic choice that MNE firms make in conducting global business. We argue that this multinational diversification likely carries systematic differences in the effect it has on task complexity for the CEO. To the extent that this argument is true, then the compensation literature (Rose and Shepard 1997) predicts that systematic changes in CEO task complexity will be associated with systematic changes in the CEO ability required to manage the MNE. As a consequence, CEOs will be paid relatively more or less, depending on the direction of the change in ability.

We argue that not all forms of multinational diversification are net value-enhancing for a firm. Prior research has shown that multinational diversification can provide a potential vehicle for CEOs to privately divert the firm's resources to the CEO's own benefit. Alternatively, the CEO could refrain from resource diversion but extract private benefits from being located in multiple countries, particularly countries in which disclosures of financial transactions are not readily available. In such circumstances, it is an open empirical question as to whether contract designers use contracts to try and deter such activities or to reward a CEO for managing even further complexity.

We find consistent evidence supporting the intuition of higher pay for multinational complexity, except when that complexity becomes too opaque. At the same time we link together new ways of measuring multinational opacity and the traditional CEO compensation literatures. By making such links, this and future research will likely shed new light on questions about why CEOs are paid as much as they are, and why firms expand across international borders in the ways that they do.

Appendix - Variable Definitions

Variable	Definition
LNCURRENT	The natural logarithm of 1 plus *SALARY* plus *BONUS* from Execucomp.
LNTOTAL	The natural logarithm of 1 plus *TDC1* from Execucomp.
DIVERSE	As per Rose and Shepard (1997), *DIVERSE* is defined as $1-\sum_{i=1}^{NUMSEG}\left[\frac{\text{segment sales}_i}{\text{company sales}}\right]^2$, where segment sales are the sales reported for the business segment and company sales is the sum of the firm's segment sales.
GEODIVERSE	Defined as $1-\sum_{i=1}^{NUMSEG}\left[\frac{\text{segment sales}_i}{\text{company sales}}\right]^2$, where segment sales are the sales reported for the geographic segment and company sales is the sum of the firm's segment sales.
LN_MVE_1	The natural logarithm of market capitalization (*PRCC_F * CSHO* in Compustat*)*, lagged by 1 period.
TOBINSQ_1	Market capitalization (*PRCC_F * CSHO* in Compustat*)* plus the book value of debt (*AT – SEQ* in Compustat), divided by total assets (*AT* in Compustat), and lagged by 1 period (as in Hartzell and Starks, 2003).
MKTROR_i	Annual stock returns, calculated using daily CRSP data, and lagged by *i* periods, *i* = 1, 2.
ACCROR	Net income (*NI* in Compustat) divided by Shareholder's Equity (*SEQ* in Compustat)
ACCROR_i	The return on equity as defined in *ACCROR*, lagged by *i* periods, *i* = 1, 2.
SDRET	Standard deviation of daily returns for each firm-year.
LNTENURE	Natural logarithm of the number of years a CEO has held the position.
STARTAGE	The age of the CEO at the time the CEO was appointed.
OUTSIDE	Indicator = 1 if the CEO joined the firm within 365 days of being appointed CEO, zero otherwise.
FOUNDER	Indicator = 1 if the CEO either founded or co-founded the firm, zero otherwise.
MANYHAVEN	Indicator = 1 if a firm's percentage of the total number of disclosed material subsidiaries located in countries identified as tax havens is greater than the 90th percentile of such percentage for the entire sample, zero otherwise. A country is classified as a tax haven if it was identified as a haven by a minimum of two (out of four) sources listed at http://www.globalpolicy.org on 4 March 2008.
MANYCORRUPT	Indicator = 1 if a firm's percentage of the total number of disclosed material subsidiaries located in countries ranking in the most corrupt quartile of the distribution of the corruption score variable for a given year is greater than the 90th percentile of such percentage for the entire sample, zero otherwise. Based on a corruption score obtained from the World Bank Worldwide Governance Indicators dataset located at http://info.worldbank.org/governance/wgi/sc_country.asp. For years 2001, 1999, and 1997 (missing in the Worldwide Governance Indicators dataset), the variable was calculated as the average of the corruption score from the preceding and subsequent years. For countries with missing data in successive years, corruption score values were backfilled and projected forward to construct a full time series for 209 countries.
MANYLOWLAW	Indicator = 1 if a firm's percentage of the total number of disclosed material subsidiaries located in countries ranking in the lowest rule of law quartile of the distribution of the rule of law score variable for a given year is greater than the 90th percentile of such

	percentage for the entire sample, zero otherwise. Based on a rule of law score obtained from the World Bank Worldwide Governance Indicators dataset located at http://info.worldbank.org/governance/wgi/sc_country.asp. For years 2001, 1999, and 1997 (missing in the Worldwide Governance Indicators dataset), the variable was calculated as the average of the rule of law score from the preceding and subsequent years. For countries with missing data in successive years, rule of law score values were backfilled and projected forward to construct a full time series for 211 countries.
MANYSMALLGDP	Indicator = 1 if a firm's percentage of the total number of disclosed material subsidiaries located in countries ranking in the smallest quartile of the GDP distribution for a given year is greater than the 95th percentile of such percentage for the entire sample, zero otherwise. Based on GDP data obtained from the International Monetary Fund's "World Economic Outlook Database April 2010" dataset located at http://www.imf.org/external/pubs/ft/weo/2010/01/weodata/download.aspx. For countries with missing data in successive years, GDP values were backfilled and projected forward to construct a full time series for 183 countries.
INDUSTRY EFFECTS	As per Rose and Shepard (1997), industry effects are weighted by the percentage of total sales within each industry$_i$ (industry sales$_i$ / company sales), where industry sales are the sales reported for industry$_i$ and company sales is the sum of the firm's segment sales.
YEAR EFFECTS	Indicator$_i$ = 1 if the firm fiscal year is equal to year$_i$, zero otherwise.

Table 1
Sample Selection

Notes: This table describes the sample used in the study. The data are gathered from Execucomp, Compustat, CRSP, http://sec.gov, BoardEx, the Field-Ritter dataset of company founding dates, the World Bank Worldwide Governance indicators dataset, and the list of tax haven countries found at www.GlobalPolicy.org. Detailed variable definitions are available in the appendix.

Sample Description	Executive Years
CEO-year observations excluding rejoining CEOs for which tenure could not be accurately calculated	27,693
CEO-year observations with segment data needed to calculate *DIVERSE* and *GEODIVERSE*	19,442
CEO-year observations with CRSP and Compustat data needed to calculate *LN_MVE_1*, *TOBINSQ_1*, *MKTROR_1*, *MKTROR_2*, *ACCROR*, *ACCROR_1*, *ACCROR_2*, and *SDRET*	17,583
CEO-year observations with data needed to calculate *LNTENURE*, *STARTAGE*, *OUTSIDE*, and *FOUNDER*	15,875
CEO-year observations with data needed to calculate weighted industry effects and fiscal year effects	15,875
Final CEO-year sample	15,875

Table 2
Univariate Descriptive Statistics

Notes: This table presents univariate descriptive statistics for the variables used in the study. See Table 1 for the sample selection criteria that result in the 15,875 observations used in the table. All variables are defined in detail in the Appendix.

NAME	N	MEAN	STD	P1	P25	P50	P75	P99
LNCURRENT	15,875	6.756	0.925	4.615	6.303	6.758	7.245	8.824
LNTOTAL	15,875	7.699	1.143	5.370	6.950	7.653	8.430	10.384
DIVERSE	15,875	0.167	0.237	0.000	0.000	0.000	0.366	0.758
GEODIVERSE	15,875	0.260	0.260	0.000	0.000	0.208	0.497	0.785
LN_MVE_1	15,875	7.194	1.557	4.043	6.093	7.028	8.148	11.298
TOBINSQ_1	15,875	2.155	1.983	0.793	1.225	1.611	2.382	8.986
MKTROR_1	15,875	0.222	0.668	- 0.706	- 0.102	0.124	0.385	2.807
MKTROR_2	15,875	0.246	0.707	- 0.709	- 0.093	0.135	0.409	2.874
ACCROR	15,875	0.054	1.426	- 1.234	0.050	0.118	0.178	0.628
ACCROR_1	15,875	0.078	0.790	- 1.004	0.054	0.119	0.178	0.602
ACCROR_2	15,875	0.090	0.845	- 0.943	0.055	0.119	0.178	0.617
SDRET	15,875	0.027	0.013	0.009	0.017	0.023	0.032	0.073
LNTENURE	15,875	1.689	0.974	- 0.497	1.043	1.764	2.384	3.638
STARTAGE	15,875	47.308	8.167	25.981	42.077	48.000	53.000	65.318
OUTSIDE	15,875	0.176	0.381	0.000	0.000	0.000	0.000	1.000
FOUNDER	15,875	0.121	0.326	0.000	0.000	0.000	0.000	1.000
MANYHAVEN	15,875	0.089	0.285	0.000	0.000	0.000	0.000	1.000
MANYCORRUPT	15,875	0.111	0.314	0.000	0.000	0.000	0.000	1.000
MANYLOWLAW	15,875	0.106	0.308	0.000	0.000	0.000	0.000	1.000
MANYSMALLGDP	15,875	0.055	0.228	0.000	0.000	0.000	0.000	1.000

Table 3
Pearson and Spearman Correlations

Notes: This table presents Pearson (above the diagonal) and Spearman (below the diagonal) bivariate correlations for the variables used in the study. All variables are defined in detail in the Appendix.

VARIABLE	*LNCURRENT*	*LNTOTAL*	*DIVERSE*	*GEODIVERSE*	*LN_MVE_1*	*TOBINSQ_1*	*MKTROR_1*	*MKTROR_2*	*ACCROR*	*ACCROR_1*	*ACCROR_2*	*SDRET*	*LNTENURE*	*STARTAGE*	*OUTSIDE*	*FOUNDER*	*MANYHAVEN*	*MANYCORRUPT*	*MANYLOWLAW*	*MANYSMALLGDP*
LNCURRENT		0.66*	0.20*	0.09*	0.45*	-0.08*	0.02*	-0.03*	0.06*	0.07*	0.03*	-0.26*	0.04*	0.09*	0.02	-0.14*	0.05*	0.12*	0.13*	0.03*
LNTOTAL	0.70*		0.15*	0.20*	0.61*	0.08*	0.07*	0.04*	0.05*	0.05*	0.03*	-0.11*	-0.07*	0.09*	0.06*	-0.13*	0.06*	0.17*	0.19*	0.05*
DIVERSE	0.25*	0.16*		0.10*	0.21*	-0.15*	-0.05	-0.06*	0.02*	0.02*	0.02	-0.21*	-0.02*	0.16*	-0.04*	-0.13*	-0.05*	0.10*	0.10*	0.02*
GEODIVERSE	0.12*	0.22*	0.09*		0.23*	0.08*	-0.01	-0.02*	0.00	-0.01	-0.01	0.07*	-0.04*	0.05*	0.04*	-0.05*	-0.08*	0.26*	0.26*	0.08*
LN_MVE_1	0.59*	0.64*	0.20*	0.22*		0.22*	0.09*	0.04*	0.06*	0.12*	0.08*	-0.30*	-0.04*	0.12*	-0.05*	-0.11*	0.02*	0.22*	0.23*	0.04*
TOBINSQ_1	-0.04*	0.12*	-0.18*	0.16*	0.28*		0.39*	0.23*	0.03*	0.05*	0.04*	0.25*	0.05*	-0.12*	0.01	0.14*	-0.05*	-0.01	-0.00	-0.04*
MKTROR_1	0.13*	0.12*	0.00	-0.03	0.18*	0.34*		-0.03*	0.04*	0.06*	-0.06*	0.14*	0.04*	-0.06*	-0.00	0.06*	-0.00	-0.02	-0.02	-0.01
MKTROR_2	0.03*	0.07*	-0.02*	-0.04*	0.12*	0.23*	-0.05*		-0.00	0.04*	0.04*	0.12*	0.04*	-0.06*	-0.01	0.07*	-0.00	-0.02	-0.02	-0.02*
ACCROR	0.32*	0.24*	0.03*	0.01	0.32*	0.42*	0.29*	0.18		0.06*	0.05*	-0.14*	0.02*	-0.00	-0.02*	-0.02*	0.00	0.02*	0.01	-0.01
ACCROR_1	0.21*	0.20*	0.02*	0.01	0.33*	0.44*	0.23*	0.27*	0.64*		0.11*	-0.14*	0.03*	0.00	-0.04*	-0.01	-0.00	0.02*	0.02*	-0.01
ACCROR_2	0.16*	0.15*	0.01	0.01	0.29*	0.37*	0.02*	0.23*	0.49*	0.64*		-0.09*	0.02*	0.01	-0.03*	-0.01	-0.01	0.02*	0.02*	-0.01
SDRET	-0.33*	-0.15*	-0.24*	0.06*	-0.37*	0.13*	-0.05*	-0.02*	-0.28*	-0.21*	-0.16*		-0.02	-0.15*	0.09*	0.17*	0.01	-0.09*	-0.06*	-0.01
LNTENURE	0.02*	-0.07*	-0.02*	-0.04*	-0.04*	0.06*	0.05*	0.06*	0.04*	0.06*	0.05*	0.01		-0.49*	-0.12*	0.38*	0.00	-0.03*	-0.04*	0.02
STARTAGE	0.15*	0.11*	0.17*	0.05*	0.13*	-0.13*	-0.03*	-0.04*	0.03	0.02	0.01	-0.18*	-0.48*		0.09*	-0.38*	-0.00	0.07*	0.05*	-0.00
OUTSIDE	0.01	0.05*	-0.04*	0.04*	-0.05*	0.01	-0.02	-0.03	-0.08*	-0.09*	-0.10*	0.08*	-0.12*	0.09*		-0.17*	0.02*	-0.01	-0.00	0.02*
FOUNDER	-0.15*	-0.12*	-0.12*	-0.05*	-0.11*	0.13*	0.02*	0.04*	-0.04*	-0.04	-0.03	0.20*	0.39*	-0.35*	-0.17*		-0.00	-0.07*	-0.06*	-0.02*
MANYHAVEN	0.05*	0.06*	-0.03*	-0.08*	0.02*	-0.07*	0.00	-0.01	-0.02	-0.02	-0.01	0.02	0.00	-0.01	0.02*	-0.00		-0.02*	-0.02*	0.06*
MANYCORRUPT	0.15*	0.17*	0.10*	0.26*	0.20*	0.01	0.02	-0.00	0.08*	0.07*	0.06*	-0.10*	-0.04*	0.08*	-0.01	-0.07*	-0.02*		0.74*	0.23*
MANYLOWLAW	0.16*	0.19*	0.10*	0.26*	0.21*	0.02	0.00	-0.00	0.06	0.06*	0.05*	-0.06*	-0.05*	0.06*	-0.00	-0.06*	-0.02*	0.74*		0.24*
MANYSMALLGDP	0.04*	0.06*	0.02*	0.08*	0.04*	-0.05*	0.00	-0.02*	-0.03	-0.04	-0.05	-0.00	0.01	0.00	0.02*	-0.02*	0.06*	0.23*	0.24*	

Table 4
CEO Compensation Regressed on Business Segment Diversity and Multinational Diversity

Notes: This table presents results from the estimation of equation (1):

$$COMP_{it} = \beta_0 + \beta_1 DIVERSE_{it} + \beta_2 GEODIVERSE_{it} + \sum_{k} \beta_k CONTROL_{it}^{k} + \epsilon \qquad (1)$$

In Models 1-3, the log of salary (*LNCURRENT*) is the dependent variable. In Models 4-6, the log of total compensation (*LNTOTAL*) is the dependent variable. All variables are defined in detail in the appendix. Iteratively re-weighted least squares (robust regression) is used to mitigate the influence of outliers on the coefficient estimates. Robust standard errors clustered at the executive level are presented in parentheses below the coefficients. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable =	*LNCURRENT*			*LNTOTAL*		
PARAMETER	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
INTERCEPT	4.318***	4.293***	4.299***	4.359***	4.317***	4.320***
	(0.062)	(0.063)	(0.063)	(0.096)	(0.096)	(0.096)
DIVERSE	0.160***		0.159***	0.092***		0.092***
	(0.022)		(0.022)	(0.032)		(0.032)
GEODIVERSE		0.091***	0.090***		0.202***	0.202***
		(0.024)	(0.023)		(0.034)	(0.034)
LN_MVE_1	0.283***	0.285***	0.279***	0.485***	0.479***	0.475***
	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.006)
TOBINSQ_1	-0.088***	-0.094***	-0.087***	-0.091***	-0.092***	-0.089***
	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.006)
MKTROR_1	0.065***	0.071***	0.067***	0.085***	0.090***	0.089***
	(0.006)	(0.006)	(0.006)	(0.009)	(0.009)	(0.009)
MKTROR_2	-0.007	-0.005	-0.005	0.057***	0.062***	0.062***
	(0.005)	(0.005)	(0.005)	(0.008)	(0.008)	(0.008)
ACCROR	0.156***	0.153***	0.156***	0.101***	0.099***	0.102***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
ACCROR_1	-0.079***	-0.080***	-0.079***	-0.017***	-0.017***	-0.016***
	(0.010)	(0.011)	(0.010)	(0.003)	(0.003)	(0.003)
ACCROR_2	-0.011***	-0.010***	-0.010***	-0.014***	-0.013***	-0.013***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
SDRET	-2.853***	-3.282***	-2.942***	9.631***	9.176***	9.382***
	(0.462)	(0.461)	(0.459)	(0.672)	(0.674)	(0.668)
LNTENURE	0.091***	0.093***	0.091***	-0.000	0.000	-0.001
	(0.006)	(0.006)	(0.006)	(0.008)	(0.008)	(0.008)
STARTAGE	0.004***	0.005***	0.004***	-0.002*	-0.002	-0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
OUTSIDE	0.079***	0.076***	0.079***	0.158***	0.158***	0.159***
	(0.014)	(0.014)	(0.014)	(0.019)	(0.019)	(0.019)
FOUNDER	-0.123***	-0.122***	-0.120***	-0.111***	-0.104***	-0.102***
	(0.022)	(0.022)	(0.022)	(0.031)	(0.032)	(0.031)
INDUSTRY EFFECTS	YES	YES	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES	YES	YES
N	15,560	15,562	15,558	15,691	15,694	15,684
ADJRSQ	0.632	0.630	0.633	0.641	0.639	0.643

Table 5
Effect of Multi-National Complexity/Opacity on Compensation

Notes: This table presents results from the estimation of equation (2):

$$COMP_{it} = \gamma_0 + \gamma_1 DIVERSE_{it} + \gamma_2 GEODIVERSE_{it} + \gamma_3 OPAQUE_{it} + \gamma_4 OPAQUE_{it} * GEODIVERSE_{it} + \sum_{k} \gamma_k CONTROL_{it}^{k} + u_{it} \quad (2)$$

This table presents results of regressing different measures of the complexity/opacity of country subsidiaries on CEO compensation. All variables are defined in the appendix. The same vector of control variables that was included in Table 2 is also included here, but not presented to save space. Iteratively re-weighted least squares (robust regression) is used to mitigate the influence of outliers on the coefficient estimates. Robust standard errors, clustered at the executive level, are presented in parentheses below the coefficients. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable =	*LNCURRENT*				*LNTOTAL*			
PARAMETER	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
INTERCEPT	4.290***	4.304***	4.308***	4.296***	4.309***	4.325***	4.329***	4.318***
	(0.063)	(0.063)	(0.063)	(0.063)	(0.095)	(0.096)	(0.096)	(0.095)
DIVERSE	0.161***	0.158***	0.157***	0.160***	0.100***	0.091***	0.092***	0.094***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.032)	(0.032)	(0.032)	(0.032)
GEODIVERSE	0.106***	0.100***	0.091***	0.101***	0.224***	0.218***	0.210***	0.212***
	(0.024)	(0.025)	(0.024)	(0.024)	(0.035)	(0.035)	(0.035)	(0.034)
MANYHAVEN	0.094***				0.140***			
	(0.020)				(0.028)			
MANYCORRUPT		0.099***				0.152***		
		(0.030)				(0.043)		
MANYLOWLAW			0.117***				0.152***	
			(0.036)				(0.049)	
MANYSMALLGDP				0.066**				0.103**
				(0.033)				(0.045)
GEODIVERSE_MANYHAVEN	-0.135**				-0.117			
	(0.057)				(0.087)			
GEODIVERSE_MANYCORRUPT		-0.171***				-0.247***		
		(0.059)				(0.082)		
GEODIVERSE_MANYLOWLAW			-0.163**				-0.223**	
			(0.069)				(0.093)	
GEODIVERSE_MANYSMALLGDP				-0.191**				-0.175*
				(0.074)				(0.096)
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY EFFECTS	YES	YES	YES	YES	YES	YES	YES	YES
YEAR EFFECTS	YES	YES	YES	YES	YES	YES	YES	YES
N	15,573	15,557	15,556	15,558	15,681	15,683	15,685	15,683
ADJRSQ	0.629	0.633	0.633	0.633	0.644	0.644	0.642	0.644

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