CEO Compensation, Diversity in Multinational Enterprises, and Innovation Ambidexterity in the Global Pharmaceutical Industry: An Extended Tournament Incentive Perspective

ABSTRACT

Extending insights from tournament theory to the international business domain, our study develops a theoretical model that formalizes how CEO compensation and international diversity influence innovation strategy in multinational enterprises (MNEs). Our premise centres on innovation ambidexterity, defined as the organization's combined pursuit of Make (in-house R&D) and Buy (external technology acquisitions) strategies to develop its global innovation portfolio. We provide postulations on how long-term, performance-based CEO incentives will positively affect both the combined and balanced dimensions of ambidexterity. Additionally, we propose that the outlined relationships are contingent on diversity in the MNE network at two levels: organizational (i.e., cultural diversity across foreign subsidiaries) and managerial (i.e., diversity of top management teams). Utilizing panel data from a matched sample of 1,070 CEOs across 547 global high-technology pharmaceutical MNEs, our empirical analyses yield robust support for the hypothesized effects, with few nuanced variations. We derive theoretical and observable managerial implications for strategic leadership in MNEs, particularly in the context of global innovation strategy.

INTRODUCTION

Research on effects of CEO compensation has largely focused on firm performance and has failed to produce unequivocal evidence (Zajac, 1990; Hu & Xu, 2022). This has emulated research avenues that examines CEOs' effects on strategic decision-making, for e.g. innovation, where CEOs have more leeway, as opposed to organizational performance which is a function of both CEOs' strategic decisions and forces beyond the CEO's control (Fong, 2010). However, existing research on the CEO compensation and innovation relationship, specifically within industries characterized by non-ergodic uncertainty and dynamism, remains underexplored with a few notable exceptions (Kim et al., 2017; Ryan and Wiggins, 2002). Most importantly, the intricate and dynamic context emanating within a multinational enterprise (MNE) network is siloed from extant corporate governance literature streams linked to CEO compensation.

CEOs and their subjective judgements are particularly relevant to MNEs as these multi-unit and cross-frontier entities are challenged both by international diversity at the organizational (cultural diversity across foreign subsidiaries) and management level (diversity in top management team (TMT)) (Cuypers et al., 2022; Ponomareva., 2022). International diversity, hence, offers a contextual idiosyncrasy to shape the potency of CEOs in strategic decision-making. Our study aims to integrate (and extend) insights from tournament theory (Connelly et al., 2014) and the international diversity perspectives in international business (IB) theory (Minbaeva et al., 2021; Stahl et al., 2016) to explore the direct effects of CEO compensation on innovation in MNEs and the moderating effects of international diversity.

We escalate our theorizing by introducing *innovation ambidexterity* - the assertion that global innovation strategy of a firm is guided by a combination of internal R&D investments (Make) and external technology acquisitions (Buy) (Veugelers & Cassiman, 1999). Although a substantial body of work has advanced understanding of the R&D investment and technology acquisition relationship (Arora et al., 2014), surprisingly few recognize that they are alternative strategies for developing innovation portfolios, requiring different sets of resources. MNEs seldom make simple dichotomous choices between the two, and an optimal innovation portfolio development is often achieved based on the combination of both, and not their trade-off. However, simultaneous engagement in Make and Buy innovation also poses processual paradoxes, with a requisite degree of multi-unit managerial integration regarded as fundamental to achieving operational coherence and desired innovation outcomes. To overcome this problem, a balanced approach to managing ambidexterity is adopted but at the expense of delays and lags triggered by duplication and alignment mismatch between units engaged disparately in R&D exploration and technology acquisitions (Grigoriou & Rothaermel, 2017). Work on how CEOs' incentives – in the form of performance-based tournaments, influences pathways to knowledge generation in global firms is yet to be adequately explored, an approach that we undertake in this paper.

Our study proposes two original scholarly contributions. First, by drawing on theory underpinned by tournament incentive perspectives, we offer greater explanatory primacy to existing research on R&D internationalization (Rosenbusch et al., 2019; Steinberg et al., 2017). Specifically, we advance this research stream by examining innovation ambidexterity in MNEs with CEO compensation as the micro-foundational underpinning of MNEs' global innovation strategies. Second, we extend the scope of ambidexterity research (for reviews, see Junni et al., 2013; O'Reilly & Tushman, 2013) to the intersection of innovation and

international business context. Top managers' characteristics have been considered an important instrument to achieve organizational ambidexterity. Our theoretical model extends the dialogue by further engaging with the CEO compensation and diversity literature within the context of IB theory.

THEORETICAL BACKGROUND

Tournament theory, Long-term CEO compensation and Innovation Strategy

CEO compensation remains a contentious issue in strategy and corporate governance. Although CEOs (and TMTs) have significant discretion over strategic decisions, shareholders remain risk neutral due to diversified portfolios, whereas CEOs are often risk averse given their concentrated employment risk (Hoskisson et al., 2017). Tournament theory proposes that long-term compensation (e.g., stock and option grants) can mitigate this divergence by aligning CEOs' risk preferences (via providing convex payoffs) with those of shareholders, reducing agency costs, and thereby incentivizing risk-taking and long-term strategic pursuits such as innovation (Kini & Williams, 2012). The option-like features of intra-organizational CEO performance-based tournaments also direct senior executives' incentives to increase firm risk. In our context, the CEO's compensation structures represent the incentive to reap higher rewards which are accompanied by boosted status and perks, provided the targets relating to innovation strategy are optimally met (Li et al., 2019). Overall, performance-based tournament contests can be structured to best match the nature of the uncertainty problem associated with firm innovation objectives (Morgan & Wang, 2010).

To enhance innovation portfolio, firms typically adopt two strategies – Make and Buy, whereas the former relies on firm's in-house R&D and the latter relates to acquisition of technologies that are exogenous to the firm (Veugelers & Cassiman, 1999; Xue, 2007). However, regardless of the type of strategies, innovation, in general, is costly and risky. The Make strategy is challenged by technological uncertainties and the risk of knowledge spillovers (Mudambi & Swift, 2014), while the Buy strategy suffers from information asymmetry, leading technology owners to withhold information and often causing firms to overpay (Higgins & Rodriguez, 2006). Moreover, commercialization of new technologies has a longer gestation period, regardless of their source (Hall et al., 2005), hence demanding long-term commitment which may extend beyond a CEO's tenure, further complicating decision-making.

Despite these challenges, innovation remains critical for maintaining firm competitiveness and achieving long-term returns—objectives that shareholders highly value (Fong, 2010). Consequently, long-term CEO compensation is expected to foster a greater willingness among CEOs to pursue innovative projects. Empirical evidence regarding the relationship between long-term CEO compensation and innovation strategies is mixed. Some studies report a positive link between long-term incentives and the Make strategy (Barker & Mueller, 2002), while others find that substantial equity holdings can lead to executive entrenchment and exacerbate risk aversion (Hoskisson et al., 2017). Notably, research linking long-term CEO compensation with the Buy strategy is scarce.

Innovation Ambidexterity

Organizations face strategic tensions in overhauling the architecture of their innovation portfolio (Raisch et al., 2009). Enhancing innovation portfolio often involves Make and Buy strategy. Innovation often exhibits path and past dependency, meaning that technological development is shaped by prior experiences, which can lock firms into specific technological trajectories due to cognitive frames and organizational processes (Thrane et al., 2010). Once firm capabilities lead to scientific and technological competencies, they become embedded in standardized organizational routines and practices, creating internal path dependency. This emphasis on efficiency and continuous improvement of existing competencies aligns with the Make strategy (Wadhwa & Kotha, 2006). However, to maintain or advance on the technological frontier, firms seek external and diverse knowledge beyond their internal capabilities. The Buy strategy involves acquiring specific technologies from domains distant from the firm's core innovation, enabling the integration of external knowledge into a narrower technological focus (Benner & Tushman, 2003). This external knowledge can be leveraged with the firm's internal capabilities to accelerate new product development, potentially transforming existing technological paradigms or facilitating transitions to new ones (Grigoriou & Rothaermel, 2017; Higgins & Rodriguez, 2006). Additionally, the Buy strategy allows firms to outsource peripheral R&D tasks, enabling them to focus on more knowledge-intensive core activities (Garcia-Vega et al., 2019).

While the literature recognizes the complementarity between the Make and Buy strategies in knowledge generation (Garcia-Vega et al., 2019; Grigoriou & Rothaermel, 2017; Veugelers & Cassiman, 1999), the

processes underlying each strategy differ. This creates a central issue of strategic ambidexterity regarding how firms allocate resources between internal and external innovation efforts.

Extant scholarly work on ambidexterity recognizes that relying exclusively on one strategy/process and discounting the other could generate suboptimal outcomes, thereby highlighting the appropriate combination and balance between two disparate strategies as critical for success. Ambidexterity research has spanned multiple disciplines; for example, the international business literature has examined local responsiveness vs. global integration and depth vs. breadth of internationalization (Huang et al., 2021). Innovation research has so far largely focused on incremental/exploitative vs. radical/explorative innovation (Kollmann & Stöckmann, 2014). Applying the ambidexterity perspective to a firm's innovation portfolio, offers a newer perspective to view strategic options of firms in an era where disruption to global competition is severe. Correspondingly, we consider the two dimensions – the combined dimension (CD) and the balance dimension (BD) – to capture an integrative picture of the ambidextrous innovation strategy construct. CD of ambidextrous innovation strategy is defined as the combined magnitude of the Make and the Buy strategy to increase the complementary effects of the two, whereas BD is the relative magnitudes of the Make and the Buy strategy to balance the efforts to identify the optimal structure. These two dimensions are conceptually different; thus, their antecedents will have distinct impacts.

HYPOTHESIS DEVELOPMENT

To establish a unique innovation portfolio, CEOs, in collaboration with their TMTs, must evaluate strategic options that alter the company's trajectory, whether in response to internal or external changes (Crossan & Apaydin, 2010), or to proactively influence the external environment (Damanpour, 1991). One prominent corporate strategy concern is the decision to pursue ambidextrous innovation (Mavroudi et al., 2023). The Make strategy, which often involves the development of technology internally, carries high risk due to the time and unique organizational factors involved (Xue, 2007). Additionally, CEOs with stock-based compensation may lean towards the Make strategy (Xue, 2007). In contrast, the Buy strategy, rely on formal, mechanistic systems focused on refinement and efficiency, offering lower risk but potentially hindering future adaptability (Cheng & Van de Ven, 1996). Also, Lerner and Wulf (2007) found a weak relationship between short-term executive compensation and innovation.

The literature suggests that a focused innovation strategy can significantly affect performance (Kim et al., 1989). Exploratory strategies, like the Make approach, may trap firms in failure cycles (Levinthal & March, 1993), while exploitative strategies, like the Buy approach, risk long-term performance for short-term gains (Uotila et al., 2009). The tension between exploration and exploitation leads to trade-offs in resource allocation. An approach grounded in innovation ambidexterity balances these strategies, providing temporary advantages that mitigate the risk of core competencies becoming rigid and obsolete (D'Aveni, 1994; Sørensen & Stuart, 2000).

Innovation ambidexterity encompasses multiple dimensions, with the most common being the balance or combination of Make and Buy innovation (Cao et al., 2009). Achieving this balance requires CEOs to grant senior managers autonomy to make innovation-related decisions (Smith, 2014; You et al., 2022). A well-compensated CEO has greater incentives and offer higher managerial discretion to coordinate with corresponding Make and Buy teams and hierarchies (entangled across multiple units), and to respond effectively to dynamic external environments (Smith & Tushman, 2005). Board members are more likely to reward such CEOs with higher incentive-based pay, giving them the freedom to pursue ambidextrous innovation strategies (Wangrow et al., 2015). We therefore postulate,

Hypothesis 1: All being equal, the degree of CEO compensation is positively associated with innovation ambidexterity (Make and Buy), such that the effect is robust for both the combined and the balanced dimensions.

Cultural diversity in MNEs influences innovation through three primary aspects: creativity, communication, and social integration. Creativity, the ability to generate novel ideas, is fostered by diverse teams due to varying mental models, problem-solving strategies, and modes of perception (Doz et al., 2004). Thus, cultural diversity in MNE subsidiaries can positively impact creativity. However, effective communication, defined as the transmission of meaning, may be hindered by linguistic and cultural differences, which complicates idea-sharing and slows innovation (Maznevski, 1994). Additionally, social integration—encompassing collaboration, trust, and coordination—may negatively affect innovation quality in culturally diverse teams, as

differences in cultural values can reduce cohesion and trust (Katz & Kahn, 1978; Kirchmeyer, 1995). In such environments, weak social integration can impair the pace of learning in foreign subsidiaries.

Based on the outlined mechanisms, the relationship between CEO compensation and ambidextrous innovation can be strengthened or weakened by cultural diversity, depending on the structural contingencies that are in place to facilitate organizational outcomes. When considering CEO effects in firms committed to innovation ambidexterity (Quigley & Hambrick, 2015), knowledge sourcing and recombination become more sensitive to creative aspects of cultural diversity and allow them to pool different knowledge, perspectives, problem-solving approaches, cognitive schemes, and routines together. In other words, in these circumstances, the benefits of cultural diversity outweigh the costs, making it a strategic asset that can assist CEOs in pursuing ambidextrous, as opposed to focused innovation. This is especially true during the recombination process, where cultural diversity is more likely to contribute positively to a wide range of learning routines, whether exploratory or exploitative. As such, we propose that

Hypothesis 2: *The relationship between CEO compensation and innovation ambidexterity is moderated by cultural diversity, to the extent that, the relationship is strengthened (weakened) when a combined (balanced) approach to ambidexterity is adopted*.

Differences in nationalities among TMTs permit addressing integration challenges to achieve ambidextrous innovation. A well-remunerated CEO in using its high managerial discretion to engage in risky routes to developing innovation portfolio, may robustly engage TMTs with the expectation that strategic decision-making relating to innovation are prioritized over others. This may drive TMTs to use their own knowledge on significant problems involved, thoroughly process viewpoints provided by other team members to comprehend the implications of their own areas of expertise, and provide feedback to the team about the consequences (Mitchell et al., 2009). These strategic decision-making processes brought about by nationality-based diversity in TMTs enable the balancing of competing interests and identify ways in which both forms of innovation may complement one another (Rico et al., 2008) and this may address the integration requirement of ambidexterity.

Hypothesis 3: The relationship between CEO compensation and innovation ambidexterity is moderated by TMT diversity in MNEs, to the extent that the relationship is strengthened (weakened) when a combined (balanced) approach to ambidexterity is adopted.

Figure 1 illustrates the proposed theoretical model.

DATA AND METHODOLOGY

Our research context is set in the global pharmaceutical industry. We identify high-tech pharmaceutical firms based on the NACE Rev.2 code of 21[1]. To construct a comprehensive sample, we employed a multi-step methodology aimed gather relevant firm-level data on CEO compensation and characteristics, firm fundamentals, TMTs, and subsidiaries from various sources including Orbis, Boardex, Compustat and Execucomp. First, we collected firm-level data from Orbis, focusing on publicly listed firms within the European Union, North America, China, India, Japan, Singapore, and the UK. This yielded 2,610 firms. Second, we gathered supplementary data on CEO compensation and characteristics from Boardex, firm fundamentals from Compustat, and TMT and subsidiaries data from Orbis. Our final step involved meticulous manual cross-validation of the gathered data to ensure accuracy and reliability. We expanded data on CEO compensation with Execucomp and Orbis, and verified firm fundamentals data with Orbis, aiming to enhance the robustness of our findings. This comprehensive dataset included complete data for all pertinent variables, spanning 2012-2021 and comprising 5,215 observations.

Subsequently, we set out to test our hypotheses by selecting MNEs. The final sample for our study consisted of 547 high-tech pharmaceutical firms, encompassing 1,070 CEOs, and comprising 4,543 observations. Figure 2 shows geographical distribution of MNEs in our sample, highlighting North America (350) and Western Europe (147) were home to a greater number of MNEs compared to Asia. Notably, there is a significant clustering of high-tech US pharmaceutical MNEs.

[1] Eurostat classifies the manufacturing industry into four categories based on technological intensity, encompassing high-tech, medium-high-tech, medium-low-tech, and low-tech. The classification framework utilizes the NACE Rev. 2 at the two-digit level.

Variable Measurements

Dependent variables: Based on the extant literature (Cao et al., 2009), we construct *combined dimension of ambidextrous innovation strategy (CA)* by taking the multiplicative term of the Make and the Buy strategy and *balanced dimension of ambidextrous innovation strategy (BA)* as the absolute difference between the two. We use *R&D intensity*, calculated as R&D expenditure divided by total sales, as the proxy for the Make strategy. For the Buy strategy, we employ natural logarithm of *technology acquisition (TA) expenditure*, added by one and TA expenditure refers to firms' investment in intangible assets and goodwill (Xue, 2007).

Independent variable: Following Sanders and Carpenter (1998), we utilize the index of long-term compensation to measure CEO compensation. The *long-term compensation index* is standardized long-term compensation ratio, measured as long-term compensation divided by total compensation. The *long-term compensation* of the CEO refers to their annual stock options, restricted stock, and other long-term compensation approaches (van Essen et al., 2012). Given our research context that focuses on global firms, we standardize the long-term compensation ratio for each country using the industry-average long-term compensation (Xue, 2007). This standardization allows for better comparability of the independent variable across countries.

Moderator variables: Our moderators include *Cultural diversity* and *TMT nationality diversity*. Following (Hutzschenreuter & Voll, 2008; Hutzschenreuter et al., 2011)**,** we evaluated the level of cultural diversity within the MNE network by calculating the total sum of cultural distance between all subsidiary pairs, and then dividing it by the number of those pairs. We use the *Blau index* of heterogeneity (Blau, 1977) to measure *TMT nationality diversity*: $B=1-\sum(S_i)^2$. wheres S_i is the proportion of the TMT members who are foreign nationals.

Control variables: To address potential issues stemming from omitted variables and to minimize variances not directly related to the research question, we have incorporated several time-varying variables, including country, firm, and CEO characteristics. These factors may influence innovation strategies and help control for the performance implications of other strategic actions taken by the firm. At the CEO level, we include three characteristics: *CEO age*, *CEO education*, and *CEO gender*. At the firm level, we include five variables representing firm fundamental: (1) *firm leverage*, (2) *firm age* (3) *firm size* (4) *return on asset* (ROA) and (5) *financial distress*, which is reflected by the *Altman-Z score* (*Azscore*) and predicts the probability of bankruptcy of the pharmaceutical firms within two years (Altman, 1968). Finally, to measure the country-level impact of economic activities, we include home country *GDP*.

FINDINGS AND DISCUSSION

Table 1 shows our main results and a regression analysis exploring the direct effects on the relationship between CEO compensation and various innovation outcomes within firms, as well as the moderating effects of TMT nationality diversity and cultural diversity. In the interest of brevity, we focus on only a few results in the main text and exclude tables of descriptive stats and robustness/sensitivity analysis.

In Column (1), Our main interest variable, *CEO compensation*, association with *CD* is positive and statistically significant ($\beta = 40.868$, $p < 0.001$), suggesting that firms that adopt higher long-term compensation strategies for their CEOs are more successful in achieving combined dimension for innovation activities.

Column (2) shows a significantly positive interaction between *Cultural diversity* and *CEO compensation* on *combined dimension (CD)* with a coefficient of 23.849 ($p < 0.001$). This suggests that cultural diversity within a firm significantly strengthens the relationship between long-term CEO compensation and the firm's ability to engage in combined dimensions.

In Column (3) we introduce *TMT nationality diversity*, and its interaction with *CEO compensation* is significant and positive ($\beta = 35.378$, $p < 0.01$), indicating that that TMT nationality diversity amplifies the impact of CEO compensation on the firm's combined dimension, enhancing the ability to balance different between exploration and exploitation of new opportunities.

Column (4) shows regression result which includes all elements: *CEO compensation, TMT nationality diversity, cultural diversity*, and their interactions are considered. The interaction term, *Cultural diversity x CEO compensation*, is significantly positive ($\beta = 22.739$, $p < 0.001$), and *TMT nationality diversity*'s interaction with *CEO compensation* shows a lessened but still positive effect ($\beta = 28.026$, $p < 0.05$).

Organizations are increasingly confronted with the challenge of matching their innovation portfolios to reliable information about future market and technological uncertainties (opportunities), underpinned by judgements from CEOs and TMTs (Keil et al., 2021). The magnitude of the problem increases with the complexities involved in doing business across borders, especially with pressures to augment corporate value across multiple locations on one hand (Beugelsdijk, 2022), and heightened coordination and integration of

locally-embedded knowledge from geographically dispersed and culturally disparate regions, on the other (Bathelt et al., 2018).

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Figure 1: Theoretical model

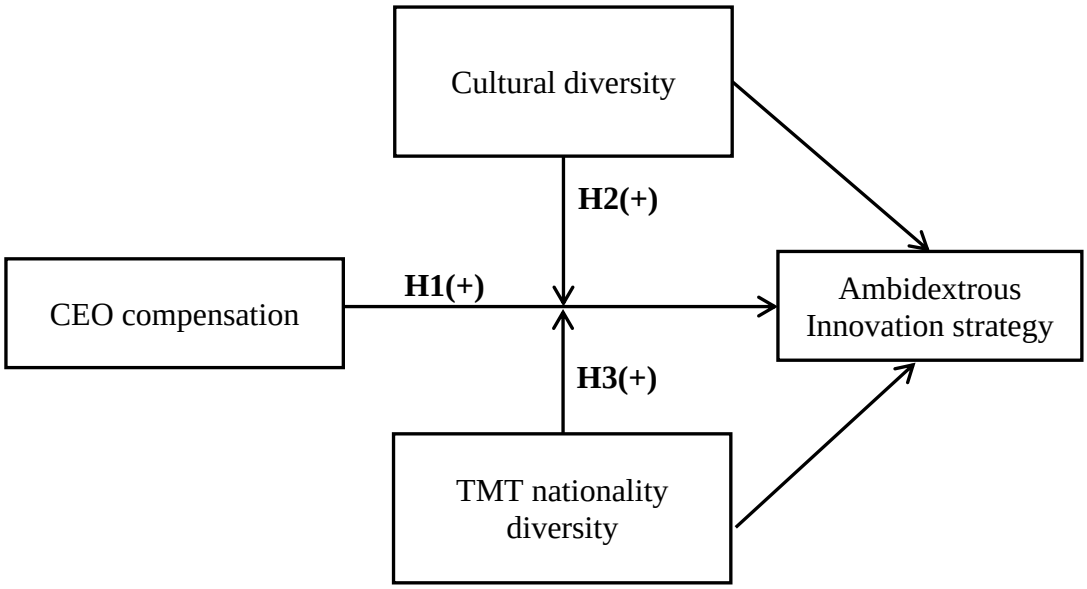

Figure 2: Geographical Distribution of High-tech Pharmaceutical MNEs

Appendix A: Variable Measurement

Variable	Measurement
Make	R&D intensity measured by R&D expenditure divided by total sales
Buy	Natural logarithm of expenditure in technology acquisition (TA) in million USD dollars plus one. TA is calculated as: Intangibles + Amortization of Intangibles + Change in Goodwill + Amortization of Goodwill where Intangibles, Amortization of Intangibles, Change in Goodwill and Amortization of Goodwill are in USD million.
CD	Following previous ambidexterity studies (e.g., Cao et al., 2009), CD is measured by the product of R&D intensity and ln(1+TA)
BD	The absolute value of the different between R&D intensity and ln(1+TA)
CEO compensation	CEO long-term compensation ratio, which is long-term compensation divided by total compensation, adjusted by industry-average per country
Culture diversity	Following Hutzschenreuter et al. (2011), we computed the sum of cultural distance between every pair of subsidiaries existing at a given point in time and divided that total by the number of pairs
TMT nationality diversity	*Blau index* of heterogeneity calculated by $B=1-\sum(S_i)^2$. where S_i is the proportion of TMT members who are foreign nationals.
CEO Age	CEO age in natural logarithm
CEO Education	A dummy variable coded 1 if the CEO has PhD and 0 otherwise.
CEO Gender	A dummy variable coded 1 if the CEO is female and 0 otherwise.
Firm leverage	The ratio of total liabilities to total equity
Firm age	The natural logarithm of firm age plus one.
Firm size	The natural logarithm of market capitalization in USD million
Firm ROA	Return on assets (ROA) is calculated as the ratio of net income to total assets
Azscore	Altman's Z-score, capturing the probability of the firm going to bankruptcy, is measured as: $1.2T_1+1.4T_2+ 3.3T_3+ 0.6T_4+ 1.0T_5$. T_1measured as $T_1 = \frac{Working\ Capital}{Total\ Assets}$, T_2measured as $T_2 = \frac{Retained\ Earnings}{Total\ Assets}$ T_3measured as $T_3 = \frac{Earnings\ before\ Interests\ and\ Taxes}{Total\ Assets}$, T_4measured as $T_4 = \frac{Total\ Common\ Equity}{Total\ Liabilities}$, T_5 measured as $T_5 = \frac{Sales}{Total\ Assets}$.
GDP	The natural logarithm of home country GDP of the MNE

Table 2. Main Findings

	(1) CD	(2) CD	(3) CD	(4) CD	(5) BD	(6) BD	(7) BD	(8) BD
CEO compensation	40.868***	23.197***	35.039***	19.414***	1.245***	2.490***	3.655***	4.387***
	(2.290)	(4.103)	(3.058)	(4.428)	(0.320)	(0.575)	(0.423)	(0.615)
Cultural diversity		0.540		0.532		0.054		0.046
		(0.384)		(0.385)		(0.054)		(0.053)
Cultural diversity x CEO compensation		23.849***		22.739***		-1.600*		-0.989
		(4.461)		(4.487)		(0.625)		(0.623)
TMT nationality diversity			-1.929	-1.503			-0.077	-0.070
			(1.944)	(1.943)			(0.269)	(0.270)
TMT nationality diversity x CEO compensation			35.378**	28.026*			-14.466***	-14.195***
			(12.305)	(12.341)			(1.703)	(1.713)
CEO age	0.029	0.025	0.030†	0.026	0.006**	0.006**	0.006**	0.006**
	(0.018)	(0.018)	(0.018)	(0.018)	(0.002)	(0.002)	(0.002)	(0.002)
CEO education	1.233†	1.134	1.106	1.039	-0.983***	-0.968***	-0.930***	-0.921***
	(0.707)	(0.706)	(0.708)	(0.707)	(0.099)	(0.099)	(0.098)	(0.098)
CEO gender	-5.347***	-5.212***	-5.364***	-5.230***	0.230	0.224	0.220	0.216
	(1.159)	(1.155)	(1.159)	(1.155)	(0.162)	(0.162)	(0.160)	(0.160)
Firm leverage	-0.020	-0.017	-0.019	-0.017	0.000	0.000	0.000	0.000
	(0.029)	(0.028)	(0.029)	(0.028)	(0.004)	(0.004)	(0.004)	(0.004)
Firm age	0.027***	0.025***	0.026***	0.025***	-0.004	-0.004	-0.003	-0.003
	(0.004)	(0.004)	(0.004)	(0.004)	(0.000)	(0.000)	(0.000)	(0.000)
Firm size	5.603***	5.393***	5.587***	5.388	0.761***	0.764***	0.775***	0.775***
	(0.144)	(0.152)	(0.145)	(0.153)	(0.020)	(0.021)	(0.020)	(0.021)
Firm ROA	0.115	0.138	0.130	0.149	0.030	0.028	0.025	0.024
	(0.357)	(0.356)	(0.357)	(0.356)	(0.050)	(0.050)	(0.049)	(0.049)
Azscore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
GDP	1.316***	1.461***	1.290***	1.436***	-0.214***	-0.212***	-0.221***	-0.218
	(0.207)	(0.212)	(0.211)	(0.217)	(0.029)	(0.030)	(0.029)	(-0.159)
Constant	-58.690***	-61.961***	-57.566***	-61.001***	4.642***	4.528***	4.780***	4.660

	(6.000)	(6.140)	(6.139)	(6.301)	(0.838)	(0.860)	(0.849)	(6.374)
Fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observation	4204	4204	4204	4204	4204	4204	4204	4204
R^2（%）	45.43	46.52	45.99	48.4	12.34	12.87	12.87	13.06

$^{\dagger}p < 0.1$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$