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Human Capital and CEO Compensation during Institutional Transitions

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ABSTRACT   Firms appoint CEOs with different types of human capital in order to manage resource dependencies. How CEOs are compensated thus can be conceptualized as a valuation process of how boards view the value of CEOs' human capital. Two types of human capital – international experience and political ties – have emerged as potential drivers of CEO compensation during institutional transitions. But how they impact CEO compensation has remained unclear. We develop a resource dependence-based, contingency framework to focus on the *external* and *internal* factors that enable or constrain human capital to impact CEO compensation. Because of the tremendous regional diversity within China, externally, we focus on the level of marketization of the region in which firms are headquartered. Internally, we pay attention to two corporate governance mechanisms: politically connected outside directors and compensation committee. Data from 10,329 firm-year observations at 94 per cent of listed firms in China largely support our framework. Overall, our study contributes to resource dependence research by extending this research to the context of institutional transitions with a focus on how human capital impacts CEO compensation.

Keywords: CEO compensation, human capital, international experience, institutional transitions, political ties, resource dependence

INTRODUCTION

As a leading theoretical perspective advocated by Pfeffer and Salancik (1978), resource dependence theory posits that firms engage in strategic actions to enhance their control of the resources needed for survival and prosperity (Drees and Heugens, 2013; Hillman et al., 2009; Wry et al., 2013). The theory suggests that appointing chief executive officers (CEOs) represents one of the most important strategic actions in managing resource dependencies (Finkelstein et al., 2009).

Having appointed CEOs, boards need to properly compensate and motivate CEOs. Different CEOs bring in different types of human capital, which broadly refers to the

stock of skills, knowledge, and social ties embodied in the capabilities to perform certain tasks that add economic value (Combs and Skill, 2003; Harris and Helfat, 1997; Ployhart and Moliterno, 2011). Because CEOs are aware that their human capital adds value, they are interested in leveraging it to maximize compensation (Geletkanycz et al., 2001; Pandher and Currie, 2013). From a resource dependence perspective, how much boards decide to compensate CEOs can be conceptualized as a valuation process of how boards value CEOs' capabilities – embodied in their human capital – in managing resource dependencies. What then drives the compensation of CEOs with different types of human capital?

The determinants of CEO compensation has a vast literature (see reviews by Devers et al., 2007; Finkelstein et al., 2009; Gomez-Mejia et al., 2010; and meta-analyses by Tosi et al., 2000; Van Essen et al., 2012a, 2014). At least two schools of thought can be identified in this literature. The first is an agency conflict view, emphasizing how boards can use incentives in CEO pay packages to reduce agency problems (Baker et al., 1988). The second is an executive power view, highlighting how CEOs use their positional and expert power to neutralize efforts designed to restrain their compensation (Finkelstein, 1992; Van Essen et al., 2014; Westphal and Zajac, 1995). While debates rage, what unites the majority of CEO compensation studies is that they take place in the relatively stable institutional environments of developed economies. As institutional transitions unfold throughout emerging economies, what drives the compensation of CEOs who bring in different types of human capital remains intriguing but unclear.

Institutional transitions refer to 'fundamental and comprehensive changes introduced to the formal and informal rules of the game that affect organizations as players' (Peng, 2003, p. 275). Resource dependence theory asserts that the *context* of institutional transitions is important, because to understand the behaviour of firms, we 'must understand the context of that behavior' (Pfeffer and Salancik, 1978, p. 1). During institutional transitions unfolding in many emerging economies, two types of human capital – international experience and political ties – have emerged as potential drivers of CEO compensation (Sun et al., 2010b).[1] In the context of intensifying global competition, international experience may not only help firms attain better performance, but also enable CEOs to obtain higher compensation (Carpenter et al., 2001). Another important form of CEO human capital is CEO political ties, which remain highly relevant during institutional transitions (Li and Zhang, 2007; Li et al., 2008; Peng and Luo, 2000; Shi et al., 2014). CEOs with political ties are reportedly paid handsomely.[2] Thus, an interesting but previously underexplored question emerges: *How* do international experience and political ties impact CEO compensation during institutional transitions?

In response, we develop a resource dependence-based, contingency framework to focus on the *external* and *internal* factors that enable or constrain human capital to impact CEO compensation in China (Boyd et al., 2012; Combs and Skill, 2003; Desender et al., 2013; Filatotchev and Allcock, 2010). Because of the tremendous regional diversity within China (Chan et al., 2010; Shi et al., 2012), *externally*, we focus on how the level of marketization of a region (province) – a measure of market-oriented institutional changes – affects the compensation of CEOs of firms headquartered in that region. *Internally*, we pay attention to the role played by two important corporate governance mechanisms, politically connected outside directors and compensation committee.

Overall, from a resource dependence perspective, a focus on the impact of different forms of human capital on CEO compensation during institutional transitions is *theoretically* important (Wry et al., 2013). This is because it permits us to follow Lin et al. (2009), Peng (2004), and Xia et al. (2014) to extend resource dependence theory to the context of institutional transitions. On the one hand, none of these three previous studies drawing on resource dependence theory has focused on CEO compensation. On the other hand, none of the nine previous papers on CEO compensations in China has drawn on this theory. Eight of them use agency theory (Bai and Xu, 2005; Buck et al., 2008; Cordeiro et al., 2013; Firth et al., 2006; Groves et al., 1995; Kato and Long, 2006; Mengistae and Xu, 2004; Wen et al., 2002), and one uses social network theory (Markoczy et al., 2013). Given (1) that boards play an important role in determining CEO compensation, and (2) that research on boards is the area where resource dependence theory enjoys 'greatest research influence' (Hillman et al., 2009, p. 1408), clearly, an opportunity exists to extend resource dependence research with a focus on CEO compensation to the context of institutional transitions.

Studies in relatively stable environments such as the United States have long documented that CEO compensation is jointly determined by market and political processes (Finkelstein and Hambrick, 1989), and thus a pure market-based (economic) explanation is not sufficient (Baker et al., 1988; Gomez-Mejia et al., 2010). Likewise in emerging economies undergoing institutional transitions, CEO compensation is also likely to be jointly determined by market and political processes – as represented by CEO international experience and political ties, respectively. Informed by resource dependence theory, our selection of the three sets of contingency variables – marketization, political directors, and the compensation committee – is driven by their relevance to market and political processes.

HUMAN CAPITAL, MARKET TRANSITION, AND POWER CONVERSION

A hallmark of institutional transitions in emerging economies is that 'while market forces have certainly become more important, government influences are not necessarily in decline' (Li et al., 2013, p. 206). As a result, a crucial strategic task for firms – especially CEOs and boards – is how to cope with the necessity to manage various resource dependencies on markets and on governments (Peng, 2003; Yiu et al., 2014). A fundamental feature is 'the lack of specific demarcation that separates market influences and government influences' (Li et al., 2013, p. 207), forcing firms (and boards) to experiment with appointing CEOs with different types of human capital – in our case, international experience and political ties as discussed in this section.

Human Capital and CEO Compensation

Assuming a reasonably functioning labour market, human capital is typically an important determinant of CEO compensation (Becker, 1972; Combs and Skill, 2003). From a resource dependence standpoint, CEO human capital 'derives from the ability a [CEO] position gives its incumbent to provide resources to an organization or to solve its resource acquisition problems' (Pfeffer and Davis-Blake, 1987, p. 440). A strict definition

of a CEO's particular human capital consists of his/her 'expertise, experience, knowledge, reputation, and skills' (Haynes and Hillman, 2010, p. 1146), from which a CEO can draw to enhance firm performance and manage external resource dependencies (Combs and Skill, 2003; Ployhart and Moliterno, 2011). A broader definition of human capital may also include social capital, defined as a resource that is embedded in a CEO's network relationships such as political ties (Peng and Luo, 2000). This broader conceptualization of human capital, which we use in this paper, 'recognize[s] the independent nature of human and social capital . . . and the difficulty of isolating the effect of one from the other' (Haynes and Hillman, 2010, p. 1147).

In comparison to the voluminous literature on CEO compensation in developed economies (Devers et al., 2007; Finkelstein et al., 2009; Gomez-Mejia et al., 2010; Tosi et al., 2000; Van Essen et al., 2012a, 2014), the literature on CEO compensation in the world's second largest economy is sparse (Sun et al., 2010b). The small number (a total of nine) of China studies (Table I) adds significant insights and documents the rise of CEO compensation over time (Figure 1). However, they typically focus on pay–performance sensitivities (Buck et al., 2008; Firth et al., 2006; Kato and Long, 2006) instead of the crucial resource dependence-based human capital dimension on which we focus. Most papers in Table I rely on agency theory. However, in the aggregate, findings have so far been inconsistent with the agency theory framework (Sun et al., 2010b). Therefore, invoking additional theoretical perspectives such as resource dependence theory has been called for (Peng, 2004; Sun et al., 2010b).

In research on institutional transitions, there is a long-standing debate on the changing value of human capital (Keister, 2009). Two contrasting views are Nee's (1989) market transition argument and Walder's (2003) power conversion argument. Although these arguments do not originate from an interest in CEO compensation, we leverage these arguments within a resource dependence framework and to extend them to CEO compensation research – as outlined next.

Market Transition

The market transition view argues for the *increasing* value of market-based capabilities and the *declining* value of political ties (Nee, 1989; Nee and Cao, 2005).[3] We extend Nee's (1989) focus on market-based capabilities to the area of CEO human capital and compensation. Specifically, we argue that international experience has emerged as an important form of market-based human capital. Increasing marketization and globalization tend to demand managerial knowledge and skills that CEOs who have gained managerial experience within emerging economies often lack. Executives with international experience tend to be in high demand, because unlike their home-grown counterparts, executives with international experience possess valuable, rare, and hard-to-imitate skills and experiences that may allow their firms to successfully compete in market competition (Barney, 2001). Not surprisingly, the high demand for skills that executives with international experience tend to possess enhances their bargaining power with boards, which is often translated into high CEO compensation

While there can be other forms of human capital to proxy market-based capabilities (Becker, 1972), we advocate three reasons as to why CEOs' international experience

Table I. Research on CEO compensation in China

Study	Sample (years)	Key contributions
Groves et al. (1995)	769 non-listed SOEs (1980–89)	Executive compensation has become more market-driven and is linked to firms' profits.
Wen et al. (2002)	180 observations from 60 listed firms (1996–98)	Board size and firm leverage has no significant relationship with CEO compensation.
Mengistae and Xu (2004)	769 non-listed SOEs (1980–89)	CEO compensation has doubled and pay-performance sensitivities increased.
Bai and Xu (2005)	300 non-listed SOEs (1980–89)	The more important managerial efforts and discretion, the more likely incentive pay would be adopted. Profits are not the only objective of the Chinese government in designing CEO contracts.
Firth et al. (2006)	1647 observations from 549 listed firms (1998–2000)	Pay-performance sensitivities are low for CEOs. Firms owned by state agencies rarely use performance related pay.
Kato and Long (2006)	942 listed firms (1999–2002)	Pay-performance sensitivities are high for CEOs. The relationship is weakened by a high level of state ownership.
Buck et al. (2008)	601 listed firms (2000–2003)	Pay-performance sensitivities for Chinese CEOs are similar to those for US and UK CEOs.
Markoczy et al. (2013)	7618 firm-year observations (2001–06)	Setting up a compensation committee (CC) is practice of symbolic management that actually generates higher CEO pay.
Cordeiro et al. (2013)	7794 firm-year observations (2001–07)	Accounting performance (ROA) is weighted more than shareholder returns in determining CEO compensation.
Our study	10,329 firm-year observations from 992–1581 listed firms (2001–08)	From a resource dependence perspective, we focus on international experience and political ties – the first study in this literature to concentrate on CEOs' human capital anchored by a contingency framework. Empirically, our data have the longest span of years.

translates to higher compensation. First, CEOs possessing international experience represent a new managerial breed in China, coinciding with institutional transitions featuring more market competition (Filatotchev et al., 2009; Liu et al., 2010). In recent years, Chinese firms at home increasingly experience the competitive 'heat' from both imports and foreign direct investment (FDI)-based products produced and marketed in China (Cuervo-Cazurra and Dau, 2009; Meyer et al., 2009). For a purely *defensive* reason, many Chinese firms find it necessary to appoint CEOs who have a better understanding of the strategies and tactics of foreign rivals that have entered China (Cheng, 2009).

Second, for an *offensive* reason, many Chinese firms have embarked on internationalization (Filatotchev et al., 2009; Luo and Tung, 2007; Peng, 2012; Sun et al., 2012, 2014; Xia et al., 2014; Yamakawa et al., 2013). Naturally, they favour CEOs with international
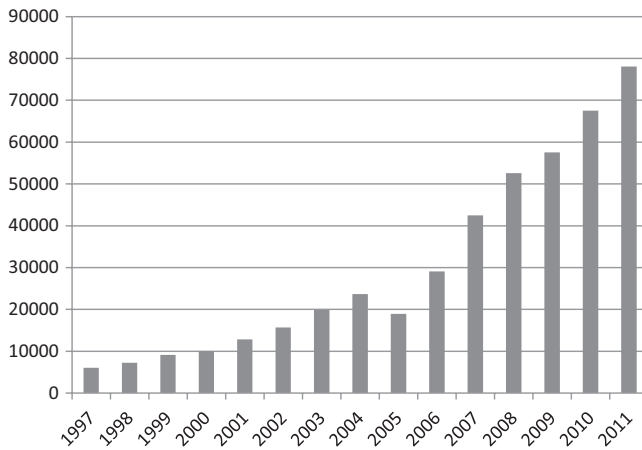
Figure 1. The increase of CEO compensation in China

Note: All compensation data here refer to cash (salary and bonus) compensation for CEOs at listed firms. 1997–98 data are from Wen et al. (2002). 1998–2000 data are from Firth et al. (2006). 2001–08 data are from our sample. 2009–11 data are from the WIND database. All based on inflation-adjusted 2001 yuan (the exchange rate during the 2001–11 period was approximately US\$1 = 8.27 yuan to 6.46 yuan).

experience. The severe shortage of CEOs with international experience may thus boost the earnings of such CEOs (Carpenter et al., 2001).

Third, Chinese firms need to compete against foreign firms for top CEO material. As more multinationals rush to China, they essentially go after the same pool of scarce talent, which is especially slim at the top. To keep up in the 'war on talent', Chinese firms often have to offer compensation higher than their historical norms in order to attract and retain top talent (Cheng, 2009; Markoczy et al., 2013; Nee and Cao, 2005).

In general, human capital theory suggests that CEOs are paid according to their job complexity and risk exposure (Finkelstein et al., 2009; Harris and Helfat, 1997; Henderson and Fredrickson, 1996). Also, a higher level of risk exposure would justify a higher level of compensation (Devers et al., 2007; Hoskisson et al., 2009). Widespread internationalization, especially for inexperienced firms, entails a substantially higher level of complexity and risk, thus justifying the rise of CEO compensation recently (Carpenter et al., 2001; Filatotchev and Allcock, 2010).

Overall, the market transition argument suggests that international experience may become an increasingly important and valuable form of human capital. As home-grown Chinese executives often lack international experience, having CEOs with international experience is likely to provide firms with a competitive advantage that warrants high CEO compensation. The market transition argument does not claim that political ties have no value – they continue to add value under certain circumstances (Nee and Opper, 2010; Shi et al., 2014). It is the argument on the *relative* decline of the dependencies on political ties (when compared with market-based capabilities such as international experience) that leads to disagreements with scholars advocating the power conversion argument.

Power Conversion

Walder's (2003) power conversion argument suggests that human capital embodied in political ties affords politically connected elites, such as communist cadres and officials, a great deal of advantage. During the transitions, these individuals are often able to manoeuvre into newer and more lucrative positions of power and wealth (Puffer and McCarthy, 2007). In China, a majority of listed firms are state-owned enterprises (SOEs) with CEOs directly appointed by the government (Brodsgaard, 2012; Fan et al., 2007b; Hung et al., 2012a; Liang et al., 2014; Peng, 2004). The main difference in terms of personal wealth is that cadres and officials during the pre-transition era had limited wealth, and they, once installed as CEOs at better funded, listed firms, can now fetch much larger compensation and perks (Walder, 2003, p. 903).[4]

According to resource dependence theory, appointing CEOs with political ties can be a co-option strategy – 'non-market based action for companies to achieve a competitive leverage' (Pfeffer and Salancik, 1978/2003, p. xxiv). Such strategy may involve 'political activities and co-opting political elites – for instance, by hiring ex-state officials' (p. xxiv). During institutional transitions, CEOs with political ties tend to know how to influence political decisions in favour of their firms and also how to co-opt political elites to manage resource dependencies (Brodsgaard, 2012; Shi et al., 2014). Therefore, high compensation paid to this type of CEO may be consistent with the value of their human capital embodied in political ties (Li and Zhang, 2007; Peng and Luo, 2000).[5]

CONTINGENCY VALUE OF HUMAN CAPITAL DURING INSTITUTIONAL TRANSITIONS

While the two different forms of human capital are likely to be important drivers of CEO compensation, the diversity of Chinese firms suggests that they are not likely to be equally important in all firms. Thus, theoretically, it is valuable to recognize the heterogeneity among firms, which suggests the usefulness of developing a contingency perspective (Boyd et al., 2012; Filatotchev and Allcock, 2010; Li and Zhang, 2007; Peng and Luo, 2000; Wu et al., 2013). Consequently, we develop a resource dependence-based, contingency model illustrated in Figure 2. Since CEO compensation is a major corporate governance decision and corporate governance has both external and internal mechanisms, we focus on the salient external and internal factors as contingency factors affecting CEO compensation (Aguilera et al., 2008; Pandher and Currie, 2013). Externally, we focus on the degree of marketization of the region in which firms are headquartered, given the regional diversity within China. Firms in China also tend to differ in internal governance mechanisms, which allow us to explore the effect of two crucial internal mechanisms – politically connected outside directors and compensation committee. Although resource dependence theory is generally externally focused, resource dependencies impact organizational outcomes through internal workings. Thus, a contingency model bringing together the salient external and internal factors can extend and contribute to the development of resource dependence theory (Wry et al., 2013).
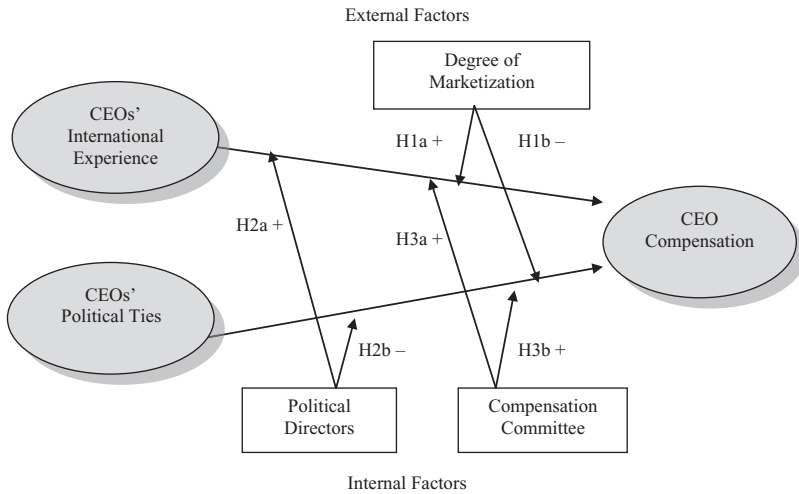
External Factors

Figure 2. Research model

External Factors: Degree of Marketization

As a measure of market-oriented institutional transitions, marketization refers to the extent to which economic exchanges are governed by market forces as opposed to government involvement (Nee, 1989). Although the general direction towards more market competition is clear (Cuervo-Cazurra and Dau, 2009; Peng, 2003), the pace for such transitions within a large and diverse country such as China is uneven (Chan et al., 2010; Li et al., 2013; Sun et al., 2014; Yiu et al., 2014). It is true that sub-national regional differences can be found in every large and complex country, such as the United States (Chan et al., 2010) and Vietnam (Meyer and Nguyen, 2005). In China, 'given its size, this holds even more so' (Tse, 2010, p. 19). In terms of informal institutions, 'provinces retain their distinct identities, with their own cuisines, customs, dialects, and sometimes languages' (Tse, 2010, p. 19). In terms of formal institutions, despite the nationwide implementation of corporate law and other market-oriented policies, substantial sub-national (or inter-regional) differences exist (Shi et al., 2012, p. 1225).

From a resource dependence perspective, although Chinese firms often operate in multiple provinces, they heavily rely on their headquarters region (province) to access various scarce resources, such as land, loans, talents, licenses, favourable taxation, and subsidies. These resources are often controlled by the provincial government (Shi et al., 2014). However, such dependencies vary based on the degree of marketization of the headquarters region. Firms in high marketization regions (such as Shanghai) may value market-based capabilities, including CEO international experience, more than firms in low marketization regions (such as Gansu) do (Shi et al., 2012). In high marketization regions, (1) competition from imports and FDI-based products, (2) Chinese firms' interest in outward internationalization, and (3) the bidding for CEO talent unleashed by non-Chinese multinationals rushing to China (or specifically, to these particular regions) may combine to enhance the value of CEO international experience. In addition, a higher level of marketization means that critical resources (e.g., land and credit) may be

increasingly obtained from markets as opposed to governments (Nee and Opper, 2010). These transitions amplify the importance of market-based capabilities such as CEO international experience. Thus, firms in high marketization regions may be more willing to pay higher compensation for CEOs with such experience.

Firms in high marketization regions, however, may not benefit from CEOs' political ties as much as firms in low marketization regions do. In low marketization regions, since critical resources (e.g., land) may still be in government hands, the value of political ties is high (Walder, 2003; Wu et al., 2013). Because increased marketization generally reduces resource dependencies on governments, the value of political ties may decline (Nee, 1989; Siegel, 2007). In high marketization regions, firms may be less willing to pay high compensation for CEOs with political ties. Overall, the strengths of the relationship between a CEO's political ties and compensation may be weaker in high marketization regions. Thus:

Hypothesis 1a: The level of marketization in the headquarters region of the firm will positively moderate the positive relationship between international experience and CEO compensation.

Hypothesis 1b: The level of marketization in the headquarters region of the firm will negatively moderate the positive relationship between political ties and CEO compensation.

Internal Factors: Politically Connected Outside Directors and Compensation Committee

In developing resource dependence theory, Pfeffer and Salancik (1978/2003, pp. 162–64) emphasize the importance of boards in provisioning important resources to the firm. Consequently, we focus on two crucial factors associated with the inner workings of boards: (1) politically connected outside directors (Lester et al., 2008), and (2) the compensation committee (Daily et al., 1998).

Pfeffer and Salancik (1978/2003, p. 163) suggest that 'when an organization appoints an individual to a board, it expects that the individual will come to support the organization'. Therefore, outside directors with different backgrounds and ties bring various valuable resources to the firm (Peng, 2004).[6] Among several types of outside directors, politically connected outside directors – hereafter 'political directors' for compositional simplicity – are likely to be appointed due to the value of their political ties (Lester et al., 2008). How do political directors interact with CEOs with different forms of human capital?

CEOs with international experience tend to be market driven and have professional backgrounds. For two reasons, we expect their compensation to be enhanced by the presence of political directors. First, political directors may have to rely on CEOs' complementary human capital embodied in international experience to leverage these directors' political ties. Because the value of political ties may deteriorate over time (Peng, 2003; Sun et al., 2010a), political directors may have more urgency to capitalize on their own human capital centred on political ties (Lester et al., 2008). However, given the

necessity to manage resource dependencies in an increasingly market-driven economy, political ties alone may not necessarily carry the day (Li et al., 2013). Directors with political ties may need CEOs with international experience to successfully lead firms to attain better performance. Thus, political directors are likely to value CEOs with complementary but different human capital (such as those with international experience), and reward these CEOs with higher compensation.

Second, since the strengths of political directors primarily lie in their political ties, their insights into the internal operations of the firm and their expertise in market-orientated strategies tend to be limited (Fan et al., 2007b). For internal operations and for expertise in market-oriented strategies, political directors thus may need to strongly ally with CEOs with international experience in order to achieve the board's role in assisting firms to accomplish their product market performance goals. This enhances the bargaining position of such CEOs to extract higher compensation. Thus:

> *Hypothesis 2a*: The number of politically connected outside directors on the board will positively moderate the positive relationship between international experience and CEO compensation.

For CEOs with political ties, political directors would interact with them differently. Resource dependence theory suggests that political directors are likely to value less the political ties of a CEO (Pfeffer and Salancik, 1978/2003). This is because the board already has the needed political ties to access critical resources. Having a politically connected CEO simply duplicates the skills that these directors already possess and thus adds relatively little to a firm's ability to manage external resource dependencies (Pfeffer, 1972). Thus, a CEO with political ties may be less able to bargain for higher compensation on the basis of his/her political ties when dealing with political directors. Thus:

> *Hypothesis 2b*: The number of politically connected outside directors on the board will negatively moderate the positive relationship between political ties and CEO compensation.

Another internal governance mechanism is the CEO compensation committee (CC), which is designed to monitor and constrain CEO compensation. CCs are set up by boards consisting solely of outside directors who tend to be more objective (Conyon and Peck, 1998; Daily et al., 1998; Markoczy et al., 2013). Yet, outside directors who serve on CCs often give in to the demands of CEOs for high compensation (Chen et al., 2010b). This is due to the desire of outside directors to be retained by a firm, whose retention decision is often influenced by the CEO (Hasenhuttl, 2008). In addition, outside directors tend to have higher reputation concerns to be good directors than inside directors do, as this reputation helps outside directors to keep and attain new directorship positions. Directors' reputation depends on how successful a firm is under their directorship (Masulis and Mobbs, 2013). This creates an incentive for outside directors who serve on CCs to be partial towards rewarding CEOs with relevant human capital in order to incentivize such CEOs for risk taking to improve firm performance.

For two reasons, we suggest that CEOs with international experience both demand higher compensation and are also more successful in convincing CCs to agree to do so. First, increased monitoring by CCs increases the career and employment risk of CEOs with international experience. Therefore, they may demand higher pay up front to compensate for this risk (Hoskisson et al., 2009). CEOs with international experience are also more likely to be hired to engage in risky, but potentially performance-improving market-oriented strategies (Liu et al., 2010). Taking such risk can adversely affect their job security and marketability in the case of failure (Filatotchev and Allcock, 2010). Demanding higher compensation for such risk may be easier for CEOs with international experience when CCs are present. Outside directors who consist of CCs may value such risk taking, whose success can also enhance their reputation as directors. Thus, these directors may take it onto themselves to construct justifications for higher CEO compensation to other board members and to shareholders. Wade et al. (1997) in the United States, Conyon and Peck (1998) in Britain, and Markoczy et al. (2013) in China document that CCs indeed often become legitimizing tools for *higher* CEO compensation as opposed to constraining CEO compensation. From a resource dependence perspective, we can argue that CCs may provide a shield to motivate, retain, and protect CEOs who are important to firms' survival and prosperity.

Second, CEOs with international experience are more professional and more likely to benchmark their pay against international norms (Chen et al., 2010b). In 2002, Hong Kong CEOs, a geographically most proximate group to mainland Chinese CEOs, commanded on average approximately US$700,000 in cash compensation (Cheng and Firth, 2006, p. 554). While modest by U.S. standards, Hong Kong CEO compensation would appear extraordinarily high by mainland Chinese standards. The average mainland Chinese CEO at a listed firm only fetched US$26,902 in cash compensation during our sample period (2001–2008).[7] Therefore, a case for higher compensation for CEOs with international experience can be plausibly made by CCs after conducting such benchmark surveys. In sum:

> *Hypothesis 3a*: The presence of a compensation committee on the board will positively moderate the positive relationship between international experience and CEO compensation.

Interestingly, politically connected CEOs, when dealing with CCs, are also likely to obtain higher compensation – due to three reasons. First, the concern of outside directors on CCs to retain directorship will likely make them inclined to favor high compensation for CEOs with political ties. Many Chinese firms have a large share of state ownership (Shi et al., 2014; Stan et al., 2014), and CEOs with political ties are in a good position to influence directors who represent the state when it comes making director retention decisions. Thus, CCs will likely favor higher compensation for CEOs with political ties.

Second, setting up a CC means increased monitoring of the CEO by the board. As discussed earlier, increased monitoring increases the career and employment risk of CEOs, especially for those with political ties (Hoskisson et al., 2009). CEOs with political ties tend to have better political skills to negotiate with boards and likely demand higher remuneration to compensate for the increased risk.

Third, given the growth of most (if not all) listed firms in China and, as noted earlier, the rising complexity of CEO job demands, the upward pressures for CEO compensation are strong (Figure 1). A decision for high CEO pay (by local standards), if made by the CC consisting of outside directors, may appear more legitimate and justifiable than such a decision made by a board without a CC (Markoczy et al., 2013). CEOs with political ties often possess skills to obtain this legitimate outcome. Therefore:

Hypothesis 3b: The presence of a compensation committee on the board will positively moderate the positive relationship between political ties and CEO compensation.

METHOD

Sample and Data

Our sample is drawn from firms listed on the Shanghai and Shenzhen Stock Exchanges (A shares) from 2001 to 2008 (inclusive). Following Firth et al. (2006), we exclude all financial services firms. Our final sample consists of 10,329 firm-year observations in eight years. In each year, the number of firms ranges between 992 in 2001 and 1581 in 2008, representing on average 94 per cent of all listed firms (Table II). Relative to all China studies on CEO compensation reviewed in Table I, our sample has the *longest* time span containing data from eight years, whereas most previous studies on listed firms use a shorter span of two to four years (Buck et al., 2008; Firth et al., 2006; Kato and Long, 2006; Wen et al., 2002).

We manually collect data from annual reports. Additional data come from the China Stock Market and Accounting Research (CSMAR) database and the WIND database. Recent studies in accounting (Hung et al., 2012a), economics (Bai and Xu, 2005; Kato and Long, 2006), and management (Lin et al., 2009; Xia et al., 2014) have used these influential databases.

Main Variables

CEO compensation refers to *cash* (salary and bonus) only, with no long-term incentive plans such as stock options. This is consistent with all previous compensation studies in China cited in Table I. This reflects the realities of the China context, where a vast majority of Chinese firms do not have long-term incentive plans. From a research standpoint, adding incentive plans into the CEO compensation mix creates confusion and debate (Gomez-Mejia et al., 2010; Martin et al., 2013; Sauerwald et al., 2015). Conceptually, cash compensation represents the closest match to the construct 'compensation'. Unlike stock options whose value is not totally controlled by boards, cash is directly controlled by boards. Thus, how much cash that boards decide to pay CEOs appears to be the most direct measure of the value of CEOs' capabilities in managing resource dependencies in the eyes of directors (Carpenter et al., 2001; Harris and Helfat, 1997). Consequently, using only cash has been argued to be a *strength* of China data in CEO compensation research (Buck et al., 2008).[8] Specifically, compensation is measured by the natural log of cash compensation (salary and bonus) CEOs received during the 2001–08 period (Buck et al., 2008). We also adjust CEO compensation by using the inflation-adjusted 2001 constant yuan.

Table II. Our sample

Year	Total number of listed firms	Total sampled firms	Percentage sampled	CEO compensation mean (US$)*	SD (US$)	Minimum (US$)	Maximum (US$)
2001	1,160	992	86%	12,856	26,524	383	158,635
2002	1,224	1,123	92%	15,671	15,473	795	192,771
2003	1,287	1,196	93%	19,924	18,653	924	205,623
2004	1,377	1,303	95%	23,684	21,960	1,157	206,827
2005	1,381	1,240	90%	18,926	24,134	121	535,358
2006	1,434	1,386	97%	29,080	25,461	402	363,398
2007	1,550	1,508	97%	42,481	49,255	594	971,888
2008	1,625	1,581	97%	52,591	52,617	1,948	943,775
Total	11,038	10,329	94%	26,902	29,260	121	971,888

Note: * Based on inflation-adjusted 2001 yuan. The exchange rate was between US$1 = 8.27 yuan and 6.94 yuan from 2001 to 2008.

CEO International Experience and CEO Political Ties. We manually collect the CEO background data from annual reports. Following Fan et al. (2007b), we obtain a CEO profile from the 'Profile of Directors and Senior Managers' section. The CEO profile contains information on education, professional background, and career history. We trace international experience by examining whether the CEO has experience working for foreign-owned multinationals, experience working for overseas subsidiaries of Chinese firms, and/or overseas education (including that in Hong Kong, Macau, and Taiwan). A CEO is classified as having political ties if he/she has worked as an official in the central government, local government, industrial bureau, or military (Li et al., 2008). Both political ties and international experience are coded by a dummy variable, 1 having these attributes and 0 otherwise.[9] Overall, 8.6 per cent of sampled CEOs have international experience, and 20.6 per cent possess political ties.

Marketization Index. Focusing on market-oriented reforms, Fan et al. (2007a) develop a 12-point marketization index, on a province-by-province basis, to measure the degree of institutional transitions towards more market competition from 1997 to 2007 with five dimensions: (1) government and market forces, (2) development of non-SOEs, (3) development of product markets, (4) development of factor markets, and (5) development of market intermediaries. These dimensions catch the multiple institutions on pro-market reform in regulatory separation, liberalization, and privatization (Cuervo-Cazurra and Dau, 2009). Although there is anecdotal evidence on the tremendous diversity across regions in China (Tse, 2010), Fan et al.'s (2007a) index provides a systematic tool to quantitatively differentiate regions within China based on their degree of marketization. As a result, it has been widely used in research in accounting (Hung et al., 2012a), economics (Hornstein, 2011), finance (Fan et al., 2013), and management (Gao et al., 2010; Shi et al., 2012; Sun et al., 2014). Specifically, we use Fan et al.'s (2007a) marketization index for the headquarters region of the listed firms.[10]

Political Directors. Following Fan et al. (2007b), we manually collect data on outsider directors' background from the 'Profile of Directors and Senior Managers' section of annual reports. Outside directors are non-management members of the board (Peng, 2004). We numerically count the number of outside directors on the board who have political ties, using the same criterion for political ties for CEOs.

Compensation Committee, as used in Markoczy et al. (2013), is a dummy variable: whether the firm has a CC (1) or not (0).

Control Variables

Firm Age is controlled by counting the number of years since the founding year.

Firm Size is measured by the log number of employees per year. A meta-analytic review finds that firm size accounts for more than 40 per cent of the variance in CEO compensation (Tosi et al., 2000).

SOE. We use a dummy variable to distinguish between SOEs and non-SOEs. It is equal to 1 if the controlling shareholder is a government entity (at the central or provincial level), and 0 otherwise.

Controlling Shareholder Shares. We compute the amount of the largest shareholder's shares divided by all issued shares. A higher proportion of controlling shareholder shares would

indicate more power of the controlling shareholders and more monitoring of managers (Mengistae and Xu, 2004).

Performance. We use return on equity (ROE) to measure performance. ROE, the net income divided by equity, is commonly used in compensation research (Tosi et al., 2000). ROE is better suited to capture firm objectives, such as maximizing firm profitability and increasing shareholder (equity) value, than return on assets (ROA), which includes debtor's interest. We do not use stock market return because there is no broad consensus that China's stock markets are efficient and that prices are fair, open, and transparent (Fernald and Rogers, 2002). The turnover ratios of Chinese stock exchanges are 700–1000 per cent, relative to 67 per cent in the United States (Xu and Wang, 1999, p. 85). The average holding period lasts about 1–2 months in China, relative to 18 months in the United States. A general lack of concrete, high-quality information about specific firms results in stock returns being highly synchronized with general market movements. In an average week, approximately 80 per cent of Chinese stocks move together, whereas only 58 per cent of US stocks do so (Morck et al., 2000).[11] Overall, financial market-based measures in China tend to 'be less informationally efficient' (Peng, 2004, p. 461).

Slack. There is a debate regarding the role of organizational slack in general and during institutional transitions in particular (Stan et al., 2014; Tan and Peng, 2003). It is possible that slack may help CEOs pursue firm growth and increase compensation. We code slack as the debt/equity ratio (Peng et al., 2010).

Outsider Directors. Outsider directors (i.e., non-management members of the board) usually play the role of monitoring and evaluating strategies and practices such as compensation policy (Peng, 2004). We use the percentage of outside directors appointed during the CEO's tenure to total directors on the board to measure the independence of the board, which may affect CEO compensation (Zajac and Westphal, 1995).

Professional Directors. We manually collect the director background data from annual reports. Using the 'Profile of Directors and Senior Managers' section, we count the number of outside directors who have professional work experience in law, accounting, and finance.

CEO Education and Management Experience. Education and experience are often used as measures for human capital (Becker, 1972; Harris and Helfat, 1997). The value for CEO education ranges between 0 and 4: (0) high school, (1) some college, (2) holding a bachelor's degree, (3) holding a master's degree, and (4) holding a doctorate. We also count a CEO's years of experience in management.

CEO Gender. This value is equal to 1 for female, and 0 for male. The gender pay gap is common in corporate boardrooms, potentially because of gender stereotypes on leadership (Kulich et al., 2011).

CEO Duality. A dummy variable is equal to 1 when the CEO in a focal firm also serves as chair of the board, and 0 otherwise. When the CEO is also chair of the board, he/she has more power to influence strategic choices and compensation policy (Peng et al., 2010; Van Essen et al., 2012b).

CEO Tenure. This variable is the number of years an individual has been the CEO of the focal company. In general, a CEO with a longer tenure has more power over the board (Graffin et al., 2013; Harris and Helfat, 1997; Hill and Phan, 1991).

Incentive Plan. Because China's stock markets have separate, restricted classes of shares for different investors, the high level of speculation and volatility in the stock market make it difficult to calculate the intrinsic value of option using traditional tools such as the asset pricing model (Fernald and Rogers, 2002). In our sample, only 2.5 per cent of listed firms have long-term incentive plans (such as stock options) between 2001 and 2008. Therefore, we use a dummy variable, which is equal to 1 if the firm adopts an incentive plan.

In addition, we employ dummy variables to control for year effects and industry effects. The industry dummy variables follow the China Securities Regulatory Commission's *Industry Classification Guide of Listed Companies*.

Estimation Strategy

Management scholars have begun to pay attention to the spatial phenomena, such as network externalities (Chang and Park, 2005) and foreign affiliate performance (Chan et al., 2010). However, in a review of 29 articles, Doh and Hahn (2008) criticize that while management scholars use spatial constructs and variables, they do not use 'spatial method as understood in the literature' (p. 661). The challenge comes from the spatial dependence on cross-sectional data used in the regional econometrics models. For example, the CEO compensation of firm A located in city i may be influenced by firm B located in a nearby city j, because cities i and j share similar institutional structure, dialect, lifestyle, and income level, which increases labour mobility between the two cities. At the same time, because CEOs' human capital and social capital are highly embedded in the local community, China's lack of countrywide executive labour market makes it very rare for CEOs to take other CEO jobs in different (especially non-neighbouring or distant) regions (Sun et al., 2010b). Both tournament theory and social comparison theory would suggest that boards may adjust CEOs' pay level based on local and neighbouring regions' average level (O'Reilly et al., 1988). These may create the potential spatial dependency issue on CEO compensation. Without addressing this issue, traditional regression estimation and specification testing may increase the probability of Type I error and yield unreliable significance (Kreft and Leeuw, 1998), because the existence of spatial dependency may violate statistical assumptions on independence (Anselin, 1988).

To address these potential problems noted by Doh and Hahn (2008), we first identify a Chinese firm's location through its headquarters' postal code and its nearby city. Then we use user-written commands '*spatwmat*' and '*spatgsa*' to generate *Moran's I*, which can indicate whether spatial dependency exists at the local level (Doh and Hahn, 2008). After testing our data at two different levels (city level and province level), we find that the null hypothesis of no spatial dependence is rejected at the city level, but not at the province level. The rejection of the null hypothesis at the city level suggests that spatial terms must be selected and weighted in the regression. However, the non-rejection at the province level indicates that spatial terms would not hurt the overall reliability of our analysis (Doh and Hahn, 2008). It means that Chinese CEOs' pay level is affected by social comparison with nearby cities within a province, but not significantly affected by cross-province differences. This finding is consistent with previous research that reports jurisdictions at

the province level to be a powerful explanatory variable in China (Chan et al., 2010; Firth et al., 2010; Shi et al., 2012). Overall, regression analyses at the province level can thus generate more stable parameter estimates and reliable significance tests than regression analyses at the city level if spatial dependency is not compensated.

To address the spatial dependency problem, we apply multilevel analysis with random coefficients models (RCM) and build our data under a two-level hierarchical structure (Hitt et al., 2007). The first level is the firm (micro) level, and the second level is the province (macro) level. While low level units are *nested* in high level units, this approach creates intra-province correlation, which is the proportion of variance in the outcome variable that is between the high level units (Bliese and Ployhart, 2002). It can be identified from intra-class correlation (ICC). The ICC on a dependent variable shows how much of the variance of that variable at the micro level can be explained by macro level independent variables (Cuervo-Cazurra and Dau, 2009; Lim et al., 2009). Following Lim et al. (2009), we calculate covariance parameter estimates and find ICC to be 0.1267, suggesting that 12.67 per cent of the variation of CEO compensation is explained by intra-province differences.[12] In addition, since our Hypotheses 1a and 1b focus on the interaction of *inter*-province differences (marketization index), RCMs help differentiate them from *intra*-province differences.

Then, we build RCMs in mixed regression with the '*xtmixed*' command in Stata V.10. In RCMs, each province has the same explanatory variables and the same outcomes, but with different regression coefficients. The models are linked together by a high level model, in which the regression coefficients of the low level models are regressed on the high level explanatory variables (Kreft and Leeuw, 1998; Rabe-Hesketh and Skrondal, 2008). As such, we can more robustly differentiate intra-province differences (the moderating effects of marketization index on CEO compensation) from intra-province correlation.

Overall, we lag all independent variables by one year. Our first model is:

$$\text{Log (Compensation)} = \beta_o + \beta_{\text{international experience}} \times \text{International experience}$$
$$+ \beta_{\text{political ties}} \times \text{Political ties} + \beta_{\text{control variables}} \times \text{Control variables} + u \qquad (1)$$

FINDINGS

Descriptive statistics are presented in Table III. The correlation matrix suggests little problem of multicollinearity. Well below the usual cut-off of 10, the highest variation inflation factor (VIF) of all variables is 6.54, and the mean of all variables' VIF is 2.32 in the baseline model.

The mean for CEO cash compensation per year is US$26,902 (based on inflation-adjusted 2001 constant yuan) during the 2001–08 period. Compared with earlier data (Figure 1), CEO compensation has increased quickly in China. However, considering that the average CEO compensation at S&P 500 firms in the United States jumped from US$3.5 million to US$14.7 million (including incentive plans) between 1992 and 2000 (Bebchuk and Fried, 2006) and the average CEO compensation in Hong Kong climbed

Table III. Descriptive statistics and correlation

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. CEO compensation	1.000																			
2. Marketization index	**0.381**	1.000																		
3. Political directors	0.110	0.079	1.000																	
4. Compensation committee	**0.145**	0.101	**0.144**	1.000																
5. Firm age	−0.001	**0.138**	**−0.132**	−0.028	1.000															
6. Firm size	0.046	−0.110	0.097	−0.015	−0.107	1.000														
7. SOE dummy	−0.003	−0.097	0.010	0.049	−0.090	**0.177**	1.000													
8. Controlling shareholder shares	−0.059	−0.089	0.051	−0.025	**−0.351**	**0.222**	**0.323**	1.000												
9. Performance	**0.185**	0.003	0.030	0.008	**−0.131**	0.105	0.073	**0.130**	1.000											
10. Slack	0.018	0.017	0.017	0.005	−0.010	0.000	0.024	0.033	0.021	1.000										
11. Outsider directors	0.085	**0.168**	0.050	0.017	0.027	−0.100	0.030	−0.031	−0.001	−0.013	1.000									
12. Professional directors	**0.133**	**0.170**	**0.237**	**0.208**	−0.013	−0.011	−0.060	−0.049	−0.040	0.012	0.119	1.000								
13. CEO education	0.099	0.102	−0.029	0.054	0.014	−0.040	0.024	−0.007	−0.007	0.010	0.040	0.016	1.000							
14. CEO gender	−0.001	0.037	0.013	−0.007	0.027	−0.031	−0.051	−0.050	−0.050	0.002	−0.012	0.028	0.029	1.000						
15. CEO management experience	**0.126**	**0.121**	0.058	0.079	0.002	0.083	0.035	−0.017	−0.017	0.001	−0.023	0.087	−0.066	0.026	1.000					
16. CEO duality	0.018	0.012	0.015	−0.030	0.013	−0.026	−0.058	−0.047	−0.047	−0.012	−0.087	−0.027	−0.010	0.040	0.070	1.000				
17. CEO tenure	0.026	−0.032	−0.013	−0.041	−0.029	0.019	0.054	0.033	0.033	0.050	−0.057	−0.049	−0.037	0.004	**0.274**	0.009	1.000			
18. Option plan	−0.004	0.022	−0.010	−0.011	−0.023	−0.001	−0.024	−0.017	−0.017	0.009	−0.011	0.009	0.027	−0.003	−0.009	−0.005	0.001	1.000		
19. CEOs with international experience	0.114	0.098	−0.006	0.003	−0.002	−0.046	−0.064	0.003	0.003	0.010	0.038	−0.002	0.119	−0.030	−0.046	−0.012	−0.031	−0.004	1.000	
20. CEOs with political ties	0.048	−0.022	0.023	−0.008	−0.023	−0.050	−0.027	−0.050	−0.050	0.006	−0.036	−0.005	−0.003	0.023	0.045	0.187	0.025	−0.008	−0.040	1.000
Descriptive statistics																				
Mean	12.25	6.811	0.600	0.668	12.429	7.280	0.637	42.512	1.516	0.532	0.621	0.712	2.346	0.051	2.684	0.108	0.938	0.025	0.086	0.206
SD	12.40	2.010	0.864	0.471	3.959	1.300	0.481	16.847	7.304	0.738	0.239	0.853	0.907	0.219	1.901	0.310	2.026	0.155	0.281	0.404
Minimum	6.91	0.330	0.000	0.000	4.889	1.792	0.000	0.390	−64.819	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	15.90	10.410	5.000	1.000	48.877	13.003	1.000	85.000	14.450	75.273	0.909	5.000	4.000	1.000	13.500	1.000	12.000	1.000	1.000	1.000

Note. Correlations above |0.12| and significant at the 0.05 level are in **bold**.

from US$474,000 to US$700,000 (cash only) between 1994 and 2002 (Cheng and Firth, 2006), the absolute level of compensation of Chinese CEOs has remained low (Gomez-Mejia et al., 2010, p. 187).

The regression results of CEO compensation levels are shown in Table IV. The baseline model reports the effects of control variables and main variables. Models 1, 2, and 3 include interaction variables to examine Hypotheses 1a/1b, 2a/2b, and 3a/3b, respectively. Model 4 includes all interaction variables. We use two steps to assess interaction effects. First, we compare model fit without interaction variables (baseline model) and with interaction variables (Models 1–3). Second, we put all interaction terms in the final regression (Model 4) to assess their reliability.

The baseline model in Table IV shows the importance of international experience and political ties. CEOs with international experience command 13.77 per cent (US$3704) more compensation than those without international experience ($\beta = 0.129$, p < 0.001).[13] CEOs with political ties earn 8.80 per cent (US$2367) more than those without such ties ($\beta = 0.0844$, p < 0.001).

Model 1 in Table IV does not support Hypothesis 1a; instead, it points to an opposite direction. However, Model 2 supports Hypothesis 1b ($\beta = -0.0148$, p < 0.05). All else being equal, the effect of political ties *decreases* CEO pay by approximately 1.47 per cent (US$395) when the marketization index increases 1 point on a scale of 12. Figure 3 depicts the moderation effects of political ties × marketization index.

Testing Hypothesis 2a, Model 2 finds significant results ($\beta = 0.0430$, p < 0.05). The positive effect of international experience increases CEO pay by approximately 4.40 per cent (US$1182) when adding one outside director with a political background. Figure 4 depicts the moderation effects of international experience × political directors. However, Hypothesis 2b does not receive significant support in Model 2.

Model 3 supports Hypothesis 3a ($\beta = 0.0407$, p < 0.05). It indicates that a CEO with international experience can receive an extra 4.07 per cent compensation (US$1094) if his/her board sets up a CC. Model 3 also supports Hypothesis 3b ($\beta = 0.0634$, p < 0.01). Specifically, a CEO with political ties can increase compensation by approximately 6.54 per cent (US$1735) through setting up a CC.

In Model 4, we include all interaction variables. Hypotheses 1b, 2a, 3a, and 3b still obtain robust support. It suggests that when these four interaction effects join together, the combined effects of political ties × marketization index (Hypothesis 1b), international experience × political directors (Hypothesis 2a), international experience × compensation committee (Hypothesis 3a), and political ties × compensation committee (Hypothesis 3b) are stable.

DISCUSSION

Contributions

At least three theoretical, methodological, and empirical contributions emerge. To the best of our knowledge, this is the first study that leverages a resource dependence framework to investigate how human capital impacts CEO compensation in an emerging economy undergoing institutional transitions. Theoretically, our study contributes to

Table IV. Random coefficient regressions on CEO compensation

	Baseline model	Model 1	Model 2	Model 3	Model 4
Control variables					
Marketization index	0.114***	0.119***	0.113***	0.114***	0.120***
	(0.0178)	(0.0179)	(0.0178)	(0.0177)	(0.0181)
Political directors	0.0249*	0.0256*	0.0232	0.0253*	0.0237
	(0.0126)	(0.0126)	(0.0147)	(0.0126)	(0.0150)
Compensation committee	0.101***	0.101***	0.102***	0.0838**	0.0814**
	(0.0224)	(0.0224)	(0.0224)	(0.0260)	(0.0267)
Firm age	−0.00657*	−0.00660*	−0.00645*	−0.00663*	−0.00650*
	(0.00306)	(0.00306)	(0.00306)	(0.00306)	(0.00313)
Firm size	0.0991***	0.0989***	0.0985***	0.0991***	0.0970***
	(0.00929)	(0.00929)	(0.00931)	(0.00931)	(0.00957)
SOE dummy	0.0870***	0.0870***	0.0879***	0.0869***	0.0782**
	(0.0258)	(0.0258)	(0.0259)	(0.0259)	(0.0265)
Controlling shareholder shares	−0.00441***	−0.00439***	−0.00442***	−0.00441***	−0.00420***
	(0.000713)	(0.000713)	(0.000713)	(0.000713)	(0.000729)
Performance	0.0147***	0.0147***	0.0147***	0.0148***	0.0143***
	(0.000926)	(0.000926)	(0.000926)	(0.000927)	(0.000962)
Slack	0.00197	0.00191	0.00201	0.00198	0.00368†
	(0.00151)	(0.00151)	(0.00151)	(0.00151)	(0.00208)
Outsider directors	0.00431	0.00437	0.00363	0.00520	0.0156
	(0.0446)	(0.0445)	(0.0446)	(0.0446)	(0.0458)
Professional directors	0.0368	0.0372	0.0368	0.0368	0.0377
	(0.0275)	(0.0275)	(0.0275)	(0.0275)	(0.0281)
CEO education	0.0255*	0.0251*	0.0259*	0.0253*	0.0291*
	(0.0113)	(0.0113)	(0.0113)	(0.0113)	(0.0116)
CEO gender	−0.164**	−0.165**	−0.163**	−0.165**	−0.157**
	(0.0531)	(0.0531)	(0.0531)	(0.0531)	(0.0543)
CEO management experience	0.0250***	0.0251***	0.0249***	0.0250***	0.0261***
	(0.00580)	(0.00580)	(0.00580)	(0.00580)	(0.00594)
CEO duality	0.00905	0.00703	0.00822	0.00861	0.0223
	(0.0337)	(0.0337)	(0.0337)	(0.0337)	(0.0349)
CEO tenure	0.00179	0.00173	0.00174	0.00136	0.00446
	(0.0107)	(0.0107)	(0.0107)	(0.0107)	(0.0110)
Option plan	0.401	0.383	0.403	0.394	0.338
	(0.733)	(0.733)	(0.733)	(0.733)	(0.731)
Main variables					
International experience	0.129***	0.326*	0.103*	0.115*	0.247
	(0.0380)	(0.156)	(0.0459)	(0.0474)	(0.160)
Political ties	0.0844***	0.186*	0.0895**	0.0613†	0.173†
	(0.0254)	(0.0881)	(0.0308)	(0.0315)	(0.0917)
Interactions (hypothesized sign)					
International experience × Marketization index (H1a+)		−0.0262			−0.0176
		(0.0201)			(0.0213)
Political ties × Marketization index (H1b−)		−0.0148*			−0.0135*
		(0.00623)			(0.00642)
International experience × Political directors (H2a+)			0.0430*		0.0425*
			(0.0167)		(0.0170)
Political ties × Political directors (H2b−)			−0.00784		−0.0183
			(0.0280)		(0.0289)
International experience × Compensation committee (H3a+)				0.0407*	0.0854*
				(0.0175)	(0.0416)
Political ties × Compensation committee (H3b+)				0.0634**	0.0603**
				(0.0203)	(0.0199)
Intercept	11.17***	11.12***	11.17***	11.17***	10.82***
	(0.164)	(0.166)	(0.164)	(0.164)	(0.144)
N	8631	8631	8631	8631	8631
Group	31	31	31	31	31
Wald chi2	1305.36	1308.09	1307.61	1309.93	1311.68
Log likelihood	−5612.9546	−5612.3780	−5612.4044	−5612.1217	−5611.9618

Notes: All variables except DV in all models have a one-year lag. Year dummy and industry dummy variables are included, but not reported here. Standardized errors are reported in parentheses. † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed test).
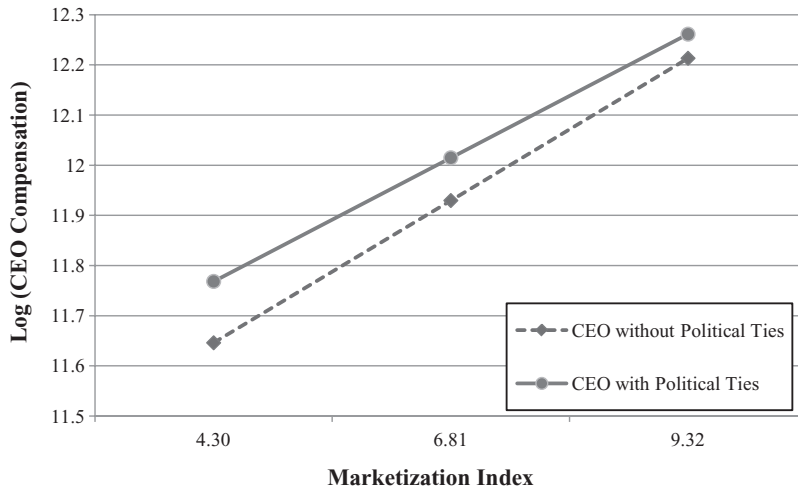
Figure 3. The moderating effect of political ties and marketization index
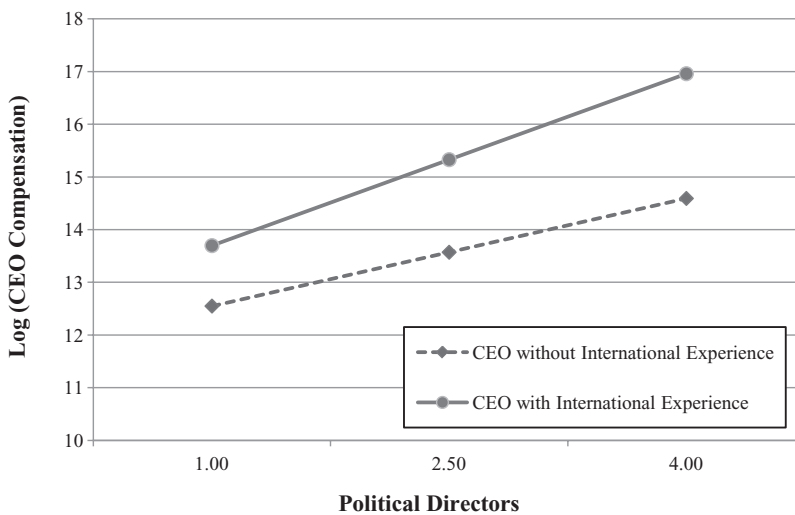

Figure 4. The moderating effect of international experience and political directors

the resource dependence literature by focusing on what Pfeffer and Salancik (1978, p. 1) emphasize on the very *first* page of their seminal book: context. It directly speaks to Hillman et al.'s (2009, p. 1420) call to expand resource dependence research to non-US contexts. In the context of China's institutional transitions where firms have to manage resource dependencies with both market forces and government forces (Li et al., 2013), how boards pay CEOs with different types of human capital reveals a great deal about how firms cope with resource dependencies. Responding to the calls issued by Boyd et al. (2012) and Filatotchev and Allcock (2010) to develop more contingency models, our resource dependence-based, contingency framework enriches the small but expanding

literature on CEO compensation in China (Sun et al., 2010b). Leveraging both the market transition and power conversion arguments, we find that the two important forms of human capital – international experience and political ties – indeed impact CEO compensation, albeit via different moderating mechanisms. Overall, this study joins recent work (Lin et al., 2009; Peng, 2004; Xia et al., 2014) to extend resource dependence research to the context of institutional transitions.

We make an empirical contribution by introducing three relatively novel factors of corporate governance in an emerging economy. First, despite the often proclaimed importance of institutional differences in emerging economies, most empirical work either uses cross-country differences (Hoskisson et al., 2013; Meyer et al., 2009) or uses data from one country (often one region in a country without controlling for institutional differences within a country). Our efforts to leverage the marketization index in different regions in China have enabled us to follow Chan et al. (2010), Gao et al. (2010), Shi et al. (2012), Sun et al. (2014), and Wu et al. (2013) to document the importance of institutional diversity within China. Second, our emphasis on politically connected outside directors – a specific type of outside directors – goes beyond the traditionally crude treatment of outside directors by simply calculating the ratio of outsiders on the board. The traditional treatment may have contributed to the inconclusive findings of the role of outside directors in China (Peng, 2004) and elsewhere (Dalton et al., 1998; Van Essen et al., 2012b). Lastly, our study joins Markoczy et al. (2013) to be among the first to introduce CC as a crucial variable in corporate governance research in an emerging economy.

Finally, we make a methodological contribution by addressing the issue of spatial dependence in cross-sectional data. Leveraging the intra-country regional (provincial) diversity within China, we find intra-country regional differences to have significant explanatory power on CEO compensation.[14] It illustrates the underdeveloped nature of China's countrywide executive labour market. The reason may be that CEOs' human capital – specifically, political ties – is largely embedded within the province where the firm is headquartered. In other words, we have advanced *guanxi* research (Peng and Luo, 2000; Shi et al., 2014; Xiao and Tsui, 2007) that has generally been making universalistic statements (such as '*guanxi* is always useful within China') to a more nuanced understanding of how *guanxi* matters – in different provinces whose marketization levels differ and in different firms whose CEOs have various human capital attributes and whose governance structures are different (e.g., with or without a CC). For example, we find the increase in CEO pay due to political ties is 56.47 per cent (US$3704/US$2367 − 1) lower than the increase in CEO pay due to international experience. It also shows a low level of mobility among CEOs with political ties across regions within China. To methodologically address this issue, we have adopted the regional econometrics models to examine the spatial dependency issue. After comparing the level of spatial auto-correlation, we find that multilevel analysis with RCM can remove spatial effects and generate unbiased inferences (Doh and Hahn, 2008).

Limitations and Future Directions

Our study has its limitations. We have not found the significant moderating effect of marketization index on CEOs with international experience (Hypothesis 1a). The reason

may be that compared with CEOs with political ties, CEOs with international experience may have higher cross-province mobility. Also the moderating effect of political directors on the relationship between CEO political ties and CEO compensation (Hypothesis 2b) is not supported. The reason may be that while the political ties of a CEO may not contribute much additional resources to the firm beyond the political ties of the outside directors, political directors are still inclined to maintain good rapport with a politically connected CEO by granting higher CEO compensation. This reasoning is consistent with Walder's (2003) power conversion argument.

Our study suggests five promising future directions. First, theoretically, continued work in the context of institutional transitions is necessary to help establish the boundaries of resource dependence theory (Casciaro and Piskorski, 2005; Hillman et al., 2009). Drees and Heugens (2013) recently report that competition law – specifically that enacted in the United States between the 1950s and the 1990s – is an important boundary criterion for this theory. Similarly, given the raging debate between the market transition argument (Nee, 1989) and the power conversion argument (Walder, 2003), it will be fascinating to explore the boundary conditions of our findings in the context of institutional transitions.

Second, it will be fruitful to integrate resource dependence theory with other perspectives (Hillman et al., 2009; Van Essen et al., 2014; Young et al., 2014). In the area of CEO compensation, while we have drawn on the human capital literature, future studies can gain additional insight by drawing on agency theory. Table I documents five agency theory-based studies with mixed findings. Groves et al. (1995), Mengistae and Xu (2004), Kato and Long (2006), and Buck et al. (2008) (in this order) report increasingly strong pay–performance sensitivities, implying reduced agency problems. In contrast, Firth et al. (2006) and Markoczy et al. (2013) document low pay–performance sensitivities. One element of the power conversion argument can be interpreted via agency theory by suggesting that CEOs with friends on the board may enrich themselves at the expense of shareholders. This view can be developed further.

Third, further conceptual clarification between international experience and political ties is needed. It is possible that political ties may lead to international experience in countries where party bureaucrats and their offspring have privileged access to employment or education opportunities abroad. Some ties may be more valuable than others (Chen et al., 2010a; Lester et al., 2008; Peng and Luo, 2000; Wu et al., 2013). As a robustness check, our post-hoc test reveals that CEOs with ties to the central government indeed enjoy significantly higher (10.18 per cent more) compensation than CEOs with ties to local governments (p < 0.01).[15] Similarly, while our measure of international experience combines work experience in foreign-owned multinationals and work experience in overseas subsidiaries of Chinese companies with educational experience abroad, future work needs to distinguish among these three sets of experience. Further, CEOs with international experience are more likely to internationalize their firms by going out of China, including not only exporting and FDI (Peng, 2012; Sun et al., 2012, 2014) but also cross-listing (Peng and Su, 2014). Future work will need to control various aspects of internationalization.

Fourth, the literature has long argued that institutions have two components: formal and informal (North, 1990; Van Essen et al., 2012a, 2012b). While we focus on formal,

market-oriented aspects, future work may probe into the impact of informal institutions such as values and norms in shaping CEO compensation (Estrin and Prevezer, 2011; Sauerwald and Peng, 2013). Also, scholars interested in institutional transitions have argued for attention to the particular period that is studied (Peng, 2003, p. 282). The particular period that we investigate (2001–08) is both a strength and a weakness of this study. As a strength, this is the first period after China's 2001 accession to the World Trade Organization (WTO), during which domestic competition has intensified (thanks to WTO-mandated lower import tariffs and WTO-inspired FDI-based products that compete in China). This is also the first period during which many Chinese firms have embarked upon large-scale internationalization (Liang et al., 2014; Peng, 2012; Sun et al., 2012, 2014). Thus, international experience is a novelty among Chinese CEOs.

Fifth, although the majority of sampled firms are SOEs that would justify our use of the 'traditional' resource dependence framework (Pfeffer and Salancik, 1978), a non-trivial number of firms are private, family firms. Family ownership influences a broad range of corporate governance practices and strategic choices affecting CEO compensation (Gomez-Mejia et al., 2011). Resource dependence theory and human capital research have a distinct rational, economic orientation, while family firms may be more motivated to pursue socio-emotional wealth (Deephouse and Jaskiewicz, 2013). How family firms make decisions on CEO compensation during institutional transitions thus remains an interesting direction for future research (Jiang and Peng, 2011; Lu et al., 2013; Peng and Jiang, 2010; Sharma and Chua, 2013).

As a weakness, our study period may limit the temporal generalizability of our findings across multiple periods. If appointing CEOs with international experience becomes a trend, its future can go in either of the following two ways. On the one hand, as more CEOs possess international experience, its novelty value may decline and abilities of such CEOs to command high compensation may become limited (Barney, 2001). Anecdotal evidence suggests that executives with international experience often have a hard time 'fitting in' at Chinese-owned firms and many leave quickly (Cheng, 2009). Such challenges may make future boards think twice before appointing CEOs with international experience (Zhang, 2008). On the other hand, certain spectacular failures of internationalization efforts led by internationally *inexperienced* CEOs (such as TCL's CEO) may enhance the earning power of CEOs possessing international experience. Both scenarios seem plausible, thus calling for further research.

Finally, while the cross-country generalizability of our findings remains to be seen, we suggest – on a speculative note – that our contingency framework may be generalizable to other contexts characterized by large-scale institutional transitions (Young et al., 2014).[16] Firms in other rapidly moving emerging economies such as Brazil, India, and Russia confront similar challenges of managing resource dependencies, attracting top-notch CEOs, and properly compensating and motivating them. As globalization affects more countries, CEOs with international experience may be able to command higher compensation. At the same time, the abilities of CEOs with political ties to both effectively manage resource dependencies and to extract higher compensation for themselves may not necessarily diminish.

CONCLUSION

CEOs with different types of human capital and their different compensation can reveal a great deal about how firms – especially boards – approach the task of managing resource dependencies. As an initial probe into boards' valuation of CEO human capital in determining CEO compensation in the context of institutional transitions, our study highlights the moderating roles played by various external and internal factors. A hallmark of institutional transitions in China is the simultaneous coexistence of the rules of the game from both state socialism and market competition (Li et al., 2013; Nee, 1989; Yiu et al., 2014), making the task of how to manage resource dependencies not only important but also challenging. 'That is why we must focus on the variable features of transitional periods' (Walder, 2003, p. 914), as we have done here. In conclusion, both international experience and political ties seem valuable in helping CEOs manage resource dependencies, and how such human capital impacts CEO compensation depends on an interesting interplay of contingency factors such as marketization, political directors, and CC.

NOTES

[1] Other potential drivers of CEO compensation during institutional transitions include firm performance (Buck et al., 2008; Cordeiro et al., 2013), CEO tenure (Hill and Phan, 1991), and CEO duality (Peng et al., 2010). Since these have been studied in previous work, we focus on the two potential drivers that are theoretically important and that, to the best of our knowledge, have not been studied together in CEO compensation research. In our empirical analysis, we have controlled for firm size, CEO tenure, CEO duality, and other factors.

[2] See anecdotes reported in *Forbes* (2013). 'Two ways to become rich in China', 23 March, http://www.forbes.com/sites/panosmourdoukoutas/2013/03/23/two-ways-to-become-rich-in-china/.

[3] While the market transition argument focuses on domestic firms (Nee, 1989), Sun et al. (2010a, p. 1161) report 'the declining, even negative, value' of political ties by sampling multinationals competing in China. Such work thus supports the market transition argument.

[4] As an alternative perspective, agency theory would argue that this behaviour can be viewed as politically connected CEOs mobilizing their ties to enrich themselves (Baker et al., 1988; Chen et al., 2010a). Agency theory argues that principal–agent conflicts are inherent, without implicating any particular wrongdoing on the part of agents (from a legal standpoint). A darker view is to argue that some of these political ties may result in corruption (Dieleman and Boddewyn, 2012). While our data cannot rule out this possibility, the political ties we focus on are more transparent (as disclosed in listed companies' annual reports) and the outcome is legitimate (CEO compensation). In contrast, politically related corruption tends to operate with non-transparent ties and result in scandals (if caught) (Chen et al., 2010a; Hung et al., 2012b).

[5] Political ties possessed by CEOs of subsidiaries of foreign firms in China are also valuable. Although our sample does not include such firms, Li et al. (2008) and Sun et al. (2010a) have reported such findings.

[6] In China research, there is a literature on *guanxi* that seeks to understand the antecedents and consequences of using social ties and connections in managing interorganizational and interpersonal relationships (Peng and Luo, 2000; Shi et al., 2014; Xiao and Tsui, 2007).

[7] Chinese CEO compensation is likely to be among the *lowest* in the world. Gomez-Mejia et al.'s (2010, p. 187) comprehensive survey reports that 'U.S. CEOs made 23 times as much as CEOs in mainland China, ten times as much as CEOs in India, nine times as much as CEOs in Taiwan, five times as much as CEOs in Japan, and two to four times as much as their counterparts in Spain, the United Kingdom, France, Italy, the Netherlands, Germany, and Switzerland.'

[8] A number of non-China studies have also used cash compensation (Harris and Helfat, 1997; Hill and Phan, 1991).

[9] Liu et al. (2010) also use a dummy variable to measure Chinese firms owned by returnees, who are individuals with international experience. Returnees are defined as 'scientists and engineers, or students who have trained or studied in OECD countries, and have returned to their native countries to start up a new venture or work for a local company' (p. 1184). Likewise, Chen et al. (2010a) use a dummy variable to measure political ties (p. 1509).

[10] We have accessed all the data provided by the National Economic Research Institute (NERI) and checked the construction process with Cronbach's alpha. The reliability test can examine whether these five dimensions represent the unidimensional latent construct of marketization. Cronbach's alpha ranges from 0.65 to 0.76 and the scale is 0.71. We have further performed factor analysis on the five dimensions. A common factor emerges with factor loadings at least 0.6 or above for each item, suggesting a high level of internal consistency of this measure.

[11] Of the 40 countries investigated by Morck et al. (2000), China ranks second in terms of stock return synchronicity. This compares very unfavourably not only with developed economies (such as the UK = 63 per cent, Germany = 61 per cent, Japan = 67 per cent), but also with emerging economies (such as Brazil = 65 per cent, India = 70 per cent). Only Poland exhibits greater stock return synchronicity (83 per cent).

[12] An ICC value above 0.10 indicates the importance of such correlation and necessitates multilevel analysis (Bliese and Ployhart, 2002).

[13] While CEO compensation uses the natural logarithm in our models, in the text, we have transformed all the coefficients in models using the $e^\beta - 1$ formula to obtain the ratio of increase in compensation. In this example, $\beta = 0.129$, after transformation using the $e^\beta - 1$ formula, we obtain 0.1377 and report it as 13.77 per cent.

[14] Intra-country regional differences in CEO compensation are typically not investigated in developed economies. To the best of our knowledge, the only exception in the United States is Garmaise (2009).

[15] Results are available upon request.

[16] Such contexts are not necessarily limited to emerging economies. Nee and Opper (2010, p. 2105) argue that at present, the value of political ties in China 'does not differ fundamentally from patterns observable in established market economies'. Consider the United States, where recent institutional changes feature substantial state ownership of large firms ranging from GM to Citigroup. Historically, US CEO human capital embodied in market-based capabilities such as international experience commands higher compensation (Carpenter et al., 2001). Although speculative, a case can be made that CEO human capital embodied in political ties (Lester et al., 2008) may also command higher pay in the post-2008 bailout era.

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