

# CEO COMPENSATION IN RELATION TO WORKER COMPENSATION ACROSS COUNTRIES: THE CONFIGURATIONAL IMPACT OF COUNTRY-LEVEL INSTITUTIONS

THOMAS GRECKHAMER\*

Ricks Department of Management, E. J. Ourso College of Business, Louisiana State University, Baton Rouge, Louisiana, U.S.A.

*Executive compensation and its relation to that of rank and file employees are vital areas of strategy research. This study contributes to our understanding of cross-national differences in executive compensation by exploring how key formal and informal country-level institutions of social power structures combine to shape CEO and worker compensation across countries as well as the resulting pay dispersion. Analyzing data spanning 54 countries using the configurational approach fuzzy set Qualitative Comparative Analysis (fsQCA), the study also explores the causal asymmetry underlying compensation outcomes by investigating institutional configurations linked to high CEO compensation, high worker pay, and high pay dispersion and those configurations linked to the absence of these outcomes. The article concludes by discussing the study's implications for theory and research on executive compensation.* Copyright © 2015 John Wiley & Sons, Ltd.

## INTRODUCTION

Executive compensation and its relation to that of lower-level employees are topics of great interest to strategy researchers, the business press, and the general public. Hence, CEO pay continues to be one of the most widely studied governance practices in strategic management research (Devers *et al.*, 2007; van Essen, Otten, and Carberry, 2015; Finkelstein and Hambrick, 1988; Finkelstein, Hambrick, and Cannella, 2009; Gomez-Mejia and Wiseman, 1997). Likewise, strategy and organization scholars have recognized that how executives are compensated in relation to rank and file employees is an indicator of CEO pay that has important implications for strategy and corporate

governance (Connelly *et al.*, 2013; Cowherd and Levine, 1992; Shin, 2014; Tosi and Greckhamer, 2004). An increasing interest in international comparisons of corporate governance regimes (Aguilera and Jackson, 2003, 2010) has also led researchers to explore the sources of cross-national differences in compensation (Fernandes *et al.*, 2013; Gomez-Mejia and Welbourne, 1991; Greckhamer, 2011; Muslu, 2010; Schuler and Rogovsky, 1998). However, further research has been called for to shed light on how institutional differences across countries shape cross-national variation in CEO pay, a vital remaining gap in this literature (Boyd, Santos, and Shen, 2012; van Essen *et al.*, 2015).

To contribute to filling this gap and to enhance our understanding of cross-national differences in organizational compensation, this study explores how institutional differences across countries shape the typical compensation received by a country's CEOs and workers as well as the resulting pay differentials or pay dispersion between CEOs and

Keywords: CEO compensation; pay dispersion; configurational; fuzzy set Qualitative Comparative Analysis (fsQCA); cross-national

\*Correspondence to: Thomas Greckhamer, 2715 Business Education Complex, Louisiana State University, Baton Rouge, LA 70803, U.S.A. E-mail: tgreck@lsu.edu

workers. The study's framework is constituted by major institutions shaping power structures underlying organizations because "wages are a resource and, like other resources, are allocated at least in part on the basis of the power of various interests (...) [which is particularly the case when considering] the wages paid to some group or position compared to some other" (Pfeffer, 1989: 389). Indeed, cross-national research has emphasized income stratification to be largely shaped by countries' social power and control structures (Bornschier and Ballmer-Cao, 1979; Lenski, 1966; Tsai, 1995).

Following recommendations to conceptualize countries' institutions as systematically interdependent configurations as opposed to isolated variables (e.g., Jackson and Deeg, 2008; Kogut and Ragin, 2006), I explore how country-level institutions of power structures and income stratification identified as important by previous theory and research combine to shape how organizations compensate CEOs and workers as well as the resulting pay dispersion across countries. I utilize fuzzy set Qualitative Comparative Analysis (fsQCA) methodology (Ragin, 2000, 2008) because it enables disentangling complex interdependences among countries' institutional dimensions underlying organizational outcomes (Pajunen, 2008; Schneider, Schulze-Bentrop, and Paunescu, 2010), including compensation (Greckhamer, 2011).

With the present study, I contribute to the literature on executive compensation in several ways. First, I extend research on cross-national differences in CEO compensation and address a vital gap identified in this literature (Boyd *et al.*, 2012; van Essen *et al.*, 2015) by focusing on how institutional power structures shape CEO pay. I further extend this literature by using a configurational approach to explore how key formal and informal institutions of countries' power structures combine to shape CEO compensation differences across countries. Second, extending the limited research on pay dispersion as an important indicator of cross-national differences in executive compensation (Tosi and Greckhamer, 2004), I investigate how institutions combine to shape cross-national variations in the pay gap between CEOs and workers. Finally, using a configurational approach, I also extend the literature by juxtaposing the institutional conditions linked to the occurrence of high CEO (and worker) compensation and high pay dispersion as well as the

institutional configurations linked to the absence of these outcomes.

## THEORETICAL BACKGROUND: COMPENSATION AND INSTITUTIONAL POWER STRUCTURES

Monetary compensation is organizations' principal reward (Pfeffer, 1997), and thus organizations' compensation systems, including pay levels and pay differentials throughout their hierarchies, are crucial elements of strategy implementation and corporate governance (Balkin and Gomez-Mejia, 1990; Lawler, 1990; Shaw, Gupta, and Delery, 2002). Because compensation of the top executives charged with the strategic leadership of organizations is of particular importance, a wealth of research has aimed to understand the determinants of CEO compensation (e.g., Devers *et al.*, 2007; van Essen *et al.*, 2015; Finkelstein and Hambrick, 1988; Finkelstein *et al.*, 2009; Tosi *et al.*, 2000). By the same token, pay differentials are important for strategy research because they have critical implications for employee attitudes and behaviors, strategy implementation, and organizations' competitive position and performance (Bloom, 1999; Connolly *et al.*, 2013; Cowherd and Levine, 1992; Jirjain and Kraft, 2007; Shaw *et al.*, 2002). Accordingly, recent research has started to explore the determinants of pay dispersion between CEOs and rank and file employees (Shin, 2014; Tosi and Greckhamer, 2004).

Research on comparative corporate governance examines how firms across countries differ in terms of power and influence over decision making (Aguilera and Jackson, 2010). Building on this notion, institutions underlying the power structures of economic organization are of primary importance because compensation is determined by the relative power of competing interests (Rueda and Pontusson, 2000). Consistent with a definition of power as "the probability that one actor within a social relationship will be in a position to carry out his own will [i.e., here, extract more compensation] despite resistance" (Weber, 1964: 152), the notion that relative power dictates how much pay employees can extract from organizations is stressed by a resource-based view of strategy (Coff, 1999) and a political perspective of organizations (Pfeffer, 1989; Shin, 2014). Spanning organizations' hierarchies by relating the compensation of CEOs at their apex and

that of workers at their nadir is particularly meaningful as it is akin to indirectly observing fundamental aspects of organizations' corporate governance and power structures (Hambrick and Finkelstein, 1995) and resulting redistributive dynamics (Shin, 2014).

Research has pointed to power as a key determinant of CEO compensation both within countries and in cross-national comparison (Bebchuk, Fried, and Walker, 2002). Finkelstein and Hambrick (1989: 124) noted that "assuming that CEOs prefer more compensation to less, then their ability to obtain more is limited by their power"; assuming other employees have similar preferences, the pay received by CEOs and rank and file employees can be expected to be largely a result of their relative power, reflected in power structures underlying organizations. This perspective emphasizing power structures also builds on research exploring cross-national compensation differences (Gomez-Mejia and Welbourne, 1991; Greckhamer, 2011; Schuler and Rogovsky, 1998) and societal income inequality (Alderson and Nielsen, 1999; Bornschier, 1983; Nielsen, 1994), which suggests that pay and pay dispersion may be primarily shaped by countries' power structures (Bornschier and Ballmer-Cao, 1979; Tosi and Greckhamer, 2004).

Comparative corporate governance research requires systematic specification of the key institutions that matter and how they are expected to shape phenomena of interest (Aguilera and Jackson, 2003). Formal and informal institutions are defined as "the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange" (North, 1990: 2); compensation is organizations' key incentive (Pfeffer, 1997). The framework constructed for this study identifies key formal and informal institutions of countries' social power structures that are expected to impact the compensation of organizations' executives and workers. As noted above, I consider the joint effects of these institutional dimensions because institutions may have different effects depending on countries' other institutional attributes (Kogut and Ragin, 2006; Rueda and Pontusson, 2000). This echoes the configurational principle that "variables found to be causally related in one configuration may be unrelated or even inversely related in others" (Meyer, Tsui, and Hinings, 1993: 1178), and that therefore cases should be treated as constellations

of interdependent attributes (Fiss, 2007; Ragin, 2000). Hence, recent research has conceptualized country-level institutions as systematically interdependent configurations (Greckhamer, 2011; Jackson and Deeg, 2008; Pajunen, 2008; Schneider et al., 2010).

## A CONFIGURATIONAL MODEL OF NATIONAL INSTITUTIONS AND COMPENSATION

Building on a configurational framework, I develop a configurational model representing key institutional attributes of countries' power structures that are expected to impact compensation outcomes (see Figure 1). This model combines level of development, several kinds of financial and labor institutions, market forces for occupational groups' skills, and cultural acceptance of social inequality. In selecting these institutional attributes using the framework of power, I synthesized both theoretical and empirical literature with a focus on attributes that should shape the compensation of CEOs and workers as well as pay dispersion among them. Although previous literature supports the inclusion of each institutional attribute in this study, their effects as part of configurations are largely unexplored. My selection was also based on considerations of empirical limits to the number of attributes that can be included in a research design utilizing the set theoretic methodology fsQCA (Marx and Dusa, 2011). In the following, I discuss the bases for including specific institutions and their link to compensation outcomes; I also provide examples of interdependencies that support the application of a configurational approach.

### Level of development

Level of development is a central determinant of the quality of corporate governance in a country (Doidge, Karolyi, and Stulz, 2007) and a first vital attribute for compensation. It has multiple facets that should impact power structures (Bornschier, 1983; Lenski, 1966) and shape pay level and dispersion (Greckhamer, 2011; Kuznets, 1955; Nielsen, 1994). First, both CEOs and workers are expected to be compensated relatively highly in wealthy countries. Second, development in terms of labor productivity shapes a country's available wealth and how it will be distributed (Bornschier

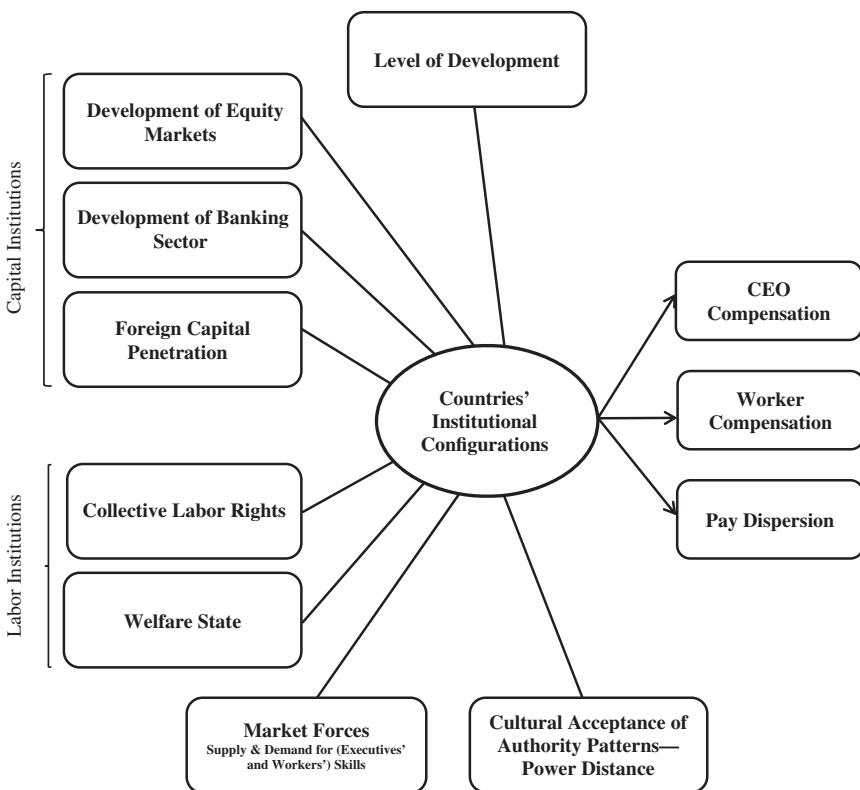


Figure 1. Theoretical model: Effects of institutional configurations on compensation outcomes<sup>1</sup>

and Ballmer-Cao, 1979; Nafziger, 2006). Third, development shifts labor from lower-income agricultural to higher-income industry and service sectors; high employment in agriculture provides a reservoir of labor that tends to disempower workers and to depress their wages and should thus be linked to high pay dispersion. Finally, as part of a transition from pre-industrial to developed industrial societies, developing countries typically experience rapid population growth and thus an excess supply of young workers that should deteriorate workers' bargaining power and pay and hence be linked to high pay dispersion. In sum, high development should be linked to low pay dispersion (Kuznets, 1955; Nielsen, 1994) and high CEO and worker compensation. However, interdependencies of level of development with other institutions should give rise to causal complexity underlying compensation outcomes, as discussed below.

## Capital institutions

Institutions shaping how corporations source capital constitute key institutional differences across

countries (Aguilera and Jackson, 2003; Pedersen and Thomsen, 1997). To understand the organization of capital, countries are commonly distinguished into bank-based and market-based systems; the former provide external finance to companies primarily by intermediaries (usually banks) and the latter provide external finance largely through financial markets (Demirguc-Kunt and Levine, 1999; Levine, 2002). Another crucial aspect of the organization of capital is the extent to which foreign direct investors control capital (Bornschier and Ballmer-Cao, 1979). Thus, I capture the organization of capital and its influence on corporate governance and organizational compensation systems cross-nationally through three key financial institutions—the development of equity markets, the nature of the banking sector, and foreign capital penetration.

<sup>1</sup> Several of these institutional attributes consist of several lower-level sets, as described in detail in the Methodology and Data section.

### *Development of equity markets*

A key financial institution and source of capital, developed equity markets increase the efficiency of capital allocation and enable countries to take better advantage of investment opportunities (Wurgler, 2000), which may increase rents for distribution and thus compensation levels. Level of development of a country's equity markets also shapes firms' ownership structure and dispersion. Ownership dispersion is considered a vital determinant of executive compensation, because greater ownership dispersion implies reduced owner-control, which should increase CEOs' power to allocate more compensation for themselves (Core, Holthausen, and Larcker, 1999; Hambrick and Finkelstein, 1995; Tosi and Gomez-Mejia, 1989). While firms' ownership dispersion varies across countries (La Porta, Lopez-de-Silanes, and Shleifer, 1999), the development (i.e., size) of equity markets was found to positively influence the quality of corporate governance (Doidge *et al.*, 2007) and to spur the development of investor protection rights as well as be a proxy for ownership dispersion (La Porta *et al.*, 1997; Pedersen and Thomsen, 1997; Shleifer and Wolfson, 2002). Also, higher ownership concentration and the presence of block-ownership significantly reduce the liquidity of firms' stocks (Brockman, Chung, and Yan, 2009; Helfin and Shaw, 2000), thus the equity markets' liquidity is another proxy for ownership dispersion in addition to their size.

Increased ownership dispersion in countries with highly developed liquid equity markets should contribute to high CEO pay and thus high pay dispersion between CEOs and workers, although a positive effect may carry over to rank and file employees' compensation (Werner, Tosi, and Gomez-Mejia, 2005). At the same time, these relationships may be causally complex due to interdependencies among institutions. For example, development of equity markets and lower ownership concentration are interdependent with a country's level of development (La Porta, Lopez-de-Silanes, and Shleifer, 2008; Levine and Zervos, 1998), raising the question whether effects of the presence (or absence) of large and liquid equity markets are the same in highly developed and in less developed countries. This and other interdependencies discussed below support the study's premise that the impact of countries' equity markets on executive compensation and pay

dispersion should be evaluated in combination with other institutional attributes.

### *Development of the banking sector*

Banks are potentially powerful providers of capital that may be better at and have more incentives than equity markets to monitor firms (Levine, 2002; Stiglitz, 1985). Cross-nationally, large corporations in countries with more concentrated banking sectors are more likely to have dominant minority owners because the largest banks are more able to control large portions of these corporations' capital (Pedersen and Thomsen, 1997). Also, banks' extent of active involvement in the private sector differs across countries (Demirguc-Kunt and Levine, 1999). Hence, a concentrated active banking sector should more effectively monitor and control firms and thus constrain CEO power and pay. Indeed, Tosi and Greckhamer (2004) found countries' banking sector concentration to be negatively related to CEO pay. The banking sector also provides a more patient source of capital and control that is more amenable to stakeholder participation and employee representation (Hall and Soskice, 2001; Jackson, 2005), which may favorably impact worker pay, even though the influence of capital via banks should be interdependent with other institutions. For example, the role and nature of the banking sector is interdependent with a country's level of development (Demirguc-Kunt and Levine, 1999), with the development of its equity markets (Levine, 2002), and—owing to greater openness to stakeholder participation—may be interdependent with the strength of its collective labor rights.

### *Dependence on foreign capital*

Foreign capital penetration, i.e., the degree to which foreign direct investors (mostly multinational corporations) hold sway over a country's capital stock, is a vital institution shaping a country's power structures. Extensive research linking foreign capital penetration to income inequality (e.g., Bornschier and Ballmer-Cao, 1979; Bornschier, Chase-Dunn, and Robinson, 1978; Dixon and Boswell, 1996) suggests that it should impact compensation systems. This research has also provided ample evidence of causal complexity, showing that foreign capital penetration is linked to increased income inequality only in some countries and that a linear relationship should not be

assumed (Tsai, 1995). For example, it was argued that in developing countries high foreign capital penetration produces highly paid managerial elites that serve as a local arm of foreign business interests (Alderson and Nielsen, 1999; Sullivan, 1983). In developed countries with strong welfare states, however, foreign capital penetration has been linked to high productivity and high value-added strategies by which multinational corporations may simultaneously invest in multiple countries so as to create competition for employment among otherwise disconnected workers across countries, thereby aiming to deter labor's power and reduce its compensation (Alderson, 2004). Thus, the link between foreign capital penetration and compensation systems should be interdependent with other institutional attributes such as level of development, the strength of welfare state institutions, and collective labor rights.

### **Labor institutions**

Critics have argued that the mainstream corporate governance and executive compensation literature has neglected the role of labor (Aguilera and Jackson, 2003; Shin, 2014). However, institutions shaping the power of labor are important for cross-national compensation research and therefore are included in the present study. I include two key institutions that, when present (or absent), should increase (or decrease) labor power and thus impact compensation for both workers and CEOs: collective labor rights and the strength of welfare state institutions.

#### *Collective rights empowering labor*

Industrial relations and strategy scholars agree that workers are able to enhance their power relative to that of organizations and capital holders, and thereby are more likely to obtain valued rewards, by acting as a collective (Coff, 1999; Freeman and Medoff, 1984; Rueda and Pontusson, 2000); hence, collective labor rights are a vital determinant of worker compensation (Kalleberg, Wallace, and Althauser, 1981; Wallerstein, 1999). Powerful labor may also constrain CEO pay and pay dispersion (DeAngelo and DeAngelo, 1991; Shin, 2014). However, the impact of collective labor power should be interdependent with other institutions. For example, the link between a country's income distribution and its collective labor rights may

differ depending on a country's degree of foreign capital penetration (Alderson, 2004), its level of development (Mosley, 2011b), its acceptance of hierarchical authority patterns (Hofstede, 2001), and the extent to which developed stock markets extend the market logic to industrial relations as opposed to labor being sheltered from the market (Hall and Soskice, 2001).

#### *Strength of welfare institutions*

Welfare state institutions—elements of social systems that transfer responsibility for its members' social welfare to the state—should impact compensation systems because by their very essence they intervene in social arrangements to partially equalize the distribution of economic welfare (Esping-Anderson, 1990; Kolberg, 1992; Tsai, 1995). They also are a key potential power resource particularly for lower-level employees because they lessen workers' dependence on employers and labor markets (Esping-Anderson, 1992; Western, 1989). Furthermore, the absence of a strong welfare state may contribute to high pay dispersion (Greckhamer, 2011). Thus, the presence of strong welfare state institutions should bolster worker compensation while constraining that of CEOs and vice versa as well as impact pay dispersion accordingly, while again being interdependent with other institutions. In addition to interdependencies discussed above, causal complexity should result from the fact that impact and strength of welfare state institutions is intertwined with level of development (Quadagno, 1987).

### **Employment market forces—the supply and demand of skills**

Compensation may also be shaped by market forces of supply and demand for skills (i.e., the human capital) of occupational groups (Barkema and Gomez-Mejia, 1998). For example, "depending on economic conditions and demand of CEO-caliber executives, a CEO's pay may be bid up by potential suitors" (Finkelstein and Hambrick, 1988: 546). More generally, differential relative scarcity of executive talent or skilled labor across countries may shape the respective group's bargaining power and consequently its relative compensation (see Bebchuk and Fried, 2003; Coff, 1999). By the same token, differences in market conditions for CEOs versus workers would influence pay dispersion.

The impact of market forces, however, is likely to be interdependent with other institutions. For example, high demand for an occupational group's skill may only translate into high compensation in the presence of high development (the economic conditions suggested by Finkelstein and Hambrick, 1988). Also, strong welfare states tend to distribute resources such as compensation according to social as opposed to market criteria (Alderson, 2004); hence, the impact of market forces may differ between countries with and without strong welfare states. Similarly, market conditions might have differential impact on compensation of both workers and CEOs depending on the strength of collective labor rights.

### Social order and authority relations

The extent to which society accepts inequality and hierarchical authority relations (i.e., power distance) (Hofstede, 2001) is a key informal institution shaping countries' institutionalized authority relations and power structures. High power distance facilitates unchecked use of power and provides more opportunities for the powerful to enrich themselves as well as to use high compensation to project power (Gomez-Mejia and Welbourne, 1991). Thus, high power distance should contribute to high CEO pay, low worker pay, and high pay dispersion, and vice versa (Hofstede, 2001; Tosi and Greckhamer, 2004), although these relationships should again be marked by causal complexity. For example, Greckhamer's (2011) configurational study on linking Hofstede's dimensions of national culture and compensation of various occupational groups (not including CEOs) identified high development and lack of power distance as a core combination for high compensation of lower-level employees and a combination of high power distance and lack of development as a core combination for high pay inequality. Also, power distance shapes cooperation among workers and resulting collective labor representation (Hofstede, 2001).

### METHODOLOGY AND DATA

Conceptualizing countries' institutions as systematically interdependent as opposed to isolated attributes (Jackson and Deeg, 2008; Kogut and Ragin, 2006; Pajunen, 2008), this study explores how institutions' combined impact shapes

compensation outcomes. Because the choice of method should be driven by theoretical expectations about causal relations underlying a phenomenon of interest (Schneider and Wagemann, 2012), I utilized the configurational approach fuzzy set Qualitative Comparative Analysis (fsQCA) (Ragin, 2000, 2008) (see online supporting information S1 for a non-technical primer of fsQCA). This approach conceptualizes cases as different kinds of attribute configurations (Fiss, 2007, 2011). In doing so, fsQCA captures the three elements of causal complexity—conjunction, equifinality, and asymmetry (Ragin, 2008; Schneider and Wagemann, 2012). Conjunction means that attributes may not impact outcomes in isolation from one another. Equifinality implies that alternative attribute combinations may be linked to an outcome. Asymmetry means that the causes for occurrence of an outcome are not necessarily the inverse of the causes of its absence and therefore each requires separate theoretical and empirical consideration; it also implies that the presence versus absence of attributes may play different roles in the occurrence of outcomes. Recognizing its potential for analyzing phenomena resulting from complex causality, a growing stream of strategic management research has utilized fsQCA (e.g., Bell, Filatotchev, and Aguilera, 2014; Crilly, Zollo, and Hansen, 2012; Fiss, 2007, 2011; Greckhamer *et al.*, 2008; Kogut, MacDuffie, and Ragin, 2004; Misangyi and Acharya, 2014), including comparative research exploring how configurations of institutions shape organizational outcomes (Greckhamer, 2011; Pajunen, 2008; Schneider *et al.*, 2010).

### Data and membership sets

FsQCA starts by defining sets representing outcomes (e.g., the set of countries with highly paid CEOs) and causal conditions (e.g., the set of highly developed countries). Cases' degrees of membership in these sets are then determined based upon empirical and/or theoretical knowledge, a process referred to as *calibration* (Ragin, 2000, 2008). I applied the direct method of calibration (see Ragin, 2008: 86–94) and followed some of its applications (Fiss, 2011; Greckhamer, 2011). The direct method utilizes three thresholds specified based upon theoretical and/or empirical knowledge—one each to designate full membership (1), full non-membership (0), and a crossover point of maximum ambiguity of

membership (0.5)—to rescale interval variables into fuzzy sets, using estimates of the log of the odds of full membership as an intermediate step. Also, to avoid theoretical difficulties of analyzing sets with membership scores of exactly 0.5, I added a 0.001 constant to all scores (Fiss, 2011; Greckhamer, 2011; Ragin, 2008).

### *Compensation outcomes*

I collected data for the years 2001, 2005, and 2009. Data on compensation of CEOs and manufacturing workers (in short, "workers") were sourced from the *IMD World Competitiveness Yearbook* (IMD, 2002, 2006, 2010, 2011), spanning 54 countries.<sup>2</sup> I consider a case to be a country–year observation (Schneider *et al.*, 2010). Data are not available for all years and countries, hence my final dataset included 131 cases for CEO compensation, 136 cases for worker compensation, and 118 cases for pay dispersion. CEO pay comprises the average total compensation (including base salary, short-term, and long-term incentives) for CEOs of companies with a minimal turnover of US\$250 million. I calculated a country's average annual worker compensation by multiplying average total hourly compensation (wages plus supplementary benefits) by average annual work hours. I calculated a country's pay dispersion as ratio of CEO pay to worker pay. Cross-national comparisons should adjust for differences in price levels between economies (World Bank, 2008), thus I adjusted compensation data for differences in purchasing power parity (ppp)—the value of goods and services that can be purchased with money—by multiplying them with the ppp-factor used to express a country's nominal gross domestic product (GDP) per capita in ppp (World Bank, n.d.).

I then calibrated the set of countries with (1) highly paid CEOs, (2) highly paid workers, and (3) high pay dispersion between CEOs and workers. Lacking established knowledge of what constitutes highly paid CEOs and workers as well as high

pay dispersion, similar to Greckhamer (2011), I considered being highly compensated a relative quality and anchored break points in data available in my data source for each year, choosing the 90th percentile as break point for full membership, the 10th percentile for full non-membership, and the median as cross-over point.<sup>3,4</sup>

### *Institutional attributes*

For economic development, I built on the literature (Greckhamer, 2011; Moller *et al.*, 2003; Nafziger, 2006; Nielsen, 1994) to integrate four of its key facets into a higher order set: (1) national wealth, measured as gross national income (GNI) per capita (ppp); (2) degree of industrial development, measured as percent of the labor force employed outside agriculture; (3) demographic development, measured as percent of population below age 15, all sourced from the World Bank's data catalogue (World Bank, n.d.); and (4) labor productivity, measured as GDP (ppp) per person employed per hour, sourced from the *IMD Yearbook* (IMD, 2002, 2006, 2010). As regards calibration, for the set of wealthy countries I chose thresholds similar to Ragin (2000) and adjusted for inflation conversion factors (Sahr, 2009). For the set of countries with high industrial development, I chose thresholds as 5 (full membership), 15 (cross-over point), and 25 (full non-membership) percent of labor working in agriculture as in highly industrialized countries this value should be 5–10 percent or lower (Nafziger, 2006). For the set of countries with high demographic development, I used 20 (full membership), 25 (cross-over point), and 30 (full non-membership) percent of population below 15 years, as developed countries' populations have a population under 15 years below 20 percent, while in less developed ones this percentage may be 30–40 or higher (Nafziger,

<sup>3</sup> Similarly lacking established knowledge, I chose the same calibration process and anchored break points in all the data available for a year in the respective data source (i.e., including data available for countries not included in this study) for productivity, size and liquidity of equity markets, concentration and activity of the banking sector, foreign capital penetration, and collective labor rights.

<sup>4</sup> The 90th percentile of the pay ratio between CEOs and workers for 2005 differed substantially from the other years due to a few outlier values (whereas the remaining percentiles were comparable across years), hence for 2005 I calibrated the set of countries with high pay dispersion by using the average of the 90th percentile values for 2001 and 2009 as threshold for full membership in order to have consistent break points across years.

<sup>2</sup> These countries are Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR China (included due to its special administrative status), Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Korea, Lithuania, Luxembourg, Malaysia, Mexico, The Netherlands, New Zealand, Norway, Peru, Philippines, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, United Kingdom, United States, and Venezuela.

2006). Finally, I calibrated the set of countries with highly productive labor as a relative property. I then integrated these sets into the higher-order set of highly developed countries by applying the compensation method (Ragin, 2000), which allows cases' strengths and weaknesses to compensate for each other by averaging membership in lower-level sets (I created all higher-order sets using this method).

For capital institutions, I operationalized the development of a country's equity markets through stock market capitalization and liquidity (Demirguc-Kunt and Levine, 1996, 1999; Pedersen and Thomsen, 1997; Wurgler, 2000), measuring the former as stock market capitalization as percent of GDP and the latter as its turnover ratio, i.e., the total value of domestic shares traded divided by average market capitalization, both sourced from the World Bank data catalogue (World Bank, n.d.). I then calibrated the sets of countries with high stock market capitalization and high liquidity as relative properties and integrated these into the higher-order set of countries with highly developed stock markets. I operationalized the development of the banking sector through its concentration and its extent of activities in the private sector (Demirguc-Kunt and Levine, 1999; Pedersen and Thomsen, 1997), measuring concentration as proportion of a country's commercial banks' total assets held by its three largest banks taken from Beck, Demirguc-Kunt, and Levine (2009) and bank activity through bank loans to the private sector as percent of GDP sourced from the World Bank's data catalogue (World Bank, n.d.). I then calibrated the sets of countries with highly concentrated and with highly active banking sectors as relative properties and combined these sets into the higher-order set of countries with a concentrated active banking sector. I operationalized foreign capital penetration as a country's stock of foreign direct investment (FDI) as percent of GDP (Alderson and Nielsen, 1999; Bornschier and Ballmer-Cao, 1979), sourced from the UN Conference on Trade and Development data center (UNCTAD, n.d.), and calibrated the set of countries with strong foreign capital penetration as a relative property.

For labor institutions, I operationalized collective labor rights using Mosley's (2011a) index, which encompasses violations of labor rights occurring in a country, in six categories. Cross-national time series data for collective labor rights are very rare and limited (Mosley, 2011b), and while Mosley's index is arguably the most comprehensive and

current cross-national data source for this attribute, its current availability was limited up to 2002; therefore, I imputed missing data for 2005 and 2009 with the most recently available data (i.e., for 2002) and calibrated the set of countries with strong collective labor rights as relative properties. To capture strength of a country's welfare state institutions, I followed Greckhamer (2011) and chose public health spending measured as percentage of total health expenditure covered by the government reported by the World Health Association (WHO, n.d.) because this is crucial for distinguishing more encompassing from more minimalist welfare states (Brady, 2005). Because the most expansive welfare states cover more than 75 percent of health care expenses, while minimalist welfare states cover less than 50 percent (Brady, 2005), I chose 80 and 45 percent as break points for full membership and full non-membership in the set of countries with strong welfare states and 65 percent as cross-over point for nuanced set membership.

Operationalizing labor market influences on (executive) compensation is challenging (Gomez-Mejia and Wiseman, 1997). I do so by capturing relative availability of executive talent and skilled labor in a country's labor market using data from IMD's executive opinion survey (IMD, 2001, 2005, 2009). I calibrated the sets of countries with readily available competent senior managers (assuming CEOs are recruited from these ranks) and readily available skilled workers based on the items' scale,<sup>5</sup> choosing break points for full membership as 8 and full non-membership as 5, with the cross-over point halfway between at 6.5. Relative differences in labor markets for CEOs and workers may impact pay dispersion, hence I calibrated higher order sets combining lack of available senior managers and readily available skilled workers (for high pay dispersion) and vice versa (for the absence of high pay dispersion).

For social acceptance of inequality, I followed the literature (e.g., Crossland and Hambrick, 2011) and utilized Hofstede's (2001) power distance index, which captures the extent to which relationships in a country are based on autocratic and paternalistic assumptions that lead people to accept unequal distribution of power and authority. I supplemented

<sup>5</sup> In this source, items regarding ready availability of "competent senior managers" and "skilled labor" in a country's labor market comprise a 10-point scale anchored from 1 "not readily available" to 10 "readily available."

missing scores for Jordan (using Hofstede's Arab countries' score), Lithuania (Huettinger, 2008), and Ukraine (Prykarpatska, 2008). I calibrated the set of countries with high power distance using Hofstede's (2001) descriptions of strong, medium, and weak cases of power distance. Thus, I set break points as 85 points for full membership, 25 for full non-membership, and 55 as cross-over point.

### Analysis procedures

FsQCA aims to identify necessary or sufficient subset relations (Ragin, 2000); attributes may be considered necessary if they must be present for an outcome to occur, and sufficient if they can produce an outcome by themselves. I first conducted necessity analyses of all attributes and their negation, applying a recommended consistency benchmark of  $\geq 0.9$  (Schneider and Wagemann, 2012) and taking coverage as measure of a necessary condition's relevance (Ragin, 2006). I then conducted sufficiency analyses using Ragin's (2008) truth table algorithm to identify attribute combinations consistently linked to an outcome, applying a consistency benchmark of  $\geq 0.8$  (Ragin, 2006, 2008) complemented by a proportional reduction in inconsistency (PRI) score benchmark of  $\geq 0.65$  to avoid simultaneous subset relations of attribute combinations in both the outcome and its absence; additionally, in sufficiency analyses I did not allow counterfactuals containing the absence of a necessary condition (Schneider and Wagemann, 2012). I conducted all analyses using fsQCA 2.5 (Ragin, Davey, and Drass, 2009).

Ragin's (2008) truth table analysis procedure produces different solutions based on how simplifying assumptions regarding counterfactuals (i.e., configurations not represented by cases with "strong" membership in the study sample as described in the online supporting information) are integrated (Schneider and Wagemann, 2012). Following current convention, I report a combination of intermediate and parsimonious solutions (e.g., Fiss, 2011; Ragin and Fiss, 2008). Intermediate solutions integrate simplifying assumptions that are consistent with empirical evidence at hand and with existing knowledge regarding single conditions that compose logical remainders (i.e., "easy" counterfactuals); parsimonious solutions are contained within intermediate solutions and may integrate both easy counterfactuals as well as difficult ones (i.e., those that are consistent with the empirical evidence but not with theoretical

knowledge) (Schneider and Wagemann, 2012). I also report set theoretic consistency and coverage measures (Ragin, 2006, 2008).

For intermediate solutions, based on the literature synthesized above, I integrated the following counterfactuals. First, I integrated the presence of high development for high CEO and worker pay because it should increase compensation levels, and I integrated its absence for the absence of high compensation. Second, based on market logic, I integrated the absence of ready availability of executive talent or skilled labor as easy counterfactual for high CEO or high worker compensation and vice versa. Third, because acceptance of high power distance should benefit the pay of those at the apex and harm the pay of those at the nadir of organizations, I included presence of high power distance as easy counterfactual for high CEO compensation and absence of high worker compensation, with the relations reversed for a lack of power distance. Finally, based on previous knowledge that strong welfare states and strong collective labor rights empower workers to enhance their compensation, I include presence of these attributes as easy counterfactuals for high worker compensation and vice versa.

As regards pay dispersion, first I included high development for lack of high pay dispersion and vice versa based on the established theory that high development reduces income inequality. Second, I included absence of strong welfare state and of collective labor rights for presence of high pay dispersion and vice versa because welfare state institutions balance the distribution of economic welfare and because strong collective labor rights empower workers to increase their wages while they may constrain executive pay. Third, based on the literature, I integrated high power distance as easy counterfactual for high pay dispersion and vice versa. Fourth, based on the market logic, I included a composite set combining lack of readily available executive talent and readily available skilled workers as easy counterfactual for high pay dispersion as well as a composite set combining readily available executive talent and lack of readily available skilled workers for absence of high pay dispersion.

## RESULTS

In Tables 1–6, I present my fsQCA analyses results using Ragin and Fiss's (2008) notation. For each configuration (or solution, numbered S1, S2,

etc.) linked to an outcome, full circles indicate an attribute's presence and crossed-out circles indicate its absence; blank spaces mark attributes that may be present or absent. Also, large circles indicate core conditions that occur in parsimonious and intermediate solutions, while small circles indicate complementary conditions that occur in intermediate but not parsimonious solutions. I sort configurations by unique coverage and group those sharing core conditions—or neutral permutations (Fiss, 2011)—together and number them S1a, S1b, etc. I also extend Ragin and Fiss's notation to incorporate necessity analyses results; I indicate an attribute's presence as necessary condition with full squares (an attribute's absence as necessary condition would be marked with empty squares).

The study focuses on understanding the institutional determinants of CEO pay and its relation to worker pay. Hence, I first present the institutional configurations linked to high CEO compensation and to its absence, followed by a comparison of these findings. I then present the institutional configurations linked to high worker pay and its absence, followed by a comparison of these results with the paths leading to the CEO pay outcomes. As the last step, I present results regarding institutional combinations linked to high pay dispersion and its absence.

## CEO compensation

### High CEO compensation

Six configurations were consistently linked to membership in the set of countries with highly compensated CEOs (see Table 1). To give an example of how to interpret the tables, the first configuration (S1) combines (irrespective of level of development) the presence of highly developed equity markets, a strong welfare state, and high power distance together with the absence of foreign capital penetration as core conditions, along with the complementary conditions concentrated active banking sector, lack of collective labor rights, and lack of ready availability of senior managers. Literature reviewed above supports the notion that dispersion of ownership and efficient capital allocation associated with highly developed equity markets, greater opportunities for exercising power given to the powerful (here CEOs) by power distance, and a shortage of senior managerial talent should be linked to high CEO compensation. S1 suggests that these factors result in high CEO compensation when combined with a lack of collective labor rights, lack of foreign capital penetration, and a strong welfare state and a strong banking sector. Although the latter two conditions might be expected to have a negative impact on CEO pay if viewed in isolation, this finding shows that combined with the other attributes in this configuration they are linked

Table 1. Configurations for high CEO compensation (pp)

	Solution					
	S1	S2a	S2b	S3	S4a	S4b
Development			●			
Foreign capital penetration	⊗		●			⊗
Developed stock market	●		●			●
Concentrated active banking sector	●			⊗		⊗
Welfare state	●			⊗		
Collective labor rights	⊗		⊗	⊗		⊗
Availability of senior managers	⊗			⊗		●
Power distance	●		●	●	●	●
Consistency	0.9	0.93	0.9	0.87	0.9	0.91
Raw coverage	0.21	0.25	0.24	0.25	0.19	0.19
Unique coverage	0.06	0.03	0	0.01	0.01	0.01
<b>Overall solution consistency</b>				<b>0.87</b>		
<b>Overall solution coverage</b>					<b>0.43</b>	

● = core causal condition present; ⊗ = core causal condition absent; ● = complementary causal condition present; ⊗ = complementary causal condition absent.

Table 2. Configurations for absence of high CEO compensation (ppp)

	Solution					
	S1	S2	S3a	S3b	S4a	S4b
Development		●				
Foreign capital penetration	●	●	⊗	●	●	●
Developed stock market		⊗	⊗⊗	●●	●⊗	●●
Concentrated active banking sector			⊗⊗	⊗⊗		
Welfare state	●●	●	●	●	●	●
Collective labor rights	●●	⊗	●●	●●		
Availability of senior managers						●
Power distance	⊗				⊗	⊗
Consistency	0.8	0.9	0.91	0.91	0.91	0.91
Raw coverage	0.6	0.2	0.21	0.28	0.29	0.29
Unique coverage	0.19	0.02	0.01	0	0	0
<b>Overall solution consistency</b>				<b>0.8</b>		
<b>Overall solution coverage</b>				<b>0.67</b>		

● = core causal condition present; ⊗ = core causal condition absent; ● = complementary causal condition present; ⊗ = complementary causal condition absent.

to high CEO pay. Put differently, the conjunction of these attributes (i.e., not their “independent” effects) constitute a consistent path to highly paid CEOs.

Overall, a lack of strong collective labor rights is a core or complementary condition in all paths consistently linked to high CEO pay (in four paths also combined with an absence of a strong welfare state), as is high power distance. This suggests that a combination of high cultural acceptance of hierarchical power structures and a lack of institutions empowering labor are vital institutional conditions for highly compensated CEOs. In addition, in S1 and S2b, a lack of readily available senior managers is a complementary condition, which is consistent with the market logic that CEO compensation should be high if senior managerial talent is scarce. However, configurations S4a and S4b contradict this expectation, including ready availability of senior managers as a core condition. This suggests that perhaps in institutional environments with ready availability of and therefore a more competitive market for senior managerial talent, embedded in a cultural acceptance of hierarchical differentiation, and not impaired by a labor force empowered by strong collective labor rights (combined with the respective complementary institutional attributes), tournaments among an abundant cadre of senior managers and with relatively high prizes for the winners (Conyon, Peck, and Sadler,

2001; Lazear and Rosen, 1981) are a salient contribution to high CEO compensation. Results reported in Table 1 also illustrate other sources of causal complexity, e.g., either the presence or absence of foreign capital penetration occurs as a core or peripheral ingredient in each path linked to high CEO pay.

#### Absence of high CEO compensation

Table 2 shows six paths consistently linked to an absence of high CEO pay. A relatively dominant path (S1, raw/unique coverage = 0.6/0.19) combines strong collective labor rights, a strong welfare state, and a lack of power distance as core conditions. This finding supports Jensen and Murphy’s (1990) argument that implicit political forces, such as government policies or strong unions, may be vital constraints for executive compensation by limiting how shareholders can contract with managers. Indeed, it suggests that a combination of institutions empowering workers and the lack of cultural acceptance of high hierarchical differentiation may constitute implicit institutional forces constraining the amount of typical CEO compensation. The finding that strong collective bargaining rights and/or a strong welfare state (both empowering workers) are core conditions in all paths to a lack of high CEO pay (supplemented in three configurations by lack of power distance as core condition) further

supports Jensen and Murphy's (1990) implicit regulation hypothesis in a cross-national context.

The expectation that a concentrated active banking sector as a proxy for strong minority owners should be linked to a lack of high CEO compensation is contradicted by the finding that absence of a concentrated active banking sector is a core or complementary condition in three paths linked to this outcome; S3a and S3b include presence of strong collective labor rights and absence of representation of capital holders through a concentrated active banking sector as core conditions. Also, the notion that high foreign capital penetration should inflate the compensation at organizations' apex is contradicted by the presence of foreign capital penetration as core or complementary condition in four paths linked to this outcome. High foreign capital penetration contributes to limiting CEO pay in highly developed countries (S2) or irrespective of a country's level of development (S4a–b), depending on other institutional conditions with which it combines; the notion that high foreign capital penetration may create a highly paid organizational elite in countries lacking development (Alderson and Nielsen, 1999; Sullivan, 1983) is not supported. Also, only one path (S4b, lacking unique coverage) included ready availability of senior managers as complementary condition, thus the identified institutional combinations constrain CEO pay largely irrespective of whether supply of executive skills is abundant or not.

#### *Comparing paths to high CEO compensation versus its absence*

Results reported in Tables 1 and 2 suggest that CEO compensation is largely (i.e., except for one path in each) high or not high irrespective of a country's level of development. This is contrary to previous research on the compensation level of other occupational groups (Grechamer, 2011) and to the findings related to worker pay reported below. Also, while previous research found CEO pay to be positively related to national wealth (Tosi and Grechamer, 2004), when studied in terms of combinations of institutions, a country's level of development appears largely irrelevant for whether CEOs are paid highly or not. A comparison of configurations linked to high CEO pay and its absence also underscores that combinations of labor institutions and cultural acceptance of inequality are key implicit constraints of CEO pay: a combination

of high power distance and (with one exception) the absence of strong labor institutions contribute to each path to high CEO pay, whereas a lack of power distance combined with strong labor institutions form a key path to the absence of high CEO pay (and either individually or in combination are core conditions in the remaining paths).

Also, while two paths to high CEO compensation (S1 and S2b in Table 1) and one path to its absence (S4b in Table 2) support traditional explanations involving market forces of supply and demand for executive talent in shaping CEO pay, the results highlight that market forces are not a universal determinant of CEO compensation cross-nationally; in some institutional contexts CEOs may be able to extract more pay even if senior managerial talent is in abundant supply (S4a–b in Table 1) while in others CEO pay may be constrained independent of the availability of executive talent (S1–S4a in Table 2). Implying that the link between market forces and CEO pay is complex and that other institutional dimensions may dominate shaping the paths to high CEO pay and even more so those linked to its absence, the results support Finkelstein and Hambrick's (1988) assertion that the labor market for executive talent may be relatively inefficient.

Comparing Tables 1 and 2 also highlights complex links between capital institutions and CEO pay. Highly developed equity markets are a core condition in several paths to high CEO compensation, and their absence is a core or complementary condition in two paths linked to the absence of high CEO pay. This is consistent with theoretical expectations discussed above that the greater ownership dispersion and reduced owner-control associated with highly developed equity markets should increase CEOs' power to extract compensation. However, when combined with other institutions, e.g., with high foreign capital penetration, a strong welfare state, and a lack of power distance (core conditions in S4a–b in Table 2), highly developed equity markets may contribute to a lack of high CEO pay. Also, S3 and S4a in Table 1 represent configurations in which CEOs are highly paid irrespective of whether equity markets are highly developed or not, even if senior managerial talent is readily available (S4a). Furthermore, both presence and absence of high foreign capital penetration are linked to both high CEO compensation and its absence. These findings highlight that the influence of foreign capital penetration depends

on the presence and absence of other institutions. Considering the paths linking high foreign capital penetration to high CEO pay (S2a–b and S3 in Table 1) versus its absence (S2, S3b, and S4a–b) suggests that different kinds of FDI may be compatible with and seek out different kinds of institutional environments (Mosley, 2011b) and consequently contribute to different kinds of CEO compensation regimes.

## Worker compensation

### *High manufacturing worker compensation*

Necessity analysis found high development an empirically relevant necessary condition for high worker pay (consistency = 0.99, coverage = 0.7). Truth table analysis further identified 10 paths (each including development as core condition) consistently linked to highly compensated workers.<sup>6</sup> Consistent with previous research (Greckhamer, 2011), these findings show that a combination of high development and lack of power distance is an important ingredient for high worker compensation. They also show how high development and lack of power distance combine as core attributes with

highly developed equity markets (S1a–f in Table 3), strong collective labor rights and readily available skilled workers (S3), a lack of foreign capital penetration (S4), or strong collective labor rights and a lack of a strong banking sector (S5) (along with various complementary conditions), to constitute the core conditions of equifinal institutional paths to high worker compensation.

Paths S1a–f are neutral permutations around core conditions lack of power distance, high development, and highly developed stock markets. The finding that lack of power distance is vital for highly compensated workers is consistent with the notion that countries with low power distance tend to have egalitarian compensation systems that consider labor as honorable and compensate it accordingly (Gomez-Mejia and Welbourne, 1991; Hofstede, 2001). The finding that in these neutral permutations it combines with highly developed equity markets—usually linked with better governance geared towards improving financial performance (Aguilera and Jackson, 2003; Hall and Soskice, 2001) and with more efficient capital allocation helping countries to take advantage of investment opportunities (Wurgler, 2000)—and with high development suggests that in countries lacking power distance, the benefits of high development as well as improved governance and capital allocation may be shared by organizations' rank and

<sup>6</sup> Solution S1b in Table 3 (as well as S1a and S2b in Table 6) overlaps with two parsimonious solutions; I represent the parsimonious solution with higher unique coverage.

Table 3. Configurations for high worker compensation (ppp)

	Solution									
	S1a	S1b	S1c	S1d	S1e	S1f	S2	S3	S4	S5
Development	■	■	■	■	■	■	■	■	■	■
Foreign capital penetration		⊗							⊗	●
Developed stock market	●	●	●	●	●	●	●	●		
Concentrated active banking sector	●	●		●	●	●	●	●	●	⊗
Welfare state			●	●	●	●	●	●	●	●
Collective labor rights	●		●		●	●	●	●	●	●
Availability of skilled workers			⊗		⊗	⊗	●	●		⊗
Power distance	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Consistency	0.91	0.92	0.9	0.9	0.9	0.88	0.94	0.94	0.92	0.91
Raw coverage	0.64	0.47	0.4	0.56	0.43	0.35	0.33	0.4	0.39	0.25
Unique coverage	0.04	0.02	0.01	0	0	0	0.02	0.01	0	0
<b>Overall solution consistency</b>	<b>0.88</b>									
<b>Overall solution coverage</b>	<b>0.73</b>									

● = core causal condition present; ⊗ = core causal condition absent; ● = complementary causal condition present; ⊗ = complementary causal condition absent; ■ = necessary condition present.

Table 4. Configurations for absence of high worker compensation (ppp)

	S1a	S1b	S1c	S2	S3a	S3b	S4
	<b>Solution</b>						
Development	⊗	⊗	⊗				
Foreign capital penetration	⊗		●	●	●	●	⊗⊗
Developed stock market		●	●		⊗	⊗⊗	
Concentrated active banking sector	⊗	●	●	●	⊗	⊗⊗	●
Welfare state	⊗		⊗	⊗	⊗	⊗⊗	⊗
Collective labor rights	⊗	⊗		⊗	⊗	⊗⊗	
Availability of skilled workers					⊗	⊗⊗	⊗
Power distance	●	●		●	●		●
Consistency	0.99	0.99	0.98	0.91	0.94	0.94	0.94
Raw coverage	0.42	0.33	0.24	0.29	0.27	0.21	0.22
Unique coverage	0.09	0.03	0.01	0.05	0.02	0.01	0.02
<b>Overall solution consistency</b>					<b>0.93</b>		
<b>Overall solution coverage</b>					<b>0.62</b>		

● = core causal condition present; ⊗ = core causal condition absent; ● = complementary causal condition present; ⊗ = complementary causal condition absent.

file employees. A concentrated active banking sector is a complementary condition in six paths to high worker compensation; this may indicate a more patient form of corporate control that is more amenable to employee representation (Jackson, 2005), which may contribute to high worker compensation.

Core conditions of paths S2 and S3 suggest that, contrary to market logic predictions, in developed countries ready availability of skilled workers may indicate a strongly developed base of skilled workers that empowers workers to attain higher compensation despite a greater supply of their skills, if they can rely on strong labor institutions combined with highly developed equity markets (S2) or a lack of power distance (S3), along with complementary factors. Overall, all but one configurations linked to high worker pay includes a strong welfare state and/or strong collective labor rights as complementary or core condition, indicating that institutions empowering labor are vital ingredients for highly compensated workers across countries.

#### Absence of high manufacturing worker compensation

Seven consistent paths were linked to the absence of high worker compensation (see Table 4). Neutral permutations S1a–c share lack of development as sole core condition, while presence or absence

of development does not matter for the remaining paths. The relatively salient path S1a (raw/unique coverage = 0.42/0.09) suggests a lack of development complemented by high power distance, and a lack of institutions empowering workers is a key path to not highly compensated workers. Overall, a lack of strong collective labor rights and/or a strong welfare state as core or complementary conditions in each path linked to the absence of high worker compensation highlights the absence of institutions empowering labor as vital ingredient for workers' inability to secure high pay.

S3a–b and S4 in Table 4 include an absence of readily available skilled workers as core condition, although market-based arguments would suggest that an abundance of skilled labor should decrease workers' pay. Perhaps a lack of readily available skilled workers is reflective of a poorly developed working class that, when combined with a lack of strong labor institutions and an inefficient allocation of capital due to poorly developed equity markets, lacks collective power to secure high compensation irrespective of a country's level of development. These findings, together with findings on the impact of market forces on CEO pay discussed above, illustrate different ways in which market forces and institutional attributes combine to affect compensation; they support arguments that market forces of supply and demand operate within a larger institutional context (Morris and Western,

1999) and may not be a viable explanation for international differences in pay inequality (Blau and Kahn, 1996). As another example of causal complexity, both presence and absence of foreign capital penetration appear to contribute to absence of high worker compensation, depending upon their combination with other institutional attributes, including power distance, institutions empowering labor, and development of equity markets. The finding that high foreign capital penetration contributes to high worker pay in some institutional contexts and to relatively poor pay for workers in others might again be due to different institutional environments attracting different kinds of FDI (Mosley, 2011b).

#### *Comparing paths to CEO and worker compensation outcomes*

Comparing configurations linked to presence and absence of high compensation for CEOs versus workers offers further insights. While paths to high CEO pay are largely independent of level of development, high development is necessary for workers to achieve high compensation, and lack of development is the core condition of three neutral permutations within S1 (Table 4) for the absence of high worker pay. Also, all but one configurations linked to high worker pay include lack of power distance as core condition, and several paths to a lack of high worker pay include presence of high power distance as core or complementary condition, while all paths to high CEO pay include high power distance as core or complementary condition, and a lack of power distance is a core condition in three paths to an absence of high CEO pay. These findings support theory suggesting that high power distance facilitates hierarchical compensation systems favoring elites of organizations while its absence is conducive to egalitarian compensation systems resulting in relatively high compensation of lower-level employees (Gomez-Mejia and Welbourne, 1991). Similarly, configurations linked to CEO versus worker compensation outcomes strikingly differ in how they are shaped by the strength of labor institutions; the presence of these institutions are vital configurational elements in paths linked to high worker compensation and to the absence of high CEO compensation, and vice versa. These findings are consistent with theory and research that has found that strong labor institutions strengthen the position of workers to attain higher compensation while constraining

executive compensation, and going beyond these insights they show how these institutions combine with other institutional forces to lead to these outcomes.

Although highly developed equity markets are a core condition in several paths to high pay for CEOs and workers, findings suggest that CEOs and workers benefit (via high pay) from developed equity markets in different institutional contexts. Comparing S1 and S2a–b in Table 1 with S1a–f and S2 in Table 3 imply that workers may benefit from developed equity markets' superior resource allocation if they are empowered by (among others) high development, strong labor institutions and/or lack of power distance, whereas CEOs may benefit from enjoying greater power resulting from ownership dispersion in institutional environments that combine (among others) an acceptance of highly paid elites (high power distance), a lack of constraints from strong labor, and/or favorable market conditions of a scarce supply of executive talent.

#### **Pay dispersion**

To further investigate CEO compensation in relation to that of workers, I present the institutional configurations linked to high pay dispersion between CEOs and workers and those linked to its absence. These findings complement the insights generated by findings presented above.

#### *High pay dispersion*

Five paths were consistently linked to high pay dispersion (see Table 5). Salient core ingredients of institutional paths linked to this outcome include a lack of strong labor institutions (each path includes absence of collective labor rights and/or a strong welfare state as core conditions) and a cultural acceptance of hierarchical authority patterns (power distance is a core condition in four paths), both disempowering lower-level employees. Together with findings linking this combination to high CEO pay and a lack of high worker pay, this implies that these are vital contributing elements for creating high pay dispersion as freeing CEO pay from implicit political constraints while hampering workers' power to obtain larger rewards (Kalleberg *et al.*, 1981; Western, 1989) is culturally accepted (Gomez-Mejia and Welbourne, 1991). Comparing configurations S2 and S3 also suggests that both presence and absence of foreign capital penetration may be core attributes

Table 5. Configurations for high pay dispersion

	Solution				
	S1a	S1b	S1c	S2	S3
Development		⊗		⊗	⊗
Foreign capital penetration			⊗	⊗	⊗
Developed stock market			⊗	●	●
Concentrated active banking sector	●		●	⊗	⊗
Welfare state	⊗	⊗	⊗		⊗
Collective labor rights	⊗	⊗		⊗	⊗
Availability of skilled workers but not executive talent					
Power distance	●	●	●	●	●
Consistency	0.94	0.99	0.95	0.98	0.95
Raw coverage	0.42	0.44	0.25	0.3	0.25
Unique coverage	0.09	0.07	0.02	0.03	0.02
<b>Overall solution consistency</b>				<b>0.93</b>	
<b>Overall solution coverage</b>				<b>0.62</b>	

● = core causal condition present; ⊗ = core causal condition absent; ● = complementary causal condition present; ⊗ = complementary causal condition absent.

Table 6. Configurations for absence of high pay dispersion

	Solution					
	S1a	S1b	S1c	S2a	S2b	S3
Development	■	■	■	■	■	■
Foreign capital penetration						
Developed stock market		●	●	●	●	●
Concentrated active banking sector		●	●	●	●	●
Welfare state	●	●	●			●
Collective labor rights	●	●	●	●	●	●
Availability of executive talent but not skilled workers						
Power distance	⊗	⊗	⊗	⊗	⊗	
Consistency	0.91	0.95	0.95	0.94	0.94	0.95
Raw coverage	0.69	0.6	0.48	0.66	0.5	0.21
Unique coverage	0.09	0	0	0.07	0.04	0.01
<b>Overall solution consistency</b>				<b>0.88</b>		
<b>Overall solution coverage</b>				<b>0.84</b>		

● = core causal condition present; ⊗ = core causal condition absent; ● = complementary causal condition present; ⊗ = complementary causal condition absent; ■ = necessary condition present.

for paths to high pay dispersion, depending on institutional context. This causal complexity supports in configurational terms the observation that the relationship between foreign capital penetration and income inequality may be more complex than has been assumed by most of the literature (Alderson and Nielsen, 1999; Tsai, 1995).

#### Absence of high pay dispersion

Necessity analyses identified high development as relevant necessary condition for absence of high pay dispersion (consistency = 0.97, coverage = 0.70), supporting the notion that high development reduces inequality (Kuznets, 1955; Nielsen, 1994). This finding pinpoints asymmetry

considering development plays a limited role in configurations linked to high pay dispersion (see Table 5). Sufficiency analysis found six paths consistently linked to a lack of high pay dispersion (see Table 6), including three neutral permutations (S1a–c) around a combination of high development, strong welfare state institutions, and an absence of cultural acceptance of inequality. The path with substantial unique coverage (S1a) complements these attributes with strong collective labor rights, all of them empowering workers to capture larger compensation while constraining CEO pay. Neutral permutations S2a–b show that high development, strong collective labor rights, and the more efficient capital allocation and governance from highly developed equity markets combine (complemented by other institutional attributes) to constitute another core path to a relatively egalitarian compensation system.

Overall, besides high development, presence of a strong welfare state and/or of strong collective labor rights are core conditions in each path consistently linked to a lack of high pay dispersion. Hence, a combination of high development, which empowers workers and enhances their human capital (Lenski, 1966; Nielsen, 1994), a strong welfare state that empowers labor and fosters income distribution according to social criteria (Alderson, 2004; Esping-Anderson, 1990), strong collective labor rights that empower workers to appropriate more of organizations' rents available for distribution (Coff, 1999; Freeman and Medoff, 1984) while limiting CEOs ability to appropriate these rents (DeAngelo and DeAngelo, 1991; Shin, 2014), and/or a low tolerance of power distance that facilitates egalitarian pay structures (Gomez-Mejia and Welbourne, 1991) appear to be vital institutional ingredients for paths to egalitarian compensation systems.

## DISCUSSION

While theory and research has related CEO compensation and organizations' fundamental power structures (Hambrick and Finkelstein, 1995), understanding how institutional power structures shape cross-national variation in CEO pay has remained an important gap in the executive compensation literature (Boyd *et al.*, 2012; van Essen *et al.*, 2015). To contribute to filling this gap, I have developed a model representing key institutions of countries' social power structures as interdependent

configurations (see Figure 1) to explore how CEO pay, in relation to worker pay, is shaped by combinations of these institutions. Thus, I investigated how development, various financial and labor institutions, market forces for occupational groups' skills, and cultural acceptance of social inequality combine to shape CEO compensation and pay dispersion between CEOs and workers. Studying CEO pay in relation to worker pay helps to understand cross-national differences in compensation as pay dispersion between CEOs and rank and file employees is a direct indicator of redistributive dynamics within organizations on the basis of power (Pfeffer, 1989; Shin, 2014). Building on the findings, I now discuss the study's limitations, implications, and promising directions for future research on executive compensation.

To begin with, the findings reported above show that 5–10 alternative configurations of institutional attributes are linked to each compensation outcome. To illustrate the configural nature of institutions' impact on compensation, some configurations including market forces regarding CEOs' and workers' skills support the market logic, whereas others contradict it. For example, contrary to the expected impact of market forces of supply and demand, in some configurations a ready availability of senior managers contributes to high CEO pay, perhaps due to greater importance of tournaments among senior managers competing to advance to the top. Other combinations of institutional forces constrain CEO compensation irrespective of whether supply of executive skills is abundant or not. Similarly, ready availability of skilled workers in some paths is linked to high pay for workers, which may imply a strongly developed working class that, in these contexts, is able to assert power and obtain a greater share of distributed rents. These examples suggest that future compensation research should investigate how market forces and other institutional factors may combine to shape CEOs' and other occupational groups' compensation, thereby shedding light on the dynamics created by the relative supply and demand of occupational groups' human capital in different institutional contexts. Considering the interdependence among countries' institutions, these findings highlight the insights possible through studying how institutional forces shape executive compensation in combination.

Another implication for the strategy literature on executive compensation results from exploring the

causal asymmetry between configurations linked to the presence versus absence of compensation outcomes. For example, although previous research has indicated a negative (linear) association between development and pay dispersion between CEOs and workers (Tosi and Greckhamer, 2004), in the present study I found that high development is a necessary condition that combines with other institutional attributes to form six paths consistently linked to the absence of high pay dispersion, while absence of high development is only a complementary condition in two of five paths linked to high pay dispersion. This finding illustrates that our understanding of cross-national compensation differences will benefit from developing theories and empirical models that separately investigate the institutional conditions linked to the presence versus the absence of compensation outcomes (rather than assuming linear and/or symmetrical relationships), combined with empirical research designs allowing for causal asymmetry.

Following recent recommendations to integrate labor into research on corporate governance and executive compensation (Aguilera and Jackson, 2003; Shin, 2014), this study's findings also highlight how institutions determining the power of labor combine with other institutional forces to shape cross-national compensation differences. They show that labor institutions are important for understanding cross-national differences in both worker and CEO pay as well as for understanding differences in the resulting pay differential between CEOs and workers. These findings indicate that in cross-national comparison implicit regulations stemming from social power structures (Jensen and Murphy, 1990)—particularly a combination of labor institutions and cultural norms regarding the acceptance of inequality and hierarchical authority relations—may be vital for CEO pay. For example, the dominant path to an absence of high CEO pay combined the presence of strong labor institutions and lack of power distance (see S1 in Table 2). In sum, the study's findings amplify the importance of integrating labor institutions into future research on cross-national differences in executive (and nonexecutive) compensation.

By integrating the literature linking foreign capital penetration to income inequality, this study also has implications for future strategy research on the links between foreign capital penetration and CEO pay as well as pay dispersion. In the Results section, I have noted that the finding that

both presence and absence of foreign capital penetration were part of configurations linked to each compensation outcome might reflect the impact of different kinds of FDI (e.g., in terms of broad sectors such as extractive versus manufacturing, or in terms of being skill intensive versus labor intensive); these have different consequences for workers (Mosley, 2011b), and by extension, may differently impact CEO pay and pay dispersion. Hence, future research could explore how different kinds of FDI may (seek out and), combined with different institutional environments, shape executive (and worker) compensation and pay dispersion. Also, the study's country-level data did not allow differentiating domestic- and foreign-owned firms. Making this distinction in future research may be useful because especially in less developed countries multinational companies and industry sectors fueled by FDI may compensate employees differently than domestic firms and sectors do (Sullivan, 1983; Tsai, 1995).

Recognizing that any set theoretic study is limited in how many attributes it can include (Fiss, 2011; Marx and Dusa, 2011), my study's model was focused on configurations of key country-level institutions of social power structures. Doidge *et al.* (2007) have concluded that in cross-national comparisons country characteristics are more important than firm characteristics as determinants of firms' governance structures. Nevertheless, governance attributes that impact power structures at the firm level may also be vital for understanding cross-national differences in CEO compensation (Bebchuk *et al.*, 2002; Fernandes *et al.*, 2013; Muslu, 2010). For example, considering that the prevalence of different kinds of owners (e.g., families, banks, institutional investors, or government) varies cross-nationally (La Porta *et al.*, 1999; Thomsen and Pedersen, 2000), future research could further explore how cross-national differences in these ownership structures may impact executive compensation. Also, firm size is another likely determinant of executive compensation (Tosi *et al.*, 2000), and industry structures that shape firms' size in turn may differ across countries (Fligstein and Freeland, 1995). Research incorporating firm- and industry-level data for analyses of conditions underlying firm-level compensation structures could utilize a set theoretic approach to span multiple levels of analysis (Greckhamer *et al.*, 2008; Lacey and Fiss, 2009), integrating nation, industry, and/or firm-level attributes.

This study also has implications for manifestations of CEO power and related governance issues beyond CEO compensation. For example, research has found cross-national differences in CEOs managerial discretion, defined as “latitude of managerial action” (Hambrick and Finkelstein, 1987: 371), and consequently in CEOs’ impact on firm performance (Crossland and Hambrick, 2007, 2011). The configurational approach applied in the present study could help to advance research on this topic because the causal impacts of country-level institutions on managerial discretion are “almost surely interrelated” (Crossland and Hambrick, 2007: 776). Power structures underlying corporate governance phenomena also shape CEOs’ entrenchment and accountability for poor firm performance (Allen and Panian, 1982). My study’s focus on the configurational impact of institutions’ power structures could be used to extend Crossland and Chen’s (2013) research, which conceptualized cross-national differences in CEOs’ accountability for firm performance as stemming from cross-national differences in managerial discretion, power asymmetries between CEOs and shareholders, and CEO labor markets, among other factors.

## ACKNOWLEDGEMENTS

I thank associate editor James D. Westphal and anonymous reviewers of SMJ for their constructive comments throughout the review process. I also thank Sebnem Cilesiz for her constructive and detailed critique of several earlier drafts of this article as well as seminar participants at Koç University and Boğaziçi University for their comments on earlier versions of this work.

## REFERENCES

- Aguilera R, Jackson G. 2003. The cross-national diversity of corporate governance: dimensions and determinants. *Academy of Management Review* **28**: 447–465.
- Aguilera R, Jackson G. 2010. Comparative and international corporate governance. *Academy of Management Annals* **4**: 485–556.
- Alderson A. 2004. Explaining the upswing in direct investment: a test of mainstream and heterodox theories. *Social Forces* **83**: 81–122.
- Alderson A, Nielsen F. 1999. Income inequality, development, and dependence: a reconsideration. *American Sociological Review* **64**: 606–631.
- Allen M, Panian S. 1982. Power, performance, and succession in the large corporation. *Administrative Science Quarterly* **27**: 538–547.
- Balkin D, Gomez-Mejia L. 1990. Matching compensation and organizational strategies. *Strategic Management Journal* **11**: 153–169.
- Barkema H, Gomez-Mejia L. 1998. Managerial compensation and firm performance: a general research framework. *Academy of Management Journal* **41**: 135–145.
- Bebchuk L, Fried J. 2003. Executive compensation as an agency problem. *Journal of Economic Perspectives* **17**: 71–92.
- Bebchuk L, Fried J, Walker D. 2002. Managerial power and rent extraction in the design of executive compensation. *University of Chicago Law Review* **69**: 751–846.
- Beck T, Demirguc-Kunt A, Levine R. 2009. Financial institutions and markets across countries and over time: data and analysis. Policy Research Working Paper No. 4943, The World Bank, Washington, DC.
- Bell G, Filatotchev I, Aguilera R. 2014. Corporate governance and investors’ perceptions of foreign IPO value: an institutional perspective. *Academy of Management Journal* **57**: 301–320.
- Blau F, Kahn L. 1996. International differences in male wage inequality: institutions versus market forces. *Journal of Political Economy* **104**: 791–837.
- Bloom M. 1999. The performance effects of pay dispersion on individuals and organizations. *Academy of Management Journal* **42**: 25–40.
- Bornschier V. 1983. World economy, level development and income distribution: an integration of different approaches to the explanation of income inequality. *World Development* **11**: 11–20.
- Bornschier V, Ballmer-Cao T. 1979. Income inequality: a cross-national study of the relationships between MNC-penetration, dimensions of the power structure and income distribution. *American Sociological Review* **44**: 487–506.
- Bornschier V, Chase-Dunn C, Robinson R. 1978. Cross-national evidence of the effects of foreign investment and aid on economic growth. *American Journal of Sociology* **84**: 651–683.
- Boyd B, Santos M, Shen W. 2012. Guest editorial: international developments in executive compensation. *Corporate Governance: An International Review* **20**: 511–518.
- Brady D. 2005. The welfare state and relative poverty in rich western democracies, 1967–1997. *Social Forces* **83**: 1329–1364.
- Brockman P, Chung D, Yan X. 2009. Block ownership, trading activity, and market liquidity. *Journal of Financial and Quantitative Analysis* **44**: 1403–1426.
- Coff R. 1999. When competitive advantage doesn’t lead to performance: the resource-based view and stakeholder bargaining power. *Organization Science* **10**: 119–133.
- Connelly B, Haynes K, Tihanyi L, Gamache D, Devvers C. 2013. Minding the gap: antecedents and consequences of top management-to-worker pay dispersion. *Journal of Management* : 1–24, DOI: 10.1177/0149206313503015
- Conyon M, Peck S, Sadler G. 2001. Corporate tournaments and executive compensation: evidence from the U.K. *Strategic Management Journal* **22**: 805–815.
- Core J, Holthausen R, Larcker D. 1999. Corporate governance, chief executive officer compensation, and

- firm performance. *Journal of Financial Economics* **51**: 371–406.
- Cowherd D, Levine D. 1992. Product quality and pay equity between lower-level employees and top management: an investigation of distributive justice theory. *Administrative Science Quarterly* **37**: 302–320.
- Crilly D, Zollo M, Hansen M. 2012. Faking or muddling through? Understanding decoupling in response to stakeholder pressures. *Academy of Management Journal* **55**: 1429–1448.
- Crossland C, Chen G. 2013. Executive accountability around the world: sources of cross-national variation in firm performance–CEO dismissal sensitivity. *Strategic Organization* **11**: 78–109.
- Crossland C, Hambrick D. 2007. How national systems differ in their constraints on corporate executives: a study of CEO effects in three countries. *Strategic Management Journal* **28**: 767–789.
- Crossland C, Hambrick D. 2011. Differences in managerial discretion across countries: how nation-level institutions affect the degree to which CEOs matter. *Strategic Management Journal* **32**: 797–819.
- DeAngelo H, DeAngelo L. 1991. Union negotiations and corporate policy: a study of labor concessions in the domestic steel industry during the 1980s. *Journal of Financial Economics* **30**: 3–43.
- Demirgürç-Kunt A, Levine R. 1996. Stock market development and financial intermediaries: stylized facts. Policy Research Working Paper No. 1462, The World Bank, Washington, DC.
- Demirgürç-Kunt A, Levine R. 1999. Bank-based and market-based financial systems. Policy Research Working paper No. 2143, The World Bank, Washington, DC.
- Devers C, Cannella A, Reilly G, Yoder M. 2007. Executive compensation: a multidisciplinary review of recent developments. *Journal of Management* **33**: 1016–1072.
- Dixon W, Boswell T. 1996. Dependency, disarticulation, and denominator effects: another look at foreign capital penetration. *American Journal of Sociology* **102**: 543–562.
- Doidge C, Karolyi A, Stulz R. 2007. Why do countries matter so much for corporate governance? *Journal of Financial Economics* **86**: 1–39.
- Esping-Anderson G. 1990. *The Three Worlds of Welfare Capitalism*. Princeton University Press: Princeton, NJ.
- Esping-Anderson G. 1992. The three political economies of the welfare state. In *The Study of Welfare State Regimes*, Kolberg J (ed). M. E. Sharpe: Armonk, NY; 92–123.
- van Essen M, Otten J, Carberry EJ. 2015. Assessing managerial power theory: a meta-analytic approach to understanding the determinants of CEO compensation. *Journal of Management* **41**: 164–202.
- Fernandes N, Ferreira M, Matos P, Murphy K. 2013. Are U.S. CEOs paid more? New international evidence. *Review of Financial Studies* **26**(2): 323–367.
- Finkelstein S, Hambrick DC. 1988. Chief executive compensation: a synthesis and reconciliation. *Strategic Management Journal* **9**: 543–588.
- Finkelstein S, Hambrick D. 1989. Chief executive compensation: a study of the intersection of markets and political processes. *Strategic Management Journal* **10**: 121–134.
- Finkelstein S, Hambrick D, Cannella A. 2009. *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. Oxford University Press: New York.
- Fiss P. 2007. Towards a set-theoretic approach for studying organizational configurations. *Academy of Management Review* **32**: 1180–1198.
- Fiss P. 2011. Building better causal theories: a fuzzy set approach to typologies in organization research. *Academy of Management Journal* **54**: 393–420.
- Fligstein N, Freeland R. 1995. Theoretical and comparative perspectives on corporate organization. *Annual Review of Sociology* **21**: 21–43.
- Freeman R, Medoff J. 1984. *What Do Unions Do?* Basic Books: New York.
- Gomez-Mejia L, Welbourne T. 1991. Compensation strategies in a global context. *Human Resource Planning* **14**: 29–41.
- Gomez-Mejia L, Wiseman R. 1997. Reframing executive compensation: an assessment and outlook. *Journal of Management* **23**: 291–374.
- Greckhamer T. 2011. Cross-cultural differences in compensation level and inequality across occupations: a set-theoretic analysis. *Organization Studies* **32**: 85–115.
- Greckhamer T, Misangyi V, Elms H, Lacey R. 2008. Using qualitative comparative analysis in strategic management research: an examination of combinations of industry, corporate, and business-unit effects. *Organizational Research Methods* **11**: 695–726.
- Hall P, Soskice D. 2001. An introduction to varieties of capitalism. In *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Hall P, Soskice D (eds). Oxford University Press: Oxford, UK; 1–68.
- Hambrick D, Finkelstein S. 1987. Managerial discretion: a bridge between polar views of organizational outcomes. *Research in Organizational Behavior* **9**: 369–406.
- Hambrick D, Finkelstein S. 1995. The effects of ownership structure on conditions of the top: the case of CEO pay raises. *Strategic Management Journal* **16**: 175–193.
- Helfin F, Shaw K. 2000. Blockholder ownership and market liquidity. *Journal of Financial and Quantitative Analysis* **35**: 621–633.
- Hofstede G. 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations* (2nd edn). Sage Publications: Thousand Oaks, CA.
- Huettinger M. 2008. Cultural dimensions in business life: Hofstede's indices for Latvia and Lithuania. *Baltic Journal of Management* **3**: 359–376.
- IMD. 2001, 2002, 2005, 2006, 2009, 2010, 2011. *IMD World Competitiveness Yearbook*. International Institute for Management Development: Lausanne, Switzerland.
- Jackson G. 2005. Employee representation in the board compared: a fuzzy set analysis of corporate governance, unionism and political institutions. *Industrielle Beziehungen* **12**: 1–28.

- Jackson G, Deeg R. 2008. Comparing capitalisms: understanding institutional diversity and its implications for international business. *Journal of International Business Studies* **39**: 540–561.
- Jensen M, Murphy K. 1990. Performance pay and top-management incentives. *Journal of Political Economy* **98**: 225–264.
- Jirjain U, Kraft K. 2007. Intra-firm wage dispersion and firm performance – is there a uniform relationship? *Kyklos* **60**: 231–253.
- Kalleberg A, Wallace M, Althauser R. 1981. Economic segmentation, worker power, and income inequality. *American Journal of Sociology* **87**: 651–683.
- Kogut B, MacDuffie JP, Ragin C. 2004. Prototypes and strategy: assigning causal credit using fuzzy sets. *European Management Review* **1**: 114–131.
- Kogut B, Ragin C. 2006. Exploring complexity when diversity is limited: institutional complementarity in theories of rule of law and national systems revisited. *European Management Review* **3**: 44–59.
- Kolberg J (ed). 1992. *The Study of Welfare State Regimes*. ME Sharpe: Armonk, NY.
- Kuznets S. 1955. Economic growth and income inequality. *American Economic Review* **45**: 1–28.
- Lacey R, Fiss P. 2009. Comparative organizational analysis across multiple levels: a set-theoretic approach. *Research in the Sociology of Organizations* **26**: 91–116.
- La Porta R, Lopez-de-Silanes F, Shleifer A. 1999. Corporate ownership around the world. *Journal of Finance* **LIV**: 471–517.
- La Porta R, Lopez-de-Silanes F, Shleifer A. 2008. The economic consequences of legal origins. *Journal of Economic Literature* **46**: 285–332.
- La Porta R, Lopez-de-Dilanes F, Shleifer A, Vishny R. 1997. Legal determinants in external finance. *Journal of Finance* **LII**: 1131–1150.
- Lawler E. 1990. *Strategic Pay: Aligning Organizational Strategies and Pay Systems*. Jossey Bass: San Francisco, CA.
- Lazear E, Rosen S. 1981. Rank-order tournaments as optimum labor contracts. *Journal of Political Economy* **89**: 841–864.
- Lenski G. 1966. *Power and Privilege: A Theory of Social Stratification*. University of North Carolina Press: Chapel Hill, NC.
- Levine R. 2002. Bank-based or market-based financial systems: which is better? *Journal of Financial Intermediation* **11**: 398–428.
- Levine R, Zervos S. 1998. Stock markets, banks, and economic growth. *American Economic Review* **88**: 537–558.
- Marx A, Dusa A. 2011. Crisp-set Qualitative Comparative Analysis (csQCA), contradictions and consistency benchmarks for model specification. *Methodological Innovations Online* **6**: 103–148.
- Meyer A, Tsui A, Hinings CR. 1993. Configurational approaches to organizational analysis. *Academy of Management Journal* **36**: 1175–1195.
- Misangyi V, Acharya A. 2014. Substitutes or complements? A configurational examination of corporate governance mechanisms. *Academy of Management Journal* **57**: 1681–1705.
- Moller S, Huber E, Stephens J, Bradley D, Nielsen F. 2003. Determinants of relative poverty in advanced capitalist democracies. *American Sociological Review* **68**: 22–51.
- Morris M, Western B. 1999. Inequality in earnings at the close of the twentieth century. *Annual Review of Sociology* **25**: 623–657.
- Mosley L. 2011a. Collective labor rights dataset. Available at: <http://dvn.iq.harvard.edu/dvn/dv/lmosley> (accessed 12 September 2013).
- Mosley L. 2011b. *Labor Rights and Multinational Production*. Cambridge University Press: New York.
- Muslu V. 2010. Executive directors, pay disclosures, and incentive compensation in large European companies. *Journal of Accounting, Auditing, & Finance* **25**: 569–605.
- Nafziger W. 2006. *Economic Development* (4th edn). Cambridge University Press: New York.
- Nielsen F. 1994. Income inequality and industrial development: dualism revisited. *American Sociological Review* **59**: 654–677.
- North D. 1990. *Institutions, Institutional Change, and Economic Performance*. Cambridge University Press: Cambridge, UK.
- Pajunen K. 2008. Institutions and inflows of foreign direct investment: a fuzzy-set analysis. *Journal of International Business Studies* **39**: 652–669.
- Pedersen T, Thomsen S. 1997. European patterns of corporate ownership: a twelve-country study. *Journal of International Business Studies* **28**: 759–778.
- Pfeffer J. 1989. A political perspective on careers: interests, networks, and environments. In *Handbook of Career Theory*, Arthur M, Hall D, Lawrence B (eds). Cambridge University Press: Cambridge, UK; 380–396.
- Pfeffer J. 1997. *New Directions for Organization Theory*. Oxford University Press: New York, NY.
- Prykarpatska I. 2008. Why are you late? Cross-cultural pragmatic study of complaints in American English and Ukrainian. *Revista Alicantina de Estudios Ingleses* **21**: 87–102.
- Quadagno J. 1987. Theories of the welfare state. *Annual Review of Sociology* **13**: 109–128.
- Ragin C. 2000. *Fuzzy-Set Social Science*. University of Chicago Press: Chicago, IL.
- Ragin C. 2006. Set relations in social research: evaluating their consistency and coverage. *Political Analysis* **14**: 291–310.
- Ragin C. 2008. *Redesigning Social Inquiry: Fuzzy Sets and Beyond*. University of Chicago Press: Chicago, IL.
- Ragin C, Davey S, Drass K. 2009. *FS/QCA 2.5*. Department of Sociology, University of Arizona: Tucson, AZ.
- Ragin C, Fiss P. 2008. Net effects versus configurations: an empirical demonstration. In *Redesigning Social Inquiry: Fuzzy Sets and Beyond*, Ragin C (ed). University of Chicago Press: Chicago, IL; 190–212.
- Rueda D, Pontusson J. 2000. Inequality and varieties of capitalism. *World Politics* **52**: 350–383.
- Sahr R. 2009. Inflation conversion factors for dollars 1774 to estimated 2019. Available at: <http://>

- oregonstate.edu/cla/polisci/faculty-research/sahr/sahr.htm (accessed 26 July 2009).
- Schneider M, Schulze-Bentrop C, Paunescu M. 2010. Mapping the institutional capital of high-tech firms: a fuzzy-set analysis of capitalist variety and export performance. *Journal of International Business Studies* **41**: 246–266.
- Schneider C, Wagemann C. 2012. *Set-Theoretic Methods for the Social Sciences*. Cambridge University Press: Cambridge, UK.
- Schuler R, Rogovsky N. 1998. Understanding compensation practice variations across firms: the impact of national culture. *Journal of International Business Studies* **29**: 159–177.
- Shaw J, Gupta N, Delery J. 2002. Pay dispersion and workforce performance: moderating effects of incentives and interdependence. *Strategic Management Journal* **23**: 491–512.
- Shin T. 2014. Explaining pay disparities between top executives and nonexecutive employees: a relative bargaining power approach. *Social Forces* **92**: 1339–1372.
- Shleifer A, Wolfson D. 2002. Investor protection and equity markets. *Journal of Financial Economics* **66**: 3–27.
- Stiglitz J. 1985. Credit markets and the control of capital. *Journal of Money, Credit and Banking* **17**: 133–152.
- Sullivan G. 1983. Uneven development and national income inequality in third world countries: a cross-national study of the effects of external economic dependency. *Sociological Perspectives* **26**: 201–232.
- Thomsen S, Pedersen T. 2000. Ownership structure and economic performance in the largest European companies. *Strategic Management Journal* **21**: 689–705.
- Tosi H, Gomez-Mejia L. 1989. The decoupling of CEO pay and performance: an agency theory perspective. *Administrative Science Quarterly* **34**: 169–189.
- Tosi H, Greckhamer T. 2004. Culture and CEO compensation. *Organization Science* **15**: 657–670.
- Tosi H, Werner S, Katz J, Gomez-Mejia L. 2000. How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management* **26**: 301–339.
- Tsai P-L. 1995. Foreign direct investment and income inequality: further evidence. *World Development* **23**(3): 469–483.
- UNCTAD. n.d. United Nations Conference on Trade and Development Data Center. Available at <http://unctadstat.unctad.org> (accessed January 2011).
- Wallerstein M. 1999. Wage-setting institutions and pay inequality in advanced industrial societies. *American Journal of Political Science* **43**: 649–680.
- Weber M. 1964. *The Theory of Social and Economic Organization*, Henderson A, Parsons T (Trans.) Free Press: New York.
- Werner S, Tosi H, Gomez-Mejia L. 2005. Organizational governance and employee pay: how ownership structure affects the firm's compensation strategy. *Strategic Management Journal* **26**: 377–384.
- Western B. 1989. Decommodification and the transformation of capitalism: welfare state development in seventeen OECD countries. *Journal of Sociology* **25**: 200–221.
- WHO. n.d. World Health Organization Data and Statistics. Available at: <http://www.who.int/research/en/> (accessed January 2011).
- World Bank. 2008. *Global Purchasing Power Parities and Real Expenditures*. The International Bank for Reconstruction and Development/The World Bank: Washington, DC.
- World Bank. n.d. The World Bank Data. Available at: <http://data.worldbank.org> (accessed multiple dates between December 2010 and October 2013).
- Wurgler J. 2000. Financial markets and the allocation of capital. *Journal of Financial Economics* **58**: 187–214.

## SUPPORTING INFORMATION

**Additional supporting information may be found in the online version of this article:**

Appendix S1. Primer on Fuzzy Set Qualitative Comparative Analysis (fsQCA).