

How Competitive are Generalist CEOs in an Emerging Economy?

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ABSTRACT: By evaluating the generalist indexes of 2,683 CEOs from 1,954 listed firms in the Chinese A-share market from 2015 to 2019, this study used regressions and two-stage least squares regression to investigate how competitive generalist CEOs are in China. Generalist CEOs are more competitive than specialist CEOs in the majority of sectors, particularly in the construction, retail, and wholesale sectors. This study also showed that generalists receive more compensation. Moreover, senior generalist CEOs are more competitive than young CEOs, and male managers receive more compensation than females. Meanwhile, this research uncovered a significant relationship between generalist CEOs and their income in state-owned enterprises (SOEs) but not in non-SOEs. These findings help us to understand CEO compensation spillovers in the Chinese employment market.

KEYWORDS: Talent heterogeneity, CEO generalist, CEO specialist, Compensation incentives

1. INTRODUCTION

Executive compensation has been extensively discussed from various perspectives such as marketing, governmental administration, media supervision, private equity investment, etc. (Chatjuthamard et al., 2021; Wu and Wang, 2010; Yang and Zhao, 2012; Wang and Zhang, 2012). Recently, some scholars have begun to

pay attention to the personal characteristics of executives, including age, gender, tenure, early life experience, work experience, and other background characteristics, along with psychological and behavioural characteristics such as overconfidence, which may potentially affect executives' behaviour, consequently determining their own compensation and corporate governance (Kaplan et al., 2012; Soojin, 2013; Adhikari et al., 2015; Li and Jiang, 2015; Zhang and Jiang, 2015; He and Liu, 2015).

However, literature on the impact of executives' personality traits on executive compensation incentives is rare because of the inaccessibility of the data. Demerjian et al. (2012) initially employed the data envelopment analysis (DEA) method to separate the efficiency factors that can be attributed to managers' abilities from the factors that affect company efficiency and used them to measure managers' capabilities. This method was adopted by Chinese researchers (He and Liu, 2015; Zhang and Jiang, 2015; Chen and Bu, 2015); however, it uses data based on the company's financial indicators rather than the executives' personality traits.

Custódio et al. (2013) collected resume data of CEOs of listed companies in the United States to construct an index to measure their general competence and studied the influence of their general skills on their salary level. Mishra (2014) studied the impact of CEO generalists on a company's cost of equity by constructing a generalist index. This research focused on developed markets and could not account for issues in developing markets because of the different institutional circumstances and economic performance. In China, state-owned

enterprises (SOEs) dominate the economy. With the continuous improvement of China's managerial market and the ongoing executive compensation reform for listed companies, the heterogeneity of CEOs' individual abilities is crucial when formulating CEO compensation policies and determining their income level. Are they a generalist or a specialist? Who is more favoured by the developing market? These questions are still unanswered. Therefore, this paper addresses these questions and provides some unique findings.

Under these circumstances, using the data of A-shares listed companies in the Shanghai and Shenzhen Stock Exchanges in China and manually collecting the resume data of the CEOs from the listed companies, this study investigated how talent heterogeneity determines CEOs' compensation levels based on five generalist indicators from the CEOs' working experience. This study is expected to enrich the literature on CEO compensation and incentives and further diversify the impact of CEO human capital characteristics on corporate governance in the future.

The contributions of this research are as follows: First, by using unique labour force data divided by CEO professions in Chinese listed companies, and manually collecting and sorting CEO personal resume data, this study established a quantitative analysis index to measure the heterogeneity of CEO talents. This theoretical and methodological guidance may facilitate corporate governance and decision making. Second, in contrast to previous studies on managers' background characteristics that only examined the influence of population, gender, age, education, etc. on CEO compensation, this study focused on CEOs'

individual talent heterogeneity using their various industry experiences to directly investigate the influence of CEO talent heterogeneity on their compensation.

This paper shows that CEO talent heterogeneity is directly related to compensation. Compared to specialist CEOs, generalist CEOs are favoured and have more competitive compensation in China, particularly in Chinese SOEs. These findings imply that efficient CEO compensation incentives based on their individual talent heterogeneity facilitate modern corporate governance and accordingly promote the firm value of listed companies in developing markets.

2. LITERATURE REVIEW AND HYPOTHESE

Human capital theories demonstrate that knowledge, skills, and experiences are differentiated and tiered, which is crucial for different types of developed company. Human capital mainly refers to the managers who lead an institution's development using their individual talents, reflected by various compensations. Studies have shown a positive relationship between a CEO's capabilities and firm performance. Based on mergers and acquisitions and equity investment data from 2000 to 2006, Kaplan et al. (2012) assessed the professional performance of 316 CEOs and found two types of skill, general management practices and communication advantages, which significantly promoted firm performance. Chen et al. (2021) suggested that generalist CEOs are more likely to engage in unrelated acquisitions than are specialist CEOs. Demerjian et al. (2012) employed DEA to investigate the relationship between CEOs' capabilities and firm performance and suggested a significant positive relationship between them. A similar finding has been reported in China. He and Liu (2015) suggested that managers' capabilities

could effectively reduce herd effects and improve investment performance with low auditing costs.

Additionally, the literature reveals a relationship between CEOs' individual traits and compensation. Gomez-Mejia and Balkin (1992) employed this theory to investigate managers' compensation characteristics and suggested that more experienced, capable, and educated managers have more competitive compensation than others. This kind of financial reward results from outstanding firm performance in many aspects, such as financing and investment, technical innovation, and quality control (Jiang et al., 2016; Zhou et al., 2017; Xu and Li, 2016; Dai and Kong, 2017; Yu et al., 2018).

In the corporate governance mechanism, the executive compensation contract is an agreement negotiated between an executive and a company in the labour market. The CEO's own management ability is more competitive than that of ordinary executives, and their bargaining power is stronger when negotiating compensation contracts. Hambrick and Mason (1984) documented that modern enterprise managers make the decisions on the company's various financial activities, and their own abilities and experiences can play a key role in complex and highly uncertain decisions. Thus, CEOs who are more capable and generate more output from the company should be paid more attention.

However, the existing literature features little discussion about CEO ability heterogeneity; in particular, Chinese CEO-based studies are few and far between. This study bridges this gap by investigating how the five CEO generalist characteristics in terms of positions, companies, industrial sectors, etc. (see Table

1) determine CEO compensation in China, which extends the current literature in the field.

Existing research suggests that CEOs with more and broader management skills tend to be at the top in managerial organisations. Ferreira and Sah (2012) showed that compared to CEOs' unique professional skills in a certain enterprise or industry, the general management skills of cross-border CEOs have become increasingly important when evaluating CEOs' abilities. When CEOs have more general management skills, they are likely to have higher compensation than others (Murphy and Zabochnik, 2007). CEOs' general management skills refer specifically to their rich management experiences in different industries, positions, and types of company. The higher the general skills of the CEO, the richer their experience. This general skill is the generalist CEO's ability to share knowledge and succeed in cross-industry, cross-company, or cross-position situations. Conversely, if a CEO focuses on a certain type of industry or company, they are called a professional or specialist CEO (Mishra, 2014; Zhao and Yang, 2018).

On the one hand, CEO general skills have become more important due to the intensification of the product market competition; on the other hand, it may be due to the continuous development and changes in enterprise technologies and managerial practices, resulting in the increasing influence of CEO talents on firm value. Accordingly, companies require a generalist CEO to deal with complex problems. Mishra (2014) demonstrated a trend where generalist CEOs are increasingly demanded in the managerial market; consequently, these CEOs are more likely to obtain favourable bargaining power for higher compensation based

on their generalist performance. As market conditions change and generic governance skills are preferred, generalist CEO compensation will increase significantly in this context (Custódio et al., 2013). Additionally, this study suggested that firms are more willing to hire a generalist CEO to solve complex problems, especially when they are rebuilt or acquired. Under these circumstances, the salary gap between generalists and specialist CEOs is greater than before.

Furthermore, Merluzzi and Phillips (2016) used data from 400 graduates of top U.S. MBAs who entered investment banking and found that people with rich and diverse work backgrounds had more job opportunities and received 36% more bonuses than those who focused on one industry. Zhao et al. (2018) confirmed that a CEO's ability structure affects firm innovation; if the CEO is a generalist, the company's innovation will be significantly improved with over 20% more patents than companies led by a specialist CEO, mainly because of the duplicable success of generalist leaders based on cross-border scenarios, which is more conducive to motivating company innovation. Therefore, generalist CEOs are favoured in most employment markets.

The human capital theory has spread widely in China, focusing on the country's employment market. Enterprises should build competitive remuneration mechanisms to attract more experienced and knowledgeable managers (Zhao, 2015; Zhang and Sha, 2015). In the complex and intensively competitive business environment, generalist CEOs with rich experience in a variety of positions in different companies across industries are desirable for addressing complicated business issues (He et al., 2019a). Additionally, generalist CEOs can cross borders

using their personal skills (Zhao et al., 2018; He et al., 2019b). Meanwhile, once general CEOs achieve a breakthrough or strategic success in their careers, they expect adequate remuneration or seek a new company that offers higher payments (Naym et al., 2019). Therefore, generalist CEOs have stronger bargaining power for compensation and employers are likely to offer them more.

This phenomenon has attracted the attention of several researchers. Li et al. (2010) and Zhao (2015) suggested that with the advancement of organisational transformation, Chinese firms are motivated and demand high-level managers to improve firm performance. Because companies are facing an increasingly complex and competitive situation, they need this kind of generalist CEO to address the complexities that company shareholders are concerned about (He et al., 2019a). The existing Chinese literature has found that generalist CEOs can promote company innovation more, and companies with generalist CEOs own over 20% more patents on average (Zhao et al., 2018; He et al., 2019b). Some research has shown that generalist CEOs can further promote the accumulation of technological capital for a company (Tang et al., 2019) and the digital transformation (Mao et al., 2022). Additionally, generalist CEOs can significantly improve a company's risk-taking abilities and ultimately enhance its market value.

Generalist CEOs are more likely to win competitions for promotion incentives because of their higher human capital. Executive compensation in generalist-CEO-preferred companies may be higher than that in specialist-CEO-based companies to motivate CEOs to maintain a promotion incentive mechanism and, consequently, improve the company's human capital

(Zhang and Sha, 2014). Chen and Bu (2015) demonstrated that the stronger a manager's ability, the greater the pay gap between executives and employees. From the perspective of human capital theory and competition theory, the CEO compensation level is determined based on the level of the CEO's personal abilities, and is the result of negotiations between the CEO and the company in a competitive employment market. The reproducible cross-border success of generalist CEOs is conducive to motivating firm innovation, promoting firm value, and ultimately increasing their personal returns (Zhao et al., 2018; He et al., 2019a).

Nevertheless, few studies have shed light on which type of CEO is most welcomed and obtains higher compensation in the Chinese employment market. What are the differences in the Chinese ownership context? This study is expected to help researchers better understand China's labour market.

Mishra (2014) suggested that investors require higher returns from firms featuring CEOs with general managerial ability, and the expected returns significantly increase with CEO generalist ability in firms with a high cost of equity capital, which is the so-called dark side of CEO generalist ability. Naym et al. (2019) argued that generalist CEOs make no significant contribution to firm performance promotion and intend to decrease investment in R&D; however, specialist CEOs do contribute. Similarly, Ma et al. (2021) found a negative relationship between CEO generalists and bond ratings. Therefore, generalist CEOs may experience more corporate agency problems and risk issues, which ultimately affect firm performance and market value.

Compared with specialist CEOs, generalist CEOs' general skills and knowledge are transferable, which potentially increases firms' risk (He et al., 2019a; Ma et al., 2021), agency issues, and agency costs, consequently affecting firm performance (Naym et al., 2019). Under these circumstances, their generalist skills are regarded as risk and uncertainty factors. Chatjuthamard et al. (2021) confirmed this point of view and argued that companies with higher board independence prefer CEOs with weaker generalist skills, and that they may regard CEOs' specific skills in a certain industry. The long-term and constant salary contract of a specialist CEO is conducive to a company's resource concentration and value creation in specific fields (Zhao et al., 2018). However, generalist CEOs are more willing to take risks to increase firm debt or investments in intangible assets because of their stronger cross-border knowledge (He et al., 2019a), which may result in more operating risks and uncertain performance (Ma et al., 2021), and their compensation will consequently be impacted.

Based on the discussion above and the managerial theory of human capital and tournament competition theory, this study proposed the following hypotheses:

Hypothesis 1a: Generalist CEOs receive more compensation (competitive) than specialist CEOs in China.

Hypothesis 1b: Generalist CEOs receive less compensation (competitive) than specialist CEOs in China.

Before China's reform and opening up in 1978, the country's economy developed into a special form: the so-called planned economy. Subsequently, the single economic mechanism changed into a market economy with a variety of

property rights. Studies show that because of the influence of the traditional economic system in China, government-dominated firms such as large- and medium-sized central enterprises, monopoly industry enterprises, and SOEs, still account for the majority, and there are great differences in the remuneration systems and corporate governance levels between companies with different ownership structures (Lu et al., 2012; Li and Hu, 2012; Wang et al., 2014).

Different characteristics of firm managers influence the financial decisions of firms with different ownership structures (Jiang et al., 2009; Li et al., 2011; Zhang et al., 2013; Han et al., 2014; Wang and Chen, 2014). Studies show that the influences are determined differently by managers' characteristics between state-owned and private enterprises in terms of investment efficiency, accounting robustness, and defence management. As the organisational transformation of enterprises gradually advances in China, companies intend to introduce high-quality managers to tackle inefficiency. Zhang and Sha (2014) demonstrated that by comprehensively considering human capital development, shareholders attempt to maintain a competitive remuneration mechanism between agents to enhance firm value and human capital. He and Liu (2015) documented that the impact of executive competence on company audit fees is more significant in SOEs than in other companies. Jiang et al. (2014) found that the compensation sensitivity of CEOs in SOEs is more remarkable than that in private enterprises in terms of accounting performance and dismissal. These China-based studies demonstrated the compensation differences between Chinese executives in SOEs and private firms.

Many Chinese SOE executives are political officials who are appointed by the government. Such appointments often assess officials' abilities by changing their location and excluding geographical advantages (Zhao et al., 2018). In fact, these officials are similar to generalist CEOs, who can practice their capabilities and utilise their knowledge in a cross-border environment. Upon collecting CEOs' curricula vitae, we noticed that CEOs from SOEs had a rich background in a variety of positions, industries, and companies. Additionally, many have had years of management experience in SOEs or central enterprises.

Compared with private enterprises, Chinese SOEs pay more attention to social responsibilities such as improving employment and protecting the environment. Meanwhile, Chinese SOEs are usually large scale, producing a variety of products and engaging in multiple industries and fields. In this complex organisational context, generalist CEOs are more favourable than specialists. On the contrary, the management experience of the CEOs in private enterprises is relatively specific, concentrating on a certain type of industry or enterprise; therefore, the general skills of CEOs in SOEs are higher, and the impact of the CEOs' general skills on their compensation incentives should significantly differ between Chinese SOEs and private enterprises.

As discussed above, most CEOs in Chinese SOEs are officials with a cross-border background because of the special nature of Chinese SOEs appointed by the state. When selecting CEOs, they focus on the diversity of CEOs' occupational experience and general skills; thus, generalist CEOs have the power to bargain for more compensation than specialists. However, CEOs in private

companies have no political positions; they are expected to be specialists in certain industries or fields, rather than generalists. As generalist CEOs have less bargaining power for their compensation than specialist CEOs do, the relationship between their generalist skills and compensation is insignificant. This reflects the China-specific mechanism of CEO employment, which is different from other countries, and this difference is reflected in the CEO compensation levels. Therefore, we proposed the following hypothesis:

Hypothesis 2: CEO generalists are more crucial in Chinese SOEs than in non-SOE companies.

3. MATERIAL AND METHODS

3.1 Material

Two sets of raw data were collected for this study: firm performance data and CEO resume data. Firm performance data were collected from the China Stock Market & Accounting Research Database (CSMAR), a comprehensive research-oriented database focusing on China's finance sector and economy, which was developed by Shenzhen CSMAR Data Technology Co., Ltd. based on academic research needs to facilitate China-based economic analysis and research. After 21 years of continuous accumulation and improvement, the CSMAR database now covers 18 series, including factor research, character characteristics, green economy, stocks, companies, overseas, information, funds, bonds, industries, economy, and commodity futures. It includes 170+ databases, 4,000+ tables, and 50,000+ fields. It cooperates with a wide range of international universities, such as the University of Hong Kong, University of Chicago,

University of Manchester, and Durham University. Further details are available on the official website (<https://cn.gtadata.com>).

The resume data of listed firms in the Chinese A-share stock market were collected and extracted from the public notifications disclosed by the listed firms and searched on Internet platforms, which were resorted and edited using STATA and Excel software.

The data were reworked by deleting extreme values and removing sample firms with debt rates greater than 1. After the initial screening, the raw data shrank by 1%; consequently, the data on 2,683 CEOs from 1,954 listed firms were valid.

3.2 Methods

3.2.1 Regression model and variable measurements

Following Custódio et al. (2013), Merluzzi and Phillips (2016), and Brockman et al. (2016), this study built a regression model to investigate how CEOs' generalist skills affect their compensation.

$$\begin{aligned}
 CEO_{pay} = & \beta_0 + \beta_1(SGen_{it}, DuGen_{it}) + \beta_2CEOage_{it} + \\
 & \beta_3MBA_{it} + \beta_4Gender_{it} + \beta_5Roa_{it} + \beta_6Size_{it} + \beta_7Lev_{it} + \\
 & \beta_8Share_{it} + \beta_9DualPo_{it} + \beta_{10}BDS_{it} + \beta_{11}Soe_{it} + \sum_{i=1}^5 Year_{it} + \\
 & \sum_{i=1}^{20} Industry_{it} + \varepsilon_{it}
 \end{aligned} \quad (1)$$

The definition and measurement of each variable are illustrated in Table 1.

Table 1 Variable definition and measurements

Panels	Variables	Symbols	Measurements	Literature
Dependent		CEOpay	CEOs' annual salary in logarithm.	Custódio et al. (2013)
	CEO compensation	Pay	The average salary of the top three executives in logarithm.	
Independent	CEO generalist index	Gen	Calculated by equation (2).	

	Standardised Gen	SGen	$Y = (X - \mu) / \sigma \sim N(0, 1)$	Custódio et al. (2013), Mishra (2014), Brockman et al. (2016)
	Dummy CEO Gen	DuGen	1 for CEOs' generalist index greater than the mean value in the same industry and year, and 0 otherwise.	
	Industrial generalist index	IndGen	The median generalist index in the same industry.	
Generalist factors	CEO previous positions	X ₁	The number of positions that the CEO has held.	
	CEO previous companies	X ₂	The number of firms where the CEO has worked.	
	CEO previous industries	X ₃	The number of industries in which the CEO has worked.	Custódio et al. (2013), Brockman et al. (2016)
	CEO previous multiple positions in other companies	X ₄	A dummy variable equal to 1 if the CEO has had a position in another firm before and 0 otherwise.	
	CEO previous experience in big group companies	X ₅	A dummy variable equal to 1 if the CEO worked in a multi-division conglomerate and 0 otherwise.	
CEO	CEO age	CEOage	CEO ages.	Brockman et al. (2016)
Characteristics	CEO gender	Gender	Male=1, Female=0.	
	MBA degree	MBA	1 for CEOs with an MBA degree and 0 otherwise.	Merluzzi and Phillips (2016)
	CEOs work in more firms	CEODual	1=positions in two or more firms, 0=one firm only.	
	CEO tenure	CEOTenure	Years working in CEO position.	
	CEO education	CEOEduc	1=Occupational certificate, 2=Diploma 3=Bachelor 4=Master, 5=Doctorate, 6=two or more doctorates.	
Control	Returns on total assets	Roa	$RoA = \frac{Net\ Profit_{i,t}}{Total\ Assets_{i,t}}$	Brockman et al. (2016)
	Financial leverage	Lev	Total liabilities/total assets at the end of a year.	Brockman et al. (2016)
	Firm size	Size	Logarithmic total assets at the end of a year.	Brockman et al. (2016)

	Equity ownership	Soe	SOE=1, Non-SOE=0.	
	Dual-tenure as CEO and president	DualPo	Dual-tenure as CEO and president=1, otherwise 0.	
	Board size	BDS	Board members.	Brockman et al. (2016)
	Shares held by CEOs	Share	Sgare=CEO shares/Total shares	
Moderator	Years	Year	Dummy variable of five years from 2015 to 2019.	
	Industry	Industry	Dummy variable of 20 industries according to the 2012 classification criteria by the China Securities Regulatory Commission.	Custódio et al. (2013)

3.2.2 Generalist index measurement

This study collected 2,683 CEOs' curricula vitae from 1,954 listed firms in the Chinese stock market and extracted a range of capability-related factors. Following Custódio et al. (2013) and Mishra (2014), this study adopted principal factor analysis to extract the significant generalist determinants: positions held by CEOs (X_1), firms for which CEOs worked (X_2), industrial sectors in which CEOs worked (X_3), multiple positions in which CEOs were invited (X_4), and multi-division conglomerate experience (X_5), grouping the five factors as the principal components (Comp. 1). To measure generalist values, it was best to cope with the collinearity issue in the regression analysis to ensure accuracy. Including other factors as components 2–4, there were five components in total.

Table 2 lists the eigenvalues of these five components. Comp. 1, with an eigenvalue of 1.5042, made 69.56% of contributions to account for generalists; thus, excluding the factors in the other components to mitigate the potential interference errors, this study used the five factors in Comp. 1 to assess CEO generalist values. Figure 1 shows the five most significant factors in Comp. 1.

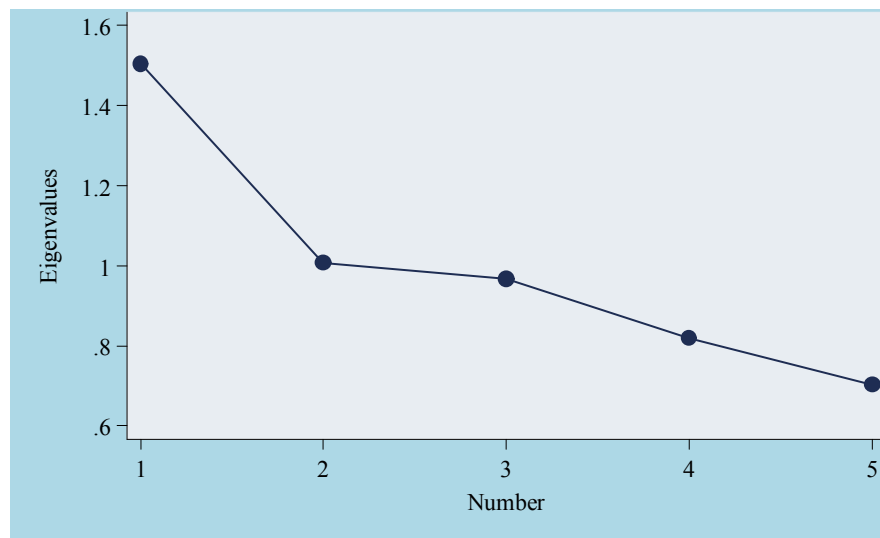


Figure 1 Scree plot of eigenvalues

Table 2 Eigen roots and variance contributions of principal components

Component	Eigenvalues	Differences	Proportions	Cumulative
Comp. 1	1.5042	0.4966	0.6956	0.6956
Comp. 2	1.0076	0.0411	0.1637	0.8593
Comp. 3	0.9665	0.1482	0.0652	0.9245
Comp. 4	0.8183	0.1149	0.0627	0.9872
Comp. 5	0.7034	.	0.0128	1.0000

Table 3 shows each eigenvector in the five components. The coefficients in the Comp. 1 column indicate that all factors make positive contributions to generalist values, while some factors in Comp. 2–5 are negative, so they may not have accurately represented generalist skills and perhaps interfered with the analysis. Therefore, the five factors (X_1 — X_5) in Comp. 1 were extracted to measure generalist indexes.

Table 3 Eigenvectors of principal component analysis

Variable	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Comp. 5	Unexplained
X ₁	0.2787	0.7338	0.4231	0.4521	0.0203	0
X ₂	0.5199	0.2563	0.0043	-0.7236	-0.3746	0
X ₃	0.5705	-0.0348	-0.3675	0.0157	0.7335	0
X ₄	0.5144	-0.3738	-0.2132	0.5132	-0.5356	0
X ₅	0.2489	-0.5049	0.8003	-0.0913	0.1854	0

According to the coefficients of Comp. 1 in Table 3, the CEO generalist indexes were calculated using equation (2). As the equation shows, the numbers of both firms and industries in which the CEOs worked (X₂, X₃) and multiple positions to which CEOs were invited (X₄) are highly weighted.

$$Gen_{i,t} = 0.279 * X_{1i,t} + 0.520 * X_{2i,t} + 0.571 * X_{3i,t} + 0.514 * X_{4i,t} + 0.249 * X_{5i,t} \quad (2)$$

4. RESULTS

4.1 Descriptive analysis

Table 4 shows the increasing generalist indices from 4.272 in 2015 to 4.613 in 2019. This upward trend was also indicated by the SGen indexes (from -0.178 to 0.017) and generalist salaries (from 387.53 to 535.37) during this period. Additionally, the generalist salary was significantly higher than the specialist salary each year.

Table 4 CEO generalist indexes and CEO incomes from 2015 to 2019 (Unit: Thousand RMB)

Generalist Indexes				Incomes			
Years	N	Gen	SGen	Generalist CEO	Specialist CEO	CEOs	Other Managers
2015	1019	4.272	-0.178	387.53	361.41	372.91	412.04

2016	1084	4.502	-0.044	424.34	390.89	411.23	437.92
2017	1388	4.618	0.028	509.28	459.74	477.21	465.06
2018	1566	4.727	0.088	531.52	503.83	524.28	492.15
2019	1665	4.613	0.017	535.37	533.59	551.37	513.55
Total	6722	4.571	-0.004	488.89	462.48	482.33	472.12

Figure 2 shows a comparison between generalist and specialist CEO compensation from 2015 to 2019. Generally, CEO payments experienced significant increases during the period, and generalist CEOs had much higher payments than specialist CEOs before 2018, although specialist CEOs had a stronger growth rate than generalist CEOs. These results demonstrate that generalist CEOs were more competitive than specialist CEOs during this period, which supports Hypothesis 1a.

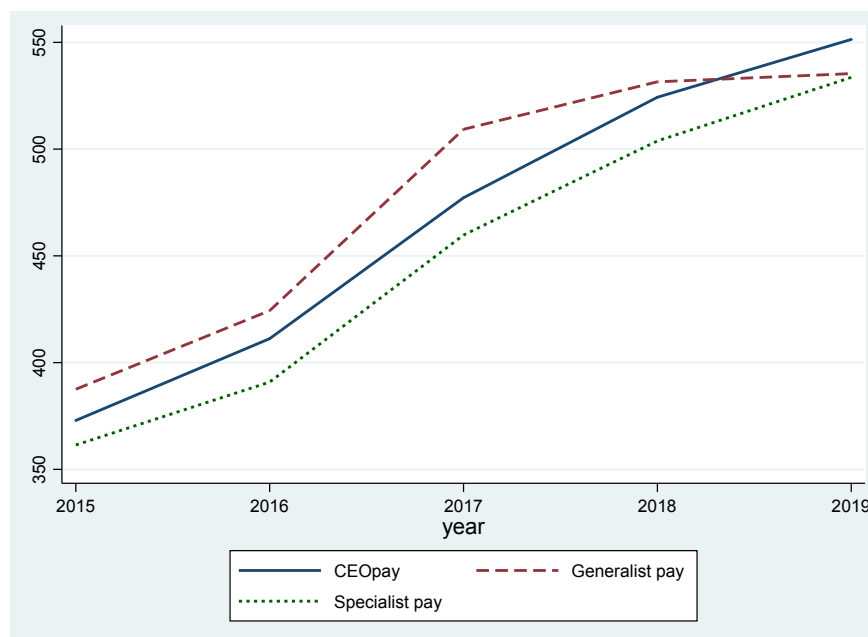


Figure 2 Comparison between generalist and specialist CEO compensation

Table 5 describes the different generalist indexes in 21 industrial sectors.

Except for the two sectors with the least number of samples (education and social

work and public health), the accommodation and catering sector had the most generalist CEOs because of its remarkable generalist index (6.326), followed by the financial sector (index = 5.257). In contrast, the agriculture-related sector had the lowest index at 3.835. The other sectors had a similar index, with a mean value of 4.578.

Table 5 shows that the CEO compensations varied across the industrial sectors. CEOs in the finance industry had the highest annual income of RMB 2,205.4 thousand; we removed this industry from our analysis because of its extreme values and small sample. Even though real estate CEOs had higher annual incomes than others, the generalist CEOs in the retail and wholesale sector had a higher income of RMB 683.74 thousand compared to others, followed by those in the construction industry. By contrast, the specialist CEOs in real estate had more income at RMB 690.34 thousand, followed by those in the IT industry.

Table 5 Comparison of generalist and specialist CEO compensation by industrial sector (Unit: RMB Thousand)

Industrial Codes	Industries	Generalist Indexes		Specialist CEO Compensation		Generalist CEO Compensation		Full Sample
		NO.	Mean Value	NO.	Mean Value	NO.	Mean Value	Mean Value
A	Agriculture-based	118	3.835	81	324.91	33	325.08	336.17
B	Mining	177	4.260	122	368.63	55	484.38	513.01
C1	Food, textiles, and leather	508	4.522	302	460.29	205	409.01	467.52
C2	Furniture, papermaking, petrochemicals	1431	4.575	781	482.57	645	458.38	478.84
C3	Automobile equipment	2510	4.528	1426	447.02	1070	457.97	508.69
C4	Electronic instruments	102	4.306	67	451.48	33	318.72	417.56
D	Public utility	278	4.590	136	365.35	141	470.68	400.97

E	Construction	196	4.696	100	500.03	94	589.17	524.99
F	Retail and wholesale	418	4.976	204	461.26	205	683.74	606.53
G	Logistics	255	4.569	132	495.49	122	518.92	558.22
H	Accommodation and catering	38	6.326	18	459.99	20	369.07	405.87
I	IT	278	4.622	154	512.07	115	442.91	523.66
J	Finance	22	5.257	8	1596.2	14	3417.9	2205.4
K	Real estate	432	4.756	218	690.34	211	542.73	771.53
L	Business service	74	4.822	41	483.04	33	547.56	601.04
M	Science and technology	20	4.685	9	485.47	11	480.84	511.49
N	Environment	71	4.657	46	353.63	25	237.55	329.22
P	Education	4	6.074	0	0	4	361.10	383.12
Q	Social work and public health	7	4.030	6	342.72	1	257.84	408.34
R	Culture and entertainment	64	4.021	49	500.02	15	546.72	551.81
S	Others	94	4.336	54	445.12	40	444.11	480.31
Total	21 sectors	7097	4.578	3954	469.27	3092	491.69	549.18

Figure 3 presents a comprehensive comparison of generalists and specialists.

Generalist CEOs received more compensation than specialist CEOs in eight sectors: mining, automobiles, public utilities, construction, retail, logistics, business services, and culture. Particularly, in the two sectors of construction and retail and wholesale, generalist compensations were significantly higher than those of the full sample of CEOs. In general, the mean value (491.69) of generalist CEOs was greater than their counterparts' value (469.27), although specialist incomes were higher than their counterparts in some sectors.

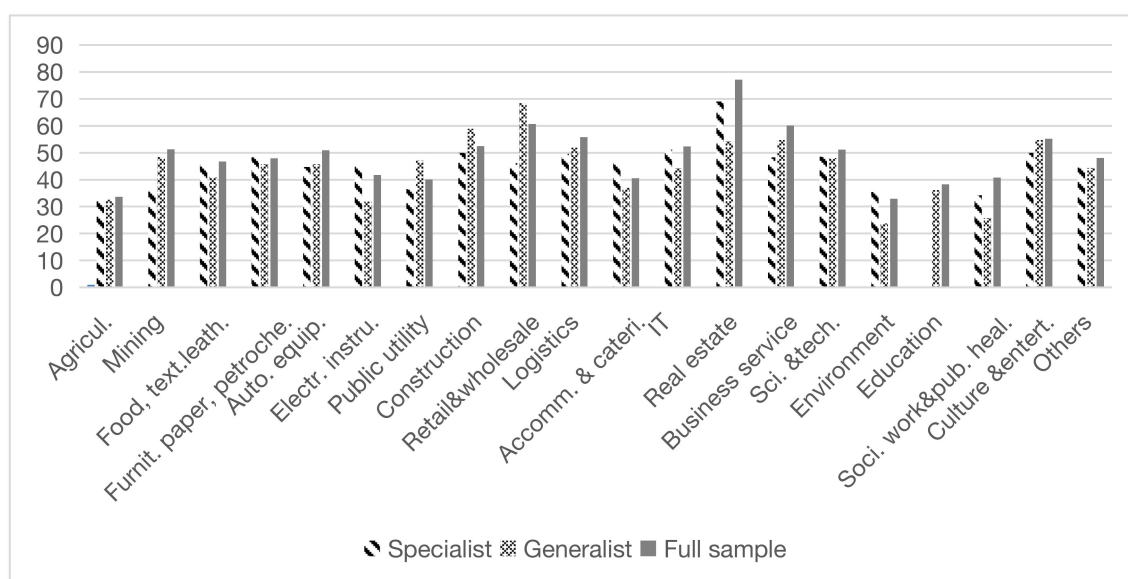


Figure 3 Generalist and specialist CEO compensations by industrial sector

Table 6 presents the statistical results for most variables. Gen values ranging from 1.650 to 9.860 indicated various specialists in different companies. This result was confirmed by the SGen values ranging from -1.840 to 5.740. The mean value of 0.439 of DuGen demonstrates that 43.9% of CEO generalist indexes were more than the industrial mean value, while the rest were not.

X_1 had a value of 4.65, demonstrating that these CEOs had worked in 4–5 positions, and even up to 17 positions for some CEOs, while some had only had 1 position. The mean value 3.76 of X_2 showed that some CEOs had worked at 3–4 companies, and even up to 20 companies for some CEOs, but only 1 company for a couple of them. X_3 showed the industrial varieties; the majority of CEOs worked in 1–2 industrial sectors, while some worked in 11 sectors. X_4 indicated that 44.3% of CEOs had experience in other firms before their current position. X_5 represented a CEO's working experience in a multi-division conglomerate. The value of 0.804 indicated that over 80% of CEOs had such experience.

The CEOs' ages ranged from 25 to 75, with an average age of 47.5. Male CEOs (93.9%) predominated in the employment market. CEO tenure was 3.27 years on average, with some reaching 15 years; 26.6% of CEOs had an MBA degree.

The mean value of firm size (21.6) was close to the maximum value of 26.7, indicating that the majority of Chinese listed firms have comparable scales. On the contrary, these firms showed non-comparable Roa performance from -0.201 to 0.256, with a mean value of 0.048. This is partially attributable to their high debt. The average financial leverage (Lev) was 0.471 and some firms had an even higher leverage of 0.944. A mean DualPo value of 0.216 indicated that 21.6% of CEOs acted as board presidents in the same company. Most of these firms had approximately 9 board members, with a range of 3 to 17 members. Meanwhile, these CEOs held a very limited share of the firms at which they worked, with an average of 7.6%. Additionally, the mean CEOdual value of 0.480 showed that almost 50% of CEOs had dual positions in different firms and 50% of CEOs worked at SOEs (mean SOE=0.499).

Table 6 Descriptive analysis of variables

Variable	mean	sd	min	p50	max
Gen	4.570	1.690	1.650	4.330	9.860
SGen	-0.001	1.000	-1.840	-0.153	5.740
DuGen	0.439	0.496	0.000	0.000	1.000
X ₁	4.650	2.330	1.000	4.000	17.000
X ₂	3.760	2.330	1.000	3.000	20.000
X ₃	1.600	0.974	0.000	1.000	11.000

X ₄	0.443	0.498	0.000	0.000	1.000
X ₅	0.804	0.397	0.000	1.000	1.000
CEOage	47.500	6.230	25.000	47.000	75.000
Gender	0.939	0.239	0.000	1.000	1.000
CEOdual	0.480	0.500	0.000	0.000	1.000
MBA	0.266	0.442	0.000	0.000	1.000
CEOTenure	3.27	2.14	1	3	15
CEOeduc	3.4	0.846	1	4	6
CEOpay	12.800	0.816	10.500	12.900	15.000
Pay	12.800	0.750	11.000	12.800	15.000
Size	21.600	1.320	18.600	21.500	26.700
Lev	0.471	0.272	0.037	0.463	0.944
Roa	0.048	0.065	-0.201	0.043	0.256
Soe	0.499	0.500	0.000	0.000	1.000
DualPo	0.216	0.411	0.000	0.000	1.000
BDS	8.970	1.810	3.000	9.000	17.000
Share	0.076	0.173	0.000	0.000	0.683

4.2 Univariate analysis

Table 7 shows some of the mean differences between the specialist and generalist groups. There were significant differences between the groups in terms of the generalist index variables, which were -2.6033 and -1.5105 with T-values of -100 and 95.265 for Gen and SGen, respectively. The generalist indices were greater than the specialist ones. Additionally, both generalist CEOpay and pay values were greater than those of the specialists; similarly, the generalist group had great values for the other variables. These findings confirmed Hypothesis 1a.

Table 7 Mean difference analysis

Variables	No.	Specialist (DuGen=0)	Generalist (DuGen=1)	Differences	T values
Gen	6722	3.4291	6.0324	-2.6033	-100***
SGen	6722	-0.6637	0.8468	-1.5105	-95.265***
CEOpay	6849	12.7671	12.8093	-0.4218	-2.1822**
Pay	7064	12.7610	12.8187	-0.5777	-3.3710***
CEOage	7066	47.3926	47.7285	-3.3589	-2.2502**
Gender	7075	1.0619	1.0599	-0.0199	0.3471
CEOdual	7075	4.4612	5.2304	-0.7692	-6.4441***
MBA	7075	2.5529	2.7876	-0.2348	-2.2190**

4.3 Regression analysis

Columns (1)–(2) in Table 8 show the relationship between the independent variable DuGen and dependent variables CEOpay and Pay, respectively. The dummy generalist index (DuGen) had a significant positive relationship with CEO compensation (CEOpay) of 0.0447 and top manager payments (Pay) of 0.0957 at significance levels of 10% and 1%, respectively, which means that generalist skills are crucial in determining CEO compensation, but also other managers' compensation.

Additionally, columns (3) and (4) show the relationship between the independent variable SGen and the dependent variables CEOpay and Pay, respectively. The standard generalist index (SGen) had a significant positive relationship with CEO compensation (CEOpay) of 0.0231 and top manager payments (Pay) of 0.0434 at significance levels of 10% and 5%, respectively, demonstrating that generalist skills are crucial for executive compensation. Meanwhile, other CEO and manager characteristics were associated with their

compensation at significant levels, such as CEO age and gender, with older people receiving more compensation and male managers having higher salaries than females.

These positive relationships explain Hypothesis 1a: more generalists and more compensation. This is because generalist CEOs who have rich working experience in a variety of positions in different companies across industries are competent in dealing with complicated issues in an unpredictable and complex context. A CEO leads the company, and generalist advantages are critical for competitive compensation in the labour market.

In terms of these control variables, Roa was the most significant factor determining CEOs' and managers' incomes; it showed that only managers and CEOs who generated more profits were rewarded with a considerable amount of compensation. Firm size (Size) was also a significant positive determinant. Additionally, other control variables (DualPo and BDS) were positively associated with CEOs' and managers' incomes. However, these variables (Lev, Soe, and Share) were negatively related to CEO income. Furthermore, CEOs did not benefit from their MBA degrees.

Table 8 Results on the relationship between the generalist index and executive compensation

	(1)	(2)		(3)	(4)
Variables	CEOpay	Pay	Variables	CEOpay	Pay
DuGen	0.0447*	0.0957***	SGen	0.0231*	0.0434**
	(1.9000)	(2.8200)		(1.6500)	(2.0900)

CEOage	0.0069*** (3.000)	0.0038* (1.7700)	CEOage	0.0069*** (2.9800)	0.0037* (1.7400)
Gender	0.1160* (1.7800)	0.1360** (2.3900)	Gender	0.1150* (1.7600)	0.1340** (2.3500)
MBA	0.0243 (0.8500)	0.0348 (1.2800)	MBA	0.0237 (0.8300)	0.0341 (1.2500)
Roa	3.0720*** (12.8600)	2.5120*** (12.0900)	Roa	3.0680*** (12.8400)	2.5050*** (12.0800)
DualPo	0.0970*** (2.6700)	0.0593* (1.8000)	DualPo	0.0968*** (2.6600)	0.0596* (1.8100)
Size	0.2260*** (13.8200)	0.2170*** (13.4100)	Size	0.2260*** (13.8500)	0.2180*** (13.4800)
Lev	-0.1910** (-2.4400)	-0.0542 (-0.6300)	Lev	-0.1920** (-2.4600)	-0.0555 (-0.6500)
BDS	0.0257*** (2.93)	0.0198** (2.46)	BDS	0.0257*** (2.9400)	0.0198** (2.4600)
Soe	-0.0996*** (-2.6700)	0.000419 (0.0100)	Soe	-0.1000*** (-2.6900)	-0.0004 (-0.0100)
Share	-0.2130** (-2.5700)	-0.2340*** (-3.1100)	Share	-0.212** (-2.5500)	-0.232*** (-3.0900)
Constant	6.8040*** (19.3500)	7.1060*** (20.8500)	Constant	6.8220*** (19.4100)	7.1290*** (20.8200)
Year	yes	yes	Year	yes	yes
Industry	yes	yes	Industry	yes	yes
Observations	6327	6477	Observations	6327	6477
R-squared	0.2400	0.2500	R-squared	0.2400	0.2500
Adj. R-squared	0.2360	0.2450	Adj. R-squared	0.2360	0.2450

Robust t-statistics in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

In order to control the impact of heterogeneous variance, the T values in parentheses are the result of the cluster

robustness adjustment of the standard errors by year and industry.

From the ownership perspective, this study further investigated how generalists affect CEO compensation. Table 9 shows the different relationships between SOE and non-SOE companies. The coefficient of 0.0375 in column (1) shows that SGen was positively associated with CEO income at a significant level in SOEs but was insignificant in non-SOEs. Similarly, this result is applicable to manager compensation because of the significant coefficient of 0.0482, and the insignificant coefficient (-0.0047) demonstrates that manager generalists made no contribution to their compensation in non-SOEs.

This is partially attributable to the fact that the CEOs in Chinese SOEs appointed by the government have a rich occupational background with a variety of positions in different industries, which facilitates their generalist skills, while non-SOEs prefer CEO specialists with a specific kind of knowledge or skill. Accordingly, there was no significant relationship between CEO generalists and their incomes in non-SOEs. These findings also support Hypothesis 1a and confirm Hypothesis 2.

Table 9 Results on the relationship between CEO generalists and compensation by ownership

Variables	(1)		(2)	
	CEOpay		Pay	
	Soe=1	Soe=0	Soe=1	Soe=0
SGen	0.0375*	-0.0042	0.0482**	-0.0047
	(1.9500)	(-0.2400)	(2.3100)	(-0.2800)
CEOage	0.0085**	0.0068**	0.0047	0.0035
	(2.3900)	(2.2900)	(1.3800)	(1.3100)

Gender	0.0947 (0.8200)	0.1070 (1.3900)	0.0886 (0.9400)	0.1350* (1.9300)
MBA	0.0676 (1.5400)	0.0046 (0.13)	0.0883** (2.0800)	0.0023 (0.0700)
Roa	3.4700*** (9.5500)	2.7350*** (8.6400)	2.7880*** (8.9200)	2.2600*** (8.0100)
DualPo	0.1020 (1.3300)	0.1200*** (2.9200)	0.0107 (0.1600)	0.0995*** (2.6400)
Size	0.1730*** (8.7000)	0.3040*** (11.6800)	0.1840*** (8.6500)	0.2840*** (11.9400)
Lev	-0.1370 (-1.1200)	-0.1790* (-1.8600)	-0.0817 (-0.6400)	-0.00037 (-0.0000)
BDS	0.0216* (1.8900)	0.0295** (2.3500)	0.0091 (0.8800)	0.0316*** (2.7700)
Share	2.2030** (2.3300)	-0.1430* (-1.6700)	1.6780** (2.0500)	-0.1720** (-2.2100)
Constant	7.7020*** (17.0700)	5.2180*** (9.5300)	7.8970*** (17.4800)	5.8180*** (11.9100)
Year	yes	yes	yes	yes
Industry	yes	yes	yes	yes
Observations	2969	3364	3074	3410
R-squared	0.2600	0.2500	0.2700	0.2500
Adj. R-squared	0.2540	0.2420	0.2630	0.2440

Robust t-statistics in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In order to control the impact of heterogeneous variance, the T values in parentheses are the result of the cluster robustness adjustment of the standard errors by year and industry.

To further verify the moderating effect of ownership on the relationship between CEO generalists and their income, this study constructed the following interaction model of generalist indices (SGen and DuGen) and ownership (Soe).

$$\begin{aligned}
 CEO_{pay} = & \beta_0 + \beta_1 SGen_{it} + \beta_2 (SGen_{it}, DuGen_{it}) * Soe_{it} + \\
 & \beta_3 Soe_{it} + \beta_4 CEOage_{it} + \beta_5 Roa_{it} + \beta_6 Size_{it} + \beta_7 Lev_{it} + \\
 & \beta_8 Share_{it} + \beta_9 BDS_{it} + \beta_{10} DualPo_{it} + \sum_{i=1}^5 Year_{it} + \\
 & \sum_{i=1}^{20} Industry_{it} + \varepsilon_{it} \quad (3)
 \end{aligned}$$

The coefficients (0.0460 and 0.0544) in columns (1) and (2) in Table 10 indicate that this interaction had a stronger effect on both CEO and manager compensation. Comparing the two coefficients with their counterparts (0.0231 and 0.0434) in Table 9, they are greater because of the contributions of the variable *Soe* to the interaction, which indicates that generalist advantages are crucial in Chinese SOEs for CEOs and other managers. Similarly, the coefficients (0.0784 and 0.1020) in columns (3)–(4) are greater than their counterparts (0.0447 and 0.0957) in Table 9, which confirms this result. Therefore, this more significant interaction result supports Hypothesis 2: CEO generalist skills are significant in Chinese SOEs.

Table 10 The effect of the interaction between generalists and ownership on compensations

	(1)	(2)		(3)	(4)
Variables	CEOpay	Pay	Variables	CEOpay	Pay
SGen	-0.0037 (-0.2100)	-0.0031 (-0.1800)	DuGen	-0.0033 (-0.1000)	-0.0024 (-0.0800)
SGen*Soe	0.0460* (1.7600)	0.0544** (2.0400)	DuGen*Soe	0.0784 (1.6100)	0.1020** (2.1900)
Soe	-0.0977*** (-2.6300)	0.0018 (0.0500)	Soe	-0.1310*** (-3.1200)	-0.0418 (-1.0300)
CEOage	0.0069***	0.0036*	CEOage	0.0069***	0.0037*

	(2.9600)	(1.6900)		(2.9900)	(1.7200)
Roa	3.0620***	2.5010***	Roa	3.0690***	2.5090***
	(12.7900)	(12.0000)		(12.8100)	(12.0100)
Size	0.2280***	0.2200***	Size	0.2270***	0.2180***
	(13.9000)	(13.5400)		(13.7900)	(13.3800)
Lev	-0.1940**	-0.0591	Lev	-0.1930**	-0.0572
	(-2.4900)	(-0.6900)		(-2.4600)	(-0.6600)
Share	-0.2210***	-0.2430***	Share	-0.2230***	-0.2460***
	(-2.6700)	(-3.2300)		(-2.6900)	(-3.2700)
BDS	0.0260***	0.0201**	BDS	0.0262***	0.0203**
	(2.9800)	(2.5100)		(2.9900)	(2.5300)
DualPo	0.1030***	0.0594*	DualPo	0.1030***	0.0590*
	(2.8900)	(1.8000)		(2.8800)	(1.7900)
Constant	6.9070***	7.2310***	Constant	6.920***	7.249***
	(19.8000)	(21.1300)		(19.7100)	(21.1900)
Year	yes	yes	Year	yes	yes
Industry	yes	yes	Industry	yes	yes
Observations	6327	6477	Observations	6327	6477
R-squared	0.2400	0.2500	R-squared	0.2400	0.2500
Adj. R-squared	0.2360	0.2440	Adj. R-squared	0.2350	0.2440

Robust t-statistics in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In order to control the impact of heterogeneous variance, the T values in parentheses are the result of the cluster robustness adjustment of the standard errors by year and industry.

4.4 Robustness check

To check the robustness of the results, this study used the firm president instead of CEO compensation to investigate the generalist significance of SOEs. The coefficient (0.0599) in column (2) in Table 11 demonstrates a significant effect of

president generalists on their compensation in Chinese SOEs, while it was insignificant in the full sample. This significance was even stronger than that (0.0375) in Table 9, which means that generalist advantages are important not only for CEOs but also for presidents. In contrast, the coefficient (-0.0401) in column (3) shows a negative relationship between them in non-SOEs, indicating that generalists are not important in Chinese non-SOEs. This robustness result provides further evidence to support Hypothesis 2: Generalists are crucial for state-owned enterprises in China.

Table 11 Robustness check on the significance of president generalists and their compensation

	(1)	(2)	(3)
Variables	Full sample	Soe=1	Soe=0
SGen	-0.0084 (-0.4300)	0.0599* (1.6900)	-0.0401* (-1.8100)
Roa	3.0960*** (8.8200)	3.0420*** (4.9900)	3.2950*** (7.5900)
Size	0.2110*** (7.6100)	0.1750*** (4.4600)	0.2500*** (6.5600)
Lev	-0.1290 (-1.0500)	-0.1780 (-0.7100)	-0.0892 (-0.7200)
BDS	0.0311** (2.3700)	0.0220 (1.0600)	0.0377** (2.3600)
Soe	-0.1530** (-2.3800)		
Share	-0.2290** (-2.2300)	-1.0330 (-0.8300)	-0.1870* (-1.8000)

Constant	7.4980*** (13.3200)	7.8670*** (9.2300)	6.8600*** (8.9900)
Year	yes	yes	yes
Industry	yes	yes	yes
Observations	2273	727	1546
R-squared	0.2300	0.2700	0.2400
Adj. R-squared	0.2150	0.2450	0.2220

Robust t-statistics in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

In order to control the impact of heterogeneous variance, the T values in parentheses are the result of the cluster robustness adjustment of the standard errors by year and industry.

Furthermore, considering the potential endogeneity interference in the results, this study employed a two-stage least squares regression of the variable (IndGen) for further examination. Both stage 2 coefficients (0.124 and 0.1200) in columns (2) and (4) of Table 12 indicated significant results. Nevertheless, this study adopted fixed effect models, lag data, and a non-standard generalist index (Gen) to investigate the research question and had consistent findings (due to space limitations, these tables are not presented here; they are available upon request).

Table 12 Results on the effect of the generalist indexes on compensation by two-stage least squares regression

	(1)	(2)	(3)	(4)
	Stage 1 results	Stage 2 results	Stage 1 results	Stage 2 results
Variables	CEOpay		Pay	
IndGen	0.5700*** (13.4000)		0.5760*** (13.6200)	
SGen		0.1240** (2.1300)		0.1200** (2.4300)
CEOAge	0.00557***	0.0062***	0.0058***	0.0033**

	(2.7700)	(3.8800)	(2.9300)	(2.4100)
Roa	0.0758*	0.1440***	0.0756*	0.1650***
	(1.7700)	(4.2500)	(1.7700)	(5.6700)
Size	0.0095	0.2300***	0.0053	0.2170***
	(0.8000)	(24.6400)	(0.4600)	(27.6900)
Lev	0.0381***	0.00035	0.0376***	0.0226***
	(4.2300)	(0.0500)	(4.1800)	(3.5700)
BDS	-0.0093	0.0344***	-0.0103	0.0284***
	(-1.2500)	(5.9500)	(-1.4200)	(5.7600)
Share	-0.1590**	0.0442	-0.1610**	-0.0657
	(-2.0900)	(0.7300)	(-2.1200)	(-1.2600)
DualPo	0.0311	0.1230***	0.0284	0.0642***
	(0.9800)	(4.9500)	(0.9100)	(3.0400)
Soe	0.0198	-0.1830***	0.0245	-0.0522***
	(0.6700)	(-7.9900)	(0.8500)	(-2.6700)
Constant	-3.2530***	6.8420***	-3.1660***	7.3160***
	(-9.9300)	(31.5400)	(-9.8600)	(40.3800)
Year	yes	yes	yes	yes
Industry	yes	yes	yes	yes
Observations	6537	6537	6700	6700
R-squared	0.0500	0.1600	0.0500	0.1800
Adj. R-squared	0.0446	0.1520	0.0438	0.1750

Robust t-statistics in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In order to control the impact of heterogeneous variance, the T values in parentheses are the result of the cluster robustness adjustment of the standard errors by year and industry.

5. Conclusions

By evaluating 2,683 CEOs' generalist indexes from 2015 to 2019, this study investigated how competitive generalist CEOs are in China and demonstrated that

generalist CEOs are more competitive than specialist CEOs (see Tables 4 and 7 and Figure 2) in 8 sectors—mining, automobiles, public utilities, construction, retail, logistics, business services, and culture—and particularly in the 2 sectors of construction and retail and wholesale (see Table 5 and Figure 3). This study also showed that more generalists equals more compensation, because generalist CEOs who have rich working experience in a variety of positions in different companies across industries have the competency to deal with complicated issues in unpredictable and complex contexts (see Table 8). Moreover, it was found that older individuals were more richly compensated and male managers had higher salaries than female ones (see Table 8).

Meanwhile, this research revealed a significant relationship between CEO generalists and their income in SOEs but not in non-SOEs (see Table 9). Additionally, generalist advantages were important not only for CEOs, but also for firm presidents (see Table 11).

Implications: In the practice of corporate governance, what is key is realising the virtuous interaction between the protection of investors' interests and the performance of management talents. In this context, the corporate governance mechanism needs to pay more attention to the human capital of executives, especially the impact of the heterogeneity of a CEO's personal talent. Companies must develop scientific and efficient compensation systems that incorporate managers' human capital and investors' interests into the entire process of corporate value creation and dynamically restrain and motivate CEOs in real time.

With the ongoing improvement of China's managerial market, CEO

competence can manifest more in external compensation. The institutional differences between Chinese SOEs and non-SOEs lead to differences in competency requirements when hiring or selecting CEOs. SOEs may concentrate more on the CEO's general skills, whereas non-SOEs may value the CEO's professional skills. When motivating a CEO, we should stress the value of their human capital, maximise the effect of compensation incentives, and ultimately achieve the goal of improving the company's performance and corporate value. Therefore, when formulating incentive compensation contracts with executives, employers should pay more attention to the influence of CEO talent heterogeneity on their compensation, establish a competitive compensation mechanism in the company, and actively screen internal agent competition for executives and market competition for external professional managers.

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