

Article

Allocation of Decision Rights and CSR Disclosure: Evidence from Listed Business Groups in China

Rumeng Cui ¹ , Zhong Ma ^{1,*} and Longfeng Wang ²

¹ School of Economics and Management, Beijing Jiaotong University, Beijing 100044, China; 16113157@bjtu.edu.cn

² State Grid Energy Research Institute Co., Ltd., Beijing 102209, China; wanglongfeng@bjtu.edu.cn

* Correspondence: zhma@bjtu.edu.cn

Abstract: Corporate social responsibility (CSR) research has recently begun to focus on the CSR performance of business groups, with the scope shifting from group members to business groups in general. This paper focuses on whether business groups with centralized decision rights tend to disclose more CSR information and investigates the heterogeneous effect of the number of subsidiaries. Using a dataset for listed groups in China from 2010 to 2020, our empirical test discovered that centralized decision rights could promote group CSR disclosure. For groups with many subsidiaries, centralization makes a more significant contribution to promoting CSR disclosure. The mechanism test revealed that this positive relationship between centralization and disclosure relies on efficient internal capital market allocation, a reduction in rent-seeking behavior of subsidiaries, and reputational concerns. Furthermore, we observed that the centralized decision rights influence on disclosure varies across different aspects of CSR, with a negative impact on “Social Contribution” and a positive impact on “Shareholder Responsibility”, “Employee Responsibility”, “Supplier, Customer, and Consumer Responsibility” and “Environmental Responsibility”. Centralized decision rights promote more CSR disclosures with voluntary disclosures, while regulatory disclosures have no significant effect. We research the allocation of decision rights and group CSR disclosure.

Keywords: corporate social responsibility disclosure; business group; allocation of decision rights; corporate governance



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1. Introduction

With the awakening of global social responsibility concerns, emerging market countries have set higher standards for corporate social responsibility (CSR) reporting, turning CSR disclosure into an integral element of sustainable strategic decision making [1]. The globalization and transition economy boom have given business groups a significant presence in emerging markets [2,3]. In China, for example, the total revenue of the top 500 business groups contributed 86% of GDP in 2018, and 172 business groups had total revenue of more than \$10 billion [4]. Corporate social responsibility work is no longer limited to independent, unaffiliated companies [5–7], and a growing stream of scholars is devoted to investigating business groups' CSR performance [8–11].

Previous studies have explored the CSR behavior of group affiliated companies [12,13], the resource allocation capacity of headquarters [14], and controlling shareholders and insider expropriation are highly debated [15]. However, less research is available on business groups' overall social responsibility performance [16]. As business groups expand and embrace a broader range of CSR activities, it is important to inspect the group's overall social responsibility performance [17]. It is difficult to comprehensively appreciate the social responsibility performance of such complex organizations from the group members alone. Recently, Correa-Garcia et al. (2020) [18] researched this topic and found evidence that parent company equity concentration and governance mechanisms affect group social

responsibility disclosure. However, in emerging economies with weak institutional foundations, parent companies often manage their subsidiaries beyond legal boundaries [19]. In addition to equity control with legal implications, parent company control over subsidiaries is more direct in terms of decision rights [20]. For CSR disclosure, Griffin and Youm (2008) [21] investigated that among plutocrats with highly centralized management decisions [22], companies appear significantly more inclined to disclose pro-social behavior to gain legitimacy around the time of the financial crisis. Terlaak et al., 2018 [23] found that CSR disclosure increases when higher family ownership combines with family leadership. This suggests that the allocation of decision rights may be vital in promoting CSR disclosure in groups. However, to date, no studies have addressed the critical role of parent company decision control in group CSR disclosure.

In China, listed business groups, consisting of listed companies and their controlled subsidiaries, provide a substantial sample to investigate this issue [24]. They are required to disclose CSR information on a consolidated scope, reflecting the CSR performance of the parent company and subsidiaries in their annual reports or CSR reports. With the expansion of group size business sinking, subsidiaries become the main bearer of specific business operations, and the function of the parent company changes to the role of resource allocation decision and supervision of subsidiaries [25]. At this time, the fulfillment of the social responsibility of subsidiaries and the parent company's ability to allocate resources become key factors for the CSR disclosure of the group. To conduct business smoothly, the parent company will grant a certain degree of autonomous asset allocation authority to the subsidiary [26], which leads to a principal-agent relationship between the parent and the subsidiary. Different motivations in the CSR activities between the parent company and the subsidiary will create agency problems and agency costs [27,28]. As independently operating entities, subsidiaries need to bear costs to fulfill their social responsibility and collect information affecting their benefits. At the same time, listed companies, as financing platforms, parent companies are eager to establish a positive image among investors and creditors by disclosing the information obtained on social responsibility. Mitigating parent-subsidiary agency issues can facilitate group CSR disclosure.

The allocation of decision rights is an essential topic in corporate governance. Research on organizational decision making suggests that how organizations allocate decision-making authority ultimately depends on the trade-off between information transfer costs and the agency costs created by decentralization of parent and subsidiary [29,30]. We hypothesize that the centralization of decision making may facilitate group CSR disclosure. Given agency theory, due to the different interest preferences between parent and subsidiary, the subsidiary may seek to enhance its own interests by sacrificing group interests, increasing agency costs between parent and subsidiary [31]. Decentralization of decisions makes it difficult to coordinate actions among agents [32]. Centralization can reduce the room for manipulative power of subsidiary management and reduce rent-seeking by subsidiary management [33], which facilitates subsidiary participation in CSR activities. Corporate social responsibility disclosure is often seen as a reputational management tool [34], especially when a negative event occurs to a member. The parent company with centralized decision-making power can use the disclosure to cushion the group from reputational damage, acting akin to insurance or value protection [35]. Given resource-based theory, excessive autonomy of subsidiaries carries the risk of misallocation of resources [36]. At the same time, centralized decision making can coordinate resource allocation in a group-wide interest [37] and supply resources for participating and disclosing CSR.

In addition, decision making in organizations is usually more complex than simply opting for delegation or centralization, and companies must consider not only the level at which decisions are made (position of authority) but also the number of people involved (diffusion of authority) [38]. Business groups holding numerous subsidiaries may exacerbate internal agency problems [39] and increase the parent company's complexity in coordinating its subsidiaries' actions [40], as groups often establish numerous subsidiaries to diversify or internationalize their operations. Extensive evidence on "diversity dis-

counts” can provide evidence that numerous divisions or subsidiaries reduce corporate cash holdings [41], cash value [42], and enterprise value [43]. At this point, centralized decision making may highlight the advantages of CSR decisions in complex organizations.

This study attempts to address two specific questions: (i) How can business groups allocate decision rights to enhance group CSR disclosure? (ii) Does the number of subsidiaries affect the relationships between decision rights allocation and CSR disclosure? The Chinese market provides a testing ground for this question for several reasons. First, the stock exchange requires listed companies to disclose CSR information of the parent company and subsidiaries together in their annual reports or separate CSR reports, and audited group CSR disclosure data is reliable and readily available. Second, China’s dual disclosure system—listed companies are required to disclose parent company statements separately when they disclose consolidated statements—facilitates the measurement of the decision rights allocation between parents and subsidiaries based on the statement data.

In this study, we employ listed groups in China A-shares as our sample set and identify the centralization of decision rights using the relative proportions of employee compensation paid by the parent company. The empirical study finds that centralized decision-making can promote group CSR disclosure. The impact of centralization on CSR disclosure is greater for groups with more subsidiaries. The mechanism test finds that decision centralization increases disclosure by increasing the efficiency of internal capital market allocation, reducing rent-seeking behavior of subsidiaries, and concern for collective reputation. Additionally, we also investigated whether there are inherent differences between voluntary and regulatory disclosures. For a deeper discussion on which aspects of the disclosure are facilitated by decision centralization, we divided CSR into five dimensions, “Shareholder Responsibility”, “Employee Responsibility”, “Supplier, Customer, and Consumer Responsibility”, “Environmental Responsibility”, and “Social Contribution”, finding that discrepancy does exist.

As the first study to systematically investigate the role of decision rights allocation on CSR disclosure in business groups, this paper adds several contributions to the literature. First, it has enriched the literature on CSR disclosure by corporate groups [44], where most past studies have focused on CSR disclosure by group-affiliated firms [12,45], business group CSR disclosure has only considered the influence of ownership structure as well as general governance characteristics [18,46,47], no studies have addressed the role of parent-subsidiary decision-making power structures. Second, it enriches the literature on decision rights allocation in business groups, where the current literature only focuses on the impact of decision rights allocation between parent and subsidiary on group financial performance, corporate value, and investment efficiency [48,49], which fills the gap in CSR research on organizational decision-making structures. It also helps to highlight the critical role of decision rights centralization in suppressing subsidiary rent-seeking and enabling members to achieve consistent sustainability goals. Finally, this investigation examined the heterogeneous effect of organizational size on the consequences of the decision rights allocation. Past studies have focused on diversification discounts, that is, the adverse impact of business diversification on company value. This paper discovers that variation in organizational size can also be heterogeneous in decision structure choices and CSR decisions.

The rest of the paper comprises four sections: Section 2 illuminates the theoretical background and assumptions regarding the allocation of decision rights. Section 3 describes data collection, variable measurement, and model design. Section 4 presents the empirical investigation results, as well as robustness and extension tests. Section 5 provides conclusions, limitations, and prospects for future research

2. Theoretical Background and Research Hypothesis

2.1. Theoretical Background

Studies on the allocation of decision rights focus on how decision rights should be located within the organization and the trade-offs between centralization and decentral-

ization [50]. Prior studies have suggested that agency and resource-based theories serve as the two pillars for understanding subsidiary decision making [51]. As highlighted in the work of Jensen and Meckling (1992) [52], decision rights allocation should trade off the information costs of centralization against the agency costs of decentralization. Although decentralized decision making can increase specialization and efficiency [53], it increases the cost of coordinated decision making. In emerging and transition economies, parent-subsidiary companies have serious agency problems [54], and when there is a conflict of interest between them, the inappropriate allocation of decision rights may leave room for the subsidiary to meet its interests by sacrificing the interests of the parent company [55]. Decentralized decision-making principals lose control of the firm and promotes the opportunistic behavior of subsidiaries [56], while centralized management can reconcile conflicts, balance interests, and mitigate agency problems due to information asymmetry [57]. According to resource-based theory, effective resource allocation can promote the CSR performance of group members [14]. Subsidiaries having excessive autonomy may entail misallocation of the group's limited resources [36], making it detrimental to engage in CSR activities. Decision centralization can optimize the efficiency of internal capital market allocation, thereby enabling subsidiaries to participate in CSR activities and improve the overall group's CSR performance.

Decision-making in organizations is not simply a choice of agents or centralization; firms need to consider the level of decision making (the location of decision authority) and the number of decision makers [38]. Therefore, the decision structure is driven by the organization's size and it is difficult for large groups to maintain consistent decisions [58]. Groups with more subsidiaries have more agents involved in CSR decisions. Therefore, the decision structure choice may be more favorable in decision effectiveness when the decision authority is located at a higher-level set.

This paper argues that decision centralization can promote group CSR disclosure. Furthermore, the relative number of subsidiaries affects this relationship. The following hypotheses are proposed. The analysis framework is shown in Figure 1.

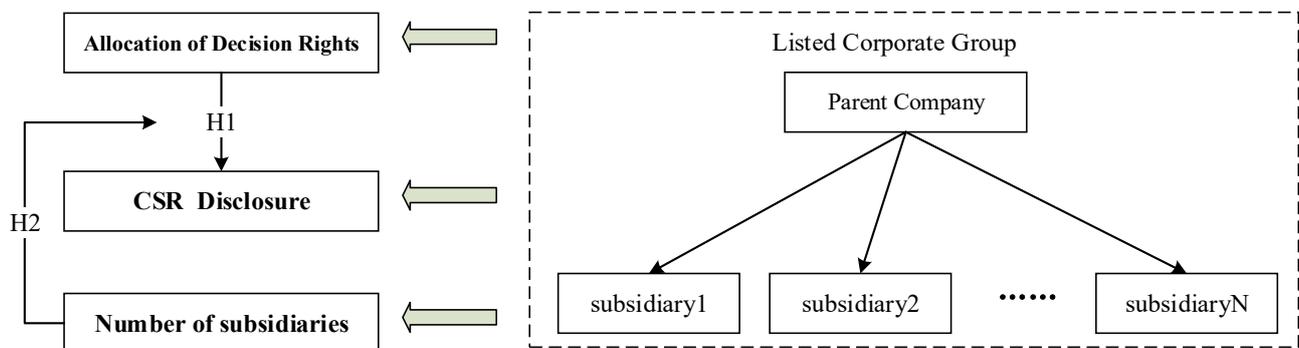


Figure 1. Analytical Framework.

2.2. Research Hypothesis

2.2.1. Decision Rights Allocation and Group CSR Disclosure

Parent company control over subsidiaries is reflected in equity control and decision rights control [25]. Prior studies have only discussed the impact of equity concentration on CSR [59–61]; however, no scholar has investigated the more direct impact of parent company decision control [62]. The distribution of decision rights in business groups involves personnel, financial, and operational aspects at various levels. Among them, personnel authority—including salary dispositions and appointments—is slightly restricted by the financial situation and operating business as a primary authority and has a certain rigidity based on the compensation contract. Centralization of decision making means that decision rights are centralized in the parent company, while decentralization means that decision rights are delegated to the subsidiaries. In the case of personnel authority,

centralization refers to how a subsidiary can control its own compensation decisions and appointments. In a centralized organization, the parent company can directly influence subsidiary decisions by selecting, appointing, and developing key subsidiary executives and retaining the power to set compensation and monitor and motivate them [63].

The centralization of decision-making compresses the space of authority that can be manipulated by the management of subsidiaries [64]. The proper scope of authority and interest preferences of the parent and subsidiary differ. When conflicts of interest arise, the subsidiary's management may seek to maximize its interests by sacrificing those of the group [55]. As independently operating entities, subsidiaries need to bear the cost of participating in and disclosing social responsibility activities, which affects current earnings to the detriment of their performance evaluation and has less incentive for CSR [65]. As the strategic leader of the group, the parent company typically possesses a more holistic and integral perspective on the sustainable strategy and direction for the group [37]. For CSR-related decisions, listed groups are the subject of CSR disclosure and an important financing platform to achieve expansion [66]. As a result, positive market reactions and the reduction in capital costs from information disclosure [67,68] benefit the entire group. In particular, disclosing more CSR information plays a role similar to insurance or value protection during a crisis [69], which can buffer the reputation loss of the whole group or parent company [70,71]. Specifically, centralized decision rights means that the parent company holds the dominant power in personnel transfer and management compensation allocation and can reduce information asymmetry to reduce the rent-seeking behavior of subsidiary management by staffing key positions for information disclosure or including social responsibility behavior in compensation assessment, increase the flexibility and fit between parent and subsidiary in participating in social responsibility activities, and promote the group as a whole to disclose social responsibility information actively.

Centralized decision making helps allocate internal capital markets more efficiently and provides financial security for the group's CSR activities. According to resource-based theory, efficient internal capital market resources allocation can promote CSR performance [13]. Research on strategic management and organizational structure field found that a company's capital allocation is shaped by its organizational decision structure [72]. Nevertheless, the ability to allocate idle financial resources flexibly depends on an organization's capacity to deploy non-financial resources and talent [73]. The parent company has flexible control over human resources through executive assignments and management compensation control in the centralized model. It has sufficient information about its subsidiaries, which improves the allocation of group resources [74]. Resourceful companies are generally more likely to bear both the potential damaging costs of disclosure and the basic costs of identifying, measuring, and reporting of CSR information [75,76], resulting in net positive economic benefits. Therefore, the centralization of decision rights in parent companies can improve the efficiency of internal capital allocation and provide sufficient resources to support subsidiaries' participation in social responsibility activities and collect CSR-related information, which can enhance the overall social responsibility disclosure of the group.

In conclusion, decision centralization in a business group can reduce rent-seeking by subsidiaries and alleviate the agency problems of parents and subsidiaries while simultaneously enhancing internal capital market allocation efficiency, protecting CSR behavior, and ultimately promoting CSR disclosure.

Hypothesis 1. *Decision rights centralization can boost the CSR disclosure of business groups.*

2.2.2. Heterogeneity in Subsidiary Numbers

The growth of business groups in emerging markets will inevitably lead to an expansion in organization size. Data from stock exchanges indicate that listed companies controlled by Chinese groups had an average of 20 subsidiaries in 2018, and over 95% of listed companies owned at least one subsidiary. Establishing and investing in subsidiaries

is an essential way for groups to diversify and operate across borders. When there is a large number of group subsidiaries, more agents are involved in decision making, and the conflict of interest between the management of each division will intensify, exacerbating the agency problems of the parent and subsidiary and reducing the efficiency of the allocation of the internal capital market [39]. This will harm CSR activities when the centralization of decision making can counteract this effect.

A listed group with many subsidiaries, where the subsidiaries assume the core business of the group, will receive more support from the group [77]; therefore, the subsidiaries gain considerable strategic independence in their operations and can exercise considerable intrafirm bargaining power to influence the allocation of resources, with the more extraordinary rent-seeking ability of the company managers [78]. In addition, the large number of subsidiaries often faces cross-regional operations and significant market differences, which exacerbate the degree of information asymmetry within the group. In a situation of “strong children and weak mothers”, the parent company needs to strengthen the control over the personnel decisions of its subsidiaries to ensure that the group’s overall interests are taken into account when the subsidiaries participate in CSR-related activities. In studies on family business groups, family managers are often assigned to foreign subsidiaries with more substantial diverse operations [79]. Similarly, in business groups, parent companies can reduce the likelihood of many subsidiaries making decisions that deviate from the group’s strategic objectives and promote CSR disclosure through personnel power control, such as the assignment of managers, cross-employment, and compensation design.

Hypothesis 2. *When a group holds many subsidiaries, the positive impact of centralized decision rights on its CSR disclosure is more significant.*

3. Research Design

3.1. Sample Selection and Data Sources

This study takes listed groups in China A-shares from 2010 to 2020 as the sample and retains the sample of holding subsidiaries (consolidated units) greater than 2. Parent company statements and consolidated statement information are obtained from the China Stock Market and Accounting Research (CSMAR) database. Corporate social responsibility disclosure ratings are obtained from the CSR report rating agency Hexun.com (the data can be accessed from the website <http://stockdata.stock.hexun.com/zrbg/>, accessed 30 December 2020), China’s third-party CSR report rating agency.

Considering comparability of financial data, samples from financial industry sectors and those at risk of delisting are excluded from this paper. Companies listed for less than one year, delisted, or suspended were excluded. Samples with missing data were also excluded, considering that a large number of missing values would lead to inconsistent results, and we performed a 1% tailing process for all continuous variables to eliminate the influence of extreme values. Finally, 5059 data were obtained.

3.2. Variable Definitions

3.2.1. Centralization of Decision Rights

The decision rights in a business group mainly refer to personnel authority, financial authority, and operating rights. The personnel authority under the remuneration contract is more “rigid” and less disturbed by operating conditions and financial fluctuations. In reality, the parent company controls its subsidiaries by assigning directors, supervisors, or financial officers to the subsidiaries and retains the right to evaluate and decide on the remuneration of the assigned personnel, requiring them to carry out orders from the parent company in the management of the subsidiaries, which can directly influence socially responsible behavior.

Throughout our work, the core independent variable is the centralization of decision rights in the group (Cen). Based on the dual disclosure system of Chinese listed companies disclosing both parent company financial statements and consolidated financial statements,

see Pan et al. (2018) [48]. Lou and Zhu (2021) [49] measure the centralization of decision rights using the proportion of remuneration of the parent company pays after eliminating size differences. Assuming that the payer of remuneration also enjoys the relevant personnel rights, there is a high correlation between the proportion of remuneration the parent company pays and the parent company's control over personnel rights. Compensation arrangements based on compensation contracts are more stable than the distribution of other resources. It has been found that personnel decisions that include compensation distribution and management appointments affect CSR disclosure through incentives and monitoring [80,81]. Specifically, after substituting the data into the model (1) regressed by year and industry, the residuals estimated are indicators of group decision centralization. With a constant ratio of the parent company to the group size, a larger value of the Cen indicator indicates that the parent company pays a more significant proportion of remuneration, the stronger its control over personnel authority and the greater the centralization of the group.

$$PSalary_{it} = \beta_0 + \beta_1 PAsset_{it} + \varepsilon \quad (1)$$

where *PSalary* refers to the percentage of compensation paid to employees from the parent company which is measured by dividing the parent company cash flow statement item "cash paid to and for employees" by the corresponding item in the consolidated cash flow statement. On the right side of the equation, the dependent variable *PAsset* is the ratio of the parent company's total assets at period end, specifically, total assets on the parent company's balance sheet divided by those on the consolidated statements. Assets percentage was chosen as an explanatory variable because it is more indirectly affected by the market, the differences in nature of operations between parents and subsidiaries, and consolidation offsets, compared to the percentage of operating income and operating cash flow. Prior to regression, the tails of *PSalary* and *PAsset* were reduced to the interval [0, 1] to avoid the effect of extreme outliers, and samples with negative net worth and year of listing were excluded.

3.2.2. CSR Variable

Referring to previous studies, we used Hutchison's CSR score (Hutchison Social Responsibility Report Ranking 2020, named "CSRDR") as the group's CSR disclosure level in our primary test [14]. The higher Hutchison's CSR score, the higher the corresponding CSR rating level of this sample company, which means that the CSR disclosure is also better. In particular, this paper divides Hutchinson's CSR score by 100 to make a better comparison with the independent variable.

Hexun.com, as a professional third-party rating agency, provides a professional evaluation system for judging CSR information disclosure quality of listed companies. The CSR information required for scoring is derived from relevant disclosures in CSR reports and annual reports. Overall, the scoring system is divided into five areas, including responsibilities to shareholders, responsibilities to employees, responsibilities to the environment, contributions to society, and responsibilities to external stakeholders (suppliers, customers, and consumers). Besides the primary indicators made up by the above five aspects, the scoring system is also subdivided into 13 secondary indicators and 37 tertiary indicators (see Appendix A). Hexun.com used this index system to make a comprehensive evaluation of the CSR information disclosure by listed companies. At the same time, different weights are set for the five first-class indicators according to different industries. Hexun's corporate social responsibility rating is comprehensive, objective, and authoritative.

3.2.3. Control Variable

Referring to prior related literature [82,83] and drawing extensively on insights from existing studies on the factors influencing CSR disclosure, we selected a set of control variables to encompass the various factors affecting CSR disclosure on firm characteristics and governance structure. For instance, as shown in past studies, profitability and size affect the amount of CSR disclosure [84]. We use the natural logarithm of total assets

plus one at year-end to control enterprise size (Size). Variation in sales revenue over time controls the growth of firms (SG). In addition, the ratio of tangible assets (Tang), which is the sum of fixed assets and inventories over the total assets, is used to control the firm's asset liquidity. Some research demonstrates that companies with relatively high leverage provide more CSR information to gain creditor acceptance [85], adding the control variable leverage (Lev). Additionally, we control for factors related to the governance structure. Board characteristics affect CSR disclosure [86]. Directors and independent directors can monitor CSR performance, controlling for board size (Board) and independent directors' share (Indep). Studies have indicated that dual CEO status is positively associated with corporate social performance [87], so adding the dummy variable Duality (Dual), 1 when the chairman and managing directors are the same person and 0 otherwise. Moreover, regarding companies' shareholding structure, companies with low management ownership generally tend to gain more benefits from their environmentally responsible activities and will increase CSR-related disclosures [88]. Studies correlating executive shareholding with carbon transparency support this perspective [89]. We add the control variable, management's ownership (Mngmhdn), which equals the sum of shares owned by the chairman, secretary to the chairman, chief financial officer, general manager, and vice president. Definitions and calculations of the main variables are summarized in Table 1.

Table 1. Variable definition and calculation.

Variables	Definition	Calculation Details
CSR D	Level of CSR disclosure	Hexun's CSR score/100
Cen	Centralization of decision rights	Percentage of salary paid by the parent company. Regression model (1) estimated residuals by year and Industry
BigNumSub	Number of subsidiaries	Equal to 1 if the number of subsidiaries is greater than the annual industry average, and 0 otherwise
Size	Company size	$\ln(\text{total assets} + 1)$
Lev	Capital structure	Total liabilities/Total assets
SG	Firm growth	(sales-lagged sales)/lagged sales
Board	Board size	Total number of directors on the board
Indep	Proportion of independent directors	Number of independent directors divided by the total number of board of directors
Dual	CEO Duality	It is equal to 1 when the CEO is also the chairman of the board, otherwise it is equal to 0
Tang	Tangibility of assets	(Net fixed assets + Inventory)/total assets
Mngmhdn	Management Ownership	Management's shareholding multiply by 100

3.3. Empirical Models

To test hypothesis 1, the following model was constructed to test the impact of the configuration of decision rights of business groups on CSR disclosure, modeled as follows.

$$CSR D_{itj} = \alpha + \beta_1 Cen_{itj} + \lambda X_{itj} + \sum Year + \sum industry + \varepsilon_{itj} \quad (2)$$

where *CSR D* indicates the quality of CSR disclosure in the group, using data from Hexun.com, and the robustness test uses data from the CSMAR database. *Cen* indicates the concentration of decision-making in the group, using the proportion of the parent company's compensation payment to the scope of consolidation. *X* indicates a series of control variables related to social responsibility disclosure. Moreover, $\sum Year$ and $\sum industry$ are a set of dummy variables that control for year and industry fixed effects. This paper applies a 1% upper and lower tail reduction to continuous variables to reduce the effect of outliers. Referring to Petersen (2009) [90], this paper is based on an OLS model adjusted for year and firm-level clustering heteroskedasticity.

4. Regression Results

4.1. Descriptive Statistics

Table 2 summarizes the results of descriptive statistics for all variables involved in the empirical model. The mean level of the CSR disclosure indicator is 0.286, which represents the general level of CSR disclosure among companies in the sample. The mean of Cen is 0.012, the minimum value is -0.512 , and the maximum value is 0.515. The decision structure is decentralized when Cen is less than zero. When Cen is greater than zero indicates centralization. This indicates that the sample, in general, is biased towards centralization. The mean value of BigNumSub is 0.309, which implies that 30.9% of the group listed companies had an above-average number of subsidiaries. Regarding the control variables, on average, the lev was 49.7%, the presence of Dual was 9.8%, and SG was 20.5%.

Table 2. Descriptive statistics of the main variables.

Variable	N	Mean	SD	Min	p50	Max
CSRD	5059	0.286	0.176	0.045	0.230	0.772
Cen	5059	0.012	0.215	-0.512	0.008	0.515
BigNumSub	5059	0.309	0.462	0	0	1
Size	5059	22.699	1.291	20.196	22.598	26.365
Lev	5059	0.497	0.198	0.084	0.505	0.888
SG	5059	0.205	0.505	-0.450	0.108	3.741
Board	5059	2.201	0.198	1.609	2.197	2.708
Indep	5059	0.367	0.050	0.308	0.333	0.571
Dual	5059	0.098	0.297	0	0	1
Tang	5059	0.399	0.183	0.036	0.385	0.819
Mngmhldn	5059	2.098	7.763	0	0.003	49.816

Table 3 displays the Pearson correlation coefficients for the main variables. The first row of the first column shows a correlation coefficient of 0.053, which is significant at the 1% level, suggesting a positive relationship between centralization of decision rights (Cen) and group CSR disclosure (CSRD), which initially supports hypothesis 1 of this paper. Overall, centralized management can promote group CSR disclosure.

Table 3. Pearson correlation coefficient.

	CSRD	Cen	Size	Lev	SG	Board	Indep	Dual	Tang	Mngmhldn
CSRD	1									
Cen	0.053 ***	1								
Size	0.214 ***	0.035 **	1							
Lev	0.0160	0.109 ***	0.449 ***	1						
SG	-0.00400	-0.0150	0.043 ***	0.075 ***	1					
Board	0.105 ***	0.115 ***	0.205 ***	0.080 ***	-0.00400	1				
Indep	-0.00700	$-0.085 ***$	0.101 ***	0.045 ***	-0.0190	$-0.420 ***$	1			
Dual	-0.0170	$-0.038 ***$	$-0.051 ***$	$-0.048 ***$	0.0130	$-0.109 ***$	0.076 ***	1		
Tang	0.050 ***	0.138 ***	0.144 ***	0.264 ***	-0.0150	0.078 ***	-0.0220	$-0.029 **$	1	
Mngmhldn	$-0.054 ***$	$-0.031 **$	$-0.183 ***$	$-0.186 ***$	0.062 ***	$-0.097 ***$	0.00500	0.132 ***	$-0.162 ***$	1

Note: ** indicates $p < 0.05$, *** indicates $p < 0.01$.

4.2. Results and Discussion

4.2.1. Allocation of Decision Rights and CSR

Table 4 illustrates the regression results of model (2) and the grouping test results by whether the number of subsidiaries is larger than the annual industry mean. Column (1) demonstrates the baseline test regression results with a coefficient of 0.0429 for the variable Cen, which is significantly positive at the 1% statistical level. Our model incorporates both annual and industry fixed effects, eliminating effects due to the time span of the sample and inherent industry factors. Therefore, hypothesis 1 cannot be rejected. This empirical result indicates that decision centralization is significantly and positively associated with group

CSR disclosure. This positive impact can be explained by the fact that the parent company's control over decision making can alleviate intra-group agency problems and promote the internal capital market to allocate resources more efficiently [13], which contributes to the effective implementation of sustainability objectives and information disclosure. We argue for such an impact mechanism in a follow-up test.

Table 4. Basic test regression results.

CSRD	(1) Full Sample	(2) BigNumSub = 1	(3) BigNumSub = 0
Cen	0.0429 *** (2.87)	0.1154 *** (3.21)	0.0367 ** (2.31)
Size	0.0523 *** (4.46)	0.0578 *** (4.43)	0.0464 *** (4.32)
Lev	−0.1862 *** (−5.89)	−0.2739 *** (−5.40)	−0.1613 *** (−5.37)
SG	−0.0102 (−1.49)	−0.0090 (−0.90)	−0.0097 (−1.53)
Board	0.0061 (0.31)	0.0266 (0.68)	−0.0123 (−0.52)
Indep	−0.0955 (−1.21)	0.0089 (0.07)	−0.1610 * (−1.80)
Dual	0.0081 (0.86)	0.0042 (0.35)	0.0070 (0.62)
Tang	−0.0294 (−1.41)	0.0147 (0.32)	−0.0381 (−1.63)
Mngmhdn	0.0006 (1.58)	0.0021 *** (3.82)	0.0002 (0.40)
_cons	−0.7260 *** (−2.72)	−0.9311 *** (−2.68)	−0.5398 ** (−2.54)
Year Fixed	Yes	Yes	Yes
Industry Fixed	Yes	Yes	Yes
N	5059	1563	3496
adj. R ²	0.2537	0.3610	0.2007

Note: * indicates $p < 0.1$, ** indicates $p < 0.05$, *** indicates $p < 0.01$, and t-statistics are in square brackets below the coefficients. Regressions were adjusted for clustering heteroskedasticity at the firm and year levels.

Our results suggest that parent company control of more decision-making power can facilitate group-wide CSR disclosure. This confirms previous studies that parent companies have a more comprehensive and complete view of the overall strategy and direction of the firm [37,91], and that centralized decision making in parent companies enables better corporate development decisions [49]. Furthermore, our results demonstrate the role of centralization of organizational decision making in achieving sustainable goals, supporting the centralization theory [92]. The centralized model facilitates consistent action by corporate executives and helps to clarify the direction of corporate development [93].

4.2.2. Impact of Heterogeneity in Subsidiary Numbers

Columns (2) and (3) of Table 4 show the grouping test results according to the relative number of subsidiaries, examining whether Hypothesis 2 holds. Column (3) exhibits the regression results for the group sub-sample (BigNumSub = 1) with a high number of subsidiaries (greater than the mean values), with a coefficient of 0.112 for the core variable Cen, which is significantly positive at the 1% level. Column (4) shows the estimation results for subsamples (BigNumSub = 0) with fewer subsidiaries (less than the mean), with a coefficient of 0.0332 for the core variable Cen, which is significantly positive at the 5% level. Since Cen's coefficient is significant in both subsamples, we deemed it advantageous to examine the differences between the sample sets to secure a more rigorous analysis. Based on the results of the SUR test (seemingly unrelated regression) for differences in coefficients between sub-samples [94,95] ($\chi^2(1) = 7.04$, Prob > $\chi^2 = 0.008$), the coefficients

of the two sub-samples are significantly different. Specifically, this implies a significant difference in the effect of decision centralization on CSR disclosure between the sample with more subsidiaries and the piece with fewer subsidiaries. Comparing the coefficients of the two sub-samples, it is found that centralization of decision rights is more effective in boosting CSR disclosure for groups with more subsidiaries, increasing CSR disclosure by 11.54%, while the group with fewer subsidiaries can expand it by only 3.67%. This empirical result supports hypothesis 2 that centralized decision making positively impacts on CSR information disclosure at larger business groups.

The empirical results confirm studies related to the organizational theory that heterogeneity in organizational size may influence the choice between centralization and decentralization and that consistent decision-making may be difficult to achieve in large groups [57]. Firms should consider not only the level at which decisions are made but also the number of people involved [38]. Therefore, a possible explanation for the findings is that within a group with many subsidiaries, information communication is complex, and monitoring and coordinating actions within the team can incur significant costs [96,97]. Centralization allows timely control of the subsidiary's operational dynamics and strategy implementation and can guarantee that the CSR activities of subsidiaries are aligned with group interests.

4.3. Robustness Check

4.3.1. Alternative Measurements

Alternative to CSR disclosure measurement. CSRD was replaced with the social responsibility evaluation index (CSRDI) constructed from the social responsibility information disclosed in the CSMAR database. Column (1) of Table 5 demonstrates the regression results with a coefficient of 0.059 for Cen, which is significantly positive at the 5% level. The results are again consistent with the benchmark test, proving the hypothesis.

Table 5. Robustness Check results.

	Alternative Measurements		Fist Stage	Second Stage
	(1) CSRDI	(2) CSRDI	(3) Cen	(4) CSRDI
Cen	0.0590 ** (2.07)			0.310 *** (4.44)
MCen		0.0394 *** (2.73)		
IndCen			0.9275 *** (7.98)	
control Variable	Yes	Yes	Yes	Yes
Year Fixed	Yes	Yes	Yes	No
Industry Fixed	Yes	Yes	Yes	No
N	5056	5059	5059	5059
adj. R ²	0.2284	0.2534	0.0658	−0.0440

Note: ** indicates $p < 0.05$, *** indicates $p < 0.01$, and t-statistics are in square brackets below the coefficients. Regressions were adjusted for clustering heteroscedasticity at the firm and year levels.

Replace the independent variable indicator to remove the effect of executive compensation. The parent company has a high proportion of executives and a large amount of executive compensation. Most of the compensation paid by the parent company belongs to executive compensation, so that executive compensation may impact the calculation of the personnel power concentration variable. Precisely, if the parent company has more executives or the level of executive compensation paid is generally higher, then even if the group implements personnel decentralization, the concentration of personnel power calculated according to the previous method will be higher. Therefore, this paper excludes executive compensation from the formula of PSalary, and then calculates the degree of personnel authority centralization using model (1) to obtain a new independent variable.

Model (2) was re-estimated. The results are shown in Table 5, column (2), with a regression coefficient of 0.039 for MCen, which is significantly positive at the 1% level, and the conclusion remains unchanged. Accordingly, after eliminating executive compensation effects, the centralization of decision rights still substantially contributes to the disclosure of group CSR.

4.3.2. Endogeneity Issues

A two-stage 2SLS regression using a one-period lagged independent variable as an instrumental variable is used for endogeneity checks. In this paper, the annual industry mean (IndCen) of the indicator of decision power concentration is used as the instrumental variable, and two-stage least squares regression is used. On the one hand, the control mode of other enterprises in the same industry affects the decision rights allocation of this enterprise, and IndCen satisfies the correlation requirement; on the other hand, the control mode of other enterprises in the same industry does not directly affect the social responsibility disclosure of this enterprise, and IndCen satisfies the exogeneity requirement. Therefore, the construction of the variable IndCen meets the requirement of instrumental variable selection. Column (3) of Table 5 exhibits the first-stage regression results. It is observed that a significant positive regression coefficient is found for the instrumental variable (IndCen), demonstrating that this instrumental variable satisfies the correlation assumption. Column (4) of Table 5 reports the second-stage regression results, where Cen appears to be significantly positive at the 1% level, suggesting that after accounting for endogeneity, centralized decision rights still have a significant positive effect on CSR disclosure.

4.4. Influence Mechanism Tests

In Hypothesis 1, this paper argues that the decision rights centralization can improve internal capital market allocation and reduce subsidiary rent-seeking behavior to promote group CSR disclosure. In addition, based on the reputation perspective, the centralization of decision rights guarantees that the group exerts an overall reputational effect. The impact of reputation externalities can be group-wide, and consistent CSR disclosure can buffer reputational damage when group members face adverse events (Martinez-Ferrero et al., 2016) [69]. When a business group has centralized decision rights, disclosure decisions are more conducive to maintaining the group's overall reputation. They can prevent subsidiaries from acting against the group's overall reputation or masking the negative reputation of other group members, thus promoting group CSR disclosure. This section verifies the mediating effects of internal capital market allocation efficiency, subsidiary rent-seeking, and overall reputation in the above arguments.

Regarding the choice of mediating variables, this paper selects the intra-group cash flow size (CF) [98], which is the total operating cash flow in the consolidated statements to measure the capital allocation capacity of the internal capital market. Cai et al. (2011) [99] constructed a rent-seeking indicator (Rent) by dividing the sum of the administrative expense line item "travel expenses" and "business entertainment expenses" by the primary operating revenue. Five perspectives were selected regarding the overall reputation indicators considering various stakeholders' evaluations of corporate reputation (see Appendix B). A total of 12 corporate reputation evaluation indicators were selected. The corporate reputation scores were calculated using factor analysis. Finally, the corporate reputation scores were divided into ten groups from low to high, and each group was assigned a value of 1 to 10 in turn.

In Table 6, the results of the mediated effects test are presented, where we provide estimates of Sobel's z-value and Mediated Proportion, as well as direct and indirect effects from the bootstrap test (Replications = 5000), and 95% bias-corrected bootstrap confidence intervals. (i) For the mediating effect of internal capital market efficiency (CF), Sobel's Z value of 4.780 bears significant positive at the 1% level, and zero is outside the bootstrapped confidence interval, which proves that centralization of decision making promotes CSR disclosure in business groups by increasing internal capital market efficiency. (ii) For the

mediating effect of subsidiary rent-seeking, Sobel's Z value of 2.379 is significantly positive at the 5% level while not involving zero at bootstrapped 95% confidence interval. It supports that centralization of decision rights in business groups can reduce the engagement of subsidiary managers in rent-seeking behavior to improve CSR disclosure in business groups. (iii) For the mediating effect mechanism of business group reputation, Sobel's Z value of 4.103 bears significant positive at the 1% level, and zero is outside the confidence interval of the bootstrap, which evidences that decision centralization towards improving the overall reputation of business groups promotes CSR disclosure.

Table 6. Mechanism test results.

	Sobel Test		Bootstrap [95% Conf. Interval] Replications = 5000					
	Z	Mediated Proportion	Indirect Effect			Direct Effect		
			CIlow	CIhigh	Effect	CIlow	CIhigh	Effect
CF	4.780 ***	0.2331	0.0077	0.0176	0.0124	0.0174	0.0644	0.0409
Rent	2.379 **	0.0382	0.0005	0.0041	0.0017	0.0215	0.0628	0.0423
Reputation	4.103 ***	0.2857	0.0058	0.0178	0.0117	0.0087	0.0497	0.0293

Note: The ** in Sobel's Z-value indicates $p < 0.05$, and *** indicates $p < 0.01$.

In light of the above, "internal capital market efficiency", "subsidiary rent-seeking" and "business group reputation" have mediating effects over the relationship between the centralized decision rights and CSR disclosure.

4.5. Further Tests

4.5.1. Five Dimensions of Corporate Social Responsibility

In this section, we are interested in whether there are differences in the different aspects of CSR disclosure promoted by the parent company of a business group. Hexun.com classifies CSR disclosure into five dimensions: "Shareholder Responsibility" includes profitability, solvency, investment in innovation, dividends, and how many times the relevant principals have been penalized by the stock exchange; "Employee Responsibility" refers to employee income and training, employee safety and employee compensation; "Supplier, Customer and Consumer Responsibility (SCCR)" covers product quality assurance, after-sales service information, integrity and reciprocity to suppliers; "Environmental Responsibility" mainly focuses on disclosures related to environmental management; "Social Contribution" is related to public donations and tax payments. See Appendix A for a more detailed interpretation of the indicators.

The dependent variable was subdivided under the different dimensions, model (2) was re-estimated, and the regression results are summarized in Table 7. According to the empirical results in column (1)–(5) of Table 7, the regression coefficient of Cen on shareholder responsibility is 0.0164, which is significant at the 5% level; the coefficient of Cen on employee responsibility is 0.0122, at the 1% level. The regression coefficient of Cen for supplier, customer, and consumer rights responsibility is 0.0092, significantly at the 10% level; the coefficient of Cen for environmental responsibility is 0.0176, which is significant at the 5% level; Cen's coefficient for social contribution aspect is -0.0119 , significantly at the 1% level. The results suggest a centralization of decision making reduces CSR disclosure by business groups in terms of social contribution compared to other aspects. This result is consistent with Huang et al. (2021) [14], who discuss the impact of group affiliation on CSR in a classification, where business groups have less incentive to invest in social welfare. A possible explanation for this result is that when the parent company is in control of decision making, it neglects to fulfill its social responsibility in terms of social contributions and tax payments, as there is no immediate positive impact on the group's overall performance.

Table 7. Empirical results of CSR disclosures with different dimensions and different attributes.

	Different Dimensions of CSR Disclosure					Voluntary	Regulatory
	(1) Shareholders	(2) Employees	(3) SCCR	(4) Environmental	(5) Social	(6) CSR D	(7) CSR D
Cen	0.0164 ** (2.56)	0.0122 *** (2.74)	0.0092 * (1.85)	0.0176 ** (2.57)	−0.0119 *** (−3.17)	0.0401 *** (2.85)	0.0295 (1.47)
Size	0.0175 *** (12.40)	0.0089 *** (3.36)	0.0104 *** (2.82)	0.0129 *** (2.83)	0.0031 *** (3.30)	0.0327 *** (5.85)	0.0189 *** (3.31)
Lev	−0.1167 *** (−15.88)	−0.0163 *** (−2.60)	−0.0277 ** (−2.54)	−0.0280 *** (−2.62)	−0.0004 (−0.09)	−0.1463 *** (−6.12)	−0.1459 *** (−3.52)
SG	0.0033 (1.59)	−0.0015 (−0.90)	−0.0047 ** (−2.33)	−0.0046 * (−1.85)	−0.0027 *** (−3.03)	−0.0027 (−0.60)	0.0137 (1.11)
Board	0.0053 (1.00)	−0.0012 (−0.27)	0.0041 (0.74)	0.0016 (0.24)	−0.0040 (−0.71)	−0.0016 (−0.10)	−0.0136 (−0.48)
Indep	−0.0602 *** (−3.03)	−0.0026 (−0.16)	−0.0065 (−0.28)	−0.0013 (−0.05)	−0.0280 (−1.51)	−0.1576 ** (−2.26)	−0.1669 (−1.58)
Dual	0.0022 (0.81)	0.0010 (0.51)	0.0005 (0.18)	0.0011 (0.34)	0.0037 (1.38)	0.0092 (0.89)	0.0027 (0.17)
Tang	−0.0359 *** (−5.56)	−0.0100 ** (−2.02)	0.0010 (0.16)	0.0113 (1.37)	0.0040 (0.67)	−0.0378 * (−1.82)	−0.0832 *** (−2.60)
Mngmhl d n	0.0006 *** (4.52)	−0.0001 (−0.86)	−0.0000 (−0.15)	0.0001 (0.92)	−0.0001 (−0.54)	0.0008 ** (2.45)	0.0005 (0.34)
_cons	−0.1772 *** (−5.63)	−0.1308 ** (−2.25)	−0.1763 ** (−2.09)	−0.2300 ** (−2.17)	−0.0199 (−0.90)	−0.3885 *** (−3.34)	0.4473 *** (3.93)
Year Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	5059	5059	5059	5059	5059	3731	1325
adj. R ²	0.2746	0.2303	0.2185	0.2381	0.2955	0.1324	0.6217

Note: * indicates $p < 0.1$, ** indicates $p < 0.05$, *** indicates $p < 0.01$, and t-statistics are in square brackets below the coefficients. Regressions were adjusted for clustering heteroskedasticity at the firm and year levels.

4.5.2. Voluntary and Regulatory Disclosures

At the end of 2008, both Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) issued the Notice on 2008 Annual Reports of Listed Companies, which required the Corporate Governance Committee of SSE, listed companies issuing overseas-listed foreign shares and financial companies, and constituent companies within SZSE 100 Index to disclose social responsibility reports separately. Meanwhile, voluntary disclosure by other listed companies was encouraged. Since then, voluntary and regulatory disclosure of CSR information by listed companies in China has coexisted. This paper further investigates whether there is a difference in the influence of decision rights allocation on the disclosure of group CSR information among the different disclosure attributes.

The empirical results in column (6) of Table 7 indicate that in the voluntary disclosure sample, the coefficient of Cen is 0.0401, which is significantly positive at the 1% level, suggesting that centralized decision making is beneficial for groups that voluntarily disclose to publish more CSR information. In contrast, the coefficient of Cen is not significant in the regulatory disclosure column (7). A possible explanation for this result is that voluntary disclosure of CSR information has uncertain payoffs in terms of costs associated with coordination and communication behaviors [100] and sunk costs related to identifying and addressing salient social issues [101]. At this point, decision centralization is more favorable to disclose more social responsibility information for the overall group interest. In contrast, the motivation for regulatory disclosure comes more from external regulatory pressures and is less influenced by internal group governance pressures.

5. Conclusions

Our research examines the association between the decision rights allocation and CSR disclosure by corporate groups. It further investigates whether organizational complexity, i.e., the number of group subsidiaries, has a heterogeneous impact. Our findings demonstrate that the concentration of decision rights in the parent company promotes group CSR disclosure. In addition to this, we find that the positive impact of decision centralization on CSR disclosure is more substantial in groups with a large number of subsidiaries. The mechanism test found that the parent company's centralized management promotes group social responsibility disclosure by optimizing the internal capital market allocation and reducing rent-seeking by subsidiaries. The overall reputation of the group also plays an intermediary role. Further tests found that the impact of centralization on CSR disclosure differs from dimensions, decreasing disclosure on "Social Contribution" but increasing disclosure on "Shareholder Responsibility", "Employee Responsibility", "Supplier, Customer, and Consumer Responsibility", and "Environmental Responsibility". The impact varies by disclosure attribute, with centralized management inducing more disclosure in groups that disclose voluntarily but with no significant effect on regulatory disclosures.

Our findings have many policy implications. First, the findings extend the prior literature focusing on CSR in business groups in that we focus on the effects of the allocation of decision rights on group CSR disclosure. Previous empirical studies have examined the impact of parent company equity allocation (equity concentration) on group CSR disclosure, ignoring the direct effects of parent company decision-making control; this paper fills a gap in recent research and stimulates exploration in CSR disclosure by business groups. Second, our empirical results provide insight into the CSR performance of large groups. The findings suggest that groups with many subsidiaries, where the parent company's control over decision-making enhances organizational coordination, will improve CSR disclosure more. This indicates that appropriate centralization can strengthen the quality of group disclosures when the organization's size increases. Third, this study has practical implications. Using the proportion of parent company payout as a measure of decision rights concentration, this paper finds that parent company control over payout may reflect control over crucial personnel power and can more directly influence subsidiaries' social responsibility disclosure decisions; therefore, greater parent company control over payout in large business groups may be one way to mitigate the divergence of subsidiaries' goals. Fourth, the study finds that the centralized management of parent companies reduces CSR performance in social welfare, suggesting that CSR performance in social welfare, such as public donations and tax payments, needs to be urged by external pressure from the government.

However, there are certain limitations to this study. It is important to note that our decision rights allocation variables only consider the ratio of compensation payments but do not examine cross-employment and direct assignment. Parent company decision rights also include financial and operational aspects, which we have not included in our discussion due to space limitations. However, this would be an interesting line of research. In addition, we only considered the group's heterogeneity in terms of the number of subsidiaries but not the differences in diversification. The complexity of business distribution also affects the difficulty of parent company coordination, which may have a more profound impact on CSR activities.

Future research could also focus on a few specific areas. Future research could consider constructing parent company personnel empowerment as a centralizing variable to test the impact of managerial vertical linkages on CSR disclosure. Finally, different typologies of enterprise groups, such as pyramid structures, should be discussed in an expanded manner. What would be interesting is to see the possible moderating role of the number of listed members in a pyramid group in the relationship between decision rights allocation to ultimate stakeholders and CSR disclosure.

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Appendix A

Table A1. Hexun Corporate Social Responsibility Score Index System.

I Indicators	II Indicators	III Indicators
Shareholder Responsibility (30%)	Profitability (10%)	Return on Net Assets (2%)
		Return on Total Assets (2%)
		Profit margin from main business (2%)
	Solvency (3%)	Cost Margin (1%)
		Earnings per share (2%)
		Unallocated earnings per share (1%)
Returns (8%)	Quick Ratio (0.5%)	
	Current Ratio (0.5%)	
	Cash Ratio (0.5%)	
Penalty (5%)	Shareholder equity ratio (0.5%)	
	Debt ratio (1%)	
	Dividend financing ratio (2%)	
Innovation (4%)	Dividend yield (3%)	
	Dividend to distributable profit ratio (3%)	
	The number of times the exchange has punished the company and relevant responsible persons (5%)	
Employee Responsibility (15%)	Performance (5%)	Product development spending (1%)
		Technological Innovation Concept (1%)
	Security (5%)	Number of technological innovation projects (2%)
Caring for employees (5%)		Revenue per employee (4%)
	Supplier, Customer and Consumer Rights Responsibilities (15%)	Product Quality (7%)
Quality Management Awareness (3%)		
After-sales service (3%)		Quality Management System Certificate (4%)
	Integrity and Reciprocity (5%)	Customer Satisfaction Survey (3%)
Security (5%)		Supplier Fair Play (3%)
	Caring for employees (5%)	Anti-bribery training (2%)
Consolation Awareness (1%)		
	Consolers (2%)	
Consolation money (2%)		

Table A1. Cont.

I Indicators	II Indicators	III Indicators
Environmental Responsibility (20%)	Environmental Governance (20%)	Environmental Awareness (2%) Environmental Management System Certification (3%) Amount of environmental investment (5%) Number of discharge types (5%) Number of energy saving types (5%)
Social Contribution (20%)	Contribution Value (20%)	Income tax to total profit ratio (10%) Amount of public donations (10%)

Note: Percentages in parentheses represent weights. Data from www.hexun.com (accessed on 30 December 2020).

Appendix B

Table A2. Reputation evaluation index system.

No.	Primary Indicators	Secondary Indicators
1	Consumer and social perspectives	Total assets, revenue from main business, net profit, return on total assets, market share of revenue from main business
2	Creditor perspective	Debt ratio, current ratio, long-term debt ratio
3	Shareholder perspective	Earnings per share, dividends per share, attendance at shareholders' meetings, whether audited by a Big 4 accounting firm
4	Corporate perspective	Board Size
5	Reputation Building	Natural logarithm of net intangible assets

References

- Perez-Lopez, D.; Moreno-Romero, A.; Barkemeyer, R. Exploring the Relationship between Sustainability Reporting and Sustainability Management Practices. *Bus. Strategy Environ.* **2015**, *24*, 720–734. [[CrossRef](#)]
- Khanna, T.; Yafeh, Y. Business groups in emerging markets: Paragons or parasites? *J. Econ. Lit.* **2007**, *45*, 331–372. [[CrossRef](#)]
- Elango, B.; Pattnaik, C.; Wieland, J.R. Do business group characteristics matter? An exploration on the drivers of performance variation. *J. Bus. Res.* **2016**, *69*, 3205–3212. [[CrossRef](#)]
- Dou, H.; Li, A.; Luo, Y. Innovation in Business Groups: Evidence from China. *Emerg. Mark. Financ. Trade* **2021**, *57*, 2503–2513. [[CrossRef](#)]
- Kurniasari, W.; Wibowo, B.J.; Prapti, M.S. Relationship Between Good Corporate Governance and Social Responsibility Disclosure. In Proceedings of the 2nd International Research Conference on Business and Economics (IRCBE), Semarang, Indonesia, 3–4 August 2016; pp. 7046–7049.
- Khan, A.; Muttakin, M.B.; Siddiqui, J. Corporate Governance and Corporate Social Responsibility Disclosures: Evidence from an Emerging Economy. *J. Bus. Ethics* **2013**, *114*, 207–223. [[CrossRef](#)]
- Husted, B.W.; de Sousa-Filho, J.M. Board structure and environmental, social, and governance disclosure in Latin America. *J. Bus. Res.* **2019**, *102*, 220–227. [[CrossRef](#)]
- Mitchell, C.G.; Hill, T. Corporate Social and Environmental Reporting and the Impact of Internal Environmental Policy in South Africa. *Corp. Soc. Responsib. Environ. Manag.* **2009**, *16*, 48–60. [[CrossRef](#)]
- Ararat, M.; Colpan, A.M.; Matten, D. Business Groups and Corporate Responsibility for the Public Good. *J. Bus. Ethics* **2018**, *153*, 911–929. [[CrossRef](#)]
- Liakh, O.; Spigarelli, F. Managing Corporate Sustainability and Responsibility Efficiently: A Review of Existing Literature on Business Groups and Networks. *Sustainability* **2020**, *12*, 7722. [[CrossRef](#)]
- Kim, W.S.; Oh, S. Corporate social responsibility, business groups and financial performance: A study of listed Indian firms. *Econ. Res.-Ekon. Istraz.* **2019**, *32*, 1777–1793. [[CrossRef](#)]
- Guo, M.; He, L.; Zhong, L. Business groups and corporate social responsibility: Evidence from China. *Emerg. Mark. Rev.* **2018**, *37*, 83–97. [[CrossRef](#)]
- Choi, Y.K.; Han, S.H.; Kwon, Y. CSR activities and internal capital markets: Evidence from Korean business groups. *Pac.-Basin Financ. J.* **2019**, *55*, 283–298. [[CrossRef](#)]
- Huang, X.; Jiang, X.L.; Liu, W.; Chen, Q. Business Group-Affiliation and Corporate Social Responsibility: Evidence from Listed Companies in China. *Sustainability* **2021**, *13*, 2110. [[CrossRef](#)]
- Lee, W.J. Group-affiliated Firms and Corporate Social Responsibility Activities. *J. Asian Financ. Econ. Bus.* **2018**, *5*, 127–133.

16. Choi, J.J.; Jo, H.; Kim, J.; Kim, M.S. Business Groups and Corporate Social Responsibility. *J. Bus. Ethics* **2018**, *153*, 931–954. [[CrossRef](#)]
17. Cuervo-Cazurra, A. The Evolution of Business Groups' Corporate Social Responsibility. *J. Bus. Ethics* **2018**, *153*, 997–1016. [[CrossRef](#)]
18. Andres Correa-Garcia, J.; Antonia Garcia-Benau, M.; Garcia-Meca, E. Corporate governance and its implications for sustainability reporting quality in Latin American business groups. *J. Clean. Prod.* **2020**, *260*, 121142. [[CrossRef](#)]
19. Meyer, M.W.; Lu, X. Managing Indefinite Boundaries: The Strategy and Structure of a Chinese Business Firm. *Manag. Organ. Rev.* **2004**, *1*, 57–86. [[CrossRef](#)]
20. Johnson, J.L.; Cullen, J.B.; Sakano, T.; Bronson, J.W. Drivers and outcomes of parent company intervention in IJV management: A cross-cultural comparison. *J. Bus. Res.* **2001**, *52*, 35–49. [[CrossRef](#)]
21. Griffin, J.J.; Youm, Y.N. Voluntarily Disclosing Prosocial Behaviors in Korean Firms. *J. Bus. Ethics* **2018**, *153*, 1017–1030. [[CrossRef](#)]
22. Lee, J.-H.; Gaur, A.S. Managing multi-business firms: A comparison between Korean chaebols and diversified U.S. firms. *J. World Bus.* **2013**, *48*, 443–454. [[CrossRef](#)]
23. Terlaak, A.; Kim, S.; Roh, T. Not Good, Not Bad: The Effect of Family Control on Environmental Performance Disclosure by Business Group Firms. *J. Bus. Ethics* **2018**, *153*, 977–996. [[CrossRef](#)]
24. Liu, Y.; Luo, T.; Yue, H. Allocation of Decision Rights Between the Parent Company and Its Subsidiaries. *J. Account. Audit. Financ.* **2018**, *33*, 355–381. [[CrossRef](#)]
25. Belenzon, S.; Hashai, N.; Patacconi, A. The architecture of attention: Group structure and subsidiary autonomy. *Strateg. Manag. J.* **2019**, *40*, 1610–1643. [[CrossRef](#)]
26. Sengul, M.; Gimeno, J. Constrained Delegation: Limiting Subsidiaries' Decision Rights and Resources in Firms That Compete across Multiple Industries. *Adm. Sci. Q.* **2013**, *58*, 420–471. [[CrossRef](#)]
27. Hoenen, A.K.; Kostova, T. Utilizing the broader agency perspective for studying headquarters-subsidiary relations in multinational companies. *J. Int. Bus. Stud.* **2015**, *46*, 104–113. [[CrossRef](#)]
28. Arnbos, B.; Kunisch, S.; Leicht-Deobald, U.; Steinberg, A.S. Unravelling agency relations inside the MNC: The roles of socialization, goal conflicts and second principals in headquarters-subsidiary relationships. *J. World Bus.* **2019**, *54*, 67–81. [[CrossRef](#)]
29. Bloom, N.; Sadun, R.; Van Reenen, J. The Organization of Firms Across Countries. *Q. J. Econ.* **2012**, *127*, 1663–1705. [[CrossRef](#)]
30. Dessein, W. Authority and communication in organizations. *Rev. Econ. Stud.* **2002**, *69*, 811–838. [[CrossRef](#)]
31. Kostova, T.; Nell, P.C.; Hoenen, A.K. Understanding Agency Problems in Headquarters-Subsidiary Relationships in Multinational Corporations: A Contextualized Model. *J. Manag.* **2018**, *44*, 2611–2637. [[CrossRef](#)]
32. Hart, O.; Moore, J. On the Design of Hierarchies: Coordination versus Specialization. *J. Political Econ.* **2005**, *113*, 675–702. [[CrossRef](#)]
33. Hart, O.; Holmstrom, B. A Theory of Firm Scope. *Q. J. Econ.* **2010**, *125*, 483–513. [[CrossRef](#)]
34. Axjonow, A.; Ernstberger, J.; Pott, C. The Impact of Corporate Social Responsibility Disclosure on Corporate Reputation: A Non-professional Stakeholder Perspective. *J. Bus. Ethics* **2018**, *151*, 429–450. [[CrossRef](#)]
35. Shiu, Y.M.; Yang, S.L. Does Engagement in Corporate Social Responsibility Provide Strategic Insurance-Like Effects? *Strateg. Manag. J.* **2017**, *38*, 455–470. [[CrossRef](#)]
36. George, R.; Kabir, R. Business groups and profit redistribution: A boon or bane for firms? *J. Bus. Res.* **2008**, *61*, 1004–1014. [[CrossRef](#)]
37. Goold, M.; Campbell, A.; Alexander, M. Corporate strategy and parenting theory. *Long Range Plann.* **1998**, *31*, 308–314. [[CrossRef](#)]
38. Katayama, H.; Meagher, K.J.; Wait, A. Authority and communication in firms. *J. Econ. Behav. Organ.* **2018**, *155*, 315–348. [[CrossRef](#)]
39. Scharfstein, D.S.; Stein, J.C. The dark side of internal capital markets: Divisional rent-seeking and inefficient investment. *J. Financ.* **2000**, *55*, 2537–2564. [[CrossRef](#)]
40. Johnston, S.; Menguc, B. Subsidiary size and the level of subsidiary autonomy in multinational corporations: A quadratic model investigation of Australian subsidiaries. *J. Int. Bus. Stud.* **2007**, *38*, 787–801. [[CrossRef](#)]
41. Duchin, R. Cash Holdings and Corporate Diversification. *J. Finance* **2010**, *65*, 955–992. [[CrossRef](#)]
42. Tong, Z. Firm diversification and the value of corporate cash holdings. *J. Corp. Financ.* **2011**, *17*, 741–758. [[CrossRef](#)]
43. Gao, W.; Chou, J. Innovation efficiency, global diversification, and firm value. *J. Corp. Financ.* **2015**, *30*, 278–298. [[CrossRef](#)]
44. Correa-Garcia, J.-A.; Garcia-Benau, M.-A.; Garcia-Meca, E. CSR Communication Strategies of Colombian Business Groups: An Analysis of Corporate Reports. *Sustainability* **2018**, *10*, 1602. [[CrossRef](#)]
45. Pattnaik, C.; Chang, J.J.; Shin, H.H. Business groups and corporate transparency in emerging markets: Empirical evidence from India. *Asia Pac. J. Manag.* **2013**, *30*, 987–1004. [[CrossRef](#)]
46. Xu, P.; Meng, D.; Bai, G.; Song, L. Performance Pressure of Listed Companies and Environmental Information Disclosure: An Empirical Research on Chinese Enterprise Groups. *Pol. J. Environ. Stud.* **2021**, *30*, 4789–4800. [[CrossRef](#)]
47. Ray, S.; Chaudhuri, B.R. Business Group Affiliation and Corporate Sustainability Strategies of Firms: An Investigation of Firms in India. *J. Bus. Ethics* **2018**, *153*, 955–976. [[CrossRef](#)]
48. Pan, Y.; Zhu, K.; Chen, X. Decision rights allocation and firm value: Empirical evidence based on business group. *Manag. World* **2018**, *12*, 111–119.
49. Lou, Z.; Zhu, M. Decision rights allocation and innovation: Evidence from China's listed business groups. *Financ. Res. Lett.* **2021**, *39*, 101572. [[CrossRef](#)]

50. Dass, N.; Nanda, V.; Wang, Q. Allocation of decision rights and the investment strategy of mutual funds. *J. Finan. Econ.* **2013**, *110*, 254–277. [[CrossRef](#)]
51. Cuervo-Cazurra, A.; Mudambi, R.; Pedersen, T. Subsidiary power: Loaned or owned? The lenses of agency theory and resource dependence theory. *Glob. Strategy J.* **2019**, *9*, 491–501. [[CrossRef](#)]
52. Jensen, M.C.; Meckling, W.H. *Specific and General Knowledge, and Organizational Structure*; Myers, P.S., Ed.; Basil Blackwell: Oxford, UK, 1992; pp. 251–274.
53. Kastl, J.; Martimort, D.; Piccolo, S. Delegation, Ownership Concentration and R&D Spending: Evidence From Italy. *J. Ind. Econ.* **2013**, *61*, 84–107. [[CrossRef](#)]
54. Zhang, H.; Lu, Z.; Zhang, R.; Jiang, G. Insider Ownership, Subsidiary Cash Holdings, and Economic Consequences: Evidence from Listed Chinese Companies. *Emerg. Mark. Financ. Trade* **2015**, *51*, S174–S195. [[CrossRef](#)]
55. Ozbas, O.; Scharfstein, D.S. Evidence on the Dark Side of Internal Capital Markets. *Rev. Financ. Stud.* **2010**, *23*, 581–599. [[CrossRef](#)]
56. Aghion, P.; Tirole, J. Formal and real authority in organizations. *J. Polit. Econ.* **1997**, *105*, 1–29. [[CrossRef](#)]
57. Colombo, M.G.; Delmastro, M. Delegation of authority in business organizations: An empirical test. *J. Ind. Econ.* **2004**, *52*, 53–80. [[CrossRef](#)]
58. Romme, A.G.L. Unanimity rule and organizational decision making: A simulation model. *Organ. Sci.* **2004**, *15*, 704–718. [[CrossRef](#)]
59. Consuelo Pucheta-Martinez, M.; Lopez-Zamora, B. Corporate Social Responsibility Strategies of Spanish Listed Firms and Controlling Shareholders' Representatives. *Organ. Environ.* **2018**, *31*, 339–359. [[CrossRef](#)]
60. Ludwig, P.; Sassen, R. Which internal corporate governance mechanisms drive corporate sustainability? *J. Environ. Manag.* **2022**, *301*, 113780. [[CrossRef](#)]
61. Gerged, A.M. Factors affecting corporate environmental disclosure in emerging markets: The role of corporate governance structures. *Bus. Strateg. Environ.* **2021**, *30*, 609–629. [[CrossRef](#)]
62. Li, M.; Cao, Y.; Lu, M.; Wang, H. Political uncertainty and allocation of decision rights among business groups: Evidence from the replacement of municipal officials. *Pac.-Basin Financ. J.* **2021**, *67*, 101541. [[CrossRef](#)]
63. Feldman, E.R. The corporate parenting advantage, revisited. *Strateg. Manag. J.* **2021**, *42*, 114–143. [[CrossRef](#)]
64. Glaser, M.; Lopez-de-Silanes, F.; Sautner, Z. Opening the Black Box: Internal Capital Markets and Managerial Power. *J. Financ.* **2013**, *68*, 1577–1631. [[CrossRef](#)]
65. Chauhan, Y.; Kumar, S.B. Do investors value the nonfinancial disclosure in emerging markets? *Emerg. Mark. Rev.* **2018**, *37*, 32–46. [[CrossRef](#)]
66. Masulis, R.W.; Pham, P.K.; Zein, J. Family Business Group Expansion Through IPOs: The Role of Internal Capital Markets in Financing Growth While Preserving Control. *Manag. Sci.* **2020**, *66*, 5191–5215. [[CrossRef](#)]
67. Dhaliwal, D.S.; Li, O.Z.; Tsang, A.; Yang, Y.G. Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting. *Acc. Rev.* **2011**, *86*, 59–100. [[CrossRef](#)]
68. Griffin, P.A.; Sun, Y. Going green: Market reaction to CSRwire news releases. *J. Account. Public Policy* **2013**, *32*, 93–113. [[CrossRef](#)]
69. Zhang, L.; Shan, Y.G.; Chang, M. Can CSR Disclosure Protect Firm Reputation During Financial Restatements? *J. Bus. Ethics* **2021**, *173*, 157–184. [[CrossRef](#)]
70. Martinez-Ferrero, J.; Banerjee, S.; Maria Garcia-Sanchez, I. Corporate Social Responsibility as a Strategic Shield Against Costs of Earnings Management Practices. *J. Bus. Ethics* **2016**, *133*, 305–324. [[CrossRef](#)]
71. Zhou, N.; Wang, H. Foreign subsidiary CSR as a buffer against parent firm reputation risk. *J. Int. Bus. Stud.* **2020**, *51*, 1256–1282. [[CrossRef](#)]
72. Kim, H.; Hoskisson, R.E.; Wan, W.P. Power dependence, diversification strategy, and performance in keiretsu member firms. *Strateg. Manag. J.* **2004**, *25*, 613–636. [[CrossRef](#)]
73. Belenzon, S.; Tzolmon, U. Market frictions and the competitive advantage of internal labor markets. *Strateg. Manag. J.* **2016**, *37*, 1280–1303. [[CrossRef](#)]
74. Mintzberg, H.; Waters, J.A. Tracking strategy in an entrepreneurial firm. *Acad. Manag. J.* **1982**, *25*, 465–499. [[CrossRef](#)]
75. Brammer, S.; Pavelin, S. Voluntary Environmental Disclosures by Large UK Companies. *J. Bus. Financ. Account.* **2006**, *33*, 1168–1188. [[CrossRef](#)]
76. Qiu, Y.; Shaikat, A.; Tharyan, R. Environmental and social disclosures: Link with corporate financial performance. *Br. Account. Rev.* **2016**, *48*, 102–116. [[CrossRef](#)]
77. Dewaelheyns, N.; Van Hulle, C. Corporate failure prediction modeling: Distorted by business groups' internal capital markets? *J. Bus. Financ. Account.* **2006**, *33*, 909–931. [[CrossRef](#)]
78. Mudambi, R.; Navarra, P. Is knowledge power? Knowledge flows, subsidiary power and rent-seeking within MNCs. *J. Int. Bus. Stud.* **2004**, *35*, 385–406. [[CrossRef](#)]
79. Chung, H.-M.; Dahms, S.; Kao, P.T. Emerging Market Multinational Family Business Groups and the Use of Family Managers in Foreign Subsidiaries. *Manag. Int. Rev.* **2021**, *61*, 57–89. [[CrossRef](#)]
80. Mio, C.; Venturelli, A.; Leopizzi, R. Management by objectives and corporate social responsibility disclosure First results from Italy. *Account. Audit. Account. J.* **2015**, *28*, 325–364. [[CrossRef](#)]
81. Enguix, L.P. The New EU Remuneration Policy as Good but Not Desired Corporate Governance Mechanism and the Role of CSR Disclosing. *Sustainability* **2021**, *13*, 5476.

82. Marquis, C.; Qian, C. Corporate Social Responsibility Reporting in China: Symbol or Substance? *Organ. Sci.* **2014**, *25*, 127–148. [[CrossRef](#)]
83. Lau, C.; Lu, Y.; Liang, Q. Corporate Social Responsibility in China: A Corporate Governance Approach. *J. Bus. Ethics* **2016**, *136*, 73–87. [[CrossRef](#)]
84. Gamerschlag, R.; Moeller, K.; Verbeeten, F. Determinants of voluntary CSR disclosure: Empirical evidence from Germany. *Rev. Manag. Sci.* **2011**, *5*, 233–262. [[CrossRef](#)]
85. Chan, M.C.; Watson, J.; Woodliff, D. Corporate Governance Quality and CSR Disclosures. *J. Bus. Ethics* **2014**, *125*, 59–73. [[CrossRef](#)]
86. Arenas-Parra, M.; Alvarez-Otero, S. CSR Disclosure: The IPO Case. *Sustainability* **2020**, *12*, 4390. [[CrossRef](#)]
87. Cabral, C.; Sasidharan, A. Do regulatory mechanisms affect corporate social performance? Evidence from emerging economies. *J. Clean. Prod.* **2021**, *326*, 129383. [[CrossRef](#)]
88. Hu, J.; Wang, S.; Xie, F. Environmental responsibility, market valuation, and firm characteristics: Evidence from China. *Corp. Soc. Responsib. Environ. Manag.* **2018**, *25*, 1376–1387. [[CrossRef](#)]
89. Shan, Y.; Tang, Q.; Zhang, J. The impact of managerial ownership on carbon transparency: Australian evidence. *J. Clean. Prod.* **2021**, *317*, 128480. [[CrossRef](#)]
90. Petersen, M.A. Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches. *Rev. Financ. Stud.* **2009**, *22*, 435–480. [[CrossRef](#)]
91. Porter, M.E. From Competitive Advantage to Corporate-Strategy. *Harv. Bus. Rev.* **1987**, *65*, 43–59.
92. Huber, G.P.; Miller, C.C.; Glick, W.H. Developing More Encompassing Theories about Organizations: The Centralization-Effectiveness Relationship as an Example. *Organ. Sci.* **1990**, *1*, 11–40. [[CrossRef](#)]
93. Davis, J.H.; Schoorman, F.D.; Donaldson, L. Toward a stewardship theory of management. *Acad. Manage. Rev.* **1997**, *22*, 20–47. [[CrossRef](#)]
94. McDowell, A. From the help desk: Seemingly unrelated regression with unbalanced equations. *Stata J.* **2004**, *4*, 442–448. [[CrossRef](#)]
95. Firpo, S.; Pinto, C. Identification and Estimation of Distributional Impacts of Interventions Using Changes in Inequality Measures. *J. Appl. Econom.* **2016**, *31*, 457–486. [[CrossRef](#)]
96. Alchian, A.A.; Demsetz, H. Production, information costs, and economic organization. *Amer. Econ. Rev.* **1972**, *62*, 777–795.
97. Becker, G.S.; Murphy, K.M. The Division-Of-Labor, Coordination Costs and Knowledge. *Quart. J. Econ.* **1992**, *107*, 1137–1160. [[CrossRef](#)]
98. Shin, H.H.; Stulz, R.M. Are internal capital markets efficient? *Quart. J. Econ.* **1998**, *113*, 531–552. [[CrossRef](#)]
99. Cai, H.B.; Fang, H.M.; Xu, L.C. Eat, Drink, Firms, Government: An Investigation of Corruption from the Entertainment and Travel Costs of Chinese Firms. *J. Law Econ.* **2011**, *54*, 55–78. [[CrossRef](#)]
100. Russo, M.V. Explaining the Impact of ISO 14001 on Emission Performance: A Dynamic Capabilities Perspective on Process and Learning. *Bus. Strateg. Environ.* **2009**, *18*, 307–319. [[CrossRef](#)]
101. Bundy, J.; Pfarrer, M.D. A burden of responsibility: The role of social approval at the onset of a crisis. *Acad. Manage. Rev.* **2015**, *40*, 345–369. [[CrossRef](#)]