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Article

Dynamic Capability and Strategic Corporate Social Responsibility Adoption: Evidence from China

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Abstract: An increasing number of studies have proposed that corporate social responsibility (CSR) performance depends on how companies apply their resources and capabilities to implement CSR. A firm's ability to integrate, build, and reconfigure internal and external competencies to respond to environmental changes is its dynamic capability. Implementation of CSR at the strategic level will contribute to a firm's sustainability. However, the research on strategic CSR is incipient. This study explores possible mechanisms to investigate how dynamic capability influences the performance of strategic CSR in China. By analyzing 134 Chinese listed companies in the period 2017–2019, in this study, we found that firms with a high level of dynamic capability were less likely to adopt strategic CSR practices, and had a low strategic CSR adoption performance. The results confirmed the loss aversion channel, indicating that firms with a high dynamic capability level were loss averse and that managers had a decreasing sensibility in decision-making and allocated fewer company resources in CSR projects. These results can help companies to better understand the dynamic capability and how dynamic capability contributes to the adoption of strategic CSR and performance over time. The policy implications of the study are also discussed.

Keywords: dynamic capability; strategic corporate social responsibility (SCSR) adoption; corporate social responsibility (CSR); sustainable development; China

1. Introduction

Companies have a responsibility to react and respond dynamically to changes in the economy, environment, and society. This dynamic capability allows companies to use and allocate resources appropriately; the aim of this study is to examine how the dynamic capability of companies is related to their corporate social responsibility (CSR) performance based on their strategic business goals. Extant literature suggests that dynamic capability contributes to the adoption of strategic CSR (SCSR) [1,2]. For example, Essid and Berland used case studies of eight large French firms to analyze the dynamic capabilities of adopting environmental management tools [2]. They found that dynamic capabilities could be operationalized to adopt environmental management tools by internal and external antecedents. For instance, accumulated knowledge is an internal antecedent to reconfiguring capabilities since accumulated knowledge helps firms to quickly absorb and develop new knowledge. Lin et al. also reached similar results in a Chinese context [3]. They surveyed 264 Chinese firms to investigate the dynamic capabilities' influence on the innovation process stages. They found a positive relationship between the dynamic capabilities and the innovation process stages, from initiation to implementation. For example, absorptive capability positively affected the whole process of innovation because the absorptive capacity may enable a firm to begin management innovation by taking in new information efficiently and acquiring and assimilating knowledge. Consequently, knowledge transformation can help the firm to integrate innovations with firm resources [3].

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China is a unique case for CSR adoption research since China suffers from various severe CSR issues, such as air pollution and bribery. Extant Chinese companies lack a recognition of the importance of incorporating CSR practices in strategy. In this paper we hope to demonstrate that dynamic capability is important for companies to achieve their CSR goals, using a sample of listed companies from two Chinese stock exchanges from 2017 to 2019.

Firms perform CSR activities for many benefits, such as showing a good company image to the stakeholders for more investments and more stable stakeholder relationships [4]. Therefore, firms must consider CSR issues and concerns when doing business and incorporate CSR concerns and practices into their operational strategies (i.e., adopt SCSR practices). Although these concepts had been previously studied separately or combined, there was a lack of in-depth analysis of the possible mechanisms between dynamic capability and SCSR. Therefore, there was a gap in how dynamic capability functions on SCSR adoption and performance.

In this paper, we argue that the dynamic capability is an important factor of SCSR adoption. However, the dynamic capability negatively affects the SCSR adoption and performance. We found that a high level of dynamic capability was negatively related to SCSR adoption and performance, although the relationship was not significant. In other words, firms with a high level of dynamic capability were less likely to adopt SCSR practices, and they had a low SCSR adoption performance. This finding supports the prospect theory that people make decisions with decreasing sensibility and loss aversion [4]. The results confirm the loss aversion channel in that firms with a high dynamic capability level were loss averse. Therefore, managers allocated fewer company resources to CSR projects and were less likely to adopt SCSR and, thus, had low SCSR performance. We found that firms with an industrial level of dynamic capability were more likely to incorporate CSR practices into strategies and have a high SCSR performance. These study findings provide an insightful explanation and a mechanism for the negative relationship between dynamic capability and SCSR adoption and performance.

This study has several significant contributions to knowledge in the field of CSR and corporate governance. First, this research makes a theoretical contribution to applying the prospect theory to the research scope of dynamic capability and CSR. Second, this study contributes to the empirical literature of CSR in the context of China. China is a unique case for CSR adoption research since China suffers from various severe CSR issues, such as air pollution and bribery. Extant Chinese companies lack recognition of the importance of incorporating CSR practices in strategies. Therefore, this study raises firms' attention to dynamic capability and SCSR in that companies may need to design resource allocation strategies and evaluate their future CSR and management practices in an early stage. This study is the first to empirically construct dynamic capability measures and prove that dynamic capability is an essential factor of SCSR adoption and performance. The research extends the CSR literature by suggesting that researchers consider the dynamic capability in CSR research. This study offers important insights into practical implications.

Our study has several practical implications for firms and managers. First, the findings may help firms to better understand manager attitudes toward risks and losses when making resource allocation decisions [5]. Firms could focus on financial investments with high returns rather than spending time and money that are greater than the industry average level on incorporating CSR into strategies. There is a need to integrate company resources and financial focus within and over departmental and company levels.

The article is structured in different sections. In Section 2, we discuss the CSR and dynamic capability literature and presents the theoretical framework; in Section 3, we include the study's methodology. In Section 4, we show the baseline regression results and robustness test results. The last section, the Conclusion, includes implications for managers, limitations, and future research.

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2. Literature Review and Hypotheses Development

2.1. CSR in China

There has been an increase in CSR research interest in developing countries over the years [6], due to three main reasons [7]. First, developing countries have more than 80% of the total world population and dominate almost 50% of the world's GDP, forming a large market in the global view. Such a market with a large potential provides many investment opportunities, resulting in the fast growth of developing countries. Second, developing countries have generally low/medium income and human development, resulting in widespread CSR-related issues and crises in developing countries due to globalization and fast economic growth; third, CSR practices are in an infant stage in developing countries, and so there is a need to call for more research into CSR issues [8–11].

The adoption of CSR is influenced by China's economic environment and institutional pressures within the institutional environment [12]. First, there has been a significant change in China's economic environment from a state-controlled economy to a socialist market [6]. During the transition, companies tended to maximize profit so as to respond to intense competition. Therefore, firms focused on financial performance instead of CSR behaviors [6]. Second, there has been a significant change in China's institutional environment [6]. On the one hand, the Chinese government promoted CSR practices to gain social legitimacy [4]. For example, Wenzhou city in Zhejiang province created China's first CSR evaluation system for private companies [13].

On the other hand, Chinese companies are learning CSR initiatives and implementations. In particular, in China, managers and business leaders with a sense of CSR integrate CSR initiatives into daily operations to obtain a potential competitive advantage [14]. Therefore, researchers must explore CSR initiatives in China's context because China has a large market with under-developed CSR systems [6,15].

2.2. Strategic Corporate Social Responsibility

The literature on CSR has stressed the lack of consensus in defining CSR [16,17]. CSR's conceptual vagueness, the inherently normative feature of the CSR literature, and the halt in the literature's development by the continuous introduction of new concepts related to CSR has led to a lack of CSR concepts [18].

Traditionally, a company's social responsibilities should include economic responsibility that maximizes the shareholders' wealth and has legal, ethical, and discretionary responsibilities [19]. However, developing countries, such as China, have different rankings and priorities of CSR components [17]. Visser proposed a new ranking pyramid for developing countries [11]. Specifically, with economic responsibility first and philanthropic responsibility second, followed by legal and ethical responsibilities. The ranking is different from Carroll's pyramid, since CSR is commonly related to charity or philanthropy in developing countries [11].

This conclusion is further supported in China's context by two possible explanations [6]. One reason is that the institutional environment in transitional China leads to imperfect market and legal systems. Hence, "stockholder interest" and "legal compliance" are rarely considered in Chinese CSR by Chinese companies, although they exist. Hence, many problems, such as the lack of procedural protection of legitimate rights, result in weak legal enforcement and civic accountability [20,21]. Another explanation lies in the influence of ethical leadership. The most typical cultural tradition in China is the Confucian culture, which is concerned with Ren and Li, meaning benevolence, philanthropy, humaneness, and social rules and norms [6]. Confucian culture has been abided by many Chinese business leaders and is a substitute for ethics [22].

Chandler defines CSR as a responsibility of firms to satisfy the interests of stakeholders and a responsibility of stakeholders to hold firms accountable for their actions [23]. Consistent with CSR definitions reviewed by other scholars [16,17], CSR's scope includes the relationship between companies and society. Inherently, CSR covers the responsibilities of both companies and stakeholders over time and at different levels. In

sum, this study is consistent with the prior literature [6,11] in that corporate social responsibilities include ethical, legal, philanthropic, and economic responsibilities.

Lantos [24] classified CSR into three types by purpose and nature; these include moral, altruistic, and strategic CSR. Moral CSR is carried out due to moral norms, whereas altruistic CSR is carried out by the firms since they want to be good citizens and benefit society without concern for their financial returns [24]. By comparison, strategic CSR is carried out since the firms want to gain a sustainable competitive advantage for either moral purpose, i.e., no harm or to compensate for harm done to society, or charitable purpose, i.e., contributing to society actively so as to meet social expectations [25]. Vishwanathan et al. [26] further defined strategic CSR as an implementation tool to ensure that the CSR activities of the firm and business operations are aligned and generate social good and financial value [1,27,28].

Through a review of CSR research, we have found three main characteristics of strategic CSR. First, strategic CSR concerns the interests of stakeholders [29]. Since firms' operating activities and the interests of stakeholders affect interactively, it is important to consider the needs of stakeholders when operating firms. Therefore, carrying out strategic CSR is an interactive process since firms need to think about the social responsibility activities to benefit and satisfy stakeholders at a strategic level [29,30].

Second, strategic CSR stresses the coexistence of business and social benefits [26,27,31]. Since strategic CSR incorporates social objectives into business and links social and economic goals in the long term [32], firms need to perform a benefit analysis before making a decision to carry out a CSR initiative [33]. The motivation of strategic CSR is to benefit society and the firm simultaneously, improving the social and firm value and achieving a win–win situation [27,32]. Therefore, firms conduct strategic CSR to achieve strategic objectives and social objectives for long-term economic benefits [24].

Third, firms integrate strategic CSR into their core operating activities [34–36]. Since strategic CSR lays a foundation for creating and maintaining a sustainable competitive advantage, strategic CSR creates a shared value for the society and the firms [27]. This is important for firms carrying out strategic CSR since combining CSR with business process contributes to a firm's internal value chain activities and improves their external competitiveness [37,38].

2.3. Dynamic Capability

Dynamic capability is considered an important factor affecting firms undertaking strategic CSR [39], where the dynamic capability refers to the higher-level capabilities associated with other resources and capabilities to achieve fitness with the environment [40]. Dynamic capability consists of sensing, seizing, and transforming capabilities. Sensing activities incorporate external information to the internal organizational system, which helps managers identify possible firm problems and new opportunities [40]. The seizing capabilities focus on the responsiveness of the firm system to external opportunities and threats. Transforming capabilities attempt to align the firm system components with each other and with strategies [40]. In sum, these three components of dynamic capability indicate the extent of the firms' behaviors in the value creation and obtainment processes. Dynamic capability creates intangible and valuable assets, such as knowledge that is scarce and difficult to imitate [39]. Therefore, the dynamic capability is vital for creating and maintaining a sustainable competitive advantage in the market.

Dynamic capability can indicate the internal competency for creating and obtaining the respondents' sustainable competitive advantage. Teece defined the dynamic capability as a firm's ability to integrate, build, and reconfigure internal and external competencies to create a long-term competitive advantage [39]. The measures of dynamic capability are often constructed based on this definition. Drawing back to the definition of dynamic capability [39], the creation of sustained competitive advantage is the ultimate goal and outcome of possessing dynamic capability. Hence, in this study we constructed a sustained competitive advantage index to measure dynamic capability. Sustained competitive advantage is a firm's ability to surpass its competitors in the fields of manage-

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ment, production, research and development, technology, branding, and marketing in long-term market competition [41]. Different companies exhibit different competitive situations; unilaterally measuring the competitive situation is too general and cannot fully reflect a company's competitive situation.

In this study we took two steps to construct the sustained competitive advantage index. First, considering that the competitive situation is a market outcome, we calculated the sustained competitive advantage by measuring the operating performance, development capability, and market position [41]. The operating performance indicator can be expressed as the excess of the company's return on equity (ROE), indicating a firm's competitive power; the development capability indicator reflects the company's growth, expressed by the growth rate of a company's operating income; and the market position indicator reflects the product's acceptance in the market, expressed by its market capitalization in the industry [42].

Second, after calculating the three indicators for three consecutive years, we used the principal component analysis method to obtain the annual sustained competitive advantage index for each sample company [41]. Sample companies were classified into three groups by comparing the annual sustained competitive advantage index to the mean of the related industry; these were sustainable competitive advantage companies (higher dynamic capability, HDC), general companies (common dynamic capability, CDC), and companies lacking competitive advantages (lower dynamic capability, LDC) [41]. Specifically, HDC refers to those companies with a competitive situation index higher than the mean of the same industry for three consecutive years, indicating a high level of dynamic capability on average. LDC refers to those companies with a competitive situation index lower than the mean of the same industry for three consecutive years, indicating a lower level of dynamic capability on average. The remaining sample companies were classified as CDC, with an average industrial level of dynamic capability. The dynamic capability (DC) variable takes the values of 1 for HDC, −1 for LDC, and 0 for CDC.

2.4. The Mechanisms of Dynamic Capability on SCSR Adoption

Dynamic capability plays an important role in strategic managerial accounting and strategic CSR practices and performance [5]. Understanding the dynamic capability and its impacts could provide more information for managers when deciding whether to adopt CSR into strategies and the possible performance [2]. However, there is a lack of empirical evidence to contribute to the effect of dynamic capability on strategic CSR adoption and performance, possibly due to measurement difficulties [43]. We explored possible mechanisms that led the level of dynamic capability for the adoption of SCSR and the resulting SCSR adoption performance. The dynamic capability perspective, stakeholder theory, and prospect theory were used to analyze the adoption of SCSR behaviors and performance results [44]. Based on these theories, we propose three potential channels for the dynamic capability to influence the adoption of SCSR (see Figure 1). These channels are increasing company resources and capabilities, increasing loss aversion, and reducing marginal cost.

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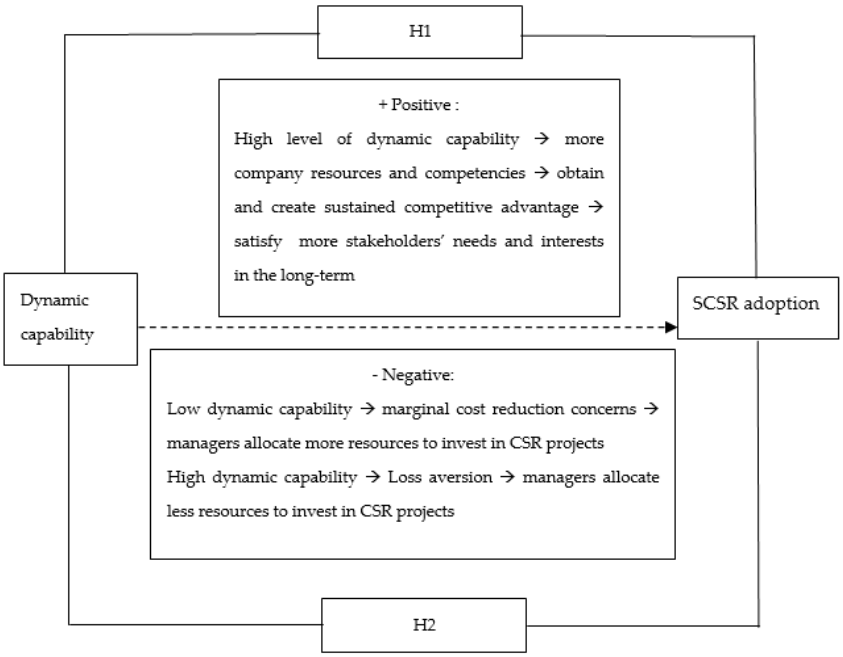

Figure 1. The mechanisms of how dynamic capability influences strategic corporate social responsibility (SCSR) adoption and performance.

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2.4.1. Dynamic Capability Channel

The first channel proposed is derived from the dynamic capability perspective, where the dynamic capability theory (DCT) states that companies need dynamic capabilities, such as public resources, specified resources, organizational and management capability, and innovative capability, to develop a sustained competitive advantage [5,39]. Dynamic capability is a crucial company resource for competency in business strategies and long-term development [39]. This DCT explains the need for companies to adopt SCSR and realize sustainable development in the long term [40]. Specifically, companies purchase public resources to produce goods and acquire knowledge. Specified resources are strategic resources, such as business secrets and patents. Companies require organizational and management capabilities to obtain specified resources. Innovative capability is acquired and integrated by companies to adapt to changing environments. Possessing more resources and better capabilities improves the resource allocation efficiency and results in a long-term competitive advantage [5].

The dynamic capability involves the manager capability and competency, which is necessary to make resource allocation decisions, such as whether and to what extent to incorporate CSR practices into strategies [5]. The dynamic capability has numerous benefits and plays an essential role in adopting management practices [5]. For example, companies with strong dynamic capability can utilize company resources effectively. Managers may make more effective resource allocation decisions related to financial and non-financial projects [5]. Drawing on these dynamic capability benefits, managers may improve their dynamic capability and incorporate CSR practices into business operations. Possessing strong dynamic capabilities can have other benefits that motivate firms to adopt SCSR [32]. For example, having a high level of dynamic capability could help identify unmet social and stakeholders' needs [45] and help attract future opportunities for management decisions [27]. Managers may revise operational strategies accordingly. Therefore, companies with a strong dynamic capability may prefer to incorporate CSR strategies to align with both companies and society and perform better in both financial and non-financial aspects.

The dynamic capability provides a sustainable competitive advantage that helps companies survive in the long term [46]. Such a competitive advantage is one reason that drives companies to develop and implement SCSR practices [47]. Therefore, the higher the level of dynamic capability, the more likely that firms may adopt SCSR and have higher SCSR performance. The possible reason is that firms may want to create and obtain a sustained competitive advantage over time.

In addition to the dynamic capability perspective, this study is based on the stakeholder perspective so as to explain the positive impact of dynamic capability on SCSR adoption and performance. The stakeholder perspective is based on the stakeholder theory, which is widely used in the literature of CSR [44,48].

The stakeholder theory states that companies should act toward the interests of stakeholders, including shareholders, employees, customers, suppliers, the government, and the community [49]. In other words, firms should consider stakeholder interests, although company ownership belongs to the shareholders. The reason is that stakeholders invest in company resources as well. For example, companies obtain human resources and productive forces at the expense of employee work [30]. According to the stakeholder theory, to make employees satisfied, companies could perform CSR activities [49]. An example is incorporating CSR engagements into operations (i.e., SCSR adoption) [32]. For instance, companies could improve the salary and working conditions to make employees satisfied, which could improve the productivity as a result, which is the same business objective as the company.

Possessing a higher level of dynamic capability could enrich company resources and capabilities. Firms could have more resources to invest in CSR projects and incorporate CSR in business strategies, satisfying stakeholders' interests. The reason is that when aligning the interests of both firms and stakeholders, companies may build up dynamic capability. Hence, firms may use the available resources and dynamic capability to create

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a long-term competitive advantage and improved financial performance to meet more stakeholder needs [39].

According to a combination of the dynamic capability perspective and the stakeholder perspective, we propose the first hypothesis.

Hypothesis 1. *Firms with a high level of dynamic capability are more likely to adopt SCSR practices and have better SCSR performance by creating more sustained company resources and competencies.*

2.4.2. Marginal Cost Reduction and Loss Aversion Channels

The second channel proposed is derived from the prospect theory stating that people make decisions (e.g., investments) with decreasing sensibility and loss aversion, where loss aversion refers to making decisions that avoid losses [50]. The maximization of profits is the ultimate goal of companies. Managers may allocate company resources to invest in projects with net gains, since managers attempt to reduce potential loss and increase possible gains to improve profits. Therefore, manager attitudes towards loss and conservatism could affect the role of dynamic capability in the adoption of SCSR.

According to the prospect theory, there may be lower marginal costs of CSR actions and initiatives and more opportunities to synergize the competitive advantages with the rise of CSR levels [50]. Therefore, we expect firms with a low dynamic capability level to be more likely to adopt SCSR. They could use high SCSR performance to reduce the marginal costs of CSR actions.

However, diminishing returns could lead CSR investment costs to increase quickly [51,52]. Managers in a firm with a high level of dynamic capability could be loss averse and more conservative. Firms could prefer financial projects with high returns rather than incorporate CSR into strategies, as the adoption of SCSR could involve more costs and low returns [51,52]. Therefore, we expect firms with a high dynamic capability level to be less likely to adopt SCSR. They could have a low SCSR performance for loss aversion reasons.

Hence, we propose the second hypothesis as follows. We expect firms with a higher level of dynamic capability to have lower SCSR performance due to the cost reduction channel.

Hypothesis 2a. *Firms with a low level of dynamic capability are more likely to adopt SCSR practices. They have high SCSR performance through marginal cost reduction channels.*

Hypothesis 2b. *Firms with a high level of dynamic capability are less likely to adopt SCSR practices and have low SCSR performance due to loss aversion.*

3. Data and Research Methodology

3.1. Sample and Data

To explore the impact of dynamic capability on the adoption of SCSR, we tested our hypotheses using data collected from Chinese listed companies in the Shenzhen and Shanghai stock exchanges. The sample period covered 2017 to 2019, since the period had a complete available dataset. The measurement data on dynamic capability were calculated using the annual sustained competitive advantage index for three consecutive years and collected from the Worldscope database. The period of the data on dynamic capability covered 2015 and 2016 as well. Data on the state-owned enterprise ownership and CSR strategy score were collected from the Environmental, Social and Governance (ESG) Asset4 database. Data on the firm age, leverage, and firm size were collected from the Worldscope database. Data on the industry categories were obtained from the Worldscope database as well.

After the deletion of missing and incomplete data, the final dataset included 134 listed Chinese companies (see Table 1). Table 1 describes the companies' industry distribution based on the Industry Classification Benchmark (shown in Thomson Reuters

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Datastream). Most companies were in healthcare, consumer services, and the basic materials sectors, with the distributions of 30.6%, 29.9%, and 20.9%, respectively. We used IBM SPSS 25 software for the data analysis.

Table 1. Industry distribution of companies.

Industry	Companies	Percentage
Basic materials	28	20.90
Industrials (Construction and materials)	14	10.40
Consumer goods (Food and Beverage)	6	4.50
Healthcare	41	30.60
Consumer services	40	29.90
Telecommunications	5	3.70
Total	134	100

Source: Industry Classification Benchmark (Thomson Reuters, Datastream).

3.2. Estimation Models

To examine the impacts of dynamic capability on SCSR, in this study, we built a multilinear regression model (see Equation (1)) and used the ordinary least squares (OLS) estimation method to test the hypotheses. We used the level of SCSR at year t as the dependent variable. Firms were classified into three groups—sustainable competitive advantage companies (HDC), companies lacking competitive advantages (LDC), and general companies (CDC), indicating high, low, and common dynamic capability, respectively.

$$SCSR = \alpha + \beta_1 \times DC + \beta_2 \times SIZE + \beta_3 \times AGE + \beta_4 \times LEV + \beta_5 \times SOE + IND + YEAR. \quad (1)$$

In Equation (1), SCSR represents the company's extent of incorporating CSR into its strategy. DC is a variable representing dynamic capability, which can have the values of 1, 0, and −1. This variable takes the value of 1 for sustainable competitive advantage companies (HDC) with a competitive situation index higher than the mean of the same industry for three consecutive years. It takes the value of −1 (LDC) for companies lacking a competitive advantage with a competitive situation index lower than the mean of the same industry for three consecutive years. It takes the value of 0 for the remaining sample companies, which are the general companies (CDC).

The annual sustained competitive advantage index for each company consists of three indicators (i.e., the excess return on equity, operating income growth rate, and market capitalization) by using the principal component analysis method. If the coefficient on the dynamic capability is significantly positive (i.e., $\beta_1 > 0$) when DC takes the value of 1, this supports the prediction of the first hypothesis. That is, firms with a higher level of dynamic capability are more likely to adopt SCSR and have better SCSR performance. If the coefficient on the dynamic capability is significantly negative (i.e., $\beta_1 < 0$) when DC takes the value of −1, this supports the prediction of hypothesis 2a. That is, firms with a lower level of dynamic capability are more likely to adopt SCSR. If the coefficient on the dynamic capability is significantly negative (i.e., $\beta_1 < 0$) when DC takes the value of 1, this supports the prediction of hypothesis 2b. That is, firms with a higher level of dynamic capability are less likely to adopt SCSR.

SIZE is the company size, measured by the natural log of the total assets. AGE is the company age, measured by the natural log of the number of years since incorporation. LEV and SOE are control variables of the leverage and company ownership nature, respectively, indicating whether a company is state-owned or not. LEV is a measure of the debt divided by the equity. SOE is a dummy variable of the company ownership nature, with a value of 1 if a company is a state-owned enterprise and 0 if otherwise. IND and

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YEAR are industry and year dummies, respectively. The details of the variables are discussed in the next section and displayed in Table 2.

Table 2. Definition of the variables.

Variable Denotations	Variable Meaning	Formula	Source
SCSR	SCSR Adoption	CSR strategy score	ESG Asset4
DC	Dynamic capability	This variable takes the value of 1 for sustainable competitive advantage companies (higher dynamic capability, HDC) with a competitive situation index higher than the mean of the same industry for three consecutive years. It takes the value of −1 (lower dynamic capability, LDC) for companies lacking competitive advantages with a competitive situation index lower than the mean of the same industry for three consecutive years. It takes the value of 0 for the remaining sample companies, which are general companies (common dynamic capability, CDC). The annual sustained competitive advantage index for each company consists of three indicators (i.e., the excess return on equity, operating income growth rate, and market capitalization) by using the principal component analysis method.	Worldscope
SIZE	Company size	Natural log of the total assets	Worldscope
AGE	Company age	Natural log of the number of years since incorporation	Worldscope
LEV	Leverage	Debt/Equity	Worldscope
SOE	A dummy of firm ownership nature	Value of 1 if the company is a state-owned enterprise, 0 if otherwise	ESG Asset4
IND	Industry dummy	Industry classification benchmark	Worldscope
YEAR	Year dummy	The years of 2017–2019	Worldscope

Certain studies considered dynamic capability and SCSR within the firm characteristics, raising concerns regarding the endogeneity issue due to a bidirectional causality between dynamic capability and SCSR adoption, leading to a bias in the estimation [53]; in this study we developed Equations (2) and (3) based on Nelling and Webb's [54] and Qiu et al.'s [55] application of Granger causality. The primary justification for using Granger causality models is that the inclusion of lagged independent variables could clearly show the increase in the explanatory power on the current dependent variable [56]. If independent variables could be helpful in the prediction of the dependent variable, then it can be said that the independent variable "Granger causes" the dependent variable [57]. Since the high level of dynamic capability (HDC) is a dummy variable taking the value of 1 if the firm has a higher level of dynamic capability than the average industry level and 0 if otherwise, we used a probit regression model to estimate Equation (2). A probit model was also used for firms with a low level of dynamic capability (LDC) and with a common level (CDC). We used the ordinary least square (OLS) regression method to estimate Equation (3).

$$DC_t = \alpha + \beta_1 \times DC_{t-1} + \beta_2 \times SCSR_t + \beta_3 \times SCSR_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t \quad (2)$$

$$SCSR_t = \alpha + \beta_1 \times SCSR_{t-1} + \beta_2 \times DC_t + \beta_3 \times DC_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t. \quad (3)$$

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In Equation (2), dynamic capability is a function of the lagged dynamic capability, current SCSR, and lagged SCSR, while in Equation (3), SCSR is a function of the lagged SCSR and current and lagged dynamic capability level. If the coefficients β_2 and β_3 were significant in Equation (2), we concluded that the SCSR adoption 'Granger caused' dynamic capability. Similarly, if the coefficients β_2 and β_3 in Equation (3) were significant, then we concluded that dynamic capability 'Granger caused' the SCSR adoption.

3.3. Measurement of Variables

3.3.1. Strategic CSR (SCSR)

SCSR adoption is the dependent variable. We considered using a quantitative method to measure the SCSR adoption and performance. In 2020, Thomson Reuters Datastream developed an indicator of CSR Strategy Score, ranging from 0 to 100, in the Environmental, Social and Governance (ESG) Asset4 database. The CSR Strategy Score reflects a company's SCSR practices and performance when the firm integrates the economic (financial), social, and environmental dimensions into its day-to-day decision-making processes (referred to the indicator definition in Datastream). This indicator measures the SCSR adoption and performance, since the definition is highly consistent with the meaning of SCSR, incorporating CSR practices into operational strategies [54]. Therefore, we used this new indicator of CSR Strategy Score to measure the SCSR adoption and performance. We expect that the higher the CSR Strategy Score, the more likely the company adopts SCSR and incorporates CSR practices into the strategy.

3.3.2. Dynamic Capability (DC)

Dynamic capability is the primary independent variable, indicating the internal competency for creating and obtaining the respondents' sustainable competitive advantage. Teece defined the dynamic capability as a firm's ability to integrate, build, and reconfigure internal and external competencies to create a long-term competitive advantage [4,55,58]. Drawing on the definition of dynamic capability [55], the creation of sustained competitive advantage is the ultimate goal and outcome of possessing dynamic capability. Hence, in this study, we constructed a sustained competitive advantage index as a proxy variable to measure the dynamic capability.

In this study we took two steps to construct the sustained competitive advantage index. First, we calculated the sustained competitive advantage by measuring operating performance, development capability, and market position [40]. The operating performance indicator can be expressed as the excess of the company's return on equity (ROE), indicating a firm's competitive power; the development capability indicator reflects the company's growth, expressed by the growth rate of a company's operating income; and the market position indicator reflects the product's acceptance in the market, expressed by its market capitalization in the industry [41].

Second, after calculating the three indicators for three consecutive years, we used the principal component analysis method to obtain the annual sustained competitive advantage index for each sample company [40]. Sample companies were classified into three groups by comparing the annual sustained competitive advantage index to the mean of the related industry; these were sustainable competitive advantage companies (HDC), general companies (CDC), and companies lacking competitive advantages (LDC) [40]. Specifically, HDC refers to those companies with a competitive situation index higher than the mean of the same industry for three consecutive years, indicating a high level of dynamic capability over average. LDC refers to those companies with a competitive situation index lower than the mean of the same industry for three consecutive years, indicating a lower level of dynamic capability over average. The remaining sample companies were classified as CDC, with an average industrial level of dynamic capability.

3.3.3. Control Variables

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The study includes the following control variables to exclude other potential factor impacts on the final results. First, the study control, company size (SIZE), measured by the natural logarithm of total assets [55]. Company size controls for the firm level's potential scale effect in impacting business strategies and CSR practices [56,57]. We obtained the data from the Worldscope database in Thomson Reuters Datastream. Company size represents the company resource capacity and the company's ability to cope with competition and funding opportunities [52,55,56]. The large firms could possess abundant resources and more substantial infrastructure to implement SCSR practices compared to small firms [55,56]. Therefore, company size can be an essential factor in SCSR adoption. Large companies are more willing to adopt green practices than small enterprises. By contrast, small companies lack this advantage and may have difficulty adopting CSR practices [57]. Therefore, we expected that larger companies are more likely to adopt SCSR because they possess a more substantial resource base and abilities to respond to complex business environments.

Second, according to the previous literature, firm age (AGE) is considered to be a factor that affects corporate CSR behavior [56,57]. We measured firm age by the natural logarithm of the number of years since incorporation.

Third, leverage (LEV) indicates the level of indebtedness of a company [3,57,59], measured by the total debt divided by the total equity. Based on the literature [60], we expected that a company with lower leverage may have more financial assets to incorporate CSR practices into strategies and adopt SCSR.

Fourth, company ownership (SOE) takes the value of 1 if it is a state-owned enterprise and 0 if otherwise. We expected that if the SOE takes the value of 1, the company may be more likely to adopt SCSR due to two reasons of corporate-level and macro-level management [3,59, 61].

Regarding the reason of corporate-level management, state-owned enterprises may put more company resources into CSR projects due to the asset-heavy attributes of the capital-intensive industries [3]. Asset-heavy means that the contribution of unit assets to sales revenue is relatively low, inevitably reducing the total asset turnover rate and financial performance of the state-owned enterprises. Due to historical reasons, state-owned enterprises have a higher proportion of non-operating assets. Hence, state-owned enterprises have a low total asset turnover rate and low ROA and financial performance.

Regarding the macro-level management, China introduced large-scale economic stimulus plans to maintain steady and rapid economic growth since the 2008 financial crisis. The state-owned enterprises have undertaken many new and continued large projects. This macro-level management has led to the slowdown in the structural adjustment and has deepened reform within the state-owned enterprises, leading to the low financial performance of the state-owned enterprises.

For these two reasons, to receive attention and attract investments, the state-owned enterprises may be more likely to incorporate CSR into their operational strategies and adopt SCSR.

In this study we controlled for industry and year effects and introduced industry and year dummy variables. We classified industries based on the Industry Classification Benchmark in the Worldscope of Thomson Reuters Datastream. The dominated industries of sample companies in this study were basic materials, industrials (construction and materials), consumer goods (food and beverage), healthcare, consumer services, and telecommunications.

4. Results and Discussions

Table 3 presents the descriptive statistics for the continuous variables in the regression analysis. The number of valid observations was 134. As seen from Table 3, the lowest value of SCSR was 0, the highest was 99.32, and the average was 30.66. This shows a great difference in the level of SCSR between companies. According to Al-Hadi et al. and Zhou et al. [62,63], if the mean and median are similar, this indicates the normality of the dis-

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tribution. Since the mean is close to the median (28.62), this study obtained a normal distribution of data. As for the company size measured by the natural log of the total assets, the minimum value was 14.97, the maximum value was 21.14, and the average was 17.36. This result shows a range of companies included in the research sample.

Regarding company age measured by the natural log of the number of years since incorporation, the minimum was 0.98 and the maximum was 3.29. The leverage variable controls for the level of indebtedness of a company, measured by the total debt divided by the total equity, where the minimum was 0 and the maximum was 7.07 with a mean of 0.80 and a median of 0.47. The result shows a variation in the level of indebtedness between sample companies. The values of each control variable show a variation between sample companies, indicating that these variables are required to be controlled.

Table 3. Descriptive statistics—continuous variables.

Variables	Number	Mean	Median	Std. Deviation	Minimum	Maximum
SCSR	134	30.66	28.62	28.61	0	99.32
SIZE	134	17.36	17.19	1.24	14.97	21.14
AGE	134	2.52	2.56	0.58	0.98	3.29
LEV	134	0.80	0.47	0.99	0	7.07

Note: There were 134 sampled Chinese listed companies for the period of 2017–2019. SCSR is the extent to incorporate CSR practices in operational strategies, measured by CSR strategy scores collected from the Environmental, Social and Governance (ESG) Asset4 database. SIZE is the company size, measured by the natural log of the total assets obtained from the Worldscope database. AGE is the company age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the company's indebtedness and measured by the total debt divided by the total equity in percentage form.

As seen from the correlation analysis using the Spearman correlation method, in Table 4 below, the first column shows the correlation coefficients between independent variables and the dependent variable. Correlations measure the strength and direction of the linear relationship between the two variables. We checked the multicollinearity for correlation coefficients and found that most correlation coefficients among variables significantly correlated at the 1%, 5%, or 10% significance levels. The correlation coefficients between independent variables and control variables were not greater than the threshold of 0.8. The greatest correlation coefficient was 0.713 was between the company size and leverage, at the 1% significance level and less than 0.8 as well. Therefore, there were no significant multicollinearity problems among the variables.

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Table 4. Correlation matrix (Spearman).

	SCSR	HDC	LDC	CDC	SIZE	AGE	LEV	SOE
SCSR	1							
HDC	0.147 *	1						
LDC	−0.253 ***	−0.121	1					
CDC	0.075	−0.676 ***	−0.650 ***	1				
SIZE	0.357 ***	0.352 ***	−0.127	−0.175 **	1			
AGE	0.046	−0.066	0.058	0.008	0.341 ***	1		
LEV	0.301 ***	0.082	−0.075	−0.007	0.713 ***	0.313 ***	1	
SOE	0.113	−0.116	0.053	0.05	0.058	0.295 ***	0.172 **	1

Note: *** indicates 1% significance level; ** indicates 5% significance level; and * indicates 10% significance level. There were 134 sampled Chinese listed companies for the period of 2017–2019. SCSR is the company's extent of incorporating CSR practices in operational strategies measured by the CSR strategy scores. HDC is a dummy variable of sustainable competitive advantage companies with a high level of dynamic capability within the firm's industry. LDC is a dummy variable of companies lacking competitive advantages with a low level of dynamic capability. CDC is a dummy variable of remaining general companies with common dynamic capability. SIZE is company size, measured by the natural log of the total assets. AGE is the company age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the company's indebtedness and measured by the total debt divided by the total equity. SOE is the company ownership nature that takes the value of 1 if the final owner is a state-owned enterprise, and 0 if otherwise.

The correlation coefficient between a high level of dynamic capability and SCSR was 0.147, at the 10% significance level. The positive correlation indicates that a company with a sustainable competitive advantage and a high level of dynamic capability within the industry was more likely to adopt SCSR and have better SCSR performance. The correlation coefficient between low dynamic capability and SCSR was −0.253, significant at the 1% level, showing a negative correlation. The correlation coefficient between common dynamic capability and SCSR was 0.075, showing a positive correlation, although the correlation was not significant.

We further checked the variance inflation factors (VIFs) value of independent variables, and tolerance values. All VIF values were less than the threshold of 5, and the maximum VIF was 2.503. All tolerance values were greater than the threshold of 0.1. The results show that there was no multicollinearity issue between the independent variables [64]. The Durbin–Watson test statistic was 2.10, which approximates 2, meaning no autocorrelation issue in the residuals. Therefore, the regression model in this study was relatively effective.

We further examined these correlation relationships using regression analysis as follows.

4.1. Multivariate Analysis

4.1.1. Results of Baseline Regression

To test for the hypotheses (see Section 2) and regression model (in Section 3), we performed OLS regression for the baseline Equation (1). We classified sample companies into three groups according to their dynamic capability level, i.e., firms with high dynamic capability (HDC), low dynamic capability (LDC), and common dynamic capability (CDC). The results of the regression analysis of the impact on SCSR based on the level of dynamic capability are shown in Table 5.

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Table 5. Regression results—baseline model.

Variables	Expected Sign	HDC as the Independent Variable	LDC as the Independent Variable	CDC as the Independent Variable
Constant		−242.68 ***	−204.86 ***	−246.78 ***
		(−5.01)	(−4.95)	(−5.67)
HDC	+	−8.77	-	-
		(−0.99)	-	-
LDC	-	-	−10.91 *	-
		-	(−1.50)	-
CDC	+	-	-	10.50 *
		-	-	(1.84)
SIZE	+	16.89 ***	14.33 ***	16.55 ***
		(5.44)	(5.67)	(6.37)
AGE	+	−8.31 *	−6.53 *	−7.83 *
		(−1.83)	(−1.48)	(−1.79)
LEV	-	−0.04	−0.03	−0.05
		(−1.13)	(−0.89)	(−1.36)
SOE	+	12.27	13.02	13.12
		(1.38)	(1.47)	(1.49)
IND		Yes	Yes	Yes
YEAR		Yes	Yes	Yes
F-statistic		4.00 ***	4.12 ***	4.23 ***
Adj R-squared		0.26	0.27	0.28

Notes: *** and * indicate significance at the levels of 1% and 10%, respectively. Robust t-statistics are in brackets. There were 134 sampled Chinese listed companies for the period of 2017–2019. SCSR is the company's extent to incorporate CSR practices in operational strategies measured by CSR strategy scores. HDC is a dummy variable of sustainable competitive advantage companies with a high level of dynamic capability within the firm's industry. LDC is a dummy variable of companies lacking competitive advantages with a low level of dynamic capability. CDC is a dummy variable of the remaining general companies with common dynamic capability. SIZE is the company size, measured by the natural log of the total assets. AGE is the company age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the company's indebtedness and measured by the total debt divided by the total equity. SOE is the company ownership nature, which takes the value of 1 if the final owner is state-owned enterprises, and 0 if otherwise. Industry dummies (IND) and year dummies (YEAR) are included. The + sign indicates for an expected positive relationship between the two variables. The – sign indicates for an expected negative relationship between two variables.

As seen from Table 5, a high level of dynamic capability was negatively related to SCSR adoption and performance, although the relationship was not significant ($\beta_2 < 0$, $p > 0.1$). This result shows that firms with a high level of dynamic capabilities were less likely to adopt SCSR practices, and they had a low SCSR adoption performance, supporting Hypothesis 2b and the loss aversion mechanism. The study result confirms the prospect theory that people make decisions with decreasing sensibility and loss aversion [50]. However, the result does not support Hypothesis 1, that firms with a high level of dynamic capabilities were more likely to adopt SCSR practices and better SCSR performance by creating more sustained company resources and competencies.

The low level of dynamic capability was negatively and significantly related to SCSR adoption and performance ($\beta_2 < 0$, $p < 0.1$), indicating that firms with a low level of dynamic capabilities were less likely to adopt SCSR practices, and they had a low SCSR adoption performance. This result does not support Hypothesis 2a that firms with a low level of dynamic capability were more likely to adopt SCSR practices and have high SCSR performance for the marginal cost reason.

We found that the common dynamic capability was positively and significantly related to SCSR adoption and performance ($\beta_2 < 0$, $p > 0.1$), indicating that firms with an industrial average level dynamic capability preferred to adopt and incorporate CSR practices into strategies and had a high CSR performance. Our findings may help firms to better

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understand managers' capability and competency in making resource allocation decisions, such as whether and to what extent to incorporate CSR practices into strategies [5].

Regarding the control variables, Table 5 shows that the company size positively and significantly affected SCSR adoption and performance ($\beta_2 > 0$, $p < 0.01$), indicating that a large firm size increased a firm's strategic CSR initiatives. Company age negatively and significantly impacted SCSR adoption and performance ($\beta_2 < 0$, $p < 0.1$), indicating that the older a firm's age, the less likely were firms to adopt SCSR. Leverage was negatively and significantly related to SCSR adoption and performance ($\beta_2 < 0$, $p > 0.1$), indicating that firms with lower leverage were more likely to adopt SCSR. A state-owned enterprise was more likely to adopt SCSR ($\beta_2 > 0$, $p > 0.1$). The results of the control variables were consistent with our expectations and previous literature [48,50,54,56,58–60]. Therefore, it is valid for this study to include theses variables as controls.

4.1.2. Endogeneity

To check the possible endogeneity issue due to reverse causality between dynamic capability and SCSR, the results of Equations (2) and (3) are displayed in Table 6. In the results of Equation (2), the coefficients of the current and lagged SCSR are not significant ($p > 0.1$), meaning that that the SCSR adoption did not 'Granger cause' dynamic capability, whatever the level of dynamic capability. In other words, the SCSR adoption cannot help predict the dynamic capability. However, the coefficients of the current dynamic capability were significant when the firm had a low or common dynamic capability ($p < 0.1$). The coefficient of lagged dynamic capability was significant at the 0.01 level when the firm had a high level of dynamic capability. These results show that dynamic capability 'Granger caused' the SCSR adoption, meaning that dynamic capability can help predict the adoption of SCSR. The inclusion of lagged dynamic capability clearly showed the increase in the explanatory power on the current SCSR. The results showed no reverse causality issues between dynamic capability and SCSR, supporting our previous analysis.

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Table 6. Endogeneity test results.

	Model Equation (2): DC as the Dependent Variable			Model Equation (3): SCSR as the Dependent Variable		
Variables	**HDC Firms**	**LDC Firms**	**CDC Firms**	**HDC Firms**	**LDC Firms**	**CDC Firms**
DC_t	-	-	-	−13.35	−5.55 *	10.82 *
	-	-	-	(−1.35)	(−0.68)	(1.73)
DC_{t_1}	63.12	2.27 ***	1.89 ***	27.37 ***	−5.69	−7.41
	-	(3.01)	(3.39)	(3.06)	(−0.69)	(−1.23)
$SCSR_t$	0.29	−0.029	0.03	-	-	-
	-	(−0.60)	(1.13)	-	-	-
$SCSR_{t\_1}$	−0.56	0.023	−0.01	0.77 ***	0.72 ***	0.74 ***
	-	(0.49)	(−0.48)	(8.99)	(7.82)	(7.90)
SIZE	64.22	−0.148	−1.12 ***	1.72	4.02	6.82 **
	-	(−0.27)	(−2.81)	(0.39)	(1.32)	(2.02)
AGE	−23.17	0.45	−0.08	−3.92	−9.59 *	−9.81 *
	-	(0.55)	(−0.14)	(−0.66)	(−1.7)	(−1.71)
LEV	−0.49	−0.009	0.01 ***	−0.03	−0.08 **	−0.09 **
	-	(−0.93)	(2.45)	(−0.61)	(−1.94)	(−2.10)
SOE	0	1.73	−1.54 *	7.57	20.67 *	20.93 *
	-	(1.48)	(−1.86)	(0.7)	(1.83)	(1.84)
Constant	−6196	1040.38	401.42	−15.47	−32.18	−82.09
	-	(0.67)	(0.35)	(−0.24)	(−0.67)	(−1.51)
IND	1.67	−0.006	0.014	Yes	Yes	Yes
	-	(−0.27)	(0.87)			
YR	29.63	−0.52	−0.19	Yes	Yes	Yes
	-	(−0.67)	(−0.33)			
Pseudo R^2 or Adjusted R^2	0.98	0.54	0.49	0.75	0.72	0.72
LR chi2 or F value	49.38	27.60	36.51	11.94 ***	10.01 ***	10.24 ***

Note: ***, **, * indicate significance at the levels of 1%, 5%, and 10%, respectively. Robust t-statistics are in brackets. Model Equation (2): $DC_t = \alpha + \beta_1 \times DC_{t-1} + \beta_2 \times SCSR_t + \beta_3 \times SCSR_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t$. Model Equation (3): $SCSR_t = \alpha + \beta_1 \times SCSR_{t-1} + \beta_2 \times DC_t + \beta_3 \times DC_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t$.

4.1.3. Robustness Test

To improve the reliability of the results, following Zhou et al. [63], we used SCSR rank as the dependent variable in a robustness check. Table 7 displays the regression results for robustness tests. We obtained similar results and findings compared to the results of the baseline regression in Table 5. The results show that our findings and conclusions were robust.

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Table 7. Robustness test results—SCSR rank as the dependent variable.

Variables	Expected Sign	HDC as the Independent Variable	LDC as the Independent Variable	CDC as the Independent Variable
Constant		−121.29 ***	−107.29 ***	−128.82 ***
		(−4.89)	(−5.10)	(−5.79)
HDC	+	−2.32	-	-
		(−0.51)	-	-
LDC	-	-	−6.52 **	-
		-	(−1.77)	-
CDC	+	-	-	5.04 *
		-	-	(1.73)
SIZE	+	8.71 ***	7.79 ***	8.94 ***
		(5.48)	(6.07)	(6.74)
AGE	+	−4.99 **	−4.28 **	−4.99 **
		(−2.15)	(−1.91)	(−2.23)
LEV	-	−0.02	−0.01	−0.02
		(−0.86)	(−0.83)	(−1.25)
SOE	+	5.53	6.02	5.97
		(1.22)	(1.34)	(1.33)
IND		Yes	Yes	Yes
YEAR		Yes	Yes	Yes
F-statistic		3.95 ***	4.23 ***	4.22 ***
Adj R-squared		0.26	0.28	0.28

Notes: ***, **, * indicate significance at the levels of 1%, 5%, and 10%, respectively. Robust t-statistics in the brackets. There were 134 sampled Chinese listed companies for the period of 2017–2019. SCSR is the company's extent to incorporate CSR practices in operational strategies measured by the ranking of CSR strategy scores. HDC is a dummy variable of sustainable competitive advantage companies with a high level of dynamic capability within the firm's industry. LDC is a dummy variable of companies lacking competitive advantages with a low level of dynamic capability. CDC is a dummy variable of remaining general companies with common dynamic capability. SIZE is the company size, measured by the natural log of the total assets. AGE is the company age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the company's indebtedness and measured by the total debt divided by the total equity. SOE is the company ownership nature that takes the value of 1 if the final owner is state-owned enterprises, and 0 if otherwise. Industry dummies (IND) and year dummies (YEAR) are included. The + sign indicates for an expected positive relationship between the two variables. The – sign indicates for an expected negative relationship between two variables.

5. Conclusions and Future Research

The purpose of the current study was to examine the impact of dynamic capability on the adoption and performance of SCSR in China. We proposed mechanisms for the function of dynamic capability on SCSR and argued that dynamic capability is an essential factor in SCSR adoption. However, dynamic capability negatively affected the SCSR adoption and performance due to the loss aversion channels.

We found that a high level of dynamic capability (i.e., higher than the average industrial level in long-run) was negatively but not significantly related to the SCSR adoption and performance. In other words, firms with a high level of dynamic capabilities were less likely to adopt SCSR practices, and they had a low SCSR adoption performance. This finding does not support the dynamic capability view of a firm and the dynamic capability channel, in which firms with high dynamic capability could satisfy more stakeholders' interests and needs through obtaining and creating a sustained competitive advantage with their rich company resources and competencies [46,65].

This study's findings are different from those of Ramachandran, who analyzed one Indian firm [1]; the author identified two kinds of dynamic capabilities (sense and respond capability and execution capability) as the necessary determinants for successful strategic CSR. The author proposed that these capabilities can be operationalized in terms

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of two associated processes, the response design process and impact assessment process. The response design process indicates the phases of identifying the problem and developing alternatives, and the impact assessment process refers to the alternative evaluation and selection phase [1]. The author indicated that the two processes are the reasons for the dynamic capability impacting the strategic CSR positively.

This study's findings indicated that firms with a high level of dynamic capability were less likely to adopt SCSR and had low SCSR performance, possibly because managers make decisions with less sensibility and more loss aversion, which is in line with the loss aversion theory. This finding supports the prospect theory that people make decisions with decreasing sensibility and loss aversion [50]. The results confirm the loss aversion theory that firms with a high dynamic capability level are loss averse. Therefore, managers allocate fewer company resources to CSR projects and are less likely to adopt SCSR and thus have low SCSR performance.

We also found that firms with a low level of dynamic capability (i.e., lower than the average industrial level in the long run) were less likely to adopt SCSR and had a low SCSR performance. This finding does not support the marginal cost reduction mechanism, according to which firms with low dynamic capability and competency were more likely to allocate rich company resources to CSR projects for the marginal cost reduction reasons.

We found that firms with common dynamic capability (i.e., equal to the average industrial level) were more likely to incorporate CSR practices into strategies and had a high SCSR performance.

This study's findings provide insightful explanation and mechanisms of a negative relationship between the dynamic capability and the SCSR adoption and performance. The negative association could be due to firms' loss aversion concerns with a high dynamic capability level.

Our study has several implications for firms and managers. First, the findings may help firms to better understand manager attitudes toward risks and losses in making resource allocation decisions, such as whether and to what extent to incorporate CSR practices into strategies [3]. Second, if the dynamic capability level is different from the average industrial level, if the firm performs above or below the average industrial level, firms could focus on financial investments with high returns rather than spending time and money on incorporating CSR into strategies. Firms with dynamic capability at the average industrial level could incorporate CSR into strategies and positively influence SCSR adoption. Third, there is a need to integrate company resources and the necessity of financial focus within and over the departmental and company levels.

The limitations of this study provide insight for future research. First, the study did not include a large sample size. Future research could enlarge the sample size. Second, future studies could assess the long-term impacts of dynamic capability on CSR adoption and performance by extending the sample period. Future studies could focus on cross-national comparisons. Third, the study sample consisted of listed firms; therefore, the results may not be applicable to small or medium enterprises (SMEs) [66]. Since SMEs are different from publicly listed firms in terms of business models, future research can focus on SMEs to conclude more findings.

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References

1. Ramachandran, V. Strategic Corporate Social Responsibility: A "Dynamic Capability" Perspective. *Corp. Soc. Responsib. Environ. Manag.* **2011**, *18*, 285–293, doi:10.1002/csr.251.
2. Essid, M.; Berland, N. Adoption of environmental management tools: the dynamic capabilities contributions. *Sustain. Accounting, Manag. Policy J.* **2018**, *9*, 229–252, doi:10.1108/SAMPJ-09-2017-0099.
3. Lin, H.F.; Su, J.Q.; Higgins, A. How dynamic capabilities affect adoption of management innovations. *J. Bus. Res.* **2016**, *69*, 862–876, doi:10.1016/j.jbusres.2015.07.004.
4. Moon, J.; Shen, X. CSR in China research: Salience, focus and nature. *J. Bus. Ethics* **2010**, *94*, 613–629, doi:10.1007/s10551-009-0341-4.
5. Teece, D.; Peteraf, M.; Leih, S. Dynamic Capabilities and Organizational Agility: Risk, Uncertainty, and Strategy in the Innovation Economy. *Calif. Manage. Rev.* **2016**, *58*, 13–35, doi:10.1525/cmr.2016.58.4.13.
6. Yin, J.; Zhang, Y. Institutional Dynamics and Corporate Social Responsibility (CSR) in an Emerging Country Context: Evidence from China. *J. Bus. Ethics* **2012**, *111*, 301–316, doi:10.1007/s10551-012-1243-4.
7. Upadhaya, B. Determinants and Consequences of Corporate Social Responsibility and the Role of Management Control Systems: Evidence from a Developing Country, Nepal, Macquarie University, 2016.
8. International Monetary Fund (IMF) *World economic outlook: Growth resuming, dangers remain*; IMF. Washington DC, 2012;
9. Peng, M.W.; Wang, D.Y.L.; Jiang, Y. An institution-based view of international business strategy: A focus on emerging economies. *J. Int. Bus. Stud.* **2008**, *39*, 920–936, doi:10.1057/palgrave.jibs.8400377.
10. Belal, A.R.; Cooper, S.; Roberts, R. Vulnerable and exploitable: The need for organisational accountability and transparency in emerging and less developed economies. *Account. Forum* **2013**, *37*, 81–91, doi:10.1016/j.accfor.2013.04.001.
11. Visser, W. Revisiting Carroll's CSR pyramid: An African perspective. **2005**, 29–56.
12. North, D.C. A transaction cost theory of politics. *J. Theor. Polit.* **1990**, *2*, 355–367, doi:https://doi.org/10.1177/0951692890002004001.
13. Development Centre for Chinese CSR of China WTO Tribune Reporting Research (2001–2009). In Proceedings of the The 2nd International Conference on CSR Reporting in China; Shanghai; 1 December 2010.
14. Gugler, P.; Shi, J.Y.J. Corporate social responsibility for developing country multinational corporations: Lost war in pertaining global competitiveness? *J. Bus. Ethics* **2009**, *87*, 3–24, doi:10.1007/s10551-008-9801-5.
15. Wang, Q.G.; Xu, X.Y. The Value Creation Mechanism and Empirical Test of Corporate Social Responsibility—Based on Stakeholder Theory and Life Cycle Theory (IN CHINESE). *China Soft Sci* **2016**, *2*, 179–192.
16. Aguinis, H.; Glavas, A. What We Know and Don't Know About Corporate Social Responsibility: A Review and Research Agenda. *J. Manage.* **2012**, *38*, 932–968, doi:10.1177/0149206311436079.
17. Carroll, A. Corporate social responsibility: Evolution of a definitional construct. *Bus. Soc.* **1999**, *38*, 268–295, doi:10.1177/000765039903800303.
18. De Bakker, F.G.A.; Groenewegen, P.; Den Hond, F. A bibliometric analysis of 30 years of research and theory on corporate social responsibility and corporate social performance. *Bus. Soc.* **2005**, *44*, 283–317, doi:10.1177/0007650305278086.
19. Carroll, A.B. A Three-Dimensional Conceptual Model of Corporate Performance. *Acad. Manag. Rev.* **1979**, *4*, 497–505, doi: 10.5465/amr.1979.4498296.
20. Xu, S.; Yang, R. Indigenous characteristics of Chinese corporate social responsibility conceptual paradigm. *J. Bus. Ethics* **2010**, *93*, 321–333, doi:10.1007/s10551-009-0224-8.
21. Snell, R.; Tseng, C.S. Moral atmosphere and moral influence under China's network capitalism. *Organ. Stud.* **2002**, *23*, 449–478, doi:10.1177/0170840602233006.
22. Zadek, S.; Wickerham, J. *Fortune China*. Henry R. Luce 2009.

23. Chandler, D. *Strategic corporate social responsibility: Sustainable value creation*; SAGE Publications, Incorporated, 2019.
24. Lantos, G.P. The Boundaries of Strategic Corporate Social Responsibility Professor of Business Administration The Boundaries of Strategic Corporate Social Responsibility. *J. Consum. Mark.* **2001**, *18*, 595–632.
25. McWilliams, A.; Siegel, D.S. Creating and capturing value: Strategic corporate social responsibility, resource-based theory, and sustainable competitive advantage. *J. Manage.* **2011**, *37*, 1480–1495, doi:10.1177/0149206310385696.
26. Vishwanathan, P.; van Oosterhout, H.; Heugens, P.P.M.A.R.; Duran, P.; van Essen, M. Strategic CSR: A Concept Building Meta-Analysis. *J. Manag. Stud.* **2020**, *57*, 314–350, doi:10.1111/joms.12514.
27. Porter, M.E.; Kramer, M.R. How to reinvent capitalism—and unleash a wave of innovation and growth. *Harv. Bus. Rev.* **2011**, *Jan-Feb*, 1–17.
28. Lantos, G.P. The ethicality of altruistic corporate social responsibility. *J. Consum. Mark.* **2002**, *19*, 205–232, doi:10.1108/07363760210426049.
29. Kuokkanen, H.; Sun, W. Companies, Meet Ethical Consumers: Strategic CSR Management to Impact Consumer Choice. *J. Bus. Ethics* **2020**, *166*, 403–423, doi:10.1007/s10551-019-04145-4.
30. Freeman, R.E.E.; McVea, J. A Stakeholder Approach to Strategic Management. In *The Blackwell handbook of strategic management*; Blackwell Publishers Ltd, 2001; pp. 189–207 ISBN 9780631218616.
31. Rodrigo, P.; Aqueveque, C.; Duran, I.J. Do employees value strategic CSR? A tale of affective organizational commitment and its underlying mechanisms. *Bus. Ethics A Eur. Rev.* **2018**, *28*, 459–475, doi:10.1111/beer.12227.
32. Porter, M.; Kramer, M. Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility. *Havard Bus. Rev.* **2006**, 1–13, doi:https://doi.org/10.1007/3-540-33247-2.
33. Yu, S.H.; Liang, W.C. Exploring the determinants of strategic corporate social responsibility: An empirical examination. *Sustainability* **2020**, *12*, 1–16, doi:10.3390/su12062368.
34. Brammer, S.J.; Pavelin, S. Corporate reputation and social performance: The importance of fit. *J. Manag. Stud.* **2006**, *43*, 435–455, doi:10.1111/j.1467-6486.2006.00597.x.
35. Michelon, G.; Boesso, G.; Kumar, K. Examining the Link between Strategic Corporate Social Responsibility and Company Performance: An Analysis of the Best Corporate Citizens. *Corp. Soc. Responsib. Environ. Manag.* **2013**, *20*, 81–94, doi:10.1002/csr.1278.
36. Vallaster, C. Managing a Company Crisis through Strategic Corporate Social Responsibility: A Practice-Based Analysis. *Corp. Soc. Responsib. Environ. Manag.* **2017**, *24*, 509–523, doi:10.1002/csr.1424.
37. Gelbmann, U. Establishing strategic CSR in SMEs: An Austrian CSR quality seal to substantiate the strategic CSR performance. *Sustain. Dev.* **2010**, *18*, 90–98, doi:10.1002/sd.448.
38. Székely, F.; Knirsch, M. Responsible leadership and corporate social responsibility: Metrics for sustainable performance. *Eur. Manag. J.* **2005**, *23*, 628–647, doi:10.1016/j.emj.2005.10.009.
39. Teece, D.J. A capability theory of the firm: an economics and (Strategic) management perspective. *New Zeal. Econ. Pap.* **2019**, *53*, 1–43, doi:10.1080/00779954.2017.1371208.
40. Teece, D.J. Dynamic capabilities as (workable) management systems theory. *J. Manag. Organ.* **2018**, *24*, 359–368, doi: 10.1017/jmo.2017.75.
41. Zhu, D.; Zhou, C.; Luo, Z. Continuing Competiveness, Dividend Distribution and Financing Liability Adjustment (IN CHINESE). *J. Soochow Univ. (Philosophy Soc. Sci. Ed.* **2017**, 100–109, doi:10.19563/j.cnki.sdzs.2017.04.013.
42. Hill, C.L.; Jones, G.R. *Strategic Management*; Beijing: China Market Press, 2007.
43. Laaksonen, O.; Peltoniemi, M. The Essence of Dynamic Capabilities and their Measurement. *Int. J. Manag. Rev.* **2018**, *20*, 184–205, doi:10.1111/ijmr.12122.
44. Rodríguez-Fernández, M.; Gaspar-González, A.I.; Sánchez-Teba, E.M. Sustainable social responsibility through stakeholders engagement. *Corp. Soc. Responsib. Environ. Manag.* **2020**, *27*, 2425–2436, doi:10.1002/csr.2023.
45. Lettice, F.; Parekh, M. The social innovation process: Themes, challenges and implications for practice. *Int. J. Technol. Manag.*

2010, *51*, 139–158, doi:10.1504/IJTM.2010.033133.

46. Tseng, S.M.; Lee, P.S. The effect of knowledge management capability and dynamic capability on organizational performance. *J. Enterp. Inf. Manag.* **2014**, *27*, 158–179, doi:10.1108/JEIM-05-2012-0025.
47. Cantrell, J.E.; Kyriazis, E.; Noble, G. Developing CSR Giving as a Dynamic Capability for Salient Stakeholder Management. *J. Bus. Ethics* **2015**, *130*, 403–421, doi:10.1007/s10551-014-2229-1.
48. Mahmood, M.; Humphrey, J. Stakeholder Expectation of Corporate Social Responsibility Practices: A Study on Local and Multinational Corporations in Kazakhstan. *Corp. Soc. Responsib. Environ. Manag.* **2013**, *20*, 168–181, doi:10.1002/csr.1283.
49. Hamidu, A.A.; Md Haron, H.; Amran, A. Corporate Social Responsibility: A Review on Definitions, Core Characteristics and Theoretical Perspectives. *Mediterr. J. Soc. Sci.* **2015**, doi:10.5901/mjss.2015.v6n4p83.
50. Tversky, A.; Kahneman, D. Advances in prospect theory: Cumulative representation of uncertainty. *J. Risk Uncertain.* **1992**, *5*, 297–323, doi:https://doi.org/10.1007/BF00122574.
51. Flammer, C. Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach. *Manage. Sci.* **2015**, *61*, 2549–2568, doi:10.1287/mnsc.2014.2038.
52. Chen, Y.C.; Hung, M.; Wang, Y. The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *J. Account. Econ.* **2018**, *65*, 169–190, doi:10.1016/j.jacceco.2017.11.009.
53. Zhao, Z.; Meng, F.; He, Y.; Gu, Z. The influence of corporate social responsibility on competitive advantage with multiple mediations from social capital and dynamic capabilities. *Sustainability* **2019**, *11*, 1–16, doi:10.3390/su11010218.
54. Nelling, E.; Webb, E. Corporate social responsibility and financial performance: The "virtuous circle" revisited. *Rev. Quant. Financ. Account.* **2009**, *32*, 197–209, doi:10.1007/s11156-008-0090-y.
55. Qiu, Y.; Shaukat, A.; Tharyan, R. Environmental and social disclosures: Link with corporate financial performance. *Br. Account. Rev.* **2016**, *48*, 102–116, doi:10.1016/j.bar.2014.10.007.
56. Rhou, Y.; Singal, M.; Koh, Y. CSR and financial performance: The role of CSR awareness in the restaurant industry. *Int. J. Hosp. Manag.* **2016**, *57*, 30–39, doi:10.1016/j.ijhm.2016.05.007.
57. Granger, C.J.W. Investigating Causal Relations by Econometric Models and Cross-spectral Methods. *Econometrica* **1969**, *37*, 424–438.
58. Teece, D.J. Business models and dynamic capabilities. *Long Range Plann.* **2018**, *51*, 40–49, doi:10.1016/j.lrp.2017.06.007.
59. Lin, C.Y.; Ho, Y.H. Determinants of Green Practice Adoption for Logistics Companies in China. *J. Bus. Ethics* **2011**, *98*, 67–83, doi:10.1007/s10551-010-0535-9.
60. Xiang, X.; Liu, C.; Yang, M.; Zhao, X. Confession or justification: The effects of environmental disclosure on corporate green innovation in China. *Corp. Soc. Responsib. Environ. Manag.* **2020**, *27*, 2735–2750, doi:10.1002/csr.1998.
61. Wu, W.; Liang, Z.; Zhang, Q. Effects of corporate environmental responsibility strength and concern on innovation performance: The moderating role of firm visibility. *Corp. Soc. Responsib. Environ. Manag.* **2020**, *27*, 1487–1497, doi:https://doi.org/10.1002/csr.1902.
62. Al-Hadi, A.; Chatterjee, B.; Yaftian, A.; Taylor, G.; Monzur Hasan, M. Corporate social responsibility performance, financial distress and firm life cycle: evidence from Australia. *Account. Financ.* **2019**, *59*, 961–989, doi:10.1111/acfi.12277.
63. Zhou, L.; Wang, M.; Yang, J. Research of internet industry on the relationship between corporate financial performance and corporate social performance (IN CHINESE). *Invest. Stud.* **2017**, *395*, 121–130.
64. O'Brien, R.M. A caution regarding rules of thumb for variance inflation factors. *Qual. Quant.* **2007**, *41*, 673–690, doi:https://doi.org/10.1007/s11135-006-9018-6.
65. Li, D.; Lin, H.; Yang, Y.W. Does the stakeholders-corporate social responsibility (CSR) relationship exist in emerging countries? Evidence from China. *Soc. Responsib. J.* **2016**, *12*, 147–166, doi:10.1108/SRJ-01-2015-0018.
66. Stoian, C.; Gilman, M. Corporate Social Responsibility That " Pays ": A Strategic Approach to CSR for SMEs. *J. Small Bus. Manag.* **2017**, *55*, 5–31, doi:10.1111/jsbm.12224.