

## Article

# Technology-Driven Cross-Border M&A, CSR, and Enterprise Innovation Performance—Evidence from China

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**Abstract:** China's technology development has entered a new stage, one of technology-driven cross-border mergers and acquisitions (TC M&A), which has become an important channel for emerging markets to achieve a technological leap. During this process, the effect of corporate social responsibility (CSR) is very complex. This paper took 230 cross-border M&A events in China as samples. Using the individual-time dual fixed effect model, we found that TC M&A and CSR played positive roles in promoting the innovation performance of the parent company. However, CSR negatively moderated the relationship between TC M&A and enterprise innovation. When enterprises entered a host country with close diplomatic institutional distance, the moderating effect of CSR on TC M&A and enterprise innovation performance became positive. When enterprises entered a host country with close institutional distance, the moderating effect of CSR on TC M&A and enterprise innovation performance was not significant. The findings of this paper not only enrich the stakeholder theory, but also showcase the important role of guiding cross-border investment enterprises for the implementation of CSR behaviors.

**Keywords:** TC M&A; CSR; enterprise innovation; diplomatic distance; institutional distance



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## 1. Introduction

In recent years, technology-driven cross-border M&A (TC M&A) has become an important channel for emerging markets to seek cutting-edge technology from mature markets. Meanwhile, corporate social responsibility (CSR) has a profound impact on cross-border M&A, being related to the innovation process of enterprises after cross-border M&A [1–3]. With the continuous development of the economy and technology in emerging markets, enterprises in emerging markets are eager to acquire core technologies that restrict their own development, so as to be at the forefront of world innovation. TC M&A is a bridge to help emerging markets achieve this strategic goal. Meanwhile, when enterprises take technology acquisition as the main purpose of cross-border M&A, due to the differences between the host market and the domestic market in terms of institutional, cultural, and economic development paths, the original CSR image will be impacted by a series of environmental factors in the host country [4]. Thus, the impact of CSR on TC M&A is compounded, and ignoring these complex factors may lead to a biased understanding of TC M&A in emerging markets. Moreover, it is of great significance for developing economies in the period of economic and social transformation to study the influence mechanism of TC M&A on enterprise innovation and its relationship with CSR. On the one hand, TC M&A is an important channel for emerging markets to break through their own technological bottlenecks and realize technological leaps; on the other hand, in the process of TC M&A, cooperation with host country stakeholders plays a key role in enterprise innovation, and the CSR view permeates throughout the whole process of stakeholder cooperation in the host country, having a vital influence on whether enterprises can make full use of innovation resources.

However, existing studies have not paid enough attention to the special phenomenon of TC M&A in emerging markets. Most studies focus on the effect of cross-border M&A in

emerging markets on enterprise innovation but fail to distinguish TC M&A. This is a gap in the existing literature. Enterprises in emerging markets mainly acquire technology in mature markets through OEM, OBM, joint venture, franchise, and other means [5]. With the gradual development of the liberal economy and the opening markets of emerging economies, the introduction of foreign capital and foreign investment has become an important means for their technical cooperation [6–8]. For example, the Chinese central government formulated the “bring in” policy in the 1990s and launched the “go out” policy in the late 1990s, aiming to make up for the technical defects of enterprises by introducing foreign capital and making overseas investments. TC M&A has been the most direct and rapid means for Chinese multinational enterprises to acquire mature market technologies in recent years. It is partly politically motivated—firms gain access to cutting-edge technology to promote the growth of particular industries (chip manufacturing, communications technology). Therefore, this type of M&A is more likely to cause vigilance and concern within the host government. At the same time, due to the huge technology gap between emerging markets and mature markets, the target enterprise managers may concern themselves with the development prospects of the enterprise after TC M&A. Therefore, can TC M&A achieve the strategic goals of enterprises under such a complex environment? The available literature lacks answers. Only a few studies have singled out this special type of M&A in emerging markets [9], and only a small number of studies have focused on the exploration of technology acquisition overseas investment in mature markets on firm performance [10–14]. Our study attempts to fill this gap.

Meanwhile, existing studies have not paid enough attention to the relationship between CSR and enterprise internationalization [2], which has become another gap in the international business (IB) field. CSR affects the process of internationalization and innovation of emerging market enterprises. It aims to safeguard the interests of the stakeholders, so as to form an innovation synergy. As a special way of enterprise internationalization, TC M&A makes enterprises face great pressure when they exercise their social responsibility. On the one hand, as mentioned above, TC M&As are prone to conflict from stakeholders in host countries due to their own nature. On the other hand, because the target enterprises of TC M&A are often located in mature markets, the economic development, social development, and environmental protection are very different from those in emerging markets, which makes local CSR correspondence more difficult [1,15,16]. The existing literature focuses on the impact of internationalization on CSR, ignoring the impact of CSR under these special conditions of TC M&A.

Moreover, China is in a period of institutional transition, with better protection of market competition, stricter protection of intellectual property rights, and more transparent law enforcement and justice [5,7]. At the same time, China is paying more and more attention to its diplomatic influence in the world. With the development of China’s “Belt and Road” policy, China has established close diplomatic relations with more and more countries. This is of great significance for allowing enterprises to cooperate and communicate in a more stable political environment. Furthermore, when emerging market enterprises enter into mature markets, institutional distance is related to the extent to which enterprises can meet the needs of host country stakeholders [17]. Diplomatic distance is related to whether the emerging market enterprises have sufficient confidence to invest in the mature market and whether they can win the support of the host country stakeholders. Therefore, with the rapid development of China’s institutional and international influence, and as important influencing factors of TC M&A, it is of great importance to study the influence of institutional distance and diplomatic distance on TC M&A and the implementation of CSR in China.

In this paper, we selected 230 Chinese cross-border M&A enterprises as samples and used the dual fixed panel effect model to study the following questions: (1) whether the TC M&A could promote the innovation of Chinese firms; (2) whether CSR can positively regulate the relationship between TC M&A and enterprise innovation performance; (3) whether the moderating effect of CSR would be affected when enterprises enter a host country with

small diplomatic distance; (4) whether the moderating effect of CSR would be affected when enterprises enter a host country with close institutional distance.

The contributions of this paper mainly focus on the following three aspects: (1) Technology-driven M&A is a special M&A and a new phenomenon in emerging markets. In this study, we singled out this kind of M&A and analyzed its promoting effect and mechanism on enterprise innovation, which is a supplement to the existing IB literature. (2) The previous literature mostly analyzed the role of CSR in enterprise internationalization from the perspective of technology spillover. From the perspective of technology acquisition in emerging markets, this paper studied the moderating effect of CSR on the relationship between TC M&A and enterprise innovation performance, and systematically analyzed the effect conditions (the influence of diplomatic distance and institutional distance on CSR). This not only extends CSR from the single national level to the international level, but also more clearly analyzes the institutional differences between emerging and mature markets, as well as the impact of such differences on enterprise innovation. This provides references for enterprises managers to formulate overseas investment policies and implement acts of social responsibility. (3) This paper combined stakeholder theory with dynamic capability theory to analyze the impact of TC M&A and CSR on enterprise innovation, which is a new perspective. It not only expands the stakeholder theory, but also complements the dynamic capability theory.

## 2. Theoretical Background and Research Hypothesis

### 2.1. Stakeholder Theory, TC M&A, and CSR

Traditional organizations uphold the principle of “shareholder first” and believe that the focus of organizational management is to continuously improve the income of enterprise shareholders and increase their wealth. In order to obtain economic benefits, enterprises give up other interests such as social optimal interests. According to the stakeholder theory, enterprises inevitably involve various stakeholders in the process of operation. Sirgy divided stakeholders into three categories: internal stakeholders, external stakeholders, and remote stakeholders. Internal stakeholders include employees, managers, and the board of directors; external stakeholders include corporate shareholders, suppliers, creditors, local communities, and the natural environment; remote stakeholders include competitors, consumers, the media, and government agencies [18]. These stakeholders connect with the organization through participation, consultation, collaboration, and information exchange [19]. In view of the close relationship between organizations and stakeholders, enterprises should understand and respect all individuals closely related to organizational behavior and results, and try to meet their needs. This is not only an ethical requirement, but also a strategic decision to enhance the competitive advantage of enterprises [20]. Enterprises’ exercising of social responsibility is the most direct embodiment of their protection of the interests of stakeholders. Since TC M&A involves not only the stakeholders of the home country, but also the stakeholders of the host country, when making TC M&A decisions, enterprises always take into account the policy orientation of their domestic governments and the support of their domestic financial institutions, such as whether the government supports enterprises to invest abroad, whether the government encourages enterprises to purchase technologies from specific host country enterprises, and to what extent financial institutions can reduce the loan burden of enterprises [5,7]. When TC M&A enterprises carry out innovation activities, they embed themselves in the host country’s innovation network and establish close links with host country suppliers, distributors, and customers [11]. They also seek R&D help from research institutes and universities in host countries. Enterprises need to establish their own CSR image to protect the interests of stakeholders in the host country. However, the CSR of enterprises has its particularity in the context of TC M&A. On the one hand, the original CSR image is beneficial for them to obtain the support of domestic stakeholders. On the other hand, due to the large institutional difference between the host country and the domestic country, CSR image may not be able to obtain a local response [1].

## 2.2. Dynamic Capability Theory, TC M&A, and CSR

Dynamic capability theory examines how an enterprise generates a new capability through integration, construction, and reconfiguration of internal and external resources and capabilities in order to adapt to the rapidly changing environment [21,22], thus creating and maintaining competitive advantages over other enterprises. The two criteria for measuring dynamic capabilities are technical (internal) fitness and evolutionary (external) fitness. Technological adaptability refers to the ratio of the enterprise's ability to be effectively utilized to its cost. It aims to explain the matching degree of the enterprise's dynamic capability with its technology in comparison with other enterprises. Evolutionary adaptability is the ability of an enterprise to outperform other enterprises by creating and expanding its resource base to survive externally. TC M&A faces a more complex international environment. On the one hand, there are great differences between emerging markets and mature markets in terms of national development path, political system, and degree of economic development; on the other hand, there is still a technological gap between enterprises in emerging markets and mature markets, and their knowledge systems are also different. On the basis of this background, TC M&A requires not only the perceptive ability of enterprises to seek and discover external opportunities, but also the efficient integration, construction, and reallocation of resources and capabilities to generate new knowledge [23]. In other words, enterprises need to have strong technical internal fitness. At the same time, when the technology acquisition enterprises enter the host country, it is difficult to provide full play to the institutional advantages obtained in the home country. For example, the CSR reputation of enterprises with high CSR in their home country may not help them gain a positive local response [15]. This requires enterprises to have high evolutionary adaptability, to adjust their operational strategy in time in accordance with the changes in the characteristics of host country stakeholders, and to rely on this adjustment in order to create and expand enterprise resources.

Therefore, TC M&A requires that the enterprise has a high dynamic capability, which includes both technological adaptability and evolutionary adaptability. It is difficult for enterprises to integrate resources effectively to form new knowledge. The lack of evolutionary adaptability makes it difficult for enterprises to coordinate various elements in the external environment and expand their own resources.

## 2.3. TC M&A and Enterprise Innovation

Studies in the IB field suggest that enterprises with clear strategic goals are more likely to achieve their goals quickly. These strategic objectives include expanding the international market, learning and acquiring new knowledge to enhance the innovation ability of enterprises, accumulating international management experience, and realizing the strategic transformation of enterprises [7]. TC M&A has a clear strategic intention, one that aims to acquire sophisticated technologies in mature markets and thus occupy a competitive place in the global market. Although some enterprises have had a degree of achievement in China, in facing the limitations of local institutions and technology, their innovation still cannot break through the bottleneck, and there is still a large technology gap between enterprises in the emerging market and those in the mature market [24]. The most direct way to bridge this gap is to acquire technology from mature markets [7].

Specifically, TC M&A can improve the performance of enterprise innovation through resource reorganization, learning, and synergy efforts. The main purpose of TC M&A is to absorb intangible resources from the target enterprise, such as technology, management skills, brands, and marketing channels, which may overlap with or differ greatly from the merged enterprise. When the acquisition enterprise and the target enterprise have a similar language, cognitive structure, knowledge background, and management skills, these similar resources may promote the sharing of knowledge of the enterprise after the acquisition. Technological overlap is conducive to the rapid discovery, integration, and absorption of resources by M&A enterprises, on the basis of which innovation synergies can be obtained [25], thus promoting the innovation performance of the parent company. When

the institutional environment, degree of economic development, and cultural customs of the target enterprise and the M&A enterprise differ greatly, the resources provided by the target enterprise and the M&A enterprise are less overlapping, and the complementarity between the resources is greater than the similarity. Such knowledge resources with strong complementarity can broaden the knowledge pool of enterprises and expand the connection between old and new knowledge, thus expanding the scope of innovation of enterprises [26]. At the same time, TC M&A is an interactive process involving mutual learning between two transnational organizations, and learning itself is generally considered to be one of the technologies that allow an organization to develop its capability for innovation [27]. Organizations usually realize the learning curve effect through employees as carriers. When the acquisition of technology is the goal of M&A, organizational employees have stronger confidence in learning and are more likely to acquire tacit knowledge that plays a key role in innovation through frequent communication activities such as electronic conferences, field exchanges, and dispatch of technical personnel. Thus, the innovation performance of the parent company can be improved [13]. In addition, TC M&A may lead to resource reallocation and asset divestiture, which would not only directly improve enterprise earnings, but also facilitate the formation of cost-based technology synergies [9], thus saving innovation costs. On the basis of the above analysis, we propose the following hypothesis:

**Hypothesis 1.** *TC M&A positively promotes enterprise innovation performance.*

#### 2.4. CSR and Enterprise Innovation

CSR helps enterprises collect innovation information and accumulate diversified innovation resources. Enterprise innovation is an extremely complex activity. For example, product innovation involves product design and R&D decisions. The innovation input of a single enterprise is limited, and enterprises often require the help of external stakeholders to accumulate innovation resources and develop innovation capabilities [28]. These stakeholders include not only suppliers, customers, and other business partners, but also governments, universities, research institutes, and social institutions. Enterprises with high CSR can easily gain the trust of stakeholders in the innovation environment and establish friendly relations with stakeholders [29]. In this way, enterprises broaden the channels for acquiring advanced technical knowledge and information [30] and establish a broader enterprise cooperation network, thus accumulating knowledge and information that is needed for innovation [31,32]. For example, enterprises with high CSR are more likely to obtain product feedback from customers; to understand the problems existing in product development and after-sales in a timely manner; and to make adjustments according to customer needs, thus improving the efficiency of innovation. Enterprises with high CSR are also more likely to form close ties with universities, which may help enterprises acquire key knowledge of basic research in the early stages and improve the capacity of the enterprise knowledge pool.

The complexity of innovation makes enterprises face higher risks and uncertainties, and high CSR helps to reduce the uncertainty of enterprises in terms of innovation. According to stakeholder theory, high CSR means that an enterprise has a good corporate reputation and also conveys the signal that an enterprise attaches importance to implicit contracts [33]. These signals help to reduce the resistance of enterprises, as well as the risks, in the process of innovation. For example, companies with high CSR will rely on reputation in order to attract more talented researchers and managers, thus reducing trial and error costs in the innovation process. Meanwhile, enterprises with high CSR are more likely to win the trust of government and financial institutions, obtaining the government's help in terms of taxation, financial allocation, and information, as well as low-interest loans from banks, thus laying a good capital foundation and reducing risk during enterprise innovation.

Enterprises with high CSR often convey a “people-oriented” signal, which is conducive to creating an open innovation atmosphere. Enterprises with high CSR tend to pay more attention to the treatment and long-term development of employees [34]. Compared with enterprises that avoid CSR, enterprises with high CSR often pay attention to shaping a favorable working environment and increase communication among employees more frequently through training and learning, group building, and organized competitions so that employees can express themselves more freely and stimulate their capacity for innovation. At the same time, it is difficult for a single, similar group to produce innovation as it depends on diversity and collective learning. Enterprises with high CSR tend to allow for more diversity of the team members, such as diversity in terms of sex and race [35], which helps to stimulate discussion and mutual learning between team members, which not only produces inspiration for innovation between organization members but also helps to enrich the knowledge reorganization of enterprises, so as to generate more innovation resources. On the basis of the above analysis, we propose the following hypothesis:

**Hypothesis 2.** *CSR positively promotes enterprise innovation.*

### 2.5. TC M&A, CSR, and Enterprise Innovation

For TC M&A, the promotion effect of CSR on M&A and innovation is difficult to implement, and may even have a negative impact in the initial stages. First, due to different political and cultural development paths among countries, there are deviations in understanding CSR and different emphases in the practice of CSR activities. As a result, enterprises with high CSR in their own countries cannot obtain recognition from the host country when implementing CSR consistent with their own countries. This may cause an additional cost, which is detrimental to the innovation capital accumulation after TC M&A. For example, Chinese enterprises pay more attention to their relationship with the government [5,7]. As an important stakeholder of enterprises, the government is the main group that enterprises take into account when exercising CSR. Nevertheless, in mature markets where the market system is more complete, although the interest groups involved in CSR also include the government, enterprises pay more attention to the relationship with suppliers, employees, and customers [28]. The behavior of enterprises is generally path-dependent. Therefore, when enterprises enter the host country, they tend to establish a close relationship with the government of the host country due to the influence of the original path dependence, which makes them pay heavier costs [36]. However, the target markets of TC M&A often have more perfect market mechanisms. Therefore, although enterprises try to contact the host government for rent-seeking behavior, they cannot receive the corresponding policy and financial return. In this case, high CSR is inhibitory to TC M&A to promote enterprise innovation. Moreover, enterprises with high CSR in China are also deeply influenced by the government, and many of them are even state-owned enterprises. In the process of TC M&A, they often shoulder the political objectives of the government, so they are more likely to cause vigilance and confrontation between the host country’s enterprises and the government, which can easily cause friction after TC M&A [37], which is inhibitory to innovation collaboration during the process of TC M&A.

Second, in order to maintain domestic CSR, enterprises may employ behaviors that are detrimental to the interests of the target enterprises. For example, in order to fulfill their responsibilities to domestic employees, Chinese companies tend to send some non-core employees to host countries in order to preserve their jobs. This may have a “crowding-out effect” on the host country’s innovative talents; the local innovative talent is crucial in cultivating the absorptive capacity of enterprises, and the reduction in local scientific and technological talent hinders the innovation process of enterprises. Meanwhile, TC M&A involves a complex negotiation, integration, and absorption process that requires a large number of resources [10]. Nevertheless, in the process of TC M&A, enterprises may require a high level of integration costs in order to maintain their CSR investment in the domestic market, which is detrimental to the integration of various innovative resources after M&A.

Finally, enterprises with high CSR may have inconsistent internal and external responsibilities. In China, some enterprises improve their CSR for the sake of their corporate reputation, but the operation situation of these enterprises is not optimistic. Under the pressure of central and local governments, as well as the supervision of the China Securities Regulatory Commission and the China Banking and Insurance Regulatory Commission, some enterprises have to improve their CSR reputation in order to gain domestic competitive advantages [38]. However, these enterprises fulfill their CSR only in response to the policies of domestic authorities, rather than seeking long-term development of enterprises, and their financial position and operating performance tend to be relatively poor. However, in the process of TC M&A, enterprises need to gather a large number of resources in a short period of time in order to deal with various risks after M&A [11,12]. These enterprises cannot provide sufficient financial support for enterprise innovation. Therefore, high CSR is inhibitory to the innovation performance of TC M&A. On the basis of the above analysis, we propose the following hypothesis:

**Hypothesis 3.** *The moderating effect of CSR on the relationship between TC M&A and the performance of enterprise innovation is negative and significant.*

#### *2.6. Diplomatic Distance, CSR, and Innovation of TC M&A*

As mentioned above, the negative effect of CSR on TC M&A is mainly reflected in two aspects: the deviation between countries in the exercise of CSR, which leads to friction between innovation interest groups, and the extra cost in the exercise of CSR, which occupies resources used in the progress of TC M&A. Diplomatic distance refers to the degree of diplomatic closeness between two countries. The establishment of a close diplomatic relationship alleviates the negative impact of CSR on the relationship between TC M&A and enterprise innovation.

The moderating effect of diplomatic distance on CSR in emerging markets is reflected in two aspects. First, the close diplomatic distance reduces the cost of enterprises exercising CSR caused by inconsistency with the values of the host country. Due to the unfamiliarity with the host country's institution and culture, enterprises in emerging markets tend to misinterpret the host country's government policies and corporate values, resulting in additional costs due to inconsistent values in the formulation and exercise of CSR rules. Emerging market companies face a higher cost of legitimacy than local companies [39]. The close diplomatic distance is conducive to sending a signal of "stable development of bilateral relations", increasing the trust of the host country's enterprises, and enhancing the legitimacy of emerging market enterprises in the host country. This makes it easier for emerging market enterprises to embed themselves in the host country's political and economic environment system and to obtain help from the host country's government. For example, when entering a host country with close diplomatic distance, it is easier for enterprises to obtain the rights and interests of the host country such as operating licenses, franchises, and corporation contracts [40,41]. More importantly, in the context of close diplomatic distance, the host country government is more likely to provide or set up specialized cooperation organizations and the corresponding supporting institutions, as well as establishing consulting management institutions, so that the emerging market companies are more familiar with the rules of the system and the specific market culture of the host country. Second, close diplomatic relationships promote a relationship of mutual trust among stakeholders involved in CSR, which is conducive to the formation of synergy and innovation. A close diplomatic relationship conveys a signal that the two countries have the prospect of stable cooperation, which can increase the sense of security and confidence of emerging market enterprises in cooperation with suppliers, research institutions, and customers in the host country [42,43]. This kind of confidence helps emerging market enterprises coordinate the interests of external network relations of enterprises, so as to generate synergy among stakeholders and reduce the friction during innovation, thus promoting the performance of enterprise innovation.

Although CSR plays a negative role in promoting the relationship between TC M&A and enterprise innovation, when enterprises enter a host country with a close diplomatic distance, the promotion effect of CSR on TC M&A is enhanced due to the reduction in liabilities of outsiders. Meanwhile, close diplomatic distance is conducive to a cooperative relationship between the host country stakeholders and emerging market enterprises, thus being of benefit to the formation of innovative synergy. On the basis of the above analysis, we propose the following hypothesis:

**Hypothesis 4a.** *When enterprises enter a host country with close diplomatic distance, the moderating effect of CSR on the relationship between TC M&A and the performance of enterprise innovation becomes positive.*

### 2.7. Institutional Distance, CSR, and Enterprise Innovation

As mentioned above, when a TC M&A enterprise enters a mature market, due to the differences in legal norms, values, and cultural customs between the home country and the host country, it is difficult for the enterprise to gain recognition in the host country, even if it has high CSR in the home country. On the contrary, when the institutions of the two countries are close to each other, the CSR of the enterprise in the home country is more easily recognized by the host country, which is conducive to the cooperation of stakeholders in terms of innovation. This is mainly reflected in three aspects:

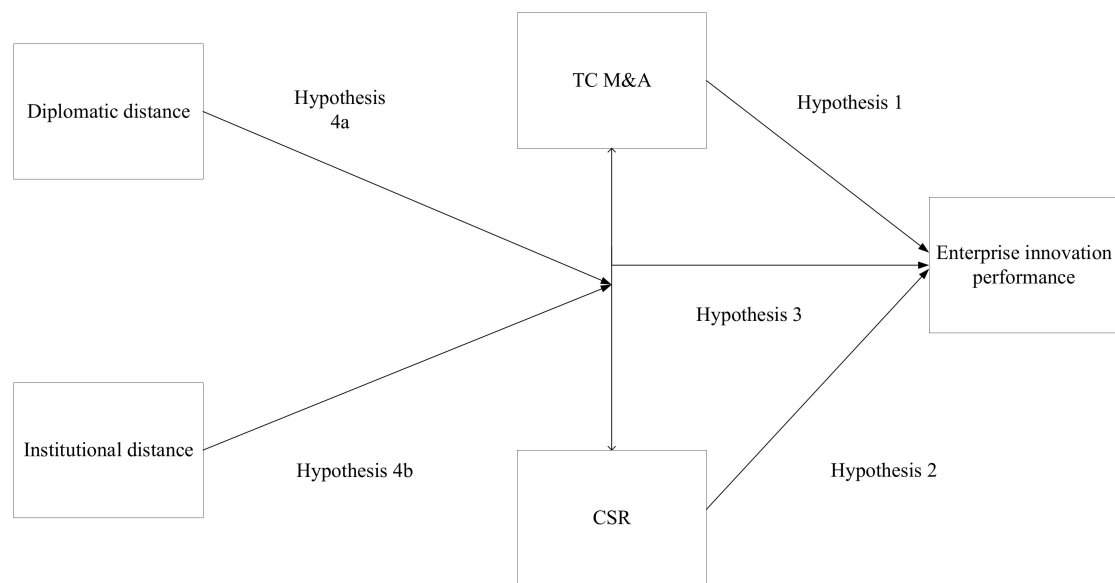
First, the close institutional distance means that countries have similar logic in terms of growth. After entering the host country, technology-acquiring enterprises face the consistency of the internal and external environments [44]. Enterprises with high CSR are more likely to obtain the support of stakeholders in the host country and to form innovation synergy both inside and outside the enterprise. The growth path and development mode of a country follow a specific logic, and the development of a national social system is printed into this specific national logic [45,46]. Due to the similarity between the internal development logic of enterprises and the national logic of the host country, when emerging market enterprises enter markets with similar institutions, increasing commitment to CSR in the host country can increase local response [9]. On the one hand, this local response promotes the operation of contract execution and the mechanism of transaction, thus promoting TC M&A. On the other hand, such local response strengthens the exchange and communication between host country stakeholders and M&A enterprises, promoting a relationship of mutual trust between host country stakeholders and M&A enterprises [47,48], so as to better generate innovative synergy. Second, similar institutional distance can promote enterprises to exercise CSR while saving innovation costs. With the increase in institutional distance, technology acquisition enterprises face a completely different business environment from their home countries, which will lead to additional costs in M&A and the integration of innovation resources after M&A. For example, due to different procedures for implementing business strategies, enterprises may face more uncertainties and increased responsibilities of outsiders after M&A, resulting in more supervision and dispute settlement costs. Moreover, due to the differences in values and norms between the acquiring enterprise and the target enterprise, local partners may have a crisis of confidence in the target enterprise after the M&A [49], thus inducing opportunistic behaviors, which make it difficult to obtain the optimal allocation of innovation resources. Finally, institutional distance also means that different countries have different degrees of institutional rigor. When technology-acquiring enterprises enter a host country with more stringent institutions, they need to develop new capabilities to cope with the institutional challenges of the host country [11], thus crowding out the innovation resources of enterprises. For example, when technology-acquisition enterprises enter a host country with a more ideal institution, they need to deal with the specific laws and regulations, multigovernment relations, and the standard difference in CSR between the home country and the host country [50]. However, the enterprise resources and the energy of managers are limited. Developing these capabilities limits an organization's ability to absorb and apply new knowledge.



In conclusion, although technology-acquisition enterprises may incur extra costs when exercising CSR due to different national development paths, various stakeholders may have a crisis of trust in the innovation process of enterprises. However, similar institutional distance reduces the burden of M&A enterprises exercising CSR and increases the positive effect of M&A enterprises exercising CSR. Therefore, we propose the following hypothesis:

**Hypothesis 4b.** *When enterprises enter a host country with close institutional distance, the moderating effect of CSR on the relationship between TC M&A and the performance of enterprise innovation becomes positive.*

The framework in this research is shown in Figure 1.



**Figure 1.** Conceptual framework.

### 3. Research Design

#### 3.1. Sample Selection

This paper selected 230 cross-border M&A events of Chinese listed companies from 2007 to 2019 as research samples. The sample selection was based on the following steps: (1) This paper excluded M&A events that may be purely for tax avoidance purposes, with the target enterprises of such events are usually located in tax havens such as the Cayman Islands and the British Virgin Islands. (2) Because the price and method of related transactions may violate market rules, we omitted the cross-border M&A samples that have related transactions. (3) If the listed company had other major events that may interfere with the M&A event in the calendar month prior to the M&A, such as the change of the board of directors, major lawsuits, and the resignation of the former general manager, we omitted these samples. In addition, for companies that have had two cross-border M&As in six calendar months, we only used the sample of the first cross-border M&A. (4) If the shareholding of the M&A company is too small after cross-border M&A, it may have the purpose of being purely a short-term investment, and therefore this paper excluded the samples with an M&A transaction (less than RMB 10,000) that was too small and with acquirers' shareholdings of less than 5%.

#### 3.2. Variable Description

The M&A samples in this paper mainly came from the Zephyr database, and the CSMAR database and CNRDS database were used for comparison and as a supplement. As CSMAR and RESSET databases provide more comprehensive financial data of Chinese

listed companies, the financial data in this paper were mainly obtained from these two databases, as well as enterprises' annual reports.

### 3.2.1. Dependent Variable

Enterprise innovation performance (EIP). Generally speaking, the number of patent applications reflects the innovation capacity of an enterprise [51], which is closely related to the innovation output. In reference to the practices of Maggitti et al. and Tian and Wang [52,53], we adopted the total number of patents applied by enterprises in one year as the measurement index of innovation performance of enterprises. Considering that these data have a large number of 0 value data, we learned from Woodridge and added 1 to it in order to take the logarithm [54].

### 3.2.2. Independent Variables

Technology-driven cross-border M&A (TC). On the basis of the description of M&A events in the CSMAR database and the industry SIC code of the M&A enterprise provided by the Zephyr database, we judged the M&A events. If the acquisition information involved technology acquisition, brand acquisition, or scientific and technological cooperation, or if the industry code of the acquired enterprise belonged to the science and technology industry, the value was assigned as 1. Otherwise, the value was 0.

Corporate social responsibility (CSR). We used the corporate social responsibility information score provided by Hexun as the measurement index of CSR, which includes four parts: supplier and consumer responsibility, shareholder responsibility, employee responsibility, and social contribution and environmental responsibility. Among them, the liability of the supplier's and the consumer's rights and interests consists of product quality, after-sales service, and integrity and reciprocity. The shareholder responsibility score consists of five parts: profit, debt repayment, credit approval, return, and innovation. Employee responsibility mainly consists of employee salary, employee training, and employee care, among others. Social contribution mainly refers to the value of contribution. Environmental responsibility mainly refers to the ability of environmental governance.

### 3.2.3. Moderating Variables

Diplomatic distance (DD). In this paper, we used the exchange of visits between the political leaders of the two countries to represent the degree of diplomatic intimacy between the two countries. Political diplomacy between top leaders includes visits, foreign visits, and meetings in third countries. This paper measured diplomatic distance according to the number of mutual visits and meetings between political leaders in a third country. The greater the number, the greater the diplomatic distance. The detailed information comes from the website of the Ministry of Foreign Affairs—"Diplomatic News".

Institutional distance (ID). We used the global governance indicators provided by the Worldwide Governance Indicators (WGI) database to measure institutional distance among countries. The indicators include six institutional factors, namely public discourse power and accountability system, political stability and elimination of violence and terrorism, government efficiency, supervision quality, level of rule of law, and corruption control. In reference to the method of Kogut and Singh [55], the specific formula is as follows:

$$ID_{ij} = \sum_{n=1}^6 \frac{(I_{nj} - D_{nj})^2}{V_n} \quad (1)$$

Consistent with cultural distance, we adopted the standardized distance measurement method,  $ID_{ij}$ , which represents the institutional difference between China and country  $J$ .  $I_{nj}$  refers to China's score on category  $n$  institutional factors,  $D_{nj}$  refers to the score of country  $J$  on the  $n$ th institutional factors, and  $V_n$  refers to the variance of each country's score in category  $n$  of institutional factors in the sample.

### 3.2.4. Control Variables

As factors at the enterprise level, transaction level, and host country level may affect the innovation of cross-border investment enterprises, we selected the following control variables: (1) Enterprise size (size): large enterprises are more likely to generate scale effects, thus saving innovation costs [56]. We measured the size of the firm by taking the logarithm of its total assets. (2) Enterprise age (age): older companies usually have more operational experience and a more mature corporate governance system [57], which is more conducive to innovation. The age of a company is measured by the difference between the observation year and the year of registration. (3) R&D investment intensity (RD): R&D investment intensity represents the resources invested by enterprises in innovation [29]. Since firms usually consider innovation spending in terms of revenue, we used the ratio of R&D spending to sales revenue to measure the intensity of firms' R&D spending. (4) Cross-border M&A experience (exper): No matter the level of successful overseas M&A experience or failed M&A experience, enterprises can generate a learning effect [58], thus promoting enterprise innovation activities. We assigned the value of "1" to the overseas M&A behavior that has occurred since the establishment of the enterprise before this M&A event; otherwise, the value was "0". (5) TobinQ: TobinQ represents the ratio between the market value of an enterprise's stock and the replacement cost of capital. A high TobinQ means that an enterprise can obtain a higher rate of return on industrial investment when entering the capital market [59], thus enhancing the innovation power of an enterprise. (6) Cash on sales ratio (PCS): Cash on sales ratio refers to the ratio of the net cash flow from operating activities of the enterprise to its sales. A larger value of this ratio indicates that an enterprise has sufficient cash flow and a good utilization effect of funds. (7) Government subsidy (subsi): Government subsidy not only directly affects enterprises' innovation input but also indirectly affects enterprises' innovation activities by affecting the cost and value creation of enterprises' operating input. (8) M&A scale (SMA): Large M&A scale may lead to an increase in integration and coordination costs after M&A, as well as an increase in the volatility of expected earnings of acquired enterprises, which is not conducive to innovation investment [60]. This paper took the logarithm of the cash or stock value paid by the buyer to measure the M&A scale. (9) Economic freedom of the host country (economic): Economic freedom is usually used to measure the degree of development of a country's market economy. The economic development level of the host country not only affects the business performance of the M&A enterprises, but also determines the abundance of national technical resources [61]. (10) Natural resources of the host country (resouc): The abundance of natural resources of the host country affects the M&A choice of Chinese enterprises and also provides sufficient raw materials for the innovation of M&A enterprises. We measured the abundance of natural resources in a country by the proportion of its exports of mineral resources, oil, and gas to its total exports of goods. (11) Cultural distance (CD): Countries with greater cultural distance also tend to have more heterogeneous and complementary knowledge, enabling them to expand the scope of innovation for firms. We used data from Geert Hofstede to measure cultural distance. It can be divided into six dimensions, namely power distance, individualism, masculinity, uncertainty avoidance, long-term orientation index, and connivance and limitation index.

$$CD_{ij} = \frac{1}{6} \sum_{n=1}^6 \frac{(I_{nj} - D_{nj})^2}{V_n} \quad (2)$$

Here,  $CD_{ij}$  represents the cultural distance between China and country  $J$ ,  $I_{nj}$  refers to China's score on the  $n$ th cultural dimension,  $D_{nj}$  refers to the score of country  $J$  on the  $n$ th cultural dimension, and  $V_n$  refers to the variance of the score of each country in the sample on the  $n$ th cultural dimension.

### 3.3. Model Construction

We first performed the F test on the model. The test results showed that this paper should use the fixed effect model between the mixed effect and fixed effect. We then performed the LM test. The results showed that this paper should choose the random effects model between random effects and mixed effects. Finally, we used the Hausman test to identify the model, and the results suggested that the fixed effect model is preferable to the random effect model. We introduced the time effect, as it can alleviate the problem of missing variables changing with time. At the same time, since enterprise innovation generally has a time lag effect, and the delay of core variables and all control variables by one period can effectively alleviate the endogeneity problem caused by the omission of variables, we delayed both core explanatory variables and control variables by one period. The model is as follows:

$$EIP_{i,t} = \alpha_0 + \alpha_1 TC_{i,t-1} + \alpha_2 CSR_{i,t-1} + \alpha_3 TC_{i,t-1} \times CSR_{i,t-1} + \sum_k \alpha_k controls_{i,t-1} + \delta_i + \eta_t + \varepsilon_{it} \quad (3)$$

$$EIP_{i,t} = \beta_0 + \beta_1 TC_{i,t-1} + \beta_2 CSR_{i,t-1} + \beta_3 DD_{i,t-1} + \beta_4 TC_{i,t-1} \times DD_{i,t-1} + \beta_5 TC_{i,t-1} \times CSR_{i,t-1} + \beta_6 CSR_{i,t-1} \times DD_{i,t-1} + \beta_7 TC_{i,t-1} \times CSR_{i,t-1} \times DD_{i,t-1} + \sum_k \beta_k controls_{i,t-1} + \delta_i + \eta_t + \varepsilon_{it} \quad (4)$$

$$EIP_{i,t} = \varphi_0 + \varphi_1 TC_{i,t-1} + \varphi_2 CSR_{i,t-1} + \varphi_3 ID_{i,t-1} + \varphi_4 TC_{i,t-1} \times ID_{i,t-1} + \varphi_5 TC_{i,t-1} \times CSR_{i,t-1} + \varphi_6 CSR_{i,t-1} \times ID_{i,t-1} + \varphi_7 TC_{i,t-1} \times CSR_{i,t-1} \times ID_{i,t-1} + \sum_k \varphi_k controls_{i,t-1} + \delta_i + \eta_t + \varepsilon_{it} \quad (5)$$

where  $i$  represents the individual,  $t$  represents the time, and  $\varepsilon_{it}$  represents the disturbance. Model 3 examines the interaction effect between TC M&A and CSR, Model 4 tests the interaction effect between TC M&A and CSR under the influence of diplomatic distance, and Model 5 tests the interaction between TC M&A and CSR under the influence of institutional distance.

## 4. Empirical Results

### 4.1. Descriptive Analysis

We performed a 1% indentation for variables with extreme values. Table 1 is variable description table. Table 1 shows that the mean value of TC M&A was 0.6043, proving that more than half of the samples were TC M&As. It can be seen that from 2007 to 2019, China's TC M&A became the main component of cross-border M&A. The minimum value of the CSR score was  $-7.07$ , and the maximum value was  $75.23$ , indicating that there was a great difference in CSR among enterprises. Therefore, the impact of CSR on TC M&A of enterprises may also have a great difference. At the same time, the minimum institutional distance was  $3.9$ , and the maximum was  $250.25$ , indicating that the institutional distance between the host countries was large, and the influence difference on M&A enterprises changed accordingly.

### 4.2. Correlation Analysis

We further analyzed whether multicollinearity existed among variables. Table 2 is correlation matrix of variables. As shown in Table 2, correlation coefficients between variables were mostly less than  $0.1$ , and the highest correlation coefficient between institutional distance and economic freedom was  $0.6247$ , which would not cause serious multicollinearity of variables. At the same time, we determined the variance inflation factor. When we gradually increased the variables, VIF always varied between  $1.09$  and  $1.41$ , far below the specified minimum critical value of  $5$  [62], which further confirms that there was no multicollinearity between variables. In addition, we performed mean-centered treatment for all variables involved in the interaction term, which further alleviated the multicollinearity problem caused by the interaction term.

**Table 1.** Variable description table.

Variable	Obs	Mean	Std	Min	Max	Data Source
EIP	230	2.0353	1.7701	0	9.0101	CSMAR, CNRDS
TC	230	0.6043	0.4901	0	1	CSMAR, Zephyr
CSR	230	26.7087	15.2781	−7.07	75.23	Hexun
DD	230	4.1609	3.9112	0	15	Foreign Office website
ID	230	130.6128	51.9879	3.9049	250.2512	WGI (Worldwide Governance Indicators)
size	230	21.7164	1.4655	18.0954	26.4162	CSMAR
age	230	14.7391	5.6066	3	34	CSMAR
RD	230	0.0496	0.0748	0	0.5851	CNRDS, CSMAR
exper	230	0.4609	0.4996	0	1	CSMAR, Corporate annual reports
TobinQ	230	2.1258	1.3475	0.8296	13.3134	CSMAR
PCS	230	0.1006	0.1702	−0.6241	0.6514	CSMAR, RESSET
subsi	230	20.2896	9.6441	1.2128	53.1490	CSMAR
SMA	230	18.1779	2.8670	6.2146	33.858	CSMAR, Zephyr
economic	230	7.8942	0.4809	6.34	8.7	Fraser Institue Report 2020
resouc	230	5.0528	7.7104	0.1249	42.5269	WDI (World Development Indicator)
CD	230	3.5132	1.0904	0.6971	5.5235	Geert Hofstede

Table 2. Correlation matrix of variables.

	EIP	Size	Age	RD	SMA	Exper	TobinQ	PCS	ID	Economic	CD	Resouc	Subsi	TC	CSR	DD	VIF
EIP	1																
size	0.1717 ***	1															1
age	0.1941 ***	0.2941 ***	1														1.09
RD	0.0247	0.3678 ***	−0.1510 **	1													1.17
SMA	0.0642	0.3828 ***	0.1921 ***	0.1783 ***	1												1.21
exper	−0.0282	−0.0465	−0.0785	0.0537	−0.0974	1											1.17
TobinQ	−0.0746	0.2979 ***	−0.100	0.3232 ***	0.2487 ***	0.1931 ***	1										1.21
PCS	−0.1313 **	0.0375	0.0511	0.0407	0.0498	0.106	0.0499	1									1.18
ID	0.0757	−0.0847	0.3594 ***	0.1586 **	−0.1203 *	0.0582	−0.0297	−0.0814	1								1.21
economic	0.0536	−0.0936	0.1996 ***	0.1091 *	0.0255	0.00950	0.0753	−0.00580	0.6247 ***	1							1.37
CD	0.0356	−0.0158	−0.0780	0.0180	−0.1591 **	0.0695	−0.0154	−0.0159	0.3453 ***	0.2094 ***	1						1.36
resouc	−0.0151	0.0787	0.0364	−0.0884	−0.0366	−0.0202	−0.1095 *	−0.0743	0.0744	−0.0688	0.0439	1					1.34
subsi	−0.1102 *	−0.0201	−0.0681	0.0398	−0.00960	−0.0232	0.0005	0.0748	0.0823	0.3142 ***	−0.0236	−0.0858	1				1.35
TC	0.1799 ***	−0.1608 **	−0.0997	0.2526 ***	−0.0382	−0.1259 *	0.0344	0.0152	0.2007 ***	0.2773 ***	−0.00530	−0.0825	0.0319	1			1.36
CSR	0.1455 **	0.3666 ***	0.0112	−0.1422 **	0.1492 **	0.0553	−0.0902	0.1503 **	0.2239 ***	0.2107 ***	0.1293 *	0.0520	0.0838	−0.0102	1		1.37
DD	0.1246 *	−0.0658	−0.0439	0.0753	−0.0357	−0.0113	0.1188 *	−0.0257	0.0662	0.3734 ***	0.1680 **	0.1192 *	0.1323 **	0.1951 ***	0.0193	1	1.41

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### 4.3. Regression Analysis

Table 3 is benchmark test table. The last three lines of Table 3 are the results of model selection. Model 1 was the test of each control variable. In Model 1, enterprise size, age, cross-border M&A experience, economic freedom, cultural distance, and resource abundance were found to be significantly positively correlated with enterprise innovation performance, which conforms to the inference in the preceding variable description. It is worth noting that, conversely to the above conclusion, the scale of M&A had a significant positive impact on enterprise innovation performance ( $\beta = 0.1896, p < 0.01$ ), which may have been because the high asset value of the target enterprise means that the enterprise can obtain more innovation resources from the target enterprise. The impact of government subsidies on enterprise innovation performance was negative ( $\beta = -0.0649, p < 0.01$ ), which may have been because the Chinese government tends to provide more subsidies to state-owned enterprises, but state-owned enterprises tend to have innovation inertia [37]. Meanwhile, the effect of R&D investment on enterprise innovation performance was not significant ( $\beta = -0.0445, p > 0.1$ ), which may have been because technology-driven M&A is faced with resource integration and collaboration [24]. In this process, the promotion effect of R&D on enterprise innovation is affected. The promoting effect of TobinQ and cash sales ratio on firm innovation is not consistent with the inference ( $\beta = -0.0052, p < 0.01$ ;  $\beta = 0.0063, p > 0.1$ ). This may be because the strategic focus of enterprises is to expand their own business scale rather than innovation. Model 2 examines the relationship between TC M&A and enterprise innovation performance. In Model 2, TC M&A had a positive promoting effect on enterprise innovation ( $\beta = 0.6279, p < 0.05$ ), which may have been because the process of cross-border M&A produces good resource reorganization, learning, and synergistic effects. Hypothesis 1 was thus confirmed. Model 3 tested the relationship between CSR and enterprise innovation performance. In Model 3, CSR had a positive effect on enterprise innovation performance ( $\beta = 0.0278, p < 0.05$ ), which means that a high CSR reputation was conducive to the accumulation of innovation resources. Hypothesis 2 was thus confirmed. Model 4 included TC M&A and CSR to test the relationship between them and the performance of enterprise innovation. Model 5 tested the moderating effect of CSR on TC M&A. In Model 5, CSR negatively promoted the relationship between TC M&A and enterprise innovation ( $\beta = 0.0278, p < 0.05$ ), which may have been due to the significant difference between emerging markets and mature markets in terms of CSR [33]. Hypothesis 3 was thus confirmed. Model 6 was a test of the moderating effect of diplomatic distance. It can be seen from Model 6 that, under close diplomatic distance, CSR had a positive promotion effect on the relationship between TC M&A and enterprise innovation ( $\beta = 0.0012, p < 0.01$ ). This was consistent with Hypothesis 4a. Model 7 tested the moderating effect of institutional distance. It can be seen from Model 7 that close institutional distance had no effect on the moderating effect of CSR, and Hypothesis 4b was therefore not verified. This phenomenon may have been caused by the fact that although countries with similar institutions have similar understandings of CSR, a large institutional distance is more likely to produce heterogeneous and complementary knowledge, thus expanding the scope of enterprise innovation. Therefore, the effect of a large institutional distance on enterprise innovation might offset part of the moderating effect of close institutional distance on CSR. When the institutional distance between the two countries was close, the promotion effect of CSR on the relationship between TC M&A and enterprise innovation was not significant.

Table 3. Benchmark test table.

	m1	m2	m3	m4	m5	m6	m7
Variables	EIP	EIP	EIP	EIP	EIP	EIP	EIP
TC		0.6279 ** (0.2586)		0.5333 ** (0.2477)	−0.0568 (0.1645)	2.4520 *** (0.5926)	0.1585 (0.5253)
CSR			0.0278 ** (0.0112)	0.0220 ** (0.0090)	0.0530 *** (0.0091)	0.4112 *** (0.1200)	0.0414 (0.0296)
DD						0.0126 *** (0.0034)	
TC × CSR					−0.0558 *** (0.0147)	0.3913 *** (0.1122)	−0.0446 (0.0403)
TC × DD						0.0087 *** (0.0024)	
DD × CSR						0.0014 *** (0.0004)	
TC × DD × CSR						0.0012 *** (0.0003)	
TC × ID							−0.0035 (0.0061)
ID × CSR							0.00001 (0.0002)
TC × ID × CSR							0.0001 (0.0003)
ID	−0.0065 ** (0.0030)	−0.0034 (0.0025)	−0.0116 *** (0.0038)	−0.0080 *** (0.0030)	−0.0075 *** (0.0021)	−0.0039 (0.0027)	−0.0043 (0.0049)
size	0.0076 *** (0.0024)	0.0093 *** (0.0021)	0.0071 *** (0.0020)	0.0086 *** (0.0019)	0.0073 *** (0.0017)	−0.0126 ** (0.0054)	0.0083 *** (0.0018)
age	0.0157 *** (0.0041)	0.0186 *** (0.0025)	0.0138 *** (0.0032)	0.0167 *** (0.0020)	0.0186 *** (0.0013)	0.0116 *** (0.0034)	0.0193 *** (0.0024)
RD	−0.0445 (0.0321)	−0.0254 (0.0285)	−0.0304 (0.0247)	−0.0172 (0.0267)	0.0291 (0.0227)	0.0965 *** (0.0295)	0.0270 (0.0247)
SMA	0.1896 *** (0.0543)	0.2117 *** (0.0361)	0.1224 ** (0.0554)	0.1554 *** (0.0331)	0.1736 *** (0.0236)	0.0186 (0.0580)	0.1873 *** (0.0266)
exper	0.5974 ** (0.2896)	0.6137 *** (0.2181)	0.5597 ** (0.2313)	0.5815 *** (0.1820)	0.7608 *** (0.1576)	2.6906 *** (0.5593)	0.7795 *** (0.2071)



Table 3. Cont.

	m1	m2	m3	m4	m5	m6	m7
Variables	EIP	EIP	EIP	EIP	EIP	EIP	EIP
TobinQ	−0.0052 *** (0.0012)	−0.0049 *** (0.0010)	−0.0058 *** (0.0009)	−0.0054 *** (0.0008)	−0.0053 *** (0.0004)	0.0131 *** (0.0021)	−0.0056 *** (0.0004)
PCS	0.0063 (0.0112)	0.0057 (0.0099)	0.0201 ** (0.0090)	0.0167 * (0.0098)	0.0204 *** (0.0055)	0.0558 *** (0.0100)	0.0210 *** (0.0044)
economic	0.0087 ** (0.0037)	0.0057* (0.0032)	0.0127 *** (0.0037)	0.0093 *** (0.0029)	0.0059 *** (0.0021)	0.0245 *** (0.0042)	0.0057 (0.0036)
CD	0.2095 * (0.1097)	0.1573 * (0.0854)	0.3187 *** (0.1072)	0.2513 *** (0.0655)	0.3071 *** (0.0747)	0.0965 ** (0.0432)	0.2757 *** (0.0854)
resouc	0.0764 *** (0.0241)	0.0708 *** (0.0223)	0.0830 *** (0.0249)	0.0769 *** (0.0242)	0.0643 *** (0.0189)	0.2272 *** (0.0358)	0.0615 *** (0.0179)
subsi	−0.0649 *** (0.0149)	−0.0693 *** (0.0130)	−0.0714 *** (0.0140)	−0.0738 *** (0.0120)	−0.0502 *** (0.0118)	−0.0304 ** (0.0142)	−0.0537 *** (0.0176)
Constant	51.6069 *** (8.2810)	59.3048 *** (5.7804)	49.4641 *** (6.3285)	56.4536 *** (4.4636)	54.7650 *** (4.2008)	−12.7497 (14.5542)	58.6197 *** (5.8022)
Observations	230	230	230	230	230	230	230
R-squared	0.9117	0.9320	0.9273	0.9413	0.9720	0.9865	0.9732
adj R-squared	0.903	0.925	0.920	0.935	0.969	0.985	0.970
F	225.7	793.3	636.4	13,620	22,867	33,603.72	2 × 10 <sup>10</sup>
Id FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
F test	8.90	9.92	9.46	9.86	17.72	12.05	9.22
LM test	9.77	10.77	10.32	11.14	11.10	11.92	11.81
Hausman test	45.62	48.63	47.89	48.71	63.62	42.39	36.36

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

#### 4.4. Robustness Test

Table 4 is robustness test of dependent variable replaced, Table 5 is robustness test of sample size replaced, Table 6 is robustness test of test method replaced. The test sequence of each model was consistent with Table 3. Compared with practical patents and design patents, invention patents are more innovative. Therefore, we selected the number of invention patents applied by the enterprise and added 1 to it to take the logarithm as the replaced dependent variable, as shown in Table 4. The significance and symbol of each model were consistent with those of the benchmark model, which proved the robustness of the empirical results. Meanwhile, since equity being too small after M&A potentially leads to a purely short-term investment, we followed Xu et al. and omitted the samples with equity less than 30% after M&A [63]; the results are shown in Table 5. For the heteroscedasticity problem, a clustering robust standard error was used in the benchmark test, and the consistent covariance matrix estimation method was able to deal with the heteroscedasticity problem in an effective manner. Therefore, the OLS method was replaced by the consistent covariance matrix estimation method as a robustness test, and the results are shown in Table 6. Compared with the benchmark model, as shown in Tables 5 and 6, TC M&A had a more significant effect on the performance of enterprise innovation ( $\beta = 0.6279$ ,  $p < 0.05$  in Table 3;  $\beta = 0.8274$ ,  $p < 0.01$  in Table 5;  $\beta = 0.6279$ ,  $p < 0.01$  in Table 6), and CSR had a more significant effect on the performance of enterprise innovation ( $\beta = 0.0278$ ,  $p < 0.05$  in Table 3;  $\beta = 0.0337$ ,  $p < 0.01$  in Table 5;  $\beta = 0.0278$ ,  $p < 0.01$  in Table 6). All model symbols are consistent with the benchmark model, which again proves the robustness of the benchmark model.

#### 4.5. Endogeneity Description

Generally, the causes of endogeneity include omission variable bias, reverse causality, sample self-selection, and measurement error. In terms of omission variable bias, we first introduced control variables at the national, transaction, and enterprise levels as much as possible, and then we delayed all explanatory variables and control variables for one period, so as to reduce the impact of omission variable bias. In terms of reverse causality, although the TC M&A and CSR of an enterprise may lead to sound innovation returns of the parent company, the innovation performance of the parent company does not lead to the TC M&A behavior of the enterprise. Therefore, reverse causality was not the main endogenous issue involved in this paper. Because TC M&A enterprises are usually enterprises with more R&D activities, which usually have better innovation performance, the sample involved the endogeneity of the self-selection problem, and therefore we adopted the Heckman two-stage model to mitigate this effect.

Table 4. Robustness test of dependent variable replaced.

	m1	m2	m3	m4	m5	m6	m7
Variables	EIPI	EIPI	EIPI	EIPI	EIPI	EIPI	EIPI
TC		0.5484 ** (0.2517)		0.4522 * (0.2444)	−0.1784 (0.1441)	1.9838 *** (0.5501)	0.1681 (0.4763)
CSR			0.0273 ** (0.0107)	0.0223 ** (0.0090)	0.0555 *** (0.0077)	0.3370 *** (0.1110)	0.0358 (0.0268)
DD						0.0110 *** (0.0031)	
TC × CSR					−0.0597 *** (0.0135)	0.3211 *** (0.1038)	−0.0382 (0.0366)
TC × DD						0.0074 *** (0.0023)	
DD × CSR						0.0012 *** (0.0003)	
TC × DD × CSR						0.0010 *** (0.0003)	
TC × ID							−0.0047 (0.0055)
ID × CSR							0.0001 (0.0001)
TC × ID × CSR							0.00003 (0.0003)
ID	−0.0049 * (0.0028)	−0.0022 (0.0026)	−0.0099 *** (0.0035)	−0.0068 ** (0.0029)	−0.0064 *** (0.0018)	−0.0051 ** (0.0024)	−0.0026 (0.0044)
size	0.0059 ** (0.0025)	0.0074 *** (0.0021)	0.0054 *** (0.0020)	0.0067 *** (0.0019)	0.0053 *** (0.0015)	−0.0121 ** (0.0049)	0.0063 *** (0.0016)
age	0.0127 *** (0.0038)	0.0153 *** (0.0026)	0.0109 *** (0.0030)	0.0134 *** (0.0020)	0.0154 *** (0.0011)	0.0096 *** (0.0031)	0.0158 *** (0.0023)
RD	−0.0576 * (0.0330)	−0.0409 (0.0297)	−0.0437 * (0.0261)	−0.0325 (0.0276)	0.0169 (0.0211)	0.0970 *** (0.0272)	0.0129 (0.0230)
SMA	0.1744 *** (0.0501)	0.1938 *** (0.0353)	0.1085 ** (0.0512)	0.1365 *** (0.0327)	0.1559 *** (0.0192)	0.0135 (0.0539)	0.1692 *** (0.0244)

Table 4. Cont.

	m1	m2	m3	m4	m5	m6	m7
Variables	EIPI	EIPI	EIPI	EIPI	EIPI	EIPI	EIPI
exper	0.5952 ** (0.2711)	0.6094 *** (0.2094)	0.5582 ** (0.2156)	0.5767 *** (0.1747)	0.7682 *** (0.1453)	2.4430 *** (0.5196)	0.7274 *** (0.1894)
TobinQ	−0.0044 *** (0.0011)	−0.0042 *** (0.0011)	−0.0050 *** (0.0009)	−0.0047 *** (0.0008)	−0.0046 *** (0.0003)	0.0112 *** (0.0020)	−0.0050 *** (0.0004)
PCS	0.0068 (0.0111)	0.0064 (0.0100)	0.0204 ** (0.0092)	0.0176 * (0.0099)	0.0215 *** (0.0051)	0.0517 *** (0.0092)	0.0209 *** (0.0040)
economic	0.0095 ** (0.0037)	0.0069 ** (0.0032)	0.0134 *** (0.0036)	0.0106 *** (0.0029)	0.0070 *** (0.0019)	0.0246 *** (0.0038)	0.0077 ** (0.0033)
CD	0.1456 (0.1044)	0.1000 (0.0871)	0.2527 *** (0.0944)	0.1956 *** (0.0610)	0.2551 *** (0.0632)	0.0872 ** (0.0383)	0.2312 *** (0.0782)
resouc	0.0808 *** (0.0229)	0.0759 *** (0.0217)	0.0873 *** (0.0238)	0.0821 *** (0.0235)	0.0687 *** (0.0174)	0.2104 *** (0.0330)	0.0626 *** (0.0165)
subsi	−0.0691 *** (0.0150)	−0.0730 *** (0.0133)	−0.0755 *** (0.0140)	−0.0776 *** (0.0123)	−0.0523 *** (0.0109)	0.0393 *** (0.0131)	−0.0579 *** (0.0162)
Constant	43.0252 *** (8.4545)	49.7479 *** (6.3357)	40.9228 *** (6.2430)	46.8490 *** (4.6780)	45.0751 *** (3.6103)	−9.4943 (13.4366)	49.0603 *** (5.1774)
Observations	230	230	230	230	230	230	230
R-squared	0.9027	0.9207	0.9202	0.9318	0.9726	0.9871	0.9735
adj R-squared	0.893	0.912	0.912	0.924	0.969	0.985	0.970
F	197.1	63,471	1445	2230	65,164	1.2 × 10 <sup>5</sup>	10 <sup>7</sup>
Id FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 5. Robustness test of sample size replaced.

	m1	m2	m3	m4	m5	m6	m7
Variables	EIP	EIP	EIP	EIP	EIP	EIP	EIP
TC		0.8274 *** (0.2583)		0.5403 ** (0.2656)	−0.0284 (0.1215)	2.9001 *** (0.6340)	0.2570 (0.8303)
CSR			0.0337 *** (0.0121)	0.0217 * (0.0127)	0.0522 *** (0.0067)	−0.1864 (0.2078)	0.0369 (0.0423)
DD						0.0124 *** (0.0037)	
TC × DD						0.0079 *** (0.0029)	
TC × CSR					−0.0559 *** (0.0149)	0.1761 (0.1942)	−0.0390 (0.0521)
DD × CSR						−0.0007 (0.0006)	
TC × DD × CSR						0.0060* (0.0031)	
TC × ID							−0.0045 (0.0087)
ID × CSR							0.0000 (0.0003)
TC × ID × CSR							0.0001 (0.0004)
ID	−0.0061 ** (0.0030)	−0.0031 (0.0025)	−0.0120 *** (0.0042)	−0.0079 ** (0.0040)	−0.0073 *** (0.0020)	−0.0126 ** (0.0060)	−0.0035 (0.0062)
size	0.0072 *** (0.0024)	0.0104 *** (0.0021)	0.0062 *** (0.0018)	0.0087 *** (0.0022)	0.0075 *** (0.0015)	−0.0026 (0.0095)	0.0085 *** (0.0017)
age	0.0151 *** (0.0043)	0.0203 *** (0.0024)	0.0124 *** (0.0038)	0.0168 *** (0.0032)	0.0189 *** (0.0020)	0.0137 *** (0.0039)	0.0193 *** (0.0024)
RD	−0.0485 (0.0346)	−0.0132 (0.0297)	−0.0353 (0.0302)	−0.0169 (0.0318)	0.0303 (0.0251)	−0.0491 (0.0430)	0.0276 (0.0253)
SMA	0.1879 *** (0.0537)	0.2213 *** (0.0358)	0.1052 * (0.0585)	0.1562 *** (0.0499)	0.1771 *** (0.0225)	0.1448 (0.1096)	0.1903 *** (0.0386)

Table 5. Cont.

	m1	m2	m3	m4	m5	m6	m7
Variables	EIP	EIP	EIP	EIP	EIP	EIP	EIP
exper	0.6341 ** (0.3039)	0.5630 *** (0.2078)	0.6226 *** (0.2323)	0.5803 *** (0.1913)	0.7559 *** (0.1535)	2.4327 *** (0.6779)	0.7542 ** (0.3001)
TobinQ	−0.0050 *** (0.0012)	−0.0050 *** (0.0010)	−0.0056 *** (0.0009)	−0.0054 *** (0.0007)	−0.0053 *** (0.0004)	0.0096 *** (0.0036)	−0.0057 *** (0.0009)
PCS	0.0050 (0.0118)	0.0074 (0.0094)	0.0207 ** (0.0090)	0.0167 * (0.0098)	0.0201 *** (0.0056)	0.0603 *** (0.0105)	0.0205 *** (0.0054)
economic	0.0087 ** (0.0039)	0.0048 (0.0031)	0.0135 *** (0.0045)	0.0092 ** (0.0039)	0.0057 ** (0.0027)	0.0308 *** (0.0054)	0.0060 (0.0038)
CD	0.1979 * (0.1042)	0.1583 * (0.0809)	0.3194 *** (0.0963)	0.2504 *** (0.0617)	0.3034 *** (0.0645)	0.0950 *** (0.0336)	0.2738 *** (0.0837)
resouc	0.0732 *** (0.0253)	0.0739 *** (0.0238)	0.0782 *** (0.0248)	0.0769 *** (0.0242)	0.0645 *** (0.0188)	0.2186 *** (0.0395)	0.0600 *** (0.0173)
subsi	−0.0644 *** (0.0144)	−0.0714 *** (0.0138)	−0.0718 *** (0.0124)	−0.0738 *** (0.0120)	−0.0502 *** (0.0117)	−0.0658 ** (0.0308)	−0.0552 *** (0.0188)
Constant	49.8113 *** (8.5334)	64.7214 *** (6.3250)	45.4527 *** (6.8669)	56.7340 *** (7.4537)	55.6770 *** (4.3026)	−46.3586 (28.4032)	59.6204 *** (8.0824)
Observations	220	220	220	220	220	220	220
R-squared	0.9136	0.9348	0.9346	0.9410	0.9719	0.9878	0.9731
adj R-squared	0.905	0.928	0.928	0.934	0.969	0.986	0.969
F	386.4	1811	5046	14,001	$7.2 \times 10^6$	$1.6 \times 10^9$	$1.1 \times 10^{10}$
Id FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 6. Robustness test of test method replaced.

Variables	m1 EIP	m2 EIP	m3 EIP	m4 EIP	m5 EIP	m6 EIP	m7 EIP
TC		0.6279 *** (0.0950)		0.5333 *** (0.0778)	−0.0568 (0.1241)	2.4520 *** (0.6628)	0.1585 (0.5139)
CSR			0.0278 *** (0.0051)	0.0220 *** (0.0040)	0.0530 *** (0.0077)	−0.4112 ** (0.1399)	0.0414 (0.0331)
DD						0.0126 *** (0.0032)	
TC × CSR					0.0558 *** (0.0111)	0.3913 *** (0.1204)	−0.0446 (0.0394)
TC × DD						0.0087 *** (0.0025)	
DD × CSR						0.0014 *** (0.0004)	
TC × DD × CSR						0.0012 *** (0.0004)	
TC × ID							−0.0035 (0.0076)
ID × CSR							0.0000 (0.0002)
TC × ID × CSR							0.0001 (0.0002)
c_ID	−0.0065 ** (0.0029)	−0.0034 (0.0021)	0.0116 *** (0.0031)	0.0080 *** (0.0025)	−0.0075 * (0.0035)	−0.0039 (0.0076)	0.1695 *** (0.0402)
size	0.0076 *** (0.0010)	0.0093 *** (0.0010)	0.0071 *** (0.0011)	0.0086 *** (0.0011)	0.0073 *** (0.0013)	−0.0126 ** (0.0055)	0.0083 *** (0.0020)
age	0.0123 *** (0.0016)	0.0136 *** (0.0010)	0.0130 *** (0.0013)	0.0139 *** (0.0012)	0.0111 *** (0.0018)	0.0047 (0.0064)	−0.0007 (0.0008)
RD	−0.0445 (0.0350)	−0.0254 (0.0288)	−0.0304 (0.0284)	−0.0172 (0.0248)	0.0291 (0.0189)	0.0965 *** (0.0109)	0.0270 (0.0250)
SMA	0.1896 *** (0.0267)	0.2117 *** (0.0111)	0.1224 *** (0.0167)	0.1554 *** (0.0111)	0.1736 *** (0.0218)	0.0186 (0.0439)	0.1873 *** (0.0256)

Table 6. Cont.

	m1	m2	m3	m4	m5	m6	m7
Variables	EIP	EIP	EIP	EIP	EIP	EIP	EIP
exper	0.5974 ** (0.2076)	0.6137 *** (0.1678)	0.5597 *** (0.1449)	0.5815 *** (0.1264)	0.7608 *** (0.1412)	2.6906 *** (0.5257)	0.7795 *** (0.2275)
TobinQ	0.0052 *** (0.0009)	0.0049 *** (0.0007)	0.0058 *** (0.0006)	0.0054 *** (0.0005)	0.0053 *** (0.0004)	0.0131 *** (0.0019)	0.0056 *** (0.0009)
PCS	0.0063 (0.0067)	0.0057 (0.0054)	0.0201 *** (0.0052)	0.0167 *** (0.0051)	0.0204 *** (0.0020)	0.0558 *** (0.0072)	0.0210 *** (0.0022)
economic	0.0087 *** (0.0028)	0.0057 ** (0.0021)	0.0127 *** (0.0020)	0.0093 *** (0.0016)	0.0059 *** (0.0016)	0.0245 *** (0.0029)	0.0057 * (0.0030)
CD	0.2095 ** (0.0811)	0.1573 ** (0.0666)	0.3187 *** (0.0790)	0.2513 *** (0.0639)	0.3071 *** (0.0831)	0.0965 (0.1308)	0.2757 *** (0.0802)
resouc	0.0764 *** (0.0130)	0.0708 *** (0.0103)	0.0830 *** (0.0083)	0.0769 *** (0.0075)	0.0643 *** (0.0107)	0.2272 *** (0.0366)	0.0615 *** (0.0152)
subsi	0.0649 *** (0.0082)	0.0693 *** (0.0063)	0.0714 *** (0.0075)	0.0738 *** (0.0055)	0.0502 *** (0.0076)	−0.0304 (0.0195)	0.0537 *** (0.0140)
Observations	230	230	230	230	230	230	230
r2	0.9117	0.9320	0.9273	0.9413	0.9720	0.9865	0.9732
F	1821	10,320	2556	8785	56,309	9922	3.089 × 10 <sup>6</sup>
Id FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



The probit or logit model is usually adopted in the first stage of Heckman's two-stage selection. The dependent variable is the variable affected by the self-selection of samples. The inverse Mills ratio (IMR) needs to be calculated in the selection equation of the first stage to estimate the bias of sample selection [64]. We then introduced IMR into the second-stage result equation as a control variable. Since the result equation and the selection equation contain overlapping control variables, the problem of multicollinearity may occur after the IMR is added. Therefore, we needed to identify the exogenous variables that were related to the explanatory variables of the selection equation (whether there was R&D investment in the year) and did not affect enterprise innovation. The control variables affecting R&D investment mainly included the enterprise's size, age, cash on sales ratio, TobinQ, government subsidy, the average R&D investment of the industry (ARDI), and the average R&D investment of the province (ARDP). Although ARDI and ARDP were related to the R&D investment of these enterprises, these two variables were not related to the innovation performance of a single enterprise, and therefore they were appropriate exogenous variables.

Table 7 is Heckman test results. As shown in Table 7, Model 1 was the logit model of the first stage. Model 1 showed that whether or not the enterprise carried out R&D activities was closely related to ARDI and ARDP ( $p < 0.01$ ). Models 2–8 were the second-stage models, and the result shows that TC M&A and CSR had a positive role in promoting enterprise innovation performance ( $\beta = 0.8991, p < 0.01$ ;  $\beta = 0.0279, p < 0.05$ , respectively), but CSR had a negative impact on the relationship between TC M&A and enterprise innovation performance ( $\beta = -0.0516, p < 0.01$ ). When the two countries had a close diplomatic distance, this effect changed from negative significant to positive significant ( $\beta = 0.0002, p < 0.05$ ). When the two countries had a close institutional distance, this effect was not significant ( $\beta = -0.0002, p > 0.1$ ), indicating that the results of Table 3 were still valid after excluding the endogeneity of self-selection.

Table 7. Heckman test results.

	m1	m2	m3	m4	m5	m6	m7	m8
Variables	wrd	EIP	EIP	EIP	EIP	EIP	EIP	EIP
TC			0.8991 *** (0.2726)		0.7924 *** (0.2523)	0.0680 (0.1626)	−0.2376 (0.2446)	0.0274 (0.5266)
CSR				0.0279 ** (0.0116)	0.0193** (0.0098)	0.0498 *** (0.0104)	−0.2897 *** (0.0333)	0.0682 ** (0.0339)
DD							−0.0269 *** (0.0013)	
TC × CSR						−0.0516 *** (0.0144)	0.3718 *** (0.0307)	−0.0764 * (0.0420)
TC × DD							0.0116 *** (0.0007)	
DD × CSR							−0.0013 *** (0.0001)	
TC × DD × CSR							0.0002** (0.0001)	
TC × ID								0.0021 (0.0063)
ID × CSR								−0.0004 * (0.0003)
TC × ID × CSR								−0.0002 (0.0003)
ID		−0.0060 (0.0037)	−0.0001 (0.0034)	−0.0111 ** (0.0043)	−0.0043 (0.0044)	−0.0064 ** (0.0027)	−0.1232 *** (0.0083)	−0.0025 (0.0049)
size	−0.0005 (0.0009)	0.0094 ** (0.0046)	0.0182 *** (0.0046)	0.0090 ** (0.0037)	0.0169 *** (0.0047)	0.0100 *** (0.0025)	−0.1217 *** (0.0073)	0.0188 *** (0.0053)
age	−0.0001 (0.0002)	0.0163 *** (0.0046)	0.0226 *** (0.0033)	0.0145 *** (0.0036)	0.0206 *** (0.0030)	0.0196 *** (0.0020)	−0.0251 *** (0.0028)	0.0251 *** (0.0037)
RD		−0.0278 (0.0478)	0.0571 (0.0463)	−0.0131 (0.0356)	0.0572 (0.0441)	0.0484 (0.0305)	−0.9763 *** (0.0597)	0.1128 ** (0.0517)
SMA	0.0419	0.1736 ***	0.1503 ***	0.1058 *	0.1061**	0.1570 ***	−0.2101 ***	0.1239 ***

Table 7. Cont.

	m1	m2	m3	m4	m5	m6	m7	m8
Variables	wrd	EIP	EIP	EIP	EIP	EIP	EIP	EIP
exper	(0.0438)	(0.0588)	(0.0425)	(0.0596)	(0.0429)	(0.0264)	(0.0225)	(0.0434)
		0.5472 *	0.3975 **	0.5076 **	0.3879 **	0.6876 ***	6.7863 ***	0.7863 ***
		(0.2869)	(0.1932)	(0.2353)	(0.1531)	(0.1530)	(0.3096)	(0.1920)
TobinQ	0.0008	−0.0055 ***	−0.0060 ***	−0.0060 ***	−0.0063 ***	−0.0056 ***	−0.0036 ***	−0.0059 ***
	(0.0010)	(0.0014)	(0.0011)	(0.0011)	(0.0009)	(0.0005)	(0.0008)	(0.0004)
PCS	−0.0025	0.0090	0.0176	0.0230 **	0.0262 ***	0.0230 ***	0.0019	0.0374 ***
	(0.0060)	(0.0135)	(0.0114)	(0.0098)	(0.0095)	(0.0061)	(0.0044)	(0.0095)
economic		0.0091 **	0.0063 **	0.0131 ***	0.0094 ***	0.0062 ***	0.0963 ***	0.0025
		(0.0036)	(0.0026)	(0.0037)	(0.0029)	(0.0020)	(0.0053)	(0.0035)
CD		0.2038 *	0.1095	0.3130 ***	0.1964 ***	0.2859 ***	1.3924 ***	0.1540 *
		(0.1146)	(0.0727)	(0.1164)	(0.0752)	(0.0819)	(0.0931)	(0.0889)
resouc		0.0760 ***	0.0668 ***	0.0826 ***	0.0724 ***	0.0639 ***	0.4250 ***	0.0760 ***
		(0.0241)	(0.0205)	(0.0248)	(0.0223)	(0.0184)	(0.0171)	(0.0160)
subsi	0.0058	−0.0723 ***	−0.1043 ***	−0.0791 ***	−0.1052 ***	−0.0616 ***	0.1624 ***	−0.0898 ***
	(0.0118)	(0.0191)	(0.0119)	(0.0171)	(0.0101)	(0.0114)	(0.0137)	(0.0189)
mean_prov	9.1229 ***							
	(3.0050)							
mean_indu	10.2346 ***							
	(2.8627)							
IMR		−1.1069 *	−3.7319 ***	−1.1931 **	−3.4092 **	−1.0452 *	31.0151 ***	−4.1361 **
		(0.5903)	(1.4049)	(0.5897)	(1.4001)	(0.5773)	(2.0825)	(1.7377)
Constant	0.4340	56.5888 ***	84.7897 ***	54.6187 ***	80.0775 ***	62.1259 ***	242.2901 ***	87.1582 ***
	(1.8901)	(14.1401)	(11.3452)	(10.8803)	(11.3961)	(7.5192)	(17.2822)	(15.2173)
Observations	230	230	230	230	230	230	230	230
R-squared	0.0771	0.9125	0.9444	0.9282	0.9515	0.9727	0.9984	0.9781
Adj R-squared	.	0.903	0.938	0.920	0.946	0.969	0.998	0.975
F/LR chi2	32.70(LR chi2)	459.6	16,177	2308	894.47	1331.57	1.5 × 10 <sup>5</sup>	4 × 10 <sup>9</sup>
Id FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## 5. Conclusions and Discussion

### 5.1. Main Conclusion

The acquisition of and learning from mature market technologies by emerging markets has always been an important topic to scholars, and whether CSR can play a role in this progress has become a worldwide problem. Taking 230 cross-border M&A events of Chinese enterprises from 2007 to 2019 as samples, this paper used individual and time dual fixed effect models to study the relationship between TC M&A, CSR, and enterprise innovation performance. On the basis of the research of Chen et al. [65] and Zhu et al. [14], this paper listed the TC M&A as a special type of M&A and analyzed the promotion effect of TC M&A on the innovation performance of the parent company in emerging markets. On the basis of the resource reorganization, learning, and synergy effects after cross-border M&A, we found that emerging market enterprises can effectively integrate innovation resources and promote the improvement of the parent company's innovation performance. Consistent with the conclusions of Hu et al. and Wang et al. [33,34], this paper suggests that CSR can send positive signals to the external market, thus helping enterprises to accumulate innovative resources. However, CSR plays a negative role in promoting the relationship between TC M&A and enterprise innovation. This is consistent with the findings of Park [66], who argued that, due to the deviation of understanding of CSR between emerging markets and mature markets, as well as the possibility of inconsistency between internal and external CSR of enterprises, the CSR in the home country cannot actively promote TC M&A. When enterprises enter a host country with close diplomatic distance, the close diplomatic relationship reduces the cost of enterprises in exercising CSR while increasing the trust of stakeholders in the host country [67]. When enterprises enter countries with distant institutions, as Keig et al. suggested [68], exposure to different institutional backgrounds may induce enterprises' innovative inspiration and increase opportunities for organizational learning and adaptation. Therefore, CSR did not show a positive moderating effect when enterprises entered countries with a small institutional distance from the host country. Hypothesis 4b was therefore not proven.

### 5.2. Theoretical Enlightenment

An enterprise engaging in TC M&A aims to acquire the core technology resources of the target enterprise to promote its own development, although some studies have discussed the promotion effect of cross-border technology acquisition on enterprise performance. However, this type of M&A is not listed separately; in comparison with other types of M&A, this type of M&A is more complex and faces stronger outsider and latecomer liabilities. Therefore, it is undoubtedly a supplement and extension to the existing IB literature in the study of the promotion effect of TC M&A on enterprise innovation performance from emerging markets.

In the process of cross-border investment, emerging market enterprises are faced with dual institutional pressure from their home country and host country. They not only face home country stakeholders, but also need to establish close links with host country stakeholders. While CSR plays a positive role in the domestic institutional environment, the mechanism and conditions of CSR in the host country are extremely different. This paper explored the mechanism by which CSR affects enterprise innovation in the host country under the condition of TC M&A, which is not only a supplement to the literature on CSR but also an extension of stakeholder theory.

This paper combined stakeholder theory with dynamic capability theory, which is a new theoretical perspective. TC M&A enterprises are not only influenced by home country stakeholders (such as government, financial institutions, and social interest groups), but also closely linked with host country stakeholders (such as host country government, suppliers, and customers). Enterprises can coordinate the relationship among stakeholders, obtain innovative resources, and integrate them efficiently, benefitting from the development of dynamic capabilities of enterprises in emerging markets. At the same time, in the face of the host country's complex business environment, enterprises cannot quickly interpret the

host country's system and cannot effectively act on evolutionary adaptation; thus, CSR is not conducive to TC M&A. In this paper, stakeholder theory and dynamic capability theory were included in the same framework, and the relationship between TC M&A, CSR, and enterprise innovation was more systematically explained.

### 5.3. Practical Implications

The practical enlightenment of this paper for the government and enterprise managers is mainly as follows: The government, first, should realize that at present, TC M&A is an important channel allowing enterprises to acquire cutting-edge technologies and achieve their own innovation breakthroughs. Therefore, the government should encourage this particular type of M&A through policy guidance, tax support, fund subsidies, and streamlined procedures for overseas investment approval. Second, the government can not only set up a formal information agency to quickly transmit information about the host country's system, culture, and market to enterprises but also help cross-border M&A enterprises to quickly obtain investment information of the host country, including the focus and specific requirements of the host country in terms of CSR norms, through government guidance and assistance from social forces. Enterprise managers should first pay attention to the differences between the host country and the home country in terms of economic development path, values, and cultural customs, and appropriately adjust their own understanding and implementation means of CSR on the basis of the requirements of target enterprises. Second, enterprise managers need to realize the dual nature of institutional distance; that is, a small institutional distance increases the consistency of values between enterprises and target enterprises and reduces the friction in innovation, but a large institutional distance may enable enterprises to obtain more diversified innovation resources. Therefore, when enterprises choose investment target countries, they are not affected by institutional distance.

### 5.4. Limitations and Prospects

First, this paper only took China as the research object, finding that TC M&A had a positive impact on enterprise innovation and CSR had a negative moderating effect on the relationship between TC M&A and enterprise innovation. Other emerging market countries, such as India, Brazil, and Thailand, differ greatly from China in their political institutions and economic development paths. Whether these conclusions could apply to other emerging markets remains to be explored.

Second, this paper discussed the effect of CSR on the relationship between TC M&A and enterprise innovation performance under the conditions of diplomatic distance and institutional distance. The CSR of enterprises in emerging markets is affected by many factors in the process of overseas investment, and these influencing conditions can be further explored and expanded.

Third, this paper only took 230 M&A events from 2007 to 2019 as research samples. In the future, with the increasing number of M&A events in China and the continuous improvement of the database, the sample size can be expanded. Meanwhile, the sample size can also be expanded by comprehensive samples from multiple emerging markets, and this could make the conclusions more reliable and accurate.

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