

Research on Corporate Green Mergers and Acquisitions Motivation and Performance: A Literature Review

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Abstract

In consequence of the promotion of the national policy for ecological civilisation construction, the demand of enterprises for green resources is undergoing a period of sustained growth. As a means of green transformation, green mergers and acquisitions has gradually become an important means of rapid transformation for enterprises. This paper focuses on the research theme of the drivers and performance of green mergers and acquisitions, undertaking an in-depth examination and synthesis of existing literature from a range of perspectives. It presents a comprehensive overview of the current research status of the drivers and performance of green mergers and acquisitions. With regard to the drivers of green mergers and acquisitions, these can be classified as external and internal. In terms of the performance of green mergers and acquisitions, it has a positive impact on the enterprise's economic, environmental and green performance. Finally, the paper analyses the difficulties faced by the current research, with a view to providing insights for future research.

Keywords

Green Bonds; Firm Value; Literature Review.

1. Introduction

In the contemporary era, the environment represents a fundamental foundation for human survival. However, the economic growth model of the past has resulted in a significant increase in environmental problems, which has led to a profound concerns among all countries about the relationship between economic development and environmental protection. There is now a growing recognition that the pursuit of economic growth alone may further damage the ecological balance, and thus the protection of the ecological environment is becoming a global development goal on a global scale. In China, the government has progressively come to recognise the vital importance and urgency of environmental protection. Through sustained publicity and the implementation of the concept of sustainable development, it is committed to fostering public awareness of environmental protection. In recent years, the acceleration of economic globalisation has been accompanied by a notable increase in the number of mergers and acquisitions (M&A) between enterprises.

Green mergers and acquisitions permit companies to rapidly acquire advanced technologies, facilitate green transformation, and optimise resource allocation. In particular, in the context of mounting environmental concerns, the capital market is demonstrating heightened interest in green environmental protection, with green mergers and acquisitions garnering significant attention. As a distinct category of mergers and acquisitions, green mergers and acquisitions diverge from traditional mergers and acquisitions in their objectives. Green mergers and acquisitions pursue a dual objective: to generate economic benefits and environmental benefits in a mutually beneficial manner. In the context of China's green development, green mergers and acquisitions are expected to facilitate the creation of new opportunities for growth and

development. Consequently, a comprehensive examination of the motivation and performance of corporate green mergers and acquisitions will not only assist in the theoretical guidance of corporate mergers and acquisitions decision-making, but also facilitate a more profound understanding of green mergers and acquisitions opportunities for corporations in practice. This, in turn, will contribute to the advancement of sustainable corporate development and the achievement of national green development goals. Furthermore, this will assist in enhancing the pertinent green mergers and acquisitions policies and regulations, thereby facilitating the sound advancement of China's green economy.

2. Research on Green Mergers and Acquisitions

2.1. Definition of Green Mergers and Acquisitions

2.1.1. Foreign Concept Definition

The concept of green mergers and acquisitions is not currently explicit in the literature; however, the governance of technology mergers and acquisitions and the concept of environmental protection are at the forefront of research. Green mergers and acquisitions can be seen as an extension of the technology mergers and acquisitions concept.

The theory of technology mergers and acquisitions was initially proposed by Williamson & Markets (1975), who also conducted a more comprehensive analysis of technology mergers and acquisitions and the evolution of motivation. Subsequently, the sophisticated concept of technology mergers and acquisitions (M&A), was gradually acknowledged by scholars of the time and gained popularity in Europe. In 2018, some scholars defined green mergers and acquisitions as acquisitions and mergers with the objective of obtaining benefits in terms of ecology and the economy. In 2019, another viewpoint categorised them as green investments, arguing that green mergers and acquisitions are direct investments into assets that help companies achieve their green goals.

2.1.2. Domestic Conceptual Definition

In China, there is currently no consensus on the definition of green mergers and acquisitions. Some scholars posit that it can be defined as a category of mergers and acquisitions that are driven by the objective of gaining competitive advantages and creating green capital assets. Other scholars adopt an alternative perspective, viewing green mergers and acquisitions as the integration of green development concepts with the objective of achieving energy savings and emission reductions, as well as environmental protection, and industrial transformation. An additional perspective is that green mergers and acquisitions represent a green management concept, with the objective of achieving sustainable corporate development. Some scholars synthesise the first two perspectives, emphasising that green mergers and acquisitions are not only a green investment method, but also a green management integration tool. The objective is to enhance corporate competitiveness through resource allocation, reduce environmental pollution and future environmental costs, and achieve unity of economic and ecological interests.

2.2. Models of Green Mergers and Acquisitions

The study by Xu Chaoyang et al. (2013) [1] classifies green mergers and acquisitions into two principal categories: intra-green industry mergers and acquisitions, defined as mergers and acquisitions between firms within the same green industry; and entry-industry type of green mergers and acquisitions, which encompasses firms from non-green industries entering green industries to conduct mergers and acquisitions. This categorisation is based on the industrial affiliation of the merger and acquisition parties and the target firms. Lu (2021) [2] proposes three types of green mergers and acquisitions: horizontal, vertical, and hybrid. Horizontal green mergers and acquisitions are defined as mergers and acquisitions between two or more firms

engaged in the production and sale of homogeneous products. Vertical green mergers and acquisitions, on the other hand, encompass mergers and acquisitions involving green firms in upstream and downstream industries of the supply chain. Finally, hybrid green mergers and acquisitions refer to mergers and acquisitions between firms operating in different industries.

3. Research on the Drivers of Corporate Green Mergers and Acquisitions

The conclusions of academic research on the motivation of corporate green mergers and acquisitions can be summarised in two ways: external motivation and internal motivation. The spontaneous green mergers and acquisitions of enterprises represent the primary manifestation of internal motivations, reflecting their sense of social responsibility and environmental awareness. In this manner, enterprises convey favourable signals to the market, underscoring their capacity and proclivity for environmental stewardship. This not only fosters the development of a positive corporate image but also curtails environmental costs and enhances the value and status of enterprises within society. In contrast, external motivations are primarily manifested in green mergers and acquisitions undertaken by enterprises in response to external policy incentives. An enterprise may be influenced by external factors, such as environmental policies introduced by the government, and thus elect to implement green mergers and acquisitions in order to comply with pertinent regulations and standards. Such behaviour may entail certain economic costs, but in the long run, the initiative to comply with the policy will contribute to the competitiveness and sustainable development of the firm in the market.

3.1. External Motivations

At the environmental level, research has demonstrated that global environmental degradation has precipitated an uptick in green mergers and acquisitions. In the case of firms engaged in significant pollution, media attention has been positively associated with their incentives to engage in green mergers and acquisitions. Additionally, research has indicated that Confucianism exerts a favourable influence on the mergers and acquisitions of firms engaged in substantial pollution.

At the governmental level, green policies can be classified into two categories: environmental regulations and green industrial policies. Environmental regulations can be further distinguished as either command-and-control or market-incentivised. The study demonstrates that, while strict environmental regulations may initially restrict green mergers and acquisitions, they ultimately foster the emergence of spontaneous firms. It can be observed that informal environmental regulations exert a more pronounced influence on green mergers and acquisitions than command-and-control environmental regulations. Pilot policies designed to reduce carbon emissions have been found to significantly encourage green mergers and acquisitions among firms with high level of pollution. Similarly, informal environmental regulations have been identified as a key driver of green mergers and acquisitions by firms with a high level of pollution, although financing constraints may diminish their effect. The probability of green mergers and acquisitions is greater when the target firms are supported by green industrial policies and is higher still when the main merging firms lack access to such policies. Furthermore, the greater the pressure on government officials to conduct environmental performance appraisals, the greater the incentive to promote green mergers and acquisitions by firms with high pollution levels.

3.2. Internal Motivations

At the enterprise level, green mergers and acquisitions typically encompass three key aspects: financial effects, resource acquisition, and sustainable development. In their analysis of the energy industry in Western Europe, Niemczyk et al. (2022) [3] identified the primary

motivation behind green mergers and acquisitions as the pursuit of a green energy transition and green economic development.

The authors elucidate the rationale behind mergers and acquisitions, delving into the concepts of economies of scale, transaction costs, and diversification. They conclude that green mergers and acquisitions can facilitate the absorption of technology and management resources, thereby enhancing competitive advantage of products and market share. Furthermore, the timing of green mergers and acquisitions is also a factor affecting corporate performance. Firms with a poor environmental record are more likely to pursue green mergers and acquisitions when their performance is only moderately below expectations. At the micro level, corporate green mergers and acquisitions are undertaken with the objective of achieving synergies through the acquisition of green resources.

From the perspective of principal-agent theory, managers engage in green mergers and acquisitions to gain control over additional assets and generate increased revenue. Bin Li (2020) [4] investigated the motivations behind green mergers and acquisitions among heavy polluters and discovered that managers with an entrepreneurial spirit are more likely to accelerate their enterprises' transformation and upgrading through green mergers and acquisitions when confronted with industry shocks and developmental changes. The pace at which this process occurs is of great importance. Xu Chaoyang, and Zhou Chao (2013) [1] posit that corporate decision-makers select green mergers and acquisitions for reasons including the enhancement of reputation and social influence, the increase of salaries, and the acceleration of promotions.

4. Research on the Performance of Green Mergers and Acquisitions by Enterprises

With the growing interest in green mergers and acquisitions, academic research has turned its attention to two key areas: firstly, whether green mergers and acquisitions can bring positive impacts to enterprises and secondly, how to evaluate the impacts of green mergers and acquisitions for enterprises. A review of the existing literature reveals that the majority of scholars concur that green mergers and acquisitions have a positive impact on corporate performance.

4.1. Evaluation Methods of Mergers and Acquisitions Performance

As a distinct form of enterprise mergers and acquisitions, green mergers and acquisitions can be evaluated using general assessment methods. Scholars at home and abroad have already produced valuable research findings in the field of enterprise mergers and acquisitions performance evaluation. The following section will introduce the relevant studies, classified according to the performance evaluation methods employed.

In the evaluation of corporate mergers and acquisitions, the event study method is the most commonly adopted approach. The fundamental premise of the event study method is to assess performance by examining the influence of corporate mergers and acquisitions on the market. Fama (1969) was among the pioneering scholars to propose and use this type of approach to study the performance of corporate mergers and acquisitions. Subsequently, an analysis of a substantial number of mergers and acquisitions revealed that these events elicit a notable response in the market and markedly enhance firm performance. A comparable methodology revealed that mergers and acquisitions positively affect the short-term performance of firms. The event study method has been employed by numerous scholars to investigate the short-term performance of firms following mergers and acquisitions, thereby further substantiating the viability and efficacy of this approach.

Furthermore, the financial indicator analysis method has been extensively employed to evaluate the performance of corporate mergers and acquisitions, with a particular emphasis on

long-term performance before and after mergers and acquisitions. The extant literature indicates that mergers and acquisitions can enhance the overall operations of the primary merging enterprises to a certain extent. Another study focuses on the performance of domestic resource-based enterprises during mergers and acquisitions and finds that their performance of such enterprises in the pre-merger and acquisition period does not improve significantly. However, as the mergers and acquisitions advance, the performance improves significantly.

The mutation level method has been employed by some scholars to evaluate the efficacy of corporate mergers and acquisitions. Their findings indicate that the principal party involved in such transactions tends to exhibit a decline in performance during the first year following the merger or acquisition. Conversely, the operational status of the acquired entity often demonstrates an improvement. This suggests that the impact of mergers and acquisitions may vary according to the parties involved. Another study employed this methodology with respect to domestic oil companies in 2017 and discovered that green mergers and acquisitions have the potential to enhance a number of performance indicators.

In addition to the above three methods, there are other methods that have been used to evaluate corporate mergers and acquisitions performance. For example, a factor analysis of the performance of GEM-listed companies before and after mergers and acquisitions in 2015 showed that the performance of most companies changed positively after mergers and acquisitions, indicating that the market environment affects mergers and acquisitions performance. In addition, the EVA analysis of 37 listed companies from 2011-2016 found that the improvement of mergers and acquisitions performance is often lagged, mostly apparent in the third year.

4.2. Evaluation of Green Mergers and Acquisitions Performance

4.2.1. Economic Performance

Green mergers and acquisitions, as a resource integration activity, can be implemented by companies with the objective of obtaining relevant tangible and intangible assets, optimize their capital structure, improving leverage, and obtaining funding to promote the expansion of the scale of the funds of polluting companies. This, in turn, improves the capital. The turnover rate. VITO et al. posits that the generation of synergies between the companies involved in mergers and acquisitions will result in an overall enhancement of the merged entity's performance following the completion of the merger and acquisition. A study by Salvi et al. (2018) [5] demonstrated that firms engaged in green mergers and acquisitions can attain superior financial outcomes. Gohan et al. demonstrated that green mergers and acquisitions enhance the economic performance of firms in both the short and long term.

Furthermore, the economic performance of green mergers and acquisitions is also reflected in the operational vitality of the firms in question. The study demonstrates that this is particularly salient issue for private manufacturing companies. Moreover, green mergers and acquisitions are classified into two categories: dark green and light green. An analysis of mergers and acquisitions of thermal power generation companies indicates that green mergers and acquisitions outperform their non-green mergers and acquisitions in both the short and long term. The market value and development potential of green mergers and acquisitions vary across different stages of the investment cycle. Light green mergers and acquisitions have stronger marginal effects in the short term, while dark green mergers and acquisitions have slightly better potential in the long term.

4.2.2. Environmental Performance

In contemplating the implementation of green mergers and acquisitions, enterprises must undertake a comprehensive assessment of the economic benefits and environmental performance they will bring about. Su (2021) [6] posits that in order to maintain their green

reputation following mergers and acquisitions, enterprises will proactively leverage the environmental protection experience and technology of green enterprises, and increase environmental expenditures to enhance the efficacy of corporate environmental governance, thus improving the environmental performance of enterprises.

The analysis demonstrates a correlation between green mergers and acquisitions and corporate environmental performance, with green technology innovation serving as a mediating factor. The implementation of green mergers and acquisitions by enterprises can facilitate the improvement of environmental performance and the promotion of sustainable development through the combination of technological development. An examination of the green mergers and acquisitions data from A-share heavy pollution industries from 2010 to 2015 reveals that green mergers and acquisitions not only enhance the green innovation ability of enterprises, but also improve environmental performance.

4.2.3. Green Performance

In recent years, there has been a notable increase in research activity in the fields of green mergers and acquisitions and green innovation. The findings of Bixi and other scholars indicate that green mergers and acquisitions have a positive impact the green innovation capabilities and levels of enterprises. Furthermore, some scholars have identified that green mergers and acquisitions can significantly enhance the level of green technological innovation of enterprises through an analysis of data from heavy polluting enterprises between 2007 and 2019. This enhancement has been found to be sustainable.

Han Zhijie et al. (2022) [7] also concluded that green mergers and acquisitions can promote green innovation. This conclusion expands the marginal effects of green mergers and acquisitions, attracting firms to conduct green mergers and acquisitions. Furthermore, Weina Huang and Tianrong Yuan (2022) [8] discovered that the level of green innovation among industrial enterprises will increase in the short term following green mergers and acquisitions. However, they also found that the marginal effect of the level of green innovation will diminish in the long term. In conclusion, green mergers and acquisitions exert a considerable stimulating influence on corporate green innovation, with this stimulating effect manifesting in varying ways across different types of firms. The study indicates that the positive impact of green mergers and acquisitions is particularly pronounced in non-state-owned firms and those with high R&D intensity. This finding offers a novel perspective and insight into the research on the economic and green performance of green mergers and acquisitions. It also provides enterprises with ideas and insights on how to enhance their green innovation level through green mergers and acquisitions.

5. Summary and Outlook

5.1. Literature Review

The concept of green mergers and acquisitions has gained increasing attention in academic research as awareness of sustainable development and environmental protection has grown. However, the academic literature on green mergers and acquisitions remains relatively limited. With regard to the definition of green mergers and acquisitions, there is currently no consensus among academics. Some scholars posit that green mergers and acquisitions are mergers and acquisitions for the purpose of technology mergers and acquisitions, whereas others argue that green mergers and acquisitions are best understood as a form of green management concept. With regard to the mode of green mergers and acquisitions, there are two principal classifications, which are based on the industry or industrial relevance of the mergers and acquisitions in question. With regard to the motivating factors behind green mergers and acquisitions, external drivers often emphasize ecological degradation, media attention and government environmental regulations, and green industrial policies. In contrast, internal

drivers are more likely to focus on financial effects, resource acquisition, and sustainable development. In terms of performance, green mergers and acquisitions have the potential to enhance economic, environmental and green performance through the acquisition of green resources and green innovation. This is expected to increase the value and business vitality of enterprises. Nevertheless, despite the contributions of existing literature to our understanding of the drivers and performance of green mergers and acquisitions, there remain some limitations.

Firstly, the theoretical system is not yet complete, and the empirical findings lack generalizability. From the standpoint of both theoretical inquiry and empirical investigation, the theoretical research on green mergers and acquisitions has yet to establish a comprehensive system encompassing multiple levels and perspectives. Moreover, the empirical scope of this research is largely confined to industries with high energy consumption and significant environmental impact, raising concerns about the generalizability of its conclusions.

Secondly, the acquisition of data on green mergers and acquisitions is challenging, and there are inherent biases. The acquisition of data pertaining to the variables associated with green mergers and acquisitions has historically represented a significant challenge for researchers. In order to address this issue, many have opted for the content analysis method, which necessitates the manual collection of merger and acquisition announcements from publicly listed companies and subsequent evaluation of these announcements to ascertain whether they align with the criteria for classifying such transactions as green mergers and acquisitions. This method is susceptible to subjectivity, which may compromise the reliability and accuracy of the entire study. Furthermore, it is likely to require significant human and material resources, making the study relatively costly.

5.2. Research Outlook

A paucity of scholarship exists concerning the internal drivers of green mergers and acquisitions. Furthermore, there is a dearth of research examining the relationship between the personal traits of decision makers and the green mergers and acquisitions of firms. The personal traits of managers can significantly influence a firm's decision-making processes with regard to green mergers and acquisitions, as they serve to direct the firm's overall activities. It can be reasonably assumed that managers who have received an education or gained experience in the field of environmental protection are more likely to cooperate with the country's green industrial policy. This, in turn, may influence enterprises to conduct green mergers and acquisitions. Consequently, a comprehensive investigation into the interconnection between the personal attributes of decision-makers and green mergers and acquisitions can facilitate a more profound comprehension of the decision-making processes employed by enterprises in green mergers and acquisitions. This, in turn, can provide more efficacious guidance for future green development.

In the academic literature on the performance of green mergers and acquisitions, there is a substantial body of research focused on green mergers and acquisitions of domestic enterprises, but relatively few studies have addressed cross-border mergers and acquisitions. Further in-depth discussion is warranted with regard to cross-border mergers and acquisitions, which represent a means for enterprises to expand internationally. It is necessary to investigate whether and how the performance of cross-border green mergers and acquisitions differs from that of domestic green mergers and acquisitions. The investigation of these matters will facilitate a more comprehensive comprehension of the consequences of disparate types of green mergers and acquisitions, thereby offering a more robust foundation for enterprises to devise green mergers and acquisitions strategies.

Acknowledgments

The author would like to express her sincerest gratitude to Guangxi Normal University, School of Economics and Management, for providing financial support through the Graduate Student Research Initiation Fund. The project number is JGYJSKY202306.

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