Green Acquisitions: Are They Just Low-Hanging Green Fruit?

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Abstract

Increasingly, corporations are expanding their green business portfolios by acquiring green technologies, brands, and firms to respond to sustainability trends. However, little is known regarding the financial impact of such a green strategy. This study uses the event study method to examine stock market reactions to green acquisition announcements. We find that the stock market reacts positively to announcements of green acquisitions. We also find that stock market performance is more favorable for acquirers with stronger marketing capability and limited innovation capability. However, the impact of the two aforementioned firm capabilities on the stock market return–green acquisition relationship is moderated by industry sensitivity. The results contribute to our understanding of how marketing and innovation capabilities influence investor behavior in the context of green acquisitions. These findings broaden our existing knowledge on the marketing–finance interface, green marketing strategy, and sustainability. This study also provides practical implications for managers.

**Keywords:** green acquisitions, sustainability, marketing capability, innovation capability, stock return

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Accelerating sustainability trends are driving organizations to develop green strategies.

Acquiring a green brand or a firm has received little academic attention even though this strategy is practiced extensively. For example, Unilever started acquiring green brands as far back as 2000. It acquired environmentally friendly firms such as Ben & Jerry, Seventh Generation, and REN. Other well-known green acquisitions include L’Oréal acquiring The Body Shop in 2006 and The Clorox acquiring Burt's Bees in 2007. PepsiCo acquired Bare Foods and several natural food companies in 2018. Global corporations, in response to green consumerism and societal pressures, develop green strategies and regularly acquire eco-friendly firms with aims to expand their green product portfolio, enter new markets and improve their firm value. Expanding of product portfolio to include green brands is in part motivated by consumers’ purchasing decisions that rely not only on utilitarian functions such as quality and price, but also on intangible and symbolic attributes (Fine, Gleason, and Budeva 2016) such as environmental-friendly product characteristics affecting their lifestyles (Khojastehpour and Johns 2014). Consequently, many firms respond to this trend by merging with or acquiring green firms and brands.

Substantive research on Merger & Acquisition (M&A hereafter) strategies largely stems from the strategic management field. Many studies explore factors that affect M&A successes. For example, King et al. (2004) find that often-explored moderators such as relatedness and method of payment have no significant impact on post-acquisition performance, indicating unidentified variables that may explain the relationship. Studies in the sustainability marketing field have increased significantly in the past two decades, including green marketing strategies (e.g., Hult 2011), green product innovation (Dangelico et al. 2013; Paparoidamis et al. 2019), green alliances (Sadovnikova and Pujari 2017), capabilities (Mishra and Modi 2016), and green certifications (Heras-Saizarbitoria et al. 2019). Although these studies have made significant
contributions to the sustainability marketing field, the effects of green acquisitions on firm value remain unexplored. Surprisingly, to our best knowledge, not a single study integrates marketing and finance disciplines and explores how green acquisitions affect firm value. The remarkable gap between the mounting green initiatives in various industries and the limited number of prior research on green acquisitions allow us to identify and empirically examine different factors that may influence firm value upon adopting green acquisition strategy. In addition, exploring green acquisitions is also crucial for practitioners, as green practices are increasingly relevant for firms that strive to align themselves with stakeholders' growing environmental concerns and demands.

**Theoretical Framework**

**Green acquisition and firm performance**

Along with increasing competition pressure and customers' increasing sustainable consumption, companies strive to adopt more environmentally responsible and sustainable growth strategies. From a signaling theory perspective, firms use different signals to reduce information asymmetry and communicate firm value to stakeholders. For example, firms form brand partnerships with a reputational brand to signal unobservable product quality (Rao, Qu, and Ruekert 1999).

McDonald and Oates (2006) note the difficulty for stakeholders to get a clear image of how sustainable a firm is. Therefore, firms utilize various methods to signal their sustainable commitments (using green labeling or advertising their green concept in social media). However, these signals do not always work if firms are suspected of greenwashing (Harrison and Freeman 1999). A more credible signal is "highly observable and costly to imitate" (Connelly et al. 2010).

Green acquisition, which requires considerable investment and is efficiently informative to different stakeholders, falls into this category. Instead of merely providing ostensible solutions to green issues, green acquisitions force acquirers to reassign firm resources, redesign operations
and activities, change business structures, therefore, lowering the suspicion of greenwashing perceived by stakeholders. Acquired green firms produce green products, create green technologies, or market green brands; they are 'green blood' injected into acquirers' current product portfolio. Cronin et al. (2011) contend that green partnerships are "long-term investments related to growing or transforming a business" and demonstrate firms' determination in seeking continuous green efforts. With significant investment, major control over target green firms, and long-term commitment by nature, green acquisitions represent similar, if not more, opportunities for firms to signal strong determinations to enhance green reputation and customer trustworthiness.

Resource-based view (RBV hereafter) suggests that firms gain competitive advantage by exploiting and exploring market-based assets from target firms such as new market segment, knowledge of the foreign market to enhance performance (Kozlenkova, Samaha, and Palmatier 2014). Capron and Hulland (1999) examine marketing resource redeployment following acquisitions, which shows significant influences on revenue-based synergies and firm performance. Acquired green firms and brands bring not only specialized knowledge in environmental-friendly operation and production but also loyal customer bases. Such green acquisitions send positive signals to customers, shareholders, and other stakeholders about corporates' commitment to sustainability in the long term, which remarkably differentiate them from less sustainable competitors. Overall, green acquisition is financially favorable for shareholders as it positively influences consumers and other key stakeholders.

H1. Green acquisition announcements favorably affect acquirers' stock market value.

The moderating role of marketing capability
A broad view of marketing capability considers it a firm's ability to convert available marketing inputs into desired outputs with higher efficiency (Bahadir, Bharadwaj, and Srivastava 2008; Mishra and Modi 2016). More specifically, marketing capability enables firms to link with customers, understand customer needs, anticipate consumer preferences changes (Day 1994), and create and maintain strong relationships with stakeholders (Hillebrand, Driessen, and Koll 2015). Scholars also outline many specific aspects of marketing capability – marketing communication, marketing information management, market sensing, customer linking, and marketing mix implantation – that benefit firms in different manners. A firm with stronger marketing capability can effectively exploit opportunities and respond to market changes and thus, generate greater future cash flows.

With superior marketing capability, acquirers can proactively reach out to different stakeholders, generate greater awareness about their green commitments among diverse stakeholders and thus, enhance the firm's positive image as a good corporate citizen; acquirers can deploy a target's brands efficiently to optimize its brand portfolio and to cope with rival brands in the market; acquirers can understand the fast-changing market demand rapidly and adopting accurate strategies accordingly. Mishra and Modi (2016) discuss how market-sensing capability helps design CSR initiatives. Similarly, better market sensing ability provides acquirers with precise market intelligence on green trends and allows them to make effective green acquisition decisions. Gupta and Kumar (2013) propose that when firms' marketing function is involved, sustainability undertakings create more opportunities for performance enhancement. Overall, acquirers with strong marketing capability are more likely to communicate their green credentials, optimize green product portfolios and strengthen their market share.
H2. The positive impact of green acquisition on firm market value will be strengthened with increasing levels of marketing capability.

**The moderating role of innovation capability**

Firm innovation capability refers to the extent to which a firm can provide an innovative product, process, and technology. Ample literature provides evidence that innovation assists in developing new products and processes, which can lead to sustained benefits and value creation (Artz et al. 2010; Doha et al. 2018). For example, Sood and Tellis (2009) find that innovation projects boost firms' stock market returns. However, it could be quite different in the green acquisition context. Green acquirers often seek to acquire environmentally friendly technologies and related green knowledge of target firms. Strong innovation capability means a higher possibility of innovation resource overlap between acquirer and target, which may decrease the quantity and quality of innovation resource recombination (Makri, Hitt, and Lane 2010), and thus, cause innovation resource redundancy (Sears and Hoetker 2014). Correspondingly, the cost of redundancy perceived by investors may destroy the potential value generated from green acquisitions.

Furthermore, for firms with strong innovation capability, green acquisition decisions may imply a distraction of managerial attention from exploiting firm core competencies, such as innovating new products in-house (Luo and Bhattacharya 2009). Even though innovative firms may be able to better exploit acquired green technologies, they are capable of developing green innovations and technologies to address stakeholders' worries and alleviate environmental impacts (Lin et al. 2020). Consequently, shareholders may suspect the motivations of firms' engagement in green acquisitions and react cautiously. According to agency theory, top management may have a
short-term personal agenda to get more control and higher compensation rather than maximizing firms' profitability in the long run (Piesse et al. 2013). This inconsistency between firm core competencies and strategy choice may also raise doubts about top management's motivation among shareholders, create uncertainty in the market, and ultimately, largely limit potential positive responses. Therefore, we hypothesize:

H3. The positive impact of green acquisition on firm market value will be weakened with increasing levels of innovation capability.

**The moderating role of industry sensitivity**

In the green context, a particularly outstanding attribute that varies among industries is industry sensitivity. Industry sensitivity refers to how sensitive an industry is to environmental regulations. Industries with a higher propensity to pollute the natural environment are subject to more stringent regulations and laws (Sadovnikova and Pujari 2017) and face greater institutional and social pressure. Firms in environmental regulation-sensitive industries are forced to seek environmental strategies to mitigate costs from complying with environmental regulations. Thus, the market may perceive firms’ green initiatives in environmentally sensitive industries as passive responses to address regulatory and stakeholder pressure. According to signaling theory, the effects of the signal also depend on the quality of the signaler, which indicates the honesty, credibility, and reliability level of the signaler (Connelly et al. 2011). If a firm (a signaler) is from an environmentally sensitive industry with a high pollution level, the stakeholders (signal receivers) will view its green efforts as lacking credibility. As firms in the sensitive industry are more likely to be subject to untrustworthy, unreliable, and opportunistic perceptions, their signaling power should be weakened (Berrone, Fosfuri, and Gelabert 2017).
With superior marketing capability, firms have better opportunities to communicate their green commitment to stakeholders effectively. However, for firms in environmentally sensitive industries, their efforts to get greener might be perceived by stakeholders as futile, or even worse, as deliberate greenwashing. In this case, the effect for firms to utilize marketing power to signal green credentials and build a green public image will be largely constrained as their message might be considered superficial or, much worse, misleading. Similarly, for firms with strong innovation capability, any green signals sent out through green acquisitions by firms in dirty industries will be perceived as more suspicious. Thus, the negative effect will be prominently amplified by the market. Therefore, the positive effects between marketing capability and stock value are dampened, while the adverse effects between innovation capability and stock value are amplified in environmentally sensitive industries.

H4a: As industry sensitivity increases, the positive relationship between firm marketing capability and stock market return is weakened.

H4b: As industry sensitivity increases, the negative relationship between firm innovation capability and stock market return is strengthened.

Figure 1 demonstrates the theoretical framework of the relationship between green acquisition and short-term firm stock return.

[Insert Figure 1 about here]

**Methodology**

We employ event study methodology and regression analyses to test the above hypotheses. Event study has been widely adopted in finance and marketing and has been employed to assess the value created in acquisitions. The event study method assumes the market is efficient, which
means a stock market captures all the information and responds immediately to the occurrence of an event. We use a 255-day period that ends 10 days before the event date as our estimation period. We calculate the abnormal returns using the market model. We then sum up daily abnormal returns for different windows to calculate cumulative abnormal returns (CARs).

**Sample data**

A green acquisition event is defined as a public announcement of a strategic acquisition between a publicly-traded acquirer and a green target firm. We collect announcements of acquisitions conducted by U.S. public-listed acquirers from 2000 to 2018. From the firm's perspective, those whose products are more accessible to end customers may emphasize environmental sustainability (Vaaland, Heide, and Grønhaug 2008). Therefore, we focus on the food/beverage and home/personal care industries. We exclude withdrawn and rumored deals and screen our sample using keywords such as "green", "organic", "recycled", and "sustainable" to identify green featured acquisition announcements. Then we analyze the screened announcement contents and target firm descriptions to confirm whether one is truly a green acquisition.

Following the literature in the finance discipline, we exclude acquisitions that only involve minor stakes (i.e., acquisition stakes equal to or below 50%). We also exclude announcements by removing significant events that occurred in the 3-day [-1,+1] window surrounding the announcement date. We then exclude deals whose stock price data and accounting data are unavailable during the acquisition period. The final dataset includes 182 announcements by U.S. public acquirers. We then obtain firm-level and industry-level data from resources such as Compustat. The accounting data were derived from the last fiscal year preceding the announcements.
Measures

Dependent Variable: Short-term Abnormal Returns. We compute CARs for various event windows, beginning three days before and ending three days after the event. We choose the event window with the most significant t-statistics (Cao and Sorescu 2013), one day before and one day after the announcement date.

Independent Variables:

Marketing capability. We apply the well-established stochastic frontier analysis (SFA) to compute the marketing capability. This input-output method "estimates a firm's marketing capability by measuring how close its realized sales are to the sales frontier given a certain level of input resources" (Mishra and Modi 2016). We follow Narasimhan, Rajiv, and Dutta (2006) and include input resources such as selling, general administrative expenses, and accounts receivable. We derive the inverse of the inefficiency term to capture firm marketing capability.

Innovation capability. Patent counts have been widely used to measure firms' innovation output in marketing and innovation literature (e.g., Doha et al. 2018). Consistent with prior research (Moorman and Slotegraaf 1999), we use a Koyck lag function to calculate patent stock in the last five years preceding the announcement to account for the depreciation in the value contributed by a patent.

Industry sensitivity. We assume industries that release more toxic substances are more sensitive to environmental regulations. We measure industry sensitivity to environmental regulations using the Toxic Release Inventory (TRI) data provided by the United States Environmental Protection Agency (EPA). EPA requires industrial facilities with ten or more employees to report the types and amount of toxic substance emissions (emissions through the air, water, land
surface, and land subsurface via underground injection) if exceeding the minimum reporting thresholds. We utilize the TRI data and accumulate the yearly release amount by each facility at the industry level.

Control Variables:

Following previous M&A and sustainability research, we accounted for the firm-, industry-, and transaction-level factors, which may also affect investors' valuation of a firm's green acquisition practices, including the acquirer's prior acquisition experience, firm size, firm financial leverage, firm market share, industry concentration, return on assets, firm prior green practices, relatedness, and geographic scope between the acquirer and target. We also included two variables to account for time- and industry-invariant heterogeneities.

Model specification

We use a two-stage Heckman (1979) selection model to account for selection bias or endogeneity due to potential systematic differences between firms that engage in green acquisitions and those that do not. In the first stage, we apply a probit selection model to see the probability of a publicly traded firm engaging in green acquisitions. The value of the dependent variable was coded as 1 if the firm engaged in a green acquisition and 0 otherwise. Following previous literature (Saboo et al. 2017; Wiles, Morgan, and Rego 2012), we include acquiring firms' financial considerations, which affect and determine firm acquisition returns to some extent. We derive the inverse Mills lambda from the resulting parameters to control unobservable factors that may be related to firms' green acquisition decisions.

In the second stage, we follow extant research on acquisitions that used event studies (Wiles, Morgan, and Rego 2012), estimating a least-squares regression model on CARs, with the
hypothesized and control independent variables as indicated previously, as well as the inverse Mills lambda obtained from the first stage. We use robust standard errors clustered by firms to account for potential heteroscedasticity and intra-group correlations. We specify the model as below:

\[
\text{CAR}_{(-1,1)} = \beta_0 + \beta_1 \text{Marketing capability} + \beta_2 \text{Innovation capability} + \beta_3 \text{Industry sensitivity} \\
+ \beta_4 (\text{Marketing capability} \times \text{Industry sensitivity}) \\
+ \beta_5 (\text{Innovation capability} \times \text{Industry sensitivity}) + \beta_6 \text{Firm size} + \beta_7 \text{ROA} \\
+ \beta_8 \text{Financial leverage} + \beta_9 \text{Market share} + \beta_{10} \text{Financing} + \beta_{11} \text{Geographic scope} \\
+ \beta_{12} \text{Relatedness} + \beta_{13} \text{Prior green practices} + \beta_{14} \text{Prior acquisition experience} \\
+ \beta_{15} \text{Competitor green acquisitions} + \beta_{16} \text{Firm reputation} \\
+ \beta_{17} \text{Industry concentration} + \beta_{18} \text{Industry dummy} \\
+ \beta_{19} \text{Year dummy} + \beta_{20} \text{Inverse Mills lambda} + \epsilon
\]

**Results**

*Main effect of green acquisition announcements on stock market return*

We present cumulative abnormal returns at different event windows in Table 1. We employ multiple test statistics to ensure our results are significant and robust. As shown in Table 1, the cumulative abnormal returns on various event windows and the abnormal return on the event day (day 0) are positive and significantly different from zero. For instance, the average abnormal return on the event day is 0.45% \((p<0.01)\), while the average CARs peak at \([-1, 1]\) three-day windows with 1.07% \((p<0.005)\). In addition, the average CARs are positively significant at multiple widows, with 0.94% \((p<0.005)\) at \([0, +1]\) two-day windows and 1.04% \((p<0.005)\) at \([-2, +2]\) five-day windows, etc. These results support H1, indicating that the announcement of a
green acquisition creates a significantly positive stock return for the acquirer. Overall, the CARs are significantly positive during the different estimation windows. These positive net returns to shareholders indicate that investors value firms’ green acquisition decisions in the short term, which could explain why firms pursue green acquisitions despite their high costs.

[Insert Table 1 about here]

**Moderating effects in regression analysis**

We test the moderating effects proposed in H2-H4 with CARs in window [-1, +1]. From the main effect model of Table 2, the acquirers’ characteristic estimates show that firms with superior marketing capability result in significant positive stock returns (main effects model: \( \beta_1 = 0.004, p < 0.05 \); full model: \( \beta_1 = 0.004, p < 0.01 \)); which supports H2. We also find acquirers’ firm innovation capability negatively affect CARs (main effects model: \( \beta_2 = -1.924, p<0.1 \); full model: \( \beta_2 = -2.480, p<0.01 \)), supporting H3. Regarding the moderating effect of industry sensitivity, our results show that the coefficient of the interaction term between marketing capability and industry sensitivity is negatively significant (\( \beta_4 = -0.002, p<0.1 \)). Meanwhile, the coefficient of the interaction term between innovation capability and industry sensitivity is also negatively significant (\( \beta_5 = -1.816, p<0.01 \)). These results provide supportive evidence for H4a and H4b, conforming that as the degree of industry sensitivity increases, the positive relationship between marketing capability and stock market return is weakened, while the negative relationship between innovation capability and the stock market return is strengthened.

[Insert Table 2 about here]

**Robustness check**
Endogeneity and selection bias. We use a two-stage Heckman (1979) selection model to account for potential selection bias because there are potential systematic differences between the firms that engage in green acquisitions and those that do not. In the first stage, we apply a probit selection model to see the probability that a public-traded firm would engage in green acquisitions. Following previous literature (Wiles et al. 2012), we include the acquirer firm's financial considerations, firm-specific features such as firm sales; as well as industry-level controls. The inverse Mills lambda was calculated from the resulting parameters to control for unobservables that may be related to firms' green acquisition decisions. We then include the estimated lambda in our regression models. The lambda is not significant, and the estimates are consistent with our original model. Thus, selection bias is not a concern.

Model specification. We put additional independent variables into the model to examine the results' stability. Specifically, we include firm reputation and Tobin's Q. Inclusion of these variables reports very similar results.

Alternative market portfolios, estimation windows, and expectation model. We use market value-weighted market returns instead of equally-weighted market returns. The CARs in different event windows are significantly positive, consistent with the CARs in our results reported here. We also employed the Fama-French four-factor model to examine the significance of A.R. and CARs in various windows. The results are quite similar to the one reported by the market model. In addition, the significance of CARs is unchanged when we re-estimated the expected return model employing a [-4, -259] window.

Discussion
Our study explores the impact of green acquisitions on firm value. Our findings provide evidence on how the stock market reacts to green acquisitions announcements. Moreover, we investigate how different factors moderate the effects of green acquisitions on firm value. In particular, we observe that green acquisition announcements positively affect acquirers’ stock market returns. Furthermore, the impact of green acquisitions on firm value is stronger for firms with superior marketing capability and limited innovation capability. However, our results also highlight the buffer effect of industry sensitivity on the moderating roles of firm marketing and innovation capabilities. Overall, the results enable us to offer implications for theory and practice.

**Theoretical Implications**

Firstly, this study contributes to our knowledge of sustainability marketing and marketing-finance interface. We expand knowledge about stock market responses to a vital sustainability strategy – green acquisition. This is the first study to explore the green acquisition – stock market value relationship. In the short term, the stock market responds to green acquisition announcements favorably. Recent research that examines relationships between sustainable/socially responsible initiatives and financial performance does not always yield positive results. Some studies indicate that sustainable strategies may not generate revenues immediately, but increase customer satisfaction (Luo and Bhattacharya 2006), reduce firm risks (Luo and Bhattacharya 2009), and enhance firm reputation (McWilliams and Siegel 2001). Our research demonstrates that green acquisition is a superior corporate sustainable strategy and generates great market return.

Secondly, we find that marketing capability has a significant positive impact on the green acquisition – stock market performance relationship. Although recent research has stressed the importance of marketing capability in a broad CSR context, it does not consider marketing
capability in the context of green acquisition. By providing more evidence of the important role of marketing capability in corporate green initiatives, this finding also strengthens the critical role of marketing in organizations' function hierarchies.

Thirdly, we outline the negative impact of firm innovation capability on shareholder wealth. Substantive studies have examined the role of firm innovation in firms' value creation processes. For example, Saboo et al. (2017) find a positive relationship between acquisition performance and innovation overlap. Our findings demonstrate that organizational capabilities that boost firm performance in conventional acquisition relationships do not always apply to the green context. Researchers should pay greater attention when dealing with green acquisitions.

**Managerial implications**

Our research also provides managers with valuable and actionable implications. Firms have shown increasing interest in environmentally sustainable strategies in the last few decades. However, managers still doubt the financial returns of green investments. The potential greenwashing suspicion may frustrate firms' green efforts to strengthen market performance. Our study provides assertive evidence that shareholders react favorably to green acquisitions. As involving substantive investments, green acquisitions could signal strong and genuine green commitments to stakeholders. Therefore, firms with sufficient budgets could consider prioritizing green acquisition as a viable and valuable strategy toward sustainability.

Moreover, our findings provide managers with specific suggestions regarding which type of green strategies they should engage in. Within our sample limitation, we find that firms with superior marketing capabilities are more likely to capture considerable returns from green acquisition strategies. In contrast, firms with high innovation capability may consider alternative
green efforts, such as developing new green products on their own rather than acquiring other green entities.

Finally, our research shows that industry sensitivity buffers the impact of firm marketing capability and innovation capability on stock returns. Since investors may become conservative and skeptical when confronting green practices (Sadovnikova and Pujari 2017), companies in the polluting industry should pay attention to this insight and recognize the potential limitations of the impact of different capabilities on green acquisition performance and implement green strategies cautiously.

**Limitations and Future Research**

We report a few limitations of this study. First, we explore green acquisitions in consumer-centered manufacturing industries, limiting the generalizability of the results. Future research could examine whether the results also apply to various industry contexts. Second, this study addresses stock market reactions to announcements of green acquisition rather than the actual implementation process after the acquisition decisions. However, we are uncertain whether the short-term positive performance is temporary or enduring. Further research could examine the relationship between green acquisition performance in the long term and strategy implementation.
References


Table 1 Event study analysis of short-term abnormal returns

<table>
<thead>
<tr>
<th>Event Windows</th>
<th>Mean Return</th>
<th>Positive Patel Z</th>
<th>Generalized Sign Z</th>
<th>Portfolio Time-Series (CDA)</th>
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<tr>
<td>0</td>
<td>0.45%</td>
<td>2.987***</td>
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<td>(-1, 0)</td>
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<td>(0, +1)</td>
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<td>(-1, +1)</td>
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<td>(-2, +2)</td>
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<td>(-3, +3)</td>
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<td>2.148**</td>
<td>1.691**</td>
<td>2.443***</td>
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* p < 0.1; **p < 0.05; ***p < 0.01.
**Table 2 Results of the cumulative abnormal return model**

<table>
<thead>
<tr>
<th>Dependent Variable: CAR (-1, +1)</th>
<th>Expected sign</th>
<th>Main effect model</th>
<th>Full model</th>
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<tr>
<td>Intercept</td>
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<td><strong>Main effects:</strong></td>
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<tr>
<td>H2: Marketing capability</td>
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<td><strong>0.0044</strong>***</td>
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<td>H3: Innovation capability</td>
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<td>-2.4802***</td>
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<td><strong>Moderating effects</strong></td>
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<tr>
<td>H4a: Marketing capability × Industry sensitivity</td>
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<td>-0.0021*</td>
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<td>H4b: Innovation capability × Industry sensitivity</td>
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<td><strong>Controls:</strong></td>
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*p < 0.1; **p < 0.05; ***p < 0.01.
Figure 1 Theoretical model

Notes: Continuous lines indicate focal relationships, and dashed lines indicate relationships involving control variables.
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