

# Resource-based Theory and Mergers & Acquisitions Success

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### **Resource-based Theory and Mergers & Acquisitions Success**

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#### **Abstract**

Mergers & acquisitions (M&A) are most popular external growth strategies. While the number of M&A has been increasing during the past decades, on average, only the shareholders of target firms gain value during the acquisitions process, while acquirers do not receive abnormal positive returns. This paper analyses the impact of strategically valuable resources on the success of M&A decisions. We test complementary resource-based hypotheses regarding the value of M&A for the shareholders of both transaction partners. Our sample consists of transactions in the pharmaceutical and biotechnological industry. The results of our study show that the shareholders of both transaction partners will gain above average positive returns only when the acquirer and the target own and combine strategically valuable resources and capabilities.

#### **Research Question**

Although mergers & acquisitions (M&A) are one of the most popular external growth strategies they often do not allow bidder firms to realize superior returns (Mandelker, 1974; Lubatkin et al., 1997; Sirower, 1997). A well known example of a failed transaction is the merger between Daimler Benz and Chrysler that consumed billions of Euros over time (Landler, 2007). The mean failure rate of M&A is estimated at approximately 60% of all transactions (Bruner, 2002). Not surprisingly, both the theoretical and practitioner literatures intensively discuss reasons for the large number of failed M&A. Many studies using different theoretical frames have concentrated on the question whether and when M&A can create value. In sum, these studies have come to the conclusion that short term value gains can be generated through M&A during the transaction period. But, typically, the shareholders of acquiring firms do not participate in economic gains in the same proportion as the shareholders of the target firms (King et al., 2004). While shareholders of the target firms often gain short-term value during the acquisition process, the acquiring firms do not receive abnormal returns or even lose value (e.g., Datta et al., 1992; Agrawal & Jaffe, 2000; Eschen & Bresser, 2005). This asymmetric distribution of gains raises the question whether M&A are a suitable means for acquirers to realize superior returns. This question is particularly relevant in dynamic, fast changing environments, where firms make frequent use of M&A strategies to resolve resource deficiencies.

In this paper, we adopt a resource-based logic to explain under what conditions M&A can be advantageous strategies for both transaction partners so that both firms can expect positive abnormal returns for their shareholders. Our main goal is to empirically investigate two alternative yet complementary explanations regarding the combination and transfer of strategically valuable resources as discussed in the resource-based literature.

#### **Hypotheses**

Barney (1988) argues in a seminal paper that acquiring firms can expect above-normal profits from an acquisition if they possess strategically valuable resources and capabilities (R&C) which they can transfer to the target firm in order to create "valuable, rare, and costly to imitate economies of scope" between both firms that other firms may not be able to duplicate (Barney 2007, p. 456)<sup>1</sup>. Thus, following this line of reasoning, the target firm does not need to possess strategically valuable R&C, only the acquirer. For the target it is sufficient to own commodity-like resources that, however, can be

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<sup>&</sup>lt;sup>1</sup> In his 1988 article, Barney refers to this case as a bidder enjoying "inimitable and uniquely valuable synergistic cash flows" with targets.

upgraded when combined with the strategically valuable R&C of the acquirer. Therefore, we hypothesize that:

*H 1a*: If the acquiring firm owns strategically valuable R&C while the target firm owns commodity resources, M&A will result in abnormal returns for the shareholders of the acquiring firm.

Barney (1988, p. 71) is not specific about the results of such transactions for the shareholders of the target firm but he also argues based on the general premise that, typically, target firms benefit from M&A most of the time. Thus we suggest,

*H 1b*: If the acquiring firm owns strategically valuable R&C while the target firm owns commodity resources, M&A will result in abnormal returns for the shareholders of the target firm.

Bidding firms frequently overestimate the value of targets and, therefore, pay too much for an acquisition. To avoid this problem, Barney (1988, p. 77) suggests that acquirers must develop skills to fully understand the value of potential synergies between themselves and the targets as well as the potential synergies between other bidding firms and targets. Eschen & Bresser (2005) extend this line of reasoning and argue that even if bidders have developed excellent requisite skills, premiums are still likely to be paid when an acquirer combines strategically valuable R&C with non-strategically valuable assets of a target. Consequently, the acquirer's gain is likely to be suboptimal. This limited potential to gain value can be expected because the acquisition will have to be justified to convince the financial community. Such justification processes encourage 'blind spots' in the assessment of the target's value (Zajac & Bazerman, 1991). It is likely that the target's value will be overestimated because the logic of the transaction has to be explained with uniquely valuable synergies that will result from the transaction which is difficult in cases where the target does not own strategically valuable R&C. Thus, a premium is likely to be paid to the shareholders of the target firm over and above the fair value of its assets. However, the markets are likely to react with scepticism to such transactions because there will be awareness that similar resources could have been acquired either in factor markets or by choosing other less expensive targets. DaimlerChrysler's acquisition of a controlling stake in Mitsubishi Motors in 2000 is a case in point. Industry experts and analysts questioned the value of this transaction because in comparison to DaimlerChrysler Mitsubishi lacked valuable resources. Consequently, the markets penalized DaimlerChrysler swiftly after the transaction was announced (Miller & Shirouzu, 2000; Eschen & Bresser, 2005).

To avoid such a difficult to justify premium to the target firm and unfavourable assessments by the markets, Eschen & Bresser (2005) propose that bidder and target shareholders are likely to benefit when both sides combine strategically valuable R&C. In this situation the potential for uniquely valuable synergistic cash flows is based on strong resource positions of both parties. Both parties have

a strong negotiation position because similarly advantageous R&C cannot be obtained easily elsewhere, and, therefore, it can be expected that the markets will react favourably. One example of two companies combining superior resource positions and both gaining above normal returns after the transaction was announced is the acquisition of Aironet Wireless by Cisco in 1999 (Hersch, 1999; Eschen & Bresser, 2005). Thus we suggest two alternative hypotheses to *H1a* and *H1b*:

**H 2a**: If the target and the acquiring firm own strategically valuable R&C, M&A will result in abnormal returns for the shareholders of the acquiring firm.

**H** 2b: If the target and the acquiring firm own strategically valuable R&C, M&A will result in abnormal returns for the shareholders of the target firm.

#### **Methods**

To test the performance effects of M&A decisions, we chose an industry context with a high incidence of M&A and where strategically valuable resources are instrumental for gaining and sustaining competitive advantage: the pharmaceutical and biotechnological industry. Only listed North-American and European companies from the pharmaceutical and biotechnological industry were considered. Relevant for the classification of the companies has been the NACE code 244. In total the sample consists of 96 M&A that occurred during the period of 2000 to 2009.

Performance effects for the acquiring and the target firms were calculated as stock effects according to the event study methodology. This methodology is commonly used in financial market studies to determine the changes in shareholder wealth, as indicated by the impact certain events have on stock prices (MacKinlay, 1997; Boyd & Bresser, 2008). The event study methodology is particularly suited for our research as it allows us to link M&A decisions directly to performance effects. For the calculation of the stock effects, a two-day event window was constructed for every transaction in the dataset consisting of the day prior and the day of the M&A announcement, as suggested in the literature (e.g., MacKinlay, 1997; McWilliams & Siegel, 1997). Overlapping events during the event window were considered and are reflected in the total sample size of 96 transactions. All relevant information about the transactions and the particular companies were obtained from the databases *Zephyr*, *Osiris*, *LexisNexis* and *Datastream*.

Results from an industry analysis show that R&C in marketing, research & development (R&D) and operations are critical for gaining competitive advantage in the pharmaceutical and biotechnological industry (e.g., Yeoh & Roth, 1999; DeCarolis, 2003; Schweizer, 2005). Thus, we consider marketing, R&D and operations R&C as potentially strategically valuable R&C that managers may try to acquire to close resource gaps and to ensure the long term success of their firms. Stochastic frontier estimation

(SFE) is used to measure the value of the relevant R&C of the firms. SFE is a commonly used methodology in economics, but in management research it is rarely applied (Dutta et al., 2005). This methodology allows to examine the marginal efficiency of the deployed resources as input factors (Kumbhakar & Lovell, 2000) and to model the different resource combinations of the transactions according to the developed hypotheses. The method allows defining a firm's capability in a specific area as its ability to deploy the resources (inputs) to achieve desired objectives (output) efficiently. Thus, the higher the functional capability a firm owns, the more efficiently it is able to deploy its productive inputs to reach its functional objectives (Dutta et al., 1999). Following the literature, we chose to operationalize the firm specific input-output relationships by constructing Cobb-Douglas production functions and, accordingly, Cobb-Douglas cost functions (Dutta et al., 1999; 2005). What follows are the specific frontier functions for the firm's R&C considered:<sup>2</sup>

- Marketing capability
   Sales = f (SGA, Installed base, Investment in Customer relationships)
- *R&D capability*Innovative products = *f* (R&D expenses, Technological base, Marketing resources)
- Operations capability
   Cost of production = f (Output, Property plant & equipment, Cost of capital,
   Marketing resources)

The results of the three frontier functions were combined to a capability index indicating the strategic value of a firm's resource bundle. The capability index for each firm (with i = 1, ..., 192) is calculated as follows:

Capability index<sub>i</sub> = (Marketing capability<sub>i</sub> + R&D capability<sub>i</sub> + Operations capability<sub>i</sub>) / 3

The mean of the capability indices over all firms (= .59) was used as the critical value for deciding if a firm owns strategically valuable resources or not. Firms with a capability index > .59 were classified as owning superior resource endowments. Thus, all other firms are classified as possessing R&C of low strategic value, i.e., commodity resources, that in and by themselves do not contribute to gaining competitive advantage.

Control variables were selected and operationalized according to the existing M&A literature.<sup>3</sup> Specifically, we considered:

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<sup>&</sup>lt;sup>2</sup> Details concerning these operationalizations are available from the authors.

<sup>&</sup>lt;sup>3</sup> Operational details are available from the authors.

- Industry growth (percent change in industry gross sales from the previous year's gross sales for each of the analysis years),
- Cross-border transaction (dummy variable indicating whether the transaction is between two domestic firms or not),
- Age of a firm (the number of years since incorporation). We logarithmize the values to correct for size effects.
- Firm *size* (total number of employees that worked in the company in the year before the acquisition announcement). Again, the logarithm of the values is taken to correct for outliers.
- Acquisition experience (total number of M&A a company has undertaken during the past five years before the focal acquisition),
- *Historical performance* (the mean of the firm's individual gross sales in the years t-2 until t-4 before the acquisition),
- To control for other *external factors* (e.g., 9/11, financial crises) which could have an impact on the stock development of the firms engaged in an acquisition, we constructed a dummy variable with the value "1" for the transaction years 2001 and 2008.
- *Cash Payment* (dummy variable whether the focal acquisition is cash financed or if other payment types are used).

OLS regressions are used to estimate three models. Model 1 is the base model including the control variables only. Model 2 and 3 reflect our hypotheses and are specified below (Table 1). Regarding the capability combinations, the index value of 1 indicates a transaction where the acquirer owns strategically valuable R&C, whereas the target possesses commodity resources only. An index value of 2 mirrors a combination where both acquisition partners own strategically valuable R&C that they can transfer to the other party after a transaction.

Equation for the acquirer	Stock effects <sub>Acquirer</sub> = $\beta_0 + \beta_1$ industry growth + $\beta_2$ cross border transaction + $\beta_3$ age + $\beta_4$ size + $\beta_5$ acquisitions experience + $\beta_6$ hist. performance + $\beta_7$ external factors + $\beta_8$ cash payment + $\beta_9$ capability combination <sub>i</sub> + $\epsilon$ where i = 1, 2
Equation for the target	Stock effects <sub>Target</sub> = $\beta_0 + \beta_1$ industry growth + $\beta_2$ cross border transaction + $\beta_3$ age + $\beta_4$ size + $\beta_5$ acquisitions experience + $\beta_6$ hist. performance + $\beta_7$ external factors + $\beta_8$ cash payment + $\beta_9$ capability combination <sub>i</sub> + $\epsilon$ where i = 1, 2

Table 1: OLS models for the acquiring and the target firms

Tests for multicollinearity (*Variance Inflation Factors*) and heteroscedasticity (*Breusch-Pagan/ Cook & Weisberg*) indicate that the main assumptions of OLS regression models are fulfilled and that the results are unbiased (Cohen et al., 2003; Wooldridge, 2006). We correct our results for potential selection bias using a Heckman selection model (Heckman, 1979) with *industry concentration* (share of industry sales generated by the four leading firms in the industry for each year of the analysis) as the instrumental variable. The  $\lambda$  values in Table 2 suggest that in all models we have no problems with selection bias.

#### **Results**

Model 2 in Table 2 indicates on the acquirer's side that the estimated coefficient for capability combination<sub>1</sub> is negative and significant (beta = -.039; p < .1) so that H 1a is not confirmed. In contradiction to H 1a, the coefficient's negative sign even suggests that acquirers' stock prices decline when they combine strategically valuable R&C with targets that own strategically non-valuable R&C. In contrast, the coefficient of capability combination<sub>2</sub> (both acquirer and target own strategically valuable R&C) is positive and significant (beta = .067; p < .001) supporting H 2a. Turning to the target side, capability combination<sub>1</sub> has a significant negative effect on the stock prices of the target firms (beta = -.136; p < .1) so that H 1a cannot be confirmed. H 2a, however, is confirmed with a positive and significant coefficient for capability combination<sub>2</sub> (beta = .114; p < .1).

#### **Conclusion and Implications**

The results suggest that shareholders of acquiring firms cannot expect positive abnormal returns from M&A by transferring their strategically valuable R&C to a target company that owns commodity resources. These acquirers even have to expect losses when this type of transaction is announced. Also, the target firms will not generate positive abnormal returns for their shareholders from an acquisition

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where only the acquirer possesses strategically valuable R&C. Our data suggest that the market for corporate control will value such M&A as negative so that short term stock prices declines are likely for both transaction partners. However, our results also suggest that the market anticipates uniquely valuable synergistic cash flows from an acquisition where both parties own strategically valuable R&C. Consistent with  $H\ 2a$  and  $H\ 2b$ , above normal short term positive stock effects can be expected in these situations.

Our findings extend the original resource-based reasoning developed by Barney (1988) by suggesting that, on average, M&A will be beneficial to the acquirer and the target if both sides, not only the acquirer own strategically valuable R&C. M&A decisions are influenced by justification processes that are likely to be accompanied by biased perceptions and assessments of a target's true value (Zajac & Bazerman, 1991), and these biases are more likely to obtain if only the acquirer owns strategically valuable R&C, and not both transaction partners (Eschen & Bresser, 2005)

Arguably, our results have implications for future resource-based M&A research. The focus should be on the synergistic value that may result if strategically valuable R&C are owned by acquirers <u>and</u> targets and not just by one of the parties. However, the limitations of this study indicate that additional research is necessary. To name just a few caveats: the study is based on secondary, cross-sectional data and is focused on one industry only.

	Acquirers						Targets					
	Control model		H 1a		H 2a		Control model		H 1b		H 2b	
Independent variables	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	beta		beta		beta		beta		beta		beta	
Constant	$.094^{*}$	(.040)	.079	(.090)	018	(.103)	.324*	(.153)	.449 <sup>+</sup>	(.239)	.239	(.191)
Industry growth	138	(.207)	034	(.273)	179	(.206)	1.264+	(.676)	1.189	(.935)	1.314+	(.683)
Cross border transaction	003	(.021)	.000	(.022)	011	(.023)	068	(.071)	063	(.075)	060	(.103)
Age	007	(.011)	002	(.015)	.001	(.016)	029	(.037)	034	(.049)	029	(.039)
Size	.004	(.007)	.002	(800.)	.005	(.007)	.004	(.020	.006	(.024)	.003	(.020)
Acquisition experience	003	(.002)	003	(.003)	004	(.003)	041	(.025)	042	(.027)	040	(.027)
Historical performance	.006	(.004)	008	(.005)	007 <sup>+</sup>	(.004)	009	(.017)	007	(.022)	008	(.021)
External factors	.001	(.024)	.004	(.024)	005	(.024)	092	(.082)	093	(.082)	086	(.102)
Cash payment	.094	(.040)	.000	(.027)	.000	(.026)	.160*	(.062)	.175 <sup>+</sup>	(.103)	.159*	(.062)
λ			.031	(.079)	.067	(.062)			087	(.234)	.027	(.057)
Capability index <sub>i</sub>			039 <sup>+</sup>	(.021)	.067***	(.018)			136 <sup>+</sup>	(.074)	.114+	(.067)
R <sup>2</sup>	.087		.126		.214		.153		.186		.182	
Adj. R²	.003		.023		.121		.075		.089		.085	
F	1.04		1.23		2.31*		$1.97^{+}$		1.94+		$1.88^{+}$	
$\chi^2$	33.18***		46.08***		13.29***		25.61***		32.03***		26.91***	
N	96		96		96		96		96		96	

<sup>&</sup>lt;sup>+</sup>p < .1; \*p < .05; \*\*\* p < .01; \*\*\* p < .001 (2-tailed).

Table 2: Results from OLS models for the acquiring and the target firms (with Heckman correction)

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