Stakeholder Conflict in Mergers and Acquisitions and the Importance of Post-Merger Integration

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1 Introduction and Overview

Given the continuous importance of external growth opportunities, corporate mergers and acquisitions (M&A) have become an increasing and popular field of research in the discipline of finance and strategic management. The most frequent question raised and analyzed – not only in academics but also in economics – is whether M&A create or destroy value, i.e. are M&A profitable for the companies involved or not? According to the Institute for Mergers, Acquisitions and Alliances (IMAA) the total number of announced M&A transactions worldwide grew considerably since the beginning of the 90s. To be more accurate, from 12,594 transactions in 1990 to 48,577 in 2018. This is almost a quadrupling of the number of M&A. In the same time period the total deal value increased by +550% from 0.6 trillion USD to 3.9 trillion USD (IMAA, 2019). Despite the complexity and constantly high failure rates, this development demonstrates a remarkable popularity of M&A among corporate decision-makers. Acquisitions and mergers are a complicated and time-consuming challenge and therefore not easy to manage. An ideal-typical acquisition process comprises three stages. The conception period, the transaction phase and the post-merger integration (PMI). The general opinion about M&A is that PMI determines the success and failure of a transaction, yet research on this topic is still limited (Schweiger and Very, 2003). A lot of published research articles focus instead on the transaction phase by empirically studying the impact of deal and firm characteristics on either the short-run or long-term development of certain financial metrics (King et al., 2004).

The three papers in this doctoral thesis highlight the post-merger integration period in M&A with a strict focus on primary stakeholder groups of the merging firms, and on PMI management itself. The presented dissertation therefore bridges the gap between finance and strategic management disciplines by integrating all relevant stakeholders and not only shareholders of a company into the derived theoretical framework to explain M&A performance (as suggested by the stakeholder theory of the firm, refer to Freeman, 2010; Parmer et al., 2010). The main argument represented in this work lies in the decisiveness of post-merger conflicts among

stakeholders that emerge due to the profound effects that M&A cause. A violation of stakeholder interests and the subsequent stakeholder resistance against the merger or acquisition have a tremendous negative impact on synergies and merger outcome. Change in general, but M&A in particular, can transform the overall organization. Transformation or reorganization leads to an environment characterized by anxiety and uncertainty which in turn influences stakeholder behavior. If then certain stakeholders decide not to cooperate but instead to combat, merger synergies will be difficult to achieve. Therefore, a successful PMI with a clear stakeholder orientation helps to align their major interests and to diminish opportunities for conflict.

The Post-Merger Stakeholder Conflict Hypothesis and the Mitigating Role of PMI in M&A

The first paper of this dissertation reapplies Hirshleifer's paradox of power (Hirshleifer, 1991) to corporate acquisitions and mergers with a rigorous focus on stakeholder interests. Hirshleifer shows, against the conventional wisdom, that in power struggles, the poorer party improves its position relative to the stronger rival instead of the other way around. The author explains that this is due to the rational incentive for the weaker side to fight harder and invest more resources into conflictual behavior. Yet, the outcome of the conflict process depends on the conflict's decisiveness which means that the weaker party cannot improve its wealth position when conflict escalates. The first paper adopts this mindset and establishes the theoretical framework of post-merger stakeholder conflicts in M&A to explain the effects of non-productive, i.e. refusing, stakeholder commitment on anticipated merger synergies. As a consequence of the emergence of stakeholder conflict, severe synergy impairment and thus, a poor post-acquisition performance occurs unless corrective actions are adopted by the acquirer management. Therefore, the theory further integrates PMI as a mitigating mechanism in M&A. It explains how a strict stakeholder orientation during the whole integration process helps to resolve conflict within certain stakeholder groups, thus stopping the commonly known wealth transfers from the acquirer to the target firm. The paper also points out the different

synergy expectations and risks of synergy impairment dependent of whether the transaction is classified as a merger of equals or as a superior or even as an extreme superior merger. It therefore stresses the importance of PMI quality in terms of stakeholder orientation. Because high-quality PMI measures are not free, an effective stakeholder-oriented integration process is worth conducting as long as net merger synergies exceed unresolved impairment and direct PMI cost.

Synergy Deterioration through Stakeholder Conflict in M&A and its Effect on Long-Term Acquirer Performance

The second paper justifies the existence of the developed post-merger stakeholder conflict hypothesis in the preceding paper through the empirical analysis of a large data sample of completed M&A transactions. Therefore, the paper firstly re-examines the long-term financial and operating performance of US acquirers. It applies a more accurate benchmarking methodology to compute unbiased long-run abnormal returns based on the approach outlined in Barber and Lyon (1997) and Barber et al. (1999). The empirical findings confirm the existing evidence of poor M&A performance of acquiring firms (Agrawal et al., 1992). Secondly, the paper identifies and tests stakeholder conflict factors (SCF) that encourage post-merger stakeholder struggles with subsequent synergy impairments. Those SCF are linked to the model parameters of the stakeholder conflict hypothesis derived in the first paper: integration capacity, merger complementarity, and decisiveness of conflict. The empirical results reveal that cross-border M&A with targets in nearby countries, and with little capacity for PMI tasks, show the highest tendency for stakeholder conflicts leading to detrimental post-merger wealth developments. Moreover, the paper empirically analyzes whether there exists a relationship between target size and acquirer M&A performance. Yet, the impact of deal size seems to be positive, a significant negative impact of smaller targets on M&A profitability cannot be found. Nevertheless, the acquisition of large targets bears higher synergy potential. Therefore, it is reasonable to emphasize the importance of a stakeholder-oriented PMI

in M&A to overcome the disadvantages of the violation of primary stakeholder interests.

Post-Merger Stakeholder Conflict and the Impact of Integration Quality on Acquirer M&A Profitability

The third paper empirically tests whether PMI quality influences acquirers' long-term M&A performance. Therefore, this paper defines four major dimensions which are important to evaluate the acquiring firm's stakeholder orientation during the integration process: management attention, stakeholder information, integration support, and risk awareness. Each dimension is explained by a PMI sub-index which comprises two to three criteria. The criteria are measured by textual analysis of publicly accessible data sources. The empirical findings of this paper are clear: PMI quality plays a decisive role within the value-creation process of corporate acquisitions. On average, high-quality integrators significantly outperform acquirers with poor PMI effort. Both three-year abnormal stock price and operating performance are considerably higher (compared to portfolio returns of nonevent reference firms matched by size and book-to-market ratio). Moreover, the paper investigates the indirect impact of PMI quality on stakeholder commitment. For example, employee productivity and customer demand positively influence long-term M&A profitability. Based on these findings, the mitigating role of PMI in M&A as outlined within the post-merger stakeholder conflict hypothesis can be confirmed. Finally, this paper analyzes factors that drive PMI quality. It shows that acquirer synergy expectation, pre-deal M&A activity, organic growth perspectives, and deal size influence the stakeholder orientation in PMI.

2

The Post-Merger Stakeholder Conflict Hypothesis and the Mitigating Role of PMI in M&A

Abstract

This paper theoretically reapplies Hirshleifer's (1991) paradox of power to stakeholder conflicts as a primary source of synergy impairment in mergers and acquisitions (M&A). It further extends the theoretical framework through focus on post-merger integration (PMI) as a mitigating factor in post-M&A value-decreasing combats. It outlines that mergers aiming for synergy can cause conflictual instead of cooperative actions within primary stakeholder groups due to violation of their interests. If acquirer management fails to counteract with high-quality PMI measures, the transaction will destroy stakeholder wealth due to deterioration of synergy. A stakeholder-oriented PMI is worth conducting up to the point where the net merger synergy still exceeds unresolved synergy impairment plus the direct cost of PMI. Applying the Cournot-Nash solution concept, the theory confirms that synergy potential grows with increasing target size. This means that so-called "merger of equals" have the highest synergy expectation and at the same time the lowest risk of synergy impairment due to missing incentives for the target stakeholders to oppose an acquisition. Nevertheless minor relative deal size encourages stakeholder conflict due to beneficial wealth transfers in favor of the target firm, provided that the conflict does not escalate.

Keywords: Mergers, acquisitions, post-merger integration, synergy impairment, stakeholder conflict

2.1 Introduction

Why do so many mergers and acquisitions still fail? Answering this question remains a challenging undertaking in finance and strategic management research of corporate takeovers and mergers. In particular, the impact of M&A on an acquiring firm's performance seems to be inconclusive through the lack of robust determinants that can predict its post-merger returns (King et al., 2004). Economic theory provides us with many possible rationales for the occurrence of mergers and the positive value effects that might result from them. Yet, empirical research reveals continuously high failure rates for acquiring firms (Agrawal et al., 1992; Loughran and Vijh, 1997; Megginson et al., 2004; Cui, 2018). Existing hypotheses that predict non-value-maximizing M&A performance therefore mainly focus on agency issues resulting from the separation of ownership and control in public enterprises. However, these theories mainly argue that specific managerial conditions during the conception and transaction phase of an acquisition process influence financial performance with a strict focus on shareholder value. The center of research is the managerial decision to execute an acquisition or merger, i.e. the period from deal announcement to its completion and the identification of circumstances that are not beneficial for long-term value creation in M&A (for example, empire building motives or CEO hubris). Unfortunately, a comprehensive theoretical explanation with focus on the post-acquisition integration process and the synergies to be captured therein is still missing. There clearly exists a gap of thorough understanding of why so many mergers fail post-merger to achieve anticipated synergies as well as the main reasons behind this development. Furthermore there is no answer for the arguably most interesting question of how synergy deteriorating post-merger developments can be stopped.

This article argues that M&A transactions of material size inevitably lead to radical organizational changes and to an environment characterized by uncertainty and anxiety among primary stakeholders of the involved firms. As a consequence, major stakeholder interests are negatively influenced in the post-acquisition period. If the impact is strong enough, stakeholders within certain groups (for example, employees,

customers, suppliers, etc.) will start to protect their claims by competing against the other firm's stakeholders within this group by devoting part of their resources to non-productive and merger-refusing activities. As a result, a conflict between merging firms' stakeholder emerges. This paper shows that such stakeholder conflicts during PMI in general heavily impair merger synergy expectations. Moreover, it points out that there is a higher probability of struggle in M&A between two unequally endowed stakeholders because of the existing incentive for the weaker party to devote part of its resources to non-cooperative activity. Finally, the analysis uncovers that a stakeholder-oriented PMI resolves stakeholder conflict and by association prevents synergy impairment.

For the hypothesis development, the paper applies the theoretical mindset of Hirshleifer's paradox of power (Hirshleifer, 1991) to mergers and acquisitions. Central parameters that encourage post-merger stakeholder conflicts, and thus influence synergy realization and value creation in M&A, are defined. In addition, the theory developed in this paper integrates PMI as a mitigating factor in M&A to emphasize the importance of a stakeholder-oriented integration in making mergers successful.

This paper contributes to the existing finance literature on M&A in several ways. Firstly, it develops a theoretical framework – namely the *"post-merger stakeholder conflict hypothesis"* – that approaches the central question of why so many M&A transactions fail and therefore do not create post-acquisition value. Within the theory, it emphasizes the firms' primary stakeholder interests and the impairment of anticipated merger synergy due to its violation. Secondly, it shows that the power relations (i.e. merger of equals vs. superior M&A) play a crucial role in conflict situations creating different incentives for the minor entity (the target company) to oppose the transaction. Thirdly, it theorizes the value-enhancing effect of a high-quality PMI and its mitigating mechanism in stakeholder conflict situations. This paper points out the importance of stakeholder orientation during the integration process, emphasizing that PMI quality matters to (re-)align stakeholder interests and in turn to prevent synergy impairments in the post-acquisition period. To the best of the author's knowledge, there does not exist any theory or hypothesis that deals with

post-acquisition stakeholder problems, value-deteriorating synergy impairments, and PMI as a mitigating mechanism. Thus, this article contributes to the M&A literature in a significant way.

The rest of the paper is organized as follows. Section 2.2 gives an overview of existing M&A theories and latest developments. Section 2.3 presents the basic assumptions and definitions of the hypothesis to be derived and models equilibrium conditions in case of post-merger stakeholder conflict. Section 2.4 integrates PMI as a mitigating factor into the theoretical framework. Section 2.5 illustrates post-merger stakeholder conflict and the application of the developed theory. The final Section 2.6 concludes the article.

2.2 Theories on Mergers and Recent Developments

There are two primary rationales that M&A theorists refer to: economic hypotheses that incorporate value-increasing motives and agency-oriented hypotheses that predict value-decreasing M&A performance. Former theories consist of, among others, the transaction cost theory whereby an acquisition is beneficial up to the point where the transaction cost can be reduced compared to the market solution, i.e. classical make-or-buy decision, hence, explaining vertical M&A (Coase, 1937 and 1960; Alchian and Demsetz, 1972; Williamson, 1991). Secondly, the monopoly hypothesis justifies value-creative M&A through the extension of market power by acquiring competitors or executing conglomerate mergers (Stillman, 1983; Trautwein, 1990). Next, a strategy-based view on M&A predicts positive outcomes through creation of long-term competitive advantage. For example, through the acquisition of know-how, technology, market access, cost leadership, etc. (Porter, 1979, 1987 and 1991; Prahalad and Hamel, 1990). Finally, the theory of operational and financial synergies forecasts positive M&A performance through economies of scale and scope, and effective allocation of financial resources within an internal capital market (Trautwein, 1990; Seth et al., 2000).

In general the agency-oriented theories are based on the principal-agent conflict to explain negative M&A profitability as a consequence of opportunistic management

behavior. Within this theoretical framework hidden characteristics, hidden intention, and in particular hidden action are responsible for agency cost and information asymmetry (Jensen and Meckling, 1976; Jensen and Smith, 1985; Akerlof, 1970). As a first implication, prestige, power, and empire building motives encourage managers to engage in value-decreasing acquisitions or mergers (Mueller, 1969; Jensen, 1988). The free-cash-flow hypothesis assumes that managers rather conduct non-profitable M&A to strengthen the assets under their control than distributing excess liquidity to shareholders (Jensen, 1986 and 1988). A further hypothesis emphasizes hubris of managers, i.e. the irrational behavior of CEOs which leads to a systematic overestimation and overpayment in M&A transactions (Roll, 1986; Hayward and Hambrick, 1997). Nevertheless, agency cost can be also reduced in M&A, based on the hypothesis for market of corporate control, whereby inefficient target management teams are replaced by an experienced acquirer management, eventually contributing to a positive M&A performance (Jensen and Ruback, 1983; Shleifer and Vishny, 1988).

However, the above mentioned theories on M&A occurrence and its prediction of either positive or negative outcomes are limited and incomplete to the extent that they do not theorize post-merger problems that threaten the realization of anticipated merger synergies. If one assumes that acquirer management behaves rationale and in favor of its principals, i.e. its shareholders, there will still remain sources of conflict within the integration process. Almost every article investigating M&A performance acknowledges that PMI is a critical and highly sensitive process to value creation in M&A. Of course, it seems obvious that high premiums paid for a target significantly reduce the probability of a successful merger (Sirower, 1997). Yet, empirical evidence on long-term M&A performance also finds significant negative long-run outcomes even in the absence of high premiums (Agrawal et al., 1992). This fact leads to the assumption that available synergy potentials cannot be effectively realized due to the existence of any other center of conflict in the integration period. Conn et al. (2004) introduce the *"indigestion hypothesis"* which in general argues that acquiring firms are not able to successfully integrate a target once there are previous transactions which still need to be integrated. However, the authors do also neglect to theorize possible

reasons behind it. The present article claims that a highly underestimated center of conflict is post-merger stakeholder conflicts which arise due to violation of primary stakeholder interests. The reasons for the violation of their interests are manifold. Schweiger and Very (2003) document five major integration issues that impair expected synergies: (i) uncertainty and ambiguity due to lack of information and inconsistent information, (ii) organizational problems because of power status and political behavior, (iii) voluntary departure of key employees due to acquirer arrogance, (iv) loss of customers caused by concerns about existing contracts and agreements, and (v) poor integration of cultural differences. All of these problems represent potential sources of stakeholder conflict which can be mitigated through stakeholder-oriented PMI measures. As demanded by Schweiger and Very (2003) *"Future research should also examine the complex relationship between integration and financial outcomes"*, this paper attempts to integrate PMI stakeholder orientation and its mitigating effect into the theory building.

Apart from finance research with its missing focus on stakeholder problems in M&A, strategic management literature provides valuable contributions to this topic of interest. On the one hand, Tantallo and Priem (2016) focus on stakeholder synergy as a value creation opportunity. They extend the existing stakeholder theory by developing a new theoretical framework that provides a perspective on how value can be created for multiple important stakeholders simultaneously, i.e. without just transferring wealth from one stakeholder group to any other one. Thereby, they counter the assumptions of competing stakeholder goals and the prioritization of shareholder value maximization. In the context of M&A, this approach addresses the prevailing empirical evidence of the transfer of existing value from the acquiring firm to the target (i.e. target shareholders benefit at the expense of acquirer stakeholders). The so-called "stakeholder-synergy" results from multi-attribute utility functions which enable the management to create value for several stakeholders at once without adversely affecting other stakeholders. In addition, this leads to higher stakeholder commitment and cooperation. The authors also point out that a firm's management has to continually attend to its essential stakeholder groups to achieve stakeholder synergies and to reach sustainable, long-term financial performance.

On the other hand, Bettinazzi and Zollo (2017) deal with acquisition performance and how it is affected by a firm's orientation towards its stakeholders. They point out the advantages and disadvantages of stakeholder orientation in the pre-acquisition and post-acquisition phase. In their study of 1,884 US acquisitions from 2002-2010 the authors find a positive impact of stakeholder focus and support a positive moderating effect of business relatedness and degree of integration on performance. Therefore, they recommend that future M&A research abandons the strict assumption of primacy to the interests of shareholders over those of other stakeholders. The authors further prompt the investigation of the effect of PMI on M&A performance in conjunction with the acquiring firm's ability to integrate stakeholder interests, for example with regard to integration planning, and PMI implementation.

2.3 The Post-Merger Stakeholder Conflict Hypothesis

2.3.1 Central Model Assumptions

The fundamental assumptions of the derived theoretical framework are that acquiring firm managers are rational and fully informed and that their corporate acquisitions are perceived to be synergistic. In the following, two firms, Firm 1 and Firm 2, are considered to engage in a merger or acquisition. Each of the two firms consists of primary stakeholder groups $s_i \in S_i,\ i = 1, 2,$ where $S_i = \{1, 2, 3, \ldots, N\}$ equals the set of essential stakeholders of firm $i = 1, 2$.[1] For example, Stakeholder Group 1 consists of employees, Group 2 of stockholders, Group 3 of customers and so on, until Stakeholder Group N which covers for instance suppliers. These stakeholders do also behave rational and solely aim to maximize their total merged firm wealth. They have either a direct or an indirect impact on the firms future cash flows and consequently, on the anticipated synergies of the underlying M&A transaction. Pre-merger, every stakeholder group s_i owns a certain amount of stakeholder wealth $\omega_{s_i} = x_{s_i} V_i$, with x_{s_i} as a percentage share on the firm's enterprise

[1] To reduce complexity, it is assumed that acquirer and target consist of the same primary stakeholder groups (basically employees, customers, suppliers, management, debt-holders, shareholders etc.).

value V_i, $i = 1, 2$.[2] This of course is an abstraction because in general, only shareholders and debt-holders have a capital stake in the company. However, other stakeholder groups (for example, employees, management, suppliers, or customers) that do not provide capital, yet are important for adding value to the firm, may impact a firm's enterprise value, or more specifically a firm's market value because value can be considered as a function of the contribution of certain stakeholder-specific input factors, such as labor capital, buying behavior, delivery promise or quality. Therefore, one can argue that these stakeholders also own part of the firm due to their ability to either directly or indirectly influence the firm's market value (dependent of the respective stakeholder's power). For example, one considers an important key customer of a company who is aware of his impact to push down the company's share price by quitting his business relationship that is of high earnings contribution. Or a highly skilled top manager who has served a company for years, contributing to its growth, and then suddenly leaves the company.

While merging, each stakeholder group uses its initial wealth as a resource endowment $R_{s_i}, i = 1, 2$ for synergistic combination within the combined entity to reach a higher total post-merger stakeholder wealth $\widetilde{\omega}_s = \widetilde{\omega}_{s_1} + \widetilde{\omega}_{s_2}$. In the case where members of a specific stakeholder group see their interests at risk due to the merger, they devote part of their resources to non-cooperative instead of cooperative activity. As a consequence, stakeholders s_1 and s_2 start to compete by conflict in M&A, provided that one assumes one-sided submission to be excluded in the theoretical framework (i.e. if a stakeholder group decides to fight against other groups, the other parties will fight back). Emerging conflict in this context is understood as a negative event, i.e. it is assumed that the outcome of a conflict to be always negative unless it can be resolved. Therefore, stakeholder conflict impairs the anticipated stakeholder synergy potential ${\theta_s}^+$ so that the combined post-merger stakeholder wealth $\widetilde{\omega}_s$ will be even lower than pre-merger stakeholder wealth ω_s, i.e. $\widetilde{\omega}_s < \omega_s$ if conflict escalates

[2] The enterprise value of a firm is defined as the sum of its market value of equity (market capitalization) and net debt (short-term and long-term interest bearing debt plus minority interest plus preferred stock minus cash and cash equivalents).

and remains unsolved. By implication, this means that dis-synergy θ_s^- can occur. If this happens to all primary stakeholder groups $s \in \dot{S} = S_1 \cup S_2 = \{1, 2, 3, \dots, N\}$, of the combined firm, there will be no merger synergy at all, and thus, the outcome of the merger will be highly negative.

The sum of each stakeholder group's post-merger wealth equals the total enterprise value of the merged firm $\tilde{V}$, which consists of Firm 1 and 2 pre-merger values V_1, V_2 plus the realized merger synergy $\hat{\theta}$.

$$\sum_{s \in \dot{S}}^{N} \widetilde{\omega}_s = \widetilde{\omega}_1 + \widetilde{\omega}_2 + \cdots + \widetilde{\omega}_N = \tilde{V} = \tilde{V}_1 + \tilde{V}_2 = V_1 + V_2 + \hat{\theta}, \tag{1}$$

where $\tilde{V}_1 = \sum_{S_1 \in S_1}^{N} \widetilde{\omega}_{s_1} = V_1 + q\hat{\theta}$ and $\tilde{V}_2 = \sum_{S_2 \in S_2}^{N} \widetilde{\omega}_{s_2} = V_2 + (1-q)\hat{\theta}$, with q as a proportionate share factor.

2.3.2 Modelling Post-Merger Stakeholder Conflict

Multi-Stakeholder Conflict

At first the general model of a multi-stakeholder conflict in M&A is outlined. It describes a situation where n out of N primary stakeholder groups with $1 \leq n \leq N \in IN^+$ compete by conflict post-merger. This divides the merged firm's set of stakeholder groups $\dot{S}$ into $\dot{S}^F = \dot{S}_1^F \cup \dot{S}_2^F$ which conists of n out of N groups that fight and the subset $\dot{S}^C = \dot{S}_1^C \cup \dot{S}_2^C$ that comprises the remaining $(N-n)$ stakeholders that behave cooperative and are not involved in the conflict. It is shown later in the proceeding work that the limiting case of $n = 1$ (analysis of intra-stakeholder conflicts within each independent stakeholder group) is sufficient for theorizing post-acquisition conflict in M&A because each stakeholder group competes by conflict within its own market that equals a duopoly (for example, labor, equity, debt or product demand).

The paper applies the Cournot-Nash solution concept by assuming that there exists an equilibrium in post-merger conflicts between stakeholders, as it does in regular market economies. Each firm's $i = 1, 2$ stakeholder group $s_i \in \dot{S}_i^F$ determines simultaneously the resources to be devoted to combative activity in cases where a

post-merger conflict arises. This implicates that certain stakeholders see their main interests at risk and start to act non-cooperatively or non-productively during the post-merger integration period, i.e. they oppose the merger.

Each stakeholder group uses its pre-merger wealth as a resource endowment which is either devoted to cooperative activity C_{s_i} or combative actions F_{s_i}:

$$\omega_{s_i} = R_{s_i} \text{ with } R_{s_i} = C_{s_i} + F_{s_i}, i = 1,2 \text{ and } s_i \in S_i \tag{2}$$

where $\omega = R = \sum_{i=1}^{2} \sum_{s_i \in S_i}^{N} R_{s_i} = V = V_1 + V_2$ equals the sum across all acquirer and target firm stakeholders' initial resource endowments. This in turn equals the sum of the pre-merger enterprise values of the Acquirer V_1 and the Target V_2.

The respective merger synergy that can be achieved in a multi-stakeholder conflict through synergistic combination of productive resources C_{s_i}, is formalized in the following merger synergy function:

$$\widetilde{\omega}(C_{s_i}, A, d, n) = \underbrace{A\left(\sum_{i=1}^{2} \sum_{s \in \dot{S}^F}^{n} C_{s_i}^{\frac{1}{d}}\right)^d}_{\widetilde{\omega}^{\eta=1}} + \underbrace{A\left(\sum_{i=1}^{2} \sum_{s \in \dot{S}^C}^{(N-n)} R_{s_i}^{\frac{1}{d}}\right)^d}_{\widetilde{\omega}^{\eta=0}} \tag{3}$$

The first term of equation (3) is the part under conflict (denoted with $\eta = 1$), where $C_{s_i} = R_{s_i} - F_{s_i}$, $F_{s_i} > 0$ for all $s \in \dot{S}^F$. The second term represents the outcome under no-conflict (denoted with $\eta = 0$), where $C_{s_i} = R_{s_i}$ for all $s \in \dot{S}^C$. Only the first term is at risk of synergy impairment and the resulting synergy (dis-synergy) is shared by the n stakeholder groups in conflict. The second term is shared by the $(N - n)$ remaining stakeholder groups that behave peaceful. In the following, the theoretical framework focuses on the analysis of the conflict term ($\eta = 1$):

$$\widetilde{\omega}^{\eta=1}(C_{s_i}, A, d, n) = A\left(\sum_{i=1}^{2} \sum_{s \in \dot{S}^F}^{n} C_{s_i}^{\frac{1}{d}}\right)^d \tag{3.1}$$

The parameter $A \leq 1$ measures the utilization of integration capacity, i.e. resources provided to manage the entire integration process. To tap the full synergy potential of a M&A transaction the ideal integration capacity utilization rate equals $A = 1$. The

factor d with $1 < d \leq 2$ is a M&A complementarity index that in general comprises three dimensions. Firstly, complementarity of businesses, products, and markets (organizational dimension). Secondly, complementarity of economic sphere, legal systems, economic laws, and regulations (economic dimension). Thirdly, complementarity of culture, values, language and business practices (sociocultural dimension). High complementarity in each of these dimensions fosters synergistic combination of stakeholder resources. Therefore, this analysis does not consider the case where $d = 1$ because the focus is on synergistic M&A only.

In addition, a merger causes a fixed transaction cost T including the premium paid. For simplification, it is assumed that all primary stakeholder groups N of the combined entity equally share the cost. The resulting stakeholder merger cost function is as follows:

$$c_{s_i}(N) = \frac{T}{2N} \tag{4}$$

for all $i = 1, 2$ and $s_i \in S_i$ and $c(N) = \frac{T}{N}$ for all $s \in \dot{S}$.

Furthermore, a stakeholder conflict function is defined that incorporates decisiveness of conflict represented by the factor $m \geq 1$. As conflict tends to escalate (m is high), the post-merger synergy impairment and thus, wealth destruction increases. In the multi-stakeholder conflict case, the function is defined as follows:

$$q_{s_i}^{\eta=1}(F_{s_i}, m, n) = \frac{F_{s_i}^m}{\sum_{i=1}^{2} \sum_{s \in \dot{S}^F}^{n} F_{s_i}^m} \tag{5}$$

with $\sum_{i=1}^{2} \sum_{s \in \dot{S}^F}^{n} q_{s_i}^{\eta=1} = 1$ and $F_{s_i} > 0$ for all $s_i \in \dot{S}_i^F$.[3]

Finally, the post-merger stakeholder wealth function for the stakeholders in struggle results in:

$$\widetilde{\omega}_{s_i}^{\eta=1} = \widetilde{\omega}^{\eta=1}(C_{s_i}, A, d, n) * q_{s_i}^{\eta=1}(F_{s_i}, m, n) - c_{s_i}(N) \tag{6}$$

[3] Stakeholders that are not involved in conflict, i.e. the remaining $(N - n)$ stakeholder groups, put all of their given resources into cooperative activity, thus sharing their part of wealth $\widetilde{\omega}_{s_i}^{\eta=0}$ of equation (3) with the proportionate factor $q_{s_i}^{\eta=0}(R_{s_i}, n) = \frac{R_{s_i}}{\sum_{i=1}^{2} \sum_{s \in \dot{S}^C}^{(N-n)} R_{s_i}}$.

$$\Leftrightarrow \widetilde{\omega}_{s_i}^{\eta=1} = A\left(\sum_{i=1}^{2}\sum_{s\in\dot{S}^F}^{n} C_{s_i}^{\frac{1}{d}}\right)^{d} * \frac{F_{s_i}^{m}}{\sum_{i=1}^{2}\sum_{s\in\dot{S}^F}^{n} F_{s_i}^{m}} - \frac{T}{2N}.$$

The total post-merger wealth of the combined firm equals:[4]

$$\widetilde{\omega} = \widetilde{\omega}_1 + \widetilde{\omega}_2 = \sum_{s_1\in S_1}^{N} \widetilde{\omega}_{s_1} + \sum_{s_2\in S_2}^{N} \widetilde{\omega}_{s_2} = \sum_{i=1}^{2}\sum_{s_i\in S_i}^{N} \widetilde{\omega}_{s_i} = V_1 + V_2 + \hat{\theta}. \tag{7}$$

It consists of the sum of all Firm 1 and 2 primary stakeholders' post-merger wealth which equals their pre-merger wealth V_1, V_2 plus the realized merger synergy $\hat{\theta}$ under conflict.

In the multi-stakeholder post-merger conflict case each stakeholder group in struggle $s_i \in \dot{S}_i^F, i = 1,2$ faces the following optimization problem:

$$Max_{F_{s_i}\in\left[0,R_{s_i}\right]}\ \widetilde{\omega}_{s_i}^{\eta=1} = A\left(\sum_{i=1}^{2}\sum_{s\in\dot{S}^F}^{n} C_{s_i}^{\frac{1}{d}}\right)^{d} * \frac{F_{s_i}^{m}}{\sum_{i=1}^{2}\sum_{s\in\dot{S}^F}^{n} F_{s_i}^{m}} - \frac{T}{2N} \tag{8}$$

The respective reaction curve equations can be derived from the condition $\frac{\delta\widetilde{\omega}_{s_i}^{\eta=1}}{\delta F_{s_i}} = 0$:

$$\frac{F_{s_i} * C_{s_i}^{\frac{1-d}{d}}}{\left(\sum_{i=1}^{2}\sum_{s\in\dot{S}^F}^{n} F_{s_i}^{m}\right) - F_{s_i}^{m}} = \frac{m\sum_{i=1}^{2}\sum_{s\in\dot{S}^F}^{n} C_{s_i}^{\frac{1}{d}}}{\sum_{i=1}^{2}\sum_{s\in\dot{S}^F}^{n} F_{s_i}^{m}} \tag{9}$$

The intersection between all stakeholder reaction curves represents the state of optimal combative resources, where each stakeholder maximizes his post-merger wealth.

Intra-Stakeholder Conflict

The derived model of multi-stakeholder conflict, where n stakeholder groups compete by conflict in M&A can be simplified to a model of so called "intra-stakeholder conflict" (one stakeholder group $n = 1$ instead of multiple stakeholders $n > 1$). It is assumed that acquirer and target firms' stakeholder of group $s \in \dot{S} = \{1, 2, 3, \dots, N\}$ have mutually exclusive interests and compete within their own

[4] Where $\widetilde{\omega}_i = \sum_{s_i\in S_i}^{N} \widetilde{\omega}_{s_i} = \left(\sum_{s_i\in\dot{S}_i^F}^{n} \widetilde{\omega}_{s_i}^{\eta=1} + \sum_{s_i\in\dot{S}_i^C}^{(N-n)} \widetilde{\omega}_{s_i}^{\eta=0}\right) = \widetilde{\omega}_i^{\eta=1} + \widetilde{\omega}_i^{\eta=0}$, for $i = 1,2$.

universe that equals a duopoly (for example, labor in the case of stakeholder group employees, or product demand in the case of customers) by steering homogeneous resources (for example, employee's productivity, or customer buying behavior). This simplifies the formalization of post-merger stakeholder conflict in M&A due to the assumption that all conflicts between acquirer and target stakeholder occur within independent stakeholder groups, for example, acquirer suppliers vs. target suppliers, or acquirer employees vs. target employees (duopolistic competition). As a result, the synergy or dis-synergy outcome of each group's intra-stakeholder conflict can be added up to determine the merged firm's total impaired post-merger wealth. This approach is in line with real-life scenarios because it is, for example, the employees or the suppliers and a company's relationship to those stakeholders that enable a firm to successfully generate intangible assets or competitive advantage.

In the following, the paper continues with the case of $n = 1$ (intra-stakeholder conflict) to specify the equations defined in Section 2.3.2. Yet, it is essential to firstly consider the situation where no conflict among acquirer and target stakeholders within a specific stakeholder group arises ($\eta = 0$). As a result of such a two-sided peaceful behavior, the stakeholder group contributes to the synergy creation in the post-acquisition period of the M&A transaction. Secondly, the focus lies on post-merger stakeholder conflicts ($\eta = 1$) that impair synergy potential within stakeholder groups, finally ending up with dis-synergy.

No conflict case ($\eta = 0$)*:*

If no conflict between primary stakeholders of the merging companies arises post-merger, each stakeholder group of Firm 1 and 2 will use one hundred percent of its resource endowments $R_{s_i} = \omega_{s_i}$ for synergistic combination in order to increase its post-merger wealth $\bar{\bar{\omega}}_{s_i}, i = 1,2$. This describes the situation where acquirer or target stakeholders do not fight as long as their counterpart from the other firm does not fight.

The combined firm's post-merger stakeholder wealth function $\bar{\bar{\omega}}_s$ for the no-conflict case is defined as:

$$\bar{\bar{\omega}}_s = \bar{\bar{\omega}}_{s_1} + \bar{\bar{\omega}}_{s_2} = \left[A(R_{s_1}^{\frac{1}{d}} + R_{s_2}^{\frac{1}{d}})^d\right] - \frac{T}{N}, \tag{10}$$

with $1 < d \leq 2, A \leq 1$, $\frac{T}{N} > 0, F_{s_i} = 0$ for all $s_i \in \dot{S}$, where $\bar{\bar{\omega}}_{s_1} = \bar{q}_{s_1}\left[A(R_{s_1}^{\frac{1}{d}} + R_{s_2}^{\frac{1}{d}})^d\right] - \frac{T}{2N}$, and $\bar{\bar{\omega}}_{s_2} = \bar{q}_{s_2}\left[A(R_{s_1}^{\frac{1}{d}} + R_{s_2}^{\frac{1}{d}})^d\right] - \frac{T}{2N}$, with $\bar{q}_{s_1} = \frac{R_{s_1}}{R_{s_1}+R_{s_2}}$, $\bar{q}_{s_2} = \frac{R_{s_2}}{R_{s_1}+R_{s_2}}$ and $\bar{q}_{s_1} = \bar{q}_{s_2} = 0.5$ if $R_{s_1} = R_{s_2}$ and $\bar{q}_{s_1} > \bar{q}_{s_2}$ if $R_{s_1} > R_{s_2}$.

The net synergy potential of the merged firm's stakeholder group $s \in \dot{S}$ results from the difference between post-merger and pre-merger wealth and in case of no conflict, equals the following realized synergy:

$$\theta_s^+ = \hat{\theta}_s = \bar{\bar{\omega}}_s - \omega_s \tag{11}$$

where $\sum_{s\in\dot{S}}^{N} \theta_s^+ = \theta^+ = \hat{\theta}$ equals the total merger synergy if there appears no conflict within any stakeholder group (this situation would be the best case with a maximum outcome for the merging partners). Similarly, the net synergy potential for the stakeholder group $s_i \in S_i$ of firm $i = 1, 2$ equals:

$$\theta_{s_i}^+ = \bar{\bar{\omega}}_{s_i} - \omega_{s_i} = \bar{q}_{s_i}\bar{\bar{\omega}}_s - \omega_{s_i} = \bar{q}_{s_i}(\bar{\bar{\omega}}_s - \omega_s) = \bar{q}_{s_i}\theta_s^+ \tag{12}$$

where $\sum_{i=1}^{2} \theta_{s_i}^+ = \theta_s^+$ is the merged firm's stakeholder synergy. The following condition holds: $\theta_s^+ > \theta_{s_i}^+ > 0$ for $i = 1, 2$.

Conflict case $(\eta = 1)$*:*

In the case where post-merger intra-stakeholder conflicts arise, each acquirer and target stakeholders of a primary stakeholder group devote part of their given resources to non-cooperative, i.e. combative activity $F_{s_i} = \alpha_{s_i} R_{s_i}, i = 1, 2$. A one-sided submission of either party is excluded in the theory, and in any case, it is not applicable in the context of post-merger intra-stakeholder conflicts. In this situation, the remaining part of the resources are utilized for cooperative, i.e. productive activity $C_{s_i} = (1 - \alpha_{s_i})R_{s_i} = R_{s_i} - F_{s_i}$, so that $R_{s_i} = C_{s_i} + F_{s_i}$ for $i = 1, 2$.

The combined firm's post-merger stakeholder wealth function $\tilde{\omega}_s$ for the intra-stakeholder conflict case $(n = 1)$ is as following:

$$\tilde{\omega}_s = \tilde{\omega}_{s_1} + \tilde{\omega}_{s_2} = \left[A(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})^d\right] - \frac{T}{N}, \tag{13}$$

with $1 < d \leq 2, A \leq 1, \frac{T}{N} > 0$ $F_{s_i} > 0$ for all $s_i \in \dot{S}$, where $\widetilde{\omega}_{s_1} = q_{s_1}\left[A(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})^d\right] - \frac{T}{2N}$, and $\widetilde{\omega}_{s_2} = q_{s_2}\left[A(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})^d\right] - \frac{T}{2N}$, with $q_{s_1} = \frac{F_{s_1}^m}{F_{s_1}^m + F_{s_2}^m}$, $q_{s_2} = \frac{F_{s_2}^m}{F_{s_1}^m + F_{s_2}^m} = (1 - q_{s_1})$ are the post-merger stakeholder conflict functions.

Consequently, if conflict remains unsolved, a net dis-synergy in form of a net wealth impairment will occur for the combined entity's stakeholder $s \, \epsilon \, \dot{S}$: $\theta_s^- = \widetilde{\omega}_s - \omega_s$, where $\sum_{s \in \dot{S}}^{N} \theta_s^- = \theta^-$ equals the total merger dis-synergy under unresolved post-merger stakeholder conflict. This describes the worst case where the participants in all primary stakeholder groups compete by conflict. Similarly, the net dis-synergy for the stakeholder group $s_i \in S_i$ of firm $i = 1, 2$ results in:

$$\theta_{s_i}^- = \widetilde{\omega}_{s_i} - \omega_{s_i} = q_{s_i}\widetilde{\omega}_s - \omega_{s_i} = q_{s_i}(\widetilde{\omega}_s - \omega_s) = q_{s_i}\theta_s^-, \tag{14}$$

where $\sum_{i=1}^{2} \theta_{s_i}^- = \theta_s^-$ is the respective merged firm's stakeholder dis-synergy. It holds: $\theta_s^- < \theta_{s_i}^- < 0$ for $i = 1, 2$ and $q_{s_1} = q_{s_2} = 0.5$ if $R_{s_1} = R_{s_2}$ and $q_{s_1} > q_{s_2}$ if $R_{s_1} > R_{s_2}$.

Summarized, the post-merger stakeholder wealth function for stakeholder group $s \in \dot{S} = \{1, 2, 3, \ldots, N\}$ of the merged firm can be expressed as:

$$\widetilde{\omega}_s(\eta) = \begin{cases} \omega_s + \theta_s^+ : \eta = 0, C_{s_i} = R_{s_i}, i = 1, 2, \theta_s^+ > 0 \\ \omega_s + \theta_s^- : \eta = 1, C_{s_i} = R_{s_i} - F_{s_i}, i = 1, 2, \theta_s^- < 0 \end{cases} \tag{15}$$

It is assumed that each stakeholder group $s \in \dot{S}$ can be treated independently from the other stakeholder groups of the merged entity. For that reason, the total post-merger wealth of the combined firm can be derived by simply adding up the resulting positive (in case of synergy) or negative (in case of dis-synergy) wealth effects of all stakeholder groups N. It follows:

$$\widetilde{\omega} = \omega + \sum_{s \in \dot{S}}^{N} \hat{\theta}_s = \omega + \hat{\theta} \tag{16}$$

where $\hat{\theta}_s$ is either positive ($\hat{\theta}_s^+ > 0$) in case of no conflict or negative ($\hat{\theta}_s^- < 0$) in case of conflict. Thus, the total realized merger synergy $\hat{\theta}$ can also be either positive or negative resulting in a higher ($\widetilde{\omega} > \omega > 0$) or lower ($0 < \widetilde{\omega} < \omega$) total post-merger wealth.

In the extreme cases of conflict or no-conflict across all primary stakeholder groups of the combined firm, the following upper and lower bounds can be defined:

$$\hat{\theta}^{+} = \sum_{s\in\dot{S}}^{N} \hat{\theta}_s^{+} \text{ for all } N \Rightarrow \tilde{\omega}^{+} \text{ (maximum)} \tag{17}$$

$$\hat{\theta}^{-} = \sum_{s\in\dot{S}}^{N} \hat{\theta}_s^{-} \text{ for all } N \Rightarrow \tilde{\omega}^{-} \text{ (minimum)} \tag{18}$$

In the next subsection, the Cournot-Nash equilibrium is defined, once for merger of equals, i.e. acquirer and target stakeholders have equal resources $R_{s_1} = R_{s_2}$, and once for superior mergers where a large firm acquires a small target, so that $R_{s_1} > R_{s_2}$.

2.3.3 Cournot-Nash Equilibrium in Post-Merger Stakeholder Conflicts

In the previous section, the post-merger wealth functions in multi-stakeholder conflicts ($n > 1$) and in intra-stakeholder conflicts ($n = 1$) were outlined. For the latter, the stakeholder post-merger wealth differences between no conflict and conflict and the resulting synergy or dis-synergy were specified.

A post-merger stakeholder conflict between acquirer and target participants can be formulated as a strategic decision game where the Cournot-Nash solution concept is applicable:

$$G = (N, S, U) = \left(\{s_1, s_2\}, [0, R_{s_1}] \times [0, R_{s_2}], (\tilde{\omega}_{s_1}, \tilde{\omega}_{s_2})\right). \tag{19}$$

Each party $s_i \in S_i$, $i = 1, 2$ has to decide how much of its resources should be used for combative activity F_{s_i}, given the non-productive effort of its opponent. The decisions are made at the same time. Both parties aim to maximize their post-acquisition wealth which leads to the following optimization problem:

$$s_i: Max_{F_{s_i}\in[0,R_{s_i}]}\, \tilde{\omega}_{s_i} = q_{s_i}\tilde{\omega}_s - c_{s_i} = \frac{F_{s_i}^m}{F_{s_1}^m + F_{s_2}^m}\left[A\left(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}}\right)^d\right] - \frac{T}{2N}. \tag{20}$$

The derived reaction curves RC_{s_1} and RC_{s_2} of stakeholder $s_1 \in S_1$ and $s_2 \in S_2$ represent each firm's stakeholder optimal fighting effort, corresponding with the opponent's choice of resources devoted to combative activity:

s_1: $\quad Max_{F_{s_1}\in[0,R_{s_1}]}\, \tilde{\omega}_{s_1} = q_{s_1}(F_{s_1}, F_{s_2}) * \tilde{\omega}_s(C_{s_1}, C_{s_2})$, subject to $F_{s_1} + C_{s_1} = R_{s_1}$.

$$\Rightarrow \frac{\delta \widetilde{\omega}_{s_1}}{\delta F_{s_1}} = 0.$$

$$\Rightarrow \frac{F_{s_1} C_{s_1}^{\frac{1-d}{d}}}{F_{s_2}^m} = \frac{m(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})}{F_{s_1}^m + F_{s_2}^m} \stackrel{\text{def}}{=} RC_{s_1}. \tag{21}$$

s_2: $\quad Max_{F_{s_2} \in [0, R_{s_2}]} \widetilde{\omega}_{s_2} = q_{s_2}(F_{s_1}, F_{s_2}) * \widetilde{\omega}_s(C_{s_1}, C_{s_2})$, subject to $F_{s_2} + C_{s_2} = R_{s_2}$.

$$\Rightarrow \frac{\delta \widetilde{\omega}_{s_2}}{\delta F_{s_2}} = 0.$$

$$\Rightarrow \frac{F_{s_2} C_{s_2}^{\frac{1-d}{d}}}{F_{s_1}^m} = \frac{m(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})}{F_{s_1}^m + F_{s_2}^m} \stackrel{\text{def}}{=} RC_{s_2}. \tag{22}$$

The factor A (integration capacity) cancels out in the derivations of the respective reaction curves. Thus, a sole increase in acquirer integration capacity does not change the proportionate allocation of resources between cooperative and non-cooperative activity. This is an important finding. Integration capacity seems not to be a decisive factor for the decision making process of the stakeholders in conflict. This fact signals that instead of integration quantity, integration quality, i.e. the PMI measures that are conducted, influence stakeholders' decision and mitigate intra-stakeholder conflicts.

Definition 1 *(Symmetrical Cournot-Nash solution): In synergistic M&A (*$1 < d \leq 2$*), there exist only interior solutions for the reaction curve equations* RC_{s_1} *and* RC_{s_2}*. In the case of a merger of equals where the respective stakeholders* $s_1 \in S_1$ *and* $s_2 \in S_2$ *have equal initial resource endowments* $R_{s_1} = R_{s_2}$*, the resulting symmetrical Cournot-Nash equilibrium in intra-stakeholder conflicts (*$n = 1$*) and for* $m = 1$ *equals:*

$$F_{s_1} = F_{s_2} = C_{s_1} = C_{s_2} = (R_{s_1} + R_{s_2})/4, \tag{23}$$

where $q_{s_1} = q_{s_2} = 0.5$ (derivation see 2.7 Appendix A.1 (i)).

For $m > 1$ *the symmetrical Cournot-Nash solution is as follows:*

$$F_{s_1} = F_{s_2} = \frac{m(R_{s_1} + R_{s_2})}{2(m+1)}, \tag{24}$$

where $C_{s_1} = \frac{R_{s_1}}{(m+1)} = R_{s_1} - F_{s_1}$, $C_{s_2} = \frac{R_{s_2}}{(m+1)} = R_{s_2} - F_{s_2}$ *and* $q_{s_1} = q_{s_2} = 0.5$ (derivation see 2.7 Appendix A.1 (ii)).

Definition 2 *(Stakeholder power relations in M&A):*[5]

(i) Merger of Equals: Conflictual or productive interaction between equally endowed stakeholders $s_i \in S_i, i = 1,2, 1 < d \leq 2$ *so that* $R_{s_1} = R_{s_2}$ $(\omega_{s_1} = \omega_{s_2})$.

(ii) Superior Merger: Conflictual or productive interaction between unequally endowed stakeholders $s_i \in S_i, i = 1,2, 1 < d \leq 2$ *so that* $R_{s_1} > R_{s_2}$ $(\omega_{s_1} > \omega_{s_2})$.

(iii) Extreme Superior Merger: Conflictual or productive interaction between a strong endowed stakeholder and a weak endowed stakeholder $s_i \in S_i, i = 1,2, 1 < d \leq 2$ *so that* $R_{s_1} > R_{s_2}$ $(\omega_{s_1} > \omega_{s_2})$ *where* $F_{s_2} \to R_{s_2}$*, i.e. the weak endowed opponent has to put almost all of its resources into fighting activity.*

Definition 3 *(Stakeholder synergy and dis-synergy):*

(i) $\theta_s^+ = \bar{\bar{\omega}}_s - \omega_s > 0$ *equals the expected synergy of stakeholder group* $s \in S$ *of the combined firm, where* $\bar{\bar{\omega}}_s$ *denotes the optimum of post-merger stakeholder wealth that is reached in case that no conflict occurs.*

(ii) $\theta_s^- = \tilde{\omega}_s - \omega_s < 0$ *equals the net dis-synergy of stakeholder group* $s \in S$ *of the combined firm (in case of conflict).*

(iii) $\Delta\theta_s^+ = \frac{\bar{\bar{\omega}}_s}{\omega_s} - 1 > 0$ *equals the (maximum) relative synergy of stakeholder group* $s \in S$ *of the merged firm (in case of no conflict).*

(iv) $\Delta\theta_s^- = \frac{\tilde{\omega}_s}{\omega_s} - 1 \leq 0$ *is the relative dis-synergy of stakeholder group* $s \in S$ *of the combined firm (in case of conflict).*

As a consequence of post-merger stakeholder conflict between equally endowed stakeholders, fifty percent of the available resources $R_{s_i}, i = 1,2$ are wasted in synergy-disruptive combative activity (where $m = 1$). As decisiveness of conflict m increases, the percentage share of non-cooperative behavior expands. For example, if $m = 3$, the resources devoted to combative action account for seventy five percent of

[5] The theory assumes that the size ratio between acquirer and target (measured by market capitalization) predetermines the power relationship between acquirer and target stakeholder groups, i.e., if Firm 1 is, for example, twice as big as Firm 2 (size ratio of 2), the pre-merger wealth ratios $(\omega_{s_1}/\omega_{s_2})$ or the ratios of initial resource endowments (R_{s_1}/R_{s_2}) between s_1 and s_2 are also 2 for all $s_1 \in S_1$ and $s_2 \in S_2$.

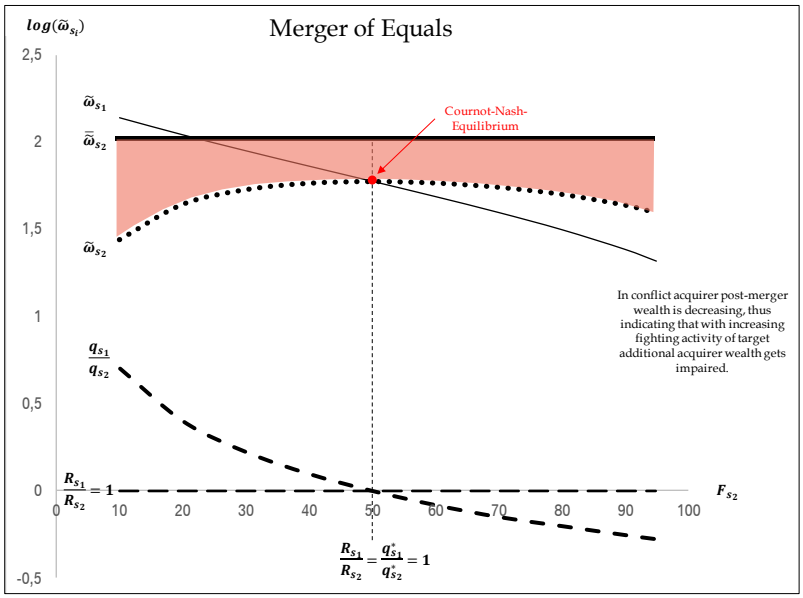
the available resources.

In the symmetrical Cournot-Nash equilibrium, and independently of m, each party receives the half of the outcome produced through synergistic combination of the remaining productive resources C_{s_1} and C_{s_2} (refer to 2.7 Appendix A.1 (iii) for the derivation of the symmetrical Cournot-Nash solution in case of multi-stakeholder conflict, where $n > 1$).

Figure 1 below illustrates acquirer and target stakeholder post-merger wealth in a merger of equals where a symmetrical Cournot-Nash equilibrium exists.

Figure 1: Acquirer and Target Stakeholder Wealth in Mergers of Equals

The figure presents an equally sized target stakeholder's post-merger wealth in conflict $\tilde{\omega}_{s_2}(F_{s_2}|F_{s_1}^*)$ and no conflict $\bar{\tilde{\omega}}_{s_2}$ and the respective wealth ratios $\frac{q_{s_1}}{q_{s_2}}$, given the acquirer's non-cooperative effort $F_{s_1}^*$ and $\tilde{\omega}_{s_1}(F_{s_2}|F_{s_1}^*)$ in the Cournot-Nash equilibrium. The y-axis shows the logarithm of wealth; the x-axis presents the target's combative activity $F_{s_2} \in]0, 100[$; $d = 1.25, m = 1, A = 1, R_{s_1} = R_{s_2} = 100$



The dotted line represents target stakeholders wealth in the post-acquisition period ($\tilde{\omega}_{s_2}$) dependent of their combative activity F_{s_2}, given acquirer's optimized combative activity in equilibrium $F_{s_1}^*$. The decreasing straight line shows acquirer stakeholders post-merger wealth ($\tilde{\omega}_{s_1}$) and the falling broken line displays the ratio $\frac{q_{s_1}}{q_{s_2}}$. In the symmetrical Cournot-Nash equilibrium the conditions $\tilde{\omega}_{s_1} = \tilde{\omega}_{s_2}$ and $\frac{q_{s_1}^*}{q_{s_2}^*} = \frac{R_{s_1}}{R_{s_2}} = 1$

hold. As one can see, for both parties a post-merger stakeholder conflict is not beneficial. The red area illustrates the target stakeholders wealth losses as a difference between resulting wealth under no-conflict $\bar{\bar{\omega}}_{s_2}$ and conflict $\tilde{\omega}_{s_2}$. Indeed, in equilibrium the losses are minimized but the wealth impairment is still significant. Both parties would lose 41% of their initial wealth if conflict was not resolved. Target stakeholders would be able to devote even more resources to non-cooperative action if they intended to strengthen their power. However, this would further impair both acquirer and target stakeholders wealth. For instance (refer to numerical example in Table 1), if target stakeholders deviated from the optimum where $F_{s_2}^* = F_{s_1}^* = 50$ by devoting for example 70 instead, total stakeholder group impairment would be -53%, splitting up to -45% for target and -61% for acquirer stakeholders (compared to -41% each in equilibrium). Therefore, post-merger stakeholder conflicts in merger of equals are a clear lose-lose situation for both parties. Nobody is better-off in a Cournot-Nash decision making setting compared to no conflict. This circumstance leads to the following theorem:

Theorem 1 *(lose-lose-situation in intra-stakeholder conflicts of merger of equals): In a synergistic merger of equals, the stakeholders' option to compete by conflict is a lose-lose solution because both acquirer and target stakeholders suffer on high post-merger synergy and wealth impairments.*

Proof. See 2.7 Appendix A.3.

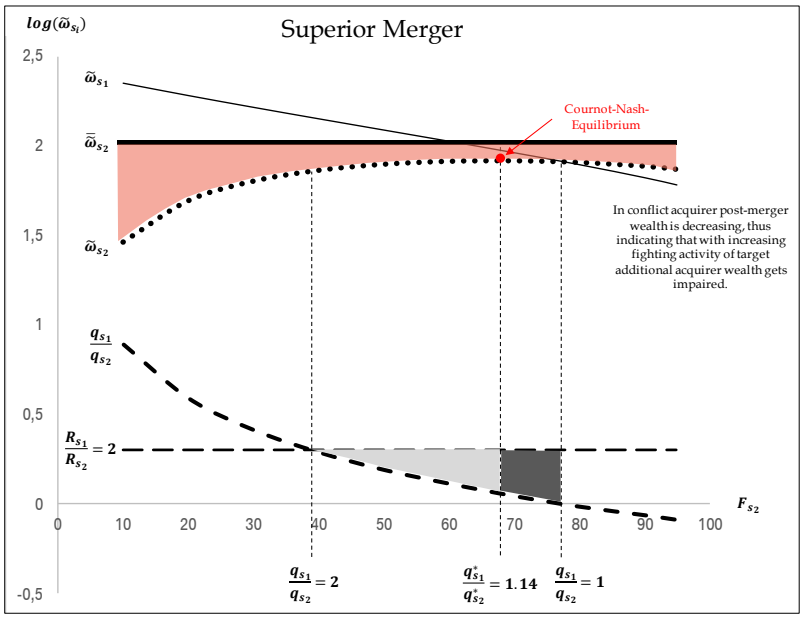
To analyze the non-symmetrical equilibrium in M&A-transactions where the acquirer exceeds the target in size, one has to distinguish between superior mergers and extreme superior merges. The former case describes the post-merger conflict situation between a strong endowed acquirer stakeholder group and a weak endowed target stakeholder group, i.e. $R_{s_1} > R_{s_2}$. In the latter case, the size ratio between acquirer and target is so high that the weaker endowed target is forced to put almost all of its resources into combative activity. It follows that $R_{s_1} > R_{s_2}$ where $F_{s_2} \to R_{s_2}$ (refer to Definition 2).

Definition 4 *(Non-symmetrical Cournot-Nash solution): For* $R_{s_1} > R_{s_2}$ *(superior merger, extreme superior merger), the non-symmetrical Cournot-Nash solution occurs at the intersection of* RC_{s_1} *and* RC_{s_2} *where each stakeholder's decision is a best response to the opponent's action* ($q_{s_1} \neq q_{s_2}$).

Compared to mergers of equals, superior M&A and, in particular, extreme superior acquisitions offer target stakeholders an incentive to consequently fight for their interests. Figures 2 and 3 illustrate the wealth development and power relations in these situations. In superior mergers (Figure 2) while combating, target stakeholders improve their power ratio from initially $\frac{R_{s_1}}{R_{s_2}} = 2$ to $1.14 = \frac{q_{s_1}^*}{q_{s_2}^*}$ in equilibrium.

Figure 2: Acquirer and Target Stakeholder Wealth in Superior Mergers

Acquirer size is twice as big as the target. The figure presents a smaller target stakeholder's post-merger wealth in conflict $\tilde{\omega}_{s_2}(F_{s_2}|F_{s_1}^*)$ and no conflict $\bar{\tilde{\omega}}_{s_2}$ and the respective wealth ratios $\frac{q_{s_1}}{q_{s_2}}$, given the larger acquirer's non-cooperative effort $F_{s_1}^*$ and $\tilde{\omega}_{s_1}(F_{s_2}|F_{s_1}^*)$ in the Cournot-Nash equilibrium. The y-axis shows the logarithm of wealth; the x-axis presents the target's fighting activity $F_{s_2} \in]0, 100[$; $d = 1.25, m = 1, A = 1, R_{s_1} = 200 > R_{s_2} = 100$



It is still the case that conflict leads to synergy and wealth impairments for each competitor. Nevertheless, in the Cournot-Nash equilibrium, the losses are minimized. Again, target stakeholders would be able to further improve their power by devoting

more than the optimized resources ($F_{s_2}^* = 68$) to non-cooperative activities. But in this case, target stakeholders would lose additional wealth, i.e. they would not maximize their wealth in conflict $\widetilde{\omega}_{s_2}$. Comparing superior M&A to mergers of equals, one can conclude that post-merger conflicts are more detrimental for acquiring firm stakeholders than for target stakeholders. In equilibrium the total wealth loss of a specific stakeholder group $s \in \dot{S}$ is still -41%. Yet, with -53% the acquirer bears much more of the losses than the target with -17% (compared to -41% each in mergers of equals). Therefore, unresolved stakeholder conflict is still not beneficial for the total merger outcome. However, in conflict, target stakeholders can at least improve their power ratio as a compensation for their wealth loss.

In extreme superior mergers where the target is sufficiently small compared to the acquiring firm, so that $F_{s_2} \to R_{s_2}$ holds, the situation in post-merger conflicts is highly interesting from the target firm's perspective. As presented in Figure 3, a conflict between stakeholder groups turns out to be beneficial for the target in equilibrium. Target stakeholders improve both their power and wealth compared to no conflict. The power ratio decreases from 4 to 1.39 (light gray shaded area) and the post-merger wealth improves by +26% compared to only +14% (green area). Each marginal increase of F_{s_2} further improves the power ratio in favor of the target (dark grey shaded area), yet deviates from the maximum wealth $\widetilde{\omega}_{s_2}^*$. Finally, one can conclude that target stakeholders have the paradoxical incentive to fight in extreme superior mergers.

Figure 3: Acquirer and Target Stakeholder Wealth in Extreme Superior Mergers

Acquirer size is four times bigger than the target. The figure presents a significantly smaller target stakeholder's post-merger wealth in conflict $\tilde{\omega}_{s_2}(F_{s_2}|F_{s_1}^*)$ and no conflict $\bar{\tilde{\omega}}_{s_2}$ and the respective wealth ratios $\frac{q_{s_1}}{q_{s_2}}$, given the acquirer's non-cooperative effort $F_{s_1}^*$ and $\tilde{\omega}_{s_1}(F_{s_2}|F_{s_1}^*)$ in the Cournot-Nash equilibrium. The y-axis shows the logarithm of wealth; the x-axis presents the target's fighting activity $F_{s_2} \in]0, 100[$; $d = 1.25, m = 1, A = 1, R_{s_1} = 400 > R_{s_2} = 100$, with $F_{s_2} \to R_{s_2}$

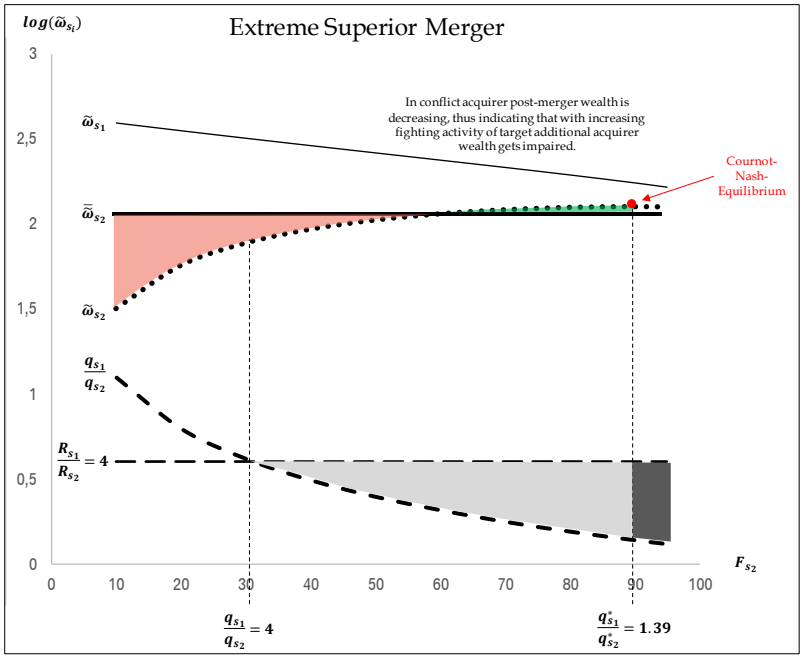


Table 1 summarizes the development of post-merger stakeholder wealth under conflict and no conflict compared to pre-merger. Panel A presents the outcomes in the Cournot-Nash equilibrium for the three cases, merger of equals ($\omega_{s_1} = \omega_{s_2} = 100$), superior merger ($\omega_{s_1} = 200, \omega_{s_2} = 100$), and extreme superior merger ($\omega_{s_1} = 400, \omega_{s_2} = 100$). As one can see, if no conflict emerges, M&A between equally sized companies have the highest synergy potential (+19%). In conflict, acquirer stakeholders suffer increasing wealth impairments as the size ratio increases, whereas target stakeholders eventually benefit once the ratio becomes extremely large (+26% in conflict vs. +14% in no conflict). Panel B shows again the three different cases but the results differ in that way that the target deviates from the equilibrium. In each constellation – given the fact that the acquirer remains in equilibrium – the target stakeholders deteriorate their wealth compared to the outcomes reported in Panel A.

Table 1: Numerical Example

Acquirer and Target Post-Merger Stakeholder Wealth in Cournot-Nash Equilibrium under Conflict
Compared to No-Conflict and Target Deviation from Equilibrium
d=1.25; m=1; A=1

Pre-Merger Wealth			**Post-Merger Wealth**												
			No conflict						**Conflict**						
Panel A: *Acquirer and target in equilibrium if conflict*															
ω_S	ω_{s_1}	ω_{s_2}	$\bar{\bar{\omega}}_S$	$\bar{\bar{\omega}}_{s_1}$	$\bar{\bar{\omega}}_{s_2}$	$\Delta\theta_S^+$	$\Delta\theta_{s_1}^+$	$\Delta\theta_{s_2}^+$	$F_{s_1}^*$	$\boldsymbol{F_{s_2}^*}$	$\tilde{\omega}_S$	$\tilde{\omega}_{s_1}$	$\tilde{\omega}_{s_2}$	$\Delta\theta_S^-$	$\Delta\theta_{s_1}^-$	$\Delta\theta_{s_2}^-$
200	100	100	238	119	119	+19%	+19%	+19%	50	**50**	119	59	59	-41%	-41%	-41%
300	200	100	353	235	118	+18%	+18%	+18%	77	**68**	178	95	83	-41%	-53%	-17%
500	400	100	571	457	114	+14%	+14%	+14%	124	**90**	301	175	126	-40%	-56%	+26%
Panel B: *Target deviates from equilibrium if conflict*															
ω_S	ω_{s_1}	ω_{s_2}	$\bar{\bar{\omega}}_S$	$\bar{\bar{\omega}}_{s_1}$	$\bar{\bar{\omega}}_{s_2}$	$\Delta\theta_S^+$	$\Delta\theta_{s_1}^+$	$\Delta\theta_{s_2}^+$	$F_{s_1}^*$	$\boldsymbol{F_{s_2}}$	$\tilde{\omega}_S$	$\tilde{\omega}_{s_1}$	$\tilde{\omega}_{s_2}$	$\Delta\theta_S^-$	$\Delta\theta_{s_1}^-$	$\Delta\theta_{s_2}^-$
200	100	100	238	119	119	+19%	+19%	+19%	50	**70**	95	39	55	-53%	-61%	-45%
300	200	100	353	235	118	+18%	+18%	+18%	77	**80**	160	78	81	-47%	-61%	-19%
500	400	100	571	457	114	+14%	+14%	+14%	124	**96**	288	162	125	-42%	-59%	-25%
$d = 1.25; m = 1; A = 1$															

Even more importantly, with increasing disparity, the target does not improve its wealth anymore (-25% in conflict vs. +14% in no conflict). Thus, in extreme superior M&A, the target stakeholders achieve the maximum increase in wealth only in equilibrium. As a result of this finding the following theorem is formulated:

T**heorem 2** *(win-lose-situation in intra-stakeholder conflicts of extreme superior mergers): In synergistic mergers where a sufficiently strong endowed acquirer purchases a weak target, i.e.* $R_{s_1} > R_{s_2}$ *where* $F_{s_2} \to R_{s_2}$*, the target stakeholders have an incentive to act non-cooperatively because of the fact that they can improve their post-merger wealth under conflict (compared to no conflict). This holds as long as the following condition is fulfilled:*

$$Aq_{s_2}^* \left(\left(kR_{s_2} - F_{s_1}^* \right)^{\frac{1}{d}} + \left(\frac{1}{k} \right)^{\frac{1}{d}} \right)^d - R_{s_2} > \frac{T}{2N}, \text{ for } R_{s_1} = kR_{s_2} \tag{25}$$

with a sufficiently large factor $k \in IR^+$.

Proof. See 2.7 Appendix A.4.

Tables 2 to 4 present numerical examples in more detail for the development of post-merger stakeholder wealth compared to pre-merger wealth by varying with the parameters d and m. The base scenario with complementarity factor $d = 1.25$ is presented in Table 2. In absence of conflict, the synergy potential is highest (for both

parties +18.9%) once acquirer and target have the same pre-merger wealth ($\omega_{s_1} = \omega_{s_2} = 100$). Compared to all other power relations where $\omega_{s_1} > \omega_{s_2}$, a merger of equals contains the highest synergy potential if no conflict arises. Yet, in presence of struggle, both parties stakeholder would lose -40.5% of their initial wealth ($\omega_{s_1} = \omega_{s_2} = 100$). However, once disparity between acquirer and target is in place ($\omega_{s_1} > \omega_{s_2}$), the weaker target loses less compared to parity status (for example -16.9% where $\omega_{s_1} = 200, \omega_{s_2} = 100$), whereas the acquiring firm's loss grows. Even more importantly, with increasing wealth disparity the target benefits from conflict situations, i.e. $\widetilde{\omega}_{s_2} > \bar{\widetilde{\omega}}_{s_2}$. In the numerical example in Table 2, the last two lines describe this case. Compared to no conflict, the target firm wins additional +12% or +53.2%, respectively.

Table 2: Acquirer and Target Stakeholder Wealth Impairment (I)

d=1.25; m=1; A=1

Pre-Merger		**Post-Merger Wealth**									
s_1: Acquirer / s_2: Target		Acquirer (no conflict)		Acquirer (conflict)		Target (no conflict)		Target (conflict)		Conflict vs. no conflict	
ω_{s_1}	ω_{s_2}	$\bar{\widetilde{\omega}}_{s_1}$	$\Delta\theta_{s_1}^{+}$	$\widetilde{\omega}_{s_1}$	$\Delta\theta_{s_1}^{-}$	$\bar{\widetilde{\omega}}_{s_2}$	$\Delta\theta_{s_2}^{+}$	$\widetilde{\omega}_{s_2}$	$\Delta\theta_{s_2}^{-}$	Δ_1	Δ_2
100	100	118.9	+18.9%	59.5	-40.5%	118.9	+18.9%	59.5	-40.5%	-59.4%	-59.4%
200	100	235.1	+17.6%	94.9	-52.5%	117.6	+17.6%	83.1	-16.9%	-70.1%	-34.5%
300	100	347.3	+15.8%	132.8	-55.7%	115.8	+15.8%	105.3	+5.3%	-71.5%	-10.4%
400	100	457.0	+14.3%	175.1	-56.2%	114.3	+14.3%	126.3	+26.3%	-70.5%	**+12.0%**
600	100	671.9	+12.0%	278.5	-53.6%	112.0	+12.0%	165.2	+65.2%	-65.6%	**+53.2%**
$d = 1.25; m = 1; A = 1$											

Once complementarity rises from $d = 1.25$ to $d = 1.5$ (results reported in Table 3), synergy potential $\Delta\theta_{s_i}^{+}$ increases, whereas synergy impairment $\Delta\theta_{s_i}^{-}$ decreases for $i = 1, 2$ (compared to the outcome in Table 2). As a result of post-merger stakeholder conflict, dissipated synergy advances ($\Delta_i = \Delta\theta_{s_i}^{-} - \Delta\theta_{s_i}^{+}$). It still holds that there is no incentive to fight against the merger in case of $\omega_{s_1} = \omega_{s_2}$. In case of increasing wealth disparity ($\omega_{s_1} > \omega_{s_2}$) a target's incentive to combat diminishes as the overall dissipated synergy increases (e.g., +4.6% vs. +12.0% as reported in Table 2, for $\omega_{s_1} = 400, \omega_{s_2} = 100$).

Table 3: Acquirer and Target Stakeholder Wealth Impairment (II)

d=1.5; m=1; A=1

Pre-Merger		**Post-Merger Wealth**									
s_1: Acquirer / s_2: Target		Acquirer (no conflict)		Acquirer (conflict)		Target (no conflict)		Target (conflict)		Conflict vs. no conflict	
ω_{s_1}	ω_{s_2}	$\bar{\bar{\omega}}_{s_1}$	$\Delta\theta_{s_1}^{+}$	$\tilde{\omega}_{s_1}$	$\Delta\theta_{s_1}^{-}$	$\bar{\bar{\omega}}_{s_2}$	$\Delta\theta_{s_2}^{+}$	$\tilde{\omega}_{s_2}$	$\Delta\theta_{s_2}^{-}$	Δ_1	Δ_2
100	100	141.4	+41.4%	70.7	-29.3%	141.4	+41.4%	70.7	-29.3%	-70.7%	-70.7%
200	100	277.5	+38.7%	116.0	-42.0%	138.7	+38.7%	94.4	-5.6%	-80.7%	-44.4%
300	100	405.4	+35.1%	162.4	-45.9%	135.1	+35.1%	115.9	+15.9%	-81.0%	-19.3%
400	100	528.3	+32.1%	212.3	-46.9%	132.1	+32.1%	136.7	+36.7%	-79.1%	**+4.6%**
600	100	764.8	+27.5%	319.2	-46.8%	127.5	+27.5%	172.2	+72.2%	-74.3%	**+44.8%**
$d = 1.5; m = 1; A = 1$											

Table 4 reports results once decisiveness of conflict m grows. For $m = 1.5$ synergy impairment and thus post-merger wealth destruction is reinforced by conflict, compared to the situation shown in Table 2. As a consequence, overall dissipated synergy Δ_i increases for both acquirer and target. The incentive of a weaker endowed target to fight against the M&A transaction further diminishes (in extreme superior mergers). If the conflict is of high decisiveness, only relatively small targets benefit from opposing the transaction. Here, for example, where $\omega_{s_1} = 600$ and $\omega_{s_2} = 100$.

Table 4: Acquirer and Target Stakeholder Wealth Impairment (III)

d=1.25; m=1.5; A=1

Pre-Merger		**Post-Merger Wealth**									
s_1: Acquirer / s_2: Target		Acquirer (no conflict)		Acquirer (conflict)		Target (no conflict)		Target (conflict)		Conflict vs. no conflict	
ω_{s_1}	ω_{s_2}	$\bar{\bar{\omega}}_{s_1}$	$\Delta\theta_{s_1}^{+}$	$\tilde{\omega}_{s_1}$	$\Delta\theta_{s_1}^{-}$	$\bar{\bar{\omega}}_{s_2}$	$\Delta\theta_{s_2}^{+}$	$\tilde{\omega}_{s_2}$	$\Delta\theta_{s_2}^{-}$	Δ_1	Δ_2
100	100	118.9	+18.9%	47.6	-52.4%	118.9	+18.9%	47.6	-52.4%	-71.4%	-71.4%
200	100	235.1	+17.6%	77.4	-61.3%	117.6	+17.6%	67.3	-32.7%	-78.9%	-50.2%
300	100	347.3	+15.8%	118.2	-60.6%	115.8	+15.8%	80.9	-19.1%	-76.4%	-34.9%
400	100	457.0	+14.3%	156.9	-60.8%	114.3	+14.3%	107.6	+7.6%	-75.0%	-6.7%
600	100	671.9	+12.0%	270.7	-54.9%	112.0	+12.0%	148.7	+48.7%	-66.9%	**+36.7%**
$d = 1.25; m = 1.5; A = 1$											

Assuming synergistic mergers ($1 < d \leq 2$), several implications are concluded from the preceding numerical examples, finally leading to Theorem 3.

Acquirer

1. The acquisition of a relatively large target or a target of same size (merger of equals) contains the highest synergy potential ($1 < d \leq 2, m \geq 1$), i.e. deal size has a positive impact on acquirer performance.
2. With increasing wealth disparity, acquirer stakeholders' synergy potential $\Delta\theta_{s_1}^{+}$ decreases.
3. The risk of dis-synergy caused by synergy impairment $\Delta\theta_{s_1}^{-}$ increases up to a certain critical disparity threshold $x^1 = \frac{\omega_{s_2}}{\omega_{s_1}}$, dependent of decisiveness of conflict m and complementarity d.
4. Increasing complementarity d improves long-term acquirer performance due to higher synergy potential.
5. Higher decisiveness of conflict m further impairs synergy in case of post-merger stakeholder conflict, thus, deteriorates financial and operating performance.

Target

1. In a merger of equals, where $\omega_{s_1} = \omega_{s_2}$, there does not exist any incentive to oppose the merger because $\Delta\theta_{s_2}^{-} < \Delta\theta_{s_2}^{+}$ for all $1 < d \leq 2$ and $m \geq 1$.
2. In superior or extreme superior mergers where $\omega_{s_1} > \omega_{s_2}$, there exists a critical disparity threshold $x^2 = \frac{\omega_{s_2}}{\omega_{s_1}}$ (dependent of complementarity d and decisiveness of conflict m), where the target benefits from fighting against the M&A transaction, i.e. $\Delta\theta_{s_2}^{-} > \Delta\theta_{s_2}^{+}$.

Theorem 3 *(Acquirers' best choice in M&A): From an acquiring firm's perspective, the acquisition of an equally-sized target (merger of equals), i.e. primary stakeholders $s_i \in S_i, i = 1, 2$ with equal resource endowments ($R_{s_1} = R_{s_2}$), has the highest expected relative acquirer stakeholder synergy $\Delta\theta_{s_1}^{+}$ compared to superior and extreme superior M&A (with $R_{s_1} > R_{s_2}$) if no conflict arises. At the same time, if post-merger a conflict of minor decisiveness arises ($m = 1$), a merger of equals has the lowest potential of an acquirer's post-merger synergy*

impairment (relative dis-synergy $\Delta\theta_{s_1}^{-}$). Yet, the latter does not hold once decisiveness of conflict increases ($m > 1$).

Proof: See 2.7 Appendix A.5.

2.4 PMI as a Mitigating Mechanism in Conflict

As a central conclusion from the previous section – assuming the application of a Cournot-Nash solution concept – one can summarize that a post-merger stakeholder conflict tremendously impairs perceived merger synergies. This happens independently of the magnitude of provided integration resources by the acquiring firm's management. This finding reinforces the perception of the value-increasing effect of a high-quality PMI in M&A.

In this section, the concept of a stakeholder-oriented PMI as a mitigating mechanism in M&A is defined and integrated into the model. High-quality PMI measures aiming to align stakeholder interests help to avoid post-merger conflicts. This in turn encourages the synergy realization process during the integration phase in mergers. As a consequence, M&A-transactions with a stakeholder-oriented PMI end up being successful. A stakeholder-oriented post-merger integration is characterized by the management's effort and skill, firstly, to identify relevant stakeholders of the firm and their interests (pre- and post-merger). Secondly, it is essential to align and integrate those interests through definition and conduction of respective PMI measures with focus on (i) stakeholder information, (ii) stakeholder support, (iii) stakeholder risks, and (iv) continuing management attention on primary stakeholder interests during the entire integration process.

Let $f_{s_i} \in \left]f_{s_i}^{*}, 1\right[$ be the stakeholder-oriented PMI effort (PMI quality) for the respective stakeholder group $s_i \in S_i$ of firm $i = 1, 2$, with

$$f_{s_i}^{*} = \frac{\theta_{s_i}^{+}}{\theta_{s_i}^{-}} = \frac{Expected\ Stakeholder\ Synergy\ of\ s_i \in S_i}{Potential\ Stakeholder\ Dissynergy\ of\ s_i \in S_i} < 0, i = 1, 2. \qquad (26)$$

The respective direct PMI costs $\gamma_{s_i} \geq 0$ are defined as:

$$\gamma_{s_i} = \begin{cases} \gamma_{s_i}^{max} \, for \, f_{s_i} \to f_{s_i}^* \\ \to 0 \, for \, f_{s_i} \to 1 \\ 0, if \; no \; PMI \; conducted. \end{cases} \tag{27}$$

Further let $f_s^* = f_{s_1}^* + f_{s_2}^* = \frac{\theta_s^+}{\theta_s^-} = \frac{(\theta_{s_1}^+ + \theta_{s_2}^+)}{(\theta_{s_1}^- + \theta_{s_2}^-)} = \frac{Expected \; Stakeholder \; Synergy \; of \; s \in S}{Potential \; Stakeholder \; Dissynergy \; of \; s \in S} < 0$ be the PMI quality for the stakeholder group $s \in \dot{S}$ of the merged firm, with $\gamma_s = \gamma_{s_1} + \gamma_{s_2}$. Thus, the resulting post-merger stakeholder wealth function in presence of conflict and PMI equals:

$$\tilde{\tilde{\tilde{\omega}}}_s := f_s \tilde{\omega}_s - \gamma_s = f_{s_1} \tilde{\omega}_{s_1} - \gamma_{s_1} + f_{s_2} \tilde{\omega}_{s_2} - \gamma_{s_2} \tag{28}$$

$$= f_{s_1} \left[q_{s_1} \left(A (C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})^d \right) - \frac{T}{2N} \right] - \gamma_{s_1} + f_{s_2} \left[q_{s_2} \left(A \left(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}} \right)^d \right) - \frac{T}{2N} \right] - \gamma_{s_2}.$$

It follows the general aggregated post-merger stakeholder wealth function

$$\tilde{\tilde{\tilde{\omega}}}_s(\eta, f_s) = \begin{cases} \omega_s + \theta_s^+, for \; \eta = 0, \; C_{s_i} = R_{s_i}, i = 1,2, \theta_s^+ > 0, \gamma_s = 0 \\ \omega_s + f_s \theta_s^- - \gamma_s, for \; \eta = 1, f_s \in]f_s^*, 1[, C_{s_i} = R_{s_i} - F_{s_i}, i = 1,2, \theta_s^- < 0, 0 < \gamma_s \leq \gamma_s^{max} \end{cases}$$

with $\lim_{f_s \to f_s^*} f_s \theta_s^- = \theta_s^+$, $(\gamma_s = \gamma_s^{max})$ and $\lim_{f_s \to 1} f_s \theta_s^- = \theta_s^-$, $(\gamma_s \to 0)$, so that $f_s \theta_s^- \in]\theta_s^-, \theta_s^+[$, and the stakeholder group $s \in \dot{S}$ (realized) net synergy function:

$$\hat{\theta}_s(\eta, f_s) = \begin{cases} \hat{\theta}_s(0, f_s^*) = \theta_s^+ - 0 \\ \hat{\theta}_s(1, f_s \to f_s^*) \to \theta_s^+ \quad - \gamma_s^{max} \\ \hat{\theta}_s(1, f_s \to 1) \to \theta_s^- - 0 \end{cases} \tag{29}$$

where $\hat{\theta}_{s_i} = f_{s_i} \theta_{s_i}^- - \gamma_{s_i}$ equals the (realized) net synergy/ dis-synergy of stakeholder $s_i \in S_i$ of firm $i = 1,2$ and $\hat{\theta} = \sum_s^N \hat{\theta}_s$ the combined firm's merger net synergy/ dis-synergy.

The respective synergy impairment function for the stakeholder group $s \in \dot{S}$ is as follows:

$$\breve{\theta}_s(\eta, f_s) = \begin{cases} \breve{\theta}_s(0, f_s^*) = \theta_s^+ - \theta_s^+ = 0 \\ \breve{\theta}_s(1, f_s \to f_s^*) \to -\gamma_s^{max} \\ \breve{\theta}_s(1, f_s \to 1) \to \theta_s^+ - \theta_s^- \end{cases} \tag{30}$$

with $\breve{\theta} = \theta^+ - \hat{\theta}$ is the merger synergy impairment. In conflict with PMI, the condition $\theta^- < \hat{\theta} < \theta^+$ holds, i.e. the realized synergy or dis-synergy lies between the

dis-synergy potential of unsolved stakeholder conflict and the merger's expected synergy potential.

Through a high stakeholder orientation in PMI ($f_s \to f_s^*, \gamma_s = \gamma_s^{max}$) across all stakeholder groups $s \in \dot{S}$, the anticipated merger net synergy θ^+ can be almost fully realized ($\hat{\theta}^+$) because stakeholder conflict will be resolved and the impairment of stakeholder wealth prevented. If PMI quality is low ($f_s \to 1, \gamma_s \to 0$) across all stakeholder groups $s \in \dot{S}$, the realized synergy impairment $\breve{\theta}$ will exceed expected net synergy θ^+ so that a dis-synergy occurs (θ^-). Table 5 summarizes the possible cases and respective synergy, merging cost, direct PMI cost and realized synergy:

Table 5: Summary of Potential Synergy Outcomes

The table reports the stakeholder synergy (dis-synergy), fixed cost of merging, direct PMI cost, and realized synergy dependent of the four cases 1) no M&A, 2) M&A w/o post-merger stakeholder conflict, 3) M&A with unresolved conflict, and 4) M&A with conflict and PMI

	Stakeholder Synergy θ_{s_i}	**Fixed cost of Merging c_{s_i}**	**Direct PMI Cost γ_{s_i}**	**Realized Synergy $\hat{\theta}_{s_i}$**
1) No M&A	0	0	0	0
2) M&A without conflict ($\eta = 0$)	$\theta_{s_i}^+ > 0$	$\frac{T}{2N} > 0$	0	$\hat{\theta}_{s_i} = \theta_{s_i}^+ > 0$
3) M&A with unresolved conflict ($\eta = 1$)	$\theta_{s_i}^- < 0$	$\frac{T}{2N} > 0$	0	$\hat{\theta}_{s_i} = \theta_{s_i}^- < 0$
4) M&A with conflict and PMI				
4.1) Low PMI quality ($f_{s_i} \to 1$)	$\theta_{s_i}^- < 0$	$\frac{T}{2N} > 0$	$\gamma_{s_i} \to 0$	$\hat{\theta}_{s_i} \to \theta_{s_i}^- < 0$
4.2) Avg. PMI quality ($f_{s_i} = f_{s_i}^{min}$)	$0 \leq \theta_{s_i}^- < \theta_{s_i}^+$	$\frac{T}{2N} > 0$	$\gamma_{s_i} > 0$	$\hat{\theta}_{s_i} \to \theta_{s_i}^- \geq 0$
4.3) High PMI quality ($f_{s_i} \to f_{s_i}^*$)	$\theta_{s_i}^- \to \theta_{s_i}^+ > 0$	$\frac{T}{2N} > 0$	$\gamma_{s_i}^{max}$	$\hat{\theta}_{s_i} \to \theta_{s_i}^+ > 0$

Definition 5 *(Upper and lower bound synergy conditions): The maximum stakeholder synergy that can be achieved if there is no stakeholder conflict equals:*

$$\theta_s^+: \qquad \widetilde{\omega}_s^{max} > \omega_s; \qquad \textit{upper bound condition for synergy } (\eta = 0).$$

The maximum dis-synergy in post-merger stakeholder conflicts equals:

$$\theta_s^-: \qquad \widetilde{\omega}_s^{min} < \omega_s; \qquad \textit{lower bound condition for dis-synergy } (\eta = 1).$$

In case of low PMI quality with subsequent (realized) dis-synergy, following condition holds:

$$f_s\theta_s^- = \hat{\theta}_s^-: \qquad \widetilde{\omega}_s^{min} < \widetilde{\omega}_s < \omega_s \; < \widetilde{\omega}_s^{max}.$$

High PMI quality solves post-merger stakeholder conflicts, so that a net synergy is realized:

$$f_s^* \theta_s^- = \hat{\theta}_s^+: \qquad \widetilde{\omega}_s^{min} < \omega_s < \widetilde{\omega}_s < \widetilde{\omega}_s^{max}.$$

Proposition 1 *(Necessary condition for profitable PMI): Provided that the condition* $\widetilde{\omega}_s > 0$ *in case of stakeholder conflict* ($\eta = 1$) *holds, i.e. combined stakeholder merger output minus cost of merging is larger than zero, a stakeholder-oriented PMI at a direct cost of* $\gamma_s \geq 0$ *is worth conducting if and only if resulting stakeholder net merger synergy* ($\hat{\theta}_s$) *exceeds synergy impairment* ($\breve{\theta}_s = \theta_s^+ - f_s \theta_s^-$) *plus management effort's related direct PMI cost* (γ_s)*:*

$$\begin{aligned} &\hat{\theta}_s > \breve{\theta}_s + \gamma_s \\ \Leftrightarrow\ & f_s \theta_s^- > (\theta_s^+ - f_s \theta_s^-) + \gamma_s \Leftrightarrow \gamma_s < 2\hat{\theta}_s - \theta_s^+. \end{aligned} \tag{31}$$

According to Proposition 1 it therefore only makes sense to invest additional money into stakeholder-oriented PMI measures as long as dis-synergies caused by stakeholder conflict are resolved, i.e. the condition $\hat{\theta}_s - \breve{\theta}_s - \gamma_s \geq 0 > \theta_s^-$ holds at least to limit the damages of merger synergy impairment (it is better to achieve at least positive or a little bit of the expected merger synergy $\hat{\theta}_s - \breve{\theta}_s - \gamma_s < \theta_s^+$ instead of realizing dis-synergies $\hat{\theta}_s - \breve{\theta}_s - \gamma_s < 0$). Condition above simplifies to $\gamma_s^{max} < \theta_s^+$ for $f_s \to f_s^*$. For the case where $f_s \to 1$ with $\gamma_s \to 0$ the condition does not hold because a poor PMI does not resolve synergy impairments, thus still leading to dis-synergy ($\hat{\theta}_s - \breve{\theta}_s - \gamma_s \to \theta_s^-$). Finally, the following theorem regarding minimum PMI quality is derived:

Theorem 4 *(Minimum quality of PMI): The minimum stakeholder orientation or quality in PMI to prevent dis-synergy and to create at least positive synergy instead equals:*

$$f_s^{min} \leq \frac{1}{2} f_s^* + \frac{\gamma_s}{2\theta_s^-} \tag{32}$$

where $\gamma_s \geq 0$ *and* $\theta_s^- < 0$*.*

Proof: See 2.7 Appendix A.6.

2.5 Illustration of Intra-Stakeholder Conflict and PMI

For an illustration of the theoretical framework developed in this paper, a situation where Company A (acquirer) merges with Company T (target) is analyzed in this section. The motive of the transaction is an expected synergy due to combination of complementary resources ($d > 1$) that improves the sharing of skills and knowledge, facilitates organizational learning and increases the probability of creation of uniquely valuable efficiencies.

For example, A and T have complementary sales channels, yet T has its core competencies in customized online marketing and A in (direct) sales in general. Therefore, a combination of these strengths is expected to exploit the merged firm's sales and marketing activities to its full extent. The management pursues a significant revenue synergy of θ^+. Due to the fact that the interests of major stakeholders of both companies might be negatively influenced by the merger and its subsequent organizational changes, management conducted a comprehensive stakeholder analysis which led to the perception that the stakeholder groups employees and customers were critical of achieving anticipated merger synergies. Therefore, management defined specific PMI measures focusing on those two primary stakeholders during the entire post-merger integration phase.

Throughout this example, the focus lies on the stakeholder group employees. It is assumed that part of the sales force of the new firm (consisting of A and T sales employees) fears a negative impact of the merger on its commission-based salary due to the prospects of increased online sales in future. Moreover, sales staff are worried about their job security in general if direct sales channels start to grow and are prioritized. As a logical consequence, an environment of uncertainty emerges among the sales staff resulting in cautious acting and merger-refusing behavior. If management is unaware of this development, a conflict situation will arise immediately. The potential risk of dis-synergy is θ^-.

Let $A = 1, d = 2, T = 100, N = 10$, and let further be A and T equally-sized companies measured by market capitalization (merger of equals). Employees have equal pre-merger resource endowments $R_{Emp_A} = R_{Emp_T} = 100$. It follows the

calculation of the expected employees' synergy θ^{+}_{Emp} in absence of conflict, and the potential employees' synergy impairment θ^{-}_{Emp} in case of conflict. The expected employees' merger synergy if no conflict arises ($\eta = 0$) equals:

$$C_{Emp_A} = C_{Emp_T} = R_{Emp_A} = R_{Emp_T} = 100$$

$$\theta^{+}_{Emp} = \left[A(R^{\frac{1}{d}}_{Emp_A} + R^{\frac{1}{d}}_{Emp_T})^{d}\right] - c_{Emp} - \omega_{Emp}$$

$$\Leftrightarrow \theta^{+}_{Emp} = (\sqrt{100} + \sqrt{100})^2 - 100/10 - 200 = 400 - 10 - 200 = 190.$$

This will be the employees' merger synergy if there is one hundred percent cooperative and productive behavior during the whole merger and integration process. The climate of the merger is characterized by a friendly and trustworthy environment that helps the merging partners to overcome a multitude of obstacles during the PMI. Employees feel confident and put all of their resources into synergistic activity to reach a higher post-merger wealth compared to pre-merger. Synergy creation mainly results from combination of unique knowledge. For the reason that no conflict among A and T employees emerges, there is no need for a stakeholder specific PMI management effort that comes with a direct PMI cost.

The potential risk of merger dis-synergy under stakeholder conflict ($\eta = 1$) with decisiveness of conflict factor $m = 1$ equals:

$$F_{Emp_A} = F_{Emp_T} = C_{Emp_A} = C_{Emp_T} = \frac{R_{Emp_A} + R_{Emp_T}}{4} = \frac{200}{4} = 50$$

$$\theta^{-}_{Emp} = \left[A(C^{\frac{1}{d}}_{Emp_A} + C^{\frac{1}{d}}_{Emp_T})^{d}\right] - c_{Emp} - \omega_{Emp}$$

$$\Leftrightarrow \theta^{-}_{Emp} = (\sqrt{50} + \sqrt{50})^2 - 10 - 200 = 200 - 10 - 200 = -10.$$

This will be the potential stakeholder dis-synergy if resistance against the merger and conflict within the stakeholder group employees arises. This can easily happen if, for example, employees of both firms have the feeling of not being well-informed about what is going on post-merger because management misses out on actively communicating about the next steps and objectives of the transaction. Furthermore, merging partners' sales staff might question the "win-win" aspect of the deal and feel threatened by the other firm's opposing stakeholders (employees). As a consequence,

already present uncertainty increases and people start to protect their interests by acting unproductively and indifferently, even going as far as to leave the company. The latter has a significant negative impact if key employees resign taking away competitive know-how. Anticipated synergies like the expected revenue synergy in this case due to a combination of marketing skills and core competencies erode. Even worse, the entire management's foundation of the merger is challenged. If management loses out on counteracting with stakeholder-oriented PMI measures, the negative spiral will accelerate and ultimately lead to dis-synergy.

In summary, the situation is characterized by resentment and fear among staff, decreased morale and productivity, increased internal conflict, dysfunctional communication, jeopardized business continuity, confusion and lack of clear objectives, loss of confidence, and a high level of uncertainty and anxiety.

The employees' synergy to be realized depends on the PMI quality and ranges between the following values:

$$\hat{\theta}_{Emp} = f_{Emp}\theta^{-}_{Emp} \in \left]\theta^{-}_{Emp} = -10;\ \theta^{+}_{Emp} = 190\right[\text{ with } f_{Emp} \in \left]f^{*}_{Emp} = \frac{\theta^{+}_{Emp}}{\theta^{-}_{Emp}};\ 1\right[.$$

The respective PMI stakeholder orientation to resolve employee conflict is derived by calculation of $\gamma_{Emp} = \gamma^{max}_{Emp}$ for $f_{Emp} \to f^{*}_{Emp}$ with $f^{*}_{Emp} = \frac{\theta^{+}_{Emp}}{\theta^{-}_{Emp}} = \frac{190}{-10} = -19$ and $\gamma_{Emp} \to 0$ for $f_{Emp} \to 1$ and $f_{Emp} = 0$ if there is no PMI management effort at all. The minimum PMI quality f^{min}_{Emp} under the condition that $\gamma_{Emp} \geq 0$ holds, to realize at least positive synergy, is determined according to Proposition 1 and Theorem 4:

$$\hat{\theta}_{Emp} - \breve{\theta}_{Emp} - \gamma_{Emp} > 0 \Leftrightarrow f_{Emp}\theta^{-}_{Emp} - \left(\theta^{+}_{Emp} - f_{Emp}\theta^{-}_{Emp}\right) - \gamma_{Emp} > 0$$

$$\Leftrightarrow 2f_{Emp}\theta^{-}_{Emp} > \theta^{+}_{Emp} + \gamma_{Emp}$$

$$\Leftrightarrow f_{Emp} < \frac{\theta^{+}_{Emp}}{2\theta^{-}_{Emp}} + \frac{\gamma_{Emp}}{2\theta^{-}_{Emp}} \Leftrightarrow f^{min}_{Emp} < \frac{1}{2}f^{*}_{Emp} + \frac{\gamma_{Emp}}{2\theta^{-}_{Emp}}$$

$$\Leftrightarrow f^{min}_{Emp} < \frac{1}{2}(-19) - \frac{\gamma_{Emp}}{200} \Leftrightarrow f^{min}_{Emp} < -9.5 - \frac{\gamma_{Emp}}{200}$$

If, for instance, management of the newly formed company conducts a well-planned PMI characterized of strict stakeholder focus, i.e. in this case with focus on the stakeholder group employees, the situation under stakeholder conflict described

above can be resolved and anticipated merger synergy through combination of synergistic resources can still be realized.

Effective employee specific PMI measures would be, for example, the development of a cultural assessment where the two groups (A and T sales people) can identify their differences and similarities and develop a common understanding of business objectives, strategy, values and ethics, as well as leadership. Other measures could include the introduction of forums at all levels for sharing institutional history, vocabulary, formal and informal networks, management and work styles, or the identification of stakeholder expectations and problems, plus the design of a realistic process for addressing them. A key element would be active and continuous communication about the rationale for management decisions coming along with the merger and the integration progress to avoid rumors and distrust among sales staff, along with strong leadership and supervisory of the newly formed sales organization. Final implications of the outlined illustration example are the following findings:

1. If management does not recognize the risk of a stakeholder conflict among sales employees, the stakeholder merger dis-synergy will be $\theta_{Emp}^{-} = -10$.

2. Thus, coming from the expecting merger synergy of $\theta_{Emp}^{+} = 190$ for the stakeholder group employees, the synergy impairment would reach the maximum amount of $\check{\theta}_{Emp} = \left(\theta_{Emp}^{+} - f_{Emp}\theta_{Emp}^{-}\right) = (190 - (-10) = 200$ unless a PMI is conducted.

3. If management manages to implement a PMI of high quality, i.e. $f_{Emp} \to f_{Emp}^{*} = -19$, the realized remaining stakeholder synergy after direct PMI cost will be $\bar{\bar{\theta}}_{Emp} = 190 - \gamma_{Emp}^{max}$. Thus, almost resolving conflict and synergy impairment completely ($\check{\theta}_{Emp} \to -\gamma_{Emp}^{max}$).

4. If management does not manage to conduct a stakeholder-oriented PMI of high quality, it would need at least a PMI quality of $f_{Emp}^{min} < -9.5 - \frac{\gamma_{Emp}}{200}$ to realize positive remaining stakeholder merger synergy $\bar{\bar{\theta}}_{Emp} \geq 0$.

2.6 Conclusion

A lot of M&A transactions are executed because management of the merging firms expects high synergies which are supposed to lead to an increased post-merger value of the combined entity. When announcing the intended deal, managers often enthusiastically promise beneficial and long-term operating efficiencies to their shareholders. Yet, as soon as the merger or acquisition is completed, acquiring firms start stumbling during the integration period. In many cases, the considered synergies are not captured or even worse the post-merger outcome becomes negative. The bottom line is that M&A transactions finally fail and destroy shareholder value.

In this paper, a post-merger stakeholder conflict hypothesis is established that outlines the poor post-acquisition performance of M&A, in particular of the acquiring firm. It theorizes post-merger conflict and power struggle between members of primary stakeholder groups, e.g. employees, customers, debt-holders, suppliers, etc. which lead to an impairment of anticipated merger synergies. Conflicts thereby emerge because essential stakeholder interests are violated through negative effects that M&A can cause. The established theoretical framework is based on a Cournot-Nash solution concept which argues that stakeholders compete through conflictual behavior that ends up in an optimized stakeholder wealth equilibrium.

This paper further shows that a high-quality post-merger integration that focuses on stakeholder interests serves as a mitigating mechanism to prevent value-decreasing effects. It eventually concludes that PMI quality matters and not the capacity (in terms of manpower) devoted by the management to handle the integration process. Furthermore, the paper explains that a merger of equals contains the highest synergy potential and likewise the lowest risk of post-merger stakeholder conflict because target stakeholders have no incentive to oppose the merger. However, if conflict is unavoidable, the total synergy loss in a symmetrical Cournot-Nash equilibrium is at least fifty percent and increases once post-merger stakeholder conflict becomes more decisive.

In the more common case of non-symmetrical, i.e. superior mergers, where a large acquirer purchases a small target, the result of post-merger stakeholder conflict

differs. The analysis points out that weaker endowed target stakeholders improve either their power or both their power and wealth while combating. This happens to the disadvantage of the acquiring firm's stakeholders. They lose tremendously in terms of wealth once stakeholder conflict arises and remains unsolved. Therefore, stakeholder-oriented PMI measures become significantly important to align merging partners' stakeholder interests and in addition, to keep target stakeholders from fighting.

The minimum PMI quality which is necessary to prevent dis-synergy and to create at least positive synergy in post-merger conflict situations is also derived in this paper. The implication of the presented theory supports the prevailing opinion that the integration period is the most critical phase in corporate mergers and acquisitions. Moreover, a well-conducted PMI that addresses primary stakeholder interests has a positive impact on acquirers' post-acquisition profitability.

The theory constructed in this paper relies on several definitions and simplified assumptions. However, these assumptions provide the basis for the formalization and investigation of the underlying research question and for the application of a game-theory approach to derive the negative effects of intra-stakeholder conflicts on long-term M&A outcome.

In a next step the developed theoretical framework of post-merger stakeholder conflicts has to be empirically tested to find evidence which, firstly, justifies the existence of stakeholder conflict and power struggle during the integration phase in M&A (Section 3), and secondly, verifies the mitigating and value-increasing effect of high-quality PMI (Section 4).

2.7 Appendix

A1: Derivation of the symmetrical Cournot-Nash equilibrium in case of intra-stakeholder and multi-stakeholder conflict

Symmetrical Cournot-Nash Equilibrium: $R_{s_1} = R_{s_2}$ for all $s_i \in S_i$

(i) Intra-stakeholder conflict, where $n = 1$ and $m = 1$, $1 < d \leq 2$:

$$RC_{s_1}: \frac{F_{s_1} * C_{s_1}^{\frac{1-d}{d}}}{F_{s_2}^m} = \frac{m\left(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}}\right)}{F_{s_1}^m + F_{s_2}^m}$$

$$RC_{s_2}: \frac{F_{s_2} * C_{s_2}^{\frac{1-d}{d}}}{F_{s_1}^m} = \frac{m\left(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}}\right)}{F_{s_1}^m + F_{s_2}^m}$$

The intersection between RC_{s_1} and RC_{s_2} solves equations above, so that in equilibrium the following condition holds: $F_{s_1}^* = F_{s_2}^*$.

Set $m = 1$ and $F_{s_1} = F_{s_2}$:

$$\Rightarrow \frac{F_{s_2} * C_{s_2}^{\frac{1-d}{d}}}{F_{s_2}} = \frac{C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}}}{F_{s_2} + F_{s_2}}$$

$$\Leftrightarrow C_{s_2}^{\frac{1-d}{d}} = \frac{C_{s_2}^{\frac{1}{d}}}{F_{s_2}}$$

$$\Rightarrow F_{s_2} = F_{s_1} = \frac{C_{s_2}^{\frac{1}{d}}}{C_{s_2}^{\frac{1-d}{d}}} = C_{s_2} = C_{s_1}$$

$$\Rightarrow R_{s_1} = C_{s_1} + F_{s_1} \Leftrightarrow R_{s_1} = 2C_{s_1}$$

Because of $R_{s_1} = R_{s_2}$ it follows:

$$F_{s_1} = F_{s_2} = C_{s_1} \ = C_{s_2} \ = \frac{R_{s_1}+R_{s_2}}{4}$$

(ii) Intra-stakeholder conflict, where $n = 1$ and $m > 1$, $1 < d \leq 2$:

$$\Rightarrow \frac{F_{s_1} * C_{s_1}^{\frac{1-d}{d}}}{F_{s_2}^m} = \frac{m\left(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}}\right)}{F_{s_1}^m + F_{s_2}^m}$$

Set $F_{s_1} = F_{s_2}$:

$$\Rightarrow \frac{F_{s_1} * C_{s_1}^{\frac{1-d}{d}}}{F_{s_1}^m} = \frac{m2C_{s_1}^{\frac{1}{d}}}{2F_{s_1}^m}$$

$$\Leftrightarrow F_{s_1} = \frac{mC_{s_1}^{\frac{1}{d}}}{C_{s_1}^{\frac{1-d}{d}}} = mC_{s_1}$$

$$\Rightarrow R_{s_1} = mC_{s_1} + C_{s_1} = (m+1)C_{s_1} \Leftrightarrow C_{s_1} = \frac{R_{s_1}}{(m+1)}$$

$$\Rightarrow F_{s_1} = \frac{R_{s_1}}{(m+1)}.$$

Because of $F_{s_1} = F_{s_2}$ and $R_{s_1} = R_{s_2}$ it follows:

$$F_{s_1} = F_{s_2} \ = m * \frac{R_{s_1}}{(m+1)} = \frac{m(R_{s_1} + R_{s_2})}{2(m+1)}$$

(iii) Multi-stakeholder conflict, where $n > 1$ and $m \geq 1$, $1 < d \leq 2$:

$$\frac{\delta \omega_{s_i}{}^{\eta=1}}{\delta F_{s_i}} = 0$$

$$\Rightarrow RC_{s_i}: \frac{F_{s_i} C_{s_i}^{\frac{1-d}{d}}}{\left(\sum_{i=1}^{2}\sum_{s\in\dot{S}^F} F_{s_i}^m\right) - F_{s_i}^m} = \frac{m\sum_{i=1}^{2}\sum_{s\in\dot{S}^F} C_{s_i}^{\frac{1}{d}}}{\sum_{i=1}^{2}\sum_{s\in\dot{S}^F} F_{s_i}^m}$$

The intersection between $2n$ reaction curves RC_{s_i} solves the $2n$ equations so that

$$F_{s_1} = F_{s_2} = \cdots = F_{n_1} = F_{n_2}$$

$$\Rightarrow F_{s_i} = \frac{m \sum_{i=1}^{2} \sum_{s=1}^{n} R_{s_i}}{2n(m+1)}$$

A2: Derivation of the non-symmetrical Cournot-Nash equilibrium in case of intra-stakeholder conflict

Non-symmetrical Cournot-Nash Equilibrium: $R_{s_1} > R_{s_1}$ for all $s_i \in S_i$.

In this case a solution is only determinable through numerical iteration. At first, given a reasonable start value for F_{s_1} and F_{s_2} the reaction curve equation RC_{s_1} is solved where $RC_{s_1} = 0$. The derived optimal fighting activity $F_{s_1}^*$ hence, again serves as a starting point for the solution of equation $RC_{s_2} = 0$. As a result $F_{s_2}^*$ is derived.

A3: Proof of Theorem 1

Let $R_{s_1} = R_{s_2}, 1 < d \leq 2, A \leq 1, N > 0, T > 0$ and $m \geq 1$. For $n = 1$ (intra-stakeholder conflict) it follows:

$F_{s_1} = F_{s_2} = \frac{m(R_{s_1}+R_{s_2})}{2(m+1)}$ and $C_{s_1} = \frac{R_{s_1}}{m+1}, C_{s_2} = \frac{R_{s_2}}{m+1}$.

It is to show that: $\widetilde{\omega}_{s_i} < \omega_{s_i}$ for all $i = 1,2$.

$$\Rightarrow A * \left(\left(\frac{R_{s_1}}{m+1} \right)^{\frac{1}{d}} + \left(\frac{R_{s_2}}{m+1} \right)^{\frac{1}{d}} \right)^{d} * \frac{F_{s_i}^m}{F_{s_1}^m + F_{s_2}^m} - \frac{T}{2N} < \omega_{s_i}$$

For the reason that $R_{s_1} = R_{s_2}, \omega_{s_i} = R_{s_i}, i = 1,2$ and $F_{s_1} = F_{s_2}$ for all $m \geq 1$ it follows that $\frac{F_{s_i}^m}{F_{s_1}^m + F_{s_2}^m} = \frac{1}{2}$.

$$\Rightarrow \frac{A}{2} * \left(\left(\frac{R_{s_i}}{m+1} \right)^{\frac{1}{d}} + \left(\frac{R_{s_i}}{m+1} \right)^{\frac{1}{d}} \right)^d - \frac{T}{2N} < R_{s_i}$$

$$\Leftrightarrow \frac{A}{2} * \left(2 \left(\frac{R_{s_i}}{m+1} \right)^{\frac{1}{d}} \right)^d - \frac{T}{2N} < R_{s_i}$$

$$\Leftrightarrow \frac{A}{2} * \left(2^d * \frac{R_{s_i}}{m+1} \right) - \frac{T}{2N} < R_{s_i}$$

$$\Leftrightarrow \frac{A}{2} 2^d * \left(\frac{R_{s_i}}{m+1} \right) - \frac{T}{2N} < R_{s_i}$$

$$\Leftrightarrow R_{s_i} A 2^d - 2R_{s_i}(m+1) < \frac{T(m+1)}{N}$$

$$\Leftrightarrow R_{s_i}(A2^d - 2m - 2) < \frac{T(m+1)}{N}$$

The left term of the equation is always smaller or equal to zero because it holds that $m \geq 1, A \leq 1$ and $2^d \in]1,4]$ for all $1 < d \leq 2$. The right term of the equation is always positive for $N > 0$ and $T > 0$. Therefore, the equation derived above is fulfilled for all $i = 1,2$ so that $\widetilde{\omega}_{s_i} < \omega_{s_i}$ ■

A4: Proof of Theorem 2

For $R_{s_1} > R_{s_2}$ so that $F_{s_2}^* \to R_{s_2}$ it is to show that

(i) $\widetilde{\omega}_{s_2} > \omega_{s_2}$ and at the same time,

(ii) $\frac{q_{s_1}^*}{q_{s_2}^*} < \frac{R_{s_1}}{R_{s_2}}$ in equilibrium.

If condition (i) is fulfilled, condition (ii) is also fulfilled. Let $R_{s_1} = kR_{s_2}$ where $k \to \infty$ and $q_{s_i} = \frac{F_{s_i}^m}{F_{s_1}^m + F_{s_2}^m}$.

If $R_{s_1} > R_{s_2} \Rightarrow F_{s_1}^* > F_{s_2}^* \Rightarrow q_{s_1}^* > q_{s_2}^*$.

With $F_{s_2}^* \to R_{s_2}$ it follows that $C_{s_2} = R_{s_2} - F_{s_2}^* \to \frac{1}{k}$.

$$\Rightarrow A * \left(\left(C_{s_1}\right)^{\frac{1}{d}} + \left(\frac{1}{k}\right)^{\frac{1}{d}} \right)^d * q_{s_2}^* - \frac{T}{2N} > R_{s_2}$$

$$R_{s_1} = k * R_{s_2} \Rightarrow C_{s_1} = k * R_{s_2} - F_{s_1}^*$$

$$\Rightarrow A * \left(\left(kR_{s_2} - F_{s_1}^*\right)^{\frac{1}{d}} + \left(\frac{1}{k}\right)^{\frac{1}{d}} \right)^d * q_{s_2}^* - \frac{T}{2N} > R_{s_2}$$

Condition (ii) holds in the extreme case where $k \to \infty$:

$q_{s_2}^* = \frac{{F_{s_2}^*}^m}{{F_{s_1}^*}^m + {F_{s_2}^*}^m}$ and it holds that $F_{s_1}^* > F_{s_2}^*$ where $F_{s_2}^* \to R_{s_2}$. It follows:

$$q_{s_2}^* = \frac{R_{s_2}^m}{{F_{s_1}^*}^m + R_{s_2}^m} < q_{s_1}^* = (1 - q_{s_2}^*)$$

$$\Rightarrow \frac{q_{s_1}^*}{q_{s_2}^*} < \frac{R_{s_1}}{R_{s_2}} = k, k \to \infty \blacksquare$$

A5: Proof of Theorem 3

Let $\Delta\theta_{s_1} = \frac{\widetilde{\omega}_{s_1}}{\omega_{s_1}} - 1$ and $1 < d \leq 2, A \leq 1$.

It is to show that for $\eta = 0$ (no conflict) and $\eta = 1$ (conflict) the following condition is fulfilled:

$$\Delta\theta_{s_1}\left(R_{s_1} = R_{s_2}\right) > \Delta\theta_{s_1}\left(R_{s_1} > R_{s_2}\right), s_1 \in S_1.$$

Let $\omega_{s_1}^E = \omega_{s_1}^U = R_{s_1}$ where index E stands for equal size and index U for unequal size. For $R_{s_1} = R_{s_2}$ it follows:

$$\Rightarrow \widetilde{\omega}_{s_1}^E = A(R_{s_1}^{\frac{1}{d}} + R_{s_2}^{\frac{1}{d}})^d * q_{s_1}^E - \frac{T}{2N}$$

$$\Leftrightarrow \widetilde{\omega}_{s_1}^E = A\left(2R_{s_1}^{\frac{1}{d}}\right)^d * q_{s_1}^E - \frac{T}{2N}.$$

For $R_{s_1} > R_{s_2}$ and $R_{s_1} = kR_{s_2} \Leftrightarrow R_{s_2} = \frac{R_{s_1}}{k}, k \in]1, \infty[$:

$$\widetilde{\omega}_{s_1}^U = A(R_{s_1}^{\frac{1}{d}} + R_{s_2}^{\frac{1}{d}})^d * q_{s_1}^U - \frac{T}{2N}$$

$$\Leftrightarrow \widetilde{\omega}_{s_1}^U = A\left(R_{s_1}^{\frac{1}{d}} + \left(\frac{R_{s_1}}{k}\right)^{\frac{1}{d}}\right)^d * q_{s_1}^U - \frac{T}{2N}$$

It is to show that $\frac{\widetilde{\omega}_{s_1}^E}{\omega_{s_1}^E} > \frac{\widetilde{\omega}_{s_1}^U}{\omega_{s_1}^U}$ for both $\eta = 0$ and $\eta = 1$.

(i) $\eta = 0$:

$$\frac{A\left(2R_{s_1}^{\frac{1}{d}}\right)^d * q_{s_1}^E - \frac{T}{2N}}{\omega_{s_1}^E} > \frac{A\left(R_{s_1}^{\frac{1}{d}} + \left(\frac{R_{s_1}}{k}\right)^{\frac{1}{d}}\right)^d * q_{s_1}^U - \frac{T}{2N}}{\omega_{s_1}^U}$$

$$\Leftrightarrow A\left(2R_{s_1}^{\frac{1}{d}}\right)^d * q_{s_1}^E - \frac{T}{2N} > A\left(R_{s_1}^{\frac{1}{d}} + \left(\frac{R_{s_1}}{k}\right)^{\frac{1}{d}}\right)^d * q_{s_1}^U - \frac{T}{2N}.$$

With $q_{s_1}^E = \frac{1}{2}$ and $q_{s_1}^U = \frac{R_{s_1}}{R_{s_1} + \frac{R_{s_1}}{k}}$ it follows:

$$\frac{A}{2}2^d R_{s_1} - \frac{T}{2N} > A * \frac{R_{s_1}}{R_{s_1} + \frac{R_{s_1}}{k}} * \left(R_{s_1}^{\frac{1}{d}} + \left(\frac{R_{s_1}}{k}\right)^{\frac{1}{d}}\right)^d - \frac{T}{2N}$$

$$\Leftrightarrow \frac{2^d R_{s_1}}{2} > \frac{R_{s_1}}{R_{s_1} + \frac{R_{s_1}}{k}} * \left(R_{s_1}^{\frac{1}{d}} + \left(\frac{R_{s_1}}{k}\right)^{\frac{1}{d}}\right)^d$$

$$\Leftrightarrow \frac{1}{2}\left(2^d R_{s_1} + \frac{2^d R_{s_1}}{k}\right) > \left(R_{s_1}^{\frac{1}{d}} + \left(\frac{R_{s_1}}{k}\right)^{\frac{1}{d}}\right)^d.$$

This equation holds for all $R_{s_1} > 0, 1 < d \leq 2, k \in]1, \infty[$. For example set $d = 2$ and $k = 2$:

$$2R_{s_1} > \frac{R_{s_1}}{R_{s_1} + \frac{R_{s_1}}{2}} \left(R_{s_1}^{\frac{1}{2}} + \left(\frac{R_{s_1}}{2}\right)^{\frac{1}{2}} \right)^2$$

$$\Leftrightarrow 3R_{s_1} > \frac{3}{2} R_{s_1} + \frac{2R_{s_1}}{\sqrt{2}}$$

$$\Leftrightarrow R_{s_1} > R_{s_1} \left(\frac{1}{2} + \frac{2}{3\sqrt{2}} \right)$$

$$\Leftrightarrow 1 > \frac{1}{2} + \frac{2}{3\sqrt{2}}, true!$$

(ii) $\eta = 1$: For the derivation of $\tilde{\omega}_{s_1}^E (R_{s_1} = R_{s_2})$ it holds: $F_{s_1} = F_{s_1} = \frac{m(R_{s_1} + R_{s_2})}{2(m+1)}$ and $C_{s_1} = C_{s_2} = \frac{R_{s_1}}{m+1}$. With $m \geq 1$ and $q_{s_1}^E = \frac{1}{2}$ it follows:

$$\Rightarrow \tilde{\omega}_{s_1}^E = \frac{A}{2} * \left(2 \left(\frac{R_{s_1}}{m+1} \right)^{\frac{1}{d}} \right)^d - \frac{T}{2N}.$$

For $\tilde{\omega}_{s_1}^U (R_{s_1} > R_{s_2})$, where $R_{s_1} = kR_{s_2} \Leftrightarrow R_{s_2} = \frac{R_{s_1}}{k}, k \in]1, \infty[$ and $q_{s_1}^U = \frac{F_{s_1}^m}{F_{s_1}^m + F_{s_2}^m}$ it follows:

$$\tilde{\omega}_{s_1}^U = A * \frac{F_{s_1}^m}{F_{s_1}^m + F_{s_2}^m} \left(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}} \right)^d - \frac{T}{2N}$$

$$\Leftrightarrow \tilde{\omega}_{s_1}^U = A * \frac{F_{s_1}^m}{F_{s_1}^m + F_{s_2}^m} \left(\left(R_{s_1} - F_{s_1}\right)^{\frac{1}{d}} + \left(R_{s_2} - F_{s_2}\right)^{\frac{1}{d}} \right)^d - \frac{T}{2N}.$$

It is to show that $\tilde{\omega}_{s_1}^E > \tilde{\omega}_{s_1}^U$ for $\eta = 1$, i.e.:

$$\frac{2^d}{2} \left(\frac{R_{s_1}}{m+1} \right) > \frac{F_{s_1}^m}{F_{s_1}^m + F_{s_2}^m} \left(\left(R_{s_1} - F_{s_1}\right)^{\frac{1}{d}} + \left(R_{s_2} - F_{s_2}\right)^{\frac{1}{d}} \right)^d$$

In equilibrium of conflict between two unequally endowed stakeholders it holds that $F_{s_1}^* > F_{s_2}^*$. Consequently, it holds: $q_{s_2}^* < 0.5 < q_{s_1}^* < 1$.

The equation derived above only holds for the case where decisiveness of conflict is low, i.e. $m = 1$.

For example let $R_{s_1} = 200, R_{s_2} = 100$ and set $d = 1.25$ and $m = 1$:

In equilibrium where $F_{s_1}^* = 77$ and $F_{s_2}^* = 68$ if follows:

$$\frac{2^{1.25}}{2}\left(\frac{200}{1+1}\right) > \frac{77}{77+68}\left((200-77)^{\frac{1}{1.25}} + (100-68)^{\frac{1}{1.25}}\right)^{1.25}$$

$$\Leftrightarrow 118.92 > 94.03\ (true!)$$

But for example if $m = 1.5$ it follows:

$$\frac{2^{1.25}}{2}\left(\frac{200}{1.5+1}\right) > \frac{92^{1.5}}{92^{1.5}+80^{1.5}}\left((200-92)^{\frac{1}{1.25}} + (100-80)^{\frac{1}{1.25}}\right)^{1.25}$$

$$\Leftrightarrow 79.28 > 82.34\ (wrong!)\blacksquare$$

A6: Proof of Theorem 4

Let $\hat{\theta}_s = f_s\theta_s^- \geq 0$, $\check{\theta}_s \geq 0$ and $\gamma_s \geq 0$. Following condition has to hold:

$$\hat{\theta}_s - \check{\theta}_s - \gamma_s > 0 \Leftrightarrow f_s\theta_s^- - (\theta_s^+ - f_s\theta_s^-) - \gamma_s > 0 \Leftrightarrow 2f_s\theta_s^- > \theta_s^+ + \gamma_s$$

$$\Leftrightarrow f_s < \frac{\theta_s^+}{2\theta_s^-} + \frac{\gamma_s}{2\theta_s^-} \Leftrightarrow f_s^{min} < \frac{1}{2}f_s^* + \frac{\gamma_s}{2\theta_s^-}.$$

Due to the prerequisite that $\gamma_s \geq 0$ it follows the condition: $f_s^* < f_s^{min} \leq \frac{1}{2}f_s^*$ to realize a positive residual $\bar{\bar{\theta}}_s > 0$ of stakeholder merger synergy, with $\bar{\bar{\theta}}_s = \hat{\theta}_s - \check{\theta}_s - \gamma_s\blacksquare$

3

Synergy Deterioration through Stakeholder Conflict in M&A and its Effect on Long-Term Acquirer Performance

Abstract

This paper analyzes 1,035 effective US mergers and acquisitions in the period 2005-2014. It finds a significant negative long-run financial and operating performance measured by buy-and-hold abnormal returns and abnormal operating cash flow returns. On average, US acquirers achieve a -8.2% stock price underperformance and a decline in pre-tax operating cash flow returns of -3.1% in the subsequent 36 months. The paper confirms that cash-financed transactions and the takeover of private targets positively impact M&A profitability. Controlling for certain firm and deal characteristics, further determinants are identified and tested which firstly, negatively influence synergy realization in general, and secondly, encourage post-merger stakeholder conflicts that reinforce synergy impairment, or even lead to dis-synergy. Based on robust results of multivariate regression analyses on acquirer performance, this paper concludes that the main post-merger value-influencing factors are integration capacity, complementarity of economic environment, and decisiveness of stakeholder conflict. This ultimately justifies the theoretical foundation of the existence of post-merger stakeholder conflicts and the need for a well-managed PMI as a mitigating mechanism to improve M&A performance.

Keywords: Mergers, acquisitions, post-merger integration, buy-and-hold abnormal return, operating performance, stakeholder conflict, cultural distance, geographic distance, cross-border M&A

3.1 Introduction

This paper makes two essential contributions to the existing finance literature on mergers and acquisitions (M&A). Firstly, it re-examines the financial and operating performance of US acquirers by using long-term performance measures and a more accurate benchmarking methodology of non-merging firms portfolios matched by size and book-to-market ratio to eliminate commonly known biases. Secondly, this paper emphasizes the post-merger integration (PMI) as the most synergistic and value creative phase of the M&A process with focus on a firm's primary stakeholders and their interests. It identifies and empirically tests factors that might encourage post-merger stakeholder conflicts with a significant influence on M&A performance.

Corporate M&A are an important strategic means of investment to create external growth opportunities for company shareholders. Despite consistently strong M&A activity, failure rates still remain at a high level. There are countless examples of transactions that did not achieve initially anticipated merger objectives, like synergies, market growth, or technology access (Dessein et al., 2006). For instance, more than fifty percent of investigated US acquisitions destroy value for acquiring firms' shareholders, whereas target owners significantly benefit (Agrawal et al., 1992). Conceptualization and subsequent execution of M&A transactions seem to expose promising value-effects from a solely business case point of view. Nevertheless, the following integration period seems to be a double-edged sword. On the one hand, acquirer management has to deliver and realize synergies to justify its merger motive and to satisfy its shareholders. On the other hand, there are further essential stakeholders whose interests need to be carefully aligned to the newly formed entity and its strategy. Thus, conflict during the integration period is sure to follow if management fails to integrate for all primary stakeholders, and not only for shareholders at the expense of employees, customers, suppliers, and debt-holders. At least it is the stakeholders and not the shareholders that are directly confronted by organizational changes, restructuring processes, and integration challenges caused by the M&A transaction. An unpreventable intervention in stakeholders' intimate environment arises. As a result it seems to be obvious that those developments lead

to potential post-acquisition problems and conflicts.

Besides the well-founded agency conflict in publicly listed firms, due to separation of ownership and control, there exists little evidence in M&A research that deals with conflicts among merging firms' primary stakeholders during the PMI. This study aims to bridge the gap between finance research on M&A – that prioritizes shareholder interests and shareholder value maximization (Jensen and Ruback, 1983) – and strategic management literature with increasing scholarly attention paid to the stakeholder theory of the firm and its impact on corporate performance (Parmer et al., 2010; Choi and Wang, 2009) and acquisition outcome (Bettinazzi and Zollo, 2017).

This heterogeneous approach in examining M&A performance might be one reason why research results in this field show high variance. Both finance and management scholars often easily agree on the conclusion that post-merger problems are responsible for acquiring firms' negative M&A performance. Therefore, they argue that PMI plays a decisive role in M&A. But to date, neither a theoretical framework nor an empirical analysis confirms this conclusion. In addition, an orientation towards stakeholders during the integration process is still missing.

A central objective of the present study – given the assumption that managers seriously seek synergies in their acquisition bids – is the identification of determinants that can cause value-decreasing, i.e. non-cooperative instead of synergistic stakeholder actions during the integration process of strategic M&A. The theoretical foundation of the *"post-merger stakeholder conflict hypothesis"* which is based on reapplication of Hirshleifer's paradox of power (Hirshleifer, 1991) serves as a starting point. Within this framework, certain parameters are described that influence aggregated post-merger stakeholder wealth. This paper tests these parameters empirically by applying appropriate proxies of so-called "stakeholder conflict factors" (SCF) in PMI. Ultimately, implications of the empirical findings amplify the hypothesis that the acquirer management should focus on primary stakeholder interests in its integration efforts to protect and realize identified merger synergies. This in turn can also enhance long-term M&A performance compared to acquirers that fail to integrate for stakeholders. Therefore, PMI serves as a value-enhancing factor to mitigate the negative impact of stakeholder conflict on long-term M&A

performance.

Primary stakeholders considered in this paper are employees, customers, financiers (debt- and shareholders), suppliers, and management itself (Clarkson, 1995; Freeman, 2010). They are important for a firm's existence and have either direct or indirect impact on its future cash flows and hence, on future synergy flows.

The rest of the paper is organized as follows. Section 3.2 outlines the theoretical motivation and research hypotheses to be tested. Section 3.3 describes the data and methodology. Section 3.4 presents empirical results of the analyses. Section 3.5 summarizes and concludes the article.

3.2 Stakeholder Conflict Factors in PMI

There exist two trends in the literature concerning the analysis of M&A performance. On the one hand, finance scholars typically focus on short-term examination of M&A announcement effects, usually within a three to ten-day event window. They ignore returns in the post-merger period by arguing that capital markets are efficient and incorporate all important information accurately and promptly in the stock price. On the other hand, previous studies analyze long-term stock price performance or operating profitability, assuming that the market does not perfectly adjust to a merger event in the post-acquisition period. Results of those studies therefore imply that post-merger abnormal returns are inconsistent with market efficiency.

Literature to date on long-run M&A performance documents a consistent underperformance of US acquirers in the past five decades. Table 6 lists selected studies covering an overall investigation period from 1955-2010, exclusively focusing on US acquirers, applying different methods to calculate long-term abnormal returns, and using event windows that range from 24-60 months. All of them report a negative outcome for the bidder firm of -6.5% to -16.8%.

Table 6: Research Studies on US Acquirers' M&A Performance

The table reports different articles with analyses and findings on US acquirers' underperformance in M&A covering the overall period from 1955-2010

Study	Period	Sample Size	Methodology	Returns	Event period
Agrawal et al. (1992)	1955-1987	765	CAR	-10.3%**	60 months
Loughran & Vijh (1997)	1970-1989	947	BHAR	-6.5%	60 months
Rau & Vermaelen (1998)	1980-1991	2,823	CAR	-4.0%***	36 months
Megginson et al. (2004)	1977-1996	204	BHAR	-9.9%**	24 months
Cui (2018)	1980-2010	7,668	BHAR	-16.8%***	36 months

* p<0.10, ** p<0.05, *** p<0.01

For the reason that the major focus is on the analysis of value-effects of stakeholder conflict factors in the post-merger integration period, the present article also applies long-term methodology to capture and re-examine the value effects for US acquirers.

Apart from the existing economic theories, i.e. value-maximizing theories, and agency-based hypotheses (which in general predict non-value-maximizing M&A performance), the underlying empirical work primarily is grounded upon the theoretical thoughts of the stakeholder conflict theory in M&A which is developed from reapplication of Hirshleifer's paradox of power (Hirshleifer, 1991). Among others, the theory approaches the following questions in M&A: Why does stakeholder conflict arise post-merger? How does the conflict affect synergy realization? What role do differences in stakeholder power play (in terms of initial resource endowments or wealth)? Within this framework, intra-stakeholder conflicts between acquirer and target members of a primary stakeholder group – for example, employees – are the major source of synergy impairments. Stakeholders start to oppose the transaction post-merger by acting non-productively. The merged firm's post-merger stakeholder wealth function according to the post-merger stakeholder conflict hypothesis is defined as:

$$\widetilde{\omega}_s = q_{s_1}\left[A(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})^d\right] - c_{s_1} + q_{s_2}\left[A(C_{s_1}^{\frac{1}{d}} + C_{s_2}^{\frac{1}{d}})^d\right] - c_{s_2}, \tag{33}$$

with the conflict functions q_{s_i} and resource endowments R_{s_i}, $i = 1, 2$:

$$q_{s_1} = \frac{F_{s_1}^m}{F_{s_1}^m + F_{s_2}^m},\ q_{s_2} = (1 - q_{s_1}) \text{ and } R_{s_i} = C_{s_i} + F_{s_i}, \tag{34}$$

where C_{s_1}, C_{s_2} are the productive and F_{s_1}, F_{s_2} the non-productive resources of the acquiring firm's stakeholder s_1 and the target firm's stakeholder s_2. Factor $A \leq 1$ measures the utilization of integration capacity, $d \in]1,2]$ is a complementarity index, m an index for decisiveness of stakeholder conflict, and c_{s_1}, c_{s_2} are the fixed cost of merging, equally shared by target and acquirer stakeholders.

On the one hand, the model emphasizes the power relations (R_{s_1} vs. R_{s_2}) between acquiring and target firms' stakeholder groups which become important in conflict situations. Dependent of the deal size of an acquisition (that serves as a proxy for the ratio between acquirer and target stakeholders' resource endowments R_{s_i}), there are different alternatives for productive (C_{s_i}) or non-productive (F_{s_i}) actions. Furthermore, the model integrates the three general parameters A, d, m which affect each stakeholder's private wealth function, and similarly, the aggregated post-merger stakeholder wealth function of the transaction: (i) acquiring firm's integration capacity, (ii) merger complementarity, and (iii) decisiveness of stakeholder conflict. Whereas the first two parameters (A and d) generally impact the degree of synergy realization, the third one (m) substantially determines the overall extent of synergy impairment in case of stakeholder conflict.

Merger complementarity consists of three dimensions of congruence between acquirer and target firm: firstly, complementarity of businesses, products and markets (organizational dimension); secondly, complementarity of economic sphere, legal systems, economic laws and regulations (economic dimension); thirdly, complementarity of culture, values, language, and business practices (sociocultural dimension). High complementarities in all of these dimensions foster synergistic combination of stakeholder resources, eventually resulting in higher post-merger stakeholder wealth (King et al., 2004). Yet, in the minority of M&A transactions, post-merger integration and reorganization activities go along without any difficulties. Typically, familiar organizational structures, business processes and functions erode, routine work flows get stuck, corporate leadership and values change, uncertainty arises, and so on. All these transformative developments can negatively influence stakeholder interests and thereby make a higher level of orientation toward important

stakeholder groups indispensable at this stage of a M&A process. Otherwise, merger synergy is impaired and in case the conflict escalates (i.e. decisiveness of conflict is high), M&A profitability diminishes and becomes negative.

Whether decisiveness of stakeholder conflict is high or low mainly depends on two aspects. The first is the importance of the merger, respectively the underlying merger synergies, for an acquirer's growth story. If the acquiring firm suffers on low internal growth opportunities, a synergy-impairing post-merger stakeholder conflict will become more decisive compared to value acquirers which are less dependent on synergy realization (due to other growth sources). The second aspect is the direct confrontation between merging firms' stakeholders, which of course will fuel conflict potential if they expect their interests to be impaired. This happens when both firms are consolidated and, for example, employees of both parties have to work together under the same roof.

To identify appropriate stakeholder conflict factors, it is insufficient to merely apply deal and acquirer characteristics commonly used in finance research that mainly account for the transaction phase in acquisitions (e.g. method of payment, target's public status, or acquirer size). Nevertheless, those variables are employed in this empirical study as controls to achieve reliable and robust multivariate regression results (refer to Section 3.4.3).

An explanatory variable to test for merger performance impact has to fulfill certain requirements to be set as a stakeholder conflict factor (SCF) in PMI. Firstly, its performance-influencing characteristic primarily takes effect in the post-merger period, i.e. from the day of merger completion until three years afterwards (event window of interest). Secondly, the factor has to be covered by and tested on a reliable proxy for the underlying model parameters A, d, m, and the ratio of R_{s_2} to R_{s_1} of the outlined aggregated stakeholder wealth function above. In particular, complementarity issues between the merging firms need to be fully covered because deviations in the defined dimensions contain a high stakeholder conflict potential, above all in large and complex M&A transactions. If resources for a well-managed integration process are low or not existent, stakeholder conflict will arise or even be

reinforced. To control for the decisiveness of conflicts, geographic proximity (distance in miles between bidder and target home country) and an acquirer's growth prospects are used as proxies in this paper.

Finally, the following SCF which fulfill the requirements mentioned above are empirically studied in this article: deal size, acquirer pre-deal M&A activity, business relatedness, cross-border M&A, cultural distance, geographic distance, and acquirer growth prospects.

Deal size

Deal size, i.e. the relative size of the target compared to the acquiring firm, is used to account for the differences in pre-merger wealth between target stakeholders and acquirer stakeholders. According to the theoretical framework, relative size matters in post-merger stakeholder conflicts because in (extreme) superior M&A where a relatively small target is acquired, the party perceived as weaker (in terms of wealth) has the paradox incentive to oppose the merger and fight for its interests. As long as decisiveness of conflict is at a low level, the opponent then increases its post-merger wealth compared to not combating. Therefore, in case of a merger of equals where the companies' sizes are more or less equal (deal size = 1), the acquirer will be better off in case of conflict (due to the missing incentive for the target to combat).

Nevertheless, mixed interpretations exist in the literature regarding deal size and its impact on M&A performance. On the one hand, researchers claim that large acquisitions destroy more value than small ones because of higher complexity in post-merger integration and consequently higher uncertainty in realizing expected synergies (Shrivastava, 1986; Hayward, 2002). For example, Alexandridis et al. (2011) find in their analysis that the acquisition of large compared to small targets significantly reduces both long-term share price and operating performance. On the other hand, existing literature documents a positive impact of deal size on M&A profitability because of larger and more significant synergies (economies of scale and economies of scope). This paper agrees to the latter interpretation of deal size. Therefore, and due to the objective of testing the justification of the post-merger stakeholder conflict theory, the following hypothesis is formulated:

Hypothesis 1: Post-merger acquirer performance increases with the acquisition of relatively large targets because of decreasing probability of arising post-merger stakeholder conflict (due to reduced target stakeholders' incentive to fight for their interests).

Deal frequency

Pre-deal M&A activity is used as a proxy for (i) an acquirer's integration capacity. Deal frequency determines integration capacity (and productivity) because if the acquirer has executed several large transactions in the recent past, resources for a well-managed integration are limited. As a consequence, synergy realization in general, and more specifically, the alignment of conflicting stakeholder interests becomes difficult. For instance, Conn et al. (2005) analyze a sample of UK acquirers from 1984-1998. Applying different short-term and long-run performance measures, the authors find a robust pattern of declining performance for multiple acquirers whose acquisitions all took place shortly after previous deals. They therefore conclude a significantly negative relationship between bid order and M&A performance. They do not find any support of M&A learning effects from previous acquisitions.

Hypothesis 2: If acquirers' integration capacity is low, stakeholder conflict is more likely to arise or in case of already existent conflict, more likely to reinforce. This impairs acquirers' long-term M&A profitability.

Relatedness

Relatedness is applied as a proxy for (ii) merger complementarity with a) a focus on business congruence (in terms of industry, products, markets, business objective). Complementarity of business has two main positive effects during the post-merger phase. Firstly, horizontal or focused M&A are supposed to generate higher synergy potential compared to non-related, i.e. diversified transactions. Secondly, stakeholder interests are easier to align compared to diversified transactions because they are supposed to be more congruent, too. It is therefore hypothesized:

Hypothesis 3a: Acquirer M&A performance increases with the acquisition of related targets in terms of business congruency because of reduced probability of stakeholder conflict.

Cross-border M&A

To test the justification of (ii) merger complementarity with b) a focus on economic environment (in terms of economic sphere, legal systems, policy, employment law and regulations) the cross-border flag is used as a proxy. The argument behind it is that cross-country transactions compared to domestic M&A bear higher risk of post-merger stakeholder conflict if economic complementarity is low. For instance, when an acquirer purchases a target in a country where labor rights are not respected or the political situation is unstable.

Hypothesis 3b: Cross-border M&A encourage post-merger stakeholder conflict due to less economic complementarity. Thus, acquirer acquisition performance declines.

Cultural distance

Cultural distance is applied as a proxy for (ii) merger complementarity with c) a focus on sociocultural factors (in terms of culture, language, and business practices). Cultural differences such as language barriers are a big challenge in post-merger integration activities. They can cause tremendous problems if top management fails to pay attention on those allegedly weak factors. One considers the simple situation where, for instance, a US firm acquirers a Chinese company and shortly after deal closure the acquirer declares unequivocally American English to be the business language. It seems to be obvious that most of the Chinese employees will experience a strong impairment of their interests. Therefore, it is argued that the probability of stakeholder conflict increases with higher cultural distance.

Hypothesis 3c: If cultural distance between bidder and target is high, risk of post-merger stakeholder conflict is high, too. As a consequence, synergy impairs and M&A profitability of the acquirer decreases.

Geographic distance

A further parameter to be empirically tested in this paper is (iii) decisiveness of conflict with a) a focus on geographic proximity. Arising post-merger stakeholder conflict might be mitigated through a high geographic distance between an acquirer's and a target's home country. It is supposed that a physical separation and missing direct stakeholder confrontation, as well as the possible perception of still being a

stand-alone entity, reduce post-merger problems between stakeholders.

Hypothesis 4a: High geographic distance has a mitigating effect on stakeholder conflict and therefore a positive impact on acquirers' long-run M&A performance.

Book-to-market ratio

The book-to-market ratio serves as a proxy for (iii) decisiveness of conflict with b) a focus on an acquirer's growth perspective. Weak internal growth opportunities encourage companies to conduct M&A to create at least external growth. Therefore one can argue that decisiveness of conflict increases with an acquirer's lower internal growth prospects (decreasing book-to-market ratio) because the synergy motive of an executed deal becomes more important, as well as the realization of synergies during the post-acquisition integration period. Otherwise, in case of failure, there would be a wasted opportunity for external growth.

Hypothesis 4b: Acquirers' growth prospects drive decisiveness of stakeholder conflict. As a consequence, a weak internal growth outlook (low book-to-market ratio) makes emerging conflict more decisive and in turn acquirers' M&A transaction less profitable.

3.3 Data Sample and Methodology

3.3.1 Data and Sources

This paper analyzes a sample of mergers and acquisitions by US publicly listed firms, completed between January 1, 2005 and December 31, 2014. The sample is drawn from the Securities Data Corporation (SDC) online US Mergers and Acquisitions Database. The sample is limited to strategic M&A, i.e. to mergers defined as a combination of business that takes place or the takeover of one hundred percent of the stock of a public or private target, and to acquisitions of majority interest (acquirer has a stake of less than fifty percent before the acquisition and seeks to acquire fifty percent or more, but less than one hundred percent of the target firm's equity). There are 1,035 M&A transactions identified that meet the following sampling criteria:

1. The acquirer is a US company listed either on the NYSE, NASDAQ, or AMEX.
2. The target is not a subsidiary and can either be private or public.

3. The primary rationale for a M&A transaction is either synergy or operating efficiency.
4. Neither the bidder nor the target operate in the Finance, Insurance, or Real Estate industry (Standard Industrial Classification Codes (SIC) 60-67).[6]
5. The deal value is equal to or greater than one hundred million US dollars.[7]
6. Monthly acquirer price and return data are available in the Thomson Reuters DataStream database for a 36-month period after deal completion.
7. Accounting data is available in the Thomson Reuters DataStream database from three years prior until three years following the effective year of the transaction.

Table 7 presents summary statistics of the final M&A sample on an annual basis. Most deals were closed in 2007 with 150 transactions. The year before, 2006 shows the highest aggregate deal value (305 billion USD), whereas in 2009 the highest average USD value is paid (3.36 billion USD). The mean sample deal value is 1.98 billion USD. 171 transactions (17%) take place cross-border (between an entity in the US and one based in a foreign country), and 572 (55%) are purely cash-financed. The majority of 667 M&A (65%) are public transactions, i.e. M&A between a publicly listed acquirer and target.

[6] Firms that belong to these industries are subject to special accounting and regulatory requirements, making them difficult to compare with other companies.

[7] This size constraint is set for the reason that the analysis focuses on M&A of material size. In addition, it reduces the probability of confounding events in case of multiple acquirers that complete several small M&A transactions within the studied event window of 12 to 36 months.

Table 7: Summary Statistics by Year

The table reports the number of M&A deals, the aggregated and average deal values in million USD, and further deal characteristics on an annual basis from 2005-2014

Year	Total Nr. of M&A	Total Value	Avg. Value	Domestic M&A	Cross-border M&A	Cash Deals	Equity Deals	Private Targets	Public Targets
2005	115	260,011	2,261	102	13	62	53	36	79
2006	114	305,282	2,678	96	18	61	53	40	74
2007	150	216,014	1,440	126	24	90	60	44	106
2008	99	151,910	1,534	79	20	42	57	32	67
2009	59	198,338	3,362	52	7	27	32	21	38
2010	100	163,169	1,632	85	15	54	46	24	76
2011	92	121,967	1,326	76	16	57	35	48	44
2012	99	237,657	2,401	80	19	59	40	39	60
2013	105	132,910	1,266	85	20	63	42	40	65
2014	102	265,254	2,601	83	19	57	45	44	58
Total	1,035	2,052,511	1,983	864	171	572	463	368	667

3.3.2 Deal and Acquirer Controls

The underlying empirical analysis controls for specific deal and acquirer characteristics. The variables method of payment (*pay*) and target's public status (*priv*) are used as transaction-specific controls. These factors have been researched and proofed in literature as M&A performance driving factors.

If a deal is one hundred percent cash-financed, the binary variable *pay* equals 1, otherwise 0 if it is financed by stock or a mixture of stock and cash. The control variable *priv* takes a 1 if the target is private, otherwise it takes a 0 if it is publicly traded. Information for both variables are available in the SDC database. As a firm control, the variable acquirer size (*ln_mv_acqu*) is applied which is determined as the natural logarithm of the acquirer's market value three months prior the effective month of the M&A transaction. Market values are gathered from Thomson Reuters DataStream. Additional controls are industry dummies according to SIC of the acquiring firms (*sic_b, sic_c, sic_xy, etc.*), and year dummies (*y_2005 to y_2014*) that indicate the year where the respective M&A transactions take place.

3.3.3 Post-Merger Stakeholder Conflict Factors

An acquirer's pre-merger M&A activity is measured by the variable deal frequency (*deal_frequ*) which is defined as the number of M&A transactions with a minimum deal value of one million USD, executed within the previous five years of the considered acquisition. This deal value constraint is adopted to exclude very small deals that are expected to have no material effect on acquirers' integration effort and capacity. For each transaction, acquirers' pre deal history is documented in SDC. Deal size (*deal_size*) equals deal value (excl. net debt of target) divided by the acquirer's market value (information available in Thomson Reuters DataStream). Whether a transaction is domestic or cross-border is defined by the binary variable *cb* which equals 1 in case of cross-border M&A, otherwise 0. A further variable applied in the empirical study is cultural distance (*cd*). It is determined according to the formula developed by Kogut and Singh (1988) as the sum of the deviations of each country from the US along each of the four cultural distance dimensions defined by Hofstede (1980, 1985): power distance, individualism, masculinity, and uncertainty avoidance.[8] Moreover, geographic distance (*geo*) in miles between acquirer and target is calculated for each transaction by firstly collecting latitude and longitude coordinates of the locations (as reported in SDC), and secondly using the great circle distance formula (Ragozzino, 2009). The book-to-market ratio (*bm*) is computed as the ratio of the acquirer's book value and its market capitalization as of December of the prior year of the transaction's effective year. The ratio gives an indication about an acquirer's growth perspective. A low ratio implies an overvalued acquirer with low future growth potential (so-called "glamour acquirer"), whereas a high book-to-market ratio identifies an undervalued acquirer with high future growth prospects (so-called "value acquirer"). Finally, the binary variable *relate_2sic* refers to the 2-digit SIC code overlap of the primary industries between bidder and target to measure the relatedness of the businesses. The variable equals 1, if the first two digits are identical

[8] Hofstede (1980) collects survey data on work-related values from about 120,000 IBM employees in 40 different countries. He identifies these four statistically independent cultural distance dimensions that explain the inter-country variation in his survey. For a detailed description of each dimension refer to Hofstede's analyses (Hofstede 1980, 1985).

(focused or horizontal M&A), otherwise it is 0 (diversified or conglomerate M&A).

3.3.4 Methodology

This paper applies a more reliable long-term return measurement procedure to capture value-deteriorating effects which mainly take effect during the post-merger integration period. Therefore, information on the post-acquisition phase will be included in the dependent return variable, and the documented disadvantages of short-term M&A event study analyses (which focus only on a few days around the announcement date, usually -1/+1 to -10/+10 days) are avoided. On the one-hand, 12-, 24-, and 36-month buy-and-hold abnormal stock price returns (BHARs) of each sample acquirer firm are computed through comparison of the compounded bidder holding return to a reference portfolio matched by firm size (market capitalization) and book-to-market ratio (following the approach of Barber and Lyon, 1997; Barber et al., 1999). Reference portfolios consist of NYSE, NASDAQ, or AMEX-listed firms not operating in the Finance, Insurance, or Real Estate industry (SIC Codes 60-67) that were not identified as acquirers during the whole period 2005-2014 of the initial SDC M&A sample and the preceding and following three years.

In June of each year from 2005-2014, all reference firms are ranked on market capitalization into ten size deciles. In each size decile, reference firms are further sorted into five quintiles based on its book-to-market ratios in December of the previous calendar year. As a result of this procedure, fifty equally-weighted portfolios are created in each year, i.e. a total of five hundred portfolios in the ten year period from 2005 to 2014. Finally, each event firm is matched to one reference portfolio according to size and book-to-market ratio at the end of the latest June prior the deal completion date.

The buy-and-hold abnormal return is calculated as the difference between the acquirer's buy-and-hold return and the long-run buy-and-hold return of its matched reference portfolio:

$$BHAR_{iT} = \prod_{t=0}^{T}(1 + R_{it}) - 1 - R_{pT}, \tag{35}$$

where $t = 0$ is the month following the month of deal closing and T the overall

holding period in months. R_{it} in the formula above is the return of event firm i in month t, and R_{pT} the return of the reference portfolio p, calculated as

$$R_{pT} = \sum_{j=1}^{n} \frac{[\prod_{t=0}^{T}(1+R_{jt})]-1}{n}, \tag{36}$$

where R_{jt} is the return of reference firm j in month t, and n equals the number of reference firms included in portfolio p. The empirical analysis mainly focuses on 36-month post-merger stock price performance, but for robustness reasons 24 and 12-month BHARs are also computed.

Due to the fact that BHARs are compounded and not cumulative, a common documented disadvantage of this approach is the positively skewed distribution of the returns which can lead to a misspecification of test statistics. This skewness-bias is controlled for by applying a bootstrapped skewness-adjusted t-statistics when testing for statistical significance as described by Barber et al. (1999).

The second return measure applied in this paper is the abnormal operating cash flow return (AOCFR). Event firms' AOCFRs are computed by the following procedure (Megginson, 2004; Healy et al., 1992). Firstly, acquirers' and reference firms' pre-tax operating cash flow returns (OCFR), as the ratio of earnings before interest and taxes (EBIT) to market value of assets, are computed in each of the three years before and the three years following the effective year of the transaction.[9] Market value of assets is defined as market value of equity (number of shares outstanding multiplied with share price) plus book value of net debt, where net debt equals total debt minus cash and cash equivalents plus minority interests plus preferred stock. Secondly, for each reference portfolio the mean OCFR in year $t \in \{-3, -2, -1, 1, 2, 3\}$ is calculated. Thirdly, AOCFR of event firm i in year t is computed by deducting the matched portfolio mean OCFR in year t from the event firm's OCFR in year t. Finally, acquirers' mean post-merger AOCFR are compared to the mean pre-merger AOCFR.

[9] According to Healy et al. (1992) the year of the merger t=0 is excluded from the return calculation because in year 0 the merging entities are consolidated for financial reporting purposes only from effective date (the day where the M&A was officially closed) to end of the financial year. In addition, year 0 is affected by one-time merger costs making a comparison with other years difficult.

3.4 Empirical Analysis and Results

Firstly, this empirical study re-examines the post-merger underperformance of US acquirers within an event window of up to 36 months, applying appropriate statistical tests to avoid commonly known biases associated with the usage of long-term return estimators such as BHAR and AOCFR. Then, the investigation proceeds with a univariate analysis of certain stakeholder conflict factors to test for significant differences in acquirers' long-term financial and operating performance. Moreover, the multivariate regression technique is applied which includes controls to determine if any of the selected SCFs has a dominant impact on long-term abnormal returns. The following basic regression model is used:

$$AR = \beta_0 + SCF_1 * \beta_1 + \ldots + SCF_n * \beta_n + Control_{n+1} * \beta_{n+1} + \ldots + Control_m * \beta_m, \quad (37)$$

where AR is the dependent abnormal return variable that either equals BHAR or AOCFR, SCF_k are the independent stakeholder conflict factors, with $k \in [1, n]$ and $Control_l$ with $l \in [n+1, m]$ are further control variables incorporated in the model and well known as correlating with M&A performance (for example, method of payment or target's public status).

3.4.1 Evidence on Acquirers' Long-Term M&A Underperformance

In this section, the negative long-term financial and operating performance of US acquiring firms is re-examined. Table 8 reports the results of the empirical tests of acquirers' M&A profitability. Panel A shows the average 12-, 24-, and 36-month buy-and-hold returns for the sample firms, for the size/book-to-market reference portfolios, and the resulting return differences.

Table 8: Long-Term Acquirer Post-Merger Performance

The table reports the differences in long-term financial and operating performance between US acquirers and a benchmark portfolio in 1,035 completed mergers and acquisitions from 2005 to 2014

Panel A: Financial Performance	**Acquirers**	**Reference Portfolio**	**Difference**
36-month BHR	0.180*** (7.94)	0.262*** (24.10)	-0.082*** (-3.89)
24-month BHR	0.106*** (6.24)	0.179*** (17.73)	-0.073*** (-4.60)
12-month BHR	0.041*** (3.39)	0.105*** (17.03)	-0.064*** (-5.54)
Panel B: Operating Performance	**Acquirers**	**Reference Portfolio**	**Difference**
3-year OCFR	-0.041*** (-9.55)	-0.010*** (-5.20)	-0.031*** (-6.94)

Bootstrapped Skewness-adj. t-statistics (Panel A) and student t-statistics (Panel B) in parentheses
* p<0.10, ** p<0.05, *** p<0.01

In Panel B the results for the average three year operating performance is documented. For each acquirer, a reference portfolio is matched that consists of non-merging firms based on firm size and book-to-market ratio (as described in Chapter 3.3). Consistent with the evidence in former M&A performance studies, acquirers' abnormal returns relative to the constructed benchmark portfolios are negative and significantly different from zero: -8.2% in 36-month BHAR, -7.3% in 24-month BHAR, -6.4% in 12-month BHAR, and -3.1% in three-year AOCFR.

For robustness reasons a so-called control firm approach is applied, where each sample acquirer is paired with a single matching firm according to market capitalization (ranging between seventy percent and one hundred thirty percent of the sample firm's market value) and the closest book-to-market ratio. In addition, to reduce the influence of potential outliers, the sample BHARs and AOCFRs are winsorized at the 2.5% and 97.5% levels. Furthermore, to account for cross-sectional dependency, multiple transactions by the same acquirer are eliminated, where event windows overlap with preceding or following deals. The results for acquiring firms are robust and remain highly negative across all investment horizons (not reported here).

3.4.2 Univariate Analysis of Acquirers' Long-Term M&A Performance

This section examines the simple relationship between selected post-merger stakeholder conflict factors and buy-and-hold abnormal returns, as well as abnormal

operating cash flow returns by testing each single SCF for statistical significance within a univariate setting.

Firstly, simple linear regressions for each SCF are applied. The results are reported in Table 9. Geographic distance *(geo)* and book-to-market ratio *(bm)* show significant statistical impact on BHAR, all other factors are insignificant. The effect of the variable *geo* is positive, although very small, indicating that higher geographic distance results in a lower decisiveness of conflict (if post-merger stakeholder conflict arises), thus positively influencing bidder firms' financial performance. This is in line with *Hypothesis 4a* (refer to hypotheses development in Section 3.2) and the assumption regarding the model parameter *m* (decisiveness of conflict) of the post-merger stakeholder conflict hypothesis. The variable *bm* shows a negative coefficient which means that a rising growth prospect (i.e. low decisiveness of conflict) reduces acquirer stock returns. This is contradictory to *Hypothesis 4b*, to the outlined general impact of model parameter *m*, and to the regression outcome of the variable *geo* above.

Table 9: Simple Linear Regression Results for SCF

The table reports simple linear regression results for each stakeholder conflict factor on acquirer financial and operating performance as dependent variables

Stakeholder conflict factor	BHAR		AOCFR	
	Coef.	t-statistic	Coef.	t-statistic
deal_size	-0.072	-1.20	0.012	0.93
deal_frequ	0.003	0.65	-0.001	-1.84*
relate_2sic	0.013	0.31	-0.023	-2.56**
cb	0.050	0.89	-0.034	-3.31***
cd	0.006	1.12	-0.002	-2.15**
geo	0.000	2.75***	-0.000	-1.17
bm	-0.131	-2.00**	-0.013	-0.67

* p<0.10, ** p<0.05, *** p<0.01

AOCFR is highly negatively impacted by deal frequency *(deal_frequ)*, business relatedness *(relate_2sic)*, cross-border M&A *(cb)* and cultural distance *(cd)*. Based on these simple linear regression results *Hypothesis 2, 3b* and *3c* are confirmed, whereas *Hypothesis 3a* is rejected.

The explanatory power of the simple linear regression analysis is limited judging by the mixed results and the different coefficients depending on whether BHAR or

AOCFR is applied. Therefore, the outcome has to be treated with caution and the empirical analysis to be extended in the following sections.

Secondly, for each SCF, the data sample is divided into two subgroups using the respective factor's median as a cut-off point. Then each SCF is tested whether its difference in abnormal returns is statistically significant or not. The following variables are analyzed: acquirer M&A activity (*deal_frequ*), acquirer growth perspective (*bm*), deal size (*deal_size*), cross-border M&A (*cb*), geographic distance (*geo*), cultural distance (*cd*), and business relatedness (*relate_2sic*).

Table 10 to Table 15 report the results of the different subsample investigations. Whereas frequent acquirers show a highly significant operating underperformance of -3.7% (at the 1% significance level) compared to less frequent bidders, there seems to be no noteworthy difference in BHARs. In contrast to operating performance, acquirers with high M&A activity (low integration capacity) show a less negative performance across all investment horizons, but statistically insignificant (Table 10). As a consequence of this outcome, *Hypothesis 2* can be confirmed for acquirers' operating profitability, however not for bidder stock price performance. Limited integration capacity due to parallel integration processes of previous acquisitions encourages post-merger stakeholder conflict, and thus, has a highly negative impact on acquirers' long-term operating cash flow returns.

Table 10: Frequent vs. Infrequent Acquirers in M&A – Univariate Analysis

The sample consists of 1,035 completed US mergers and acquisitions in the period 2005-2014

Performance Measures	**Frequent Acquirers (N=552)**	**Infrequent Acquirers (N=483)**	**Test of Difference (Frequent – Infrequent)**	
	Coef.	Coef.	Coef.	t-statistic
36-month BHAR	-0.065	-0.102	0.037	0.87
24-month BHAR	-0.059	-0.090	0.031	0.94
12-month BHAR	-0.050	-0.080	0.030	1.24
3-year AOCFR	-0.046	-0.009	-0.037	-3.83***

(Cut-off point: Median of pre-deal M&A activity measured by variable *deal_frequ*: 1)
* p<0.10, ** p<0.05, *** p<0.01

Growth or value acquirers (undervalued, i.e. high book-to-market ratio) perform better compared to mature ones (overvalued, i.e. low book-to-market ratio) indicating

that decisiveness of post-merger stakeholder conflict is higher and therefore more detrimental to synergies for acquirers with low internal growth prospects. This holds for both BHAR and AOCFR. Nevertheless, there does not exist a sole significant statistical dependency between acquirer growth perspective and long-term financial and operating performance (Table 11). As a consequence, based on these findings of the univariate subsample test, Hypothesis 4b can neither be rejected nor confirmed.

Table 11: Mature vs. Growth Acquirers in M&A – Univariate Analysis

The sample consists of 1,035 completed US mergers and acquisitions in the period 2005-2014

Performance Measures	**Mature Acquirers (N=533)**	**Growth Acquirers (N=502)**	**Test of Difference (Mature – Growth)**	
	Coef.	Coef.	Coef.	t-statistic
36-month BHAR	-0.094	-0.069	-0.026	-0.62
24-month BHAR	-0.092	-0.054	-0.038	-1.17
12-month BHAR	-0.081	-0.045	-0.036	-1.52
3-year AOCFR	-0.034	-0.028	-0.006	-0.72

(Cut-off point: Median of book-to-market ratio measured by variable *bm*: 0.36)
* p<0.10, ** p<0.05, *** p<0.01

The analysis of large versus small M&A transactions reveal mixed outcomes (as reported in Table 12). The takeover of a relatively large target leads to significantly worse negative BHARs across all investment horizons. For example, in the 36-month investment period, the acquisition of a relatively large target compared to the takeover of a small target yields a significant -13.5% difference in stock price returns. A possible explanation could be the critical investors' expectation of higher complexity to integrate larger firms and increased uncertainty of realizing anticipated merger synergies. However, if applying the operating performance measure, the acquisition of a relatively large target results in a higher cash flow return, yet not statistically significant. Referring to the stakeholder conflict theory and the derived *Hypothesis 1*, which claims that the takeover of a relatively large target bears less risk of conflict during the PMI – associated with higher long-term performance – the results of the subsample analysis reveal exactly the opposite for acquirers' financial profitability. Consequently, in a univariate setting *Hypothesis 1* has to be rejected.

Table 12: Large vs. Small M&A-Transactions – Univariate Analysis

The sample consists of 1,035 completed US-mergers and acquisitions in the period 2005-2014

Performance Measures	Large Target (N=531)	Small Target (N=504)	Test of Difference (Large – Small)	
	Coef.	Coef.	Coef.	t-statistic
36-month BHAR	-0.149	-0.015	-0.135	-3.27***
24-month BHAR	-0.131	-0.014	-0.118	-3.63***
12-month BHAR	-0.101	-0.025	-0.076	-3.21***
3-year AOCFR	-0.024	-0.037	0.014	1.52

(Cut-off point: Median of deal value to market value of acquirer measured by variable *deal_size*: 0.14)
* p<0.10, ** p<0.05, *** p<0.01

Cross-border compared to domestic M&A have a significantly worse impact on acquirers' average three year operating profitability of -3.4%. Interestingly, financial performance is higher in cross-border transactions but insignificant as reported in the following table. A reasonable explanation might be an increased potential of stakeholder conflict due to divergent legal systems, economic laws and policies, making it more difficult to capture future synergy cash flows. Therefore, Hypothesis 3b can be confirmed once the operating performance measure is used.

Table 13: Cross-Border vs. Domestic M&A-Transactions – Univariate Analysis

The sample consists of 1,035 completed US-mergers and acquisitions in the period 2005-2014

Performance Measures	Cross-border M&A (N=165)	Domestic M&A (N=818)	Test of Difference (Cross-border – Domestic)	
	Coef.	Coef.	Coef.	t-statistic
36-month BHAR	-0.040	-0.090	0.050	0.89
24-month BHAR	-0.031	-0.082	0.052	1.19
12-month BHAR	-0.040	-0.069	0.028	0.84
3-year AOCFR	-0.059	-0.025	-0.034	-3.31***

(Cut-off point: Cross-border flag measured by dummy variable *cb*)
* p<0.10, ** p<0.05, *** p<0.01

Finally, this paper tests the isolated influence of geographic distance as a proxy for decisiveness of stakeholder conflict, and cultural distance as an explanatory variable for sociocultural complementarity, on financial and operating performance. The former factor only signals for 36-month BHAR that the acquisition of high compared to low distant targets leads to a significant positive return difference of +8.2%. The

mitigating effect of geographic proximity thus can be partially confirmed for 36-month BHAR (*Hypothesis 4a*). Nevertheless, the result is mixed because, on the one hand, it is not significant for 24 and 12-month BHARs, neither for AOCFR. On the other hand, the coefficient of the return difference is negative for the three-year operating performance (-1.4%) which indicates that from an operating profitability viewpoint, the acquisition of high distant targets results in lower returns (Table 14).

Table 14: Geographic Distance in M&A-Transactions – Univariate Analysis

The sample consists of 1,035 completed US-mergers and acquisitions in the period 2005-2014

Performance Measures	**High Distance (N=518)**	**Low Distance (N=517)**	**Test of Difference (High – Low)**	
	Coef.	Coef.	Coef.	t-statistic
36-month BHAR	-0.041	-0.123	0.082	1.98**
24-month BHAR	-0.066	-0.081	0.015	0.45
12-month BHAR	-0.049	-0.078	0.029	1.22
3-year AOCFR	-0.038	-0.024	-0.014	-1.58

(Cut-off point: Median of geographic distance measured by variable *geo*: 105)
* p<0.10, ** p<0.05, *** p<0.01

The latter determinant split into high cultural distance and low cultural distance shows a significant negative difference in AOCFR of -1.9%, whereas the differences in financial performance are positive and not significant across all event windows (Table 15). Therefore, *Hypothesis 3c* can be confirmed in the case of applying AOCFR.

Table 15: Cultural Distance in M&A-Transactions – Univariate Analysis

The sample consists of 1,035 completed US-mergers and acquisitions in the period 2005-2014

Performance Measures	**High Distance (N=115)**	**Low Distance (N=920)**	**Test of Difference (High – Low)**	
	Coef.	Coef.	Coef.	t-statistic
36-month BHAR	-0.055	-0.085	0.030	0.53
24-month BHAR	-0.017	-0.081	0.064	1.35
12-month BHAR	-0.047	-0.066	0.019	0.51
3-year AOCFR	-0.047	-0.029	-0.019	-1.71*

(Cut-off point: Mean of culture distance measured by variable *cd*: 1.07)
* p<0.10, ** p<0.05, *** p<0.01

The analysis of return differences between related M&A and non-related, i.e. diversified or conglomerate transactions reveals a significant negative relationship between business relatedness and acquirers' abnormal operating cash flow returns. The acquisition of related targets compared to non-related ones results in a three-year AOCFR-difference of -2.3% (not reported here). As a result of this finding, *Hypothesis 3a* is rejected.

Overall, the univariate analyses do not comprehensively shed light upon the underlying research question, whether or not certain stakeholder conflict factors do cause synergy impairments post-merger that impact long-term value creation of acquiring firms. The outcomes of the analyzed subsamples are mixed and do not offer clear interpretation. Possible reasons are the limited explanatory power due to the isolated consideration of each SCF, missing control variables, or miss-specified methodology in measuring long-term bidder performance (financial vs. operating returns). It makes it difficult to correctly make a conclusion on the derived hypotheses.

Therefore, the following Subsection 3.4.3 extends the empirical analysis by applying multivariate regression methodology and controlling for effects which have been proved in M&A literature to explain returns to acquiring firms.

3.4.3 Multivariate Analysis of Acquirers' Long-Term M&A Performance

Based on the basic regression model outlined above, the long-term financial performance and operating profitability of acquiring firms are analyzed in a multivariate setting. The following seven SCFs are tested on its joint impact on both BHARs and AOCFRs: deal size *(deal_size)*, deal frequency *(deal_frequ)*, acquirer growth prospects *(bm)*, cultural distance *(cd)*, cross-border deals *(cb)*, geographic distance *(geo)* and relatedness of businesses *(relate_2sic)*.

In all regression models, the three controls – method of payment *(pay)*, target public status *(priv)*, and acquirer size *(ln_mv_acqu)* – are included. In addition, this paper controls for industry and year effects by adding dummy variables to the regressions. Table 16 reports results from the multivariate regressions (Models 1-3) where the dependent variable is either 36-, 24- or 12-month BHAR (*BHAR_36*,

BHAR_24, and *BHAR_12*). Since the examination of long-term post-merger acquirer performance is of main interest in this study, the conclusions are primarily based on the 36-month BHAR regression results combined with the regression findings on the three-year post-acquisition operating performance (reported in Table 17). The other investment horizons presented here serve as robustness checks.

Table 16: Regression Results (I)

Regression of 36-/ 24-/ 12-month buy-and-hold abnormal returns (BHAR) on stakeholder conflict variables and deal and acquirer controls

Model	**1**	**2**	**3**
Dep. variable	**BHAR_36**	**BHAR_24**	**BHAR_12**
deal_size	0.027	-0.039	-0.061*
	(0.43)	(-0.85)	(-1.95)
deal_frequ	-0.011***	-0.009***	-0.008***
	(-2.38)	(-2.85)	(-3.06)
cd	-0.010	0.003	0.001
	(-1.05)	(0.52)	(0.20)
cb	-0.143*	-0.044	-0.012
	(-1.71)	(-0.63)	(-0.22)
geo	0.000**	0.000	0.000
	(2.48)	(1.12)	(0.52)
bm	-0.030	-0.007	0.054
	(-0.41)	(-0.12)	(1.21)
ln_mv_acqu	0.044***	0.038***	0.032***
	(2.82)	(3.06)	(3.87)
priv	0.089*	0.059	0.011
	(1.73)	(1.52)	(0.42)
pay	0.117**	0.039	0.008
	(2.31)	(1.03)	(0.28)
relate_2sic	0.040	0.004	0.013
	(0.93)	(0.11)	(0.52)
constant	-0.566***	-0.312**	-0.251**
	(-3.07)	(-2.07)	(-2.51)
Industry dummies	yes	yes	yes
Year dummies	no	no	no
N	982	1016	1034
R^2	0.051	0.040	0.047
Adjusted R^2	0.035	0.025	0.032
Overall p-value	0.000	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

The explanatory variables *deal_frequ*, *cb*, and *geo* show a statistically significant impact on both acquiring firms' financial and operating M&A performance. Acquirers' pre-merger M&A activity is negatively correlated to profitability, suggesting that serial acquirers or firms that executed many deals of material size in the recent past have only limited resources available for integration of the present transaction. This pattern is confirmed by previous research, for example in Conn et al. (2004), Kengelbach and Klemmer (2012), or Fuller et al. (2002). As often mistakenly hypothesized, there seems to be no M&A learning effect that exists, thus implicating that transaction quantity does not automatically improve quality in terms of M&A performance.

The regression outcomes further reveal a significant negative impact of the binary variable cross-border M&A which serves as a proxy for economic complementarity (in terms of economic sphere, legal systems, regulations and laws, etc.). It is assumed that the integration period in those deals is characterized by higher potential of stakeholder conflict compared to domestic M&A due to lacking complementarity. For instance, Black et al. (2003) also find a negative association between cross-border M&A and five-year BHARs for US acquirers of -22.9% in the period 1985-1995. Conn et al. (2005) report evidence for UK acquirers from 1984 to 1998. They report negative three-year post-acquisition returns of -13.4% for completed cross-border deals. For public cross-border targets, the returns are even more negative and amount to -32.3%. The authors suggest that cultural differences are primarily responsible for the negative impact on acquirers' long-run returns making integration and acculturation a complex and time-consuming undertaking. However, this paper controls for cultural distance in the underlying analysis but does not find any significant impact neither on long-run financial performance nor on abnormal operating cash flow returns. At least the coefficient is negative, i.e. an increasing gap in culture reduces 36-month returns.

The factor geographic distance has a significant positive value-effect for acquirers. This might be due to less decisiveness of emerging stakeholder conflict caused by the distant physical separation of bidder and target corporate environments and the continuing perception of still being a stand-alone entity. This in turn reduces

ambiguity and anxiety among affected stakeholder groups about their primary interests and claims.

Table 17: Regression Results (II)

Regression of (4) abnormal operating cash flow returns (AOCFR) on stakeholder conflict variables and deal and acquirer controls vs. (5) incl. year dummies and vs. (6) deal size by total assets

Model	**4**	**5**	**6**
Dep. variable	**AOCFR**	**AOCFR**	**AOCFR**
deal_size	0.019	0.017	
	(0.43)	(1.32)	
deal_size_ta			-0.002
			(-0.21)
deal_frequ	-0.001**	-0.001**	-0.002**
	(-2.04)	(-1.98)	(-3.06)
cd	-0.001	-0.000	-0.000
	(-0.51)	(-0.25)	(-0.27)
cb	-0.043***	-0.045***	-0.055***
	(-2.76)	(-2.88)	(-3.00)
geo	0.000*	0.000	0.000*
	(1.72)	(1.55)	(1.70)
bm	-0.028	-0.026	-0.023
	(-1.58)	(-1.42)	(-1.07)
priv	0.009	0.006	0.019
	(0.92)	(0.61)	(1.16)
pay	0.011	0.010	0.002
	(1.12)	(1.01)	(0.13)
relate_2sic	-0.018**	-0.019**	-0.033***
	(-2.03)	(-2.16)	(-3.37)
constant	0.027	0.031	0.034
	(1.16)	(1.08)	(1.27)
Industry dummies	yes	yes	yes
Year dummies	no	yes	no
N	806	806	597
R^2	0.061	0.070	0.079
Adjusted R^2	0.043	0.041	0.055
Overall p-value	0.000	0.000	0.000
t statistics in parentheses			
* p<0.1, ** p<0.05, *** p<0.01			

So far, these findings on the stakeholder conflict factors M&A activity, cross-border flag, and geographic proximity are in line with the respective *Hypotheses 2*, *3b*,

and *4a*. Both financial and operating performance measures signal the hypothesized direction. Therefore, these hypotheses are confirmed.

The three control variables *priv*, *pay*, and *ln_mv_acqu* are statistically significant in the BHAR regressions (insignificant on AOCFR), all of them with a positive coefficient. There exists a lot of evidence in M&A literature claiming that cash-financed deals (e.g., Faccio and Masulis, 2005; King et al., 2004; Loughran and Vijh, 1997; Megginson et al., 2004; Andrade et al., 2001) and the acquisition of private targets (Fuller et al., 2002; Chang, 1998; Conn et al., 2005) yield significant higher long-run returns for bidder firms. Therefore the inclusion as control variables in regression analyses on performance is standard to the literature.

Moeller et al. (2004) analyze announcement returns for acquirers and find a robust negative size-effect, i.e. large acquirers do earn lower stock price returns compared to small ones. They conclude that larger acquirers destroy shareholder value due to managerial entrenchment as hypothesized by Shleifer and Vishny (1989). Yet, the used acquirer size control in this paper shows a highly positive effect on holding returns. Due to the fact that the focus is on strategic M&A and true synergy rationales by acquirer management are assumed, possible explanations for the positive size-effect could be larger organizational resources, more investment experience, and also better corporate governance mechanisms of large compared to small firms. For example, Alexandridis et al. (2011) do also find a positive and significant association between acquirer size and abnormal returns in their analysis of completed US mergers during 1990-2007.

Consistent with *Hypothesis 1* and *Hypothesis 3a*, although not significant, the SCF deal size (*deal_size*) and business relatedness (*relate_2sic*) contribute positively to acquirers' financial performance. However in the AOCFR regressions the variable business relatedness is highly negative (on a 5%-significance level), indicating that diversified instead of focused M&A improve operating performance of bidder firms. This is the only contradictory finding between the BHAR and AOCFR regressions. In addition, the negative correlation to AOCFR also differs from the results of Megginson et al. (2004). They report corporate focus as a strong value-influencing factor in M&A long-term performance. Yet, Agrawal et al. (1992) find a less negative

acquirer performance for non-related mergers compared to focused transactions. Nevertheless, all other variables in the regression models show the same signs.

Cultural distance (*cd*) and acquirer growth prospects (*bm*) are negatively correlated and statistically insignificant. *Hypotheses 3c* and *4b* are therefore rejected. It seems reasonable that cultural differences might cause problems during the integration period, hence impacting value creation in mergers. Yet, limited research outcome in context of M&A exists to date. One study by Barkema and Vermeulen (1997) focuses on international joint ventures. The authors find that certain culture differences have a strong negative impact on joint ventures. However, M&A research on acquirer growth either measured by book-to-market ratio or Tobin's Q is extensive. Rau and Vermaelen (1998) document a significant negative relationship between US acquirer performance in mergers and its low book-to-market ratio (so-called "glamour" acquirers which are overvalued and low-growth firms) in the period 1980-1991. They argue that this is due to the market's overextrapolation of bidders' past performance. Contrary to this finding Megginson et al. (2004) and Lang et al. (1989) report a negative correlation between acquirer growth and post-acquisition performance which is – apart from the insignificance – in line with the findings here.

Several robustness checks are applied in this paper to verify the statistical inference of the reported multivariate results. Firstly, to control for outliers, the BHARs and AOCFRs are winsorized at the 2.5% and 97.5% level (Model 8 in Table 18). Secondly, a matching firm approach is used instead of a reference portfolio procedure (Model 9 in Table 18) to control for an imperfect expected return proxy (bad model bias). There, each event firm is matched to a single reference firm according to its size and book-to-market ratio. Thirdly, to control for cross-sectional dependencies in the tested data sample, multiple acquisitions by the same firm within any 36-month period are excluded, i.e. after the first transaction, additional M&A until after the 36-month event window are eliminated from the initial data sample (Tables 2 and 3 in 3.6 Appendix A.1). The initial regression results remain stable and robust.

Table 18: Regression Results (III)

Robustness check: regression of (7) 36-month BHAR on stakeholder conflict variables and deal and acquirer controls vs. (8) 2.5%-winsorized BHARs and vs. (9) matching firm approach

Model	**7**	**8**	**9**
Dep. variable	**BHAR_36**	**wBHAR_36**	**mBHAR_36**
deal_size	0.027	0.025	0.052
	(0.43)	(0.44)	(0.86)
deal_frequ	-0.011***	-0.010**	-0.020***
	(-2.38)	(-2.44)	(-3.00)
cd	-0.010	-0.006	-0.008
	(-1.05)	(-0.83)	(-0.84)
cb	-0.143*	-0.132*	-0.139
	(-1.71)	(-1.82)	(-1.33)
geo	0.000**	0.000***	0.000***
	(2.48)	(2.92)	(3.05)
bm	-0.030	-0.030	-0.047
	(-0.41)	(-0.42)	(-0.47)
ln_mv_acqu	0.044***	0.045***	0.025
	(2.82)	(3.25)	(1.31)
priv	0.089*	0.077*	0.097
	(1.73)	(1.75)	(1.58)
pay	0.117**	0.106**	0.120**
	(2.31)	(2.40)	(2.02)
relate_2sic	0.040	0.040	0.007
	(0.93)	(1.06)	(0.13)
constant	-0.566***	-0.547***	-0.298
	(-3.07)	(-3.24)	(-1.32)
Industry dummies	yes	yes	yes
Year dummies	no	no	no
N	982	982	982
R^2	0.051	0.054	0.046
Adjusted R^2	0.035	0.039	0.030
Overall p-value	0.000	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

In addition, due to the importance of the parameter deal size – according to the stakeholder conflict theory – different size measures are incorporated into the regression analyses (see Table 19 for BHAR and Table 17 for AOCFR, models 4 and 6). On the one hand, deal size is measured by the firms' sales ratio (Model 11), on the other hand, deal size is defined as the ratio of total assets of target and bidder (Model 12). Apart from all other determinants, the sign of the variable deal size changes,

probably indicating miss-specification of the applied proxy. In a last robustness check, the analysis controls for year-fixed effects by including year dummies while regressing 36-month BHAR (see Table 1 in 3.6 Appendix A.1). Again, the initial regression results of Model 1 remain robust.

Table 19: Regression Results (IV)

Robustness check: regression of (10) 36-month BHAR on stakeholder conflict variables and deal and acquirer controls vs. deal size by sales (11) and deal size by total assets (12)

Model	**10**	**11**	**12**
Dep. variable	**BHAR_36**	**BHAR_36**	**BHAR_36**
deal_size	0.027		
	(0.43)		
deal_size_sales		-0.001	
		(-0.03)	
deal_size_ta			-0.003
			(-0.10)
deal_frequ	-0.011***	-0.012***	-0.012**
	(-2.38)	(-2.59)	(-2.29)
cd	-0.010	-0.006	-0.004
	(-1.05)	(-0.56)	(-0.38)
cb	-0.143*	-0.194**	-0.209**
	(-1.71)	(-1.82)	(-2.45)
geo	0.000**	0.000**	0.000**
	(2.48)	(2.17)	(2.18)
bm	-0.030	-0.062	-0.072
	(-0.41)	(-0.82)	(-0.96)
ln_mv_acqu	0.044***	0.031*	0.031*
	(2.82)	(1.88)	(1.89)
priv	0.089*	0.064	0.067
	(1.73)	(0.85)	(0.78)
pay	0.117**	0.120**	0.115**
	(2.31)	(2.18)	(2.04)
relate_2sic	0.040	0.045	0.029
	(0.93)	(0.95)	(0.60)
constant	-0.566***	-0.539**	-0.531**
	(-3.07)	(-2.48)	(-2.23)
Industry dummies	yes	yes	yes
Year dummies	no	no	no
N	982	738	725
R^2	0.051	0.044	0.049
Adjusted R^2	0.035	0.023	0.028
Overall p-value	0.000	0.002	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Finally, the results of the empirical analyses pointed out in Sections 3.4.2 and 3.4.3 are summarized in the following Table 20.

Table 20: Summary Hypotheses Confirmation

The table reports the rejection (=no) or confirmation (=yes) of the developed research hypotheses tested by seven stakeholder conflict factors (SCF)

Perform. Measure		**BHAR**			**AOCFR**		
Hypo-thesis	SCF	Simple regression	Subgroup analysis	Multivariate regression	Simple regression	Subgroup analysis	Multivariate regression
1	*deal_size*	No	No	No	No	No	No
2	*deal_frequ*	No	No	**Yes*****	Yes*	Yes***	**Yes****
3a	*relate_2sic*	No	No	No	No	No	No
3b	*cb*	No	No	**Yes***	Yes***	Yes***	**Yes*****
3c	*cd*	No	No	No	Yes**	Yes*	No
4a	*geo*	Yes***	Yes**	**Yes****	No	No	**Yes***
4b	*bm*	No	No	No	No	No	No

* p<0.1, ** p<0.05, *** p<0.01

By comparing the findings of the univariate tests with those of the multivariate regressions, one can see that results of the latter methodology are consistent across the applied long-term abnormal return measures: 36-month BHAR and three-year AOCFR. In addition, the multivariate regression results are robust upon the application of different robustness tests, such as cross-sectional dependency, different benchmarks in estimating BHARs, year-fixed effects, or sample outliers. For both BHAR and AOCFR, the *Hypotheses 2, 3b*, and *4a* can be confirmed. The result of the multivariate regression of the SCF geographic distance (*geo*) on BHAR is also confirmed by simple linear regression and subgroup analysis. In case of AOCFR, the significant effects of the SCFs acquirer integration capacity (*deal_frequ*) and economic complementarity (*cb*) on operating performance are also found within the simple linear regressions and subgroup analyses.

3.5 Conclusion

This paper provides a comprehensive analysis of long-term M&A performance of US acquirers. In a first step, it re-examines bidders' underperformance and confirms the existing evidence that US acquirers still fail to create value in corporate mergers and acquisitions. Both financial and operating performance measures (buy-and-hold and abnormal operating cash flow returns) are applied and significant negative outcomes are found compared to a size and book-to-market reference portfolio of nonevent US firms.

Based on the theoretical framework of post-merger stakeholder conflict, several hypotheses for selected stakeholder conflict factors are derived to explain how and to what extent they influence long-term acquirer performance during the post-merger integration phase. This paper runs univariate and multivariate empirical tests on these SCFs and reveals statistically significant results for acquirers' integration capacity, complementarity of economic environment, and decisiveness of stakeholder conflict. Therefore, this paper concludes that acquirers that have executed several M&A transactions in the recent past have only limited integration capacity. This in turn causes stakeholder conflict during the post-merger integration period because their interests are not aligned through a well-managed and productive PMI. In addition, stakeholder claims are violated when merging firms' economic sphere, legal systems, regulations and laws differ, which is primarily the case in cross-country compared to domestic M&A. Thus, missing complementary resources within the organizational and sociocultural dimensions seem to be secondary in post-merger processes. At least, no significant impact of the applied predictor variables relatedness and cultural distance on long-term acquirer returns was found.

Furthermore, geographic proximity has a mitigating effect on stakeholder conflicts within the merged entity, i.e. the greater the distance between acquirer and target, the less decisive emerging stakeholder conflicts are. The direct confrontation between primary stakeholder groups of the merging firms therefore outweighs acquirers' growth perspectives.

Overall, one can affirm the following central conclusion: If an acquirer executes a

cross-border M&A transaction in a nearby country and then fails to put enough capacity into post-merger integration, stakeholder conflict with subsequent synergy impairments will arise, and by implication lead to a value destruction on a massive scale.

There seems to be a slight positive relationship between increasing deal size or target size on acquirer performance. Yet, a significant negative impact of smaller targets on long-run acquirer returns is not found. As a consequence, the existence of the paradox incentive for weaker endowed stakeholders to fight for their interests by opposing a merger cannot be confirmed to its full extent. Nevertheless, one can conclude that it appears that the acquisition of a larger target is associated with larger synergy potential outweighing an investor's expectation of higher integration complexity and uncertainty about synergy realization.

Further steps would include empirical research on the importance of a stakeholder-oriented PMI to test the mitigating mechanism of integration in M&A as described in the post-merger stakeholder conflict hypothesis. This would amplify the orientation towards all primary stakeholders of a firm while conducting a merger or acquisition, ultimately indicating that the mere focus on shareholder interests and shareholder value maximization is already outdated and does not create value for acquiring firms.

3.6 Appendix

A1: Robustness tests

Table 1

Robustness check: regression of (13) 36-month BHAR on stakeholder conflict variables and deal and acquirer controls vs. (14) regression incl. year dummies

Model	**13**	**14**
Dep. variable	**BHAR_36**	**BHAR_36**
deal_size	0.027	0.008
	(0.43)	(0.12)
deal_frequ	-0.011***	-0.010**
	(-2.38)	(-2.14)
cd	-0.010	-0.009
	(-1.05)	(-0.94)
cb	-0.143*	-0.148*
	(-1.71)	(-1.77)
geo	0.000**	0.000**
	(2.48)	(2.21)
bm	-0.030	-0.007
	(-0.41)	(-0.09)
ln_mv_acqu	0.044***	0.045***
	(2.82)	(2.90)
priv	0.089*	0.069
	(1.73)	(1.36)
pay	0.117**	0.101**
	(2.31)	(2.05)
relate_2sic	0.040	0.040
	(0.93)	(0.97)
constant	-0.566***	-0.623***
	(-3.07)	(-2.76)
Industry dummies	yes	yes
Year dummies	no	yes
N	982	982
R^2	0.051	0.092
Adjusted R^2	0.035	0.068
Overall p-value	0.000	0.000
t statistics in parentheses		
* p<0.1, ** p<0.05, *** p<0.01		

Table 2

Robustness check: cross-sectional dependency. Regression of 36-/ 24-/ 12-month buy-and-hold abnormal returns (BHAR) on stakeholder conflict variables and deal and acquirer controls

Model	**15**	**16**	**17**
Dep. variable	**BHAR_36**	**BHAR_24**	**BHAR_12**
deal_size	0.034	-0.033	-0.056*
	(0.54)	(-0.70)	(-1.73)
deal_frequ	-0.015**	-0.010*	-0.009*
	(-2.35)	(-1.75)	(-1.85)
cd	-0.016	0.003	0.001
	(-1.60)	(0.43)	(0.10)
cb	-0.109	-0.046	-0.013
	(-1.14)	(-0.56)	(-0.20)
geo	0.000**	0.000	0.000
	(2.15)	(1.08)	(0.69)
bm	-0.080	-0.023	0.034
	(-1.06)	(-0.36)	(0.70)
ln_mv_acqu	0.055***	0.047***	0.034***
	(3.08)	(3.27)	(3.91)
priv	0.109*	0.074*	0.008
	(1.87)	(1.65)	(0.27)
pay	0.093	0.031	-0.003
	(1.63)	(0.72)	(-0.09)
relate_2sic	0.027	-0.005	0.019
	(0.55)	(-0.13)	(0.66)
constant	-0.723***	-0.373**	-0.266**
	(-3.16)	(-2.18)	(-2.34)
Industry dummies	yes	yes	yes
Year dummies	no	no	no
N	803	836	853
R^2	0.047	0.042	0.050
Adjusted R^2	0.027	0.023	0.031
Overall p-value	0.002	0.003	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 3

Robustness check: cross-sectional dependency. Regression of (18) abnormal operating cash flow returns (AOCFR) on stakeholder conflict variables and deal and acquirer controls vs. (19) incl. year dummies and vs. (20) deal size by total assets

Model	**18**	**19**	**20**
Dep. variable	**AOCFR**	**AOCFR**	**AOCFR**
deal_size	0.015	0.013	
	(1.11)	(0.94)	
deal_size_ta			-0.005
			(-0.56)
deal_frequ	-0.002	-0.002	-0.003**
	(-1.53)	(-1.40)	(-1.51)
cd	-0.000	0.000	-0.000
	(-0.16)	(0.07)	(-0.19)
cb	-0.055***	-0.055***	-0.066***
	(-3.15)	(-3.19)	(-3.26)
geo	0.000**	0.000*	0.000*
	(2.06)	(1.85)	(1.91)
bm	-0.020	-0.015	-0.018
	(-1.07)	(-0.74)	(-0.79)
priv	0.009	0.008	0.012
	(0.84)	(0.75)	(0.67)
pay	0.011	0.011	0.002
	(0.97)	(0.97)	(0.12)
relate_2sic	-0.015	-0.017*	-0.035***
	(-2.03)	(-1.67)	(-2.98)
constant	0.080	0.052	0.038
	(1.58)	(1.00)	(1.21)
Industry dummies	yes	yes	yes
Year dummies	no	yes	no
N	648	648	477
R^2	0.064	0.074	0.086
Adjusted R^2	0.041	0.038	0.056
Overall p-value	0.000	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

A2: Variable definitions

Table 4

Variable definition

Variable	Description
I M&A Financial Performance Variables	
BHAR_36	36-month buy-and-hold abnormal return (BHAR) derived with reference portfolio approach
BHAR_24	24-month BHAR derived with reference portfolio approach
BHAR_12	12-month BHAR derived with reference portfolio approach
mBHAR_36	36-month BHAR derived with matching control firm approach
mBHAR_24	24-month BHAR derived with matching control firm approach
mBHAR_12	12-month BHAR derived with matching control firm approach
wBHAR_36	36-month BHAR derived with reference portfolio approach – winsorized 2.5%/ 97.5% levels
wBHAR_24	24-month BHAR derived with reference portfolio approach – winsorized 2.5%/ 97.5% levels
wBHAR_12	12-month BHAR derived with reference portfolio approach – winsorized 2.5%/ 97.5% levels
wmBHAR_36	36-month BHAR derived with matching control firm approach – winsorized 2.5%/ 97.5% levels
wmBHAR_24	24-month BHAR derived with matching control firm approach – winsorized 2.5%/ 97.5% levels
wmBHAR_12	12-month BHAR derived with matching control firm approach – winsorized 2.5%/ 97.5% levels
II M&A Operating Performance Variables	
AOCFR	Three year average abnormal operating cash flow return (AOCFR) compared to pre-merger
wAOCFR	Three year average AOCFR compared to pre-merger – winsorized 2.5%/ 97.5% levels
III Stakeholder Conflict Variables	
deal_size	Relative deal size defined as ratio between deal value and acquirer's market value at effective year
deal_size_sales	Relative deal size defined as ratio between target's LTM sales and acquirer's LTM sales at effective year
deal_size_ta	Relative deal size defined as ratio between target's total assets and acquirer's total assets at effective year
deal_frequ	Acquirer's deal frequency: defined as number of transactions with minimum deal value of 100 million USD - executed within the previous 5 years
cd	Culture distance between acquirer's and target's nation: measured by Kogut and Singh formula and with 5 culture distance dimensions of Hofstede
cb	Binary variable that equals 1 if the transaction takes place cross-border, otherwise 0 if US domestic
geo	Geographic distance in miles between acquirer's headquarter and target's headquarter
IV Firm and Deal Characteristic Controls	
bm	Acquirer firm's book-to-market ratio (high ratio = undervalued acquirer, low ratio = overvalued acquirer)
ln_mv_acqu	Natural logarithm of the acquirer's market value
priv	Binary variable that equals 1 if target firm is a private firm, otherwise 0 if it is publicly listed

pay	Binary variable that equals 1 if the acquirer pays with cash, otherwise 0
relate_2sic	Binary variable that equals 1 if acquirer's and target's first 2-digit SIC codes are identic, otherwise 0
V Industry and Year Controls	
sic_b	Binary variable that equals 1, if acquirer operates in the SIC division B: mining, otherwise 0
sic_c	Binary variable that equals 1, if acquirer operates in the SIC division C: construction, otherwise 0
sic_d	Binary variable that equals 1, if acquirer operates in the SIC division D: manufacturing, otherwise 0
sic_e	Binary variable that equals 1, if acquirer operates in the SIC division E: transportation, communications, electric, gas, and sanitary services, otherwise 0
sic_f	Binary variable that equals 1, if acquirer operates in the SIC division F: wholesale trade, otherwise 0
sic_g	Binary variable that equals 1, if acquirer operates in the SIC division G: retail trade, otherwise 0
sic_i	Binary variable that equals 1, if acquirer operates in the SIC division I: services, otherwise 0
y_2005,…, y_2014	Binary variable that equals 1, if M&A effective date in 2005, 2006, …, 2014, otherwise 0

4

Post-Merger Stakeholder Conflict and the Impact of Integration Quality on Acquirer M&A Profitability

Abstract

This paper empirically examines the post-merger stakeholder conflict hypothesis in M&A by applying a sample of 425 effective US transactions from 2005-2014. The theory claims that potential violations of primary stakeholder interests cause non-cooperative stakeholder actions and an impairment of merger synergy. A stakeholder-oriented post-merger integration (PMI) may serve as a value enhancing mechanism to mitigate the negative impact on long-term merger outcomes. The theory is tested by showing that a high-quality PMI with focus on the four dimensions of management attention, stakeholder information, integration support, and risk awareness (all measured by textual analysis of annual reports and publicly available information), on average results in a 22% higher acquirer stock return and an increase in operating performance of 4% over a three-year period compared to a portfolio of reference firms matched by size and book-to-market ratio. This paper also finds, as a result of high-quality integration, that improved employee productivity and customer demand positively influence long-run M&A performance. Finally, it is shown that acquirer synergy expectation, pre-deal M&A activity, growth prospects, as well as deal size drive PMI quality.

Keywords: Mergers, acquisitions, post-merger integration, PMI quality, operating performance, buy-and-hold abnormal returns, stakeholder conflict, synergy impairment

4.1 Introduction

Mergers and acquisitions (M&A) play a predominant and popular role among corporate managers seeking external growth opportunities. Apart from a strategic and organizational fit between two merging companies, the acquisition process and here, in particular, the post-merger integration (PMI) are important to make a M&A transaction successful. A lack of appropriate integration has been the downfall of many mergers in the past. One third of all mergers simply fail due to poor PMI (Shrivastava, 1986). The Daimler-Chrysler merger in 1998 or the combination of AOL and Time Warner in 2000 are spectacular examples of value destruction on a massive scale, mainly caused by integration incompetence.

Of course, it is not only the lack of integration which causes a merger to fail. All parts in the M&A process are important for value creation. Haspeslagh and Jemison (1991) claim that the key to successful M&A is the understanding and management of the entire acquisition process with a strict distinction of pre-acquisition decision-making and post-acquisition integration processes. The conception and transaction of a merger do not bring the expected benefits and synergies. It is clearly the post-merger integration activities and measures of the management that determine the achievement of the perceived M&A objectives and hence, determine success and failure. Easily said, it is the integration and how it is managed which matters in M&A.

According to Risberg's (2003) opinion, "If one wants to understand what happens to the organization during the post-acquisition process, one needs to understand how the individuals experience the process", a major point of criticism in previous finance research on M&A is seen in the mere orientation towards company shareholders. There are still other important stakeholders like employees, customers, suppliers, debt-holders, and management itself, all who also have tremendous impact on a firm's future cash flows.

A merger of material size can have a major impact on the organization and its renewal. It seems to be grossly negligent to believe that this transformative development does not fail to leave its mark on primary stakeholders. A lot of sources of conflict can emerge, making it important to counteract these through an

appropriate and well-managed PMI process. Strategic management literature has recently started to counter the prioritization of shareholder interests through the application of stakeholder theory, arguing that benefits of managing for stakeholders are stronger commitment, higher firm legitimacy, more value creation, and more trust in firm-stakeholder relationships (Freeman, 2010; Parmar et al., 2010).

Therefore, this paper empirically tests the post-merger stakeholder conflict hypothesis with a focus on the mitigating effect of a stakeholder-oriented PMI on long-term acquirer M&A performance. The analysis aims to answer the question all too frequently raised by theorists and practitioners of whether or not the quality of PMI improves post-acquisition profitability. In the present article, quality of PMI is understood as the degree of stakeholder orientation during the integration (managerial and sociocultural aspects) and not as the evaluation of functional, procedural, legal, or physical integration tasks. Thus, this analysis arguably covers one of the most difficult and least examined integration challenges.

To measure the quality of PMI, i.e. the stakeholder orientation in PMI, four indexes are first constructed within this paper with a focus on the following dimensions: stakeholder information, integration support, risk awareness, and management attention. Secondly, data is hand-collected via textual analysis from annual reports, Lexis Nexis database, and S&P daily news by focusing on the mentioned stakeholder integration aspects.

The hypothesis to be tested claims that primary stakeholder interests are negatively impacted post-merger, which in turn causes value-deteriorating conflicts and the impairment of synergies. Therefore, PMI measures that directly focus on the alignment of stakeholder interests and a firm's relationship to its most important stakeholder groups can either avoid or resolve emerging conflict and stop costly synergy destruction. Moreover, the hypothesis emphasizes that the quality of integration matters and not the sole provision or increase of integration capacity (in terms of quantity), true to the motto "not just doing the right things but also doing things right".

The empirical study does also incorporate the variables employee productivity and customer demand to further investigate the impact of stakeholder commitment

(as indirect PMI quality measure) on M&A performance. In addition, determinants that might drive PMI quality are analyzed. Of major interest are the variables deal size, acquirer M&A activity, organizational, economical and sociocultural complementarity between merging firms, target public status, and acquirer growth perspective and synergy expectation.

Empirical research to date mainly focuses on the general investigation of M&A performance and the impact of deal characteristics like method of payment, hostile vs. friendly takeovers, target public status, et cetera. The evidence on acquiring firms' long-term financial performance seems to be clear. Acquirers achieve significant negative abnormal returns in mergers and acquisitions (Agrawal et al., 1992; Loughran and Vijh, 1997; Rau and Vermaelen, 1998; Megginson et al., 2004; Cui, 2018). Studies that focus on short-term announcement returns for both target and acquirer firms find significant positive returns for the target shareholders (Dodd and Ruback, 1977; Bradley et al., 1983; Servaes, 1996; Andrade et al., 2001), but zero or negative returns for bidder shareholders (Firth, 1980; Draper and Paudyal, 2006).

The study of Kengelbach and Klemmer (2012) is one of only a few that tries to analyze post-merger problems in association with M&A performance, though with limited validity. The authors investigate a global M&A sample of 20,975 transactions from 1989 to 2010. Based on the indigestion hypothesis[10] (Conn et al., 2004), they hypothesize a positive relationship between the time since the last completed merger and the short-term abnormal returns of the present transaction. They argue that a shorter time span between two consecutive M&A transactions leads to PMI problems due to shorter integration periods. They measure integration time and regress it on short-term abnormal return metrics but find no significant impact. The authors therefore further investigate the existence of a negative interaction effect of deal size and integration time on short-run stock price performance. Finally, significant

[10] The indigestion hypothesis claims that a high M&A activity causes post-merger integration problems because the acquiring firm cannot manage several integration processes simultaneously. On the one hand, the acquirer is not able to use learning effects and transfer them to following M&A transactions. On the other hand, too many acquisitions within a short time span can lead to a loss of control and to organizational chaos.

negative abnormal returns that result for the acquirer support the existence of the indigestion hypothesis. Yet, the analysis design and outcome are limited to derive guidance for successful post-merger integration. On the one hand, the sole consideration of integration time does not comprehensively cover post-acquisition problems. On the other hand, the analysis limits its focus to short-term shareholder returns, assuming that the market is efficient, and acknowledges negative post-acquisition developments to its full extent.

In contrast, the analysis of Bettinazzi and Zollo (2017) investigates stakeholder orientation and its impact on acquisition performance. They analyze 1,884 US acquisitions in the period 2002-2010 and find a positive association between stakeholder focus and acquisition outcomes. In particular, there appears to be a positive moderation effect of business relatedness and degree of integration on financial profitability. Yet, the authors point out the advantages and disadvantages of stakeholder orientation during the entire M&A process, but their empirical study is also limited to parameters that do not comprehensively incorporate post-merger stakeholder problems. As a consequence, the authors prompt the investigation of the value-impact of PMI in conjunction with the acquirer's ability to integrate primary stakeholder interests, for instance, with regard to integration planning and implementation. This is exactly the motivation of the underlying empirical study in this paper. It aims to provide evidence for the positive impact of high-quality PMI (stakeholder-oriented PMI measures) on long-term acquirer financial and operating performance.

In summary, this article contributes to the existing literature in several ways. Firstly, it empirically tests the post-merger stakeholder conflict hypothesis and the mitigating factor of high-quality PMI measures. Secondly, this paper proves that stakeholder commitment is important for post-acquisition value creation. Thirdly, variables are determined that significantly impact PMI quality.

The rest of the paper is organized as follows. Section 4.2 presents the data, the PMI quality index construction, and the methodology applied. Section 4.3 documents descriptive and empirical results of the research analysis. Section 4.4 concludes the article.

4.2 Data Sample, PMI Index Construction and Methodology

4.2.1 Data and Sources

To make the hand data collection tasks manageable the number of M&A transactions analyzed in this paper is limited to 425 M&A transactions executed by US publicly listed acquirers (NYSE, AMEX, NASDAQ) from 2005-2014. Deal data is collected from the Thomson Reuters SDC Platinum M&A database. The sample is limited to strategic and synergistic M&A, i.e. to mergers defined as a combination of business that takes place or the takeover of one hundred percent of the stock of a public or private target, and to acquisitions of majority interest (acquirer has a stake of less than fifty percent before the acquisition and seeks to acquire fifty percent or more, but less than one hundred percent of the target firm's equity). The sampling procedure is conducted according to the following criteria:

1. Neither the bidder nor the target operate in the Finance, Insurance, or Real Estate industry (SIC Codes 60-67).[11]
2. The deal value is equal to or greater than one hundred million US dollars.[12]
3. Monthly acquirer price and return data is available in the Thomson Reuters DataStream database for the period of 36 months after deal completion.
4. Accounting data is available in the Thomson Reuters DataStream database from three years prior the merger until three years following the effective date of the transaction.
5. Annual reports or 10-K SEC filings are available for the effective year and the following three years.

Table 21 presents summary statistics of the M&A sample on an annual basis. Most deals were closed in 2007 with 62 transactions. The year before, 2006 shows the

[11] Firms that belong to these industries are subject to special accounting and regulatory requirements, making them difficult to compare with other companies.

[12] This size constraint is set for the reason that the analysis focuses on M&A of material size. In addition, it reduces the probability of confounding events in case of multiple acquirers that complete several small M&A transactions within the studied event window of 12 to 36 months.

highest aggregate deal value (260 billion USD), whereas in 2009 the highest average USD value was paid (6.13 billion USD). The mean sample deal value is 3.05 billion USD. 51 mergers (12%) take place cross-border (between an entity in the US and one in a foreign country), and 218 deals are purely financed with cash (51%). The majority of 73% are public transactions, i.e. M&A where both acquirer and target are stock-exchange-listed companies (309 M&A).

Table 21: Summary Statistics by Year

The table reports the number of M&A deals, the aggregated and average deal values in million USD, and further deal characteristics on an annual basis from 2005-2014

Year	Total Nr. of M&A	Total Value	Avg. Value	Domestic M&A	Cross-border M&A	Cash Deals	Equity Deals	Private Targets	Public Targets
2005	51	184,697	3,622	46	5	21	30	12	39
2006	49	260,187	5,310	44	5	19	30	9	40
2007	62	139,802	2,255	56	6	35	27	9	53
2008	16	92,310	5,769	15	1	6	10	0	16
2009	23	140,990	6,130	21	2	9	14	6	17
2010	41	117,056	2,855	40	1	18	23	8	33
2011	47	92,097	1,960	39	8	27	20	21	26
2012	43	147,252	3,424	38	5	22	21	14	29
2013	50	57,428	1,149	41	9	33	17	21	29
2014	43	63,664	1,481	34	9	28	15	16	27
Total	425	1,295,483	3,048	374	51	218	207	116	309

4.2.2 Variable Definition

Deal and acquirer controls

On the one hand, the empirical analysis controls for the following deal characteristics: method of payment, target public status, deal size, cross-border transaction, cultural and geographic distance between acquiring firm and target, as well as business relatedness. If the acquirer pays one hundred percent in cash, the binary variable *pay* equals 1, otherwise, if it finances the deal with stock or a mixture of stock and cash, the variable equals 0. The variable *priv* takes a 1 if the target is private, otherwise, if it is publicly traded, it equals 0. Information for both method of payment and target public status are available in the SDC database. Deal size (*deal_size*) equals deal value (excl. net debt of target) divided by acquirer market value (information available in Thomson Reuters DataStream). Whether a transaction is domestic or cross-border is

defined by the binary variable *cb* which equals 1 in case of cross-border M&A, otherwise 0. A further variable applied in the empirical study is cultural distance (*cd*). It is determined according to the formula developed by Kogut and Singh (1988) as the sum of the deviations of each country from the US along each of the four cultural distance dimensions defined by Hofstede (1980, 1985): power distance, individualism, masculinity, and uncertainty avoidance.[13] Moreover, geographic distance (*geo*) in miles between acquirer and target is calculated for each transaction by firstly, collecting latitude and longitude coordinates of the locations (as reported in SDC), and secondly, using the great circle distance formula (Ragozzino, 2009). Finally, the binary variable *relate_2sic* refers to the 2-digit SIC code overlap of primary industry between bidder and target to measure the relatedness of the businesses. The variable equals 1, if the first two digits are identical (focused or horizontal M&A), otherwise it equals 0 (diversified or conglomerate M&A).

On the other hand, the variables acquirer size, acquirer pre-deal M&A activity, acquirer growth perspective and acquirer synergy expectation are used as firm controls. The variable acquirer size (*ln_mv_acqu*) is determined as the natural logarithm of the acquirer's market value three months prior the effective month of the M&A transaction. Market values are gathered from Thomson Reuters DataStream. An acquirer's pre-merger M&A activity is measured by the variable deal frequency (*deal_frequ*) which is defined as the number of M&A transactions, with a minimum deal value of one hundred million USD, executed within the previous five years of the considered acquisition. The deal value constraint is adopted to exclude very small deals that are expected to have no material effect on acquirer integration capacity. For each transaction, acquirers' pre-deal history is documented in SDC. An acquirer's synergy expectation (*goodw_to_dv*) is defined as the ratio between reported transaction goodwill according to IFRS and the deal value. Goodwill equals the residual value which is not allocated to any tangible or intangible asset within the

[13] Hofstede (1980) collects survey data on work-related values from about 120,000 IBM employees in 40 different countries. He identifies these four statistically independent cultural distance dimensions that explain the inter-country variation in his survey. For a detailed description of each dimension refer to Hofstede's analyses (Hofstede 1980, 1985).

purchase price allocation process. Therefore, it is argued that goodwill reflects the management's synergy expectation as present value of the future synergy cash flows of the M&A transaction. The transaction goodwill is collected from the annual reports/10-K SEC filings in the year of deal completion. Finally, the book-to-market ratio of the acquiring firm (*bm*) is calculated as the ratio of its book value and its market capitalization as of December of the prior year of the effective year. The ratio gives an indication about acquirer growth prospects. A low ratio implies an overvalued bidder with low future growth potential (so-called "glamour acquirer"), whereas a high book-to-market ratio identifies an undervalued acquirer with high future growth prospects (so-called "value acquirer"). As further controls, the empirical investigation incorporates industry dummies according to the Standard Industrial Classification Code (SIC) of the acquiring firm (*sic_b, sic_c, sic_xy, etc.*).

Stakeholder commitment variables

This paper further studies the indirect impact of PMI quality on long-term M&A performance through incorporation of stakeholder commitment variables. On the basis of defined proxies, these variables evaluate how the commitment of a specific stakeholder group has changed post-merger compared to pre-merger, thus giving an indirect assessment of PMI quality. This paper claims that if post-merger important interests of a stakeholder group are violated and are not aligned through high-quality PMI measures, the respective commitment to the firm of this specific stakeholder will decrease. Vice versa, the commitment to the firm will be stable or even improve if acquirer management implements a stakeholder-oriented PMI.

Here, the focus lies on two primary stakeholders of a firm, the *customer* and the *employee*. The changes in sales growth (demand) and sales per employee (productivity) post-merger to pre-merger are used as proxies for customer and employee commitment, respectively. The former indicator equals the ratio of the combined firm's post-merger three-year average growth in net sales (excluding the year of deal completion) minus the acquirer net sales growth one year prior to the effective year of the M&A transaction. Sales growth equals net sales at the end of the financial year divided by net sales at the beginning of the financial year. The latter

variable is calculated by an acquirer's post-merger average employee productivity (sales per employee, which is net sales divided by the number of employees) in the following three years after the event year minus the acquirer employee productivity one year prior the merger completion.

PMI quality factors

This paper defines ten PMI quality variables to measure the direct impact of PMI quality on long-term acquirer performance. They are allocated to four PMI sub-indexes. PMI Sub-index 1 "management attention" comprises the binary variables *pmi_mgmt* and *pmi_conf* to determine management focus and confidence, respectively. PMI Sub-index 2 "stakeholder information" consists of the determinants *pmi_plan*, *pmi_object* and *pmi_transp*. All of them take either a 1 if applicable, otherwise 0. PMI Sub-index 3 "integration support and governance" is composed of the 0/1-variables *pmi_consult*, *pmi_incent* and *pmi_gov*, whereas Sub-index 4 "risk awareness" comprises *pmi_risk* and *pmi_stakeh*. The sub-indexes and its construction as well as its respective PMI quality variables are described in the following Section 4.2.3.

4.2.3 PMI Quality Index Construction and Measurement

To empirically prove that PMI has a significant impact on acquirer long-run financial and operating performance, a PMI quality index that consists of four sub-indexes is constructed and applied. The following subsection describes the data sources and data collection process of relevant PMI information and the construction of each PMI sub-index.

In the context of the underlying analysis of stakeholder orientation in the post-merger integration process, it is important to receive applicable and reliable data. Due to the fact that each company should have an interest in keeping its primary stakeholders informed about important and material firm events, there has to be a maximum degree of transparency and communication. Important documents to inform all relevant stakeholders are a company's annual report and 10-K filing of the United States Securities and Exchange Commission (SEC). These publicly available documents serve as a standardized and reliable source of all important financial and

economic data and events within a firm's reporting year. These sources are used to hand-collect integration data of M&A transactions. In addition, the information search is referred to the Lexis Nexis database that provides corporate data and full text press articles (e.g. S&P Daily News) as well as company ad-hoc announcements.

To collect suitable PMI data, the following textual analysis approach is applied. Firstly, for each M&A transaction, the annual reports or 10-K SEC filings of the effective year and the subsequent three reporting years are downloaded electronically from the respective acquiring firm's investor relations website or the SEC's EDGAR (Electronic Data Gathering, Analysis and Retrieval) database (www.sec.gov), respectively. Secondly, each document is searched for the following keywords: "merger", "acquisition", "integration", "integrating", "integrate", "restructure", "restructuring", "synergy", "synergies", "consultant", "consulting", "advisor", "goodwill", "purchase price", and "stakeholder". Thirdly, applicable information and data are matched to the respective PMI quality sub-indexes according to the defined criteria of each index.

In general, a PMI sub-index comprises two or three criteria. Each criterion c_i, $i = 1, \dots, N$ is scored, either with 1 if applicable or 0 if not applicable. The sum of all reviewed aspects results in a total sub-index score:

$$\bar{IS}^m = \sum_{i=1}^{N} c_i, \tag{38}$$

where N equals the number of criteria and $m \in \{1,2,3,4\}$ equals the set of PMI sub-indexes.

The main objectives of the index scoring are, a standardized mapping of relevant PMI quality characteristics, and a reasonable numerical evaluation of the different PMI sub-indexes and its respective dimensions. Overall, the PMI quality index consists of ten criteria subdivided into four sub-indexes: (i) management attention (two criteria), (ii) stakeholder information (three criteria), (iii) integration support and governance (three criteria), and (iv) risk awareness (two criteria). As a result of this procedure, the overall PMI quality index score is as follows:

$$\bar{\bar{IS}} = \sum_{m=1}^{4} IS^m \in [0,10], \tag{39}$$

with a minimum score of 0 and a maximum score of 10 (refer to 4.5 Appendix A.3 for an example of PMI quality evaluation).

PMI Sub-index 1: Management attention ($\overline{IS}^1$)

This index covers information about the acquiring firm's management and its perception during the integration period of the merger or acquisition. It is essential for all stakeholders that the management has a clear focus on the post-acquisition integration process and the ongoing activities. Therefore, management itself should have an interest in PMI proceeding smoothly and communicating its confidence. The following criteria and questions are included in the index:

Management Focus (*pmi_mgmt*)	Is there any statement regarding the PMI within the annual report's CEO letter to the shareholders?	If yes, then 1. If no, then 0.
Management Confidence (*pmi_conf*)	Is there any positive communication, for example, within the annual report's CEO letter to the shareholders, about PMI progress or PMI goal attainments, for instance, about the amount of synergy realization?	If yes, then 1. If no, then 0.

PMI Sub-index 2: Stakeholder information ($\overline{IS}^2$)

To keep primary stakeholders informed about what is going on during the post-merger period and how integration tasks are implemented, the acquiring firm should inform stakeholders about its PMI plan, strategy and integration objectives. In addition, overall degree of information (i.e. disclosure and transparency) within the annual report, 10-K filing, or press news is important. The sub-index PMI stakeholder information maps the following aspects.

Integration Plan (*pmi_plan*)	Is there any statement in the annual report or publicly available information about an integration plan or a restructuring program?	If yes, then 1. If no, then 0.
Integration Objective (*pmi_object*)	Is there any statement in the annual report or publicly available information about the objectives or the strategy of the integration? Are synergies or other targets communicated?	If yes, then 1. If no, then 0.
General Transparency (*pmi_transp*)	Measures the general degree of stakeholder information within the analyzed publicly available documents, i.e. whether a detailed information of the PMI or the M&A transaction is reported?	If yes, then 1. If no, then 0.

PMI Sub-index 3: Integration support and governance ($\overline{IS}^3$)

To simultaneously enable a smooth and efficient post-merger integration, professional PMI consultants or integration teams should support the entire PMI process from the first day on. Moreover, the PMI should be supervised by a Chief Information Officer (CIO) or an Integration Committee. To avoid unproductive or aimless integration activities, incentives can help to quicken the goal attainment.

Consultants/ Integr. Team (*pmi_consult*)	Is there any statement, e.g., within the annual report that consultants were hired to accompany the PMI process? Or alternatively, was an integration team installed to focus on the PMI?	If yes, then 1. If no, then 0.
Integration Incentives (*pmi_incent*)	Are incentives for a successful PMI set within the management compensation? Are any other incentives or targets regarding PMI defined?	If yes, then 1. If no, then 0.
PMI Governance (*pmi_gov*)	Is a Chief Integration Officer or an Integration Committee installed?	If yes, then 1. If no, then 0.

PMI Sub-index 4: Risk awareness ($\overline{IS}^4$)

The integration process comprises a lot of risks. Thus, it is important that the acquiring firm is aware of specific integration risks and additionally, of risks that impact stakeholder relationships. The PMI risk awareness sub index depicts transaction and stakeholder specific integration risks.

Integration Risks (*pmi_risk*)	Is there any section, for example, in the annual report available that informs about integration risks and threats or difficulties regarding the respective M&A transaction?	If yes, then 1. If no, then 0.
Stakeholder Risks (*pmi_stakeh*)	Are there any potential conflicts with stakeholder interests due to the M&A communicated?	If yes, then 1. If no, then 0.

Table 22 summarizes the four PMI sub-indexes with the respective criteria and index scores.

Table 22: PMI Quality Sub-Indexes

The table presents the four PMI sub-indexes, its criteria and maximum index scores

	Management Attention	Stakeholder Information	Support and Governance	Risk Awareness
	Management Focus, Management Confidence	Integration Plan, Integration Objective, Degree of Transparency	Integration Team, Integration Incentives, PMI Governance	Integration risks, Stakeholder risks
Max. Score	**2**	**3**	**3**	**2**

4.2.4 Methodology

This paper applies long-term return measures in the empirical study. On the one hand, buy-and-hold abnormal returns (BHAR) are used as a dependent financial performance variable. On the other hand, to investigate the long-run effects on the acquirer's operating performance, abnormal operating cash flow returns (AOCFR) are calculated.

The BHARs for a 12-, 24-, and 36-month holding period of each sample acquirer firm are computed through comparison of the acquirer's compounded holding return to the return of a reference portfolio matched by firm size (market capitalization) and book-to-market ratio (following the approach of Barber and Lyon, 1997; Barber et al., 1999). Reference portfolios consist of NYSE, NASDAQ, or AMEX-listed firms not operating in the Finance, Insurance, or Real Estate industry (SIC Codes 60-67) that are not identified as acquirers during the whole period 2005-2014 of the initial data sample and the preceding and following three years. In June of each year from 2005-2014, all reference firms are ranked on market capitalization into ten size deciles. In each size decile, reference firms are further sorted into five quintiles based on book-to-market ratios in December of the previous calendar year. As a result of this procedure, fifty equally-weighted portfolios are created in each year, i.e. a total of five hundred portfolios in the ten year period from 2005 to 2014. Finally, each event firm

is matched to one reference portfolio according to size and book-to-market ratio at the end of the latest June prior the deal completion date.

The buy-and-hold abnormal return is calculated as the difference between the acquirer buy-and-hold return and the long-run buy-and-hold return of its matched reference portfolio:

$$BHAR_{iT} = \prod_{t=0}^{T}(1 + R_{it}) - 1 - R_{pT}, \quad (40)$$

where $t = 0$ is the month following the month of deal closing and T the overall holding period in months. R_{it} in the formula above is the return of event firm i in month t, and R_{pT} the return of the reference portfolio p, calculated as

$$R_{pT} = \sum_{j=1}^{n} \frac{[\prod_{t=0}^{T}(1+R_{jt})]-1}{n}, \quad (41)$$

where R_{jt} is the return of reference firm j in month t, and n equals the number of reference firms included in portfolio p. The present analysis mainly tests 36-month post-merger stock price performance but for robustness reasons 24 and 12-month BHARs are also computed. Since BHARs are compounded and not cumulative, a common documented disadvantage of this approach is the positively skewed distribution of the returns which can lead to a misspecification of test statistics. This skewness-bias is controlled for by applying a bootstrapped skewness-adjusted t-statistic when testing for statistical significance as described by Barber et al. (1999).

The second return measure, a firm's AOCFR, is computed by the following procedure (Megginson, 2004; Healy et al., 1992). Firstly, acquirers' and reference firms' pre-tax operating cash flow returns (OCFR) as the ratio of earnings before interest and taxes (EBIT) to market value of assets are computed in each of the three years before and the three years following the effective year of the transaction.[14] Market value of assets is defined as market value of equity (number of shares outstanding multiplied with share price) plus book value of net debt, where net debt

[14] According to Healy et al. (1992) the year of the merger t=0 is excluded from the return calculation because in year 0 the merging entities are consolidated for financial reporting purposes only from effective date (the day where the M&A was officially closed) to end of the financial year. In addition, year 0 is affected by one-time merger costs making a comparison with other years difficult.

equals total debt minus cash and cash equivalents plus minority interests plus preferred stock. Secondly, for each reference portfolio the mean OCFR in year $t \in [-3; 3] \backslash \{0\}$ is calculated. Thirdly, the AOCFR of event firm i in year t is calculated by deducting the matched portfolio mean OCFR in year t from the event firm's OCFR in year t. Finally, acquirers' mean post-merger AOCFR are compared to the mean pre-merger AOCFR.

4.3 Acquirer Long-Term Returns and PMI Quality

In this section, the descriptive and empirical results of the research analysis are presented. After showing that there seems to exist a clear relationship between PMI quality and acquirer long-term M&A performance, the study continues with in-depth univariate subgroup analyses for certain acquirer and deal characteristics. High-quality PMI is compared to low quality integration and the resulting abnormal return differences are tested for statistical significance. Finally, two multivariate regression models are defined. The first one aims to prove that PMI quality has a significant effect on acquirers' long-term financial and operating performance. The second one focuses on the identification of dominant factors that drive PMI quality:

$$AR = \beta_0 + PMI * \beta_1 + \ldots + F_n * \beta_n + Control_{n+1} * \beta_{n+1} + \ldots + Control_m * \beta_m, \quad (42)$$

$$PMI = \beta_0 + F_1 * \beta_1 + \ldots + F_n * \beta_n + Control_{n+1} * \beta_{n+1} + \ldots + Control_m * \beta_m, \quad (43)$$

where AR is either BHAR or AOCFR, PMI equals the respective PMI index scores $\overline{IS}^1, \overline{IS}^2, \overline{IS}^3, \overline{IS}^4$ and $\overline{\overline{IS}}$, F_j are the explanatory variables (PMI quality, deal and acquirer controls, and stakeholder commitment variables) with $j \in [1, n]$ and $Control_l$ with $l \in [n+1, m]$ are further control variables incorporated in the model.

4.3.1 Descriptive Results

The average sample's acquirer post-merger performance is significantly negative. Financial performance measured by 36-month BHAR is -8.6% and -10.1% for 24-month BHAR, and -8.4% for 12-month BHAR, respectively. The average three-year operating performance is also negative (-2.2%) and statistically significant. These

findings confirm the documented evidence of a highly negative acquirer outcome in M&A literature.

The PMI quality for each of the 425 merger events is measured according to the index criteria and information collected from publicly available sources. The sample's average PMI quality amounts to 2.2. The minimum sample score equals 0 and the highest sample score that is measured equals 9, i.e. the maximum PMI quality score of 10 is not reached by any of the analyzed 425 transactions. The year 2008 is the year of the highest average PMI quality (2.8) followed by 2012 (2.7) and 2014 (2.3). A possible explanation for the high average PMI quality in 2008 may be the consequences of the financial crisis, leading to a stronger stakeholder orientation during the post-acquisition integration. The descriptive results in Table 23 show that the lion's share of acquiring firms (65% for BHARs; 57% for AOCFRs) conduct a PMI of low quality, i.e. where the index score is equal to or smaller than the sample's median cut-off point of 2. This means that the majority of acquirer management fails to focus on stakeholder interests during the integration period, probably resulting in value-deteriorating post-merger stakeholder conflicts. As one can see, both acquirer BHAR and AOCFR are more negative if PMI quality is low, i.e. equal to or smaller than 2. For example, the mean 36-month BHAR is -16.4% and average three-year AOCFR equals -3.5%. Yet, an increasing PMI quality yields in higher (less negative) abnormal returns for the acquirer. 36-month BHAR improves by +4.3% to -12.1% if PMI quality is equal to or lower than 4, and even by +7.8% to -8.6% if PMI quality is equal to or lower than 9. Thus, acquirers that focus on stakeholders during the PMI achieve positive abnormal returns, for instance of +8.3% for a PMI quality scored with 4, or +10.1% for a PMI quality of 7, whereas companies that do not focus on PMI destroy value. The same is valid for operating performance, where returns improve from -3.5% (PMI quality ≤ 2) to -2.2% (PMI quality ≤ 9). There is a clearly recognizable positive linear relationship between acquirer returns and stakeholder orientation in PMI. As integration quality improves, BHAR and AOCFR also improve.

Table 23: Acquirer Returns and PMI Quality

The table reports BHAR and AOCFR according to the PMI quality

PMI Quality	% share	12-month BHAR	24-month BHAR	36-month BHAR	% share	3-year AOCFR
0	26.6	-0.122	-0.145	-0.101	30.5	-0.051
≤ 1	50.0	-0.130	-0.174	-0.166	50.1	-0.035
≤ 2	64.9	-0.116	-0.171	-0.164	57.2	-0.035
≤ 3	75.3	-0.110	-0.155	-0.145	76.3	-0.030
≤ 4	84.0	-0.102	-0.140	-0.121	84.6	-0.029
≤ 5	89.2	-0.090	-0.120	-0.105	89.5	-0.028
≤ 6	96.0	-0.089	-0.110	-0.096	96.2	-0.022
≤ 7	98.3	-0.086	-0.105	-0.092	98.4	-0.022
≤ 8	99.1	-0.087	-0.102	-0.087	99.2	-0.022
≤ 9	100.0	-0.084	-0.101	-0.086	100.0	-0.022

A similar picture is observable for the respective sub-indexes (Table 24). If the index score is zero, 36-month BHAR is the most negative, but improves once certain criteria are fulfilled. For instance, if acquirer management does not put any attention on post-merger integration, the return is on average -5.7% more negative (-14.3% vs. -8.6%).

Table 24: 36-Month BHAR and PMI Quality Sub-Indexes

The table reports BHAR and AOCFR according to the PMI quality

Index Score	PMI 1 Management Attention	PMI 2 Stakeholder Information	PMI 3 Integration Support	PMI 4 Risk Awareness
0	-0.143	-0.146	-0.115	-0.137
≤ 1	-0.123	-0.111	-0.086	-0.123
≤ 2	-0.086	-0.090	-0.087	-0.086
≤ 3	n.a.	-0.086	-0.086	n.a.

The average sample index scores of the sub-indexes 1 to 4 are 0.62 for management attention, 0.66 for stakeholder information, 0.21 for PMI support, and 0.67 for risk awareness, respectively. Hence, Sub-index 4 (integration risk awareness) has the highest relative average index score with a degree of achievement of 33.5%, whereas Sub-index 3 (integration support and governance) shows the lowest relative score with a degree of no more than 7%.

As theorized and assumed, one can state that there exists a mitigating effect of stakeholder-oriented PMI measures. In the following Subsections 4.3.2 and 4.3.3, it is further analyzed whether PMI quality has a statistically positive impact on long-term acquirer returns or not. So far, descriptive results strongly support this assumption.

4.3.2 Subgroup Analysis

At first, a subgroup analysis is applied through the division of the full sample into M&A of high and low PMI quality. The results of the univariate test are presented in Table 25. Acquirers that fail to implement stakeholder-oriented integration measures do significantly underperform regardless of whether the investment horizon is 12, 24 or 36 months long, or the operating return measure is applied. For example, the return difference in 36-month abnormal stock returns equals on average 22%, which is statistically significant at the 1% significance level (20% for 24-month BHAR and 9% for 12-month BHAR). AOCFR are also significant different at the 1% level. High-quality PMI firms achieve a +4% higher operating return compared to bidders with low quality integration. More important, high-quality PMI acquirers do not just reduce a negative return compared to low-quality PMI firms, they even achieve positive M&A performance results: +5.6% (+3.0%) in 36-month (24-month) BHAR and +0.5% in three-year AOCFR. As a result of the subgroup analysis, the descriptive findings outlined in Section 4.3.1 can be confirmed.

Table 25: PMI Quality High vs. Low – Univariate Analysis

The sample consists of 425 completed US mergers and acquisitions in the period 2005-2014

Performance Measures	**High-quality PMI (N=149)**	**Low-quality PMI (N=274)**	**Test of Difference (High – Low)**	
	Coef.	Coef.	Coef.	t-statistic
36-month BHAR	0.056	-0.164	0.220	3.71***
24-month BHAR	0.030	-0.171	0.202	3.95***
12-month BHAR	-0.026	-0.116	0.090	2.64***
3-year AOCFR	0.005	-0.035	0.040	2.94***

(Cut-off point: Median of PMI quality by variable *pmi*: 2, i.e. high > 2; low ≤ 2)
* p<0.10, ** p<0.05, *** p<0.01

In a next step, this paper further details the empirical analysis by taking certain acquirer and deal characteristics into account. A univariate test of return differences in 36-month BHAR between high and low PMI quality is applied through further division of the M&A sample into the subgroups high vs. low growth acquirers, high vs. low synergy expectation, small vs. large deals, and high vs. low deal frequency. Results are reported in the following Table 26.

Table 26: Subgroup Analysis PMI Quality High vs. Low and SCF on 36-Month BHAR

The sample consists of 425 completed US mergers and acquisitions in the period 2005-2014

36-month BHAR	**High-quality PMI**	**Low-quality PMI**	**Test of Difference (High – Low)**	
	Coef. (N/t-statistic)	Coef. (N/t-statistic)	Coef.	t-statistic
High growth acquirer	0.046	-0.281	0.326	4.17***
N=208 / *bm* > 0.44	(78/0.82)	(130/-5.02)		
Low growth acquirer	0.069	-0.058	0.127	1.41
N=215 / *bm* ≤ 0.44	(71/0.94)	(144/-1.11)		
High synergy expectation	0.115	-0.223	0.338	4.04***
N=202 / *goodw_to_dv* > 0.53	(72/1.76)	(130/-4.23)		
Low synergy expectation	0.002	-0.111	0.112	1.34
N=221 / *goodw_to_dv* ≤ 0.53	(77/0.03)	(144/-1.97)		
High deal size	-0.006	-0.239	0.233	2.62***
N=208 / *deal_size* > 0.21	(95/-0.11)	(113/-3.41)		
Low deal size	0.166	-0.111	0.277	3.14***
N=215 / *deal_size* ≤ 0.21	(54/2.15)	(161/-2.54)		
High deal frequency	0.076	-0.227	0.304	3.88***
N=212 / *deal_frequ* > 0	(74/1.22)	(138/-4.86)		
Low deal frequency	0.037	-0.100	0.136	0.56
N=211 / *deal_frequ* = 0	(75/0.56)	(136/-1.61)		

(Cut-off point: Median of PMI quality by variable *pmi*: 2, i.e. high > 2; low ≤ 2)
* p<0.10, ** p<0.05, *** p<0.01

The analysis finds that value acquirers (undervalued firms with high book-to-market ratio) do significantly destroy shareholder value if they fail to focus on stakeholder interests during the PMI. The average return difference equals -32.6% compared to high growth firms with a high-quality integration. This finding implicates that post-merger conflicts, which are supposed to be less decisive in M&A where the bidder firm has high growth prospects, are highly underestimated, thus wasting returns and impairing acquirers' financial M&A performance. For low book-

to-market acquirers (glamour or overvalued firms), there does not exist any significant difference in BHARs.

Next, acquirers' synergy expectation is investigated. It is computed by dividing the transaction's reported goodwill by its deal value. In mergers with high synergy expectation, PMI quality plays a decisive role. Acquiring firms that miss out on focusing on their primary stakeholder groups achieve a significant negative return of -22.3%. This is 33.8% lower compared to bidders that implement a high-quality PMI. Therefore, one can conclude that PMI towards stakeholders considerably matters in acquisitions where management perceives high synergy potentials. On average, well integrated M&A with high synergies yield +11.5% in a 36-month BHAR.

According to the post-merger stakeholder conflict hypothesis, post-acquisition synergy realization is influenced by size differences between acquirer and target. The present study reveals that low PMI quality leads to significant lower abnormal returns, independently of relative target size. Yet, the return difference of 27.7% (compared to 23.3%) is stronger for the acquisition of smaller targets (low deal size). This confirms the hypothesis that stakeholders of small targets have higher incentives to fight for their interests, hence making it important to focus on them during the PMI.

At the end, return differences between high vs. low PMI are analyzed for the subgroup deal frequency. The result is unmistakable. Acquirers that often engage in mergers (high deal frequency, i.e. low integration capacity) do lose -22.7% in BHAR if they do not integrate towards primary stakeholder interests. Compared to high PMI-quality acquirers' return of +7.6%, the resulting difference of 30.4% is statistically significant. This means that stakeholder interests and the integration towards stakeholders are of high importance in M&A where the acquirer has executed several previous deals.

The univariate findings in this article emphasize the importance of PMI quality in general but also for specific subgroups as outlined in this section, including among others value acquirers, M&A with high synergies (or relatively large goodwill), low deal size (small targets) and high deal frequency (low integration capacity).

4.3.3 Multivariate Regression Analysis

In this subsection, multivariate regression methodology is applied to test the joint impact of PMI quality and further variables on long-term financial and operating M&A performance. In addition, factors are analyzed that drive acquirer PMI quality.

Table 27 reports the outcome of the regression of 36-month BHAR on the respective PMI sub-index and firm and deal characteristics. Model 1 to 4 show that management attention criteria during the PMI (*pmi_1*), stakeholder information (*pmi_2*), integration support and governance aspects (*pmi*_3), and risk awareness *(pmi*_4) have a significant positive impact on financial profitability. The t-statistic of PMI Sub-index 2 is the highest (4.08, which is significant at the 1% level) whereas Sub-index 3 has the lowest (2.59 at the 5% significance level). In all four regression models, the variables acquirer size (*ln_mv_acqu*), synergy expectation (*goodw_to_dv*), cross-border deals (*cb*), and geographic distance (*geo)* have a consistent and either statistically positive (*ln_mv_acqu*, *geo)* or negative (*goodw_to_dv, cross-border*) impact on BHARs. Interestingly, high synergy expectation is negatively related to long-term stock returns. In addition, the coefficients are relatively large. A possible reason might be the fact that investors do not share managements' synergy perceptions or believe that the premiums paid are too high. In combination with the univariate finding in Section 4.3.2, it is concluded that a high PMI quality is essential if reported synergy expectation is high. Yet, an overpayment outweighs the positive impact of PMI quality. Cross-border M&A do also significantly negatively influence returns. Thus, missing complementarity in terms of economic congruency encourages stakeholder conflicts. Apart from Regression Model 1, the variable deal frequency (*deal_frequ*) shows a statistically significant negative impact in the regressions 2 to 4. Consequently, a reduced acquirer integration capacity reinforces post-merger synergy deterioration. In Model 2 a higher acquirer growth perspective and thus, a lower decisiveness of conflict additionally, negatively influences abnormal stock returns. This is contradictory to the general assumption about decisiveness of conflict in the theoretical framework of post-merger stakeholder conflicts.

Table 27: Regression Results (V)

Regression of 36-month buy-and-hold abnormal returns (BHAR) on PMI quality sub-indexes and firm and deal characteristics

Model	**1**	**2**	**3**	**4**
Dep. variable	**BHAR_36**	**BHAR_36**	**BHAR_36**	**BHAR_36**
pmi_1	0.127***			
	(3.63)			
pmi_2		0.116***		
		(4.08)		
pmi_3			0.161**	
			(2.59)	
pmi_4				0.142***
				(3.37)
ln_mv_acqu	0.045*	0.046*	0.047*	0.050*
	(1.76)	(1.78)	(1.82)	(1.96)
goodw_to_dv	-0.263**	-0.281***	-0.290***	-0.257**
	(-2.53)	(-2.64)	(-2.69)	(-2.42)
bm	-0.166	-0.196*	-0.150	-0.143
	(-1.55)	(-1.78)	(-1.40)	(-1.34)
cd	-0.020	-0.017	-0.019	-0.022
	(-1.09)	(-0.94)	(-1.01)	(-1.17)
deal_frequ	-0.015	-0.021*	-0.022**	-0.021*
	(-1.44)	(-1.84)	(-1.98)	(-1.92)
deal_size	0.043	0.051	0.063	0.035
	(0.53)	(0.64)	(0.78)	(0.46)
cb	-0.216*	-0.241**	-0.241**	-0.219**
	(-1.96)	(-2.14)	(-1.92)	(-2.02)
geo	0.001**	0.001**	0.001**	0.001**
	(2.41)	(2.47)	(2.37)	(2.43)
priv	0.068	0.095	0.060	0.076
	(0.77)	(1.07)	(0.67)	(0.85)
pay	0.100	0.108	0.106	0.110
	(1.50)	(1.61)	(1.58)	(1.65)
relate_2sic	0.016	-0.005	0.004	-0.001
	(0.26)	(-0.08)	(0.07)	(-0.02)
constant	-0.632**	-0.643**	-0.569*	-0.649**
	(-2.08)	(-2.04)	(-1.84)	(-2.16)
Industry control	yes	yes	yes	yes
N	423	423	423	423
R^2	0.106	0.109	0.094	0.105
Adjusted R^2	0.067	0.069	0.054	0.065
Overall p-value	0.001	0.001	0.004	0.002

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 28 reports the results of extended regression analyses. Models 5 and 6 present the regression of BHAR on total PMI quality. On the one hand, the total PMI index score is regressed (Model 5). On the other hand, Model 6 includes all four PMI sub-indexes.

Table 28: Regression Results (VI)

Regression of 36-month buy-and-hold abnormal returns (BHAR) on PMI quality sub-indexes, stakeholder commitment variables, and firm and deal characteristics

Model	**5**	**6**	**7**	**8**
Dep. variable	**BHAR_36**	**BHAR_36**	**BHAR_36**	**BHAR_36**
pmi	0.067***		0.066***	0.0602***
	(5.21)		(4.96)	(4.55)
pmi_1		0.068*		
		(1.68)		
pmi_2		0.060		
		(1.63)		
pmi_3		0.039		
		(0.56)		
pmi_4		0.094**		
		(2.13)		
ln_mv_acqu	0.043*	0.044*	0.040	0.043*
	(1.72)	(1.74)	(1.59)	(1.78)
goodw_to_dv	-0.290***	-0.283***	-0.264**	-0.279**
	(-2.79)	(-2.71)	(-2.53)	(-2.41)
bm	-0.180*	-0.176	-0.160	-0.168
	(-1.71)	(-1.62)	(-1.48)	(-1.63)
cd	-0.019	-0.020	-0.022	-0.024
	(-1.04)	(-1.08)	(-1.23)	(-1.38)
deal_frequ	-0.018	-0.018	-0.016	-0.016
	(-1.64)	(-1.62)	(-1.48)	(-1.45)
deal_size	0.025	0.020	0.012	0.018
	(0.30)	(0.25)	(0.15)	(0.23)
cb	-0.219**	-0.219**	-0.144	-0.146
	(2.02)	(-2.04)	(-1.47)	(-1.49)
geo	0.001**	0.001**	0.001**	0.001**
	(2.52)	(2.51)	(2.31)	(2.33)
priv	0.092	0.094	0.098	0.112
	(1.05)	(1.05)	(1.08)	(1.24)
pay	0.117*	0.118*	0.131*	0.138**
	(1.77)	(1.77)	(1.95)	(2.16)
relate_2sic	-0.000	-0.001	-0.002	-0.012
	(-0.01)	(-0.01)	(-0.03)	(-0.20)
customer			0.197	0.190
			(1.35)	(1.32)
employee			0.213	0.213*
			(1.64)	(1.68)
constant	-0.695**	-0.707**	-0.458	-0.500**
	(-2.29)	(-2.32)	(-1.51)	(-2.01)
Industry control	yes	yes	yes	no
N	423	423	414	414
R^2	0.127	0.128	0.135	0.125
Adjusted R^2	0.088	0.082	0.091	0.094
Overall p-value	0.000	0.000	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Again one can conclude – according to the regression outcome of Model 5 – that PMI quality drives value creation in M&A (the variable *pmi* is highly significant at the 1% significance level). Nevertheless, Model 6 reveals that the PMI sub-indexes 1 and 4 (management attention and integration risk awareness) are most important and statistically significant at the 10% and 5% significance level, respectively. Again, the determinants *ln_mv_acqu*, *goodw_to_dv*, *cb*, and *geo* show strong effects on performance. Moreover, purely cash-financed transactions are positively related to 36-month BHARs.

The Regression Models 7 and 8 incorporate the stakeholder commitment variables *customer* and *employee* to further investigate the indirect impact of stakeholder orientation in PMI on acquirer M&A performance. Both parameters have a positive coefficient, yet are not statistically significant once industry belonging is controlled for. When the industry control is excluded, at least the variable *employee* shows a statistically positive impact at the 10% level. Controlling for cross-sectional dependency (not reported here) and inclusion of industry dummies in the regressions confirms the statistical impact of the variable *employee* at the 10% significance level. In other words, a positive change in employee productivity (sales per employee) post-merger compared to pre-merger signals higher employee commitment which in turn reveals that their interests are aligned post-merger. Therefore, one can indirectly conclude that quality or stakeholder orientation in PMI drives performance through increased stakeholder commitment to the merged firm. Combined with the direct measurement of PMI quality and its effect on long-term acquirer returns, one can eventually conclude that PMI has an outstanding role in M&A.

The empirical analysis proceeds with the investigation of whether the impact of PMI quality is similar on acquirer operating performance. The outcome of the regressions reported in Table 29 and 30 are slightly mixed but on the whole they document the same conclusion. Independently analyzing the impact of each PMI sub-index on operating returns, all sub-indexes except for Sub-index 1 (*pmi_1*) show a statistically significant positive influence. Here, integration risk awareness (*pmi_4*) has the strongest impact with a t-statistic of 3.49 (1% significance level). The variables deal frequency (*deal_frequ*) and cross-border M&A (*cb*) are highly negatively related

in all four Regression Models 9 to 12. Compared to the previous analyses of BHAR, acquirer synergy expectation is not statistically significant, however the coefficients remain negative. Investors expectation about synergies or overpayment seems therefore not in line with post-acquisition operating performance.

Table 29: Regression Results (VII)

Regression of AOCFR on PMI quality sub-indexes and firm and deal characteristics

Model	**9**	**10**	**11**	**12**
Dep. variable	**AOCFR**	**AOCFR**	**AOCFR**	**AOCFR**
pmi_1	0.011			
	(1.16)			
pmi_2		0.014*		
		(1.81)		
pmi_3			0.030**	
			(1.97)	
pmi_4				0.039***
				(3.49)
goodw_to_dv	-0.017	-0.019	-0.022	-0.013
	(-0.57)	(-0.65)	(-0.74)	(-0.46)
bm	-0.038	-0.042	-0.038	-0.032
	(-1.39)	(-1.57)	(-1.41)	(-1.26)
cd	0.003	0.003	0.003	0.002
	(1.00)	(1.12)	(1.06)	(0.76)
deal_frequ	-0.004**	-0.004**	-0.005**	-0.005**
	(-2.15)	(-2.29)	(-2.48)	(-2.28)
deal_size	0.019	0.019	0.020	0.010
	(1.01)	(1.00)	(1.10)	(0.58)
cb	-0.064**	-0.066**	-0.063**	-0.064**
	(-2.17)	(-2.23)	(-2.13)	(-2.24)
geo	0.000	0.000	0.000	0.000
	(1.46)	(1.55)	(1.49)	(1.62)
priv	0.024	0.028*	0.024	0.030*
	(1.49)	(1.69)	(1.46)	(1.88)
pay	0.024	0.021	0.022	0.024*
	(1.41)	(1.43)	(1.52)	(1.66)
relate_2sic	-0.019	-0.020	-0.019	-0.021
	(-1.30)	(-1.40)	(-1.35)	(-1.50)
constant	-0.027	-0.032	-0.022	-0.049
	(-0.45)	(-0.53)	(-0.36)	(-0.80)
Industry control	yes	yes	yes	yes
N	371	371	371	371
R^2	0.083	0.088	0.088	0.118
Adjusted R^2	0.038	0.044	0.044	0.075
Overall p-value	0.013	0.002	0.006	0.004

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 30: Regression Results (VIII)

Regression of AOCFR on PMI quality sub-indexes and stakeholder commitment variables

Model	**13**	**14**	**15**	**16**
Dep. variable	**AOCFR**	**AOCFR**	**AOCFR**	**AOCFR**
pmi	0.010***		0.009***	0.010***
	(2.93)		(2.68)	(2.78)
pmi_1		-0.000		
		(-0.05)		
pmi_2		0.003		
		(0.34)		
pmi_3		0.014		
		(0.91)		
pmi_4		0.036***		
		(2.82)		
goodw_to_dv	-0.021	-0.017	-0.014	-0.012
	(-0.70)	(-0.58)	(-0.46)	(-0.42)
bm	-0.041	-0.034	-0.043	-0.033
	(-1.54)	(-1.35)	(-1.57)	(-1.34)
cd	0.003	0.003	0.002	0.001
	(1.01)	(0.82)	(0.76)	(0.45)
deal_frequ	-0.004**	-0.005**	-0.004**	-0.004**
	(-2.22)	(-2.37)	(-2.26)	(-2.07)
deal_size	0.015	0.011	0.014	0.012
	(0.77)	(0.58)	(0.77)	(0.68)
cb	-0.063**	-0.063**	-0.037	-0.034
	(-2.14)	(-2.18)	(-1.53)	(-1.47)
geo	0.000	0.000*	0.000	0.000
	(1.64)	(1.65)	(0.96)	(1.15)
priv	0.030*	0.031*	0.028*	0.035**
	(1.83)	(1.88)	(1.71)	(2.25)
pay	0.023	0.025*	0.025*	0.021
	(1.61)	(1.72)	(1.79)	(1.55)
relate_2sic	-0.020	-0.021	-0.020	-0.023*
	(-1.38)	(-1.50)	(1.43)	(-1.70)
customer			0.070**	0.071**
			(2.28)	(2.24)
employee			0.057*	0.055*
			(1.90)	(1.78)
constant	-0.049	-0.052	0.041	-0.024
	(-0.81)	(-0.85)	(0.69)	(-0.77)
Industry control	yes	yes	yes	no
N	371	371	363	363
R^2	0.103	0.121	0.116	0.089
Adjusted R^2	0.059	0.070	0.067	0.056
Overall p-value	0.001	0.002	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

According to the regression results of Model 13 and 14 it becomes obvious that integration risk awareness (*pmi_4*) is the most important criteria for operating cash

flow returns. Overall PMI quality shows a statistically positive impact on AOCFR, however as shown in Model 14, only Sub-index 4 is highly significant at the 1% significance level. Acquiring firms that integrate potential transaction and stakeholder specific integration risks into its PMI measures improve long-term operating profitability. Moreover, controlling for stakeholder commitment of employees and customers, both Regression Models 15 and 16 reveal a positive relationship between the variables *employee/ customer* and AOCFR performance.

Furthermore, acquirer deal frequency remains negatively related to AOCFR whereas cross-border M&A become insignificant. In case of operating performance, the target's public status plays an important role. The acquisition of private targets improves long-run AOCFR. This is in line with previous M&A performance studies on acquisitions of private vs. public targets (Fuller et al., 2002; Draper and Paudyal, 2006). Reasons for the favorable impact of private targets on performance are private information of management, less public visibility and information disclosure.

A further area of interest is the identification of factors that drive PMI quality (stakeholder orientation) in the integration process. Therefore, overall PMI quality and the independent impact of each PMI sub-index are analyzed. The respective index scores $\overline{IS}^m$, with $m \in \{1,2,3,4\}$ are regressed on several firm and deal variables.

The findings reported in Table 31 are interesting. Management attention in PMI is highly influenced by deal frequency (*deal_frequ)* and deal size (*deal_size*). The former variable has a negative, the latter factor a positive impact on the underlying quality criteria. It seems to be obvious that active acquirers on the M&A market dealing with several previously executed transactions are about to lose its focus on the present merger or acquisition. This justifies the negative coefficient of the factor deal frequency. In contrast, the larger the target compared to the acquirer, the higher the management attention. This can not only be explained through the higher complexity of integrating larger targets but also through the larger synergy potential. In addition, acquisitions of material size usually enjoy higher publicity, which in turn should also encourage management attention.

Table 31: Regression Results (IX)

Regression of PMI quality sub-indexes on firm and deal characteristics

Model	17	18	19	20
Dep. variable	Mgmt. Attention	Stakeholder Information	Integration Support	Risk Awareness
bm	0.087	0.413**	-0.010	-0.021
	(0.74)	(2.46)	(-0.12)	(-0.19)
goodw_to_dv	0.121	0.355*	0.241*	0.124
	(0.80)	(1.85)	(1.89)	(0.93)
deal_frequ	-0.037**	0.002	0.009	0.002
	(-2.30)	(0.11)	(0.80)	(0.15)
deal_size	0.198**	0.147*	0.039	0.255***
	(2.55)	(1.83)	(0.95)	(4.05)
cd	0.007	-0.019	-0.007	0.008
	(0.47)	(-1.30)	(-1.27)	(0.37)
cb	-0.100	0.078	-0.082	-0.085
	(-0.65)	(0.49)	(-1.24)	(-0.55)
geo	-0.000	-0.000*	-0.000	-0.000
	(-1.21)	(-1.85)	(-0.77)	(-0.49)
priv	-0.137	-0.361***	-0.022	-0.083
	(-1.51)	(-3.92)	(-0.48)	(-1.08)
pay	-0.062	-0.119	-0.082*	-0.082
	(-0.74)	(-1.24)	(-1.79)	(-1.16)
relate_2sic	-0.066	0.124	0.017	0.058
	(-0.77)	(1.32)	(0.34)	(0.80)
constant	0.618***	0.344**	0.118	0.552***
	(4.45)	(2.13)	(1.37)	(4.08)
Industry control	no	no	no	no
N	425	425	425	425
R^2	0.064	0.101	0.048	0.067
Adjusted R^2	0.041	0.079	0.025	0.044
Overall p-value	0.000	0.000	0.018	0.001

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Sub-index 2 "stakeholder information" is positively related to acquirer growth perspective (*bm*), indicating that an increasing acquirer growth prospect improves stakeholder information about integration plan, objective and so on. This finding is confusing because it was expected that instead, bidders with low growth opportunities are more likely to inform stakeholders due to the higher importance or decisiveness of potential stakeholder conflict. Synergy expectation (*goodw_to_dv*) also has a significant positive effect on PMI stakeholder information mainly due to higher pressure on management to realize anticipated merger synergies, thus making it necessary to keep primary stakeholders on track and informed about the integration

progress to avoid costly stakeholder conflicts. Furthermore, deal size (*deal_size*) favorably influences stakeholder information. The reasoning is more or less the same as for Sub-index 1 (see above). However geographic distance (*geo,* as proxy for decisiveness of conflict) and the acquisition of private targets (*priv*) are negatively related to the information quality of stakeholders. The former factor seems reasonable due to less direct confrontation and probably less perceived necessity for information, which go hand in hand with greater geographic distance. The latter factor, namely the acquisition of private targets, is more interesting. It reveals that non-publicly listed firms are somewhat of a black-box, making it difficult for the acquiring firm's management to disclose all potential information to its stakeholders. There is a high degree of information asymmetry when it comes to the takeover and integration of privately held firms.

The next sub-index under investigation is "integration support and governance" (Model 19). Here, synergy expectation (*goodw_to_dv*) plays a decisive role with a highly positive impact on the respective index criteria. This result seems to be clear if one considers the pressure placed on managements' shoulders to deliver promised merger synergies. Management therefore either hires consultants or installs an integration team, designates a Chief Integration Officer, or an integration committee. In contrast, cash-financed deals (*pay*) deteriorate PMI support and governance mainly because of a lack of financial funding.

Finally, integration risk awareness (PMI Sub-index 4; Model 20) is positively driven by deal size (*deal_size*). A possible explanation lies in the increasing complexity of integrating large or even equally-sized targets into the organization. There are a lot of sources for potential stakeholder conflict, thus encouraging acquirer management to deal with specific integration and stakeholder risks throughout the entire post-merger integration process.

Table 32 reports the regression results for the overall PMI quality. When industry controls are excluded (Model 21), the main quality drivers are acquirer synergy expectation (positive at the 10% significance level), deal size (positive at the 1% significance level) and the acquisition of private targets (negative at the 1% significance level). Once industry controls are included in Model 22 synergy

expectation becomes insignificant whereas, in addition, geographic distance (decisiveness of conflict) and cash-financed deals negatively impact PMI quality.

Table 32: Regression Results (X)

Regression of PMI quality index on firm and deal characteristics

Model	**21**	**22**
Dep. variable	**PMI Quality**	**PMI Quality**
bm	0.047	0.335
	(1.34)	(1.00)
goodw_to_dv	0.841*	0.584
	(1.83)	(1.25)
deal_frequ	-0.024	-0.019
	(-0.70)	(-0.55)
deal_size	0.639***	0.642***
	(3.15)	(3.22)
cd	-0.011	-0.010
	(-0.27)	(-0.23)
cb	-0.189	-0.093
	(-0.49)	(-0.24)
geo	-0.001	-0.001*
	(-1.60)	(-1.81)
priv	-0.602***	-0.577**
	(-2.66)	(-2.45)
pay	-0.344	-0.376*
	(-1.61)	(-1.73)
relate_2sic	0.132	0.128
	(0.60)	(0.58)
constant	1.633***	1.178**
	(4.37)	(2.36)
Industry control	no	yes
N	425	425
R^2	0.111	0.150
Adjusted R^2	0.090	0.117
Overall p-value	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Several robustness tests are applied to verify the statistical inference of the reported empirical findings. Firstly, the BHARs and AOCFRs are winsorized at the 2.5% and 97.5% level to control for potential outliers (see Table 2 and 3 in 4.5 Appendix A.2). Secondly, to avoid a so-called "bad model bias" a different benchmarking procedure is applied to calculate abnormal stock returns. Instead of the reference portfolio approach, a control firm approach is used by matching each event firm to a single reference firm (instead of a portfolio of several firms) of similar

size and book-to-market ratio. Finally, this paper controls for cross-sectional dependency by excluding multiple acquisitions by the same acquirer within any three-year period (see Table 4 to Table 9 in 4.5 Appendix A.2). The multivariate regression results are largely robust against the applied robustness checks.

4.4 Conclusion

This paper aims to present evidence in answer to the question of whether PMI quality improves long-term performance of US acquirers or not. It defines PMI quality as the degree of stakeholder orientation towards certain stakeholder integration criteria, which are assigned to four dimensions: (i) management attention, (ii) stakeholder information, (iii) integration support, and (iv) integration risk awareness. To achieve a metric scale that enables the measurement and evaluation of PMI quality, four PMI sub-indexes are constructed that cover the dimensions and aspects mentioned above.

The outcome of the empirical analysis leads to a strong support of the mitigating effect of PMI in post-merger stakeholder conflicts as theorized in the post-merger stakeholder conflict hypothesis which derives from Hirshleifer's paradox of power (Hirshleifer, 1991). US acquirers that fail to conduct a stakeholder-oriented PMI significantly underperform compared to high-quality integrators of M&A. On average they lose 22% in buy-and-hold abnormal returns and 4% in abnormal operating cash flow returns. A further separation of the data sample into high vs. low growth acquirers, high vs. low synergy expectation, high vs. low deals size, and high vs. low deal frequency reinforces the decisive role of PMI, in particular, the value-enhancing effect of stakeholder orientation in PMI.

Finally, the outcome of multivariate regressions confirms the positive relationship between PMI quality and acquirer abnormal returns for both measures BHARs and AOCFRs. Among the investigated PMI sub-indexes, the criteria combined under the index "integration risk awareness" have the strongest impact on both financial and operating performance. This finding underscores the need for acquirer management, firstly, to reveal transaction and stakeholder specific PMI risks, secondly to understand them, and thirdly, in the case of emerging post-merger stakeholder

conflict, to avoid these risks. For that reason, it is indispensable to run a comprehensive stakeholder analysis that concretizes primary stakeholder interest and claims.

In addition, it is shown that long-term performance is also impacted by a positive change of stakeholder commitment post-merger compared to pre-merger. An increasing employee and customer commitment yields higher acquirer abnormal operating cash flow returns and partially higher financial performance. Moreover, the presented empirical study does also confirm the relevance of certain stakeholder conflict variables while analyzing post-acquisition performance. Among others, acquirer integration capacity and cross-country transactions deteriorate long-term M&A performance, whereas geographic proximity mitigates synergy-impairing stakeholder conflicts.

Based on the assessment of different stakeholder integration criteria, further variables are identified that significantly impact PMI quality. Acquirer synergy expectation, relative target size, and the target's public status drive stakeholder orientation during the PMI of corporate takeovers and mergers.

Altogether, the presented empirical study provides a compelling evidence that the mere focus on shareholder value in M&A is outdated. What really counts in the post-acquisition period of M&A is the effective integration management towards all primary stakeholders, i.e. employees, customers, suppliers, debt-holders, and so on. They have either direct or indirect influence on the firm's future cash flows and its merger synergies. Therefore, it is important to align their interests to the new circumstances and conditions in the post-merger period.

The empirical analysis in this paper is limited in several ways. Firstly, the focus is on US acquirers only. For future research it might be interesting to examine whether PMI quality has such a mitigating mechanism and value-increasing effect in other developed M&A markets, e.g. in UK or Germany. Secondly, the degree of stakeholder orientation in PMI might not be fully covered by the defined ten criteria in this paper. In addition, there might exist further dimensions and aspects worth investigating in more detail. Moreover, the data sources of collecting PMI information might be not sufficient enough due to the possibility that not every piece of information is

communicated or documented in the annual reports, 10-K SEC filings, press news, or ad-hoc announcements. The applied approach of assessing PMI quality in this paper does not cover first-hand information. Thus, a survey approach might be worth conducting in future research to either confirm or reject the outcome of the high-level procedure within this article. Finally, due to the high effort of collecting relevant integration data, the underlying M&A sample only comprises 425 effective transactions. The small sample size might be prone to biased statistical inferences. Therefore, researchers are encouraged to re-examine the relevance of PMI quality in M&A in their future work through application of a sufficiently large data sample.

4.5 Appendix

A1: Variable definition

Table 1

Variable definition

Variable	Description
I M&A Financial Performance Variables	
BHAR_36	36-month buy-and-hold abnormal return (BHAR) derived with reference portfolio approach
BHAR_24	24-month BHAR derived with reference portfolio approach
BHAR_12	12-month BHAR derived with reference portfolio approach
mBHAR_36	36-month BHAR derived with matching control firm approach
mBHAR_24	24-month BHAR derived with matching control firm approach
mBHAR_12	12-month BHAR derived with matching control firm approach
wBHAR_36	36-month BHAR derived with reference portfolio approach – winsorized 2.5%/ 97.5% levels
wBHAR_24	24-month BHAR derived with reference portfolio approach – winsorized 2.5%/ 97.5% levels
wBHAR_12	12-month BHAR derived with reference portfolio approach – winsorized 2.5%/ 97.5% levels
wmBHAR_36	36-month BHAR derived with matching control firm approach – winsorized 2.5%/ 97.5% levels
wmBHAR_24	24-month BHAR derived with matching control firm approach – winsorized 2.5%/ 97.5% levels
wmBHAR_12	12-month BHAR derived with matching control firm approach – winsorized 2.5%/ 97.5% levels
II M&A Operating Performance Variables	
AOCFR	Three year average abnormal operating cash flow return (AOCFR) compared to pre-merger
wAOCFR	Three year average AOCFR compared to pre-merger – winsorized 2.5%/97.5% levels
III Firm and Deal Characteristics	
deal_size	Relative deal size defined as ratio between deal value and acquirer's market value at effective year
deal_frequ	Acquirer's deal frequency: defined as number of transactions with minimum deal value of 100 million USD - executed within the previous 5 years
cd	Culture distance between acquirer's and target's nation: measured by Kogut and Singh formula and with 5 culture distance dimensions of Hofstede
bm	Acquirer firm's book-to-market ratio (high ratio = undervalued acquirer, low ratio = overvalued acquirer)
ln_mv_acqu	Natural logarithm of the acquirer's market value
priv	Binary variable that equals 1 if target firm is a private firm, otherwise 0 if it is publicly listed
pay	Binary variable that equals 1 if the acquirer pays in cash, otherwise 0
relate_2sic	Binary variable that equals 1 if acquirer's and target's first 2-digit SIC codes are identical, otherwise 0
goodw_to_dv	Reported transaction goodwill divided by deal value (acquirer synergy expectation)
cb	Binary variable that equals 1 if the transaction takes place cross-border, otherwise 0 if US domestic
geo	Geographic distance in miles between acquirer's headquarter and target's headquarter

IV Stakeholder Engagement Variables	
employee	Employee productivity as the ratio of net sales to number of employees
customer	Sales growth as the ratio of net sales at end of year to net sales beginning of year
V Industry and Year Controls	
sic_b	Binary variable that equals 1, if acquirer operates in the SIC division B: mining, otherwise 0
sic_c	Binary variable that equals 1, if acquirer operates in the SIC division C: construction, otherwise 0
sic_d	Binary variable that equals 1, if acquirer operates in the SIC division D: manufacturing, otherwise 0
sic_e	Binary variable that equals 1, if acquirer operates in the SIC division E: transportation, communications, electric, gas, and sanitary services, otherwise 0
sic_f	Binary variable that equals 1, if acquirer operates in the SIC division F: wholesale trade, otherwise 0
sic_g	Binary variable that equals 1, if acquirer operates in the SIC division G: retail trade, otherwise 0
sic_i	Binary variable that equals 1, if acquirer operates in the SIC division I: services, otherwise 0

A2: Robustness tests

Table 2

Robustness check: Winsorized BHAR at 2.5% and 97.5% level. Regression of 36-month buy-and-hold abnormal returns (BHAR) on PMI quality sub-indexes, stakeholder engagement variables, and firm and deal characteristics

Model	**6**	**6.1**	**7**	**7.1**
Dep. variable	**BHAR_36**	**wBHAR_36**	**BHAR_36**	**wBHAR_36**
pmi			0.066***	0.063***
			(4.96)	(5.24)
pmi_1	0.068*	0.073*		
	(1.68)	(1.91)		
pmi_2	0.060	0.057		
	(1.63)	(1.63)		
pmi_3	0.039	0.0331		
	(0.56)	(0.50)		
pmi_4	0.094**	0.086**		
	(2.13)	(2.11)		
ln_mv_acqu	0.044*	0.042*	0.040	0.039*
	(1.74)	(1.92)	(1.59)	(1.77)
goodw_to_dv	-0.283***	-0.235***	-0.264**	-0.218**
	(-2.71)	(-2.60)	(-2.53)	(-2.40)
bm	-0.176	-0.179*	-0.160	-0.162
	(-1.62)	(-1.82)	(-1.48)	(-1.66)
cd	-0.020	-0.009	-0.022	-0.011
	(-1.08)	(-0.68)	(-1.23)	(-0.91)
deal_frequ	-0.018	-0.016	-0.016	-0.014
	(-1.62)	(-1.51)	(-1.48)	(-1.39)
deal_size	0.020	0.004	0.012	0.002
	(0.25)	(0.06)	(0.15)	(0.03)
cb	-0.219**	-0.177*	-0.144	-0.110
	(-2.04)	(-1.80)	(-1.47)	(-1.22)
geo	0.001**	0.000***	0.001**	0.000***
	(2.51)	(2.99)	(2.31)	(2.61)
priv	0.094	0.089	0.098	0.095
	(1.05)	(1.17)	(1.08)	(1.24)
pay	0.118*	0.103*	0.131*	0.116*
	(1.77)	(1.75)	(1.95)	(1.95)
relate_2sic	-0.006	-0.003	-0.002	-0.006
	(-0.01)	(-0.06)	(-0.03)	(-0.10)
customer			0.197	0.183
			(1.35)	(1.38)
employee			0.213	0.174
			(1.64)	(1.47)
constant	-0.707**	-0.665**	-0.458	-0.426
	(-2.32)	(-2.41)	(-1.51)	(-1.54)
Industry control	yes	Yes	yes	yes
N	423	423	414	414
R^2	0.128	0.121	0.135	0.125
Adjusted R^2	0.082	0.075	0.091	0.080
Overall p-value	0.000	0.000	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 3

Robustness check: Winsorized AOCFR at 2.5% and 97.5% level. Regression of abnormal operating cash flow returns (AOCFR) on PMI quality sub-indexes, stakeholder engagement variables, and firm and deal characteristics

Model	**14**	**14.1**	**15**	**15.1**
Dep. variable	**AOCFR**	**wAOCFR**	**AOCFR**	**wAOCFR**
pmi			0.009***	0.008***
			(2.68)	(2.82)
pmi_1	-0.000	-0.001		
	(-0.05)	(-0.16)		
pmi_2	0.003	0.006		
	(0.34)	(0.74)		
pmi_3	0.014	0.017		
	(0.91)	(1.12)		
pmi_4	0.036***	0.026**		
	(2.82)	(2.48)		
goodw_to_dv	-0.017	-0.027	-0.014	-0.022
	(-0.58)	(-1.18)	(-0.46)	(-0.93)
bm	-0.034	-0.026	-0.043	-0.034
	(-1.35)	(-1.18)	(-1.57)	(-1.43)
cd	0.003	0.002	0.002	0.002
	(0.82)	(0.80)	(0.76)	(0.78)
deal_frequ	-0.005**	-0.004**	-0.004**	-0.004**
	(-2.37)	(-2.31)	(-2.26)	(-2.21)
deal_size	0.011	0.011	0.014	0.013
	(0.58)	(0.91)	(0.77)	(1.09)
cb	-0.063**	-0.051**	-0.037	-0.035
	(-2.18)	(-2.16)	(-1.53)	(-1.57)
geo	0.000*	0.000	0.000	0.000
	(1.65)	(1.61)	(0.96)	(1.00)
priv	0.031*	0.029**	0.028*	0.027*
	(1.88)	(2.00)	(1.71)	(1.82)
pay	0.025*	0.021	0.025*	0.020
	(1.72)	(1.65)	(1.79)	(1.59)
relate_2sic	-0.021	-0.019	-0.020	-0.019
	(-1.50)	(-1.54)	(1.43)	(-1.47)
customer			0.070**	0.073**
			(2.28)	(2.24)
employee			0.057*	0.041*
			(1.90)	(1.80)
constant	-0.052	-0.047	0.041	0.030
	(-0.85)	(-0.83)	(0.69)	(0.61)
Industry control	yes	yes	yes	yes
N	371	371	363	363
R^2	0.121	0.112	0.116	0.115
Adjusted R^2	0.070	0.061	0.067	0.066
Overall p-value	0.002	0.001	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 4

Robustness check: Cross-sectional dependency. Regression of 36-month buy-and-hold abnormal returns (BHAR) on PMI quality sub-indexes and firm and deal characteristics

Model	**23**	**24**	**25**	**26**
Dep. variable	**BHAR_36**	**BHAR_36**	**BHAR_36**	**BHAR_36**
pmi_1	0.130***			
	(3.43)			
pmi_2		0.133***		
		(4.35)		
pmi_3			0.153**	
			(2.29)	
pmi_4				0.151***
				(3.20)
ln_mv_acqu	0.039	0.038	0.041	0.043
	(1.37)	(1.32)	(1.43)	(1.52)
goodw_to_dv	-0.283**	-0.298***	-0.303***	-0.269**
	(-2.51)	(-2.59)	(-2.61)	(-2.35)
bm	-0.249**	-0.299***	-0.229**	-0.228**
	(-2.41)	(-2.83)	(-2.17)	(-2.19)
cd	-0.017	-0.013	-0.015	-0.018
	(-0.88)	(-0.73)	(-0.81)	(-0.99)
deal_frequ	-0.003	-0.007	-0.009	-0.010*
	(-0.27)	(-0.59)	(-0.79)	(-0.83)
deal_size	0.055	0.061	0.074	0.046
	(0.67)	(0.77)	(0.91)	(0.60)
cb	-0.209*	-0.225*	-0.208*	-0.215*
	(-1.80)	(-1.88)	(-1.75)	(-1.87)
geo	0.001**	0.001**	0.001**	0.001**
	(2.28)	(2.35)	(2.24)	(2.32)
priv	0.056	0.086	0.046	0.062
	(0.61)	(0.95)	(0.50)	(0.68)
pay	0.695	0.072	0.077	0.086
	(0.97)	(1.00)	(1.06)	(1.20)
relate_2sic	-0.000	-0.017	-0.009	-0.008
	(-0.00)	(-0.26)	(-0.13)	(-0.12)
constant	-0.342	-0.295	-0.349	-0.425
	(-1.03)	(-0.90)	(-1.06)	(-1.28)
Industry control	yes	yes	yes	yes
N	377	377	377	377
R^2	0.109	0.117	0.094	0.108
Adjusted R^2	0.064	0.073	0.048	0.063
Overall p-value	0.003	0.001	0.02	0.007

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 5

Robustness check: Cross-sectional dependency: Regression of 36-month buy-and-hold abnormal returns (BHAR) on PMI quality sub-indexes, stakeholder engagement variables, and firm and deal characteristics

Model	**27**	**28**	**29**	**30**
Dep. variable	**BHAR_36**	**BHAR_36**	**BHAR_36**	**BHAR_36**
pmi	0.080***		0.069***	0.064***
	(5.05)		(4.79)	(4.48)
pmi_1		0.068		
		(1.55)		
pmi_2		0.082**		
		(2.06)		
pmi_3		0.001		
		(0.01)		
pmi_4		0.095*		
		(1.91)		
ln_mv_acqu	0.038	0.038	0.033	0.039
	(1.35)	(1.35)	(1.17)	(1.54)
goodw_to_dv	-0.304***	-0.292***	-0.281**	-0.301
	(-2.71)	(-2.62)	(-2.47)	(-2.40)
bm	-0.272***	-0.278***	-0.259**	-0.260***
	(-2.66)	(-2.64)	(-2.48)	(-2.60)
cd	-0.016	-0.016	-0.019	-0.022
	(-0.86)	(-0.88)	(-1.07)	(-1.24)
deal_frequ	-0.004	-0.004	-0.002	-0.003
	(-0.34)	(-0.35)	(-0.18)	(-0.22)
deal_size	0.038	0.033	0.026	0.031
	(0.47)	(0.42)	(0.32)	(0.38)
cb	-0.208*	-0.214*	-0.122	-0.126
	(-1.81)	(-1.87)	(-1.19)	(-1.23)
geo	0.001**	0.001**	0.001**	0.001**
	(2.40)	(2.40)	(2.19)	(2.20)
priv	0.081	0.087	0.085	0.098
	(0.91)	(0.96)	(0.93)	(1.06)
pay	0.082	0.081	0.093	0.087
	(1.15)	(1.14)	(1.30)	(1.28)
relate_2sic	-0.010	-0.011	-0.009	-0.015
	(-0.16)	(-0.16)	(-0.14)	(-0.23)
customer			0.199	0.176
			(1.24)	(1.13)
employee			0.229*	0.243*
			(1.69)	(1.78)
constant	-0.366	-0.371	-0.179	-0.405
	(-1.13)	(-1.12)	(-0.46)	(-1.57)
Industry control	yes	yes	yes	no
N	377	377	369	369
R^2	0.131	0.133	0.143	0.133
Adjusted R^2	0.087	0.081	0.093	0.099
Overall p-value	0.000	0.000	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 6

Robustness check: Cross-sectional dependency. Regression of abnormal operating cash flow returns (AOCFR) on PMI quality sub-indexes and firm and deal characteristics

Model	**31**	**32**	**33**	**34**
Dep. variable	**AOCFR**	**AOCFR**	**AOCFR**	**AOCFR**
pmi_1	0.008			
	(0.79)			
pmi_2		0.012		
		(1.42)		
pmi_3			0.029	
			(1.65)	
pmi_4				0.048***
				(3.84)
goodw_to_dv	-0.018	-0.019	-0.022	-0.011
	(-0.56)	(-0.60)	(-0.68)	(-0.38)
bm	-0.032	-0.037	-0.032	-0.027
	(-1.12)	(-1.30)	(-1.13)	(-1.02)
cd	0.003	0.003	0.003	0.002
	(1.06)	(1.15)	(1.10)	(0.73)
deal_frequ	-0.004*	-0.004*	-0.004*	-0.004*
	(-1.77)	(-1.84)	(-1.95)	(-1.90)
deal_size	0.018	0.017	0.018	0.007
	(0.87)	(0.87)	(0.92)	(0.36)
cb	-0.071**	-0.072**	-0.069**	-0.072**
	(-2.16)	(-2.17)	(-2.10)	(-2.27)
geo	0.000	0.000	0.000	0.000
	(1.50)	(1.55)	(1.53)	(1.79)
priv	0.020	0.023*	0.020	0.027*
	(1.19)	(1.35)	(1.16)	(1.67)
pay	0.023	0.022	0.024	0.028*
	(1.45)	(1.43)	(1.52)	(1.76)
relate_2sic	-0.017	-0.018	-0.017	-0.016
	(-1.05)	(-1.09)	(-1.06)	(-1.06)
constant	-0.028	-0.033	-0.027	-0.063
	(-0.46)	(-0.54)	(-0.43)	(-1.00)
Industry control	yes	yes	yes	yes
N	329	329	329	329
R^2	0.083	0.087	0.089	0.134
Adjusted R^2	0.033	0.037	0.039	0.086
Overall p-value	0.026	0.006	0.006	0.004

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 7

Robustness check: Cross-sectional dependency. Regression of abnormal operating cash flow returns (AOCFR) on PMI quality sub-indexes, stakeholder engagement variables, and firm and deal characteristics

Model	**35**	**36**	**37**	**38**
Dep. variable	**AOCFR**	**AOCFR**	**AOCFR**	**AOCFR**
pmi	0.010***		0.009**	0.010**
	(2.67)		(2.46)	(2.52)
pmi_1		-0.003		
		(-0.29)		
pmi_2		-0.002		
		(0.23)		
pmi_3		0.014		
		(0.73)		
pmi_4		0.048***		
		(3.30)		
goodw_to_dv	-0.021	-0.013	-0.014	-0.017
	(-0.65)	(-0.42)	(-0.45)	(-0.55)
bm	-0.037	-0.026	-0.037	-0.026
	(-1.31)	(-0.99)	(-1.29)	(-1.00)
cd	0.003	0.002	0.002	0.001
	(1.04)	(0.73)	(0.69)	(0.36)
deal_frequ	-0.004	-0.005*	-0.004**	-0.003
	(-1.64)	(-1.96)	(-1.66)	(-1.31)
deal_size	0.013	0.007	0.011	0.009
	(0.65)	(0.38)	(0.58)	(0.48)
cb	-0.069**	-0.071**	-0.039	-0.039
	(-2.11)	(-2.23)	(-1.47)	(-1.55)
geo	0.000	0.000*	0.0004	0.000
	(1.67)	(1.78)	(1.00)	(1.31)
priv	0.025	0.026	0.024	0.032*
	(1.51)	(1.58)	(1.43)	(1.93)
pay	0.024	0.028*	0.026*	0.018
	(1.55)	(1.81)	(1.73)	(1.22)
relate_2sic	-0.017	-0.016	-0.019	-0.021
	(-1.05)	(-1.05)	(1.20)	(-1.43)
customer			0.048	0.052
			(1.39)	(1.46)
employee			0.081***	0.077**
			(2.66)	(2.42)
constant	-0.052	-0.060	0.049	-0.025
	(-0.83)	(-0.96)	(0.76)	(-0.72)
Industry control	yes	yes	yes	no
N	329	329	322	322
R^2	0.102	0.135	0.123	0.084
Adjusted R^2	0.053	0.079	0.067	0.045
Overall p-value	0.002	0.004	0.001	0.003

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8

Robustness check: Cross-sectional dependency. Regression of PMI quality sub-indexes on firm and deal characteristics

Model	**39**	**40**	**41**	**42**
Dep. variable	**Mgmt. Attention**	**Stakeholder Information**	**Integration Support**	**Risk Awareness**
bm	0.106	0.528***	-0.007	0.003
	(0.85)	(3.11)	(-0.08)	(0.03)
goodw_to_dv	0.134	0.301	0.208	0.099
	(0.86)	(1.50)	(1.57)	(0.73)
deal_frequ	-0.051**	-0.022	-0.006	-0.003
	(-2.46)	(-1.20)	(0.68)	(-0.20)
deal_size	0.186**	0.125	0.035	0.251***
	(2.36)	(1.61)	(0.87)	(3.93)
cd	0.006	-0.017	-0.006	0.010
	(0.37)	(-1.23)	(-1.03)	(0.47)
cb	-0.090	0.014	-0.084	-0.058
	(-0.54)	(0.08)	(-1.17)	(-0.37)
geo	-0.000	-0.000	-0.000	-0.000
	(-1.17)	(-1.49)	(-0.71)	(-0.80)
priv	-0.152	-0.368***	-0.026	-0.085
	(-1.64)	(-3.89)	(-0.56)	(-1.09)
pay	-0.021	-0.015	-0.061	-0.080
	(-0.23)	(-0.14)	(-1.24)	(-1.07)
relate_2sic	-0.033	0.103	0.015	0.029
	(-0.37)	(1.03)	(0.31)	(0.38)
constant	0.580***	0.294*	0.133	0.564***
	(3.99)	(1.71)	(1.48)	(3.92)
Industry control	no	no	no	no
N	379	379	379	379
R^2	0.063	0.109	0.041	0.070
Adjusted R^2	0.037	0.084	0.015	0.044
Overall p-value	0.002	0.000	0.067	0.002

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 9

Robustness check: Cross-sectional dependency. Regression of PMI quality index on firm and deal characteristics

Model	**43**	**44**
Dep. variable	**PMI Quality**	**PMI Quality**
bm	0.047	0.335
	(1.34)	(1.00)
goodw_to_dv	0.841*	0.584
	(1.83)	(1.25)
deal_frequ	-0.024	-0.019
	(-0.70)	(-0.55)
deal_size	0.639***	0.642***
	(3.15)	(3.22)
cd	-0.011	-0.010
	(-0.27)	(-0.23)
cb	-0.189	-0.093
	(-0.49)	(-0.24)
geo	-0.001	-0.001*
	(-1.60)	(-1.81)
priv	-0.602***	-0.577**
	(-2.66)	(-2.45)
pay	-0.344	-0.376*
	(-1.61)	(-1.73)
relate_2sic	0.132	0.128
	(0.60)	(0.58)
constant	1.633***	1.178**
	(4.37)	(2.36)
Industry control	no	yes
N	425	425
R^2	0.111	0.150
Adjusted R^2	0.090	0.117
Overall p-value	0.000	0.000

t statistics in parentheses
* p<0.1, ** p<0.05, *** p<0.01

A3: PMI quality evaluation example: Merger between Republic Services Inc. and Allied Waste Industries in 2008 (Total index score: 9 of 10)

1. Sub-Index: PMI Management Attention (Score: 2 of 2)

A. Management Focus on PMI: (YES=1)

"We are well aware that some mergers in our industry, and other industries, failed because they did not focus enough on integration. We recognized this challenge and began to develop our integration process and strategy as soon as we announced our merger...[...]. We made successful integration a high priority and identified specific integration tasks at every level throughout the combined organization." (Data Source: Republic Services 2008 Annual Report, Letter to Shareholders)

"Our integration work centered on controlling costs and realizing the savings the merger promised." (Data Source: Republic Services 2009 Annual Report, Letter to Shareholders)

"Finally, in 2010 we successfully completed the two-year integration of Republic and Allied." (Data Source: Republic Services 2010 Annual Report, Letter to Shareholders)

B. Management Confidence about PMI (YES=1)

"..., we believed we could capture $150 million in annual run-rate savings by the end of 2010. However, by the second quarter 2009, it was clear we could do better. We then increased that goal to a range of $165 to $175 million, again by the end of 2010. As 2009 ended, we had already reached annual run-rate savings of $150 million and were well on our way to achieving our new target." (Data Source: Republic Services 2009 Annual Report, Letter to Shareholders)

"The integration achieved a total of approximately $190 million in annual run-rate synergy savings – well above the $150 million we originally targeted." (Data Source: Republic Services 2010 Annual Report, Letter to Shareholders)

2. Sub-Index: Stakeholder Information (Score: 3 of 3)

A. Integration Plan (YES=1)

"We spent more than 35,000 man-hours to develop our integration plan and to ensure that each and every employee was engaged and understood his or her role in this process." (Data Source: Republic Services 2008 Annual Report, Letter to Shareholders)

B. Integration Objective (YES=1)

"Merger Integration Strategy. ... [...] ... – Timely and Focused Integration Process. ... [...] ... – Significant Synergies. (Data Source: Republic Services 2008 Annual Report, Item 1. Business, Operating Strategy, p. 4-5)

"Upon the completion of the integration of Allied, our goal is to maintain our selling, general and administrative costs at no more than 10.0% of revenue, which we believe is appropriate given our existing business platform." (Data Source: Republic Services 2008 Annual Report, Item 7. Management's discussion, Consolidated Results of Operations, p. 49)

C. General Transparency (YES=1)

"..., the merger is expected to generate total annual run-rate integration synergies, primarily resulting from operating efficiencies, economies of scale, and leveraging corporate and overhead resources of approximately $150.0 million by the end of 2010. We have identified and are on track to realize in 2009 approximately $100.0 million, or 67% of the total expected annual run-rate synergies. (Data Source: Republic Services 2008 Annual Report, Item 1. Business, Overview, p. 1)

3. Sub-Index: Integration Support and Governance (Score: 3 of 3)

A. Consultants / Integration Team (YES=1)

"During December 2008, we incurred $82.7 million of restructuring charges associated with integrating our operations with Allied. These charges primarily consist of severance and other employee termination and relocation benefits and consulting fees paid to outside parties." (Data Source: Republic Services 2008 Annual Report, Item 7. Management's discussion – Merger with Allied Waste Industries, Inc., p. 39)

B. Integration Incentives (YES=1)

"Consequently, we have developed and implemented incentive programs that help focus our entire company on the realization of key financial metrics of ... [...], as well as achieving integration synergies." (Data Source: Republic Services 2008 Annual Report, Item 1. Business – Financial Strategy, p. 2)

"Furthermore, in conjunction with the merger with Allied, we have developed integration metrics to be achieved by our executive management team and key employees based upon targeted annual run-rate synergies..." (Data Source: Republic Services 2008 Annual Report, Item 1. Business, Compensation, p. 14)

C. PMI Governance (YES=1)

"Allan C. Sorensen Chairman, Integration Committee" (Data Source: Republic Services 2008 Annual Report, Board of Directors 2009, p. 175)

4. Sub-Index: Integration Risk Awareness (Score: 1 of 2)

A. Integration Risks (YES=1)

"The actual integration may result in additional and unforeseen expenses, and the anticipated benefits of the integration plan may not be realized. We may not be able to accomplish the integration process smoothly, successfully or on a timely basis. We may experience difficulties integrating Allied's business... [...]... The necessity of coordinating geographically separated organizations, information systems and facilities, and addressing possible differences in business backgrounds, corporate cultures and management philosophies, may increase the difficulties of integration... [...]...Employee uncertainty and lack of focus during the integration process may also disrupt our business. The inability of our management to successfully and timely integrate the operations of Republic and Allied could have a material adverse effect on the business and results of operations of the combined company." (Data Source: Republic Services 2008 Annual Report, Item 1A. Risk Factors, p. 15-16)

B. Stakeholder Risks during PMI (NO=0)

No information found by textual analysis.

5 Concluding Remarks

Many M&A-transactions destroy value on a massive scale due to the lack of appropriate and effective PMI measures. Arguably the biggest mistake still made by acquiring firm managers is their mere focus on shareholder interests and the required rate of return on shareholder equity. Managers miss out on focusing on the overall picture while executing an acquisition or a merger. They fail to manage all relevant stakeholders and their primary interests during the PMI. This misstep can be disastrous as outlined and empirically proven in this doctoral thesis.

This dissertation provides valuable guidance for future M&A decision makers by emphasizing stakeholder interests and the primary stakeholders' role during the post-merger integration process. Firstly, it outlines the relevance of PMI to mitigate detrimental post-acquisition developments caused by stakeholder struggle through the development of the "post-merger stakeholder conflict hypothesis". Secondly, it examines the justification of the established theoretical framework by confirming the existing evidence of US acquirers' underperformance, and empirically analyzing the impact of stakeholder conflict factors on long-run financial and operating M&A profitability. Thirdly, it tests the developed theory through construction of a PMI index (consisting of the four dimensions: management attention, stakeholder information, integration support, and integration risks) that evaluates PMI quality, and through the empirical assessment of PMI quality and its impact on M&A performance. It shows which dimension is most important when it comes to stakeholder orientation during the PMI.

This dissertation covers the general threat of value-decreasing stakeholder conflicts in the post-acquisition period of M&A and suggests that a stakeholder-oriented PMI mitigates synergy impairment. However, more understanding is needed with regard to the effective application of stakeholder specific integration measures, for example, what exact kind of activities, their positive impact, when and to what extent they should be used. Moreover, it is advantageous to know which stakeholder group is most important for post-merger management and integration in order to avoid detrimental conflict and power struggle associated with M&A failure.

Thus, future research is needed to delve deeper into PMI and its favorable role in M&A with focus on primary stakeholders and their interests to be aligned.

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