Unlocking Future Potential in M&A: A Comprehensive Analysis of Long-Term Performance Measurement Approaches and the Identification and Realization of Synergy Values

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„A life spent making mistakes is not only more honorable,

but more useful than a life spent doing nothing.“

George Bernard Shaw

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Abstract

For decades, mergers and acquisitions (M&A) have been the preferred strategic tool in corporate management for enabling rapid growth. The complexity of evaluating M&A performance, however, goes far beyond strategic management, resonating in the corporate finance and organizational behavior literature. Despite this large amount of research, there is little to no agreement within or across disciplines on how to measure M&A performance. The majority of finance studies criticize M&A as not creating value or assuring growth for the acquirer. M&A failure rates are estimated to be 70–90%. The complexity, lack of transparency, and uncertainty in measuring M&A performance can be attributed to the proliferation of diverse benchmarks. The valuation of a target company can be performed from different perspectives, resulting in different company values. A capital market-driven valuation, for example, may be a reputable source but neglects the accounting perspective and the accounting of assets. The increased intangible assets documented on financial balance sheets further intensify the discussion and pose expansive challenges for managers. For M&A decision-makers, these discrepancies raise the important question regarding the reliability of valuation methodologies for assessing M&A performance.

While scholars have recognized the importance of varied performance measures in appraising the success of M&A, the literature lacks a comprehensive approach that captures all aspects of an acquiring firm's current and future performance, capable of distinguishing between them and accurately adjusting post-M&A performance for other influencing factors. Therefore, the first research objective of this paper is to gain empirical insights into the operation of a holistic valuation approach that differs significantly from previous approaches. The dissertation relies on the findings of the interactions between pre- and post-M&A performance to identify the transaction-related changes in performance and to evaluate the information content of the measure in the post-M&A context.

As a performance indicator for M&A success, a company's future potential (FP) captures elements of the capital market perspective as well as those of the accounting and value-oriented perspectives. However, the indicator is unexplored in empirical research so far and there are no studies on its practical applicability and interpretability. For decades, there has been a controversial discussion —especially in M&A research— on how to value synergies, as they are intangible, manipulable, highly non-transparent, and subject to biased assumptions. The FP approach seems suitable for M&A research as it addresses those critical issues. The market prices already include all shareholder expectations for the company, i.e.,

all growth in the future has already been priced in by the shareholders of a listed company and expectations can only be influenced through new information. FP also filters out the expectations to be realized through internal growth and allows for a pure evaluation of the M&A effect. Furthermore, the approach allows a dynamic development of FP. Accounting ratios provide information about a company's performance but do not indicate the current capital market expectations. Changes in the market price must be taken into account in the same way as changes in the operating business. This represents a major challenge for companies, as they are in a constant process between creating and realizing FP. This interaction is imperative for the sustainable success of a company. The second research objective of this dissertation addresses the general application of the FP approach in M&A research. To answer this research question, a consistent conceptual and empirical structure spans across all papers.

Addressing a large unanswered research gap, the FP approach represents a contribution to the fundamental research on M&A performance. There are numerous questions that must be raised to develop this conceptual approach. For instance, the quantification of the FP engendered by M&A remains uncertain. Similarly, how the company manages the multiple potentials and the extent to which potential gains remain unrealized and are consequently forfeited remains ambiguous. It is also uncertain how long FPs are preserved if they remain unused or undiscovered. There are also theoretical questions surrounding the drivers of FP. It can be argued that goodwill accounting and intangible assets are drivers of FP, as they represent synergies or the main motivation for conducting M&A. The literature strongly criticizes overpaying for transactions and the lack of correlation between post-M&A performance and purchase prices. In the short term, however, goodwill and FP measure the same issue from different perspectives as both contain the synergies of transactions. With increasing distance to transactions, widely acknowledged problems emerge, which have been known to the FASB and IASB for decades, such as companies using their managerial discretion to prevent impairments of goodwill. As a result, the third research objective of this paper is to determine whether FP is a better indicator of whether goodwill impairment is required.

Numerous literature reviews have displayed the complexity of M&A performance and demonstrated that there is confusion about what is being measured in the first place. The measures used are often not directly related to M&A performance and may contain confounding factors. The correlation between these different M&A measures cannot be proven in meta-studies. Therefore, a fourth research objective of the dissertation relates to

analyzing FP performance development. This study is structured to be comparable with previous methodologies, and the main drivers of FP used are those measured and classified in the existing literature.

Finally, this paper analyzes the main research streams on goodwill research including value relevance, information content, and predictive value. Using a large sample of U.S. M&A transactions, it aims to determine whether FP affects the relationship between goodwill, or premiums and firm operating performance. Based on previous studies, FP is used as a moderator variable since it is assumed that goodwill cannot reflect a firm's full growth potential, and goodwill should correlate with the realization of synergies in the long run. While operating performance can only measure the realization of goodwill, FP contains more information about the long-term impact of goodwill on performance.

The dissertation is organized as follows: Chapter 1 outlines the overarching research motivation by formulating the primary research questions and summarizing the fundamental research assertions derived from the studies conducted. Chapter 2 addresses the M&A performance measures relevant to the work and the classification of FP. Part 1 of the dissertation comprises Chapters 3 through 6, which present the four individual research papers chronologically. In Chapter 3, Research Paper 1 examines the extent to which M&A increases FP by measuring the creation of FP and the time it takes to realize FP after a transaction. In Chapter 4, Research Paper 2 presents a conceptual consideration of FP, exploring how balance sheet items and FP are related. Strategic action options that are specifically relevant for balance sheet managers can be derived from the conceptualization. Research Paper 3 in Chapter 5 extends the basic research on M&A performance and addresses the general critique of performance measures in previous studies by performing a validation analysis of the FP. Research Paper 4 in Chapter 6 integrates the research from the previous papers, taking up the criticism and treatment of the accounting rules on goodwill accounting by the FASB and IASB, in particular. In Part 2, Research Paper 5 addresses the impact of ESG criteria on the duration of the M&A process, which is expected to be relevant concerning realizing synergies in the future. The dissertation concludes in Chapter 9 with a summary of the findings of all research papers, a discussion of their implications for both research and practice, a description of limitations from a methodological and theoretical perspective, and important recommendations for future research directions.

This dissertation contributes to the literature by conceptually and empirically demonstrating that separating FP from present value and linking the accounting, capital market, and value-

based perspectives allows for more nuanced conclusions about M&A performance. The results provide important insights for handling goodwill accounting and its subsequent valuation, for which standard-setters have been strongly criticized internationally. Specifically, this dissertation contributes to the M&A literature by (1) developing a holistic approach to assessing M&A performance; (2) deriving recommendations for strategic decision making; (3) establishing a measure for identifying and concretely predicting the development of growth potential; (4) directly comparing the holistic measure with long-established M&A performance measures; (5) renewing the critique of previous one-dimensional performance measures, as well as offering and empirically examining a concrete solution; (6) validating the impact of deal and firm characteristics on sustainable M&A performance; (7) reviewing the empirical research on whether goodwill is an asset and addressing the information content of the goodwill position, specifically the application of the impairment-only approach and predictive value; and (8) assessing the value of the goodwill position and premium and how it impacts the operating performance to assess whether the synergies associated with the M&A are justified from a capital market perspective. (9) In addition, this dissertation expounds upon the growing significance of ESG criteria within the context of the M&A process.

Zusammenfassung

M&A sind seit Jahrzehnten das bevorzugte strategische Instrument der Unternehmensführung, um Wachstum zu ermöglichen. Die Komplexität der Bewertung der M&A-Leistung geht jedoch weit über das strategische Management hinaus und findet ihre Berücksichtigung in der Literatur zur Unternehmensfinanzierung und zum Organisationsverhalten. Trotz einer großen Menge an Forschungsergebnissen besteht weder innerhalb, noch zwischen den Disziplinen Einigkeit darüber, wie die M&A-Leistung zu messen ist. In den meisten Finanzstudien wird kritisiert, dass M&A keinen Wert schaffen oder dem Erwerber kein Wachstum sichern kann. Die Misserfolgsquote bei M&A wird auf 70-90 % geschätzt. Die Komplexität, der Mangel an Transparenz und die Unsicherheit bei der Messung der M&A-Leistung sind auf die Verbreitung verschiedener Benchmarks zurückzuführen. Da die Bewertung eines Zielunternehmens aus verschiedenen Blickwinkeln erfolgen kann, existiert nicht nur ein Unternehmenswert. Eine kapitalmarktorientierte Bewertung kann beispielsweise eine seriöse Quelle sein, vernachlässigt aber die buchhalterische Perspektive und die Bilanzierung der Vermögenswerte. Die zunehmenden immateriellen Vermögenswerte, die in den Finanzbilanzen dokumentiert sind, verschärfen die Diskussion und stellen die Manager vor große Herausforderungen. Für M&A-Entscheidungsträger werfen diese Diskrepanzen die wichtige Frage nach der Zuverlässigkeit von Bewertungsmethoden zur Beurteilung der M&A-Performance auf.

Obwohl Wissenschaftlern die Bedeutung verschiedener Leistungskennzahlen für die Beurteilung des Erfolgs von M&A erkannt haben, fehlt in der Literatur ein umfassender Ansatz, der alle Aspekte der aktuellen und zukünftigen Leistung eines erwerbenden Unternehmens erfasst und in der Lage ist, zwischen ihnen zu unterscheiden und die Leistung nach M&A um andere Einflussfaktoren zu bereinigen. Das erste Forschungsziel dieser Arbeit besteht daher darin, empirische Erkenntnisse über die Funktionsweise eines ganzheitlichen Bewertungsansatzes zu gewinnen, der sich deutlich von bisherigen Ansätzen unterscheidet. Die Dissertation stützt sich auf die Erkenntnisse über die Wechselwirkungen zwischen der Performance vor und nach M&A, um die transaktionsbedingten Veränderungen in der Performance zu identifizieren und den Informationsgehalt der Maßnahme im Post-M&A-Kontext zu bewerten.

Als Leistungsindikator für den M&A-Erfolg erfasst das Zukunftspotenzial (ZP) eines Unternehmens sowohl Elemente der Kapitalmarktperspektive als auch solche der bilanziellen und wertorientierten Perspektive. Allerdings ist der Indikator in der empirischen Forschung

bislang unerforscht und es gibt keine Studien zu seiner praktischen Anwendbarkeit und Interpretierbarkeit. Seit Jahrzehnten wird - insbesondere in der M&A-Forschung - kontrovers diskutiert, wie Synergien zu bewerten sind, da sie immateriell, manipulierbar, in hohem Maße intransparent und mit subjektiven Annahmen verbunden sind. Der ZP-Ansatz scheint für die M&A-Forschung geeignet zu sein, da er diese kritischen Punkte anspricht. In den Marktpreisen sind bereits alle Erwartungen der Aktionäre an das Unternehmen enthalten, d.h. das gesamte zukünftige Wachstum ist von den Aktionären eines börsennotierten Unternehmens bereits eingepreist und die Erwartungen können nur durch neue Informationen beeinflusst werden. ZP filtert auch die durch internes Wachstum zu realisierenden Erwartungen heraus und ermöglicht eine reine Bewertung des M&A-Effekts. Darüber hinaus erlaubt der Ansatz eine dynamische Entwicklung des ZP. Bilanzkennzahlen enthalten nur Informationen über die Leistungsfähigkeit eines Unternehmens, vernachlässigen aber die Erwartungen des Kapitalmarktes. Veränderungen der Marktpreise müssen jedoch gleichermaßen berücksichtigt werden wie Veränderungen im operativen Geschäft. Dies stellt eine große Herausforderung für Unternehmen dar, da sie sich in einem ständigen Prozess zwischen der Schaffung und der Realisierung von ZP befinden. Diese Wechselwirkung ist für den nachhaltigen Erfolg eines Unternehmens unabdingbar. Das zweite Forschungsziel dieser Dissertation befasst sich mit der allgemeinen Anwendung des ZP-Ansatzes in der M&A-Forschung. Um diese Forschungsfrage zu beantworten, wird eine konsistente konzeptionelle und empirische Struktur über alle Arbeiten hinweg verfolgt.

Der ZP-Ansatz ist ein Beitrag zur Grundlagenforschung über die Leistung von M&A und schließt eine große unbeantwortete Forschungslücke. Es gibt zahlreiche Fragen, die zur Entwicklung dieses konzeptionellen Ansatzes gestellt werden müssen. So ist z.B. die Quantifizierung der durch M&A hervorgerufenen ZP noch völlig ungewiss. Auch die Art und Weise, wie Unternehmen mit den vielfältigen Potenzialen umgehen, und das Ausmaß, in dem potenzielle Gewinne unrealisiert bleiben und folglich verfallen, bleiben unklar. Es ist auch ungewiss, wie lange die ZP erhalten bleiben, wenn sie ungenutzt bleiben. Es gibt auch theoretische Fragen zu den Triebkräften des ZP. Es kann argumentiert werden, dass Goodwill und immaterielle Vermögenswerte die treibenden Kräfte für das ZP sind, da sie Synergien oder die Hauptmotivation für die Durchführung von M&A darstellen. In der Literatur werden überhöhte Preise für Transaktionen und die fehlende Korrelation zwischen der M&A-Leistung und den Kaufpreisen kritisiert. Kurzfristig gesehen messen Goodwill und ZP jedoch das gleiche Problem aus unterschiedlichen Perspektiven, da beide die Synergien von Transaktionen beinhalten. Mit zunehmendem Abstand zu den Transaktionen treten weithin

anerkannte Probleme auf, die dem FASB und dem IASB seit Jahrzehnten bekannt sind, wie z.B. die Tatsache, dass Manager ihren Ermessensspielraum nutzen, um Wertminderungen des Goodwill zu verhindern. Infolgedessen besteht das dritte Forschungsziel dieses Papiers darin, festzustellen, ob das ZP ein besserer Indikator dafür ist, ob eine Wertminderung des Goodwills erforderlich ist.

Zahlreiche Literaturübersichten haben die Komplexität der M&A-Performance aufgezeigt und gezeigt, dass Unklarheit darüber herrscht, was überhaupt gemessen wird. Die verwendeten Messgrößen stehen oft nicht in direktem Zusammenhang mit der M&A-Leistung und können Störfaktoren enthalten. Die Korrelation zwischen diesen verschiedenen M&A-Messgrößen kann in Metastudien nicht nachgewiesen werden. Ein viertes Forschungsziel der Dissertation bezieht sich daher auf die Analyse der ZP-Leistungsentwicklung. Diese Studie ist so strukturiert, dass sie mit früheren Methoden vergleichbar ist, und die wichtigsten Einflussfaktoren aus der bestehenden Literatur werden gemessen.

Schließlich werden in diesem Papier die wichtigsten Forschungsrichtungen im Bereich des Goodwills analysiert, darunter Wertrelevanz, Informationsgehalt und Vorhersagewert. Anhand einer großen Stichprobe von M&A-Transaktionen in den USA soll ermittelt werden, ob der ZP die Beziehung zwischen dem Goodwill bzw. den Prämien und der Betriebsleistung des Unternehmens beeinflusst. Basierend auf früheren Studien wird ZP als Moderatorvariable verwendet, da angenommen wird, dass der Goodwill nicht ökonomisch ist und das volle Wachstumspotenzial eines Unternehmens widerspiegeln kann und der Goodwill langfristig mit der Realisierung von Synergien korrelieren sollte. Während die operative Leistung nur die Realisierung des Goodwills messen kann, enthält das ZP mehr Informationen über die langfristigen Auswirkungen des Goodwills auf die Leistung.

Die Dissertation ist wie folgt gegliedert: Kapitel 1 skizziert die übergreifende Forschungsmotivation, indem es die primären Forschungsfragen formuliert und die aus den durchgeführten Studien abgeleiteten grundlegenden Forschungsaussagen zusammenfasst. Kapitel 2 befasst sich mit den für die Arbeit relevanten M&A-Performance-Maßen und der Klassifizierung der ZP. Teil 1 der Dissertation besteht aus den Kapiteln 3 bis 6, in denen die vier einzelnen Forschungsarbeiten chronologisch dargestellt werden. In Kapitel 3 wird in Paper 1 untersucht, inwieweit M&A die ZP erhöht, indem die Schaffung von ZP und die Zeit bis zur Realisierung von ZP nach einer Transaktion gemessen wird. In Kapitel 4 wird in Paper 2 eine konzeptionelle Betrachtung von ZP vorgestellt und untersucht, wie Bilanzpositionen und ZP zusammenhängen. Aus der Konzeptualisierung lassen sich strategische

Handlungsoptionen ableiten, die speziell für Bilanzmanager relevant sind. Paper 3 in Kapitel 5 erweitert die Grundlagenforschung zur M&A-Performance und geht auf die allgemeine Kritik an Performance-Maßen in früheren Studien ein, indem es eine Validierungsanalyse des ZP durchführt. Paper 4 in Kapitel 6 integriert die Forschung aus den vorangegangenen Forschungsarbeiten und greift insbesondere die Kritik und Behandlung der Rechnungslegungsvorschriften zur Goodwill-Bilanzierung durch das FASB und IASB auf. In Teil 2 befasst sich Paper 5 mit den Auswirkungen von ESG-Kriterien auf die Dauer des M&A-Prozesses, was für die Realisierung von Synergien in der Zukunft von Bedeutung sein dürfte. Die Dissertation schließt in Kapitel 9 mit einer Zusammenfassung der Ergebnisse aller Forschungsarbeiten, einer Diskussion ihrer Implikationen für Forschung und Praxis, einer Beschreibung der Grenzen aus methodischer und theoretischer Perspektive und wichtigen Empfehlungen für zukünftige Forschungsrichtungen.

Diese Dissertation leistet einen Beitrag zur Literatur, indem sie konzeptionell und empirisch aufzeigt, dass die Trennung von ZP und Gegenwartswert sowie die Verknüpfung von Bilanzierungs-, Kapitalmarkt- und wertorientierter Sichtweise differenziertere Rückschlüsse auf die M&A-Leistung zulässt. Die Ergebnisse liefern wichtige Erkenntnisse für den Umgang mit der Goodwill-Bilanzierung und Folgebewertung, für die Standardsetzer stark kritisiert wurden. Im Einzelnen leistet diese Dissertation einen Beitrag zur M&A-Literatur, indem sie (1) einen ganzheitlichen Ansatz zur Bewertung der M&A-Performance entwickelt; (2) Empfehlungen für die strategische Entscheidungsfindung ableitet; (3) ein Maß zur Identifizierung und konkreten Vorhersage der Entwicklung von Wachstumspotenzialen etabliert; (4) das ganzheitliche Maß direkt mit seit langem etablierten M&A-Leistungsgrößen vergleicht; (5) die Kritik an bisherigen eindimensionalen Leistungsgrößen erneuert sowie eine konkrete Lösung anbietet und empirisch untersucht; (6) Validierung des Einflusses von Deal- und Unternehmenscharakteristika auf die nachhaltige M&A-Leistung; (7) Überprüfung der empirischen Forschung zur Frage, ob der Goodwill ein Vermögenswert ist, und Behandlung des Informationsgehalts der Goodwill, insbesondere die Anwendung des reinen Wertminderungsansatzes und des prädiktiven Werts; und (8) Überprüfung des Werts des Goodwill und der Prämie und wie sie sich auf die operative Leistung auswirkt, um zu beurteilen, ob die mit der M&A verbundenen Synergien aus Sicht des Kapitalmarkts gerechtfertigt sind. (9) Darüber hinaus wird in dieser Dissertation die wachsende Bedeutung von ESG-Kriterien im Rahmen des M&A-Prozesses dargelegt.

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BHAR	Buy-and-hold abnormal return
BV	Book value
CAR	Cumulative abnormal return
CAAR	Cumulative average abnormal return
CAPM	Capital asset pricing model
CEO	Chief Executive Officer
COE	Costs of equity
CTAR	Calendar time abnormal returns
CTPR	Calendar time portfolio regression
EPS	Earnings-per-share
ESG	Environmental, Social and Governance
EVA	Economic Value Added
FASB	Financial Accounting Standard Board
FP	Future potential
GAAP	Generally Accepted Accounting Principles
HRM	Human Resource Management
IASB	International Accounting Standard Board
IFRS	International Financial Reporting Standards
IOA	Impairment-only approach
M&A	Mergers and acquisitions
MV	Market value
NI	Net income
P&L	Profit and loss
P/B	Price-Book-ratio
P/E	Price-Earning-ratio
PV	Present value

RQ	Research question
ROA	Return on assets
ROE	Return on equity
ROS	Return on sales
R&D	Research & Development
TTC	Time to completion
U.K.	United Kingdom
U.S.	United States

Index of Research Papers

Table 1.1 Overview of research papers

Index	Title	Authors	Journal	Status	Rankings	
Research Paper 1	Future potential through acquisitions? A multidimensional approach for measuring M&A success	*Just, Ruben & Meckl, Reinhard*	*Scientific journal*	Finished manuscript	Not applicable	
Research Paper 2	What we still misunderstand about measuring M&A: A conceptual approach for accounting future potential	*Just, Ruben & Honold, Dirk*	*Scientific journal*	Under review	Not applicable	
Research Paper 3	Long-term performance of German M&A using forward-looking performance measures	*Just, Ruben & Meckl, Reinhard*	*Scientific journal*	Under review	Not applicable	
Research Paper 4	"Future potential" – a promising new accounting-based M&A performance measures	*Just, Ruben; Honold, Dirk & Meckl, Reinhard*	*Cogent Business & Management*	Published in 2023	*VHB-JQ3* *SJR* *Impact Factor* *5-year impact factor* *CiteScore* *H-Index*	- Q2/0.524 3.0 3.0 3.5 32

*Notes: ESG= Environmental, Social & Governance, M&A = Mergers and Acquisitions, SJR = Scimago Journal Ranking, VHB = Verband der Hochschullehrer*innen für Betriebswirtschaft e.V.*

Source: Author's representation

Table 1.1 Overview of research papers (continued)

Research Paper 5	The impact of ESG similarity and difference on time to completion – Does sustainability matter?	*Just, Ruben; Sommer, Friedrich, Heubeck, Tim & Meckl, Reinhard*	*Financial Research letters*	Published in 2023	*VHB-JQ3* *SJR* *Impact Factor* *5-year impact factor* *CiteScore* *H-Index*	B Q1/ 2.231 10.4 5.3 5.3 81

*Notes: ESG= Environmental, Social & Governance, M&A = Mergers and Acquisitions, SJR = Scimago Journal Ranking, VHB = Verband der Hochschullehrer*innen für Betriebswirtschaft e.V.*

Source: Author's representation

Chapter 1 Introduction

1.1 Research Motivation and Context

The decades of accumulated research on mergers and acquisitions (M&A) performance by academics from a wide range of fields, including economics, corporate finance, strategic management, accounting, and organizational behavior, demonstrate a broad scholarly interest in corporate transactions (Thanos & Papadakis, 2012). Despite the large body of research, however, little agreement exists within and across research fields on measuring acquisition performance (Zollo & Singh, 2004). Literature reviews by Stahl and Voigt (2008) and Weber and Drori (2008) show that most research on M&A is fragmented across different disciplines. The research is not systematic or linked to a comprehensive theory, and the models rarely apply to different organizations.

While M&A is the most popular growth strategy for companies in practice, academic opinions are divided on whether M&A pays off for the acquiring company. The majority of studies originating from the financial sector conclude that M&A rarely creates value or secures growth for the acquirer. The failure rate of M&A transactions varies widely, ranging from 40 to 90%, with certain studies indicating a more stringent range of 70 and 90% (Bagchi & Rao, 1992; Bower, 2001; Christensen et al., 2011; Kenny, 2020; Rao-Nicholson et al., 2016). The uniqueness of the transactions, however, makes comparability impossible (Lubatkin, 1987). King et al. (2004) applied meta-analytic techniques to assess the impact of the most commonly studied strategic and financial variables (e.g., method of payment or acquisition experience) on post-M&A performance. None of the variables studied explained variance in post-acquisition performance, and unidentified variables were found to account for the variance. Zollo and Meier (2008) also argued that construct measurement in previous research was not profound enough to explain complex phenomena such as transactions.

While numerous motivations of companies for engaging in M&A can be found in the literature, the main objective is to achieve financial synergies by increasing efficiency and improving financing activities (Larsson & Finkelstein, 1999). Companies are susceptible to numerous uncertainties in corporate transactions, which can significantly impact company performance. The various obstacles often prevent companies from fully realizing the anticipated benefits of a transaction (A. K. Chakrabarti, 1990; Fang et al., 2004). Formalization of resource allocation, other management decisions, and strategic management challenges can all negatively impact performance (Danbolt, 1995).

Studies also point to the relevance of the human aspect in M&A (Jemison & Sitkin, 1986; Qiu & Wang, 2011). The integration phase of the M&A process is critical to the business's success (Haspeslagh & Jemison, 1987; Marks, 1982), as the process aims to create synergies and increase existing capabilities (D. K. Datta, 1991). Even the best M&A managers cannot predict all the challenges that may arise during the integration phase of a transaction (Schoenberg, 2006; Very & Schweiger, 2001). A core problem identified in the literature in the integration phase is the failure to create a single entity (Shrivastava, 1986). Strategic and organizational fit are necessary to achieve a successful corporate transaction outcome (Haspeslagh & Jemison, 1991). Acquisitions that are characterized by a pronounced alignment with the acquirer's core activities often exhibit heightened success rates (Dreher & Ernst, 2022). Strategic and cultural fit between organizations also influences whether shareholder value increases (Chatterjee et al., 1992).

Various measurement methods have been developed to assess M&A performance (Berrioategortua et al., 2018; Das & Kapil, 2012; S. Ghosh & Dutta, 2016; Meglio & Risberg, 2011; Mehrotra & Sahay, 2018; Papadakis & Thanos, 2010; Vazirani, 2012; Zollo & Meier, 2008). One stream of the literature derives M&A performance measurements from quantitative and objective metrics, like accounting returns and stock market-based metrics, which are often widely known by economic and financial schools. In contrast, the organizational and strategic management schools refer to qualitative criteria when measuring M&A success, such as the personal behavior of managers on M&A decisions (Papadakis & Thanos, 2010).

The contradictory results generated by different measures and the high error rates may be attributed to the one-dimensional nature of approaches employed in measuring M&A performance (Stahl & Voigt, 2008). A few studies have addressed this weakness by examining the correlation of multiple performance criteria. Schoenberg (2006) found no correlation between objective and subjective performance measures. Papadakis and Thanos (2010), however, revealed that accounting-based measures correlated positively with managers' subjective assessments but not with cumulative abnormal returns (CAR). This raises questions as to whether the various performance measures actually assess what they are proposed to do. The lack of correlation between the variables suggests they do not.

Recently, Honold et al. (2016) and Honold et al. (2017) introduced the future potential (FP) approach, which addresses the mismatches between accounting and capital market perspectives by adding the present value (PV) perspective. The authors criticized the

inconsistencies and limited informative value of book values (BV) and market values (MV), stating that they inadequately reflect the actual operative business. The accounting perspective decomposes companies into individual values represented as past-oriented BVs. The capital market perspective forms a holistic construct but may not draw conclusions about the current business. The literature also criticizes the limited informative value of these ratios, especially when MVs and BVs are mixed. Papadakis and Thanos (2010), for example, found that higher profits do not automatically lead to higher MVs for a company. The price-to-earnings ratio (P/E) and price-to-book ratio (P/B) also lack risk factors and are not indicative of a company's future growth, making them of limited use in comparing companies (Honold et al., 2016). In the BV and MV perspectives, for example, it is impossible to ascertain how a company value is derived from the earnings figures, just as the MV does not provide any information about the earnings figure. From a capital market perspective, entrepreneurial growth, in particular, is already contained in the market value, even if the growth is only realized in subsequent years. Similarly, MVs already take future economic downturns into consideration.

In light of the criticism presented, the FP is the difference between the MV and the PV, wherein the latter encapsulates the monetary worth of a company derived from its existing business operations (Honold et al., 2016). FP represents systematic earnings potential derived from sources such as growth, patents, market trends, and the long-term strategic orientation of a company. The concept of FP is designed to reconcile discrepancies between accounting and capital market metrics, employing a value-oriented framework to forecast future company developments.

Based on these research gaps, the overarching goal of this dissertation is to measure and harness the concept of FP for measuring M&A performance, substantiating its pivotal role as a decision-making instrument and extending its applicability beyond the realm of M&A assessment to encompass strategic management considerations. As such, the FP is applied to M&A decisions with the assistance of conceptual considerations and empirical analyses. This approach addresses the weaknesses of one-dimensional BVs and MVs by combining them into a multidimensional concept, allowing M&A decisions to be made with a greater depth of understanding and allowing for comparisons of M&A success. Though it does not allow for compelling statements on whether a transaction has added value to an entity, the approach does enable conclusions on how much FP has been created for the acquirer by the transaction. Integrating and realizing FP is the responsibility of the acquirer, who is accountable for long-term M&A success.

While the success of transactions may be inconsistently evaluated from an accounting or capital market perspective, FP indicates how much prospective value has actually been created for the company. The approach also identifies investment requirements if the FP for a company is very weak and there is little organic growth, making it equally valuable for a sustainable corporate strategy. Disregarding low FP will lead to a long-term decline in a company's operating performance, and the cost of capital will not be earned. To this purpose, this dissertation analyses (1) the drivers of FP for acquiring firms, (2) the conceptual relationship between FP and goodwill accounting through M&A, and (3) the impact of FP on firm performance, as well as the moderating effect of FP on overpayment. The following three research questions (RQs) will be addressed over the course of four research papers:

RQ 1. How long does it take to realize the synergies created by a transaction?

RQ 2. What are the drivers of FP?

RQ 3. Which balance sheet items lag behind their economic value in M&A?

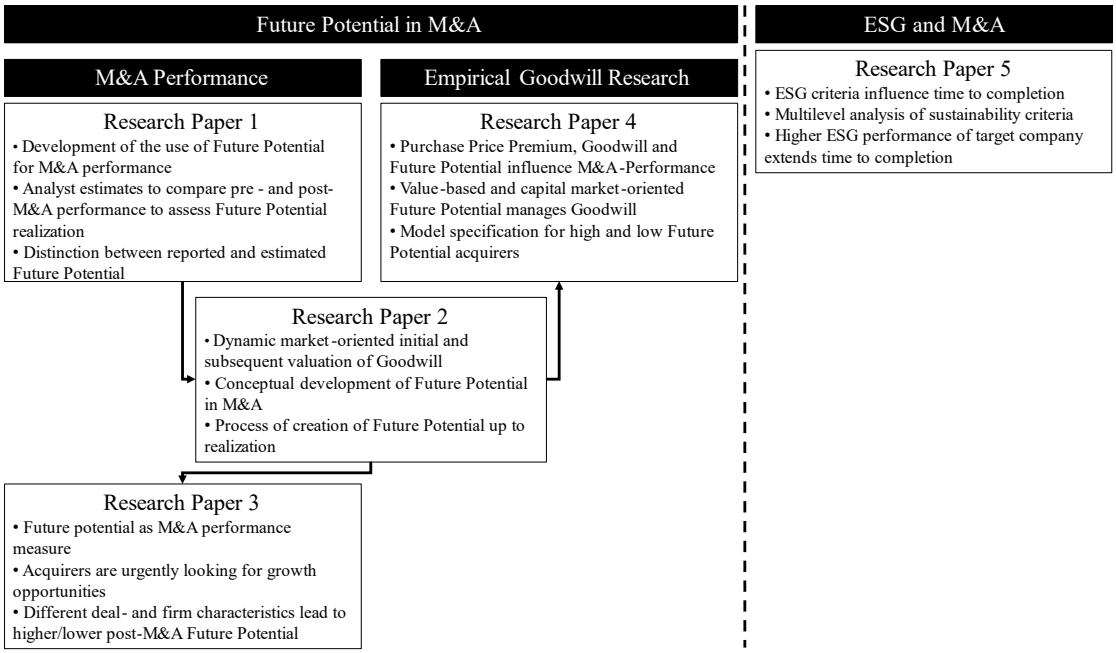
1.2 Dissertation structure and results

This dissertation is organized into eight chapters. Chapter 2 contains the fundamental literature on M&A performance and its associated measures. It includes all quantitative measurement methods derived from accounting and capital market theory, which provide the foundation for the development of the FP approach to M&A. Five individual research papers follow in Chapters 3 to 7, four of which address FP in M&A and one which examines the effect of environmental, social, and governance (ESG) criteria on the M&A process. Figure 1.1 illustrates the structural framework of the dissertation as a whole, offering an overview of the principal findings in each research paper. Together, the first four papers create a foundation for the value-based M&A performance measure and the recoverability of goodwill accounting. Research Papers 1 and 3 empirically analyze FP as a new M&A performance measure. Research Paper 2 presents a conceptual approach whose considerations can be applied to market-based goodwill impairment and provides important insights into M&A performance. The conceptual ideologies introduced in Research Paper 2 are empirically examined in Research Papers 3 and 4. Research Paper 1 elaborates on the FP approach, analyzing the long-run impact of M&A on actual FP and accompanied by an analysis of the anticipatory strategies employed by financial analysts in forecasting these changes. Research Paper 2 presents conceptual work that identifies the key drivers of FP from accounting

research and develops an overarching construct, providing explanations for the different directions of FP development through transactions. Research Paper 3 analyzes the impact of FP on operational firm performance and investigates whether FP has a moderating effect on success factors. The findings from the first three papers make it possible to introduce FP as an individual performance indicator and to establish it alongside the well-known M&A performance measures in Research Paper 4. Deal and firm-specific variables are tested to identify which determine the transaction-related FP. Finally, Research Paper 5 addresses companies' future sustainability performance, which is becoming increasingly important. The paper examines the impact of sustainability performance on the length of the M&A process.

The first four research papers contribute to the fundamental research on M&A performance by establishing the theoretical construct of FP, as well as developing an empirical understanding of the significance of the approach in a controversially debated academic discipline. The fifth paper focuses on the global sustainability trend, which has also attracted interest in corporate transactions. The research paper utilizes an in-depth analysis of the M&A process to understand whether process advantages exist for more sustainable companies.

Figure 1.1 Structure of the dissertation



Source: Author's representation

Research Paper 1 in Chapter 3, “Future potential through acquisitions? A multidimensional approach for measuring M&A success,” is finished and ready for submission to a scientific journal. This research paper analyzes the evolution of FP before and after transactions and uses historical long-term estimates by analysts to determine 1) the degree of FP realization FP following M&A and match it with pre-M&A future expectations and 2) whether analysts change their estimates of a firm’s FP when an M&A occurs. As presented in value maximization theory, managers use M&A as a strategic tool to respond to technological, environmental, and economic changes to improve business performance and create positive synergies (Harford, 2005). The glaring mismatch between the expectation and failure rates of M&A, in 40–60% of transactions, the acquirer fails to create value for shareholders, shows that the existing approaches do not succeed in extracting acquisition value from the overarching capital market and accounting measures (Christensen et al., 2011; Dixon Wilcox et al., 2001; Haspeslagh & Jemison, 1991). To address these research gaps, the paper develops a holistic approach to evaluate M&A performance that aims to answer the following two interrelated RQs:

RQ 1. *How does FP perform in the post-M&A view?*

RQ 2. *How do analysts take into account the expected FP from a transaction in the post-M&A view?*

This paper evaluates the expectations of M&A from a combined holistic capital-markets, accounting, and value-based perspective and provides explanations for the studies that make sweeping statements about M&A failure.

This research paper is authored by Ruben Just and Reinhard Meckl. Ruben Just was responsible for project administration, conceptualization and theory, data collection and analysis, methodology, original draft writing, and the review and editing stages. Reinhard Meckl supervised the project and was involved in the editing process of the paper.

In Chapter 4, the second research paper, “What we still misunderstand about measuring M&A: A conceptual approach for accounting future potential” is presently undergoing the review process for potential publication in a scientific journal. Research Paper 2 builds on Research Paper 1 and expands on the approaches to FP in a conceptual study. Although the share of intangible assets accounted for in MVs has increased dramatically in recent decades and is reflected in higher amounts of goodwill on balance sheets (Ocean Tomo, 2022), there is

little consensus among standard setters and researchers on how to handle goodwill recognition (Bloom, 2009; Colley & Volkan, 1988; Giuliani & Brännström, 2011; Johnson & Petrone, 1998). A research gap arises from the different theories underlying M&A performance. While there is agreement that goodwill represents the potential economic value of excess returns (Ye et al., 2016), it can only be confirmed by merger efficiency theory, which assumes that M&A generates goodwill, increases synergies, and improves a company's value (Andrade et al., 2001). Goodwill may be overvalued, however, if an acquirer only considers short-term performance without having a long-term vision and does not properly value the acquired company. Additionally, an acquired company's resources may not be effectively integrated after the transaction, which further increases the financial burden on the acquirer (Tan et al., 2021). Research Paper 2 bridges the existing research gap by formulating theoretical and conceptual considerations that address the relationship between goodwill recognition and goodwill impairment. It also considers that goodwill should not be treated as a static component and that changes must be linked to market expectations. The following research question is addressed in Research Paper 2:

RQ. *How does future potential contribute to a better understanding of M&A accounting?*

The primary achievement of the conceptual paper is in developing a classification scheme that offers intricate insights into goodwill valuation from a capital market perspective. The categories presented in the scheme represent the interplay between expected synergies, goodwill accounting, and the synergy valuation of the capital market. Furthermore, the scope of action in goodwill accounting becomes evident. The model provides decision-makers with relevant information on whether the goodwill created by the transaction corresponds to the synergies still expected by the market or whether managers have overused their discretion. The paper also discusses the different speeds at which the synergies contained in the FP are realized.

This research paper is authored by Ruben Just and Dirk Honold. Ruben Just was responsible for project administration, conceptualization and theory, methodology, development of the graphical representation, original draft writing, and the review and editing stages. Dirk Honold supervised the project and conceptualized and developed the graphical representation.

The third research paper in Chapter 5, "Long-term performance of German M&A using forward-looking performance measures," is currently in the review process for publication in

a scientific journal. Research Paper 3, similar to Research Paper 1, attempts to enhance comprehension of the performance associated with M&A.

In a meta-study summarizing hundreds of research papers on transaction success, Renneboog and Vansteenkiste (2019) revealed that expected performance improvements are not associated with high investment amounts. The research problem stems from the measurement of M&A success, as there is wide variation in the criteria and definitions used to measure merger success (Das & Kapil, 2012). Measures of M&A performance used in research assess different constructs and are not comparable (Meglio & Risberg, 2011; Zollo & Meier, 2008). Studies typically use a single indicator of M&A performance and do not use statistically constructed scales to evaluate measurement structure and error (Boyd et al., 2005; Richard et al., 2009). To date, only a few studies acknowledge the fact that the various performance measures are not comparable as each M&A transaction contains unique, non-comparable elements (Bower, 2001; Das, 2021; King et al., 2004; Lubatkin, 1983; Schoenberg, 2006; Zollo & Meier, 2008). When a transaction is announced, expected synergies may be overestimated due to behavioral patterns, biased bidder press releases, pricing pressures, merger integration issues, or unforeseen changes in the economic environment; positive short-term announcement returns are often not sustained over the long term, requiring adjusted M&A measures (Agrawal & Jaffe, 2000; Malmendier et al., 2018). So far, empirical evidence on the suitability of the FP approach for evaluating M&A performance is lacking. Evidence is also needed to determine which drivers are responsible for changes in post-M&A performance and the alignment of these results with traditional measures. Research Paper 3 aims to advance M&A performance literature by answering the following RQ:

RQ. *Can an integrative measure combining market and accounting performance be used to measure an acquirer's performance?*

To answer the research question, the study uses a sample of 137 M&A transactions conducted by German companies between 2005 and 2021. The findings show that the post-transaction FP of the acquirer increases significantly in terms of both raw and industry-adjusted performance, underscoring the insufficiency of measuring performance using market metrics or accounting data alone. The FP created by transactions and the adjustment for market effects demonstrate that acquirers do not successfully convert the potential into operating profits following a transaction. The study also finds that the created potential is more sustainable than previously thought and is not lost immediately after the transaction. The capital market continues to trust companies to realize their potential even after a transaction. The results

underline the importance of a holistic M&A performance measure for evaluating M&A success, and the specific expectations the capital market has in the post-M&A phase. The findings provide evidence that relative deal size and cash reserves increase FP, while cross-border transactions, cash-financed transactions, friendly transaction atmosphere, and relatedness decrease FP.

This research paper is authored by Ruben Just and Reinhard Meckl. Ruben Just was responsible for project administration, conceptualization and theory, data collection and analysis, methodology, original draft writing, and the review and editing stages. Reinhard Meckl supervised the project and was involved in the editing of the paper.

The fourth research paper presented in Chapter 6, "Value relevance of Goodwill Accounting - How a forward-looking valuation approach guides Goodwill recoverability," was published in the journal *Cogent Business & Management*.

Long-running criticism of the current accounting principles for goodwill has prompted both the American Financial Accounting Standards Board (FASB) and its European counterpart, the International Accounting Standards Board (IASB), to fundamentally revise the accounting principles for identifiable intangible assets and the subsequent accounting of goodwill (Financial Accounting Standards Board [FASB], 2023; IAS Plus, 2022). In recent years, there has been a renewed research focus on goodwill accounting and the United States (U.S.) generally accepted accounting principles (GAAP) and International Financial Reporting Standards (IFRS) accounting requirements (d'Arcy & Tarca, 2018; Wen & Moehrle, 2016), as well as an examination of the determinants and decision benefits of goodwill reporting (Amel-Zadeh et al., 2023). Goodwill impairments send a negative signal about the quality of M&A, as value-destroying acquisitions lead to more regular and higher future goodwill impairments (Ahn et al., 2020). Managers can delay goodwill impairments by manipulating cash flows, though it negatively impacts future performance (Filip et al., 2015). This underscores a firm's inability to create value from past acquisitions (Caplan et al., 2018). The resulting managerial discretion in recognizing goodwill impairment leads to an inflated fair value of goodwill made through opportunistic valuation assumptions or by inflating the current cash flow level, serving as the foundation for prediction future cash flow to estimate goodwill's fair value (Banker et al., 2017; Penman, 2013). Nonetheless, doubts persist regarding goodwill impairment, given that the acquirer initially pays a price exceeding a company's MV, expecting to realize synergies within the merged organization (Krishnan et al., 2007; Sirower,

1997). According to agency theory concerns about compensation and reputation, and breaching debt obligations, provide managers with an incentive to delay the recognition of goodwill impairment (K. K. Li & Sloan, 2017).

Research Paper 4 is motivated by the fact that most frameworks on the value relevance of goodwill measure market performance without considering the realization of synergy potential that has already taken place or the achievement of value-oriented targets. King et al. (2004) show that expected synergies are often not realized post-M&A and that unidentified variables explain substantial variances in acquisition performance. The share of already-realized synergies can only be found in accounting and is always accompanied by the assessments of capital market participants. Nevertheless, accounting information is past-oriented and may not serve as a reliable indicator of future corporate performance. Research Paper 4 contributes to the empirical goodwill literature by answering the following RQ:

RQ. *Can a value-based measure control the value relevance and information content of goodwill and premium regarding long-term performance?*

Analysis of a sample of 2660 business combinations completed by U.S. acquirers between 1998 and 2018 shows that goodwill negatively impacts industry-adjusted operating performance two years after the transaction is completed, renewing the criticism of the impairment-only approach (IOA). Conversely, value-based FP demonstrates that companies realize synergies promptly and exhibit superior performance. The capital market confirms the value of anticipated synergies in other companies. An interaction effect between goodwill and FP provides strong support for mitigating the negative impact of goodwill on performance. Thus, goodwill is found to be significantly more value-relevant by the capital market as assumed so far. In particular, the findings strongly support acquirers who can quickly realize their potential. The positive effect between goodwill and performance for low-FP acquirers can be attributed to fast synergy realization. The results make an important contribution to the literature, as addressing several research areas simultaneously. The work contributes empirical research on the value relevance goodwill approach, purchase price allocation, and the opportunistic use of goodwill discretion. Research Paper 4 also renews the criticism of existing performance measures, which are insufficient to measure actual M&A performance.

This research paper is authored by Ruben Just, Dirk Honold, and Reinhard Meckl. Ruben Just was responsible for project administration, conceptualization and theory, data collection and analysis, methodology, original draft writing, and the review and editing stages. Dirk

Honold and Reinhard Meckl supervised the project and were involved in the review and editing of the paper.

The fifth research paper in Chapter 7, "Sustainability as a stumbling block in closing acquisitions? The joint effect of target and acquirer ESG performance on time to completion," was published in *Finance Research Letters*.

ESG criteria are becoming increasingly important for companies, investors, and other stakeholders. Despite an intense debate on the impact of sustainability on financial performance (Friede et al., 2015), ESG performance currently plays little role in M&A decisions. Time to completion (TTC) is another relevant metric that receives little attention and of which the effects are unclear, despite being an important success factor ahead of M&A. Shareholders often push for a fast closing of the transaction in order to realize synergies quickly (Luypaert & de Maeseneire, 2015). As TTC increases, a company's value can change significantly due to internal and external factors, which increases the risk of renegotiation (Bhagwat et al., 2016). On the other hand, accelerating deal completion may overlook relevant risks in the due diligence process (Chahine et al., 2018). Several studies have examined the impact of deal- and firm-specific factors on TTC (Adelaja & Mukhopadhyay, 2022; Bick et al., 2017; Chahine et al., 2018; Dikova et al., 2010; Roh et al., 2023; Thompson & Kim, 2020). There have been mixed empirical results as to whether TTC is affected by an acquirer or target's high ESG performance or the degree of similarity between the two, as investigated by Bereskin et al. (2018), Cardillo and Harasheh (2023) and Deng et al. (2013). Building on the studies mentioned above, this research aims to confirm Cardillo and Harasheh's (2023) findings that large differences in ESG performance between target an acquirer firms accelerate completion. Bereskin et al. (2018) have also argued that differences in ESG performance reduce TTC when the acquirer's ESG performance exceeds that of the target. Transferring better performance to the target firm appears more straightforward because target firms are often smaller and less complex than acquirers. In addition, integration is usually only designed to transfer the acquirer's processes and mindset to the target company and not vice versa. This study contributes to the literature on sustainability management and the M&A process by answering the following question:

RQ. *Does greater differences in ESG performance speed up closing of M&A processes?*

In line with Bereskin et al. (2018), Cardillo and Harasheh (2023), and Deng et al. (2013), Research Paper 5 uses Cox regression built on hazard rates. Hazard models are commonly

applied in medical research to analyze the effects of drugs at the time of an adverse event such as death. An analysis of 521 global transactions shows that the difference in ESG performance between the acquirer and the target accelerates deal completion. In contrast, the higher ESG performance of the target leads to a longer TTC. The findings also show that the effect of the difference in ESG performance only materializes when the acquirer's ESG performance is higher than the target, lending credence to the "ESG transfer hypothesis."

This research paper is authored by Ruben Just, Friedrich Sommer, Tim Heubeck, and Reinhard Meckl. Ruben Just was responsible for project administration, conceptualization and theory, data collection and analysis, methodology, original draft writing, and the review and editing stages. Friedrich Sommer was responsible for project administration, conceptualization, and the review and editing stages. Tim Heubeck and Reinhard Meckl supervised the project and were involved in the review and editing of the paper.

Chapter 8 summarizes the findings of the dissertation, and explains their research contribution, presents the theoretical and practical implications, and provides a research outlook for future studies.

Chapter 2 M&A Performance

2.1 Theoretical background of M&A performance measures

2.1.1 What is M&A performance?

Before M&A performance can be explored specifically, the intricacies of measuring corporate performance must be addressed. Organizations are instruments for different purposes, coordinated by visions, strategies, and goals. Organizational performance is a central element of management, organization, and strategy research, as it serves as an important measure of the impact of management decisions (Das & Kapil, 2012). Given that companies pursue multiple purposes simultaneously, the complexity of performance measurement arises from the need to consider a myriad of indicators, e.g., profit, sales, market share, productivity, leverage, share prices, innovation, employee satisfaction, etc. (Das, 2021; Das & Kapil, 2012). In most empirical studies, company performance has been used as a dependent variable to measure the performance and to identify the variables explaining its variance (March & Sutton, 1997). The examination of organizational performance, however, has led to a diverse range of measures, resulting in a lack of consensus regarding the definition of organizational performance and the variables, indicators, and measurement methods to be used in research (Meglio & Risberg, 2011).

Measuring the M&A performance has resonated in the academic literature since the early 1960s (Das & Kapil, 2012). A broad study of M&A activity in the U.S. between 1992 and 2009 reveals a substantial influence of the corporate control market on firms, as 91.4% of firms took part in at least one transaction during the period, while the median number of transactions per firm was close to 16 deals (Netter et al., 2011). While it is generally accepted that M&A transactions are conducted to promote growth, there is disagreement in the academic community as to whether M&A actually pays off for the acquiring company, as M&A transactions often neither create value nor growth for the acquirer (Das & Kapil, 2012). In an extensive meta-analysis of variables considered in M&A research, King et al. (2021) confirmed previous findings that, on average, the change in acquisition performance is not significantly different from zero (King et al., 2004) and that performance varies widely post-acquisition. The theoretical relationships between research variables and acquisition performance also need to be clarified. Because of the fragmented theory within the literature, it is not clear if some transaction characteristics have inconsistent effects on different measures; it raises questions about the nature of the underlying measures being assessed. The literature on industrial enterprises and strategic management also reaches different

conclusions on M&A performance (Lubatkin, 1983). Scholars attribute this inconsistency to the uniqueness of each M&A, making comparability impossible, though the explanations are mostly superficial (Lubatkin, 1987).

M&A performance is a research topic that has been widely discussed among academics and practitioners alike, yet scholars have not reached a consensus on measuring the ambiguous construct (Andriuškevičius et al., 2022; Meyer, 1994). There is a lack of universality, as each M&A performance indicator has its own merits, purpose, and perspective. Some scholars go so far as to argue that every M&A is unique, so comparing outcomes across typologies and frameworks is meaningless (Bower, 2001; Lubatkin, 1987). Researchers rely on a wide range of performance indicators and use both broad and narrow definitions of M&A, unique time scales, and different units of analysis, often valuing different factors in different environments (Meglio & Risberg, 2010). Variables deemed highly significant by some studies may be absent in others, and the delineation of relationships between key variables and distinct stages of the M&A process is often inadequate (Nguyen, 2013). Current models may lack adequate specificity, given the apparent insufficiency and variation in the inclusion of essential variables across different M&A studies (King et al., 2004).

Most studies presented in this Chapter measure acquisition performance using a unidimensional construct, although previous researchers have emphasized its multidimensional nature (Papadakis & Thanos, 2010). While scholars generally concur that M&A performance constitutes a multidimensional construct, the precise interpretation of multidimensionality and its implications for performance measurement remain ambiguous (Meglio & Risberg, 2011). A criticism of multidimensionality is that it measures various aspects of the identical construct (Stahl & Voigt, 2008; Zollo & Meier, 2008), as multidimensionality is equated with multiple indicators within a dimension (Venkatraman & Ramanujam, 1987). Given that previous studies have struggled when using multiple performance criteria simultaneously, this criticism does not seem surprising (Papadakis & Thanos, 2010).

Although most research on M&A performance focuses on financial performance (Andriuškevičius et al., 2022; Cording et al., 2008; King et al., 2021; Meglio & Risberg, 2010), in management research, the meaning of performance ranges from narrower definitions tied to financial performance to more expansive definitions encompassing organizational effectiveness (Carton & Hofer, 2006; Meglio & Risberg, 2011). While strategic management draws on the narrower concept of financial performance (Venkatraman & Ramanujam, 1987)

or operational performance (Carton & Hofer, 2006), organizational science typically directs its attention toward the overarching concept of organizational effectiveness (Meglio & Risberg, 2011). This under-specification risks distorting regression coefficients for included variables, as significant variables omitted from the model may still exert influence (Berrioategortua et al., 2018). Among management scholars, there is no consistent conceptualization of performance research as the constructs are often not adequately defined (March & Sutton, 1997). Instead, a variety of variables, indicators, and measurement methods make it impossible to reach a consensus on operational measures, as the alternative perspectives give different meanings and interpretations to the data (Astley, 1985).

The major problem with the application of organizational performance in the M&A performance literature is that it treats M&A performance as a unitary construct to generalize research findings, but researchers must clearly define ambiguous constructs to avoid comparing different measures as if they refer to the same characteristics of the organization (Meglio & Risberg, 2011). Furthermore, corporate performance is a multidimensional construct, so single measures are limited in their ability to provide broader insights (Richard et al., 2009). The over-reliance on singular performance measures appears to be responsible for the conflicting findings frequently reported in the M&A research (Brouthers et al., 1998; King et al., 2004; King et al., 2021). To achieve multidimensionality, multiple indicators within different domains must be included (Venkatraman & Ramanujam, 1986). Unfortunately, scholars have failed to categorize performance domains, dimensions, and indicators in a consistent manner (Carton & Hofer, 2006), so the same indicators are sometimes categorized under different dimensions (Richard et al., 2009; Venkatraman & Ramanujam, 1987). The complexity of measuring M&A performance is illustrated by Zollo and Meier (2008), who categorize previous empirical studies on M&A performance as integration process, employee retention, customer retention, accounting performance, long-term financial performance, short-term financial performance, acquisition survival, innovation performance, knowledge transfer, system transformation, change in market share and market share, and overall acquisition performance.

Within the finance domain, which includes market and accounting performance, there are two accepted approaches for determining M&A performance (Vazirani, 2012). First, users from industrial organizations often employ *outcome studies* that use stock market reactions to measure pre- and post-acquisition performance and compare the merging companies with peer companies or the underlying industry (Tichy, 2001). However, outcome studies are subject to restrictions that complicate measuring M&A performance. Should the target firm have a

substantially lower market valuation (i.e., relative inferiority) than the acquirer, the financial contribution of the target firm would be inconsequential. Finding a suitable control group is another hurdle that must be overcome as some industries have more M&A transactions on average than other industries, meaning that even in the control groups, there can be biases in the results (Das & Kapil, 2012).

Second, a significant proportion of M&A research uses *event studies* to analyze stock market reactions to events (e.g., the public announcement of M&A) (Das & Kapil, 2012). These studies capture the expectation of success or failure of acquisitions, signifying the discounted future cash flows produced by the acquisition beyond a benchmark established by the market (Renneboog & Vansteenkiste, 2019). This approach assumes that markets are efficient and that changes in stock prices reflect the economic impact of an acquisition while adjusting the price movements for general market movements (Schwert, 1981). Short-term studies scrutinize M&A performance within a span not exceeding one year (Andriuškevičius et al., 2022). Alexandridis et al. (2012) found that across merger waves, acquisitions lead to abnormal financial losses for acquiring firms in a three-day and a 21-day window around the announcement of the acquisition, which they attributed to investors' perceptions of the acquirer's inability to create value.

There is disagreement on the appropriate length of the observation period. Most studies look at the short-term impact on shareholder wealth with regard to the acquirer, target, or integrated company (e.g., Datta et al., 2013). Subjective metrics are optimally crafted for the long term, elucidating the quantification of realized synergies, integration effectiveness, and strategic gap reduction (Das & Kapil, 2012). Difficulties in measuring long-term objective performance can stem from accounting and capital market perspectives. In this context, the analysis levels in the literature refer to the improvement of business performance, competitive position, or process efficiency (e.g., quality of integration, amount of premium paid) (Das & Kapil, 2012). Despite there is a tendency for measuring long-term returns to be much more useful in determining M&A performance, as short-term returns often do not cover the entire value creation effects of a transaction because the success of the integration process and information about synergies is only available at a later stage or because potential distortions such as pricing pressures or market inefficiencies (Malmendier et al., 2018; Mitchell et al., 2004). A challenge inherent in the long-term performance assessment is the difficulty of isolating the takeover effect from concurrent influences on the firm's trajectory during the years following the transaction, as neither stock returns nor accounting measures readily facilitate the isolation of such effects. The choice of an event window requires a trade-off

between sufficient length to capture the relative over- or underperformance of the transaction and the elimination of some transactions due to disruptive events that will reduce the sample size but could bias the results, which is why most empirical studies use an event window of three years after the merger, facilitating the comparability of findings across studies (Renneboog & Vansteenkiste, 2019). As the event window increases, the choice of model for the calculation of expected returns becomes increasingly important because even minor errors in creating a benchmark model for expected returns can lead to substantial errors in abnormal long-term returns and a significant impact on the significance and size of the findings (Bessembinder et al., 2019; Kothari & Warner, 2007).

Theoretical considerations such as the realization of synergies (Feldman & Hernandez, 2022; Larsson & Finkelstein, 1999), economies of scope and scale (Pangarkar & Lim, 2003), and greater market monopolization (Ikeda & Doi, 1983; Lubatkin, 1983; Sharma & Ho, 2002) all determine whether acquisitions pay off or improve performance. In contrast to the objectives of M&A, the performance of many companies declines as a consequence of M&A. Complications often arise in the process, preventing the intended benefits from being realized in the way they were originally intended (A. K. Chakrabarti, 1990; Fang et al., 2004; Schweiger & Denisi, 1991). Each M&A is unique and differs in company size; industry characteristics; overlaps in products, markets, and customers; previous M&A experience of the parties; whether the takeover is hostile or friendly; the relative performance of the acquired company; and how much assimilation is desired or required (Bohlin et al., 2000). Obstacles can arise from both processes and people, such as if cultural differences are not properly managed in cross-cultural endeavors (Fang et al., 2004; Schweiger & Denisi, 1991). Both organizational culture (Chatterjee et al., 1992; D. K. Datta, 1991), and national cultural differences can have a negative impact on acquisition performance (Olie, 1994; Schraeder & Self, 2003).

When an acquiring company retains its employees post-transaction, M&A project success is frequently greater, in contrast to situations where there is a notable surge in employee attrition following the transaction. An inherent challenge lies in the conflict of objectives, as synergy effects typically necessitate staff reductions. Maintaining a familiar management team often exerts a positive influence on employee morale in the aftermath of an M&A, contributing to the overall success of the endeavor (Dreher & Ernst, 2022). Studies have underscored the human dimension within the realm of M&A (Nahavandi & Malekzadeh, 1988; Sarala et al., 2019). Even managers involved in the M&A process cannot predict all the problems that may arise during the integration phase of the transaction (Schoenberg, 2006; Very & Schweiger,

2001). Formalizing resource allocation and other management decision-making areas also negatively impacts performance (A. K. Chakrabarti, 1990).[1]

Table 2.1 summarizes the main advantages and disadvantages of the respective approaches assessing M&A performance, illustrating that none of the measures currently in use is superior to the others.

[1] In Chapter 2.3.2, as a counterpart to the synergy hypothesis, causes of M&A failure that can be attributed to the overpayment hypothesis are also discussed, including agency problems, overconfidence, and hubris (Billett and Qian, 2008; Healy et al., 1997; Ismail, 2008; Roll, 1986; Shleifer and Vishny, 1997; Sirower, 1997).

Table 2.1 Summary of the advantages and disadvantages of accounting and capital market measures of M&A performance

	Definition of failure	Advantages	Disadvantages
Accounting-based measures	Corporate transactions fail if the post-merger returns of the merged company, adjusted for industry and size, are lower than the average size- and industry-adjusted pre-merger returns of each merging company (Sudarsanam, 2003).	Long-term accounting measures include the synergies that a company achieves through a transaction (Harrison et al., 1991; Hitt et al., 1998; Tuch & O'Sullivan, 2007). Accounting ratios are readily used in M&A research due to their easy availability and simple interpretation (Das & Kapil, 2012). The approach measures realized performance as reported in financial statements and not, as with cumulative abnormal returns, the investors' expectations for the future (Grant et al., 1988; Thanos & Papadakis, 2012). Accounting-based metrics can measure different aspects of M&A performance, such as efficiency, effectiveness, or profitability. The combination of several accounting-based measures allows one to obtain a holistic view of M&A performance (Thanos & Papadakis, 2012). Some studies use financial ratios simultaneously	Accounting-based measures are the most restrictive, as they only measure economic performance (Lubatkin & Shrieves, 1986; Venkatraman & Ramanujam, 1986). M&A performance is a multidimensional construct encompassing financial and non-financial elements. Using only accounting metrics leads to an incomplete understanding of performance (Thanos & Papadakis, 2012). Only measure the past performance of the company and not future performance (Chenhall & Langfield-Smith, 2007; Das & Kapil, 2012; Montgomery & Wilson, 1986). Therefore, it is impossible to predict a company's future performance (Keats, 1988; Richard et al., 2009). In a turbulent environment, the comparability of accounting ratios is less feasible and may not represent valid signals of economic performance (Richard et al., 2009). Measures a company's overall performance (i.e., aggregate data) rather than the performance of individual acquisitions (Bruton et al., 1994; Chenhall & Langfield-Smith, 2007; D. K. Datta, 1991; Lubatkin, 1983; Montgomery & Wilson,

		(Ansoff et al., 1970). Using accounting-based metrics as the dependent variable to assess M&A success can overcome problems associated with common method bias (Thanos & Papadakis, 2012).	1986). Problems arise when an acquirer participates in multiple transactions in a short time period. The approach fails to separate the effects of an M&A event, as mergers are often accompanied by write-downs, restatements, special write-offs, or amortization after the disposal of some purchased assets (Renneboog & Vansteenkiste, 2019). Cross-border acquisitions are not comparable due to different accounting standards. In some countries, financial statements lack quality, making objective performance data unreliable and susceptible to distortion due to manipulation (Hult et al., 2008; Schoenberg, 2006). The diversity of accounting metrics makes it difficult to compare studies (Thanos & Papadakis, 2012; Tuch & O'Sullivan, 2007). Accounting standard changes and differences between income-based and cash flow-based measures affect results over time, resulting in lower and higher measures of performance, respectively (Ravenscraft & Scherer, 1987; Ravenscraft & Scherer, 1989). Bild et al. (2002) and Yook (2004) argue that accounting data cannot measure value creation for the acquirer because these methodologies are not suitably related to whether the acquisition represents a positive net PV investment. The

			ratios cannot assess whether incremental profit returns exceed the cost of capital (Penman, 2003). Accounting-based performance measures can assess economic motivations for M&A, but M&A can also be driven by other motives, such as hubris (Hayward & Hambrick, 1997) and personal motives (Brouthers et al., 1998), which accounting-based measures cannot assess.
Stock-based measures	A transaction fails if cumulative abnormal returns are negative. Returns to shareholders of both acquirers and targets during a period around the takeover announcement are compared with returns from a period before the event (Sudarsanam, 2003).	The data are publicly available for all listed companies (Campa & Hernando, 2004; Lubatkin & Shrieves, 1986; Schoenberg, 2006). Easily applied and directly measured shareholder value (Lubatkin & Shrieves, 1986). The future-oriented measure represents the discounted PV of future cash flows and takes into account intangible assets better than accounting measures do (Das & Kapil, 2012).	Using event studies assumes that capital markets are efficient, investors act rationally and have access to all information about the company, and share prices react immediately to newly available information (Martynova & Renneboog, 2011). Short-term event studies relying on the capital asset pricing model are insufficient at capturing the comprehensive performance of acquisitions (Chatterjee et al., 1999). Short-term studies only measure investors' expectations of a transaction, not actual performance (Montgomery & Wilson, 1986; Schoenberg, 2006). Short-term studies do not fully capture the value-creation effects of a transaction, as information on synergies and integrations' success is only available in the long term (Malmendier et al., 2018;

			Mitchell et al., 2004). Data are not available for private companies (Papadakis & Thanos, 2010). Multiple motives for takeovers are ignored (Brouthers et al., 1998). The correlation between market ratios and actual performance depends on the company's equity and the market's information efficiency (Richard et al., 2009). It is not clear whether the market can correctly identify information about future operating performance (Dipali Krishnakumar & Sethi, 2012). The long-term market performance indicators include performance associated with the acquisition event as well as the performance of the company as a whole (Das & Kapil, 2012; Renneboog & Vansteenkiste, 2019), resulting in other events considered in the assessment. Event studies assume cross-sectional independence of abnormal returns, but M&A events are non-random and are often clustered, leading to an underestimation of the standard errors and overstated test statistics (Kolari & Pynnönen, 2010).

Subjective measures	The managers of the acquiring company subjectively assess whether the goals stated before the takeover have actually been achieved. If expectations were not met, the transaction is said to have failed. Financial aspects include returns and growth, while non-financial aspects include management power or competitive position (Papadakis & Thanos, 2010).	Useful when objective data on M&A performance is unavailable or difficult to access (Dess & Robinson, 1984). M&A performance requires a multidimensional construct (Larsson & Finkelstein, 1999). Many studies are not based on a single method but use several methods (e.g., case studies, interviews, observation, archival data, and media texts) to gain a more in-depth understanding (Risberg, 2016). Takes into account that several motives can be determining factors (Brouthers et al., 1998).	It can be difficult to obtain a sufficiently large sample size (Bowman & Ambrosini, 1997). Bias in the personal response behavior of managers (Lubatkin & Shrieves, 1986; Schoenberg, 2006). A single respondent manager can easily overestimate his company's performance, and the necessity to involve more than one person in the survey (Bowman & Ambrosini, 1997; Miller et al., 1997; Venkatraman & Ramanujam, 1987). Trichterborn et al. (2016) also consider subjective evaluation measures susceptible to general method bias. It is widely held that findings from qualitative empirical studies are anecdotal (R. Chakrabarti et al., 2009).

Source: Author's representation, based on Papadakis and Thanos (2010, p. 861)

2.1.2 Accounting based measures

Given their capacity to generate or destroy value on a significant scale, M&A transactions have captured the attention of researchers, particularly those specializing in finance and accounting. Within a meta-study addressing M&A performance, Cumming et al. (2023) highlighted the substantial economic magnitude of M&A transactions. Their study uses a bibliographic coupling to categorize the main accounting research clusters into a) corporate governance and accounting outcomes; b) predicting takeovers and their outcomes; c) valuation; and d) financial reporting, takeover decisions, and performance. Renneboog and Vansteenkiste (2019) conducted a comprehensive exploration of the determinants of M&A success in a different meta-study, consolidating insights on how long-term success in M&A endeavors can be ascertained and summarized.

Accounting performance metrics significantly influence the evaluation of a corporate restructuring plan's success (Aggarwal & Garg, 2022). Accounting disclosure from well-governed companies holds significant importance for external investors, as companies adhering to robust governance standards would be less inclined to disclose misleading information intentionally (Song, 2015). Earnings reports based on accounting information are often used by market participants and stakeholders to determine the economic performance of a company and make economic decisions (H.-A. Lee & Choi, 2016). Within the accounting literature, accounting benchmarks have been used to evaluate the success of an acquisition as proponents of this direction aim to achieve a satisfactory return on investment (McGee et al., 2010, p. 522). Real economic gains cannot necessarily be anticipated if the market is mispriced in the short run when only stock prices are considered (Healy et al., 1992). From an information economics standpoint, accounting and financial reporting impact an efficient capital market (Chen et al., 2001). Many researchers specifically use accounting measures due to their consistency with the objective of M&A: the realization of synergies (Hitt et al., 1998). As a more proximate measure than a capital market measure of synergy gains or losses, accounting-based performance metrics represent the value created by the acquisition (Fu et al., 2013).

The behavior of managers is also significantly influenced by accounting information (S. Li et al., 2018). Accounting disclosures can reduce information asymmetries between counterparties that assume a pivotal role in capital markets (Hu et al., 2014). Although market-based measures of long-term post-merger performance may intuitively offer better proxies of company performance, executives place more trust in accounting measures

(Aggarwal & Garg, 2022). In a survey of chief executive officers (CEOs) from a sample of the 400 largest M&A transactions between 1995 and 2000, Kukalis (2007) found that CEOs felt accounting-based metrics were a better indicator of post-merger performance than market-based metrics.

As with long-term stock returns, there are concerns related to long-term post-acquisition operating performance. When accounting data are used to measure post-merger performance, there may be inherent uncertainty associated with them, as mergers often involve adjustments, depreciation, special write-offs, or amortization, challenging it to separate the impact of a merger event precisely (Renneboog & Vansteenkiste, 2019). Ongoing reforms to accounting standards also mean that there are discrepancies between earnings- and cash-flow-based measures. In extreme cases, post-merger performance is lower when earnings-based measures are used, while it increases when cash-flow-based measures are used (Ravenscraft & Scherer, 1987; Ravenscraft & Scherer, 1989; Sharma & Ho, 2002). Managers may manipulate earnings-based metrics in the pre-merger phase to increase the attractiveness of target companies (e.g., Perafán-Peña et al., 2022), but manipulations can also significantly influence earnings in the post-merger phase. During a CEO change-over, for example, a new CEO may attempt to manipulate post-acquisition earnings to improve company performance relative to the predecessor (Renneboog & Vansteenkiste, 2019).

To date, there is little agreement on the appropriate benchmark for long-term operating performance, as industry shocks from acquisitions also distort the results (Andrade et al., 2001; Harford, 2005). To find an appropriate benchmark, Healy et al. (1992) adjusted cross-sectional regression intercepts for industry performance and compared the adjusted values to firms' pre-merger performance. However, biases may still result from a general economic shock, for example, or if the merging firm's performance was better than the industry average prior to the acquisition (Martynova et al., 2007). Additional research suggests that achieving a valid and adjusted benchmark for long-term operating performance necessitates more comprehensive comparisons of control firms, encompassing pre-merger characteristics such as performance and size rather than industry factors (Loughran & Vijh, 1997; Morck et al., 1990; Rao-Nicholson et al., 2016). Golubov et al. (2013) describe the process wherein the acquiring entity is initially mandated to identify a control firm within the same industry based on an identifier during the year immediately before the public announcement of the acquisition. It is further argued that the chosen control company should exhibit a BV of the total assets ranging between 90% and 110% of the acquirer's total assets, coupled with a commensurate ROA. In instances where a suitable counterpart cannot be identified, the limits

are extended. In extreme cases, a company in the industry that has a comparable ROA to the acquirer is selected. Recently, some researchers have proposed solutions to the problems of applying an appropriate benchmark. Because industry adjustment and the inclusion of industry means used as controls lead to highly inconsistent and biased estimates. Gormley and Matsa (2014) recommended using fixed effects models by industry and year to control for industry-specific shocks. Adding analyst forecasts to traditional operational performance metrics may also help counteract the issues that exist with performance benchmarks (Harford, 2005).

Some metrics of M&A accounting performance have found wide acceptance in the academic literature, including ROA (Bettinazzi & Zollo, 2017), ROE (Cannella & Hambrick, 1993), return on sales (ROS; (Krishnan et al., 1997)), and pre-tax cash flow (Healy et al., 1992). Typically, ROA is the predominant accounting measure used in acquisition research, with a usual duration of observation of at least one year (King et al., 2004; Papadakis & Thanos, 2010). The use of ROA as the sole metric to measure acquisition performance is problematic, however, as a merger increases an acquirer's asset base by paying a premium, which can result in a lower value of the measure (Ravenscraft & Scherer, 1987; Sirower, 1997).

2.1.3 Capital market measures

Capital market studies represent the largest branch of research for assessing the performance of M&A (Cartwright & Schoenberg, 2006; Zollo & Meier, 2008). These studies aim to maximize shareholder wealth (McGee et al., 2010, p. 524). Most often, M&A research examines the effects of announcements using event studies to measure the expectation of acquisition success (Das & Kapil, 2012). This technique uses company stock prices as a direct measure of shareholder value, and the data are readily available for all publicly traded companies (Campa & Hernando, 2004; Lubatkin & Shrieves, 1986).

The majority of research has analyzed the *short-term* effects on shareholder value from the perspective of the target, the acquirer, and the merged company (Agrawal & Jaffe, 2000; Renneboog & Vansteenkiste, 2019). This assumption is based on the belief that the market promptly assimilates the actual impact of acquisitions on the value of the acquiring company, leading to immediate reactions in stock prices following the announcement of the deal (Das & Kapil, 2012). In the case of short-term effects, an M&A announcement brings new information to the market, updating investors' expectations about the company's prospects (Martynova & Renneboog, 2008). The valuation impacts of M&As are covered by a short

event window surrounding the announcement, typically up to 11 days (e.g., Mateev, 2017). Operating under the efficient market hypothesis, the announcement of an M&A is accompanied by abnormal increases in share prices for transactions deemed value-enhancing, whereas value-destroying takeovers trigger an abnormal reduction in share prices (Golubov et al., 2013). The expected return is computed employing the market model, a methodology that entails estimating the parameters of the market model by applying a regression of security returns on a designated reference index (Brown & Raymond, 1986). The approach used by Moeller et al. (2005), among others, is based on applying the market model parameters determined in the estimation procedure to the return of a reference index for a specific day to determine the expected return of a share (Golubov et al., 2013). A second approach is the market-adjusted model, which is used by Fuller et al. (2002), among others. This modified market model may be beneficial in samples with serial acquirers, which could somewhat distort the market model parameters as the estimation period includes previous deal announcements (Golubov et al., 2013).

In a meta-analysis of 93 empirical studies, King et al. (2004) found that the stock values of both acquiring and target firms generally increase significantly on the day an acquisition is announced in response to shareholders' expectations of long-term synergistic gains from M&A. Agency theory provides an alternative reason for the short-term effects, suggesting that shareholders should benefit from disciplinary action against managers who perform poorly (Palepu, 1986). When target companies experience agency problems and poor management performance, target company shareholder returns are likely to increase following the announcement (A. Ghosh & Lee, 2000). Numerous studies have shown that shareholders of target firms tend to have statistically significant gains because of the takeover premiums paid by the acquirer (Hitt et al., 1998; Markides & Oyon, 1998; Sudarsanam & Mahate, 2003). DeLong's (2001) study found positive returns of 88.6% of target companies studied within a 12-day event period. Similarly, Martinez-Jerez (2002) found positive abnormal returns of 82% of targets over a 3-day event period.

Takeover effects on the acquiring company cannot be definitively interpreted because of the differing results within the literature. While studies by Ben-Amar and André (2006) and Mulherin (2000) find positive returns for a 3-day and 2-day window, respectively, conflicting studies report negative short-term returns (Holl & Kyriazis, 1997; Sudarsanam & Mahate, 2003). According to a study by Tuch and O'Sullivan (2007), short-term positive performance is possible, but an acquirer's poor performance may only become apparent after a long period,

so short-term studies could be misleading. Researchers have not successfully explained much of this variation (Fuller et al., 2002).

Research on the *long-term* effects of M&A on acquiring companies began in the 1970s and can be divided into three major research phases (Laabs & Schiereck, 2010). The initial phase persisted until the 1980s and typically regarded the examination of long-term performance as ancillary to short-term event studies (Malatesta, 1983), given the influence of various other factors that increasingly affect performance as the time from the transaction grows. The initial investigations employed the standard market model, commonly utilized for short-term analyses. Long-term studies examine the performance of acquiring firms over a minimum of several months after the transaction is completed (Mitchell & Stafford, 2000). Most studies, however, choose a larger event window and examine the abnormal returns over 2 to 5 years after the transaction (Agrawal et al., 1992; Rau & Vermaelen, 1998).

The emergence of notable extended abnormal returns challenged the prevalent efficient market hypothesis, prompting a growing scholarly interest in long-term return patterns during the early 1980s (Laabs & Schiereck, 2010). Although the overlapping impact of factors on a company's market performance prevents isolating the long-term impact of M&A (Das & Kapil, 2012), the research focus continues to be on measuring long-term returns, as short-term announcement returns often fail to fully capture the value creation effects of a deal, since relevant information on the existence and exploitation of synergies and successful integration only becomes available as the transaction progresses (Renneboog & Vansteenkiste, 2019).[2] Capital market participants may require a period to reassess their evaluations in light of new information about the integration of a takeover and competitors' reactions (Golubov et al., 2013). Examinations of long-term financial performance thus involve scrutinizing the degree to which the initial short-term losses or gains reported by capital markets upon the announcement of M&As are sustained over time (Das & Kapil, 2012). It is essential first to ensure an adequately extended event window to capture the relative transactional over- or underperformance and, second, to allow for the potential of identifying interfering events and decreasing the sample size, which could bias the findings, while most studies do not look at multiple event windows, which should be considered when comparing multiple studies based of different event windows (Renneboog & Vansteenkiste, 2019). Even the smallest error in building an expected-return benchmark model has the potential to result in significant

[2] The market is not allowed fully anticipate stakeholder resistance to reorganization due to cultural disparities between the two firms (Capron & Guillén, 2009), for example, or market inefficiencies and price pressure may arise (Malmendier et al., 2018; Mitchell et al., 2004).

discrepancies in abnormal long-term returns, impacting the significance of the findings (Bessembinder et al., 2019; Kothari & Warner, 2007).

The second research phase commenced with the work of Franks et al. (1991) and centered explicitly on the long-term performance analysis of acquiring firms. This research introduced advanced benchmarks amalgamating calendar and event-time approaches (A. Dutta, 2015). Consistent with the approach of accounting studies, studies comparing event-firm returns to the returns of control firms matched firm characteristics such as size, risk, industry, or market-to-book, and a second category of studies are event studies that obtain alpha coefficients by regressing event-firm returns on market-wide factor models such as the market model, the capital asset pricing model (CAPM), or the Fama–French three/five-factor models extended by the momentum factor if necessary (Renneboog & Vansteenkiste, 2018, 2019).

To measure long-term abnormal returns after a takeover, a suitable cross-sectional approach calculates *CAR* as the arithmetic sum of abnormal returns over an event window of varying length, while a second widely used method of measuring long-term stock market performance is buy-and-hold abnormal returns (BHAR), where abnormal returns are measured geometrically aggregated over the event period, and BHARs allow for compounding (Renneboog & Vansteenkiste, 2019). Loughran and Vijh's (1997) study marked a new trend in the study of stock price performance by replacing traditional measures such as the CAPM and market model. Mitchell and Stafford (2000) explained that BHAR returns are the average multi-year return of a strategy that invests in all firms that complete an event and are sold at the end of a predetermined holding period, compared to a similar strategy that uses otherwise similar, non-event firms. Barber and Lyon (1997) pointed out that, in the past, BHARs were almost exclusively used to measure long-run events based on the premise that actual investors typically retain assets over an extended duration and do not earn abnormal returns daily. These models are commonly perceived as more robust and advanced compared to those employed in the first research phase.

Nevertheless, these long-term models also exhibit shortcomings by neglecting issues typically linked to prolonged abnormal performance analysis (Laabs & Schiereck, 2010). Fama (1998) criticizes the BHAR as it can lead to statistical problems. Other studies also criticize the approach as BHARs are frequently nonsignificant as soon biases in the methodology of BHAR have been adjusted for (S. Dutta & Jog, 2009; Mitchell & Stafford, 2000). CAR and BHAR use event time studies, which assume that abnormal returns are independently distributed across all firms (Renneboog & Vansteenkiste, 2019). Some difficulties arise when

these methods are explicitly applied to M&A, as M&A are clustered not randomly, leading to an underestimation of the standard errors and overstated test statistics (Kolari & Pynnönen, 2010; Mitchell & Stafford, 2000). Barber and Lyon (1997) explained that test statistics calculated based on reference portfolios are subject to rebalancing and new listing bias and found a positive skewness in the CAR and the BHAR, meaning that conclusions based on a normality assumption were not possible.

The third research phase began in the late 1990s, using improved CAR and BHAR metrics (Laabs & Schiereck, 2010). Loughran and Vijh (1997) were the first to apply the advanced BHAR methodology, estimating abnormal returns of acquirers based on control companies matched by MV and market-to-book ratios. Bessembinder and Zhang (2013) asserted that results differences between cross-sectional and time-series models stemmed from imperfect fitting of event and control firms and recommended that cross-sectional measures like BHARs should align with idiosyncratic volatility, momentum, liquidity, and capital investment in addition to size and market-to-book ratios. Further, Bessembinder et al. (2019) found that abnormal returns were eliminated or significantly attenuated in the three months following a series of corporate events after adjusting for 14 corporate characteristics.

The calendar time approach distinguishes itself from the event time approach by assessing whether a portfolio of companies that underwent an event during a specific period in the past exhibits abnormal returns in comparison to a benchmark portfolio (Schertzinger, 2009). In calendar time approaches like calendar time abnormal returns (CTAR) as well as calendar time portfolio regression returns (CTPR), the cross-sectional correlations of the returns of the individual event companies in the portfolio variance are considered at all periods in calendar time by forming event portfolios (Fama, 1998; Mitchell & Stafford, 2000). The mean monthly CTARs (also known as fama-french 3-factor model) were additionally standardized by Mitchell and Stafford (2000) by the portfolio standard deviation as part of the statistical test procedures to prevent heteroscedasticity and, at the same time to give more weight to the periods with a higher number of events, which is why the statistical generalizations are then based on the average of the correspondingly standardized monthly CTARs and the standard error of the average. CTPR are based on the regression analysis of a collection of portfolio returns against a set of market-wide factors, with the portfolios comprising companies that engaged in an M&A event during a specific period, and the regression intercept quantifies the average monthly abnormal return of the portfolio associated with the event company (Renneboog & Vansteenkiste, 2019).

Jegadeesh and Karceski (2009) propose modifying the calendar-time approach and using robust heteroscedasticity and autocorrelation approaches to overcome cross-sectional correlation and other problems. While this generally improves the robustness of the approach, it loses significance due to the large number of estimated parameters. Fama (1998) recommended the use of calendar-time-based approaches because the monthly returns are less biased and, therefore, less susceptible to problems of bad models. By forming monthly calendar-time portfolios, all cross-correlations of the abnormal returns of event companies are automatically accounted for in the portfolio variance. The distribution of this estimator can also be better approximated by the normal distribution, which allows for classical statistical inference. Similarly, Mitchell and Stafford (2000) support the calendar time approach rather than the BHAR method because BHARs assume independence of abnormal returns of multi-year event firms.

A criticism of CTPR is that, depending on time-varying mispricings, the total of companies within the portfolio can change across periods and that with employing equal weighting for each period, it is difficult to identify abnormal returns as periods can offset each other depending on the level of activity (Loughran & Ritter, 2000). Moreover, while managers may try to time M&A events to exploit mispricing, the CTPR underweights managers' timing decisions and overweights other observations by forming calendar time portfolios. Additional problems arise for CTPR when a factor model is used to estimate expected returns; constant factor loadings are assumed, but this is improbable as the composition of the event portfolio changes monthly and acquisition events are clustered over time and by industry (Renneboog & Vansteenkiste, 2019). Betton et al. (2008) compared the matched-firm CTAR procedure to the CTPR approach combined with a factor model. In the matched-firm technique, they identified matched firms with different factor loadings than the firms in the event sample, highlighting the methodological relevance of the CTPR factor model approach. Golubov et al. (2013) conclude that isolating a takeover's influence on long-term abnormal returns from concurrent events impacting the company within the event window is unattainable. Additionally, they emphasize that financial models lack precise predictability of stock returns, a challenge exacerbated over extended time horizons. Consequently, caution is warranted in interpreting results from long-term studies, recognizing the potential for bias in such analyses.

2.1.4 Non-financial measures

Some scholars have assessed M&A performance through subjective measures of firm performance because soft factors, such as human resources and corporate culture, may also be reasons for M&A failure (Bauer et al., 2016; Bohlin et al., 2000). Researchers have criticized these subjective measures because there is no clear relationship between financial and strategic variables and M&A performance (King et al., 2004). Subjective measures appear to be of great value when objective data for a particular construct are challenging to achieve, though the generalizability of results may be attenuated by bias (Das & Kapil, 2012). Often, the primary reason for the failure of M&A is cultural and leadership conflicts, which explains why post-acquisition integration is essential in achieving synergies after M&A transactions (Weber et al., 2011). Cultural differences between organizations are often seen as triggers for problems such as stress, trauma, and negative behaviors toward the merged organization and its management after M&A (Amiot et al., 2006; Buiter & Harris, 2013). Consequently, in a longitudinal, intuitively conducted, real-time analysis, Monin et al. (2013) systematically pursued a friendly acquisition promptly after the public disclosure, overseeing the integration process over five years. Additionally, structured interviews were conducted semi-annually for approximately four years.

Typical non-financial performance measures of M&A include market share, innovation, number of patents, productivity, and attainment of goals (Al Musharraf, 2003; Brush, 1996; Di Guardo et al., 2015; Kapoor & Lim, 2007; Meglio & Risberg, 2011). Researchers often make use of managers' assessments of the achievement of goals set prior to M&A (Adolph et al., 2001; Angwin, 2004; Bauer et al., 2016; D. K. Datta, 1991; D. K. Datta & Grant, 1990; Homburg & Bucerius, 2006; Reus & Lamont, 2009). Papadakis and Thanos (2010) identified three important reasons for using subjective measures. First, as Dess and Robinson (1984, p. 265) noted, that there are problems in obtaining objective performance measures, making subjective measures more appropriate. Second, managers may provide information on financial and non-financial indicators to consider different dimensions in the performance assessment (Brouthers et al., 1998; Schoenberg, 2006). Vaara et al. (2014) and Zollo and Meier (2008) support that subjective measures correlate with objective measures. Third, managers' perceptions of success determine their actions, so it is crucial to ask them about their perceptions of M&A success (Nikandrou & Papalexandris, 2007).

Risberg (2016) summarizes the most important qualitative methods in M&A research in the areas of case studies, interviews, observation, archival data, and media texts. The

questionnaire method is frequently used in studying the acquisition of small business units or private takeovers because it can measure perceptions and attitudes that cannot be assessed with objective measures (Dipali Krishnakumar & Sethi, 2012). Datta and Grant (1990) advocated using a questionnaire method to analyze performance because external variables strongly influence accounting and market measures, making it nearly impossible to separate the effects of acquisitions from other events. The problem of measuring takeover performance also increases as the number of business units in the acquiring company increases or if the target company is very small due to the uncertain assessment of the extent of the transaction. Trichterborn et al. (2016) also used the questionnaire method, asking respondents to rate the development of sales, market share, operating margin, synergy effects, and overall satisfaction compared to expectations using a five-point Likert scale, with open questions supplementing the survey. Management evaluation allows for examining multiple dimensions of M&A performance and provides a more nuanced assessment of internal company information that is not available to the public, such as integration outcomes (Gates & Very, 2003; Laamanen, 2007; Papadakis & Thanos, 2010).

Another non-financial measure of M&A performance is innovation output, measured by research and development (R&D) expenditure, the frequency of patent applications filed by the acquiring company, and the number of new patents granted (Certo et al., 2008). Innovation output is suitable for measuring the success of a technological acquisition. Alternative measures appear necessary, especially when traditional key figures reach their limits and cannot be applied to some transactions meaningfully. Also, Ahuja and Katila (2001) measured the impact of acquisitions on the subsequent innovation performance of acquiring firms in the chemical industry.

2.1.5 Mixed measures

Another category for measuring acquisition performance arises from the criticism that most studies assume acquisition performance is a unidimensional construct, despite the multidimensional nature of acquisition performance being well-accepted in the literature (Papadakis & Thanos, 2010). Hence, instances arise where different accounting performance measures are employed, leading to measuring different aspects of the same construct (Stahl & Voigt, 2008; Zollo & Meier, 2008). However, if only one measure of performance is used, the singular measures may be to blame for the frequently published contradictory results (Brouthers et al., 1998; King et al., 2004; Schoenberg, 2006). In contrast, Grigorieva (2020)

posits that using multiple methods, coupled with measuring M&A performance, makes it possible to show the relationship between the results obtained with different methods. Consequently, distinct effects may be unveiled by one method while others remain overlooked. The incorporation of multiple indicators in analytical frameworks enables the comprehensive exploration of various facets of acquisitions, encompassing aspects such as market reaction, value creation, and change in operational efficiency. The use of a variety of methods, therefore, enables a higher degree of accuracy in the conclusions of the studies (D. Krishnakumar & Sethi, 2012; Switzer, 1996). Accordingly, there has been a persistent demand for multidisciplinary approaches that enhance our understanding of the integration process, as the post-acquisition integration phase is progressively recognized as pivotal for achieving complete value realization in M&A (Cartwright & Cooper, 1995; Larsson & Finkelstein, 1999).

In a review of mixed methods in M&A studies, Kroon and Rouzies (2016) questioned the methods used for collecting information and building inferences to enhance the overall quality of research in the field of M&A. They posited that multidisciplinary approaches are a more effective means of capturing the intricacies inherent in the post-M&A integration process. Berrioategortua et al. (2018) also advocated for the adoption of diverse measures of financial performance following an acquisition, emphasizing the need to foster interdisciplinary research and enhance comprehension of the distinctions between accounting and stock market metrics. Schoenberg (2006) expanded on this fundamental concept by evaluating takeover performance through four distinct criteria: capital market performance, subjective assessments by managers, subjective assessments by informants, and data on divestitures. Papadakis and Thanos (2010) also conceptualized a study in which they measured acquisition performance using accounting-based measures, capital-market-based measures, and managers' subjective assessments of acquisition goal achievement.

Meglio and Risberg (2010) criticized M&A research methods for exhibiting excessive standardization. The authors asserted that the approaches to knowledge production in this domain must be rethought, particularly regarding research design and the utilization of diverse data sources. In a subsequent paper, Meglio and Risberg (2011) also noted that the dominant method of measuring M&A performance is one-dimensional using a single indicator. This increasing trend, despite the widespread belief that M&A is complex, may be because mixed methods are challenging to implement due to the complexity of collecting, analyzing, mixing, and interpreting both quantitative and qualitative data (Clark et al., 2010). Some studies have used multiple methods to measure M&A performance by examining the

correlation between different methods to determine whether the methods measure the same thing and which methods can be treated as substitutes, or whether a single method is best suited to capture M&A performance (Dipali Krishnakumar & Sethi, 2012). Stahl and Voigt (2008) noted that a potential explanation for the lack of consensus among researchers on the effects of cultural differences on M&A performance is that they draw on different criteria to measure M&A outcomes.

There has long been an epistemological debate about whether qualitative and quantitative methods can be combined within a study (Brannen, 2005; Bryman, 1988). An inherent advantage of mixed-methods research studies is their capacity to address both exploratory and confirmatory research questions concurrently (Kroon & Rouzies, 2016). Das and Kapil (2012) have asserted that mixed measures better compensate for factors ignored by accounting and market measures. To move away from one-dimensionality, a multidimensional measure that integrates diverse perspectives rather than looking at one-dimensional measures side by side is needed. Given the intricate and dynamic nature of M&A, using mixed methods offers a significant benefit by elucidating, complementing, or exploring alternative explanations for relationships within the research design (Kroon & Rouzies, 2016). Mixing methods has the potential to explore new dimensions and ask new questions (Hammond, 2005), providing new ways of linking contexts and creating something that goes beyond the two separate data sets (May, 2007). Advocates of mixed methods adhere to a pragmatic paradigm, positing that method selection should be contingent upon the goals and contextual nuances of the research rather than dictated by underlying epistemological and philosophical assumptions (Rouzies, 2013). The author posits that the pushback against methodological integration stems from the argument that qualitative and quantitative methods are grounded in distinct epistemological and ontological assumptions and cannot be meaningfully combined.

Sun and Tang (2000) examined the source of profits in M&A in the railroad sector, using share price reactions to assess market power and operating performance to assess efficiency power. Several indicators were used to calculate operating performance. To test the consistency between stock market returns and operating performance, Choi and Harmatuck (2006) used operating cash flow as an indicator of operating performance, sales growth rate, and employment level as indicators of firm size, and CAR to measure stock market returns. Malhotra and Zhu (2006) conducted a comprehensive examination of the short-term impact of an M&A announcement and the long-term impact of M&A on shareholders' wealth at the acquiring firm and tested the effect of the acquisition on the acquiring firm's financial performance. They used CAR to examine the market reaction to the announcement of M&A

as well as for long-term performance and other accounting-based measures such as sales growth, profit margin, ROE, earnings-per-share (EPS), and foreign export sales.

2.2 Empirical M&A performance results

2.2.1 Findings on accounting-based M&A performance

The long-term operational performance of a company following acquisitions has been subject of numerous studies (S. Dutta & Jog, 2009; King et al., 2004; King et al., 2021; Martynova et al., 2007; Martynova & Renneboog, 2008). Empirical studies frequently use accounting returns to evaluate post-merger performance (Stanton, 1987). The prevailing understanding, acknowledged by a majority, is the lack of consensus within the literature regarding performance improvements following M&A (Amel et al., 2004; Healy et al., 1992; Meglio & Risberg, 2011; Papadakis & Thanos, 2010; Schoenberg, 2006; Tuch & O'Sullivan, 2007). Some studies show positive gains, while others show negative or no gains. Studies using performance metrics based on cash flow often indicate improved company performance after acquisitions (Healy et al., 1992; Rahman & Limmack, 2004), while studies based on profitability metrics show that M&As perform just like their relevant benchmarks or that merged companies experience a significant decline (Boateng et al., 2017; Sharma & Ho, 2002).

Meeks (1977) studied 233 takeovers and found that while profitability increased in the year following the takeover for about 60% of the merged firms, it decreased in the following five years. King et al. (2004) showed that the long-term accounting returns of acquirers are either insignificant or negative, suggesting that M&A does not increase the performance of the acquiring (or merged) firm. In a study of 2,941 acquisitions, Dickerson et al. (1997) concluded that non-acquiring firms outperformed acquiring firms by 2.4% per year following an acquisition. Similarly, Dutta and Jog (2009) examined the long-term operating performance of Canadian takeover firms using 1,300 M&A events from 1993 to 2002. They found no significant difference between operating performance three years before and after the takeover. Rao-Nicholson et al. (2016) examined a sample of 57 M&A in Southeast Asian countries from 2001–2012, concluding that industry-adjusted operating performance tends to decline in the three years following an M&A. Martynova et al. (2007) examined the long-term profitability of 155 European corporate takeovers completed between 1997 and 2001 using four different measures of operating performance and found that the profitability of the merged company generally declines significantly after a takeover but that the decline in

performance becomes insignificant when controlling for the performance of peer firms selected to control for industry, size, and performance prior to the event. Sharma and Ho (2002) also found no significant improvement in operating performance for 36 Australian takeovers between 1986 and 1991. Lu (2004) studied 592 U.S. transactions over five years before and after acquisitions and similarly found a negative industry-adjusted ROE. Ghosh (2001) finds, using an appropriate benchmark in terms of performance and size, that operating performance improves after acquisitions and that cash flow increases significantly after acquisitions made in cash while decreases after acquisitions made in shares.

In contrast, some studies have found improved performance for the acquiring firm. Aggarwal and Garg (2022) found in their study of 68 Indian acquiring companies that the profitability of the acquiring companies increased significantly five years after a merger, but the effect was not yet observed one year after the takeover. Some studies have split the post-merger performance into short- and long-term views, typically finding that the long-term performance of the combined company increases compared to the short-term performance (Rahman & Limmack, 2004). Examining the change in operating performance in a sample of 413 U.S. mergers, Linn and Switzer (2001) found that cash offers are associated with a significantly higher increase in industry-adjusted pre-tax operating income than combined cash/stock offers, which are much more common than stock offer. In contrast, Karim et al. (2016) found that acquiring companies increase their profits around mergers, but only when the payment method is shares of the acquirer, and found no such evidence for cash as a payment method. Healy et al. (1992) found that for the 50 largest U.S. mergers between 1979 and 1984, merged entities showed enormous asset productivity improvements, leading to significantly increased industry-adjusted cash flow returns in the five years post-acquisition. Later research confirmed the results and showed positive industry-adjusted cash flow returns over a 10-year period (Healy et al., 1997). The authors further argue that strategic takeovers, in particular, generate substantial profits for the acquirers, while financial transactions, at best, cover their costs. Heron and Lie (2002) examined a large sample of acquisitions between 1985 and 1997 and found that acquiring firms have higher post-acquisition operating income than their respective industry peers and perform significantly better than control firms with similar pre-event operating income.

2.2.2 Findings on short-term capital-market-based M&A performance

Since Fama et al.'s (1969) seminal work, the event study methodology has been the most popular among researchers for analyzing short-term shareholder wealth effects. Although takeovers lead to value creation on average (calculated as the weighted average of the announcement returns of both acquirers and target companies), the returns actually benefit the target company shareholders who have the greatest bargaining power in M&A negotiations (Renneboog & Vansteenkiste, 2019). In principle, target companies can expect positive short-term announcement returns as acquirers offer premiums to incentivize the sale of target company shares, leading to an increase in its MV (Yaghoubi et al., 2016).

Returns to target shareholders differ depending on the survey period and region. Eckbo (1983), for example, found a three-day CAR of 6.2% for U.S. targets during 1963–1978. Asquith (1983) estimated CAR for target firms for a two-day event window in the U.S. between a similar period of 1962 to 1976, finding CAR of 6.2% in the event window and 13.3% for 20 days starting on the day before the announcement. Dodd (1980) examined the CAR of U.S. merged companies one day before and on the day of the event in 1970–1977 and found that shareholders of the target companies achieved CARs of 13.4%. Two and three-day CARs for U.S. targets are significantly higher in more recent studies, measuring 24–29% (Alexandridis et al., 2017; Netter et al., 2011).

For European M&A in the 1990s, Martynova and Renneboog (2011) calculated CARs of 16% for target companies. Huyghebaert and Luypaert (2013) examined 130 horizontal M&A deals in Europe between 1997–2008 and found a significant CAR of 10.48% for the 3-day event window. Craninckx and Huyghebaert (2011) reported a highly significant cumulative average abnormal returns (CAAR) of 7.5% (−1,+1) for target companies based on a sample of 267 transactions of listed companies in the European Union between 1997 and 2006. Examining 156 transactions in the European utility sector from 1990 to 2006, Datta et al. (2013) reported a significant CAAR (−2,+2) of 8.8% for target companies. In a recent study, Kellner (2024) investigates the announcement returns of target companies in the European Union between 2010 and 2021 based on 2,554 transactions. There is a strong positive increase in the share price of target companies for multiple periods around the announcement date, with the highest CAAR of 13.9% for an 11-day period. In contrast, using a 3-day event window, Franks and Harris (1989) found that U.K. targets had significant negative CARs of −3.6% during the period of 1955–1985, while their U.S. counterparts had insignificant positive CARs of 0.1%.

Different results emerge when examining the announcement returns for the acquirer's shareholders (Yaghoubi et al., 2016). Most studies reveal significantly negative or only insignificant positive returns for acquiring companies (Fuller et al., 2002; Kellner, 2024). Returns that are indistinguishable from zero mean that takeovers, on average, have a net PV of zero for acquirers (Yaghoubi et al., 2016). Only a few studies using samples from the 1960s and 1970s reported slightly positive abnormal returns (Asquith, 1983; Eckbo, 1983; Fuller et al., 2002; Ismail, 2008), as did one using data from the 1990s (Martynova & Renneboog, 2011). Some more recent studies, however, point to positive abnormal returns for the acquirer. Between 2010 and 2015, Alexandridis et al. (2017) reported moderately positive CARs for acquirers. Mateev (2017) used a sample of 2,823 European takeovers announced between 2002 and 2010 to examine the impact of M&A announcements on the stock returns of acquiring companies in continental Europe and the United Kingdom. For both U.K. and European acquirers, significant positive CAARs of around 1% were found for some event windows. Similarly, Defrancq et al. (2021) examined M&A transactions between 2007 and 2013 for 2,230 continental European transactions and found that acquiring companies had a significant, slightly positive CAAR (−1,+1) of 0.8%. Domestic and industry-related transactions tend to perform during M&A announcements. Dranev et al. (2019) analyzed the announcement returns for the acquirers in 178 international fintech M&A across different event windows. Their results showed that fintech M&As generate significant CARs of approximately 1% for acquiring companies. Rosen (2006) argued that acquirers are more likely to achieve positive abnormal returns when previous mergers of other companies have been well received or if the stock market as a whole performs better. Returns for acquirers who make a transaction during hot market phases, however, are reversed in the long term compared to those who acquire at other times.

Other findings indicate slightly negative returns during the 1970s and 1980s in some studies (Chang, 1998; Morck et al., 1990). Dodd (1980) identified a noteworthy negative CAR of −1.09% for the acquiring entities within the specified event window, in contrast to the positive CAR observed for target entities in the same study. Firth (1980) examined 434 M&A in the U.K. between 1969 and 1975 and found significant abnormal negative returns of −6.3% for the announcement month. Using a large sample of 3,406 U.S. acquisitions of subsidiaries and publicly traded companies from 1981 to 2012, Jaffe et al. (2015) confirmed that acquirers achieved a significant negative average return of −0.58% in the three-day announcement period. Datta et al. (2013) identified significant CAARs of −0.2% for acquiring companies in a 5-day event window. Moeller et al. (2004) examine equal-weighted and value-weighted

CAR for a sample of 12,023 global takeovers by publicly traded firms between 1980 and 2001, finding that while equal-weighted CAR was 1.1%, the value-weighted CAR was −1.18%. They also found a size effect, as the announcement returns to an acquirer's shareholders were about two percentage points higher for small acquirers than for large companies. Mager and Meyer-Fackler (2017) did not find an overall significant negative abnormal long-term performance for German acquiring companies between 1981 and 2010. In the early years, when M&A activity was rare (1980–1990), the authors found positive abnormal long-term returns compared to German industry peers. Behavioral scientists argue, however, that announcement returns are only the market's reaction to takeover announcements and do not necessarily reflect the value implications of the transactions (Yaghoubi et al., 2016).

The combined announcement returns of the acquirer and target firms often show significant positive returns. For studies in the 20th century, the combined returns range from 1.06% to 2.6% (Andrade et al., 2001; Betton et al., 2008; Maksimovic et al., 2011). Alexandridis et al. (2017) demonstrated announcement returns of 4.51% for M&A during the 2010s, while Huyghebaert and Luypaert (2013) found a CAR of 3.14% for an eleven-day event window.

These studies share a commonality in identifying various characteristics of takeover bids that can explain the disparities in returns. Tender offers, for example, have higher short-term returns for bidders and target companies than friendly merger negotiations (Bowman & Ambrosini, 1997; Loughran & Vijh, 1997; Martynova & Renneboog, 2011) and are observed to have a higher likelihood of successful completion and a faster closure while concurrently tending to offer higher premiums than other types of acquisitions. They convey a higher level of confidence in the transaction which can lead to higher bidder demand and competing offers (i.e., rising prices) from multiple bidders (Offenberg & Pirinsky, 2015). Even if opportunistic, overvalued bidders lose a bidding war, they drive up the price for the winning bidder (D. Li et al., 2018). A target's returns tend to be higher in hostile takeover bids compared to friendly bids because, in a hostile takeover, the bidding company directly approaches the target's shareholders and pays higher premiums. Differences in returns increase further if, in hostile bids, the target firm's board rejects the offer, as resisting a bid signals the market and drives up the price and value of the firm (Franks & Mayer, 1996; Martynova & Renneboog, 2011). If transactions can be interpreted as rational decisions by the bidder, then a bidder only engages in hostile takeovers that can be expected to yield good outcomes (Schwert, 2000). This contrasts with the assumption that acquirer shareholders fear overbidding in hostile

transactions or paying target shareholders more than the anticipated synergy value, thus driving down the acquirer's share price (Renneboog & Vansteenkiste, 2019).

When paying for transactions, cash offers generally lead to higher announcement returns for the acquirer and target than a pure equity offer (Bhagat et al., 2005; Loughran & Vijh, 1997; Savor & Lu, 2009). Franks et al. (1991) demonstrated that the type of payment influences the buyer's announcement returns, finding a negative CAR of −3.15% for 128 equity-financed takeovers but a positive CAR of 0.83% for 156 cash-financed takeovers. Martynova and Renneboog (2006) reported that bidder shareholders evaluate cash-only deals more favorably (CARs 0.6% for cash-only deals and 0.9% for mixed deals) than equity-only deals. In contrast, Mateev (2017) found a significantly larger announcement effect for equity deals, with abnormal returns of 2.49%, than for cash deals or mixed payment deals, with abnormal returns of 1.02% and 0.84%, respectively. The author argued that stock-only payments are associated with larger announcement effects than cash-only or mixed payments only in the sample of continental European bidders. As explained by the adverse selection framework, cash financing represents an advantage for the acquirer if management considers the shares of the acquiring company to be undervalued, whereas, conversely, equity financing is advantageous if the target company is considered to be overvalued (Myers & Majluf, 1984). Chemmanur et al. (2009) support this perspective and demonstrate that acquirers whose share prices significantly exceed the intrinsic value, as calculated by earnings-based models, are more inclined to use shares as a method of payment. In the aftermath of the transaction, the market adjusts to the divergent valuation.

Moreover, samples of private acquirers and small deals have less of the wave-like pattern and are more evenly distributed through time than samples that focus predominantly on large or public firms (Netter et al., 2011). Several studies have found substantial differences in announcement returns between public and private firms. The announcement returns of the acquirer are negative in samples with large, public firms and positive in samples that include small or private deals (Capron & Shen, 2007; Fuller et al., 2002). Jaffe et al. (2015) observed significantly negative announcement yields for acquirers of public targets and significantly positive returns for acquirers of subsidiaries. Similarly, the empirical findings by Draper and Paudyal (2006) for the U.K. indicate that acquisition bids directed towards publicly listed targets result in either neutral or negative returns for the acquiring entities. Conversely, when the target entities are unlisted, such as private or subsidiary companies, the acquirers experience positive returns. Schneider and Spalt (2017) also show that low acquirer returns are related to small acquirers and large targets in public targets. This effect could be attributed

to several factors, including the weaker relative bargaining power of the target in private takeovers, which reduces premiums and mitigates risks of overpayment, and another possible explanation may involve higher restructuring costs associated with public M&A transactions (Renneboog & Vansteenkiste, 2019). This is also consistent with the study by Moeller et al. (2003), who found that private takeovers by large companies can generate positive abnormal returns in the long term, while private takeovers by small companies generate negative abnormal returns in the long term. Jaffe et al. (2015) tested four previously unexamined theories of the return differential between public and private firms—synergy, target financial liquidity, target valuation uncertainty, and target bid resistance—but found that none of the empirical measures could explain the return differential, despite having empirical support in other areas of finance. More recently, research by Alexandridis et al. (2017) have shown an increase in bidding returns for publicly traded targets from –1.08% to 1.05% between 2009 and 2015. This change is due to mega-deals (defined as a minimum acquisition price of more than $500 million) that yielded a return of 2.54% to acquirers.

2.2.3 Findings on long-term capital market M&A performance

A similar pattern emerges when comparing long-term operating performance and capital market performance (Agrawal & Jaffe, 2000). Malmendier et al. (2018) provide evidence that short-term announcement returns are not useful in predicting the long-term performance of the deal, which is why long-term return measurements should be considered when evaluating M&A success. Bradley et al. (1988) define synergy gains as the CAR of the merged company, which is a weighted average based on the CAR of the target and acquirer firms' stocks around the time of the transaction's announcement. The weights are based on the respective companies' market capitalizations measured before the announcement. Agrawal and Jaffe (2000) presented a detailed review of studies on the long-term post-acquisition performance of acquiring firms with strong evidence for long-term underperformance after acquisitions, but relativized their results due to inadequate estimation procedures at the end of the 20th century and the consequent derivation of firm conclusions. Andrade et al. (2001) also found negative abnormal returns for merged firms three to five years after an acquisition is completed. In a study of 256 mergers from 1969 to 1974, Malatesta (1983) found a significant average abnormal portfolio rate of −5.4% 6 months after the merger event and −7.6% 12 months after. Agrawal et al. (1992) used a sample of 937 mergers and 227 tender offers from 1955 to 1987 and found that the shareholders of the acquiring companies suffered a

statistically significant loss of approximately 10% in the five years following the merger. Neither company size nor problems with beta estimation were found to be responsible for negative returns after the merger.

Loughran and Vijh (1997) examined a sample of 947 transactions, where both the target and the acquirer were traded on an American index between 1970 and 1989, finding a negative BHAR of −6.5% five years following the transaction. They also separated mergers from tender offers and found that abnormal returns after a merger are significantly negative (−15.9 %) but marginally positive after tender offers. Mitchell and Stafford (2000) calculated BHAR using appropriate size and book-to-market value portfolios for a sample of 2,068 transactions of CRSP-listed firms between 1961 and 1993 and found significant abnormal returns of −3.8% over three years. In a meta-study, King et al. (2021) also found the aggregate results for BHAR to be significantly negative, although they advised caution in interpreting the significance of BHAR as the pooled studies used different periods. Using different calendar time approaches with and without overlap cases, Andre et al. (2004) examined the long-term performance of 267 Canadian M&As between 1980 and 2000 and found that acquirers underperformed over the three years following the event.

Some theoretical explanations shed light on how the negative long-run returns to acquirer firms occur (Renneboog & Vansteenkiste, 2019). The prevailing argument often points to an overestimation of expected synergies, and the market is slow to register the overestimation, taking years to adjust to the correct MV. Under the assumption that there is no strong capital market efficiency, only long-term returns can capture the true value of a transaction (Fama, 1970, 1976). Another explanation relates to the EPS myopia hypothesis, in which managers tend to overpay for acquisitions to achieve higher EPS in the short term and make an acquisition easier to justify (Renneboog & Vansteenkiste, 2019).[3] Some anecdotal evidence shows that acquirers are concerned about EPS enhancement and dilution when planning and executing an acquisition. Accordingly, a company is more likely to become a target if it is acquired by companies in the same industry, and EPS can be increased even after paying a substantial premium (Dasgupta et al., 2020; Garvey et al., 2014). Conversely, higher EPS leads to the overvaluing of these companies in the market, resulting in a long-term correction in value and lower long-term takeover returns. Additionally, Malmendier et al. (2018)

[3] A merger with a company whose price-earnings ratio is lower than that of the acquirer, for example, when the payment is made with shares, may increase the EPS of the acquirer. There is a widespread assumption that a company should not be acquired if its price/earnings ratio is higher than that of the acquirer (Brealey et al., 2023, pp. 924–926).

employed a novel test for long-run returns, using the post-merger performance of losing firms in close bidding contests to extrapolate the counterfactual performance of winners if they had lost the contest. While winner and loser returns comove prior to contests, after three years, the loser outperformed the winner by 24% for U.S. stocks and 14% for international stocks. A study by Rau and Vermaelen (1998), however, found no proof of the EPS myopia hypothesis but did find evidence for the performance extrapolation hypothesis. The performance extrapolation hypothesis states that the bidder is mispriced immediately after the takeover announcement but assumes that management is unaware of this mispricing. In contrast to the EPS myopia hypothesis, the performance extrapolation hypothesis assumes that both the market and the company decision-makers are excessively focused on past performance. It assumes that the market over-extrapolates the bidder's past performance when assessing the value of an acquisition.

Rau and Vermaelen (1998) distinguished between "glamour" firms, which have low book-to-market ratios, and "value" firms, which have high book-to-market ratios. If the acquiring firm is a glamour firm, managers are more likely to overestimate their own ability to execute an acquisition (see discussion on the hubris hypothesis in Chapter 2.3.2). The overestimation of capabilities is reinforced by the fact that glamour firms historically achieve high stock returns and growth in cash flow and earnings (Lakonishok et al., 1994). In the case of value firms, where management may have a poor track record, greater doubts arise about executing transactions, and managers and major shareholders may be more reluctant to approve transactions that may threaten the company's existence. From a shareholder value perspective, firms characterized as value seem less motivated by hubris, demonstrating a greater likelihood of creating value rather than destroying it (Rau & Vermaelen, 1998). Their empirical results prove that glamour firms tend to be overvalued before M&A transactions. Adjusting for size and book-to-market ratio, long-term abnormal returns are –17% for glamour firms three years after acquisition but 8% for value firms. The performance extrapolation hypothesis states a reassessment of the quality of the bidder only after the transaction when there is more certainty about the outcomes of the acquisition, which requires a clear distinction between the short and the long run because, in an inverse of the long-term results, glamour bidders achieve higher abnormal returns in the short run than value bidders.

2.2.4 Findings on non-financial performance measures

Most studies that have applied subjective measures to M&A performance find that the managers surveyed were not able to achieve the goals set before the transaction or were dissatisfied with the transaction (Adolph et al., 2001; Hunt et al., 1987; Kitching, 1974; Schoenberg, 2006). Through the use of surveys, Kitching (1974) discovered that 50% of U.S. and 46% of European transactions failed to fulfill planned aims 2–7 years after the transaction was completed. Hunt et al. (1987) found that for 40 acquisitions by public companies in the U.K., managers judged that the expectations placed on the transaction were not met in 45% of cases 3.6 years after the transaction was completed. In a study of a shorter period, Adolph et al. (2001) found that 53% of M&A transactions did not achieve expected outcomes for two years after closing. Based on the results presented, Schoenberg (2006) determined that 3–5 years after completing a transaction, 44% of managers were dissatisfied with the financial performance of the acquisition compared to initial expectations.

Cannella and Hambrick (1993) conducted a study to analyze the impact of executive departures in a sample of 96 acquisitions between 1980 and 1984, employing an expert panel comprising six executives from the acquired firm and six securities analysts specializing in the acquired firm's securities. These experts were tasked with assessing the profitability of the acquired company both at the time of acquisition and four years after that. The study found that the departure of executives from the acquired company had a detrimental effect on performance four years after the acquisition, with a stronger effect when high-level executives departed. A positive effect was found, however, when the acquired company's departing executives joined the company's top management team. Groff et al. (2007) criticize that performance metrics do not provide a global measure of mergers' impact on efficiency, give little insight into the causes of efficiency changes, and used data envelopment analysis to investigate whether technical efficiency changed following a merger of 166 U.S. hospitals in the 1990s. The results showed that there were demonstrable improvements in efficiency in the second year after the merger.

Few empirical studies have been conducted on the effects of acquisitions on the acquirer's post-acquisition innovation performance. The existing research suggests that the majority of acquirers do not improve innovation performance (McCarthy & Aalbers, 2016). Cloodt et al. (2006), for example, showed that non-technological M&A have a negative impact on the acquirer's post-acquisition innovation performance. Das (2021) likewise found that an acquirer's R&D intensity is strongly positively related to long-term innovation performance

and, therefore, effective technological integration after an acquisition. Liu and Zou (2008) used panel data analysis to examine the influence of international technology spillovers on innovation within Chinese high-technology industries through greenfield foreign direct investment, cross-border M&A, and trade, including variables such as intra- and inter-foreign production, skilled labor, R&D, and M&A. Foreign greenfield R&D activities of multinational enterprises in a host country were found to significantly affect the innovation performance of domestic firms, with both intra-industry and inter-industry spillover effects. Only cross-industry spillover effects were found for M&A.

Subjective metrics have consistently faced criticism because they easily reach their limits. Venkatraman and Ramanujam (1987) argue that a single respondent manager can easily overestimate a company's performance, suggesting a need to involve more than one person in the survey (Bowman & Ambrosini, 1997; Miller et al., 1997). Trichterborn et al. (2016) also considered subjective evaluation measures to be susceptible to general method bias. To avoid bias from individual sources, the authors asked two other colleagues of the interviewee to complete a separate questionnaire on M&A performance, but the response rate was not high. In the meta-analysis by King et al. (2021), non-financial measures of managerial assessment and innovativeness could not be meta-analyzed as the calculation of the mean scores is not possible due to differences in measurement. For example, when Likert scales are used in management evaluations, different means may indicate no change in performance.

2.2.5 Findings on mixed measures

As with the other performance measures, the results for mixed measures are also ambiguous, mainly due to the different considerations of various objective and subjective measures. Cartwright et al. (2012) noted that only 3.2% of M&A research articles published in high-impact journals from 1963 to 2009 chose an approach that combined both qualitative and quantitative methods. Rouzies (2013) similarly analyzed 450 empirical articles dealing with M&A published in 19 high-ranking academic journals between 1963 and 2012. When selecting the journals, care was taken to ensure the greatest possible variance in the disciplines (finance, human resource management, marketing, organizational behavior and theory, and strategy). Nevertheless, only nine of the articles analyzed used a mixed research design.

At the financial level, Healy et al. (1992) compared operating performance results to those of an abnormal returns event study for the 50 largest U.S. mergers between 1979 and 1984 and

found a strong positive relationship between the post-merger increase in operating cash flow and abnormal stock returns when a merger was announced. Krishnan et al. (2009) confirmed the results for a sample of 50 related U.S. acquisitions between 1992 and 1996. Ghosh (2001) finds no correlation between accounting and capital market studies for a sample of 315 M&As in the U.S. between 1981 and 1995. In line with the results of previous sections, Sun and Tang (2000) showed that acquiring companies' shareholders do not benefit from mergers, while the shareholders of the acquired companies and industry peers achieve positive market-adjusted returns. However, the operating performance of the merged companies was worse in the post-merger analysis. Choi and Harmatuck (2006) examined a sample of 44 M&A transactions in the U.S. construction industry between 1980 and 2002, finding that although operating performance improved slightly, it was non-significant. The investigation substantiated the argument, positing that managers exhibit a heightened propensity to augment their personal wealth as opposed to that of the shareholders, and the stock market efficiency study indicated that market returns are positive at an insignificant level.

Malhotra and Zhu (2006) examined Indian bidding firms that acquired U.S. firms from January 1999 to December 2005 and showed that the Indian domestic market had a significantly positive response to the announcement of the acquisition of U.S. firms by Indian companies. In terms of financial performance, net sales growth increased following an acquisition, while other financial ratios declined. For a sample of 303 completed U.K. takeovers between 1985 and 1996, Guest et al. (2010) applied the residual value method to compare the fundamental value of the acquired company before and after the acquisition but did not find a statistically significant impact of the takeover. However, they did find significantly positive effects of the transactions on the profitability of the acquirer, contradicting significantly negative stock returns.

Alternative studies employ a combination of diverse methods at a predominantly subjective level. Bresman et al. (1999) measured knowledge transfer in international acquisitions by collecting questionnaire data from 42 cases and conducting a qualitative phase with 19 interviews that led to in-depth case studies of three international acquisitions. For both types of data, information was collected at two points to examine knowledge transfer patterns over time. Faulkner et al. (2002) examined the human resource management (HRM) practices of American, Japanese, German, and French companies in the U.K. companies they acquired by statistically analyzing 201 questionnaires and conducting 40 in-depth interviews. The results of both forms of research were largely consistent with each other. It notes a convergence of HRM practices based on performance-related compensation and more training in the

subsidiaries, but also that HRM practices differ depending on the country of origin of the parent company. Birkinshaw et al. (2000) used mixed methods data to measure the integration process following Swedish multinationals' acquisition of three foreign companies. They conducted interviews and questionnaires for both companies and found that initially, human integration was smooth, leading to cultural convergence and mutual respect, while later, task integration occurred, leading to greater interdependence between the acquired and acquiring units. Raukko (2009) systematically examined the organizational commitment exhibited by personnel at the acquired company throughout the post-acquisition integration process by applying a longitudinal case study methodology. The study employed sequential quantitative surveys administered at 6-month intervals, complemented by 58 qualitative interviews interspersed between surveys. The quantitative surveys were designed to gauge the extent of organizational commitment, whereas the qualitative interviews were intended to elucidate a comprehensive understanding of the commitment levels among key individuals following a cross-border acquisition. The findings indicated variations in the perception of organizational change among key employees. Notably, in amicable takeover scenarios, key personnel not only anticipated organizational changes but may have also actively contributed to the instigation of such changes. The results showed that a stronger analytical generalization can be achieved through method triangulation (qualitative and quantitative data and analyses).

Schoenberg (2006) used both financial and nonfinancial criteria to measure M&A performance for 61 cross-border takeovers by U.K. companies from 1988 to 1990. The findings revealed a lack of correlation between subjective and objective performance measures, necessitating the adoption of alternative metrics in future assessments to gauge authentic M&A performance. Research from Papadakis and Thanos (2010) based on a sample of 50 domestic takeovers in which three different measures are applied contradicted Schoenberg's (2006) results, finding a positive correlation between accounting-based measures and managers' subjective assessments. CARs, however, were not correlated with the accounting-based measures or the managers' subjective assessments. Zollo and Meier (2008) used a unique dataset created by surveying partners and directors of a large consulting firm advising on integration progress following 146 acquisitions in different industries and geographies. The results of the factor and structural equation analysis revealed that none of the factors managed to load on all nine measures examined; a causal chain linked integration process performance to long-term accounting and capital market performance via the mediating role of customer retention and overall acquisition performance; and short-term window event studies were unrelated to any of the other performance metrics and load on a

separate factor. Overall, the findings on mixed measures show a strong dependence on the proportions and types of nonfinancial measures in the total measures of a study, which makes comparison between studies impossible. Mixed measures seem to be the least suitable for measuring M&A performance, given the possibility of misinterpretation.

2.3 Future potential measure

2.3.1 Concept of future potential

The FP approach originates from Honold et al. (2016). They endeavors to further distinguish the gap between MV, BV, and PV to enhance the precision in understanding shareholders' anticipations of MVs. This approach successfully integrates the capital market perspective with accounting considerations while focusing on value orientation. Business valuation is a highly fragmented and nonuniform field of research. Numerous criticisms of existing business valuation tools exist, as presented in Chapter 2.1. The accounting and capital market perspectives are supplemented by value-oriented management and control systems, such as the residual profit-oriented indicator and economic value added (EVA), which also contain elements of both perspectives.

The challenge with various approaches to company valuation from different perspectives is the misunderstandings that arise in determining an actual company value (Mellen & Evans, 2018). Users of the respective approaches use different input data to determine a company's value, which is difficult to compare and attracts a lot of criticism. Firstly, the profits shown in the profit and loss statement (P&L) are not yet an indicator of price increases (Papadakis & Thanos, 2010). Ratios based on BVs, such as ROE, ROA, or ROS, inherently possess limited standalone informative value and are not conducive to forecasting share price dynamics. Secondly, the usually applied P/E ratios lack comparability if risk and growth potential are not considered. Investors are increasingly acknowledging the potential disparity between future circumstances and historical trends, as exemplified by the manner in which the media covers earnings releases (Mellen & Evans, 2018, p. 18). Thirdly, knowledge about the correlation between periodic earnings figures and a company's value is lacking; conversely, the statements on market value developments are limited to the earnings figures. The disclosed earnings of a public company are routinely juxtaposed with market expectations, underscoring the dependence of asset valuation on future expectations. Historical data, in this context, serves predominantly to evaluate the dependability of forecasts (Mellen & Evans, 2018, p. 18). Fourthly, growth factors are often given from an accounting and capital market

perspective, although the data are limited to the growth already realized within a defined period. Expected growth can only be recorded from the capital market perspective because, assuming efficient capital markets, MVs already contain all information about future events. This criticism has led to the emergence of the MV–BV–PV gap.

Considering the already priced in FP, diverse potential scenarios and statements regarding company growth expectations become conceivable. Especially in the context of young, innovative companies with compelling business models, the market often trusts these companies to attain substantial growth, even when the current performance is low or negative. For established companies in the market that have a mature business model that has been consistently successful over decades, high growth expectations are not necessary. A differentiated view of the case suggests that as long as further growth expectations are present, a company's performance will be maintained. If positive growth expectations are missing for a company, it can be assumed that the current operating performance will not be possible in the future, and a decline is to be expected (Honold et al., 2016).

To calculate enterprise value, Honold et al. (2016) use the classical net present value calculation, based on the result for a given period. By calculating a perpetual annuity, it is assumed that the period result ($NI_{i,t}$) is also earned in the future. Considering an appropriate cost of capital rate ($COE_{i,t}$), this results in the enterprise value (Formula 1).[4] Assuming imperfect capital markets, it becomes apparent that the company's MV and the implied net PV assumptions of the capital market do not align with the actual period results reported in the accounting.

(1) $PV_{i,t} = \frac{NI_{i,t}}{COE_{i,t}} = \frac{ROE_{i,t} * B_{i,t}}{COE_{i,t}}$

The FP of a company implicitly expected by the market is calculated as the difference between the MV and the PV.

(2) $FP_{i,t} = MV_{i,t} - PV_{i,t}$

The numerous ratios used to determine the value of a company, based on differing perspectives, contain little meaningfulness in isolation. The different reference values of the ratios confirm these discrepancies, indicating a need for more transparency for each perspective incorporated into the FP approach and their dynamic interactions. From a capital market perspective, the ratio of a long-term return on equity, ROE_L, to the cost of equity

[4] Growth expectations can also be integrated into the model, but this has not been done for illustrative purposes.

results in a specific P/B ratio. ROE_L distinguishes itself from ROE insofar as the ratio determines the sustainable expected ROE based on the BV, which has already been priced into the share price by the company's shareholders and must be achieved in the long term.

(3) $\frac{P_{i,t}}{B_{i,t}} = \frac{ROE_{L,i,t}}{COE_{i,t}}$

To company management, internal control is based not only on the minimum return to be achieved for the shareholders, but also on the underlying P/B ratio. Only when the company earns ROE_L over the long term is the current share price justified and are investors' expectations fulfilled. Concrete opportunities for the implementation of earnings improvements lie in improved penetration of existing markets and customers, the development of new regional markets, expansion of the product portfolio and services, and the use of new sales channels through portfolio and program management as well as innovation management (Honold et al., 2017). When the dynamics in the changes in share prices triggered by new information are considered, ROE_L also adjusts to the new situation.

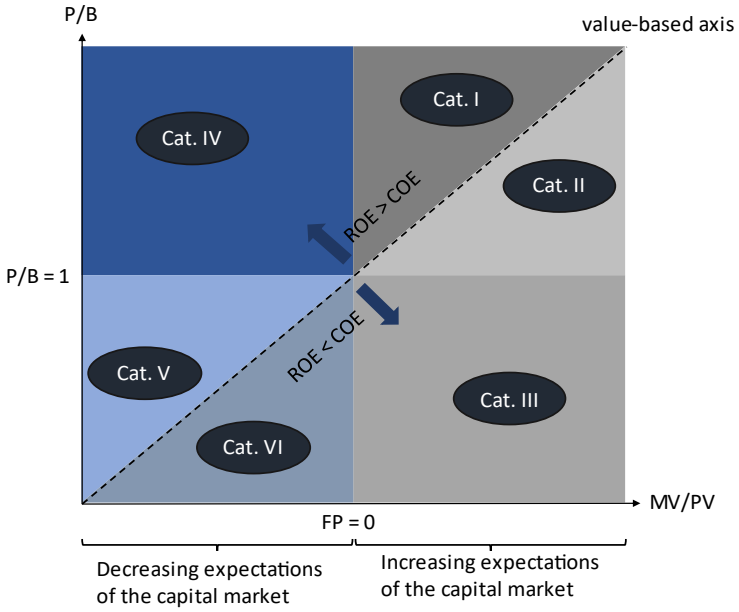
(4) $ROE_{L,i,t} = COE_{i,t} * \frac{P_{i,t}}{B_{i,t}}$

The provided explanations show the classification of traditional ratios and their significance in relation to other financial metrics. In this way, the FP approach clarifies owners' expectations and increases pressure on management to strive for result improvement. A company's growth opportunities and long-term strategic orientation are already reflected in the MV, and identifying new potentials becomes crucial for further share price increases.

Figure 2.1 combines the internal, value-oriented perspective with the accounting and capital market perspectives. The resulting classification scheme identifies which part of the market value is explained by the actual net income (NI) and which is assigned to FP. The right-hand side of the figure shows a capital market anticipating positive FP (Cat. I, II, and III), while the left predicts a negative FP (Cat. IV, V, and VI). If FP is positive, shareholders expect an improvement in performance. The value-oriented axis indicates whether the company has managed to earn the COE in a given period. In the fields above the value-oriented axis (Cat. I, IV, and V), the company has managed to earn an ROE above the minimum return required by the shareholders. Earning its cost of capital in one financial year, however, is not necessarily an indicator of existing FP, as this is only the case for Cat. I. When MV/PV and P/B are both either greater or less than 1, it is unclear how ROE relates to COE. Certain categories, namely Cat. I and V, demonstrate the ability to generate returns exceeding the cost of capital, whereas others, specifically Cat. II and VI, exhibit an inability to do so, a circumstance determined

solely by the ratio of P/B. When FP is negative, the current operating result cannot meet the expectations of the capital market. Although it may well be possible that a company continues to achieve the required minimum return (Cat. IV and V), the ROE will decrease in the long term. These companies face the challenge of finding new FP to overcome the expected decline in operating profit.

Figure 2.1 Classification scheme



Source: Author's representation, based on Honold et al. (2017, p. 45)

2.3.2 Theoretical motivation of future potential in M&A

The theoretical construct for the emergence of FP is based on the motives for M&A. The synergy hypothesis, often regarded as the most prevalent motive for M&A (Signori & Vismara, 2018), involves the integration of two or more business units to create a consolidated entity with enhanced competitive advantages and realize synergy potentials (Porter, 1985). According to Goold and Campbell (1998), *"the word synergy is derived from the Greek word synergos, which means working together"* (p. 139). The synergy hypothesis assumes that merged companies operate more efficiently than the individual companies (Seth et al., 2000). To generate value from an acquisition, the value of synergies realized must exceed the sum of the target's price and any required acquisition premiums, financing costs, and coordination costs (Zhou, 2011). Fiorentino and Garzella (2013) assert that drawing from value creation theories (Rappaport, 1986), company valuation models (Demirakos et al.,

2004), and synergy studies (Damodaran, 2005), the value of synergy expectations depends on the financial flows associated with the potential M&A synergies, their distribution over time, and the discount rate. The increase in performance achieved through synergies is the PV of the additional net cash flows generated by the transaction, which companies could not achieve without the merger. When synergies are achieved, the value of the two companies in combination is higher than the sum of their two individual values (Bradley et al., 1988; Feldman & Hernandez, 2022; Gates & Very, 2003; Jensen & Ruback, 1983).[5] Beyond the general notion that 2 + 2 = 5, there are a variety of synergy typologies and definitions (Bauer & Friesl, 2024, p. 4).

While previous research agrees that value creation occurs during post-merger integration (Haspeslagh & Jemison, 1991), an understanding of synergistic objectives and the accurate valuation of synergies is integral to grasping the intended outcomes (Richard et al., 2009). The literature characterizes the concept of synergy as exceptionally intricate, with a conspicuous absence of a universally agreed-upon understanding (Garzella & Fiorentino, 2014; King et al., 2004; Larsson & Finkelstein, 1999). Synergies are essential to a successful product-market strategy as they represent the strategic "fit" between the existing and new business units. However, realizing existing synergy potentials is only possible when the new business unit complements the activities of the existing business unit in a useful way (Bauer & Matzler, 2014; Larsson & Finkelstein, 1999). Jemison and Sitkin (1986) further emphasize that strategic fit involves extending or adding to the strategy, contributing notably to the parent company's financial and non-financial objectives. Lubatkin (1983) argues that the extent of strategic fit, considering the alignment between the competitive strengths and market growth rates of both the acquiring and acquired company, directly influences the potential for increased profitability.

In contrast to the anticipated presumption of exclusively positive synergies, negative synergies have a non-value-enhancing impact, resulting in value diminution, denoted as acquisition-related costs (Fiorentino & Garzella, 2015; Rozen-Bakher, 2018). The term acquisition costs is also referred to in the literature as dis-synergies (Herzfeldt et al., 2017). Dis-synergy occurs when two types of synergies replace each other, i.e., an increase in one type reduces the value created by the other type (Feldman & Hernandez, 2022). Many academics emphasize the negative impact that difficulties in achieving synergy potential can

[5] Ansoff (1965, p. 75) formulates the synergy effect as: "…combined return on investment of the firm is higher than the return which would result if each division (or strategic business unit) operated without taking advantage of sharing and complementarities."

have on the failure of M&A and argue that potential synergies are often unrealized in the integration process (Angwin & Urs, 2014; Fiorentino & Garzella, 2015; Steigenberger, 2017; Zollo & Singh, 2004).

Fundamentally, the scholarly discourse distinguishes between operational and financial synergies (Huyghebaert & Luypaert, 2013). Reasons for synergies include potential cost reductions; perfection of operational efficiency; revenue improvements due to distribution network optimization (e.g., cross-selling), new business regions/areas, and increased market power (e.g., fewer competitors); expanded monopoly positions; reduced threats; and a range of financial benefits such as tax efficiencies and leverage (Blonigen & Pierce, 2016; Carpenter & Sanders, 2007; S. Deng & Elyasiani, 2008; Di Guardo et al., 2019; Huyghebaert & Luypaert, 2013; Seth, 1990a, 1990b; Singh & Montgomery, 1987). Cost of operating synergies receive the most attention because they directly impact cash flow and the income statement (Damodaran, 2005; Rabier, 2017; Rappaport, 1986). Devos et al. (2009) demonstrate that synergistic gains, on average, constitute 10% of the combined firm value, with the majority being operational synergies. Across the literature, synergies are frequently differentiated into *revenue* and *cost synergies*.

Revenue growth is a frequently mentioned synergistic phenomenon (Sethi & Krishnakumar, 2012), though as many as 70% of mergers do not achieve expected revenues (Christofferson et al., 2004). Long-term revenue synergies may result from introducing new products or services or strengthening the existing product and service portfolio (Calipha et al., 2010; Gopinath, 2003; Levinson, 1970; Trautwein, 1990). So-called “superadditive” synergies can also create value by combining unique company resources within merging companies (Davis & Thomas, 1993). New sales opportunities created by combining firms would not have been achievable by acquiring or targeting companies independently (Golubov et al., 2013). Tanriverdi and Venkatraman (2005) connected the emergence of revenue synergies to the “resource relatedness” concept, which states that companies increase output by sharing related resources across different parts of the organization, leading to a higher output of the combined units. Likewise, complementary goods or improved distribution can lead to higher growth and sales for the combined company than the target and acquiring companies could achieve by operating independently in the market (Levinson, 1970; Malik et al., 2014; Shaver, 2006). Another reason for increased revenues may stem from heightened market power and the elimination of competing entities (Golubov et al., 2013).

Cost reductions are a common source of synergies achieved through economies of scale and scope, economies of experience, eliminating duplicate facilities, and greater bargaining power with distributors or suppliers (de Graaf & Pienaar, 2013; Fatima & Shehzad, 2014; Feldman & Hernandez, 2022; Kumar & Sharma, 2019; Piesse et al., 2022; Townsend, 1968). The consolidation of entities through a merger has the potential to yield *economies of scale*, enabling the integrated firm to achieve heightened cost efficiency and enhanced profitability (Damodaran, 2005, p. 4). A recent study showed that acquisitions driven by economies of scale and innovation have longer negative tails of performance but also longer positive tails of performance compared to other transactions (Rabier, 2017). In a study of the announcement returns of horizontal mergers and takeover bids, Shahrur (2005) interpreted positive combined bidder/target returns to mean that the market viewed the transactions as efficiency-enhancing. In the case of fixed costs, average unit costs decrease with increasing output, given technology and cost factor prices. With increasing company size, companies have the opportunity to achieve cost degression effects across various functions (e.g., procurement, manufacturing, sales, marketing, R&D) (Capron, 1999, p. 989; Gaughan, 2018, p. 140; Jensen & Ruback, 1983, p. 611). Transaction cost theory views this positive effect as countered by "diseconomies of bureaucracy" because the higher administrative costs and lower flexibility associated with the economies of scale may even exceed size-related savings in some sectors (Canback et al., 2006; Williamson & Winter, 1993). A pivotal distinction is that the negative synergies associated with an acquisition typically emerge automatically, while positive synergies necessitate deliberate efforts during corporate integration (Shaver & Mezias, 2009; Zhou, 2011). Diseconomies of scale may arise because higher costs are associated with coordinating a larger operation, which is controversial in academia, as some companies have long periods of growth behind them and still pay their shareholders an acceptable ROE. There is a conflicting opinion that such companies could offer their stockholders a higher return if they were smaller, more efficient companies (Gaughan, 2018, p. 140).

Economies of scope describe the relationship between product variety and a company's profitability. This concept explains the cost advantages of company size in heterogeneous product programs (DePamphilis, 2011); the production of a diversified range of services/products is cheaper in a large, heterogeneous plant than in several separate single-production plants (Camesasca, 2000). The concept is directly related to the goal of vertical integration in that coordinating the flow of products or services from one entity to another should reduce inventory costs, accelerate product development, increase capacity utilization, and improve market access (Carlton & Perloff, 1994; Goold & Campbell, 1998). Transaction

costs run through the entire M&A process, from the initiation to the adjustment of economic performance relationships, though they can be reduced if the transaction partner is part of the same company and not on the market (Picot, 1982). Acquiring companies operating within the same product segment can create centers of competence for individual components or precursors that can be used in diverse end products, which is a typical approach in the automotive sector (Kalmbach et al., 2022). The significance of economies of scope in elucidating M&A within the banking sector is comparable to economies of scale (Mester, 1987). Pursuing these advantages is one of the factors responsible for the consolidation in the banking sector during the fifth wave of mergers (Gaughan, 2018, p. 141).

The cost savings from *economies of experience* are based on accumulated knowledge and experience. The increased pool of experience associated with M&A leads to the continuous development of more efficient ways of working, as well as quality gains (Besanko et al., 2000; Haleblian & Finkelstein, 1999; Lubatkin, 1983). According to experiential learning theory, knowledge is created through understanding and processing experiences (Kolb, 1984). Economies of experience are subject to an empirical law that states that if the output quantity is doubled, the absolute unit costs related to the value-added can be reduced by 20%–30% (depending on the industry) through learning effects (Henderson, 1968). Acquirers that undertake serial acquisitions have been found to be better at M&A than other companies, realizing exceptional performance even after multiple M&As (Golubov et al., 2015). In addition, exceptional acquirers continued to execute good acquisitions, while poor acquirers did the opposite. The outstanding performance of these good acquirers remained after the change of CEO, suggesting it is independent of leadership. In a large-scale study on the characteristics of serial acquirers using data from 56,095 M&As, Macias et al. (2016) found the distribution of acquirers to be quite skewed in terms of number of transactions, with more than a quarter of acquirers having completed only one M&A, while a small proportion of acquirers completed the most M&As. These serial acquirers based almost all of their growth on M&A. Other empirical studies examining serial acquirers, however, have found that the performance of a particular acquirer declines from transaction to transaction (Aktas et al., 2011; Billett & Qian, 2008).

While the synergy hypothesis provides support for the emergence of FP, the *overpayment hypothesis* is motivated by *managerial agency* problems, *overconfidence*, and *hubris* (Billett & Qian, 2008; Healy et al., 1997; Ismail, 2008; Roll, 1986; Shleifer & Vishny, 1997; Sirower, 1997). Proponents of this theory argue that acquirers often pay a premium for a target that exceeds expected synergies, leading to value destruction for the acquirer (Aktas et al., 2016;

El-Khatib et al., 2015; Hayward & Hambrick, 1997; Sirower, 1997). Gupta and Misra (2007) took advantage of the differences in empirical studies on synergies and overpayments to investigate whether premiums and returns behave asymmetrically and whether the takeovers are value-enhancing or value-decreasing. They showed that premiums only negatively affect the acquiring companies if the takeover is classified as value-enhancing.

Roll's (1986) *hubris hypothesis* argues that managerial *overconfidence* about target companies leads to negative performance. Following the concept of hubris, managers exhibit a misguided belief in their superior abilities to govern and oversee diverse corporate entities compared to their counterparts. This hubris often causes companies to pay a price exceeding the value of the target company (Hayward & Hambrick, 1997). Roll (1986) substantiated this theory by showing that in previous empirical results, the combined value after a takeover did not differ significantly from the individual values of the target and the bidder. Even when synergies exist, bidder managers make mistakes and overpay for their targets. Overconfidence can lead a CEO or decision-maker to conduct inferior due diligence and ignore negative information resulting from the process (Hitt et al., 2001).

There is also a close connection between hubris and the winner's curse hypothesis. If there are several potential acquirers, there is a risk that an acquiring company will offer too much for the target company or overestimate the value of the target company (Varaiya & Ferris, 1987).[6] The winner tends to overpay, outbidding competitors who value the target more accurately (Bazerman & Samuelson, 1983). In extreme cases, this can lead to a purchase price premium that exceeds the possible synergy potential. From a psychological perspective, the bidder's desire to win the auction is fulfilled despite the overpayment (Chua & Luk, 2005). Billett and Qian (2008) and Doukas and Petmezas (2007) hypothesized that overconfident managers tend to attribute their preliminary success from previous business decisions to their own abilities due to self-attribution bias and, therefore, close subsequent deals that perform worse than acquisitions initiated by non-overconfident managers. According to Barnes (1998) and Berkovitch and Narayanan (1993), there is clear evidence that many takeovers are motivated by hubris.

Agency theory and the *managerial hypothesis* postulate that acquiring companies often overpay for acquisitions when top managers engage in opportunistic behavior to achieve

[6] Varaiya and Ferris (1987) studied more than 800 takeovers carried out between 1974 and 1983. The authors found that, on average, the winning bid in takeover bids exceeded the capital market's estimation of potential takeover profits by up to 67%. The overpayment was measured as the difference between the premium of the winning bid and the highest possible bid before the market reacted negatively to the bid.

personal advantages and transfer wealth from the shareholders of the acquiring company to the management (Geiger & Schiereck, 2014; S. Moeller & Balsyte, 2022; Seth et al., 2000; Trautwein, 1990). Agency problems arise when managers seek excessive growth to promote personal interests (Morck et al., 1990). A company's continued growth through additional acquisitions may positively affect the remuneration of the management board and expand its power, status, and prestige. In M&A, the agency problem arises from the separation of ownership and control. Conflicts of interest and information asymmetries between shareholders and management cause management to take opportunistic, self-interested actions that may destroy shareholder value (Jensen & Meckling, 1976). Malatesta (1983) provided empirical evidence of agency problems in M&A, finding that mergers motivated by agency problems are usually value-reducing.

Managers may use conglomerate mergers to diversify a company's activities and smooth profits to secure their own position in the company, which is at odds with the interests of shareholders, who can diversify risks at very low cost themselves (Amihud & Lev, 1981). The more management's wealth is tied to a company, the more CEOs try to reduce risk through mergers (Williams et al., 2008). According to Shleifer and Vishny (1989), acquisitions are made to increase a company's dependence on the skills of the acquiring managers, even though such acquisitions may reduce the value of the acquiring company. Companies with relatively high management ownership have a higher risk aversion, which is reflected in greater diversification through mergers, and the problem is known as "empire building" because when companies have free cash flow, managers are more likely to make acquisitions to build their own empires, and substantial free cash flow can lead management to undertake projects with low returns or value-destroying projects that do not create shareholder value, referred to as the agency cost of free cash flow (Jensen, 1986). Morck et al. (1990) found that many acquirers are more interested in maximizing company size than company value and that management objectives drive M&A. Mueller (1969) noted that the prestige and power that managers can gain from their profession are directly related to the size and growth of the company rather than its profitability. Managers also often receive high bonus payments on top of their basic salary for completing M&A deals (Grinstein & Hribar, 2004). If remuneration systems are inefficient, managers may strive to accelerate a company's growth, even at the expense of profitability. Business growth can be achieved particularly quickly through acquisition strategies. Nevertheless, empirical studies indicate that managerial compensation is contingent upon profitability rather than company size (Lewellen & Huntsman, 1970).

2.3.3 Application of future potential in M&A

The success of M&A is a hotly debated phenomenon. While the literature indicates that corporate transactions do not pay off, global deal volume rises again (Boston Consulting Group, 2023). Most studies from the financial sector find that M&A does not always create value or secure growth for the acquirer, as the failure rate averages 44–50% (Cartwright & Schoenberg, 2006). The divergent M&A performance outcomes delineated in the preceding sections and the existing meta-analyses, exemplified by King et al. (2004), underscore the absence of variables in empirical investigations conducive to forecasting post-acquisition performance. Alternative variables more effectively explain M&A performance, necessitating further theoretical development and alterations in M&A research methodologies. The anticipated enduring synergy gains associated with M&A typically do not differentiate from post-acquisition market returns and accounting performance from their pre-M&A performance, suggesting that companies do not realize the potential gains the acquiring company's shareholders expect from the takeover (Searle & Ball, 2004).

In general, this phenomenon can be explained through a low synergy potential, which results in a suboptimal strategic fit (Larsson & Finkelstein, 1999), or by poor integration, which results in an insufficient realization of synergies (Angwin & Urs, 2014; Graebner et al., 2017; Haspeslagh & Jemison, 1991). The value difference between the realization of synergies and synergy expectations has been used to examine M&A performance (Gates & Very, 2003). Bauer and Friesl (2024) postulated that existing studies presuppose the objective assessment of predicted synergies, positing them as reflective of the true value potential of an acquisition and anticipating that they will be realized through the integration process. However, their analysis demonstrates that synergies frequently fail to accurately mirror the true potential of acquisitions. Rozen-Bakher (2018) revealed that a disproportionate expansion of the workforce by management, aimed at realizing synergy potential, increases the risk of a "synergy–profit-loss–efficiency" trade-off. Despite an increase in sales growth, the study found a concurrent decrease in profitability, indicating that the correlation between expected synergies and profitability was not adequately explained.

While some academic research has enabled the comparison of results and provided explanations for their variance (March & Sutton, 1997), unidentified mediators appear to influence the variance in M&A performance (King et al., 2004). Nevertheless, a common understanding of the effectiveness of synergy measurement is lacking due to the absence of consensus in both theoretical and empirical research (Garzella & Fiorentino, 2014), positing

that the measurements align precisely with a company's intended objectives appears utopian (Richard et al., 2009). This is illustrated by the problem of synergies valuation, as it is difficult to accurately predict impacts based on uncertain events (de Graaf & Pienaar, 2013). A paradigm shift is imperative, as there is a need for a departure from the conventional analysis of synergies as value drivers of performance toward an investigation of the methodologies employed in estimating and predicting synergetic value (Bauer & Friesl, 2024). So far, academic studies have failed to investigate how synergy value is estimated (Feldman & Hernandez, 2022). The high failure rates of M&A may indicate the need for a better understanding of synergy valuation in M&A research (Cloodt et al., 2006; Makri et al., 2010), to overcome the most common errors in the evaluation of synergies (Damodaran, 2005).

Employing FP as a measure of M&A performance proves advantageous in mitigating shortcomings inherent in extant performance metrics, as it leverages the robust attributes of both accounting and capital market measures. The approach is well-suited for appraising the growth expectations associated with M&A transactions reflected through synergies. Equivalent to the methodological frameworks of capital market and accounting studies, FPs are compared in terms of their pre- and post-M&A performance using appropriate benchmark models. The approach also does justice to the dynamics of M&A and counters accusations of one-dimensionality. Additionally, the FP approach provides insights into the identification of synergies and the speed of their realization. Under the assumption of imperfect market efficiency, synergies can be discerned even after the transaction announcement or during the integration process.

The temporal dynamics inherent in the accounting and market perspectives suggest that the influence of the capital market takes precedence initially, with accounting adjustments manifesting at a subsequent stage. A significantly higher FP is thus usually expected after the transaction, decreasing as synergies are achieved, leading to an improved operating performance. Beyond assessing the dynamic evolution of FP and the acquired synergies, this approach also furnishes insights into the investments required when synergies and growth potential are depleted. The absence of FP indicates a difficulty in sustaining long-term operational performance, which subsequently influences a company's stock prices. The monitoring and management of FP is critical to a company's existence. The approach also provides potential explanations for the uniformly negative long-term CAR, when transactions are made only to hedge against short-term negative developments and not because of a high synergy potential associated with the transaction.

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Part 1: Future Potential in M&A

Chapter 3 Future potential through acquisitions? A multidimensional approach for measuring M&A success (Research Paper #1)

Just, R., & Meckl, R. (2024). Future potential through acquisitions? A multidimensional approach for measuring M&A success. Currently. *Finished manuscript.*

Abstract

Determining the success of transactions is one of the central questions in mergers and acquisitions (M&A) research. This paper aims to identify the future potential in the market values of acquiring companies, using a multidimensional approach that includes both the effect around the announcement date and long-term analyst estimates. We investigate whether M&As affect companies' future potentials from both the accounting and capital market perspectives. Using a still-novel research approach, we divide a company's market value into two determinants: A present value based on the current business activity. The future potential is already priced into the market value by capital market participants, but has not yet been realized. From an accounting perspective, we identify purchase price premiums and goodwill as sources of future potential. Additionally, we use the multidimensionality of the approach to investigate the realization of future potential. We derive the reported future potentials in each period and use historical analyst estimates to examine expectations for subsequent periods. We find that high takeover premiums and goodwill lead to a higher share of future potential in the market value. In the long term, transactions cause acquiring companies to realize their potential more slowly than directly after the closing.

Keywords: Acquirer, Future Potential, Goodwill, M&A, M&A success, Takeover premium

Chapter 4 What we still misunderstand about measuring M&A: A conceptual approach for accounting future potential (Research Paper #2)

Just, R., & Honold, D. (2024). What we still misunderstand about measuring M&A: A conceptual approach for accounting future potential. *Currently under review at a scientific journal.*

Abstract

This study aims to examine the extent to which the goodwill arising from M&A contains additional growth potential beyond what is already included in shareholders' expectations of the company. In this paper, we introduce a new approach to measuring changes in a company's future potential (FP). For this purpose, we divide the market value into present value (PV) and FP. The PV is calculated as the perpetuity of profit divided by the cost of capital. The difference between the market value and the PV represents FP. Our approach overcomes the previous weaknesses in one-dimensional M&A valuation approaches and provides important insights on the conflicting results of the impact of goodwill recognition and the predictive power of goodwill on future performance. Similarly, we discuss the different relationships between shareholder expectations of goodwill and goodwill that can be accounted for. The approach provides important implications for researchers, M&A managers, and analysts, as the goodwill recognized can be analyzed in terms of its actual predictive power about success and, instead of a pure assessment of M&A success based on market values or accounting ratios, both perspectives are linked to FP. The correlation between goodwill and FP better reflects shareholders' expectations of transactions than onedimensional measures.

Keywords: M&A accounting, Future potential, Goodwill, Present value, P/B-ratio

Chapter 5 Long-term performance of German M&A using forward-looking performance measures (Research Paper #3)

Just, R., & Meckl, R. (2024). Long-term performance of German M&A using forward-looking performance measures. *Currently in the review process at a scientific journal.*

Abstract

We examine the long-term performance of mergers and acquisitions (M&A) of German acquirer companies using a performance metric (future potential) that considers both past-oriented performance and shareholder expectations to address criticisms of one-dimensional performance metrics in the academic literature. Our results show that acquirers' future potentials (FP) significantly underperform the median peer of their industry before the transaction announcement but that after the acquisition, acquirers' future potentials increase dramatically. Raw performance and industry-adjusted future potentials increase significantly due to the transaction, confirming the synergies present in the company but not yet realized. Using multiple regression to validate the differences in FP, we identify several transaction and company characteristics that affect the performance variable. Our results show that a high proportion of future potential is comprised through M&A, thus, future operating performance depends on the ability of the acquirer to realize the estimated potential.

JEL codes: G34, L25

Keywords: Future potential, Long-term performance, M&A, Performance measurement

Chapter 6 Value relevance of Goodwill Accounting - How a forward-looking valuation approach guides Goodwill recoverability (Research Paper #4)

Just, R., Honold, D., & Meckl, R. (2023). Value relevance of goodwill accounting - how a forward-looking valuation approach guides goodwill recoverability, *Cogent Business & Management, 10: 2262213.*

Abstract

This study addresses the problem of value relevance and accounting for goodwill positions, as the measures used in previous studies are only suitable to a limited extent for measuring the growth potentials through M&A. For this purpose, the measure of future potential (FP) is defined as a company's expected growth from a capital market perspective, which is already priced in but has not yet been realized and separates it from the growth already realized in the income statement. The study includes 2660 acquisitions from US companies between 1998 – 2018. Goodwill (premiums) are identified as carriers of FP, and we seek to determine whether they affect long-term operating performance. Our results show that changes in FP, like goodwill, significantly negatively affect future operating performance, demonstrating the realization of growth potentials through M&A. Second, using moderation analysis, we show that the interaction between goodwill and FP predicts changes in operating performance, and the negative relationships decreased significantly when firms were able to generate more potential through the transaction. Our model is particularly suitable for acquirers who have purchased only a few FP. The controversy surrounding goodwill's value relevance and the impairment- only approach's discretionary nature is scrutinized.

Keywords: Goodwill, Performance, Premium, M&A, Future potential

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Data availability statement: The data will be made available on request.

6.1. Introduction

In today's environment, companies are pressured to make increased investments that often fail to pay off (Gu & Lev, 2011; Harford, 2005; Harford & Li, 2007). The challenge is to find new investment opportunities that drive growth constantly. Due to M&A, the share of intangible assets in balance sheets has continued to rise. In 1975, the percentage of intangible assets in the market value made up 17% in the S&P 500; this exploded to 90% by 2020, and M&A strongly influenced the development, because goodwill often represents the largest single item on companies' balance sheets (Brown, 2023; Ocean Tomo, 2020). Goodwill reflects the present value of expected future benefits from intangible assets that cannot be identified individually and are not recognized separately. However, goodwill in the origination and subsequent measurement of these items is highly controversial in the literature and difficult to define (Bloom, 2009; Giuliani & Brännström, 2011; Johnson & Petrone, 1998).[7]

The increasing criticism of the current accounting principles for goodwill has led both the United States' (US) Financial Accounting Standards Board (FASB) and its European counterpart, the International Accounting Standards Board (IASB), to revise the accounting principles on Identifiable intangible assets and subsequent accounting for goodwill (Financial Accounting Standards Board, 2023; IAS Plus, 2022). In recent years the literature reviews on accounting for goodwill by Wen and Moehrle (2016) focus on the US's Generally Accepted Accounting Principles (GAAP) accounting requirements and d'Arcy and Tarca (2018) on International Financial Reporting Standards (IFRS) requirements, while overarching review by Amel-Zadeh et al. (2023) reviews the determinants and decision usefulness of goodwill reporting. In subsequent valuations, goodwill impairments convey a negative signal about the acquisitions' quality, as value-destroying M&As lead to more frequent and larger future goodwill impairments (Ahn et al., 2020). Also, Filip et al. (2015) showed that managers delay goodwill impairments by manipulating cash flows and the resulting consequences for future performance. They study the effect of real earnings management on future performance and confirm that the actual manipulation of activities adversely affects future performance. This underlines that the company has not been able to create value from past acquisitions (Caplan et al., 2018). Therefore, managers have significant discretion in recognizing goodwill impairment, as impairment losses must be disclosed to the extent that the carrying amount of

[7] The International Financial Reporting Standards (IFRS) 3 Appendix A describes goodwill as "an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized."

goodwill on the balance sheet exceeds its fair value. The fair value of goodwill can be inflated by opportunistic valuation assumptions or by inflating the current level of cash flow to assume as the basis for forecasting future cash flow used to estimate the fair value of goodwill (Banker et al., 2017; Penman, 2013). Therefore, there are doubts about the impairment of the goodwill position because the acquirer originally pays a price above the company's market value in the hope of realizing the synergies of the merged organization (Krishnan et al., 2007; Sirower, 1997). However, according to agency theory, compensation and reputational concerns, as well as concerns about breaching debt obligations, incentivize managers to delay the recognition of goodwill impairment (Li & Sloan, 2017). In addition, Chung and Hribar (2021), Hayn and Hughes (2006), and Jarva (2009) observed that the recognition of goodwill impairment is usually delayed for several years due to the deterioration of economic performance.

In accounting research, some papers have investigated whether accounting goodwill is relevant to the equity valuation of capital market participants. The studies have consistently found a positive relationship between firm value and goodwill (Jennings et al., 1996). Goodwill may be strongly associated with expected future benefits when the acquisition is recognized but is likely to decline rapidly. No differential effect was found between recently acquired goodwill and older goodwill, but annual amortization rather than the impairment-only approach (IPO) was also examined. Bugeja and Gallery (2006) investigated the value relevance after the change to the IPO. They found a positive relationship between goodwill and firm value in the observation year, but not with goodwill acquired more than two years previously. However, some research criticizes that market prices and accounting measures are not correlated and are, therefore, not very informative (King et al., 2004, 2021; Papadakis & Thanos, 2010). The increasing goodwill positions due to the introduction of the IPO in the balance sheet have since been criticized, as the actual economic value of the goodwill is doubted due to the absence of impairments. Wang and Huang (2019) show that excess goodwill has no positive effect on firms' market performance, but a significant adverse effect on firms' financial performance.

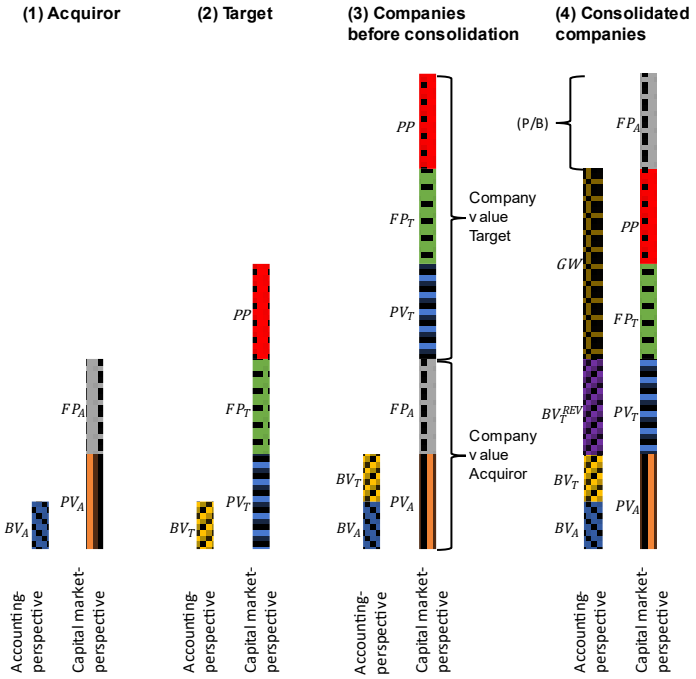
Therefore, this work is motivated by the fact that most frameworks on the value relevance of goodwill measure market performance while at the same time not considering the realization of synergy potential that has already taken place and, in addition to this, the achievement of value- oriented targets. However, the share of synergies already realized can only be found in accounting and is always accompanied by the assessments of capital market participants on the other side. But accounting information is past-oriented and is not a good indicator of

future corporate performance. To address the complexity of goodwill accounting, a mediating measure that can calculate value-based goodwill is needed to provide information to preparers of annual reports as to whether the reported value of goodwill is justified. The work is significantly motivated by Yehuda et al. (2019), which examined whether goodwill determined for accounting purposes by US acquirers corresponds to the underlying economic reality of the transaction according to the Financial Accounting Standard Board (FASB) and demonstrates the discrepancy between the perspectives.

Research question: *Can a value-based measure control the value relevance and information content of goodwill and premium regarding long-term performance?*

To overcome the existing misalignment of goodwill recognition and its subsequent measurement, a holistic value component, which includes the economic significance of goodwill from a combined metric composed of the accounting capital market and value-oriented perspective, is used to classify the previous results. In order to isolate the effect of goodwill on M&A success, the market value (MV) of a company is divided into the components' present value (PV) and FP (Honold et al., 2016). The PV is developed based on a perpetual annuity from the adjusted net income and the company's cost of capital. The PV represents the operating performance of the company, a key figure that indicates the performance a company can achieve based on the assets shown in the balance sheet and the income statement. Compared to other valuation mechanisms, such as cash flow, growth rates are deliberately omitted in this case, as they are not associated with current performance. The difference between the calculated PV and the company's MV gives the company's periodized FP. FP implies the expectations placed on the company by the shareholders regarding future business development, which the company could not yet realize at the operational level. FP is the goodwill created from a market perspective that the company has to realize in the future. Figure 1 shows an illustrative example of the FP approach to the goodwill problem.

Figure 6.1 Value gaps in M&A from an accounting- and capital market- perspective



Notes: BV_A= Book Value Acquiror, PV_A= Present Value Acquiror, FP_A= Future Potential Acquiror, BV_T= Book Value Target, PV_T= Present Value Target, FP_T= Future Potential Target, GW = goodwill, PP = Purchase Price Premium, BV_T^{REV} = Book Value Target revealed.

Source: Author's representation

In the first two columns, three different dimensions are compared. Simplified, it is assumed that the PV exceeds the BV of the acquiring company, but further FP are also included in the market value.[8] The target differs from the acquirer only in the acquisition premium paid. The takeover premium includes the maximum purchase price based on the fundamental analysis of the acquiring company, which is higher than the current market value due to synergies and cost savings (Damodaran, 2005). Aktas et al. (2016) point out that takeover premiums are seen in connection with management's overestimation of their skills, implying values for target companies that are not realizable. But premiums are necessary to induce the target company's shareholders to sell their shares to gain control over the company (Ciobanu, 2015). A further value gap results from the difference between the acquisition premium paid and the market value if the $Transaction\ Value\ (TV) \div MV_t^T <> 1$. While column three contains the aggregate balance before consolidation, column four shows the consolidation's influences on

[8] Formally, $MV_t^A \div PV_t^A > 1$ and consequently $MV_t^A \div BV_t^A > 1$ for the acquiring company and $MV_t^T \div PV_t^T > 1$ and consequently $MV_t^T \div BV_t^T > 1$ for the target company.

the value gaps, with a remaining difference between the accounting and capital market perspective solely explained by the original FP of the acquirer. The values in the first two columns can be easily transferred to column four without structural changes. The differences from column three to the accounting perspective in column four result from the consolidation measures of the target company on the balance sheet side. No further adjustments are required from a capital market perspective. The disclosure of hidden reserves leads to a revaluation of the equity of the target by the acquirer, expressed by BV_t^{REV}. Revaluating the BV closes the gap between PV and BV, as the identified assets are recognized at their respective fair value following the fair value balance sheet. The accounting for the FP of the target company and the acquisition premium were not recognized in the balance sheet prior to the transaction, but are now recognized as goodwill in the balance sheet and contribute to an increase in the carrying amount. The amount of the premium paid and the target's FP share in its market value determine the amount of goodwill recognized. The effects on the P/B are unaffected by this and thus irrelevant to assessing the company's growth prospects. The figure suggests a decline in the ratio, meaning lower growth intentions than before the transaction. The ratio is highly controversial and must be interpreted differently depending on the industry.

The study analyzes a sample of 2660 business combinations completed by US acquirers between 1998 – 2018. The results show that goodwill negatively impacts the industry-adjusted operating performance two years after the transaction's closing, which also renews the criticism of IOA. In contrast, value-based FP, which includes the transaction's synergies, shows an opposite relationship with performance. Companies that realize the synergies quickly manage to show better performance. In contrast, for other companies, the capital market confirms the value of the synergies, and the companies are expected to perform better in the long run. Using a moderation analysis, the interaction effect between goodwill and FP also shows strong support for mitigating the negative impact of goodwill on performance and, therefore, for goodwill being classified as significantly more value-relevant by the capital market. In addition, the results show that the model is particularly relevant for acquirers who can realize their potential quickly. The positive effect between goodwill and performance for low-FP acquirers can be attributed to the fast synergy realization. At the same time, however, a decline in operating performance can be expected if the company cannot create new FP.

We contribute to several existing research streams. The research on empirical goodwill is controversial due to the introduction of the IPO, and the second is the general criticism of M&A performance measurement.

First, our study provides new insights into the value relevance approach, investigating whether stock prices behave as if investors perceive goodwill as an asset. We extend the results of Aharony et al. (2010) and Amel-Zadeh et al. (2020), who provide isolated evidence that the value relevance of goodwill increased after introducing the IPO. They neglect the already partial realization of the acquired goodwill from a balance sheet perspective in the form of better performance and possible distortions in stock prices.

Second, we contribute to the purchase price allocation studies demonstrating managers' opportunistic use of goodwill discretion, leading to a higher purchase price allocation to goodwill (Amel- Zadeh et al., 2023). In this regard, Paugam et al. (2015) find that the portion of the purchase price specifically allocated to goodwill leads to negative abnormal returns. Their study also reports that "abnormal goodwill" is negatively associated with future firm performance. However, the results suggest that the goodwill position cannot be measured by changes in performance alone, as this disregards investors' expectations of the goodwill position.

Third, our research explains the results of Li et al. (2011) on the information content of goodwill impairment charges. Li et al. (2011) examine the market reaction to goodwill impairment announcements and find that the negative reaction is lower in the SFAS 142 period. While goodwill impairments are informative for investors, verifiability must be tested as a moderating factor (Amel-Zadeh et al., 2023). The FP has a significantly higher information content because it includes different valuation perspectives.

his paper also contributes to the heated debate of how to reform FASB and IFRS goodwill. Most recently, literature reviews by Amel-Zadeh et al. (2023), d'Arcy and Tarca (2018), and Wen and Moehrle (2016) have pointed out that empirical research does not allow us to conclude whether the current goodwill accounting rules provide an optimal level of discretion and it is therefore strongly influenced by management incentives and the institutional context. Zhang and Zhang (2017) also noted that under SFAS 142, the allocation of the purchase price to goodwill is influenced not only by economic determinants but also by management's incentives. This is also due to the non-verifiable fair value measurements, which are related to the underlying economic circumstances, but also deviate from the true values when management reporting incentives are present. The FP is therefore likely to scrutinize fair value measurements by giving balance sheet preparers less incentive to use discretion. Similarly, external appraisers alone cannot completely eliminate management discretion in the valuation of intangible assets.

Within a third research stream, the paper contributes to the general concerns about the criticisms of purely accounting measures (Papadakis & Thanos, 2010). They argue that, on the one hand, accounting profit is the closest measure of performance (Venkatraman & Ramanujam, 1986), as it measures the pure economic performance of a firm (Lubatkin & Shrieves, 1986). The data from financial statements are considered credible and usable due to the strict regulations and compliance with international standards (Eriksson & Lausten, 2000).

Second, accounting ratios are problematic in that they only reflect past firm performance and, therefore, cannot predict future results (Chenhall & Langfield-Smith, 2007; Wernerfelt & Montgomery, 1988).

Third, accounting data provide only aggregated data derived from the entire firm's performance; therefore, these data are not suitable for determining the success of transactions (Chenhall & Langfield-Smith, 2007; Lubatkin, 1983; Panigrahi et al., 2014).

Fourth, the lack of correlation with stock returns is critique-worthy. The returns do not reflect the change in the economic value of a company and do not allow reliable statements about the change in market value (Rappaport, 1998).

These criticisms are directed at the studies on future performance presented earlier, which refer to pure changes in key figures from accounting. We address this mismatch by introducing FP as a measure that can better explain future performance. Therefore, it is investigated whether the introduction of the FP can reduce the problems of accounting studies (Honold et al., 2016) and whether the new dimension can provide more explanatory power for scholars and practitioners.

The structure of the paper is as follows. First, Chapter 2 discusses the current reforms. This is followed by a theoretical literature review in Chapter 3 and an empirical literature review and hypothesis formulation in Chapter 4. Chapter 5 contains the research design, while Chapter 6 describes and discusses the results. In the final Chapter, a summary of the research is drawn, and limitations and an outlook are provided.

6.2. Background

Goodwill accounting, or the introduction of IOA by the US FASB in 2001 and by the IASB in 2003,[9] is a highly controversial topic in accounting policy and has not been finalized to date (Ramanna, 2008; Watts, 2003). There appears to be increasing criticism of the current accounting principles for goodwill, so the accounting principles are being reviewed by both the IASB and the FASB. Most recently, the literature reviews on goodwill accounting by Wen and Moehrle (2016) focus on US GAAP accounting requirements for goodwill and US studies, while d'Arcy and Tarca (2018) focus on IFRS requirements, and the overarching research by Amel-Zadeh et al. (2023) addresses goodwill accounting principles

The impairment of goodwill has been controversial from the beginning. On the one hand, there is widespread agreement that the IPO provides more decision-useful information, as an appropriate impairment charge more accurately reflects the decline in value of an asset with an indefinite useful life than if it were amortized on a blanket basis over an arbitrary useful life. In contrast, it is argued that the IOA provides a large degree of discretion that impairment managers can use opportunistically; for example, to delay or avoid necessary impairment charges (Ramanna & Watts, 2012; Watts, 2003). Purchase price allocation (PPA) is a method of accounting for acquisitions that assigns a fair value to all assets acquired and liabilities assumed by the target company (e.g., Paugam et al., 2015; Zhang & Zhang, 2017). During the PPA, managers are given the opportunity to identify and revalue intangible assets, which may affect the contribution of allocated goodwill. The number and amount of previously unrecognized assets determine the difference between the revalued net assets and the purchase price (Shalev, 2009). This opportunistic opportunity may result in the purchase price premium differing from the recognized goodwill. Managers can use their knowledge when allocating goodwill to units to specifically allocate goodwill to those units where there is a lot of internally generated goodwill (which may not be recognized). Thus, there is a great opportunity to avoid having to impair goodwill in the future. In case of doubt, the calculations of the recoverable amount may be based on purely subjective and non-verifiable company-specific forecasts (European Financial Reporting Advisory Group, 2017). On the other hand, preparers of financial statements criticize that goodwill impairment tests are complex and unreasonably costly (International Accounting Standards Board, 2020, paragraph 4.5).

[9] Detailed explanations can be found in the Standards. See Statement of Accounting Standards (SFAS) No. 141 (Financial Accounting Standards Board, 2001a), and SFAS No. 142 (Financial Accounting Standards Board, 2001b), as well as the European counterparts IFRS 3 and IAS 36 (IASB, 2015).

With continued criticism of the standards for accounting for business combinations and goodwill, the IASB and FASB broke away from their harmonization, but both reconsidered their standards (Financial Accounting Standards Board, 2019; IASB, 2020). While the FASB made a preliminary Board decision to reinstate amortization in late 2020 (FASB, 2023), the IASB opposed reinstating amortization because it "has no compelling evidence that amortizing goodwill would significantly improve the information provided to investors." (IASB, 2020, para IN35(c)). However, as this decision was extremely close, the IASB decided to issue a discussion paper inviting stakeholders to provide further evidence to help the IASB further develop the standards (International Accounting Standards Board, 2019). In addition, the IASB plans to deviate from the annual review if there are no indications of impairment and the introduction of additional disclosure requirements about the acquisition targets of the entities and the subsequent achievement of these targets by the acquired entities (Amel-Zadeh et al., 2023). On 15 June 2022, the FASB made a surprise decision to abandon the project on identifiable intangible assets and subsequent accounting for goodwill, stating that the change they were seeking to make to subsequent accounting for goodwill would not improve the current rules because investors believed the information would provide only marginal benefits (Financial Accounting Standards Board, 2022). Previously, a statement from the International Organization of Securities Commissions (IOSCO) noted that: "When the requirements under US GAAP are as aligned as possible with those under IFRS on accounting for goodwill, there is greater comparability in financial statements prepared under IFRS and US GAAP. . . the likelihood of achieving a converged outcome is greatly enhanced when the two Boards work collaboratively" (IAS Plus, 2022).

6.3 Theoretical literature review

In the research, several theories addressed the economic consequences of goodwill and how to deal with goodwill impairment. In M&A, potential acquirers have to pay a premium to give the owners of the target company an incentive to sell their shares (La Bruslerie, 2013). However, the premiums often do not reflect the firm's economic performance. However, the impact of purchase price premiums on success after M&A shows that acquisitions bought at too high a price do not pay off (Krishnan et al., 2007; Sirower & Sahni, 2006). In theory, firms hope to achieve synergies by leveraging the complementary assets of acquiring and acquired firms to produce valuable and unique products or services (Ravenscraft & Scherer, 1987). Synergy can also be achieved by consolidating assets to achieve economies of scale and scope, eliminating inefficiencies and redundancies in firms' value chains by combining

sales forces and production facilities, sharing trademarks, brand names, or distribution channels (Capron, 1999; Haspeslagh & Jemison, 1991; Rabier, 2017). The synergy motive is rooted in the resource-based approach to the firm, in which the complementary resource profiles of the two firms, such as physical resources, intangible resources, financial resources, and human resources, are integrated in a way that uniquely posi-tions the firm relative to its competitors, creating competitive advantages (Capron, 1999). While creating synergies is the stated motive for paying high premiums (Hitt et al., 2008), agency theory and managerial hubris also explain the inflated goodwill balances (Hitt et al., 2012).

Second, Roll's (1986) hubris hypothesis postulates that managers systematically overestimate their capabilities in relation to the assessments of the target companies, resulting in negative performance. Further studies confirm these results (Aktas et al., 2016; El-Khatib et al., 2015; Qiu et al., 2014). As a result of hubris, companies pay too much for their targets (Hayward & Hambrick, 1997). Overconfidence may cause the CEO to perform inferior due diligence and to ignore negative information from this process (Hitt et al., 2001).

Third, agency theory postulates that acquiring companies often overpay for acquisitions when top managers engage in opportunistic behavior that provides them with personal benefits and creates wealth transfers from acquirer shareholders to acquirer management (Geiger & Schiereck, 2014; Trautwein, 1990). With the acquisitions, the size of the company also continues to grow, which in turn has a positive effect on the remuneration of the Executive Board and expands its power. In M&A, the agency problem arises from the separation of ownership and control. The conflict of interest and information asymmetry between shareholders and management cause management to take some opportunistic actions that promote management's self-interest but destroy firm and shareholder value (Jensen & Meckling, 1976).

6.4 Empirical literature review and hypotheses development

The research stream on the value relevance of goodwill shows that goodwill accounting is found to be positively associated with stock prices (Aharony et al., 2010; Cascino et al., 2021; Chauvin & Hirschey, 1994; Elnahass & Doukakis, 2019; Horton & Serafeim, 2010; Jennings et al., 2001). On the other hand, Zheng et al. (2014) show that goodwill on the balance sheet can significantly reduce the company's future performance due to an excessive focus on short-term performance while neglecting the company's long-term goals, which leads to expensive acquisitions and high good-will positions.

Secondly, goodwill contains a certain predictive power about the future cash flow that can be generated and generally about the economic performance after transactions (Bostwick et al., 2016; Chalmers et al., 2011; Jarva, 2009; Li & Sloan, 2017).

Thirdly, other studies have examined the value relevance of goodwill impairments (Bens et al., 2011; Guler, 2018; Hamberg et al., 2011; Knauer & Woehrmann, 2016; Li & Sloan, 2017; Li et al., 2011). Although the FASB and IASB, following the agency theory, explicitly require entities to perform the impairment test once a year, the subsequent recognition of the impairment loss could be delayed (Chung & Hribar, 2021; Hayn & Hughes, 2006). Managers are allowed to manipulate and improve the company's profits to convince others that the goodwill is not impaired, even if the economic value of the goodwill has decreased, and to protect their private interests from feeling adverse effects due to impairment (Filip et al., 2015, 2021; Glaum et al., 2018; Li & Sloan, 2017; Li et al., 2011; Nguyen & Thi Duong, 2022).[10] Therefore, a company's management can use discretionary power and strategically place write-offs in opportunistic periods to avoid losses (Filip et al., 2015; Li & Sloan, 2017). Han and Tang (2020) assumed that impaired goodwill is less likely to generate future profits when using the is allowed to be changed in ROA and ROE to measure future performance. Suppose an impairment loss is omitted in the short term. In that case, the likelihood increases that a high impairment loss will be recognized in the long term, negatively affecting a firm's performance growth and increasing the risk of a stock price decline. Companies increase short-term accounting performance and market prices by not impairing goodwill (Li & Sloan, 2017). This is also because goodwill is only impaired if the carrying amount in the balance sheet exceeds its recoverable amount. However, based on management's subjective assumptions, fair value is derived from an alternative financial model and is not driven by an active market, so companies may make optimistic assumptions about these variables to increase fair value (Filip et al., 2015, 2021). Yehuda et al. (2019) examined whether goodwill reflects the underlying economic reality for US acquirers. Although 41% of the transactions have a negative net present value, the acquirer did not impair the goodwill at the acquisition date as required. Acquirers with economic losses allocate significantly more proportion of the total purchase price to goodwill instead of impairing it. Using an additional test, it was possible to demonstrate that, in the case of acquisitions with an economic gain, the estimated economic gain and the goodwill recognized are highly significantly related to future

[10] In contrast, there is empirical evidence that the value relevance of acquired goodwill increased after the amendment of IFRS in 2008, suggesting that management discretion actually improved the quality of financial information (Tunyi et al., 2020).

performance, justifying the synergies promised by the acquisition. In the case of acquisitions with economic losses, it has been demonstrated that higher losses lead to the recognition of higher goodwill.

Since the calculation of the fair value of money can be arbitrarily adjusted by using the manager's discretion, and accounting standards have not yet been able to eliminate this problem (Ayres et al., 2019; Bens et al., 2011), the question arises as to the actual economic value of the goodwill recognized. Li and Sloan (2017) have already demonstrated that avoiding impairments leads to higher goodwill amounts when using one-dimensional measures, which either increase accounting earnings and share prices in the short term. The FP fills this gap by having the measure identify and evaluate the synergies created from the transaction. In doing so, the measure considers not only the acquirer's long-term performance increases but also the market's dynamic assessment of the value of the synergies. Consequently, the FP can influence the effect of the value of goodwill. A strengthening of the effect occurs when the position of goodwill is very valuable and is associated with the performance, while a deterioration of the effect represents the use of managerial discretion, and the goodwill recognized does not match the economic goodwill.

Hypothesis 1a: Future potential moderates the effect of transactional goodwill on firm performance.

The accounting guidance for goodwill decides that the purchase price of a business is allocated to the various components of the acquired company based on the fair value of the underlying assets and liabilities (Zhang & Zhang, 2017). If the purchase price is higher than the fair value of the identifiable net assets of the acquired company, the difference is recognized as goodwill (Gore & Zimmerman, 2010). Opportunistic behavior on the part of the manager may result in the use of their discretion in the revaluation of intangible assets to influence the contribution of allocated goodwill, such that the purchase price premium differs from the recognized goodwill.

The synergy hypothesis implies that the greater the expected synergies to be realized through the takeover, the higher the premium the bidder is willing to pay. The relationship between premiums and bidders' long-term performance has been the subject of numerous studies, but the linear relationship found between the variables does not indicate whether the relationship is positive or negative (Antoniou et al., 2008; Bradley et al., 1983; Diaz Diaz et al., 2013; Sirower, 1997). Rani et al. (2020) find that synergy-motivated M&A leads to significantly higher long-term performance after M&As than agency-motivated M&As. Antoniou et al.

(2008) found that the synergy hypothesis demonstrated that the merger premium better indicates the synergies between the acquirer and its target company. Wang et al. (2021) also argue that high premiums from non-state firms are negatively correlated with the current financial performance of firms, but not with future annual financial performance. A harmful M&A motivation can exacerbate the risk of M&A integration and block the realization of M&A synergies. If there is disharmony and exclusion in various parts of the company in the integrated management stage after transactions, it will affect the performance of M&As. If an anticipated higher performance is not achieved in the long term, this leads to a deterioration in financial performance, which is reflected in the position of goodwill.

The overpayment hypothesis on the other hand is motivated by agency problems and hubris (Roll, 1986; Shleifer & Vishny, 1997). Acquirers pay a premium that exceeds expected synergies, so the negative relationship between the premium and the acquirer's performance expresses value destruction (Aktas et al., 2016; El-Khatib et al., 2015; Hayward & Hambrick, 1997; Qiu et al., 2014; Sirower, 1997). Gupta and Misra (2007) viewed the differences in empirical studies on synergies and overpayment as an opportunity to examine whether the relationship between premiums and returns is asymmetric and depends on whether the acquisition is value-enhancing or value- decreasing. They only showed that premiums have a negative impact on acquiring firms when the acquisition is classified as value-enhancing.

From the two underlying theories examining the impact of the premium on performance, contradictory empirical results emerge. The research suggests that synergies expressed in terms of premiums alone provide little information. Using FP as a moderator, the information content of the premium is tested, and the interaction effect can be used to test the value of the premium and how well the premium is actually suited to predict future company performance. Since proponents of the synergy hypothesis measure the realization of synergies purely in terms of financial performance, they ignore the fact that shareholders' expectations change significantly a few years after the transaction, which is expressed in the FP. Therefore, FP is expected to influence the impact of premiums on performance.

Hypothesis 1b: Future potential moderates the effect of purchase price premiums paid on firm performance.

So far, research has completely ignored how the synergies achieved with the transaction can be measured from a value-oriented perspective. The synergy value should be consistent with the value of goodwill. But the well-known studies show that recognizing goodwill impairment usually lags several years behind deteriorating economic performance (Chung & Hribar,

2021; Hayn & Hughes, 2006; Jarva, 2009). Adjacent to the criticism of excessively high goodwill balances by Han and Tang (2020), it can be assumed these are related to highly disclosed FP under rational capital market participants. Wang and Huang (2019) showed in a study the negative impact of excess goodwill on operative performance (ROE & ROA). This is related to the manipulation of profits by managers to prevent goodwill impairment losses, even if the economic value of the goodwill has decreased (Filip et al., 2015, 2021; Glaum et al., 2018). Since goodwill is expressed as a proxy by capital market expectations and balance sheet-realized synergies in FP, FP behaves asymmetrically to goodwill. Despite realizing synergies (decrease in FP), managers use discretion to prevent impairment.

Hypothesis 2a: The impact of the goodwill on operating performance is positive and stronger if few future potentials are attributed to the acquirer after the transaction.

Hypothesis 2b: The impact of the purchase price premium paid for the transaction on operating performance is stronger if few future potentials are attributed to the acquirer after the transaction.

6.5 Research design

6.5.1 Sample construction and selection

The sample compilation is based on the Refinitiv database Eikon and Datastream. In addition, capital market data was obtained from the investing.com financial platform. The M&A deals had to meet the criteria as described in Table 6.7 to remain in the sample. Initially, the total sample size was 4360 companies. Further limitations in the sample result from the choice of the longitudinal study in order to be able to measure the post-merger performance. Thus, all transactions were eliminated for which a value could not be determined at all measurement points. Other cases were also eliminated if no value or financial information could be determined for any of the variables required for the multiple regression model. For acquiring companies that do not have their reporting date on December 31, adjustments were made to allocate the transaction to the associated accounting period if a transaction occurred after the reporting date. Furthermore, all transactions were removed from the sample for which no accounting data was available. This resulted in a final sample size of 2660 transactions.

6.5.2 Measures

6.5.2.1 Dependent variable

The operating performance of the acquiring companies is measured as the difference between the return on assets (ROA) 2 years (1 year) after the transaction and ROA 1 year before the transaction. The anticipation of real economic gains cannot be distinguished from false market prices if only short-term stock prices are considered (Healy et al., 1992). ROA is an appropriate measure of M&A performance because all value creation occurs after the acquisition, and therefore of critical importance is the quality of the post-merger integration process (Fu et al., 2013; Haspeslagh & Jemison, 1991). Most of the M&A literature attributes the failure of M&A to a misjudgment of potential synergies (Bauer & Friesl, 2022; Roll, 1986), but especially in successful acquisitions, up to 75% of the synergy effects are already achieved in the first year after the takeover (Ficery et al., 2007).

For some target companies, data specifically before the transaction announcement is absent due to missing identifiers. Similarly, the degree and intensity of integration of the target company after the transaction also complicates the measurement of post-acquisition performance. In addition, Renneboog and Vansteenkiste (2019) criticize that in many empirical studies there is little clarity on the construction of post-merger operational metrics, which limits the observation of how post-merger performance is affected by the choice of earnings-based versus cash flow-based metrics. In addition to the existing measurement problems, this study will focus on the acquisition of companies, as the development of FP relates to the target companies and is relevant for this study. The regression models will account for other deal- and company-specific characteristics via control variables. To attribute the changes in operating performance solely to the transactions, the ROA of the acquiring companies was adjusted for the performance of the applicable peer of the acquirer. Choosing the right benchmark is just as important for calculating the long-term operating performance as for the long-term performance of shares (Renneboog & Vansteenkiste, 2019). The peer controls for industry effects was implemented similarly to Rao-Nicholson et al. (2016) and Healy et al. (1992). In contrast, Martynova et al. (2006) used pre-acquisition size and performance in addition to adjustments for industry effects, but the results did not change significantly. A separate industry portfolio was created for each acquirer, including all public companies with their headquarters in the US and the same two-digit North American industry classification (NAIC) code. In order to take into account both industry and time effects, a new industry portfolio was calculated for every year. As with Rao-Nicholson et al. (2016), the

benchmark values are derived from the median values of the ROA so that distortions due to outliers can be reduced.

The approach for measuring operational performance can then be expressed as follows by Zollo and Singh (2004):

(1) Change in ROA_{t+2} = $\left(ROA_{i,t+2} - ROA_{c,t+2}\right) - \left(ROA_{i,t-1} - ROA_{c,t-1}\right)$

(2) Change in ROA_{t+1} = $\left(ROA_{i,t+1} - ROA_{c,t+1}\right) - \left(ROA_{i,t-1} - ROA_{c,t-1}\right)$

$ROA_{i,t+2}$ and $ROA_{i,t+1}$ represent the post-merger performance and $ROA_{i,t-1}$the pre-merger performance of each acquirer. $ROA_{c,t+2}$, $ROA_{c,t+1}$ and $ROA_{c,t-1}$ represent the median return on assets of the same industry as the acquiring company in the respective period.

6.5.2.2 Independent and moderator variable

6.5.2.2.1 Future potential

Consistent with Honold et al. (2016), a measure of FP is used to capture the impact of the transaction on the acquirer. The measure ΔFP is the change of FP for the acquiring company from the previous year of the announcement to year 2 (1) after the acquisition (Formula (5) and (6)). Year 0 is defined as the year in which the transaction took place. FP is measured as the difference between the market value of equity and the present value and is expressed as a percentage (Formula (4)). The market value of equity is the share price multiplied by the number of ordinary shares in issue measured at the end of the calendar year. The present value is calculated as the perpetual annuity resulting from the net income for the year and the cost of equity from the CAPM (Formula (3)). Calculating the cost of equity (CoE) using the CAPM formula requires making various assumptions for capital market data. In order to ensure comparability between market and accounting data, the data was collected at the end of the calendar year, as the reporting of the companies then corresponds to the capital market data. The S&P 500 was chosen as the reference market for the average market return over 30 years, as it almost wholly represents the market capitalization of listed stock corporations in the US. The yield of a 30-year federal bond as of December 31 of the calendar year was included as the risk-free interest rate. In addition, 5-year beta factors were used for the model. Net income before extraordinary items measures the companies' operating profit and eliminates distortions due to one-off effects.

(3) $PV_{i,t} = \frac{NI_{i,t}}{CoE_{i,t}}$

(4) $FP_{i,t} = MV_{i,t} - PV_{i,t}$

(5) Change in FP_{t+2}=$\left(FP_{i,t+2} - FP_{i,t-1}\right)$

(6) Change in FP_{t+1}=$\left(FP_{i,t+1} - FP_{i,t-1}\right)$

6.5.2.2.2 Goodwill

Studies of goodwill find that it is a good predictor of future business performance because accounting data are used to make predictions of future economic results accurate. Lee (2011) found that goodwill under SFAS 142 significantly predicted future cash flows. Discretionary reporting is also used less opportunistically and supports the elimination of systema-tic depreciation. In contrast, Hamberg et al. (2011) argue that unimpaired goodwill is a sign of strength. A lack of impairment indicates a company's success, as it contains information about good historical investments. The earnings statement is higher if the company does not recognize any impairment and the share price increases. In even greater detail, Bugeja and Gallery (2006) examined the value relevance of acquired goodwill with increasing maturity. The results show that currently acquired goodwill has information content, whereas older goodwill does not.

6.5.2.2.3 Premium

The debate about the appropriateness of the takeover premium is highly controversial in the literature. Purchase price premiums are mandatory in many transactions to incentivize shareholders to sell their shares. However, transactions that are procured too expensively lead to a failure of post-merger integration and the destruction of value (Krishnan et al., 2007; Sirower & Sahni, 2006). Companies willing to pay high takeover premiums expect to achieve synergies through the transaction, which can then justify the price paid for gaining control (Antoniou et al., 2008; Bradley et al., 1983). Zhu and Jog (2009) found a negative effect in their study on the relationship between ROA and takeover premium, but only for domestic transactions. The primary function of the takeover market should be to replace inefficient management because it is easier to increase the value of the target company, especially for companies with poor performance, which also explains the negative relationship between the premium and ROA for target companies.

6.5.2.3 Control variables

Studies of the long-term operational performance of M&A control for various deal and firm-specific characteristics. Previous literature addresses method of payment (Haleblian et al., 2009), industry relatedness (Bryson et al., 2006; Healy et al., 1992), crossborder status (Aguiar & Gopinath, 2007; Chen, 2011; Moeller & Schlingemann, 2005), Tobin's Q (Alhenawi & Krishnaswami, 2015; McLaughlin et al., 1998), deal size (Asquith et al., 1983; Fuller et al., 2002), M&A experience (Haleblian & Finkelstein, 1999; Zollo & Leshchinkskii, 2000; Mohite, 2017), leverage (Masulis et al., 2007), and goodwill impairment (AbuGhazaleh et al., 2011; Carlin & Finch, 2009; Chalmers et al., 2011; Petersen, 2006; Watts, 2003) as key factors impacting M&A. Han and Tang's (2020) study of future company performance also use numerous control variables, such as size, financial leverage, market-to-book ratio, sales growth, and the share of intangible assets. Following the studies presented, similar control variables were chosen. The collection and calculation of all variables is detailed in Table 6.8.

6.5.3 Model

Using multivariate analysis, the effects of the independent and moderating variables on changes in operational performance are measured.

$$\text{Change in } ROA = \beta_0 + \beta_1 * \Delta LNGOODWILL + \beta_2 * PREMIUM + \beta_3 * \Delta FP + \beta_4 * \Delta LNGOODWILL\ x\ \Delta FP + \beta_5 * PREMIUM\ x\ \Delta FP + \beta_6 * \Delta LNGOODWILL\ x\ PREMIUM\ x\ \Delta FP + \text{CONTROLS} + \varepsilon$$

Table 6.1 contains the correlation matrix to all variables used in the following studies. These include the moderator, independent, and control variables in addition to the dependent variables. The results show very low correlation coefficients between the variables. Larger values are obtained only for the correlation between the dependent variables used in this study, which therefore need not be considered further. Collinearity bias between the variables can be ruled out for the sample. Similarly, the data set was checked for multicollinearity using a variance inflation factor (VIF) test. For all models, the variables receive a VIF factor, which is slightly above 1, well within the limit of the critical value of 10 (Kutner et al., 2005). Even in the models with interactions, the VIF never reaches the value of 2. Unexplained

multicollinearity can be excluded. In addition, the standard model was tested to see if it was homoscedastic. A uniform distribution of the individual points over the horizontal axis could be determined through a scatter plot. The Durbin-Watson test was also applied to check the model for autocorrelation. Both the scatter plot and the Durbin-Watson statistic of 1.848 indicate that there is no autocorrelation.

Table 6.1 Correlation table

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	ΔROA2	1														
2	ΔROA1	.828***	1													
3	ΔROE2	.171***	.118***	1												
4	ΔROE1	.135***	.131***	.981***	1											
5	ΔLNGOODWILL	-.066***	-.023	-.009	.003	1										
6	PREMIUM	-.004	-.001	.001	.025	-.012	1									
7	ΔFP	-.345***	-.239***	-.105***	-.050	-.031	.011	1								
8	CASH	-.015	-.004	-.023	-.021	-.137***	.030	-.056***	1							
9	RELATEDNESS	-.063***	-.042**	-.027	-.028	.012	-.027	.022	-.137***	1						
10	CROSSBORDER	-.044**	-.020	-.016	-.013	-.024	-.003	.017	.132***	-.046**	1					
11	LEVERAGE	-.007	.007	.017	.019	-.050**	-.005	-.003	-.027	-.214***	.034*	1				
12	EARNED	-.231***	-.220***	-.097***	-.103***	.043**	.006	.099***	.090***	. 094***	-.027	-.024	1			
13	SIZE	-.072***	-.081***	-.055***	-.052***	.110***	-.022	.054***	-.106***	-.105***	-.048**	.315***	.135***	1		
14	EXPERIENCE	.030	.041**	-.025	-.025	-.006	-.004	-.055***	.082***	-.018	-.003	.000	.117***	.214***	1	
15	IMPAIR	.048**	.036*	.001	.001	-.006	-.008	-.006	-.004	-.088***	-.026	.096***	-.074***	-.010	.016	1

Pearson correlation coefficients are reported. Significant at the 1% (***), 5% (**), or 10% (*).

Source: Author’s representation

Table 6.2 reports the descriptive statistics for the data used in this study. Different effects between the ΔROA and ΔROE were found for both measurement time points. Studies using ROA report, on average, negative outcomes, while the contrary is found for cash flow (Thanos & Papadakis, 2012, p. 116). The mean values of the ROA are slightly negative and are −.052% and −.388%, thus matching the research of Zollo and Singh (2004). On the other hand, ROE was positive at 1.433% and 2.898%. The variable ROE has to be assessed critically, as some high outliers (see standard deviation) may distort the mean value. The outliers are due in part to very low equity ratios. The moderating variable ΔFP and the independent variable PREMIUM also show a high standard deviation, which is also reflected in the extreme values of the variables. These variables are winsorized in the regression models to limit the problem with outliers.

Table 6.2 Sample selection

Industry	Number of deals	Percentage of all deals
Agriculture, Forestry, Fishing and Hunting	1	0.04
Mining	114	4.29
Utilities	41	1.54
Construction	26	0.98
Manufacturing	897	33.72
Wholesale Trade	51	1.92
Retail Trade	94	3.53
Transportation and Warehousing	49	1.84
Information	238	8.95
Finance and Insurance	788	29.62
Real Estate Rental and Leasing	91	3.42
Professional, Scientific, and Technical Services	171	6.43
Administrative and Support and Waste Management and Remediation Services	34	1.29
Educational Services	7	0.26
Health Care and Social Assistance	30	1.13
Arts, Entertainment, and Recreation	6	0.23
Accommodation and Food Services	17	0.64
Other Services (except Public Administration)	4	0.15
Public Administration	1	0.04
Total	2660	100%

Source: Author's representation

Table 6.3 shows the distribution of the sample by NAIC codes. Financial and insurance companies remain in the sample, as in other M&A performance measures that use ROA as the dependent variable.

Table 6.3 Descriptive statistics

	N	Mean	Median	SD	Min	Max
Dependent Variable:						
ΔROA2	2660	-.052	-.115	16.617	-96.353	556.692
ΔROA1	2660	-.388	-.097	15.460	-108.425	501.653
ΔROE2	2660	1.433	-1.037	222.393	-1693.950	10784.111
ΔROE1	2660	2.898	-.812	214.609	-772.832	10597.275
Independent Variables:						
ΔLNGOODWILL	2660	1.290	.666	2.158	-9.966	10.987
PREMIUM	2660	78.624	32.99	1412.848	-99.98	71836.51
Moderator:						
ΔFP	2660	36.611	6.191	232.840	-1574.888	2090.323
Controls:						
CASH	2660	.441	0	.497	0	1
RELATEDNESS	2660	.626	1	.484	0	1
CROSSBORDER	2660	.120	0	.324	0	1
LEVERAGE	2660	.184	.154	.165	0	.886
EARNED	2660	.871	1	.336	0	1
SIZE	2660	5.602	5.541	2.101	-4.711	12.101
EXPERIENCE	2660	2.130	2	.891	1	4
IMPAIR	2660	.182	0	.386	0	1

Source: Author's representation

Table 6.4 Changes in operating performance

Event window	Raw performance					
	ROA	t-value	p-value	ROE	t-value	p-value
[2,-1]	-1.242	-3.953	.000***	0.072	.017	.987
[1,-1]	-1.254	-4.252	.000***	1.926	.462	.644
[0,-1]	-1.326	-4.282	.000***	1.836	.445	.656
	Industry-adjusted performance					
	ROA	t-value	p-value	ROE	t-value	p-value
[2,-1]	-0.052	-.161	.872	1.433	.332	.740
[1,-1]	-0.388	-1.295	.195	2.898	.697	.486
[0,-1]	-0.772	-2.446	.015**	2.387	.589	.563

Differences in operating performance. Significant at the 1% (***), 5% (**), or 10% (*) level using a t-test.

Source: Author's representation

Table 6.4 shows the change in raw and industry-adjusted operating performance. For ROE, there are no significant differences in any of the three event windows, neither for raw

performance nor for industry-adjusted performance. All measurement points show that the industry- adjusted performance is significantly higher than the raw performance. ROE increased by up to 2.898% after the transaction. The non-significant results can be attributed to the already large scatter in the data set. In contrast, ROA shows highly significant results for both raw performance and industry-adjusted performance for the different measurement time points. With −1.326% and −0.772%, the results look very similar to those in the studies of Rao-Nicholson et al. (2016) and Dickerson et al. (1997), respectively. Based on the t-test, further analyses focus exclusively on ROA as the dependent variable, as already indicated in the model description.

6.6 Empirical results and discussion

6.6.1 Cross-sectional analysis (H1a & H1b)

The results of the multiple regression analysis of the model are presented in Table 6.5 (including fixed year and industry effects). Different models were constructed for both ΔROA2 and ΔROA1 to consider the respective influence of the independent variables separately. Models 4 and 8 include all variables and moderating effects. In all models, all control variables are included. All models show that the included variables have good coherence, as the F-statistics for all models ($p < 0.001$) are strongly significant, and the R2 increases from the initial model to the entire model. For ΔROA2, the R^2 increases from 15.1% to 32.7%, and for ΔROA1 from 12.2% to 28.7%. Models 1 and 5 first show the pure influence of the control variables on ROA changes. In Models 2 and 3, as well as 5 and 6, the respective independent variables are set in interaction with the change in FP. Independent of the previous studies on the relationship between goodwill and premium, the influence of FP on terms can thus be analyzed. The final Models 4 and 8 include all variables.

First, the controls' findings show highly significant negative relationships with operating performance for the variables SIZE, EARNED, and CROSSBORDER. In contrast, the variables LEVERAGE and EXPERIENCE significantly positively affect operating performance. The effects are very constant in all models.

Second, the strong, significant negative relationship between ΔLNGOODWILL and operational performance in Models 2 and 4 is consistent with the previous findings of Li and Sloan (2017), which criticize failure to amortize goodwill and postulate that, in the long run, operating performance suffers as a result. While in the short term, goodwill may well reflect

the economic benefits of transactions, in the long term, goodwill is an asset unsuitable for reflecting future operating performance due to, among other things, intense intermingling between derivative and original goodwill. Immediately after the transaction, managers can attribute strong potential to goodwill, which, however, has to be realized quickly using a successful post-merger integration (PMI).

Third, interestingly, none of the models can be identified as having a significant influence of the PREMIUM on performance. The results do not support the synergy hypothesis, so the payment of high premiums is not associated with more synergies (Hitt et al., 2008), and they also do not support the overpayment hypothesis, so the opportunistic behavior of managers is not associated with takeover premiums (Geiger & Schiereck, 2014).

Fourth, in addition to the previous findings on accounting-based performance measurements of M&A, the ΔFP introduced a value-based metric that can measure the extent to which the transaction created new potential for the company that the acquirer was able to develop during the transaction. For all six models, highly significant effects can be observed between the operating performance and ΔFP. The negative relationship between the variables show that acquiring companies with a positive development of the operating performance are more likely to realize the company's potential. In contrast, acquirers who fail to increase performance still retain the potential in the company.

Fifth, the models first separately measured the interaction relationships between the main effects and the interaction coefficient ΔFP. In Models 2 and 3, the interaction coefficients have a positive sign for the main effects, which are all significant. Thus, the negative impact of the ΔLNGOODWILL is less significant if the company can show more FP in return. Therefore, in Model 2, 0.010 must be added to the main effect of the ΔLNGOODWILL for each unit of ΔFP. The increase in R2 up to 27.1% also indicates that the ΔFP offers additional explanatory potential for the development of operating performance that has not been considered in previous research. The research expands the understanding of the fair value of goodwill, which in the literature is attributed exclusively to subjective assessments by management (Filip et al., 2015, 2021). The results also support the synergy hypothesis (Hitt et al., 2008), showing that companies have problems realizing all synergies even in the long run after the acquisition. Contrary to the IOA proponents, goodwill has more intrinsic value than previously known. Thus, the empirical analysis finds much support for Hypotheses 1a and 1b. In contrast, for the models with the variable ΔROA1 measuring the impact on post-transaction performance, no significant effects of the ΔLNGOODWILL, PREMIUM, and interactions are

found, which is due to the fact that reporting seems to be correct in the short run after M&A but deviates from value orientation in the long run.

With the final interaction between ΔLNGOODWILL, PREMIUM, and ΔFP, the market and accounting perspectives were combined, and further explanatory potential by combining the different perspectives could be found, shown in Model 4 with an R^2 of 32.7%.

Table 6.5 Cross-sectional analysis of post-M&A operating performance

	ΔROA2				ΔROA1			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	16.909*	15.140*	15.035*	14.969*	10.183	10.380	10.294	10.274
	(1.76)	(1.77)	(1.75)	(1.75)	(1.05)	(1.19)	(1.18)	(1.18)
Controls:								
CASH	0.960**	0.220	0.263	0.194	1.287***	0.635*	0.598	0.613*
	(2.34)	(0.60)	(0.72)	(0.53)	(3.13)	(1.71)	(1.61)	(1.65)
RELATEDNESS	-0.122	-0.120	-0.139	-0.128	-0.023	0.016	0.013	0.018
	(-0.27)	(-0.030)	(-0.35)	(-0.32)	(-0.05)	(0.04)	(0.03)	(0.04)
CROSSBORDER	-1.872***	-1.453***	-1.519***	-1.476***	-0.596	-0.674	-0.686	-0.674
	(-3.24)	(-2.82)	(-2.94)	(-2.87)	(-1.03)	(-1.29)	(-1.31)	(-1.29)
LEVERAGE	3.819***	3.116***	3.575***	3.127***	3.332**	3.311***	3.214***	3.355***
	(2.95)	(2.68)	(3.09)	(2.69)	(2.56)	(2.82)	(2.74)	(2.85)
EARNED	-8.395***	-7.164***	-7.130***	-7.078***	-8.352***	-7.316***	-7.277***	-7.298***
	(-14.78)	(-14.08)	(-14.01)	(-13.91)	(-14.65)	(-14.19)	(-14.11)	(-14.13)
SIZE	-0.361***	-0.249***	-0.289***	-0.246***	-0.378***	-0.350***	-0.344***	-0.343**
	(-3.62)	(-2.77)	(-3.23)	(-2.74)	(-3.77)	(-3.69)	(-3.79)	(-3.60)
EXPERIENCE	1.128***	0.705***	0.710***	0.691***	1.147***	0.709***	0.726***	0.703***
	(5.19)	(3.62)	(3.65)	(3.56)	(5.26)	(3.54)	(3.68)	(3.50)
IMPAIR	-0.012	-0.122	0.004	-0.121	-0.264	0.118	0.107	0.122
	(-0.02)	(-0.26)	(0.01)	(-0.26)	(-0.50)	(0.25)	(0.22)	(0.26)
Independent Variables:								
ΔLNGOODWILL		-.274***		-0.272***		0.016		0.016
		(-3.22)		(-3.20)		(0.33)		(0.32)
PREMIUM			0.005	0.005			0.004	0.004
			(1.33)	(1.40)			(1.13)	(1.11)
Interactions:								
ΔFP		-0.022***	-0.022***	-0.023***		-0.023***	-0.023***	-0.023***
		(-25.34)	(-22.17)	(-22.11)		(-24.41)	(-19.15)	(-19.06)
ΔLNGOODWILL x ΔFP		0.010*		0.001**		-0.001**		-0.000
		(1.65)		(2.52)		(-2.34)		(-1.63)
PREMIUM x ΔFP			0.000**	0.000***			-0.000	0.000
			(2.18)	(2.73)			(-0.11)	(0.12)
ΔLNGOODWILL x PREMIUM x ΔFP				-0.000**				-0.000
				(-2.00)				(-0.29)
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
F-statistic	11.26	27.14	27.02	25.88	9.01	22.89	22.77	21.59
Adjusted R^2	0.151	0.325	0.324	0.327	0.122	0.288	0.286	0.287
N	2660	2660	2660	2660	2660	2660	2660	2660

Ordinary least squares estimation. The first row shows the regression coefficients, and the second row shows the t-value in parentheses. The dependent variable, ΔROA2 and ΔROA1, as well as ΔLNGOODWILL PREMIUM and ΔFP has been winsorized at the 1% and 99% levels. Year and Industry FE are included. All the variables are defined in Table 6.8. Significant at the 1% (***), 5% (**), or 10% (*).

Source: Author's representation

6.6.2 Additional tests (H2a & H2b)

The results show that the ΔFP contains a lot of information relevant to post-transaction performance. However, the partly highly significant results allow only a partial interpretation of the figures, since only the overall effect of the ΔFP has been investigated so far. In a further step, the acquirer companies were divided into three subcategories. Companies that were able to realize a substantial amount of potential through the transactions (the top 25% quantile) are shown as high FP acquirers. In contrast, there is a category for low FP acquirers that have the least FP after the transaction, since they were either unable to generate any FP or were able to convert them quickly into returns. In each model, all variables, including all control variables, were included as in the full model (Table 6.6). An adjusted R2 of 63.2% is particularly striking for low FP and indicates that the model can explain low FP acquisition well. None of the independent variables or the interactions can predict acquirers' performance with average FP. For the variable ΔLNGOODWILL, a negative and significant effect ($p < 0.05$) on operating performance was found for high FP acquirers. At the same time, it is positive and strongly significant ($p < 0.01$) for low FP acquirers. Therefore, high FP acquirers with increasing firm performance have less goodwill accounted for in the transaction, as goodwill impairment could be more likely to occur. M&A in the High FP category also shows that less goodwill is recognized when the company's long-term performance is per-forming well. The results are also consistent with Yehuda et al. (2019), which have already demonstrated that acquirers with economic losses allocate a significantly higher proportion of the total purchase price to goodwill. Nevertheless, it should be noted that the negative relationship between ΔLNGOODWILL and ΔROA2 should be put into perspective by the FP, since the capital market nevertheless attributes many previously unrealized synergies to the acquirer.

For companies that have not succeeded in gaining potential through the transaction, the relationship between performance and goodwill is in the same direction. In companies that were able to realize FP quickly, there is a positive relationship between goodwill and performance. This shows the mismatch between the perspectives particularly clearly. Although the market recognizes that companies have already realized their FP, the goodwill on the balance sheet still seems to justify the actual performance, which satisfies the auditors of the accounting data. Thus, we confirm the findings of Chung and Hribar (2021), Hayn and Hughes (2006) and Jarva (2009), that the recognition of goodwill impairment usually lags several years behind deteriorating economic performance. Also, the results complement the research of Gonçalves et al. (2023) showing that auditors for highly profitable companies are less likely to report goodwill impairment as a key audit matter.

Consistent with the results of the ΔLNGOODWILL, the PREMIUM behaves in all models, so a lower premium has a positive effect on performance, especially for high FP companies. These directions of effect are consistent with the previous studies that analyzed overpriced transactions.

In each case, the interaction relationships are highly significant at low FP. For goodwill, the interaction ΔLNGOODWILL x ΔFP runs in the same direction and shows that FP amplifies the effect between the variables. Again, an identical impact for the PREMIUM was found. For high FP acquirers, there is only a highly significant effect for the interaction PREMIUM x ΔFP, which is the opposite and confirms that as long as the capital market awards the company high FP, high premiums are also associated with weaker on-balance sheet performance. The assumptions made in Hypotheses 2a and 2b that there is a positive and strong effect of goodwill and PREMIUM on the operating performance of companies with little FP could not be directly confirmed. Based on the results, it can be clearly demonstrated that FP's interaction variable significantly affects both variables and amplifies the effects. Thus, it is also proved that the relationships between the market view and the accounting view in M&A are more strongly linked than could be assumed. With the variable FP, it is possible to incorporate significantly more explanatory potential into the model than the usual studies that choose the market value/book value ratio at this point. However, this cannot represent the actual value creation of M&A. This effect is even stronger if the future share of intangible assets increases.

Table 6.6 Influence of high and low future potential on operating performance

	High FP	Average FP	Low FP
Constant	17.453	15.916**	-3.582
	(1.08)	(2.28)	(-0.35)
Controls:			
CASH	0.392	-0.146	1.079
	(0.28)	(-0.35)	(0.75)
RELATEDNESS	-3.932**	0.284	-0.240
	(-2.49)	(0.63)	(-0.15)
CROSSBORDER	-2.616	-1.067*	0.795
	(-1.37)	(-1.82)	(0.37)
LEVERAGE	3.453	6.431***	-8.335*
	(0.80)	(4.58)	(-1.91)
EARNED	-9.824***	-7.058***	-6.552***
	(-5.08)	(-8.83)	(-3.81)
SIZE	-0.218	-0.465***	0.896**
	(-0.64)	(-4.45)	(2.60)
EXPERIENCE	1.331	0.300	0.759
	(1.62)	(1.39)	(1.02)
IMPAIR	-0.201	-0.433	1.474
	(-0.11)	(-0.78)	(0.83)
Independent Variables:			
ΔLNGOODWILL	-0.780**	-0.064	1.358***
	(-2.09)	(-0.67)	(3.74)
PREMIUM	-0.030***	-0.000	0.121***
	(-3.94)	(-0.26)	(8.75)
Interactions:			
ΔFP	-0.016***	-0.039***	-0.077***
	(-6.68)	(-3.72)	(-17.18)
ΔLNGOODWILL x ΔFP	0.001	-0.007	0.025***
	(1.16)	(-1.45)	(16.37)
PREMIUM x ΔFP	0.000***	-0.000	0.001***
	(3.94)	(-0.24)	(13.67)
ΔLNGOODWILL x PREMIUM	0.000	-0.00	-0.000***
x ΔFP	(1.32)	(-0.070)	(-16.05)
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
F-statistic	3.64	6.71	23.79
Adjusted R^2	0.163	0.182	0.632
N	665	1331	664

Ordinary least squares estimation. The first row shows the regression coefficients, and the second row shows the t-value in parentheses. Data were clustered into three groups based on the variable ΔFP. High FP means that the acquirers have a high proportion of the market value explained by the FP, while low FP means that the FP can only explain a small proportion of the market value. Year and Industry FE are included. All the variables are defined in Table 6.8. Significant at the 1% (***), 5% (**), or 10% (*).

Source: Author's representation

6.6.3 Robustness checks

Some adjustments were made to test the models for robustness. First, all firms from the finance and insurance industry were removed, reducing the size of the sample to 1830 transactions. The results for ΔLNGOODWILL and the PREMIUM remained constant. Changes occurred only for the control variables. Second, changing the measurement of PREMIUM from a metric variable to a categorical variable resulted in no changes in the significance levels for the interaction effects. Third, the elimination of the insignificant control variables also substantially increased the sig-nificance levels without changing the overall conclusions of the model. Fourth, the dependent variable was changed by no longer measuring M&A performance as Change in ROA, but as Tobin's Q. The variable was defined as Market value of equity plus Total assets minus Total equity divided by Total assets). Tobin's Q represents an interesting measure in the context of FP, as it incorporates replacement costs and is thus much more forward-looking than a purely operative measure. Only after ΔROE was used as the dependent variable instead of ΔROA did the model change, and no significant effects were detected, which is consistent with the univariate analysis**.**

6.7 Summary and conclusion

In recent years, goodwill volumes on balance sheets worldwide have risen steadily due to the introduction of the IPO. Numerous studies have investigated whether managers use discretion to delay or avoid goodwill impairment even if the economic value of the goodwill has decreased and to protect their private interests from feeling adverse effects due to impairment (Filip et al., 2015, 2021; Glaum et al., 2018). In addition, buyers are criticized for paying prices for companies significantly higher than the expected synergies. As a result, the amount of goodwill recognized on balance sheets has continued to increase, and both the FASB and the IASB seem unable to find a solution.

Therefore, this paper aims to determine the economic value of synergies and test whether the goodwill position following the transaction is justified or whether managers should have recognized impairment losses. Based on a holistic view, the FP is derived by combining elements of the value-based view, book values, and market values to analyze the value relevance and information content of goodwill and the resulting future earnings. By distinguishing between actual realized accounting performance and the FP to be initially realized in the future, which is already reflected in the market price, the approach can better measure isolated M&A effects. FP implicates the expectations placed on the company by the

shareholders regarding future business development, which the company could not yet realize at the operational level.

Although there is support in the models that goodwill has a negative long-term impact on performance, which also renews the criticism of IOA. But equally, the effect of value-based FP that incorporates the transaction's synergies is also negative. Companies that realize the synergies quickly manage to show better performance. In contrast, for other companies, the capital market confirms the value of the synergies, and the companies are expected to perform better in the long run. Using a moderation analysis, the interaction effect between goodwill and FP also shows strong support for mitigating the negative impact of goodwill on performance and, therefore, for goodwill being classified as significantly more value-relevant by the capital market. In addition, the results show that the model is particularly relevant for acquirers who can realize their potential quickly. The positive effect between goodwill and performance for low-FP acquirers can be attributed to the fast synergy realization. At the same time, however, a decline in operating performance can be expected if the company cannot create new FP.

This paper delivers practical implications for managers, capital market participants, and standard setters for assessing the impairment of goodwill, the information content of goodwill, and the predictive power of future earnings. The current discussions of the FASB and IASB on "Identifiable Intangible Assets and Subsequent Accounting for Goodwill" show that for more than 20 years, there has still been no agreement on how goodwill should be treated. The scientific approaches discussed have little explanatory potential if they generalize goodwill. The interplay between accounting, capital market perspective, and value-based view provides essential information about the value of goodwill and helps forecast company performance development.

Further research must verify whether the results also apply to capital market performance. Some limitations result from the country error, as only US-based acquirers are considered. In addition, further studies need to consider more than just the operating performance of the acquirer. For example, the FP of the target company before the transaction should also be integrated into the analysis, as this is where the real potential is embedded. M&A motivations should also be better scrutinized from a theoretical perspective. If one transaction is motivated by synergies and others by agency theory, then the capital market should also price the companies at different levels of FP.

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6.9 Appendix

Table 6.7 Sample description

Observations	Query Description
675.357	Announcement date between January 1998 and December 2017 and Completion date between January 1998 and December 2018
189.198	The acquirer is a listed firm with nation of headquarters in U.S
4.360	Takeover premium is available in the Eikon database.
3.276	The transaction must have resulted in the subsequent holding of more than 50% of shares from a previous holding of less than 50% of shares
2.661	Missing accounting or capital market data; missing company market value
2.660	Lack of data to measure the dependent variable at the time of measurement before or after the transaction.

Source: Author's representation

Table 6.8 Variable definitions

Variable	Symbol	Description
Dependent Variable:		
Change in ROA t+n	ΔROA2(1)	Change of return on assets (ROA) for the acquiring company from the year before the announcement to year 2 (1) after the acquisition. The ROA is calculated as the income after taxes for the financial period divided by the average total assets and is expressed in percentages. Total assets are the average total assets at the beginning and the end of the year.
Change in ROE t+n	ΔROE2(1)	Change of return on equity (ROE) for the acquiring company from the year before the announcement to year 2 (1) after the acquisition. The ROE is calculated as the income available to common excluding extraordinary items for the fiscal period divided by the same period's average common equity and is expressed as a percentage. Average common equity is the average common equity at the beginning and the end of the year.
Independent Variables and Moderator:		
Goodwill	ΔLNGOODWILL	Goodwill is calculated as the natural logarithm of the change in goodwill for the acquiring company in year x after the acquisition less the year before the announcement.
Premium	PREMIUM	PREMIUM is defined as the excess of the offer price over the target stock price four weeks prior to the M&A announcement (expressed in percentage)
Change in Future Potential	ΔFP	Change of FP for the acquiring company from the prior year to year 2 after the acquisition. Year 0 is defined as the year in which the transaction took place. Future potential is measured as the difference between the market value of equity and the present value and is expressed as a percentage. The market value of equity is the share price multiplied by the number of ordinary shares in issue measured at the end of the calendar year. The present value is calculated as the perpetual annuity

		resulting from the net income for the year and the cost of equity from the CAPM.
Controls:		
Cash	CASH	Dummy variable equal to 1 if method of payment is cash.
Relatedness	RELATEDNESS	Dummy variable equal to 1 if acquirer and target operate in the same industry.
Crossborder Status	CROSSBORDER	Dummy variable equal to 1 if acquirers and targets nation of headquarter is the same.
Leverage	LEVERAGE	The acquirer leverage is calculated as Total debt outstanding divided by Total assets
Value-based	EARNED	Dummy variable equal to 1 if acquirers ROE is higher than the costs of capital before the transaction announcement.
Transaction Size	SIZE	Transaction size is computed as natural logarithm of the transaction value.
M&A Experience	EXPERIENCE	Dummy variable equal to 4 if bidder has completed more than 10 M&As, equal to 3 if bidder has completed more than 5 M&As, equal to 2 if bidder has completed more than 1 M&As, equal to 1 if bidder has completed 1 M&A.
Goodwill Impairment	IMPAIR	Dummy variable equal to 1 if acquirer recorded a goodwill impairment after the transaction.

Source: Author's representation

Part 2: ESG and M&A

Chapter 7 Sustainability as a stumbling block in closing acquisitions? The joint effect of target and acquirer ESG performance on time to completion (Research Paper #5)

Just, R., Sommer, F., Heubeck, T., & Meckl, R., (2023). Sustainability as a stumbling block in closing acquisitions? The joint effect of target and acquirer ESG performance on time to completion, *Finance Research Letters, 58*, 104422. https://doi.org/10.1016/j.frl.2023.104422

Abstract

Sustainability is currently a major concern in business and society. As environmental, social, and governance (ESG) aspects are also considered in acquisitions, e.g., through time-consuming ESG due diligences, we investigate whether differences in ESG performance delay the closing of acquisitions. Using a sample of global M&A transactions, we measure ESG performance using the Refinitiv Eikon ESG scores and time to completion (TTC) as the number of days between the announcement and closing of a transaction. Our results show that larger differences in ESG performance between acquirer and target lead to shorter TTC when acquirer ESG performance exceeds target ESG performance.

Keywords: ESG, M&A, sustainability, time to completion, due diligence

JEL: D22, G34, M14, M41

Disclosure statement: The authors report there are no competing interests to declare.

Data availability: Data are available from the corresponding author upon request.

7.1 Introduction

In recent years, environmental, social, and governance (ESG) criteria have attracted increasing attention from companies, investors, and other stakeholders. Despite an intensive debate about the effect of sustainability on financial performance (e.g., Friede et al., 2015), ESG performance does currently not play an important role in decisions on mergers and acquisitions (M&A). Only 11% of M&A executives stated that they regularly evaluate ESG issues as part of the transaction process; however, 65% expect that the focus on ESG will increase in the near future (Bain and Company, 2022).

Besides the financial performance effects, time to completion (TTC) is another relevant metric, which is currently understudied despite being a relevant pre-M&A success factor. Shareholders frequently pressure rapid deal completion to realize synergies quickly (Luypaert and Maeseneire, 2015). Quick completion is also considered a critical component of successful post-merger integration (Feldman et al., 1999). Further, with increasing TTC, enterprise value can change significantly, which increases the risk of renegotiation (Bhagwat et al., 2016). However, speeding up deal closure comes at the potential cost of overlooking relevant risks in the due diligence process (Chahine et al., 2018). Several studies have examined the impact of deal- and company-specific factors on TTC (Adelaja and Mukhopadhyay, 2022; Bick et al., 2017; Chahine et al., 2018; Dikova et al., 2010; Roh et al., 2021; Thompson and Kim, 2020).

Prominent risk factors, such as pollution, child labor, and governance issues, are nowadays counted among the ESG criteria (e.g., Diebecker et al., 2019). Hence, ESG performance is also considered a risk-management tool (Kim et al., 2021), which has led to additional ESG due diligence reviews in practice (e.g., Duke, 2015). Whether high ESG performance of acquirer, target, or their similarity or difference speed up or slow down TTC has been investigated empirically with mixed results. Deng et al. (2013) concentrate on U.S. mergers and reason that high-sustainability acquirers are less suspicious to breach (implicit) contracts, why they gain stakeholders' support more quickly. In line with these arguments, their results show that high-sustainability acquirers close their deals faster. Building on this research, Bereskin et al. (2018) do not consider acquirer sustainability performance in isolation, but the similarity between target and acquirer. Using a sample of both mergers and acquisitions, they conclude that high similarity reduces TTC. These authors argue that sustainability behavior reflects cultural similarity, which makes identifying successful merger pairs easier. Interestingly, they also provide arguments for the opposite results, i.e., shorter TTC because

of dissimilarities when dissimilarities constitute a source of value creation. More precisely, they argue that the acquirer's (beneficial) culture could be transferred to the target or that the acquirer's culture could substantially benefit from the target's (beneficial) culture by lending reputational credibility from the target. However, they do not find support for these opposite arguments. Cardillo and Harasheh (2023) sample European M&A deals to investigate the effects of both acquirer and target ESG performance as well as their difference on the TTC. Arguing along the lines of cultural discrepancies as a stumbling block in M&A deals and synergy generation, they conclude that high acquirer ESG performance and the difference in ESG performance between acquirer and target slow down TTC, while high target ESG performance facilitates quick completion. Cardillo and Harasheh (2023) follow Deng et al. (2013) and Bereskin et al. (2018) in using Cox regressions, which build on hazard rates. Hazard models are often applied in medical research to analyze the impact of, e.g., certain medications on the timespan until an adverse event like death. A positive coefficient implies a greater hazard of early death. In the TTC context, though, the "hazard" is a deal that is closed earlier and, thus, potentially beneficial. A positive coefficient thus implies a shorter TTC, which the authors interpret inversely. Hence, we suggest to interpret their results in the opposite direction. I.e., greater differences and high acquirer ESG performance lead to shorter TTC, while high target ESG performance retards TTC. This potentially counterintuitive result is the primary motivation for this paper.

Building on the aforementioned studies, we seek to confirm the results by Cardillo and Harasheh (2023), particularly that greater differences in ESG performance speed up closing. Considering the arguments by Bereskin et al. (2018), we reason that differences reduce TTC when acquirer ESG performance exceeds target ESG performance. Transferring superior performance to the target seems easier as targets are often smaller and less complex than acquirers. Further, integration is often only designed to bring acquirer processes and "acquirer mindset" to the target, not *vice versa*.

Our results are in line with these predictions. The difference in ESG performance between the acquirer and target accelerates closing, while higher target ESG performance fuels longer TTC. We further show that the effect of the differential in ESG performance only materializes when acquirer ESG performance is superior to target ESG performance.

This study contributes to research and practice in at least three ways. First, we substantiate the potentially counterintuitive result when re-interpreting the tables in Cardillo and Harasheh (2023). Second, we can explain that differences between target and acquirer ESG

performance do not per se shorten TTC, but the direction of the difference matters. Third, while Deng et al. (2013) and Bereskin et al. (2018) use KLD data to assess sustainability, we build on Refinitiv Eikon. This is important because KLD (nowadays MSCI ESG) follows a risk-oriented approach in assessing sustainability performance, i.e., an ESG issue is only considered as a risk when financial results could be adversely affected (Diebecker et al., 2019). Refinitiv Eikon rather concentrates on "pure ESG." Thus, this database is a more challenging test of our theory.

The remainder of the paper proceeds as follows. Section 2 presents data and methodology. In Section 3, we describe the results of our empirical analysis, while Section 4 contains the discussion. Section 5 concludes.

7.2 Data and Methodology

7.2.1 Sample Selection

Our dataset considers all global M&A transactions of non-financial firms announced between January 1, 2003 and December 31, 2021 listed in the Refinitiv Eikon database. The transaction must qualify as a merger, an acquisition of majority interest, or an acquisition of assets resulting in controlling influence of the acquirer over the target. To assess the TTC, only completed deals can be used. If individual deal, company-specific, or corporate governance data were unavailable, the transaction was removed from the sample. The final sample amounts to 521 transactions with complete data, as shown in Online Appendix A. Online Appendix B contains the sample description by year and two-digit NAICS industry.

7.2.2 Measures and Statistical Approach

Our dependent variable Time to Completion (*TTC*) represents the number of days between the public announcement and the effective deal date of a transaction. Using the Refinitiv ESG data, the log of the ESG performance of acquirer (*LN_ESG_ACQ*) and target (*LN_ESG_TAR*), as well as the log of the difference between acquirer and target ESG score (*LN_DIF_ESG*) are our main independent variables, with additional analyses regarding the impact of logarithmized differences use the environmental (*LN_DIF_E*), social (*LN_DIF_S*), and governance (*LN_DIF_G*) pillars. We control for related acquisitions using a dummy variable taking the value of 1 if target and acquirer hold the identical two-digit NAICS code (and 0 otherwise, *RELATEDNESS*). *CB* is a dummy for cross-border acquisitions. Further, the log of

the deal value represents deal size (*LN_DV*). The remaining control variables are included for acquirer (prefix *ACQ_*) and target (prefix *TAR_*) separately and contain information asymmetry measured as the number of financial analysts following (*FIN*), free funds measured as cash and short-term investments over total assets (*FUN*), return on assets (*ROA*), leverage (*LEV*), and country risk according to the Worldwide Governance Indicators (*CR*). Industry- and year-fixed effects are included. Appendix A contains detailed variable descriptions. Online Appendix C presents correlations between the variables.

Following prior research, we use survival analysis as an estimation strategy commonly used in this context, more precisely Cox regressions (Adelaja and Mukhopadhyay, 2022; Bereskin et al., 2018; Deng et al., 2013; Cardillo and Harasheh, 2023).

7.3 Results

Table 7.1 presents the descriptive statistics. On average, deals are completed after 185.74 days with a range between 1 day and 1236 days. The acquirer ESG performance averages slightly higher than the target ESG performance, which is also reflected in a positive difference for *LN_DIF_ESG*.

Table 7.2 contains the Cox models for the hypotheses tests. None of the common assumptions for these models are violated (e.g., Emmert-Streib and Dehmer, 2019). In particular, outliers were not identified as critical. This is not surprising, as the ESG data can take values between 0 and 100, and our dependent variable also shows a reasonable range. Nevertheless, to rule out any effect of extreme values, we winsorized the dependent and continuous control variables at the 1% and 99% percentiles in a pretest. The results were inferentially identical to our reported values.

In the introduction, we already stressed that interpreting the sign of the coefficients is of utmost importance in Cox models. Positive significances indicate the “risk” of accelerated closing, thus shorter TTC. Before turning to the main research question, i.e., the effect of differences in ESG performance between acquirer and target, we investigate the level of their respective ESG performance separately. Model (1) analyzes the impact of *LN_ESG_ACQ* on *TTC*, while Model (2) focuses *LN_ESG_TAR*. Model (3) integrates both independent variables. Both in isolation (Model (1) and Model (2)) as well as in combination (Model (3)), the coefficient on *LN_ESG_ACQ* is insignificant, while the coefficient on *LN_ESG_TAR* is significantly negative at the 1% level. Thus, acquirer ESG performance does not have an

impact on the TTC, while higher target ESG performance leads to longer TTC. Turning to our main point of interest, these results are consistent with the positive coefficient on *LN_DIF_ESG* in Model (4), which is significant at the 5% level. Hence, differences speed up completion. The difference is calculated as acquirer minus target ESG performance, hence target ESG performance is inversely incorporated. In Model (5), the difference between acquirer and target ESG performance is broken down into the three pillars. Only the coefficient on the environmental pillar (*LN_DIF_E*) significantly affects *TTC*. Hence, the environmental pillar drives the result.

In Table 7.3 we replicate the Models (1) to (4) in Table 7.2 but distinguish between ESG-similar and ESG-different deals following Bereskin et al. (2018). A deal is considered ESG-similar when the difference in amount between the ESG values of the two matching companies is greater than the mean value of the ESG difference for the entire sample. For ESG-similar deals we find negative coefficients that are significant at the 10% level for *LN_ESG_ACQ* (Model (1)) and *LN_ESG_TAR* (Model (2)) in isolation. This indicates that both higher acquirer and target ESG performance lead to longer TTC. However, the significances vanish when jointly analyzing the effects in Model (3). For ESG-different deals neither acquirer and target ESG performance nor their difference affect TTC. In Table 7.4, we distinguish between cases in which target ESG performance is larger than acquirer ESG performance (Models (1) to (4)) et vice versa (Models (5) to (8)). It turns out that only in cases with acquirer greater than target ESG performance, the overall effects reported in Table 7.2 can be observed with *LN_ESG_TAR* leading to longer times to completion. In the opposite cases, only *LN_ESG_ACQ* is significantly negative at the 10% level (Model (1)). However, this effect vanishes when considering both *LN_ESG_ACQ* and *LN_ESG_TAR* in Model (3).

Table 7.1 Descriptive statistics

Table 1
Descriptive statistics

Variable	*n*	Mean	Median	Std. dev.	Min	Max
TTC	521	185.74	146.00	138.98	1	1236
LN_ESG_ACQ	521	3.85	3.98	0.53	1.43	4.54
LN_ESG_TAR	521	3.45	3.50	0.58	0.68	4.52
LN_DIF_ESG	521	0.40	0.33	0.70	-2.43	3.63
LN_DIF_E	521	1.02	0.61	1.79	-4.11	4.53
LN_DIF_S	521	0.37	0.33	0.75	-2.68	3.18
LN_DIF_G	521	0.32	0.19	0.90	-2.96	4.45
RELATEDNESS	521	0.75	1	0.43	0	1
CB	521	0.36	0	0.48	0	1
LN_DV	521	8.02	8.07	1.44	2.76	11.53
ACQ_FIN	521	1.90	2	1.38	0	10
ACQ_FUN	521	0.09	0.06	0.09	0.00	0.58
ACQ_ROA	521	0.06	0.05	0.09	-0.59	0.48
ACQ_LEV	521	0.35	0.61	11.16	-251.31	12.45
TAR_FIN	521	1.89	2	1.36	0	12
TAR_FUN	521	0.13	0.07	0.16	0.00	1.30
TAR_ROA	521	0.01	0.03	0.15	-1.09	0.39
TAR_LEV	521	0.94	0.53	4.48	-35.61	65.35
ACQ_CR	521	81.08	77.5	10.13	35.4	97.6
TAR_CR	521	80.79	77.5	9.70	28	97.6

Source: Author’s representation

Table 7.2 Cox regression analysis of time to completion

Table 2

Cox regression analysis of time to completion

	Dependent variable: TTC									
Variable	(1)		(2)		(3)		(4)		(5)	
LN_ESG_ACQ	0.007				0.018					
	(0.06)				(0.16)					
LN_ESG_TAR			-0.226	***	-0.264	***				
			(-2.69)		(-3.08)					
LN_DIF_ESG							0.174	**		
							(2.42)			
LN_DIF_E									0.084	**
									(2.41)	
LN_DIF_S									-0.027	
									(-0.33)	
LN_DIF_G									0.046	
									(0.78)	
CB	0.128		0.213	**	0.233	**	0.197	*	0.196	*
	(0.122)		(2.09)		(2.18)		(1.88)		(1.86)	
RELATEDNESS	0.097		0.145		0.073		0.091		0.125	
	(0.84)		(1.05)		(0.63)		(0.79)		(1.06)	
LN_DV	-0.178	***	-0.152	***	-.0115	***	-0.143	***	-0.144	***
	(-4.59)		(-3.81)		(-2.74)		(-3.67)		(-0.370)	
ACQ_FIN	-0.150	***			-0.090	**	-0.086	*	-0.077	*
	(-3.68)				(-2.12)		(-2.05)		(-1.82)	
ACQ_FUN	0.478				-0.065		-0.380		0.460	
	(0.89)				(0.11)		(0.68)		(0.82)	
ACQ_ROA	0.397				0.805		0.721		0.643	
	(0.82)				(1.53)		(1.37)		(1.20)	
ACQ_LEV	-0.010	**			-0.008	**	-0.007	*	-0.007	*
	(-2.54)				(-1.85)		(-1.80)		(-1.66)	
TAR_FIN			-0.130	***	-0.118	***	-0.117	***	-0.118	***
			(-3.40)		(-3.08)		(-3.07)		(-3.06)	
TAR_FUN			0.522		0.528		0.545		0.475	
			(1.59)		(1.51)		(1.57)		(1.35)	
TAR_ROA			-0.425		-0.733	**	-0.791	**	-0.823	**
			(-1.24)		(-1.95)		(-2.09)		(-2.16)	
TAR_LEV			-0.008		-0.008		-0.006		-0.007	
			(-0.73)		(-0.72)		(-0.57)		(-0.60)	
ACQ_CR	-0.001				0.000		-0.001		-0.000	
	(-0.29)				(0.01)		(-0.12)		(-0.08)	
TAR_CR			-0.000		0.002		0.000		0.000	
			(-0.01)		(0.05)		(-0.04)		(0.05)	
YEAR FE	YES		YES		YES		YES		YES	
INDUSTRY FE	YES		YES		YES		YES		YES	
N	521		521		521		521		521	
Log-likelihood	-2665		-2664		-2650		-2652		-2650	
LR Chi-2	157.91		160.10		188.04		184.59		187.66	
Generalized R^2	0.261		0.265		0.303		0.298		0.302	

Significance tests are based on Cox regression. ***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Source: Author's representation

7.4 Discussion

We conclude from the results of our empirical study that differences in ESG performance between acquirer and target only matter if acquirer ESG performance exceeds target ESG performance in acquisitions. In this case, transferring the acquirer's ESG policies and practices to the target seems to be possible, thus shortening TTC. In the opposite case, the transfer seems to contradict integration practices, why we find no effect. This explains the re-interpreted tables in Cardillo and Harasheh (2023), as our results are in line with this interpretation. This result diverges from the earlier studies by Deng et al. (2013) and Bereskin et al. (2018). We attribute this divergence, at least in parts, to the risk-oriented KLD measures in the earlier studies. The increased focus on ESG over time is another potential explanation. However, our findings might explain the limited importance that M&A professionals currently assign to ESG due diligences, as—maybe apart from severe adverse facts—the transfer of acquirer ESG policies and practices to the target seems to be feasible in the integration context.

Our results further confirm that higher target ESG leads to longer processes by Cardillo and Harasheh (2023), while we find only limited support for the beneficial effect of acquirer ESG performance on TTC. This result remains surprising from a risk management perspective. Potential explanations include that acquirers seek to challenge potentially high ESG performance through more rigorous due diligence reviews.

The effects we report are primarily driven by the "E" in ESG. This stresses the importance of the environmental dimension, which is—according to the descriptive statistics in Table 7.1—also the dimension with the largest differences. These differences are the technical reason for the significances. From a content perspective, we assume that massive differences or issues in the S and G pillars would rather be deal breakers (e.g., human rights or child labor in the S pillar or economic crime in the G pillar). Such deals would not be closed and could not be part of the sample, reducing the variation in the S and G pillars. Consequently, differentiation in the ESG domain takes place in the E pillar, which is rather in line with an "E transfer hypothesis" instead of an "ESG transfer hypothesis." The rationale is that many issues in the E domain, like emissions reduction, can be fixed after the deal.

Table 7.3 Analysis of ESG similar and ESG different deals

Table 3
Analysis of ESG similar and ESG different deals

	Dependent variable: TTC							
	ESG SIMILARITY				ESG DIFFERENCE			
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable								
LN_ESG_ACQ	-0.268 *		-0.101		0.081		-0.033	
	(-1.65)		(-1.25)		(0.52)		(-0.20)	
LN_ESG_TAR		-0.330 *	-0.315			-0.056	-0.025	
		(-1.90)	(-1.25)			(-0.40)	(-0.18)	
LN_DIF_ESG				0.080				-0.000
				(0.35)				(-0.00)
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES	YES
N	313	313	313	313	208	208	208	208
Log-likelihood	-1431	-1435	-1428	-1431	-867	-863	-856	-856
Chi-2	119.05	111.84	124.02	118.86	78.92	86.85	100.80	100.74
Generalized R^2	0.316	0.300	0.327	0.316	0.316	0.341	0.385	0.384

Transactions between companies are to be defined as ESG similar (different) if the difference in amount between the ESG values of the two matching companies is less (equal or greater) than the mean value of the ESG difference for the entire sample. The full table including all data for the control variables is depicted in Online Appendix D (Table 7.9). Significance tests are based on Cox regression. ***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Source: Author's representation

Table 7.4 Comparison between superior/inferior ESG performance of the target

Table 4
Comparison between superior/inferior ESG performance of the target

	Dependent variable: TTC							
	ESG TAR> ESG ACQ				ESG TAR< ESG ACQ			
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable								
LN_ESG_ACQ	-0.408 *		-.161		-0.052		0.058	
	(-1.82)		(-.55)		(-0.32)		(0.33)	
LN_ESG_TAR		-.0376	-.630			-0.225 **	-0.292 ***	
		(-1.03)	(-1.39)			(-2.27)	(-2.79)	
LN_DiIF_ESG				-0.174				0.255 **
				(-0.60)				(2.51)
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES	YES
N	146	146	146	146	375	375	375	375
Log-likelihood	-550	-549	-543	-546	-1789	-1783	-1775	-1776
Chi-2	70.36	73.11	85.08	79.96	127.58	140.60	156.09	154.26
Generalized R^2	0.382	0.394	0.442	0.422	0.288	0.313	0.340	0.337

Models (1) - (4) include all transactions where the ESG level of the target before the transaction has been greater than the ESG level of the acquirer. Models (5) - (8), in contrast, include transactions where the ESG level of the acquirer before the transaction has been greater than the ESG level of the target. The full table including all data for the control variables is depicted in Online Appendix E (Table 7.10). Significance tests for TTC are based on Cox regression. ***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Source: Author's representation

7.5 Conclusion

Based on an empirical study of acquisitions between 2003 and 2021, we conclude that the difference between acquirer and target ESG performance can facilitate quicker deal closure, particularly when acquirer ESG performance is superior to target ESG performance. This effect is driven by the environmental pillar in ESG. While this research concentrates on aggregate ESG performance assessed through ESG scores, future research could scrutinize the content-wise differences in the M&A process, in particular the due diligence reviews, that stem from ESG issues. Further, investigating different integration approaches dependent on the target's ESG performance seems a viable road to additional insights.

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7.7 Appendix

Table 7.5 Sample description

Variable	Symbol	Description
Dependent Variable		
Time to completion	TTC	Number of days between the announcement date and the completion date.
Independent Variables		
ESG score acquirer	LN_ESG_ACQ	Acquirer ESG Score is an overall company score based on the self-reported information in the environmental, social and corporate governance pillars.
ESG score target	LN_ESG_TAR	Target ESG Score is an overall company score based on the self-reported information in the environmental, social and corporate governance pillars.
Differences in ESG performance	LN_DIF_ESG	LN_DIF_ESG is the logarithm of the buyer's ESG score minus the logarithm of the target's ESG score.
Differences in E-performance	LN_DIF_E	LN_DIF_E is the logarithm of one plus the buyer's E score minus the logarithm of one plus the target's E score. The environmental measure pillar reflects how well a company uses best management practices to avoid environmental risks and capitalize on environmental opportunities.
Differences in S-performance	LN_DIF_S	LN_DIF_S is the logarithm of the buyer's S score minus the logarithm of the target's E score. The social pillar reflects the company's reputation and the health of its license to operate.
Differences in G-performance	LN_DIF_G	LN_DIF_G is the logarithm of the buyer's E score minus the logarithm of the target's G score. The corporate governance pillar measures a company's capacity, through its use of best management practices, to direct and control its rights and responsibilities through the creation of incentives, as well as checks and balances.
Controls		
Crossborder	CB	Dummy variable equals 1 if crossborder, otherwise 0.
Relatedness	RELATEDNESS	Dummy variable equals 1 if the acquirer and the target have the same NAIC code, otherwise 0.
Deal value	LN_DV	Natural logarithm of transaction volume.
Leverage	LEV	Total debt divided by common equity.
Information asymmetry	FIN	Number of target and bidder financial analysts.
Free funds	FUN	Cash and short-term investments divided by total assets.
ROA	ROA	Net income divided by the average total assets of the two previous years multiplied by 100.
Country Risk	CR	The risk classification of countries can be determined from the Worldwide Governance Indicators. From this, the level of risks related to governance in the sourcing countries is determined, data available on https://www.amfori.org/resource/country-risk-classification-2022.

Source: Author’s representation

7.8 Online Appendix

Table 7.6 Sample selection

Online Appendix A
Sample selection

	Total
Completed merger, acquisition of majority interest, or acquisition of assets of public companies (2003-2021)	108.975
- Incomplete or missing ESG data for both companies involved	108.311
- Companies from the finance or insurance industry	142
- Missing control variable data	1
Final sample	521

Source: Author's representation

Table 7.7 Sample distribution

Online Appendix B
Sample distribution

Panel A: Transaction Year

Year	Transactions	Percentage
2003	1	0.2
2004	0	0
2005	6	1.2
2006	17	3.3
2007	21	4.0
2008	13	2.5
2009	17	3.3
2010	23	4.4
2011	25	4.8
2012	26	5.0
2013	10	1.9
2014	32	6.1
2015	32	6.1
2016	48	9.2
2017	57	10.9
2018	55	10.6
2019	59	11.3
2020	38	7.3
2021	41	7.9
Total	521	100.0

Panel B: Acquirer Industry

NAIC	Industry	Transactions	in %
11	Agriculture, Forestry, Fishing and Hunting	1	0.2
21	Mining, Quarrying, and Oil and Gas Extraction	72	13.8
22	Utilities	22	4.2
23	Construction	10	1.9
31-33	Manufacturing	214	41.1
42	Wholesale Trade	8	1.5
44-45	Retail Trade	22	4.2
48-49	Transportation and Warehousing	13	2.5
51	Information	70	13.4
53	Real Estate and Rental and Leasing	40	7.7
54	Professional, Scientific, and Technical Services	20	3.8
56	Administrative and Support and Waste Management and Remediation Services	12	2.3

62	Health Care and Social Assistance	8	1.5
71	Arts, Entertainment, and Recreation	5	1.0
72	Accommodation and Food Services	3	0.6
81	Other Services	1	0.2
Total		521	100.0

Panel C: Target Industry

NAIC	**Industry**	**Transactions**	**in %**
11	Agriculture, Forestry, Fishing and Hunting	1	0.2
21	Mining, Quarrying, and Oil and Gas Extraction	77	14.8
22	Utilities	27	5.2
23	Construction	9	1.7
31-33	Manufacturing	174	33.4
42	Wholesale Trade	14	2.7
44-45	Retail Trade	20	3.8
48-49	Transportation and Warehousing	13	2.5
51	Information	73	14.0
53	Real Estate and Rental and Leasing	37	7.1
54	Professional, Scientific, and Technical Services	50	9.6
55	Management of Companies and Enterprises	2	0.4
56	Administrative and Support and Waste Management and Remediation Services	12	2.3
62	Health Care and Social Assistance	5	1.0
71	Arts, Entertainment, and Recreation	3	0.6
72	Accommodation and Food Services	3	0.6
81	Other Services	1	0.2
Total		521	100.0

Panel A shows the breakdown of the sample by year. Panel B shows the sample breakdown by industry for acquirers. Panel C shows the breakdown of the sample by industry for targets.

Source: Author’s representation

Table 7.8 Correlations

Online Appendix C

Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) TTC	1																		
(2) LN_ESG_ACQ	.080*	1																	
(3) LN_ESG_TAR	.235***	.216***	1																
(4) LN_DIF_ESG	-.135***	.580***	-.670***	1															
(5) LN_DIF_E	-.160***	.444***	-.429***	.696***	1														
(6) LN_DIF_S	-.076*	.497***	-.553***	.839***	.571***	1													
(7) LN_DIF_G	-115***	.392***	-.509***	.722***	.328***	.354***	1												
(8)RELATEDNESS	.040	-.104**	-.024	-.059	-.163***	-.014	-.054	1											
(9) CB	-.040	.217***	.126***	.060	-.086*	.051	.009	-.074*	1										
(10) LN_DV	.335***	.262***	.314***	-.062	-.054	-.045	-.045	.045	.019	1									
(11) ACQ_FIN	.310***	.046	.202***	-.134***	-.183***	-.103**	-.083*	.031	.093**	.372***	1								
(12) ACQ_FUN	-.076*	-.182***	-.078*	-.073*	-.037	-.100**	-.050	-.017	.002	-.115***	-.031	1							
(13) ACQ_ROA	-.012	.084*	.015	.051	.088**	.031	.021	-.003	-.027	.119***	-.006	.108**	1						
(14) ACQ_LEV	.050	-.045	-.005	-.030	-.081*	-.028	.002	.074*	-.049	-.009	.009	.023	.001	1					
(15) TAR_FIN	.293***	.059	-178***	-.104**	-.118***	-.130***	-.036	.004	.121***	.304***	.384***	-.028	.024	.005	1				
(16) TAR_FUN	-.135***	.042	-.130***	-.141***	.193***	.081*	.138***	-.160***	..037	-.064	-.108**	.253***	.037	-.173***	-.063	1			
(17) TAR_ROA	-152***	-.047	.111**	-.128***	-.168***	-.062	-.113***	.152***	-.007	.208***	.140***	-.010	.233***	.178***	.011	-.288***	1		
(18) TAR_LEV	-.033	-.041	-.055	.015	.016	.064	-.068	-.033	-.032	.002	.038	-.033	.003	.003	-.006	-.111**	.109**	1	
(19) ACQ_CR	.051	.121***	.052	.049	.042	.040	.055	.051	.185***	-.048	-.072	-.039	-.144***	-.020	.102**	.031	-.068	-.082*	1
(20) TAR_CR	-.001	.043	.038	.001	-.060	.033	.014	-.001	.154***	-.151***	-.050	.027	-.108**	.017	.051	.018	-.015	-.046	.554***

This table denotes Pearson correlation coefficients for all 521 M&A. ***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Source: Author’s representation

Table 7.9 Analysis of ESG similar and ESG different deals (full table)

Online Appendix D

Analysis of ESG similar and ESG different deals (full table)

	Dependent variable: TTC							
	ESG SIMILARITY				ESG DIFFERENCE			
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable								
LN_ESG_ACQ	-0.268 *		-0.101		0.081		-0.033	
	(-1.65)		(-1.25)		(0.52)		(-0.20)	
LN_ESG_TAR		-0.330 *	-0.315			-0.056	-0.025	
		(-1.90)	(-1.25)			(-0.40)	(-0.18)	
LN_DIF_ESG				0.080				-0.000
				(0.35)				(-0.00)
CB	0.137	0.181	0.130	0.084	0.225	0.008	0.326 *	0.313 *
	(0.97)	(1.31)	(0.91)	(0.60)	(1.29)	(0.05)	(1.77)	(1.77)
LN_DV	-0.160 ***	-0.204 ***	-0.151 ***	-0.187 ***	-0.120 *	-0.141 *	-0.023	-0.031
	(-3.15)	(-3.89)	(-2.91)	(-3.82)	(-1.70)	(-1.95)	(-0.29)	(-0.44)
ACQ_FIN	-0.188 ***		-0.138 **	-0.154 **	-0.130 *		-0.090	-0.085
	(-3.39)		(-2.22)	(-2.48)	(-1.77)		(-1.28)	(-1.26)
ACQ_ROA	0.576		0.635	0.452	-0.059		0.022	0.007
	(0.98)		(1.01)	(0.70)	(-0.05)		(0.02)	(0.01)
ACQ_LEV	0.032		0.031	0.029	-0.008 *		-0.004	-0.004
	(0.67)		(0.63)	(0.60)	(-1.94)		(-0.99)	(-0.99)
TAR_FIN		-0.135 ***	-0.68	-0.062		-0.097	-0.198 ***	-0.195 ***
		(-2.85)	(-1.30)	(-1.18)		(-1.27)	(-2.69)	(-2.68)
TAR_ROA		0.284	0.157	-0.015		-1.882 ***	-2.184 ***	-2.168 ***
		(0.57)	(0.28)	(-0.03)		(-3.18)	(-3.51)	(-3.50)
TAR_LEV		-0.028 *	-0.017	-0.013		-0.026	-0.033	-0.033
		(-1.94)	(-1.14)	(-0.85)		(-0.94)	(-1.28)	(-1.30)
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES	YES
N	313	313	313	313	208	208	208	208
Log-likelihood	-1431	-1435	-1428	-1431	-867	-863	-856	-856
Chi-2	119.05	111.84	124.02	118.86	78.92	86.85	100.80	100.74
Generalized R^2	0.316	0.300	0.327	0.316	0.316	0.341	0.385	0.384

Transactions between companies are to be defined as ESG similar (different) if the difference in amount between the ESG values of the two matching companies is less (equal or greater) than the mean value of the ESG difference for the entire sample. Significance tests are based on Cox regression. ***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Source: Author's representation

Table 7.10 Comparison between superior/ inferior ESG performance of the target (full table)

Online Appendix E

Comparison between superior/ inferior ESG performance of the target (full table)

	Dependent variable: TTC							
	ESG TAR> ESG ACQ				ESG TAR< ESG ACQ			
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable								
LN_ESG_ACQ	-0.408 *		-.161		-0.052		0.058	
	(-1.82)		(-.55)		(-0.32)		(0.33)	
LN_ESG_TAR		-.0376	-.630			-0.225 **	-0.292 ***	
		(-1.03)	(-1.39)			(-2.27)	(-2.79)	
LN_DiIF_ESG				-0.174				0.255 **
				(-0.60)				(2.51)
CB	0.006	-0.193	0.011	-0.091	0.088	0.151	0.194	0.142
	(0.02)	(-0.84)	(0.04)	(-0.36)	(0.72)	(1.24)	(1.53)	(1.18)
LN_DV	-0.158 *	-0.150	-0.082 ***	-0.204 **	-0.220 ***	-0.176 ***	-0.130 **	-0.151 ***
	(-1.90)	(-1.45)	(-0.85)	(-2.51)	(-4.51)	(-3.45)	(-2.49)	(-3.02)
ACQ_FIN	-0.165 **		-0.156 *	-0.146	-.0174 ***		-0.130 **	-0.127 **
	(-2.00)		(-1.69)	(-1.62)	(-3.28)		(-2.43)	(-2.36)
ACQ_ROA	0.296		-1.031	-1.056	0.711		1.340 *	1.171
	(0.37)		(-0.99)	(-1.01)	(1.01)		(1.75)	(1.52)
ACQ_LEV	0.113		0.118 *	0.091	-0.011 ***		-0.008 **	-0.007 *
	(1.51)		(1.66)	(1.26)	(-2.78)		(-1.97)	(-1.90)
TAR_FIN		-0.216 ***	-0.141 *	-0.149 *		-0.098 *	-0.095 **	-0.088 *
		(-2.82)	(-1.77)	(-1.86)		(-1.95)	(-1.97)	(-1.84)
TAR_ROA		2.723 ***	2.743 **	2.632 **		-1.221 ***	-1.658 ***	-1.678 ***
		(3.13)	(2.53)	(2.39)		(-3.31)	(-4.33)	(-4.33)
TAR_LEV		-0.008	0.010	0.010		-0.008	-0.009	-0.007
		(-0.24)	(0.28)	(0.31)		(-0.72)	(-0.70)	(-0.57)
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES	YES
N	146	146	146	146	375	375	375	375
Log-likelihood	-550	-549	-543	-546	-1789	-1783	-1775	-1776
Chi-2	70.36	73.11	85.08	79.96	127.58	140.60	156.09	154.26
Generalized R^2	0.382	0.394	0.442	0.422	0.288	0.313	0.340	0.337

Models (1) - (4) include all transactions where the ESG level of the target before the transaction has been greater than the ESG level of the acquirer. Models (5) - (8), in contrast, include transactions where the ESG level of the acquirer before the transaction has been greater than the ESG level of the target. Significance tests for TTC are based on Cox regression. ***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Source: Author's representation

Chapter 8 Conclusion

8.1 Summary of results and research contributions

The dissertation has addressed the fundamental question of the appropriateness of prior measures of M&A performance in response to the call of numerous studies for the establishment of a more holistic approach (King et al., 2004; King et al., 2021; Papadakis & Thanos, 2010; Stahl & Voigt, 2008; Thanos & Papadakis, 2012b, 2012a; Weber, 2011; Zollo & Meier, 2008; Zollo & Singh, 2004). Conceptual considerations and empirical studies on M&A performance and goodwill impairment were conducted through four research papers to fill this gap in the literature, while a fifth research paper investigates the effect of ESG on the M&A process. The main findings of the research are presented below, in response to the three RQs derived in Chapter 1.

RQ 1. How long does it take to realize the synergies created by a transaction?

The first RQ was addressed in Research Papers 1, 2, and 3. Research Paper 1, titled "Future potential through acquisitions? A multidimensional approach for measuring M&A success", explains the relevance and contribution of FP to M&A performance. In alignment with King et al.'s (2004) critique that expected synergies are often not realized following M&A and that unidentified variables explain substantial variance in acquisition performance, Research Paper 1 provides insights into the identification and pronouncement of FP realization. To this end, an empirical model that builds on long-term expected FP and measures the realization of potential synergies achieved through a transaction was constructed. The study also investigated whether expectations of FP differ between pre- and post-M&A periods and whether analysts and capital market participants have identical assumptions about FP. The results of a sample of German M&A transactions underline the theoretical derivation of FP. The findings indicate that transactions result in a slower realization of FP by acquiring firms in the long run, and notably, not all aspects of FP were fully realized even within a 5-year period. The realization of FP in P&L is not expected in the subsequent period but only in later periods.

Research Paper 1 makes several important contributions to the literature. First, it introduces an approach that has not been used before in empirical M&A research and puts into perspective criticisms of the often inconsistent results within research (Marzo, 2013). Second, the results contribute to a broader understanding of the concept of enterprise value. The study

highlights instances where distinctions between various enterprise values are often unclear and are used synonymously. M&A analysts often find it challenging to differentiate between organic and external growth when forecasting long-term corporate performance. The levels are observed to be hardly distinguishable from the pre-M&A level, even after transactions. Third, the study's results provide new insights into the realization of FP and its duration. Surprisingly, the findings revealed that FP that was already attributed to the company before the transaction was realized faster. M&A activates potentials hidden within the company, e.g., resulting from synergies between business units. However, writing off the FP can also be a reason for reducing the FP if management has overestimated the potential (Roll, 1986).

Research Paper 2 contributed to the overarching research goal of exploring a holistic approach and providing theoretical explanations for the FP developments outlined in Research Paper 1. Titled, "What we still misunderstand about measuring M&A: A conceptual approach for accounting future potential", the paper develops a conceptual approach that contributes to discussions on the realization of FP. The approach borders some areas within the goodwill literature, such as value relevance and goodwill recognition following transactions (Aharony et al., 2010; Amel-Zadeh et al., 2023; Barth et al., 2001; Godfrey & Koh, 2001; Henning et al., 2000; Jennings et al., 1996). The research paper also provides key insights into goodwill impairment avoidance and its contribution to the interplay between accounting and capital market performance. Li and Sloan (2017) demonstrated that avoiding goodwill impairment only increases short-term accounting profits and stock prices. The risk of goodwill impairment has been little explored, although it can significantly reduce a company's earnings (Han & Tang, 2020).

Research Paper 3, included in Chapter 5, examined the evolution and drivers of FP through transactions using a sample of 137 German acquirer companies. The paper, "Long-term performance of German M&A using forward-looking performance measures" shows that though acquirers fail to convert created potential into operating profits after the transaction, the market remains convinced of the created potential. The paper makes an important contribution to the existing M&A literature, where the failure of M&A is consistently attributed to a misjudgment of potential synergies (Bauer & Friesl, 2024; Roll, 1986; Sirower, 1997). In these times of cutthroat competition and short-lived competitive advantage, it is more imperative than ever to fully realize potential, though many companies struggle to do so. Research Paper 3 shows that even in the post-merger phase, potentials persist despite integration difficulties and that statements about M&A success do not reach far enough.

RQ 2. What are the drivers of FP?

The second RQ was addressed in Research Paper 3, which was built on the work of Zollo and Singh (2004) to develop a practical dependent variable to measure M&A performance. Many studies have analyzed post-M&A performance through accounting metrics to measure the potential performance improvement for the acquirer since the synergies between companies are too complex to measure through market-oriented metrics (Papadakis & Thanos, 2010; Rao-Nicholson et al., 2016; Thanos & Papadakis, 2012b). Criticisms of Boyd et al. (2005) and Richard et al. (2009), specifically, who empirically investigated the use of a single indicator to measure performance, persist, attesting that even an observation of operational performance is far from sufficient, as there may be other reasons for an increase in performance as the distance from the transaction increases. The critique is supported by Thanos and Papadakis (2012b), who were unable to find significant correlations between accounting and market-based measures. Thanos and Papadakis (2012a) have already pointed out that it can take years for synergies to be realized. To our knowledge, Research Paper 3 is the first to apply a holistic approach that explicitly addresses the highly fragmented M&A performance literature and aims to identify the true synergy value.

To date, there has been little exploration of FP as a performance measure within the literature, as its application has focused exclusively on the development of FP in companies (Honold et al., 2016; Honold et al., 2017). In previous research on M&A performance, multiple business and firm characteristics have been applied to examine the influence of independent variables on the dependent performance variable and to explain the significant changes between pre- and post-M&A performance. Studies have examined transaction and firm characteristics such as payment mode (Ghosh, 2001; Haleblian et al., 2009; Linn & Switzer, 2001; Rao-Nicholson et al., 2016), industry affiliation (Ghosh, 2001; Kruse et al., 2007), transaction atmosphere (Rao-Nicholson et al., 2016), geographic diversification (Boateng et al., 2008; Eun et al., 1996), acquirer cash reserves (Martynova et al., 2007), relative size (Linn & Switzer, 2001; Ramaswamy & Waegelein, 2003), purchase price premium (Ismail, 2011; Nnadi & Aghanya, 2018), M&A experience (Fowler & Schmidt, 1989), transaction duration (Luypaert & de Maeseneire, 2015), and competing acquisitions (Schubert, 2020). Based on these prior studies, Research Paper 3 examined several characteristics of M&A performance.

The study tested a longitudinal sample of 137 companies based in Germany, resulting in mixed results that were partly consistent with the theoretical arguments of the deal and firm characteristics. The observed negative associations between FP and certain characteristics can

be attributed to firms' expeditious realization of anticipated synergies. The capital market trusts the acquirer with far-reaching FP following a transaction but also illustrates the problems of rapid integration in large transactions (Alexandridis et al., 2012; Alexandridis et al., 2013; Martynova et al., 2007). The results on cash reserves are divergent from other research findings and do not support arguments that cash reserves could be used opportunistically to carry out unprofitable projects (Martynova et al., 2007). The findings of our research project suggest that acquirers engage in sustainable investments characterized by values that are anticipated to materialize in subsequent periods. No empirical support for the hypotheses concerning the takeover premium and M&A experience was identified.

Certain additional control variables, such as cross-border transactions, cash-financed transactions, a friendly transaction atmosphere, and relatedness, exhibited a negative influence on FP. In friendly takeover scenarios, shareholder support is markedly elevated, indicating transaction approval, and the capital market anticipates synergies between the involved firms. Cash-financed transactions are also perceived favorably by the capital market, signifying the rapid integration of FP. The impact of cross-border transactions stems from two factors: 1) the market tends to anticipate cross-border transactions negatively, and 2) cultural differences between two countries can heighten the impetus to achieve synergies.

Research Paper 3 makes three contributions to the literature. First, the study eliminates the weaknesses of the one-dimensional constructs that have been repeatedly criticized by finance and economic scholars and have led to inconsistent results in the past (Meglio & Risberg, 2011; Papadakis & Thanos, 2010; Zollo & Singh, 2004). The performance measure incorporated in the study does not consistently find support for preceding studies, indicating that the studies have overgeneralized M&A performance. Second, only a small number of M&A performance studies have been conducted for the European, and specifically the German, M&A market (Martynova et al., 2007; Powell & Stark, 2005). M&A has played only a minor role in the German economy compared to Anglo-Saxon countries, so the necessary data have not been readily available (Mager & Meyer-Fackler, 2017). Third, our paper addresses the valuation of synergies in M&A. Synergy valuation using the one-dimensional approaches is misleading because shareholders value synergies promptly, and said valuation is reflected in stock prices. In contrast, value creation occurs during post-merger integration (Haspeslagh & Jemison, 1991). Synergy valuation in the case of a transaction failure is usually attributed to poor integration management or cultural issues (Graebner et al., 2017). However, the results of Research Paper 3 show that some deal and firm characteristics

influence the FP. Transactions designated as failed transactions in the short term may satisfy shareholder expectations in the long term.

RQ 3. Which balance sheet items lag behind their economic value in M&A?

Research Papers 2 and 4, presented in Chapters 4 and 6, respectively, examine the economic values of balance sheet items. As previously outlined, Research Paper 2 develops a conceptual approach for measuring the realization of FP, bordering the goodwill literature. The impact of goodwill on balance sheets has become more significant, due to the rapidly increasing share of intangible assets as part of MVs (from 17% in 1975 to 90% in 2020), as the item represents future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized (Ocean Tomo, 2022). The recognition of goodwill is closely related to company performance, is highly controversial, and can lead to a multitude of serious misinterpretations (Bloom, 2009; Colley & Volkan, 1988; Giuliani & Brännström, 2011; Johnson & Petrone, 1998). Changes in accounting standards at the FASB and IASB have also resulted in greater discretion for managers in dealing with goodwill impairment (Ramanna & Watts, 2012) Numerous studies have shown that managers use that discretion to avoid the timely recognition of goodwill impairment due to private incentives related to compensation and reputation (Abughazaleh et al., 2011; Abughazaleh et al., 2012; Glaum et al., 2018; K. K. Li & Sloan, 2017; Ramanna & Watts, 2012).

Research Paper 2 theoretically derived the relationship between FP and goodwill and simulated all possible scenarios within a classification scheme. The scenarios were based on existing studies and criticism of accounting standards, which so far have not been able to find a sustainable solution for dealing with goodwill. Based on the analysis of the interplay of goodwill and FP, the paper developed six unique possible scenarios explaining to what extent the goodwill recognized is justified. The discussion within the paper focuses on the tension between the P/B ratio and the transaction value/price.

The results are significant for research on M&A accounting, as FP provides new insights into goodwill accounting. The different categories show that there is flexibility in goodwill accounting and provide direct evidence on whether the goodwill created by a transaction corresponds to the synergies still expected by the market or whether managers overuse their discretion. This study has greatly advanced the literature on goodwill accounting by addressing goodwill impairment from a holistic perspective and provides recommendations for action derived from the different scenarios. As an illustration, the assessment of goodwill

alignment with its economic worth can serve to ascertain its continued relevance when reflected in the balance sheet. This evaluation can function as an indicative measure, signaling the necessity for potential goodwill impairment recognition. Conversely, the persistence of goodwill over extended periods can rationalize the continual significance of goodwill within balance sheets. This phenomenon justifies the sustained representation of a significant share of goodwill, substantiating its presence over time.

Research Paper 4, "Value Relevance of Goodwill Accounting - How a forward-looking valuation approach guides goodwill recoverability", analyzed the assumption that recognized goodwill does not reflect the economic value of synergies expected at the outset of the transaction, based on Research Paper 2. The research model assumes that FP moderates the relationship between goodwill and operating performance. The theoretical argument supporting this assumption is grounded in the explicit prescription of agency theory, which mandates companies to conduct the impairment test annually. However, this requirement for an annual schedule may introduce a potential delay in recognizing the impairment loss (Chung & Hribar, 2021; Hayn & Hughes, 2006). Managers are allowed to manipulate and improve a company's profits to falsely increase the credibility of goodwill, even if the economic value of goodwill has decreased, and to protect their private interests from the negative impact of impairment (Filip et al., 2015; Filip et al., 2021; Glaum et al., 2018; Z. Li et al., 2011; K. K. Li & Sloan, 2017). Companies use discretion, strategically placing impairments in opportunistic periods to avoid losses (Filip et al., 2015; K. K. Li & Sloan, 2017). In this respect, the incentive to report goodwill that is not in line with the economic value is significantly higher, which leads to distortions in the income statement and the balance sheet and influences the investment behavior of investors.

The study provided first-time evidence that the level of FP acquired improves the relationship between the goodwill recognized (the acquisition premium) and operating performance. The findings reveal a disparity between the recognized goodwill and its corresponding economic value, indicating a misalignment in goodwill valuation. The moderation analysis shows that the negative effect of goodwill on performance decreases significantly, meaning the economic value of goodwill is significantly higher than previously assumed. The results are particularly relevant for acquirers who can quickly realize the synergies expected from the transaction. In the long term, an excellent operating performance resulting from the rapid realization of FP leads to a need for further FP if the company is to maintain the high operating performance. This study extends the stream of research that finds the value relevance of goodwill increases after the introduction of the IOA, though it neglects the already partial realization of the

acquired goodwill from an accounting perspective in the form of better performance and possible distortions of stock prices (Aharony et al., 2010; Amel-Zadeh et al., 2013). Furthermore, the results do not withstand the scrutiny posed by criticisms from purchase price allocation studies, suggesting that managers may use goodwill discretion opportunistically. This behavior can result in an upward bias, leading to an overallocation of the purchase price to goodwill (Amel-Zadeh et al., 2023). There is a current assumption that "abnormal goodwill," or the portion of the purchase price associated with goodwill, is negatively associated with future firm performance (Paugam et al., 2015). However, the results suggest that the position on goodwill needs to be more forward-looking and aligned with the expectations of capital market participants.

Research Paper 4 further contributes to the heated debate on goodwill reform in FASB and IFRS. Most recently, Amel-Zadeh et al. (2023), d'Arcy and Tarca (2018), and Wen and Moehrle (2016) have emphasized that empirical research does not allow for concluding whether current goodwill accounting rules provide an optimal level of discretion and, therefore strongly influenced by management incentives and the institutional context. Consequently, FP employs a valuation mechanism in fair value testing, constraining balance sheet preparers' latitude for discretionary judgment. Similarly, external appraisers alone cannot completely eliminate management discretion in valuing intangible assets.

This research result is also supported by the negative impact of FP on performance. Reported performance is significantly higher for companies that quickly realize their potential. Companies with integration problems may receive a lot of trust from the capital market in the long term but are under pressure to integrate more rapidly.

In summary, four major contributions to the M&A performance literature are derived from the cumulative results of the four research papers. First, adopting a holistic approach is necessary to measure true M&A performance. The majority of one-dimensional measures that have been applied to measure M&A performance are not able to capture the complex construct of M&A and the weaknesses lead to misinterpretation of the results. Additionally, M&A function as strategic tools shaping a company's future business landscape. In this context, reliance on past-oriented perspectives or purely estimation-based assumptions proves inadequate for capturing the dynamic and forward-looking nature of M&A activities. The FP measure introduces significant innovations for determining M&A performance, which is impossible through the one-dimensionality of the traditional measures. M&A goes far beyond the expectations of capital market participants in decision-making because all growth potentials

are already included in the prices. Through purchase price premiums, further new expectations are priced in, which do not initially coincide with shareholders' expectations. The acquiring company faces immense challenges in convincing the capital market of these potentials.

Second, the FP approach also identifies which synergies have already been realized, making it notably suitable to the contemporary landscape characterized by swift growth and digital disruption. The results showed that M&A is an essential driver of synergy activation. The enhancement in FP is attributable not only to the transaction itself but is especially pronounced during the phase of synergy realization. Pre-existing FPs are actualized more expeditiously after a transaction.

Third, the study's results provide important contributions to goodwill accounting and measurement. The reformation of goodwill has been a topic of controversial discussion for two decades without a solution in sight. Criticism has been directed at whether goodwill is an asset, and numerous studies have criticized managers for allowing discretion in valuing goodwill and encouraging opportunistic behavior. While Research Paper 4 provides evidence that little attention has been paid to the value of goodwill, it is likely due to the fact that empirical studies to date have almost exclusively considered traditional approaches that cannot represent the complexity of goodwill.

Finally, the results of Research Paper 3 show that FP increased significantly between the pre- and post-M&A phases, although most research has concluded that synergies are typically realized in the first 1–2 years after a deal closes. Research Paper 3 identified some deal and firm characteristics that can explain the effect of high FP. These results also show that as long as the capital market trusts a firm to realize synergies, goodwill on the balance sheet is well justified.

Overall, the four research papers have shown that research on M&A performance remains incomplete, and FP is an appropriate measure to evaluate the synergy potential and predictive power of future performance.

8.2 Practical implications

In addition to the theoretical contribution, this dissertation has implications for managers, M&A decision-makers, investors, consultants, analysts, and standard-setters. The integration offers a new and to date undiscovered approach that necessitates initial acceptance and

validation within practical applications. The approach furnishes managers with a mechanism to enhance the oversight of their M&A activities, facilitating more effective monitoring and management of such activities. Research Paper 2 elaborated on the dynamic perspective of the FP approach and specifically addressed the interplay between accounting and capital market valuation. The M&A business strongly relies on ratio analysis but frequently employs ratios that lack substantive significance when interpreted alone or underdeveloped ratios. Ratios such as the P/B or P/E ratio may be well-known and helpful in decision-making, but they say little about the future development of a company. Dynamic FP is, therefore, an important indicator of whether there is sufficient growth within a company to meet shareholder expectations. It also provides information on when organic growth is no longer sufficient and external growth in the form of transactions and identifying synergies is thus necessary. The proportion of future value must also be compared with the PV so that more accurate statements can be made about the proportion of FP. Managers must determine an optimal ratio of FP to MV, to which the company's investment requirements are linked.

The accounting for goodwill, or the introduction of IOA, by the FASB in 2001 and by the IASB in 2003, is a highly controversial topic in accounting policy and has not been conclusively addressed by standard setters to date (Ramanna & Watts, 2012; Watts, 2003). The treatment of goodwill outlined within accounting standards has been criticized, increasing pressure on the FASB and IASB. In response to escalating critiques of the accounting standards governing business combinations and goodwill, the IASB and the FASB have suspended their harmonization efforts. Both entities intend to independently reassess and revise their respective standards in light of the mounting criticisms (Financial Accounting Standards Board, 2019; International Accounting Standards Board, 2020). While the FASB made a preliminary decision to reinstate amortization in late 2020 (Financial Accounting Standards Board, 2023), the IASB declined to reinstate amortization because it "has no compelling evidence that amortizing goodwill would significantly improve the information provided to investors" (International Accounting Standards Board, 2020). The IASB did issue a discussion paper, however, inviting stakeholders to provide further evidence to assist the IASB in developing the standards (International Accounting Standards Board, 2019). This research supports standard setters in the challenge of finding an appropriate way to deal with goodwill accounting, potentially restoring harmony between the FASB and IASB. For this purpose, the scope of discretion and the possibility of opportunistic behavior must be limited, and a transparent method must be established to make the impairment test of goodwill more comprehensible. If fair value is fully covered by PV, then there is no evidence that goodwill is

entitled to be on the balance sheet in the long term. From an economic perspective, goodwill will therefore be impaired in the coming periods.

For analysts and investors, the approach represents an additional option for evaluating the sustainability of an investment or using bundled information when making investment decisions. Research Paper 1 has shown how much time is needed until the company can realize all acquired FP. Growth expectations are also used to forecast key performance indicators and can be applied to the FP. This enables more accurate forecasts about a company's future development, allowing analysts to better anticipate investment requirements. Capital market participants and other investors receive more forward-looking information in turn, which is necessary when making M&A decisions.

8.3 Limitations

Despite its contributions to the literature and to practice, this work is not without some theoretical and empirical limitations. While acknowledging that these limitations constrain the scope of the findings, they concurrently serve as catalysts for future research efforts.

Overall, the input factors of FP must first be questioned concerning. Calculation of PV is based on a company's most recently reported NI and the COE. While the FP approach emphasizes the dynamic component of M&A, only the market prices develop dynamically, whereas the data from the P&L are past-oriented and static. The end of the calendar year was chosen as the reporting date, consistent with the end of the fiscal year. Quarterly reports, if available, could be used to include information during the year in the approach, making the PV more dynamic. Calculating the COE has also become highly controversial, so the CAPM calculation could be replaced by the implicit COE (Diebecker et al., 2019). The assumptions of the CAPM appear no longer up to date as the CAPM is subject to strong criticism, such as the calculation of the beta factor and the length of the time interval for calculating the risk-free interest rate and the market return. Despite the criticisms, it is noteworthy that even publicly listed companies continue to report and utilize the CAPM.

Research Paper 1 is based on a longitudinal study of DAX companies between 2011 and 2020. Nevertheless, it's essential to acknowledge that the analysis is restricted to difference analyses exclusively, thereby constraining the broader significance of the obtained results. In addition, owing to constraints in data collection, the ultimate sample size is marginally small, necessitating a thorough examination of the robustness of the results.

Research Paper 2 is a purely conceptual paper; despite the scientific foundation, conclusions cannot be drawn because of the highly controversial research area. The paper does not go beyond an open discussion, leaving room for further theoretical explanations of FP. The presentation of the static relationship between the accounting and capital market perspectives and the resulting value gaps of M&A accounting, in particular, is purely exemplary, as other possible combinations of the different perspectives are also conceivable. The paper focuses on the FP acquired by the target and the resulting GW at the acquiring company but does not comment on how the original goodwill, which is subject to a capitalization ban, contributes to FP.

Research Paper 3 is based on a longitudinal sample of 137 acquirer companies headquartered in Germany between 2005 and 2021. The research model is based on a comprehensive benchmark model that adjusts for industry effects and is adapted from the studies of Healy et al. (1992) and Rao-Nicholson et al. (2016). While other studies, such as Martynova et al. (2007), have built more accurate benchmark models by considering size, pre-acquisition performance, and industry effects, such formulation was not practicable for the German M&A market owing to an insufficient sample size to create a suitable benchmark. Furthermore, calculating the PV via NI is rather unusual, so other key figures, such as cash flows or EBITDA, should be considered.

Research Paper 4 is based on a large longitudinal sample of U.S. transactions between 1998 and 2018. While the theory extensively links the importance of goodwill value relevance and goodwill impairment to FP, the research model only considers goodwill impairments as control variables. The level of impairments, however, measured in terms of absolute goodwill, has a high informative value for the FP statement.

There are also several general limitations across Research Papers 1, 2, 3, and 4. First, it remains unclear how to interpret high and low levels of FP, as discussed in detail in Research Paper 2. Questions arise as to whether low levels of FP following a transaction should be viewed positively, as if the firm quickly achieved the synergies. Conversely, it can be argued that FP was lost because the market valued the synergies differently. This interpretive situation results from the complexity of the approach, expressed in the simultaneous changes in accounting and capital market perspectives. Second, future research should investigate the reproducibility of the results, especially of Research Papers 3 and 4, using a global sample. The effects for the German and U.S. markets are based purely on national samples, and the sample sizes differ significantly. The novelty of the approach allows for little comparability

with existing studies, so the approach must first be established in broad research before comparisons can be made.

8.4 Future research

Overall, FP as an alternative M&A performance measure is still poorly explored, so statements about research progress are not meaningful. However, the results within the scope of this work are a promising expansion of this sensitive research area. The studies presented in this dissertation should be replicated using large global samples to check the robustness of the results. The work presented in this dissertation does not only criticize the research on M&A performance, as previous research papers have done, but provides a concrete proposal for a solution. However, additional persuasion is needed to get researchers to take a more sophisticated view of M&A performance and deviate from current inadequate approaches.

Another future research focus should examine IOA, as the recognition of impairment loss is thought to be delayed (Chung & Hribar, 2021; Hayn & Hughes, 2006). Managers manipulate and enhance company profits to convince others that goodwill is not impaired, even if the economic value of goodwill has declined, and to protect their private interests from the negative effects of impairment (Filip et al., 2015; Filip et al., 2021; Glaum et al., 2018). The realization of FP indicates that goodwill amortization must be performed if the synergies from the transaction have been realized and are recognized in the PV. A decrease in value-based FP would be expected, corresponding to the amount of goodwill impairment. A deviation from these results would confirm the previous research on managerial discretion and inadequate accounting rules.

Intangible fixed assets such as patents, copyrights, trademarks, software, brand names, customer lists, etc., are subject to a prohibition on capitalization within balance sheets. However, these items conceal values anticipated by the capital market so that the determination of value by FP would lend itself to identifying all values that cannot be recognized in the balance sheet. The composition of FP should also be distinguished based on industry, as technical intangible assets may be particularly relevant to competition in some industries. For the pharmaceutical industry, due to several patents, the share of self-generated FP is expected to be significantly higher than that achieved through transactions.

The general construct of the FP measure is based on mutually influencing effects, though it is unclear which of the effects is triggering, as accounting and capital market performance have

underpinned their importance in research. One way to further drive momentum would be to use reported data from quarterly reports to measure the effects of FP. Building on Research Paper 1, investment needs could be derived from FP performance, and models could be created to determine the predictive power of MVs, as companies are penalized if they do not have FP.

8.5 Concluding remarks

Scholars from different disciplines have long discussed M&A performance. Faced with the emergence of disruptive technologies and shortening lifecycles, companies face challenges in remaining competitive and use M&A to unlock growth potential. Research on M&A performance, however, often uses established approaches based on conflicting assumptions that lead to differing results.

The overarching goal of this dissertation was to revisit the existing literature on M&A performance and meet the demands of academia by integrating a holistic approach that eliminated existing criticisms of previous measures and addressed future challenges in strategic management. Within the framework of four research papers, a new, holistic approach to M&A performance was developed, the value drivers of the approach were analyzed, goodwill recoverability of goodwill was tested, and the realization of synergies was examined.

Research Paper 1 provided initial insights into how FP contributes to existing approaches. The FP measure opens new research opportunities due to its dynamic nature arising from the accounting, capital markets, and value-based perspectives. Research Paper 2 built on Research Paper 1 to develop a conceptual approach highlighting the discrepancies between the accounting and capital market perspectives and discussed the economic recoverability of goodwill. Research Paper 3 established FP conducted a longitudinal study comparing pre- and post-FP to establish FP as a new M&A performance measure. The study expanded the understanding that M&A success cannot be defined in terms of a specific period and identified the drivers responsible for the emergence of FP. Research Paper 4 built on a classification scheme from Research Paper 2 by comparing the recoverability of goodwill accounting and subsequent measurement with multidimensional FP. The research directly addressed the problems faced by the FASB and IASB, which have not been able to find a sustainable solution for the treatment of goodwill. A moderation analysis could prove that the

criticism of managers' excessive discretion in treating goodwill is only partially justified, as the capital market trusts in the unrealized synergies even after the transaction.

In an additional fifth research paper, the effect of sustainability performance on the duration of the M&A process was analyzed. The results extended the literature on the influence of ESG factors on M&A decisions, showing that when buyers with good ESG performance buy targets with poor ESG performance, the M&A process is shortened because corporate culture is more easily transferred.

The development of a conceptual model and the empirical studies succeed in introducing a new forward-looking measure of M&A performance that combines multiple existing research directions. Overall, the four research papers presented in Chapters 3 to 6 contribute to the progress made in the research field of M&A performance and the value of goodwill. The long-criticized research problem assessing M&A performance is finally met with an approach capable of adequately addressing the highly complex topic.

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