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Joachim Vogt

Value Creation within the Construction Industry

A Study of Strategic Takeovers

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Preface

Writing a PhD thesis is an incredible challenge. I could not have completed this demanding project without the selfless contribution of numerous supporters. To these individuals, family, friends, and colleagues, I dedicate this work.

I would like to begin by thanking my first supervisor Prof. Dr. Dirk Schiereck. His professional advice, constructive input and challenging questions were essential to me in writing the dissertation. He also supported me however he was able. I hold him in high esteem and offer my highest gratitude in exchange for his support. In addition I am grateful for the valuable professional input of my second supervisor, Prof. Dr. Nico Rottke. I am particularly grateful for his efforts and advice during preparations for my final examination.

Recognizing my professional peers, I reflect upon the inspiring time spent with my colleagues at the Department Finance, Accounting and Real Estate. I would especially like to thank Dr. Mark Mietzner and Felix Miebs for sharing their impressive knowledge in corporate finance and programming. In addition to the crucial intellectual contribution they made to my thesis, they also count amongst my good friends.

I am grateful to my close American friends, Katherine Abbott and Mark Lewis, who offered me continuous motivation to excel. They also donated their time and patience in proofreading my dissertation in its successive incarnations. I thank them for improving the elementary quality of the thesis.

Without best friends, I would not have completed this challenging journey. Matthäus Sielecki supported me unconditionally, in every task and at every time. Matthäus' strong encouragement and altruistic character enabled me to succeed in every challenge, including writing this dissertation. Benjamin Reinbold is a life-long friend on whom I can always rely, regardless of the situation or task. Patrick Heinecke and Georg Merholz showed up for me when I needed good, capable friends.

I devote a significant part of this dissertation to my family. My mother, father and siblings have always been there, making every effort to help me realize my happiness. They provide me with the inner strength to cope with life's challenges, including my doctoral studies and more.

Finally, I offer the most important dedication, to my beloved partner Melanie Redetzki who took this journey with me. She patiently witnessed my every thought and feeling, my every doubt and fear. She also served as a capable peer, helping me formulate my ideas. Her love and empathy were the essential elements in discovering my voice and finding my right path. Naturally, my most profound gratitude belongs to her.

Joachim Vogt

Foreword

Which motives initiate managers to merge or to acquire other corporations? While there is a long-lasting history of academic research on M&A in a cross-industry context, our knowledge about industry specific drivers of M&A is more than limited. Given this background, the construction industry is an attractive segment to address questions on M&A motives – as it is on the one hand a very fragmented industry and on the other hand a very internationally oriented segment which is traditionally organized by cross-company production structures. Construction companies are very familiar in integrating outside knowledge and competencies into internal teams resulting in partnering solutions which are needed to realize very challenging construction project.

In his thesis, Mr. Vogt makes an effort to answer the question why firms in the construction industry follow M&A strategies and how successful they are in their transactions. This is not only a remarkable endeavor because Mr. Vogt uses some hand selected unique datasets, but in particular, because he presents state-of-the-art analyses which are competitive and meet highest international standards.

The thesis on hand carefully identifies and addresses open research questions related to M&A strategies and M&A performance in a very specific industry. Its primary objective was to identify short-term and long-run drivers of the M&A success for different types of M&A transactions in various sub-segments of the construction industry by analyzing stock price and accounting data. Thusly objectifying managerial action allows deriving recommendations for financing practice. Another focus of the thesis concerns the use of case study methodology to analyze the consequences resulting from the critical selection of acquisition targets in a still hardly consolidated industry segment that only generates overall operational growth beyond the German home market of the transaction partners under consideration. The documented empirical evidence provides significant negative value added for the involved parties. Defensive acquisitions in stagnating regional markets seem to destroy shareholder value.

Mr. Vogt fully achieves the objectives of this dissertation. The analysis contains many intriguing and surprising results which make this thesis an interesting read I highly recommend to corporate finance researchers and practitioners. I wish for a high, due circulation of this dissertation.

Prof. Dr. Dirk Schiereck

List of Abbreviations

ACS	Actividades de Construccion y Servicios
AG	Aktiengesellschaft
BHAR	Buy-and-Hold Abnormal Return
CAR	Cumulated Abnormal Return
CAAR	Cumulated Average Abnormal Return
CB	Combined Portfolio
CDAX	Composite Deutscher Aktienindex
CEO	Chief Executive Officer
DSI	Dyckerhoff Systems International
DYWIDAG	Dyckerhoff und Widmann AG
E	España
EBIT	Earnings before Interest and Taxes
EBT	Earnings before Taxes
EPS	Earnings per Share
GDP	Gross Domestic Product
GmbH	Gesellschaft mit beschränkter Haftung
ICE	Intercity Express
IPO	Initial Public Offering
IRL	Ireland
ISIC	International Standards of Industrial Classification
M&A	Mergers and Acquisitions
M/B	Market to Book
MV	Market Value
MTBV	Market to Book Value
n.a.	not available
NObs	Number of Observations
OLS	Ordinary Least Square

PLC	Public Limited Company
PPP	Public Private Partnership
RBS	Royal Bank of Scotland
R&D	Research and Development
REIT	Real Estate Investment Trust
ROCE	Return on Capital Employed
ROE	Return on Equity
SIC	Standard Industrial Classification
UBW	Universal-Bau Walter
UK	United Kingdom
US	United States
USD	United States Dollar
WTB	Walter-Thosti-Boswau

List of Symbols

$\bar{\alpha}_i$	Market model based Alpha (y-axis intercept) of firm *i*
$\bar{\alpha}_w$	Market model based Alpha (y-axis intercept) for Walter Bau
$AR_{i,t}$	Abnormal return for firm *i* over time interval *t*
$AR_{w,t}$	Abnormal return of Walter Bau over time interval *t*
$\bar{\beta}_i$	Market model based Beta for firm *i*
$\bar{\beta}_w$	Market model based Beta for Walter Bau
$BHAR_{i,[t,T]}$	Buy-and-hold abnormal return of firm *i* from point in time *t* until *T*
$BHAR_{j,[t,T]}$	Buy-and-hold abnormal return of the reference portfolio *j* from point in time *t* until *T*
$BHAR_{w,[t,T]}$	Buy-and-hold abnormal return of Walter Bau from point in time *t* until *T*
$CAR_{c,[t,T]}$	Cumulated abnormal return for the combined entity *c* from point in time *t* until *T*
$CAR_{i,[t,T]}$	Cumulated abnormal return for firm *i* from point in time *t* until *T*
$CAR_{w,[t,T]}$	Cumulated abnormal return for Walter Bau from point in time *t* until *T*
$CAAR_{i,[t,T]}$	Cumulated average abnormal return for firm *i* from point in time *t* until *T*
$i=1,\ldots,N$	Index of observations of sample firms
$j=1,\ldots,N$	Index of observations of reference portfolios
MV_i	Market Value of the target *i* one day before the event window
MV_w	Market Value of Walter Bau one day before the event window
n_b	Sample extraction of the original Sample Size N
$R_{i,t}$	Stock Return of firm *i* over time interval *t*

$\overline{R}_{i,t}$	Market Model based expected Stock Return of firm i over time ^ interval t
$\overline{R}_{m,t}$	Return of Market Index m over time interval t
$R_{w,t}$	Stock Return of Walter Bau over interval t
$\overline{R}_{w,t}$	Market Model based expected Stock Return of Walter Bau over time interval t
$t = 1, \ldots, T$	Index of time

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1 Introduction

1.1 Research Overview and Objectives

Mergers & Acquisitions (M&A) and the construction industry have one thing in common. They both build new and unique entities. Due to their uniqueness the created entities differ in size, complexity and their character. Construction entities are unique as e.g. an office can be 100 or 1000 feet high at varying footprints, design, material inputs or other parameters inducing different challenges on the architecture of the building. Some of the ways in which M&A are unique is the strategy that is required, the companies who bid, the culture the involved parties comprise and the location they encompass. Companies have several challenges to address when considering M&A transactions: Is a horizontal acquisition of competitors enhancing the market power and entailing synergies for the merging parties or are the employees reluctant to cooperate in the new entity causing extraordinary expenses instead of synergies? Can the vertical integration of suppliers raise the efficiency of the production process or is the consequent dependency on the integrated supplier detrimental? Does lateral diversification lead to substantial benefits, as revenue streams are distributed and the independency from the core business is increased or causes this M&A type crucial difficulties due to the insufficient knowledge of the acquired business? Furthermore, the geographical focus of the M&A transaction significantly influences the acquisition decision. Should international diversification be preferred to national consolidation in the course of the globalizing world economy or is the familiarity with the national culture more important for a successful integration? In addition, the financial static of the acquisition is of major relevance for the success of the transaction. The acquisition requires an adequate funding and a stable financial foundation for operating and competing successfully. Consequently, the M&A success depends on the shape of the static as well as the design of the architecture of the new entity.

Several studies have already investigated the wealth effects of mergers and acquisitions in cross-industrial surveys. Overall, most studies document negative or no wealth impacts for the acquirer and positive effects for the targets indicating that wealth is transferred from the acquirer shareholders to the target shareholders (Loughran and Vijh, 1997; Andrade et al., 2001; Bruner, 2002; Jovanovic and Barguinsky, 2004; Moeller et al., 2005). Nevertheless, the studies often report heterogeneous results with a high variance of the abnormal returns, as industry specific wealth effects remain unconsidered (Gregory and McCorriston, 2005). However, when observing the M&A in one industry, these general effects may shift, as every industry has its own peculiarities.

This applies particularly to the construction industry. The worldwide construction industry is characterized by high fragmentation and in several countries faces supply overcapacities of construction services (Euroconstruct, 2007; Engineering News Record, 2006). This often causes price competition deterioration among the construction firms for new projects. The construction firms calculate the costs as low as possible for the construction projects neglecting any unforeseen incidents on the construction site. In addition, as each construction project is unique and has to be newly designed, planned and conducted, an exact predictability of the costs and profits is difficult to achieve. This situation creates shrinking profits or even a loss of the project as most incidents occur during the construction process (Glawon, 2009). Finally, the size of a construction firm often determines whether the company is perceived by the customer as capable to handle big-scale construction projects. For example, for big-scale civil engineering projects, a construction firm requires capital intensive machinery. This machinery can usually only be afforded by big construction firms. Since however, civil-engineering projects and other big-scale projects are mostly more lucrative than smaller construction operations, it becomes attractive for construction firms to reach that critical size, which enables them to operate such projects (Delaney and Wamuziri, 2004).

To overcome these burdens many construction firms have used M&A as a remedy. Some construction firms intend to reduce the capacities on the market by purchasing a market competitor thereby trying to increase the market power as well as their profitability. Other firms diversify their business into related and also unrelated businesses of the construction sector in order to spread their revenue sources. Due to the accelerating globalization, several customers demand international construction services. Hence, construction firms often expand their business to other countries by acquiring a foreign construction firm. Furthermore, as construction volumes on several markets as Japan or Germany dropped severely in the period from 1995–2004, intensifying the competition for new contracts, many construction firms in these markets extended their business to construction markets with growing volumes (Rice, 2007; Statistisches Bundesamt, 2008; Ministry of Land, Infrastructure and Transport of Japan, 2008). That specific situation of the construction market as well as the fast increase of takeovers within the construction industry since the mid-nineties poses the question: Do M&A transactions within the construction industry behave differently to the results of the cross-industrial studies? Therefore, I focus my doctoral thesis on the effects of M&A within the construction industry. By applying short-term and long-term analyses, I intend to provide a comprehensive picture of the achieved wealth effects in relation to M&A transactions. Additionally, I show with a specific case that general assumptions about the superior M&A strategy have to be partly revised for acquisitions in the construction industry.

With my analysis I do not only address unanswered aspects within the M&A research, but also try to provide an extensive picture about the advantages and disadvantages of the different M&A strategies within the construction industry