

Nikolas Pojezny

**Value Creation in European Equity Carve-Outs**

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Nikolas Pojezny

# **Value Creation in European Equity Carve-Outs**

With a foreword by Prof. Ulrich Hommel, Ph.D.

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## Foreword

Over the past two decades, equity carve-outs (ECOs) have become an increasingly popular form of corporate restructuring in Europe. Individual business segments are separated from the parent conglomerate company, and a minority stake is listed on the stock exchange. The parent company thus retains economic control over the subsidiary, while simultaneously creating more transparency for capital markets, restructuring its investment portfolio and creating the option to either reintegrate or completely sell off the subsidiary at a later stage. The attractiveness of ECOs as research objects is largely due to their dualistic nature as both means of parent company financing and corporate restructuring.

While comprehensive academic literature on ECOs already exists, studies mainly focus on the US market. The objective of the present study is to conduct corresponding analyses using a European sample, allowing the examination of both research issues on an intra-European level, and of the admissibility of analogies between US and European results.

The author's goal is to cover all key aspects of the ECO literature with empirical analyses. This includes both financial (*ex ante*) and operating (*ex post*) considerations, as well as the analysis of the short- and long-term performance, and also covers related aspects such as the second event and the efficiency of internal capital markets. The relevant literature is comprehensively reviewed, and the specific research questions are properly derived on its basis. The author makes comprehensive use of existing empirical methodologies, employing alternative testing procedures to increase the robustness of results. While the economic interpretation of the analytical results is quite short in some cases, the author does ground the majority of the results in corporate finance theory. Overall the analyses are conducted very thoroughly and knowledgeably, and thus clearly demonstrate the author's competence in this field.

The key results of the thesis are largely in line with intuition, both confirming results from previous studies, as well as adding a series of new insights. Operating and share price performance are found to be influenced by a number of event- and firm-specific characteristics, agreeing with economic common sense. Some of the results are surprising and noteworthy, e.g. an abnormally negative price reaction in the days following the initial ECO announcement (which, as in previous studies, is found to lead to positive announcement period returns). While some of the interpretations in the chapter on internal capital markets seem speculative and are therefore not able to answer the existing uncertainty regarding the efficiency of internal capital markets, the analysis is conducted very thoroughly and in great detail. The results regarding the second event decision complement existing literature by identifying some of the key drivers of the eventual wind-up of the ECO structure.

The structure of the thesis is logically consistent and based on the international financial journal standards. The language and diction used complies with the high standards

required in international publishing. The breadth of the analysis' scope by far surpasses that of a standard dissertation, without impairing the quality of the empirical analyses. The geographical focus of the thesis, the one-of-a-kind sample and the level of analytical meticulousness render this study unique. In total, this thesis is a tour de force, representing a milestone in European ECO literature.

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Rudolf-von-Bennigsen-Foerder-  
Foundation Professor of Finance at  
the EUROPEAN BUSINESS  
SCHOOL

## Preface

“Another thesis on equity carve-outs?” This was the tough albeit justified reaction of a former work colleague when I asked him for his opinion about the suitability of this topic as a subject for my doctoral thesis. The process of identifying a fitting subject is daunting: Ideally, there should be some prior research on the topic to prevent having to establish a new research field from scratch, but gaps in understanding should exist; the subject should be specialised enough allowing the researcher to make some tangible contribution to his discipline, without running the risk of producing results only marginally relevant to anyone but himself;<sup>1</sup> and finally, the topic should be of interest outside of academics, e.g., for market practitioners.

As for requirement one, a series of papers and Ph.D. theses on equity carve-outs (ECOs) have been published in recent years.<sup>2</sup> Simultaneously, existing literature leaves some crucial questions regarding the potential value creation in ECOs unanswered.<sup>3</sup> As for requirement two, ECOs are a clearly defined, specialised form of corporate restructuring, but at the same time offer fascinating features allowing the formulation of research questions regarding an array of corporate finance concepts. As for requirement three, European firms have carried out at least 178 ECOs with a total volume of approx. €91 billion over the last 20 years. Companies in Europe continue to possess potential ECO candidates, and transaction volume will remain high in the foreseeable future.<sup>4</sup> ECOs thus promise to be an exciting research topic both for this thesis and for future studies.

This thesis contributes to a better understanding of ECOs for firms, investors and academics: Firms learn under which conditions markets are likely to react positively to the announcement of an intended ECO, in which specific constellations of circumstances an ECO is likely to create value in the long term, and the potential impact of the ECO design on the firm’s future growth, profitability and share price. Investors learn about the probable consequences of investing in firms engaged in an ECO, how to interpret the information provided by the parent firm regarding the ECO, and about profitable trading strategies involving the eventual reacquisition or complete sell-off of the partially floated subsidiary firm. Academics learn whether investors are able to differentiate efficient from inefficient internal capital markets, and whether ECOs tell us something about the efficiency of capital markets in general. In addition, academics may profit from a number of methodological insights presented in this study regarding both short- and long-term performance analysis.

The pragmatically orientated reader may find some passages, in particular the methodological sections, tough going. The disadvantage of a detailed description of methodological issues is that readability of results may be hampered. The advantage is

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<sup>1</sup> On this point see Eco (2005), p. 16-22.

<sup>2</sup> See sections 3.3, 4.3, and 5.3 for comprehensive literature reviews.

<sup>3</sup> See section 1.2.

<sup>4</sup> See section 1.1 and section 8.3.

that the relevant sections represent detailed overviews of the current state of knowledge regarding the methods used, and may be helpful for future researchers employing these methods.<sup>5</sup> Different reader groups will thus find value added in different sections. A helpful advice may be to begin with the end: Chapter 8 contains a summarizing conclusion of the key results of this study and may serve as a guide to individual sections of interest.

As always, this thesis would not have been possible without ample support from various sides. I thank my supervisor, Prof. Ulrich Hommel, Ph.D., for giving me the opportunity to write this thesis, and for considerable support and valuable comments during its creation. Similarly, I thank Prof. Dr. Dirk Schiereck for acquiescing to co-supervise this thesis and providing a number of useful suggestions. I also thank Prof. Dr. Ralf Elsas for helpful discussions in the conceptual stage of the thesis, as well as for providing access to some crucial empirical data. I thank seminar participants of the 2006 Meeting of the Academy of Economics and Finance in Houston/Texas for constructive observations. Friends and former work colleagues have provided me with a series of comments and recommendations, as well as the appropriate amount of distraction over the last 18 months. My girl friend Carolin has been invaluable in supporting me and has proven an enviable amount of patience and tolerance when listening to my ups and downs while working on this project. Finally, and most importantly, I thank my parents, Dr. Jarmila and Peter Pojezny. Without their continuous manifold support over the last 28 years I would not be where I am today, nor in fact anywhere else. Thank you Mum and Dad.

Nikolas Pojezny

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<sup>5</sup> This was pointed out to me by Prof. Balik at the annual meeting of the Academy of Economics and Finance in Houston/Texas in February 2006.



## Summary of Contents

List of Abbreviations .....	XVII
List of Symbols .....	XIX
List of Tables .....	XXI
List of Figures .....	XXIII
List of Appendices .....	XXV
1 Introduction.....	1
1.1 Significance of research object .....	1
1.2 Current knowledge and research gap .....	2
1.3 Key research question and structure of thesis .....	4
2 Definitions and theoretical foundations .....	7
2.1 Description of research object.....	7
2.2 Reasons for engaging in an equity carve-out .....	15
2.3 Efficient market hypothesis.....	18
3 Short-term price performance of European equity carve-outs.....	34
3.1 Abstract .....	34
3.2 Introduction .....	34
3.3 Literature review .....	36
3.4 Data and methodology .....	40
3.5 Empirical results .....	54
3.6 Various extensions .....	72
3.7 Conclusion .....	80
4 Long-term operating performance of European equity carve-outs.....	82
4.1 Abstract .....	82
4.2 Introduction .....	82
4.3 Literature review .....	84
4.4 General methodology.....	86
4.5 Data and specific analyses .....	88
4.6 Empirical results .....	93
4.7 Conclusion .....	111
5 Long-term price performance of European equity carve-outs.....	113
5.1 Abstract .....	113
5.2 Introduction .....	113

5.3	Literature review .....	115
5.4	General methodology .....	120
5.5	Data and specific analyses .....	125
5.6	Empirical results .....	135
5.7	Conclusion .....	160
6	What do we learn about internal capital markets from equity carve-outs?.....	162
6.1	Abstract .....	162
6.2	Introduction .....	162
6.3	Literature review .....	166
6.4	Data and specific analyses .....	177
6.5	Empirical results .....	185
6.6	Conclusion .....	193
7	Determinants of the nature of the second event in European equity carve-outs...	194
7.1	Abstract .....	194
7.2	Introduction .....	194
7.3	Literature review .....	195
7.4	Data and univariate analyses .....	199
7.5	Logit regression analyses .....	212
7.6	Conclusion .....	217
8	Conclusion .....	219
8.1	Summary of key findings .....	219
8.2	Recurring themes and their implications.....	222
8.3	Avenues for future research .....	227
	Appendix .....	231
	Bibliography.....	287

**Table of Contents**

List of Abbreviations ..... XVII

List of Symbols ..... XIX

List of Tables ..... XXI

List of Figures ..... XXIII

List of Appendices ..... XXV

1 Introduction ..... 1

    1.1 Significance of research object ..... 1

    1.2 Current knowledge and research gap ..... 2

    1.3 Key research question and structure of thesis ..... 4

2 Definitions and theoretical foundations ..... 7

    2.1 Description of research object ..... 7

        2.1.1 Corporate restructuring as the overarching concept ..... 7

        2.1.2 Definition of an equity carve-out ..... 8

        2.1.3 Differentiating an equity carve-out from other forms of restructuring ..... 9

        2.1.4 Primary and secondary equity carve-outs ..... 10

        2.1.5 Sample identification ..... 11

        2.1.6 Descriptive statistics ..... 12

    2.2 Reasons for engaging in an equity carve-out ..... 15

        2.2.1 Motivations of parent firms ..... 15

        2.2.2 Sources of value creation ..... 16

    2.3 Efficient market hypothesis ..... 18

        2.3.1 History of the efficient market hypothesis ..... 19

        2.3.2 Basic concepts of the efficient market hypothesis ..... 20

        2.3.3 Definition of an anomaly ..... 22

        2.3.4 Types of anomalies ..... 23

        2.3.5 Academic community’s reaction to potential anomalies ..... 26

            2.3.5.1 Questioning the anomaly ..... 26

            2.3.5.2 Subsuming the anomaly ..... 28

            2.3.5.3 Explaining the anomaly ..... 28

        2.3.6 Potential biases ..... 30

        2.3.7 Conclusion ..... 32

3 Short-term price performance of European equity carve-outs ..... 34

3.1	Abstract .....	34
3.2	Introduction .....	34
3.3	Literature review .....	36
3.3.1	Evidence from the US .....	36
3.3.2	Evidence from Germany and Europe .....	38
3.4	Data and methodology .....	40
3.4.1	Calculation of abnormal returns .....	41
3.4.2	OLS assumptions .....	44
3.4.3	Estimation and event window .....	46
3.4.4	Announcement dates .....	47
3.4.5	Choice of significance test .....	47
3.5	Empirical results .....	54
3.5.1	Results of abnormal return calculation .....	54
3.5.2	Negative abnormal returns following the announcement .....	56
3.5.3	Cross-sectional regression analysis .....	60
3.5.3.1	Explanatory variables .....	60
3.5.3.2	Control variables .....	67
3.5.4	Models .....	69
3.6	Various extensions .....	72
3.6.1	Assumption on market parameter stability .....	72
3.6.2	Multiple dates .....	74
3.6.2.1	Three additional dates of interest .....	74
3.6.2.2	Contamination of announcement dates .....	77
3.6.3	Impact on non-announcing firms .....	78
3.7	Conclusion .....	80
4	Long-term operating performance of European equity carve-outs .....	82
4.1	Abstract .....	82
4.2	Introduction .....	82
4.3	Literature review .....	84
4.4	General methodology .....	86
4.5	Data and specific analyses .....	88
4.6	Empirical results .....	93
4.6.1	Empirical results for parent firms .....	93
4.6.1.1	Barber/Lyon (1996) methodology .....	93

4.6.1.2	Lie (2001) methodology.....	95
4.6.2	Empirical results for subsidiary firms.....	96
4.6.3	Explanations for patterns in operating performance.....	97
4.6.3.1	Market timing or earnings management.....	97
4.6.3.2	Analysis of potential earnings management.....	98
4.6.4	Explanation of cross-sectional results for parent firms.....	101
4.6.4.1	Independent variables.....	101
4.6.4.2	Growth as dependent variable.....	105
4.6.4.3	Profitability as dependent variable.....	106
4.6.4.4	Interpretation of results.....	107
4.6.5	Explanation of cross-sectional results for subsidiary firms.....	108
4.6.5.1	Growth as dependent variable.....	108
4.6.5.2	Profitability as dependent variable.....	108
4.6.5.3	Interpretation of results.....	109
4.7	Conclusion.....	111
5	Long-term price performance of European equity carve-outs.....	113
5.1	Abstract.....	113
5.2	Introduction.....	113
5.3	Literature review.....	115
5.4	General methodology.....	120
5.5	Data and specific analyses.....	125
5.5.1	BHAR and selection of benchmarks.....	126
5.5.2	BHAR and statistical significance.....	128
5.5.3	Calendar time portfolio method.....	134
5.6	Empirical results.....	135
5.6.1	Post-event performance of parent firms.....	135
5.6.1.1	BHARs across various time periods.....	136
5.6.1.2	Statistical significance of BHARs.....	137
5.6.1.3	Calendar time method.....	138
5.6.1.4	Interpretation of results.....	139
5.6.2	Pre-event performance of parent firms.....	141
5.6.2.1	Two hypotheses related to pre-event performance.....	141
5.6.2.2	BHARs across various time periods.....	143
5.6.2.3	Interpretation of BHAR results.....	144

5.6.2.4	Testing the first hypothesis: Market timing .....	146
5.6.2.5	Additional test of the market timing hypothesis .....	146
5.6.2.6	Testing the second hypothesis: STPP and pre-event LTPP .....	148
5.6.3	Explanation of cross-sectional results for parent firms.....	149
5.6.3.1	Two hypotheses related to post-event performance.....	149
5.6.3.2	Testing the first hypothesis: LTOP causes LTPP .....	150
5.6.3.3	Testing the second hypothesis: STPP causes LTPP.....	151
5.6.3.4	Multivariate case .....	152
5.6.3.5	Interpretation of results .....	152
5.6.4	Post-event performance of subsidiary firms .....	153
5.6.4.1	Statistical significance of BHARs.....	153
5.6.4.2	Calendar time method .....	154
5.6.4.3	Interpretation of results .....	155
5.6.5	Explanation of cross-sectional results of subsidiary firms.....	156
5.6.5.1	Variables in regression.....	157
5.6.5.2	Interpretation of results .....	158
5.7	Conclusion .....	160
6	What do we learn about internal capital markets from equity carve-outs?.....	162
6.1	Abstract .....	162
6.2	Introduction .....	162
6.3	Literature review .....	166
6.3.1	ICMs in the context of equity carve-outs.....	167
6.3.2	Internal capital markets in the literature.....	168
6.3.2.1	Arguments for inefficiency of ICMs.....	169
6.3.2.2	Arguments for efficiency of ICMs.....	171
6.3.3	Biases in studies on ICMs and the conglomerate discount.....	173
6.3.4	ICMs and the conglomerate discount across time and geography.....	176
6.4	Data and specific analyses .....	177
6.4.1	Sources of data .....	177
6.4.2	Size measures.....	179
6.4.3	Efficiency measures .....	182
6.5	Empirical results .....	185
6.5.1	Investors' perspective on ICMs .....	186
6.5.1.1	Measures of ICM size from the year prior to the ECO.....	186

6.5.1.2	Measures of ICM efficiency from the year prior to the ECO .....	187
6.5.1.3	Measures of changes in ICM size .....	188
6.5.1.4	Measures of changes in ICM efficiency.....	188
6.5.1.5	Interpretation of results .....	189
6.5.2	Conditions of ICM efficiency .....	190
6.6	Conclusion .....	193
7	Determinants of the nature of the second event in European equity carve-outs...	194
7.1	Abstract .....	194
7.2	Introduction.....	194
7.3	Literature review .....	195
7.4	Data and univariate analyses .....	199
7.4.1	Data sources .....	199
7.4.2	Impact of individual parameters on the second event.....	200
7.4.2.1	Frequency of second events .....	200
7.4.2.2	Time until second event .....	202
7.4.2.3	Stake retained in initial ECO .....	203
7.4.2.4	Over/undervaluation of subsidiary firm.....	203
7.4.2.5	Leverage and coverage of parent firm .....	206
7.4.2.6	ICM size and efficiency .....	207
7.4.2.7	Industry .....	208
7.4.2.8	Region .....	210
7.5	Logit regression analyses .....	212
7.5.1	Logit Model 1: Sell off vs. reacquisition .....	212
7.5.2	Logit Model 2: Second event vs. no second event.....	215
7.5.3	Interpretation of results .....	216
7.6	Conclusion .....	217
8	Conclusion .....	219
8.1	Summary of key findings .....	219
8.2	Recurring themes and their implications.....	222
8.3	Avenues for future research .....	227
	Appendix .....	231
	Bibliography.....	287

**List of Abbreviations**

APAR	announcement period abnormal return
AR	abnormal return
ATCF	after tax cash flow
AVA	absolute value-added
BA	book value of assets
BHAR	buy-and-hold abnormal return
BHRR	buy-and-hold raw return
bn	billion
BTM	book-to-market
CAPM	capital asset pricing model
CAR	cumulative abnormal return
CF	cash flow
CR	compound annual return
CRSP	Center for Research in Security Prices
DCF	discounted cash flow
EBIT	earnings before interest and taxes
EBITDA	earnings before interest, taxes, depreciation and amortization
EBT	earnings before taxes
ECM	external capital market
ECO	equity carve-out
EGLS	estimated generalised least squares
EMH	efficient market hypothesis
ew	equal-weighting
FECE	firm excess capital expenditure
GDP	gross domestic product
GLS	generalised least squares
HML	high-minus-low
HQ	headquarters
ICM	internal capital market
LTOP	long-term operating performance
MAM	market adjusted model
MM	market model



## XVIII

MRM	mead adjusted returns model
MSCI	Morgan Stanley Capital International
MTB	market-to-book
NACE	Nomenclature Générale des Activités Economiques dans l'Union Européene
NPV	net present value
NYSE	New York Stock Exchange
OLS	ordinary least squares
PE	price-to-earnings
PECE	profitability-weighted excess capital expenditure
ROA	return on assets
ROCAA	return on cash-adjusted assets
ROMVA	return on market value of assets
ROS	return on sales
RVA	relative value-added
s.a.	sine anno (without year)
SDC	Securities Data Company
SEO	seasoned equity offering
SIC	Standard Industrial Classification
SMB	small minus big
STPP	short-term price performance
TA	total assets
TAC	total accruals
vw	value-weighting
WACC	weighted average cost of capital
WLS	weighted least squares

**List of Symbols**

$\sim$	expected value
$E$	expectation operator
€	Euro
$i$	used to index firms or securities (unless otherwise indicated)
$n$	number of firms in the sample (unless otherwise indicated)
$p$	price of a security
$\phi_t$	information set at time $t$
$\sigma$	standard deviation
$p$	price
$r$	return
$t$	used to index time
$T$	number of days in the estimation period
$V$	variance-covariance matrix
$z$	excess return

## List of Tables

Table 1: Descriptive statistics .....	14
Table 2: CARs across various event day windows .....	54
Table 3: Sample firms used in event study .....	55
Table 4: Tests for hypotheses regarding [+2] day window abnormal returns .....	59
Table 5: CARs across countries .....	61
Table 6: Country classification as explanatory variable for CARs.....	61
Table 7: Regional classification as explanatory variable for CARs .....	63
Table 8: Stated motivation as explanatory variable for CARs.....	64
Table 9: Difference between companies with and without announcement.....	65
Table 10: Industry classification as explanatory variable for CARs.....	67
Table 11: Cross-sectional regression of CARs .....	70
Table 12: Average reaction of non-announcing companies: Grand subgroup averages.	79
Table 13: Number of p-values in excess of Bonferoni-adjusted alpha level .....	80
Table 14: Total accruals/total assets by relative event year.....	100
Table 15: Parent firm BHAR across various periods.....	136
Table 16: Number of sample companies in calendar time method.....	138
Table 17: Calendar time method for parent firms.....	139
Table 18: Pre-event parent firm BHAR across various periods.....	143
Table 19: Regression of LTPP on 12-month pre-event LTPP .....	146
Table 20: Change in valuation levels of subsidiary firm's and other industries .....	147
Table 21: OLS-regression of LTPP on STPP .....	151
Table 22: Subsidiary firm BHAR across various periods.....	153
Table 23: Calendar time method for subsidiary firms .....	154
Table 24: Average time until second event.....	202
Table 25: Stake retained after initial ECO and second event.....	203
Table 26: Over/undervaluation of subsidiary firm and second event .....	205
Table 27: Leverage, coverage and second event.....	207
Table 28: Country financial development and second event .....	211

**List of Figures**

Figure 1: CARs around event date – [-10;+10] day window .....	55
Figure 2: Correlation of abnormal returns: Trend reversal .....	58
Figure 3: Abnormal returns as a function of the post-event stake .....	66
Figure 4: Difference between pre- and post-event beta .....	72
Figure 5: Parent firm post-event BHAR .....	137
Figure 6: Parent firm pre-event BHAR .....	143

## List of Appendices

Appendix 1: Overview of various restructuring and financing mechanisms.....	232
Appendix 2: Derivation of sample.....	233
Appendix 3: Sample by year and country.....	234
Appendix 4: Sample by year (relative to IPOs).....	235
Appendix 5: MSCI Europe 1984-2004.....	236
Appendix 6: Sample by year (money volume).....	237
Appendix 7: Sample by industry (relative to benchmark universe).....	238
Appendix 8: Sample by year and industry.....	239
Appendix 9: Sample by country (relative to IPOs).....	241
Appendix 10: Existing studies on ECO announcement period returns - US.....	242
Appendix 11: Existing studies on ECO announcement period returns - Non-US.....	243
Appendix 12: Hypotheses on value creation.....	244
Appendix 13: Abnormal return on individual days around event.....	245
Appendix 14: CARs around event date - [-50;+20] day window;.....	246
Appendix 15: Abnormal returns per year.....	247
Appendix 16: Abnormal returns per period.....	248
Appendix 17: CARs and significance - Betas from pre- and post-event period.....	249
Appendix 18: CARs on four different dates.....	250
Appendix 19: CARs of excluded companies.....	251
Appendix 20: Average reaction of non-announcing companies - Subgroups.....	252
Appendix 21: ROA rank of parent firms.....	253
Appendix 22: Size rank of parent firms.....	253
Appendix 23: ROA/size rank combinations.....	254
Appendix 24: MTB rank of parent firms.....	254
Appendix 25: Benchmark universe composition.....	255
Appendix 26: Parent firm abnormal profitability - Barber/Lyon (1996) method.....	256
Appendix 27: Parent firm abnormal growth - Barber/Lyon (1996) method.....	257
Appendix 28: Algorithms used and firms included in sample.....	258
Appendix 29: Parent firm abnormal profitability - Lic (2001) method.....	259
Appendix 30: Subsidiary firm abnormal profitability - Barber/Lyon (1996) method.....	260
Appendix 31: Subsidiary firm abnormal growth - Barber/Lyon (1996) method.....	261
Appendix 32: Explanation of parent firm growth.....	262

Appendix 33: Explanation of parent firm profitability .....	263
Appendix 34: Explanation of subsidiary firm growth .....	264
Appendix 35: Explanation of subsidiary firm profitability.....	265
Appendix 36: Annual portfolio composition for three-factor model.....	266
Appendix 37: Parent firm post-event BHAR - Significance of results.....	267
Appendix 38: Parent firm pre-event BHAR - Significance of results .....	268
Appendix 39: Regression of STPP on 12-month pre-event LTPP.....	269
Appendix 40: Significant regression coefficients LTPP / LTOP (growth).....	270
Appendix 41: Significant regression coefficients LTPP / LTOP (profitability).....	271
Appendix 42: Explanation of parent firm post-event LTPP .....	272
Appendix 43: Subsidiary firm post-event BHAR - Significance of results .....	273
Appendix 44: Subsidiary firm post-event abnormal BHAR.....	274
Appendix 45: Explanation of subsidiary firm post-event LTPP.....	275
Appendix 46: Illustrative example for Billet/Mauer (2000) ICM measure .....	276
Appendix 47: Explanation of abnormal returns using ICM measures.....	277
Appendix 48: Explanation of abnormal returns using the change in ICM measures....	278
Appendix 49: Regression of CARs on cash flow correlation .....	279
Appendix 50: Event day abnormal returns vs. cash flow correlation .....	280
Appendix 51: Nature of second events in previous studies .....	281
Appendix 52: ICM size and efficiency and second event.....	282
Appendix 53: Same/cross-industry ECOs and second event .....	283
Appendix 54: Industry association and second event .....	284
Appendix 55: Logit model I: Sell-off vs. reacquisition .....	285
Appendix 56: Logit model II: Second event vs. no second event.....	286

## 1 Introduction

To appreciate the relevance of the present thesis, the introductory chapter highlights the practical significance of the research object, as well as its appeal to academics (section 1.1). The current status of knowledge regarding the research object is outlined, and key gaps in understanding are identified (section 1.2). The chapter concludes with an outline of the key research questions and a description of the structure of the thesis (section 1.3).

### 1.1 Significance of research object

Corporate restructuring in general and portfolio restructuring in particular have become an important part of corporate life in Europe. The total volume of exchange-listed disinvestments in Europe from 1990 to 1998 amounted to approx. €100 billion.<sup>6</sup> The general motive for these transactions is (or should be) the desire to create value for company shareholders by focussing on core businesses, disposing of poorly performing divisions, eliminating negative synergies between unrelated business segments, creating pure-play companies easier to evaluate for investors, and reducing the debt burden.<sup>7</sup>

Equity carve-outs (ECOs) are a popular instrument in a firm's portfolio restructuring toolbox. This study identifies 178 ECOs in 13 European countries in the time period from 1/1/1984 to 31/12/2004, with a total money volume of approx. €91 billion.<sup>8</sup> This compares to a total initial public offering (IPO) volume in the same countries and over the same time period of approx. €580 billion.<sup>9</sup> A series of recent high-profile transactions in Europe have brought ECOs onto the radar screen of both firms and academics.<sup>10</sup>

From an academic's point of view, ECOs are fascinating because they combine elements of two distinct corporate restructuring mechanisms.<sup>11</sup> First, an ECO is similar

<sup>6</sup> See Glatzel (2003), p. 4. Converted to € at the average of daily exchange rates from 1/1/1990 to 31/12/1998 (approx. US\$/€ 1.25).

<sup>7</sup> See Gaughan (2002), p. 395-403.

<sup>8</sup> The ECO volume is calculated as the market capitalisation of the subsidiary on the first day of trading, multiplied by the percentage stake sold by the parent company. All data points required for this calculation could be identified for 151 out of the 178 sample firms. The total ECO volume is based on the total identified ECO volume, plus an estimate of the average ECO size multiplied by 27 (i.e., 178-151).

<sup>9</sup> The IPO volume estimate is based on all capital-raising transactions listed in SDC for the 13 European countries in which ECOs have been identified, with a transaction date from 1/1/1984 to 31/12/2004, IPO flag marked as 'yes', and excluding repeatedly listed transactions. The US\$ amount is converted to € at day-end exchange rates as of the date of the respective transaction.

<sup>10</sup> Examples include the floatation of T-Online by Deutsche Telekom (2000), Epcos and Infineon by Siemens (1999 and 2000, respectively), Deutsche Postbank by Deutsche Post (2004) in Germany, Kemira GrowHow by Kemira (2004) in Finland, Pages Jaunes by Wanadoo (2004) in France, Terna by Enel (2004) in Italy, Cintra by Grupo Ferrovial (2004) in Spain, Converium by Zurich Financial Services (2001) in Switzerland, and Burberry by GUS (2002) in the UK.

<sup>11</sup> See chapter 2.1.2 for a detailed definition of ECOs and other corporate restructuring activities.

to financial restructuring mechanisms like IPOs and seasoned equity offerings (SEOs) in that a subsidiary firm goes public, and cash is raised. Second, an ECO is similar to portfolio restructuring mechanisms like spin-offs and divestitures in that the composition of the parent firm's assets changes, and control over the subsidiary firm is transferred from the parent firm to shareholders. This dual nature renders ECOs a uniquely interesting research object, providing a range of potential research questions. ECOs can also serve as 'natural experiments' for addressing more general questions about the level of efficiency of internal capital markets.<sup>12</sup>

ECOs thus represent a prominent transaction mechanism for European firms, allowing them to (partially) exit non-core business areas, and to use the released capital for investment into core businesses, the repayment of existing debt, or for other financing purposes. Academics are attracted by the dual nature of ECOs as both a portfolio and a financial restructuring mechanism. Hence, both the volume of and interest in ECOs will continue to be substantial.

## 1.2 Current knowledge and research gap

Previous research has established some important knowledge regarding ECOs. Announcements of intended ECOs on average lead to positive abnormal returns.<sup>13</sup> Two sets of explanations are offered: First, according to the divestiture gains hypothesis, value gains arise because the business focus of both parent and subsidiary firm increases following the ECO, cash proceeds can be used to retire debt, the carved-out entity is able to separately finance its investment projects and is more likely to be taken over, the information availability regarding the subsidiary firm's performance increases, investors are more inclined to invest into the new pure-play stock, and managers' contracts can be designed more efficiently.<sup>14</sup> Second, according to the asymmetric information hypothesis, issuing shares in the subsidiary firm signals an undervaluation of the larger parent firm assets and an overvaluation of the smaller subsidiary firm assets. Investors use this information and buy shares in the parent firm, leading to positive returns.<sup>15</sup> Announcement period returns are higher on average when parent and subsidiary firms are from different industries<sup>16</sup>, when pre-event informational asymmetry is high<sup>17</sup>, when subsidiary firm assets are greater than non-subsidiary firm assets<sup>18</sup>, when the ECO is conducted as a primary (rather than a secondary) offering<sup>19</sup>, and when the parent firm

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<sup>12</sup> See chapter 6.

<sup>13</sup> See chapter 3 for a literature review.

<sup>14</sup> See Schipper/Smith (1986), p. 169-175 and Vijh (2002), p. 164-165.

<sup>15</sup> See Nanda (1991) and Slovin/Sushka/Ferraro (1995) for a detailed description of the asymmetric information hypothesis.

<sup>16</sup> See Vijh (2002), p. 177.

<sup>17</sup> See Elsas/Löffler (2005), p. 15.

<sup>18</sup> See Vijh (2002), p. 155.

<sup>19</sup> See Kaserer/Ahlers (2000), p. 562-564.



uses the proceeds to repay debt<sup>20</sup>. Parent and subsidiary firm operating performance improves in the first year following the ECO<sup>21</sup>, with the subsidiary firm's operating performance declining again in the following years.<sup>22</sup> Carved-out entities tend to be the high-growth divisions of the parent firms.<sup>23</sup>

In many cases ECOs are temporary structures, and the parent firm either reacquires or completely sells off its partially floated subsidiary firm in later years.<sup>24</sup> An ECO thus creates a real option, allowing the parent firm to profit from the resolution of uncertainties.<sup>25</sup> Also, investors seem partially able to anticipate the second event: ECO announcements followed by an eventual take-over of the carved-out entity by a third party produce higher abnormal returns than announcements not followed by a take-over.<sup>26</sup>

Simultaneously, existing research fails to answer several aspects of value creation in ECOs. Regarding short-term price performance, it is unclear whether announcement returns differ across time and geography, whether there is a systematic price reaction at additional dates during the ECO process, and whether non-announcing firms with similar ECO candidates experience abnormal reactions to other firms' ECO announcements.

Regarding long-term operating performance, it is unclear why the subsidiary firm's operating performance, after peaking around the time of the ECO, deteriorates in later years. The parent firm's operating performance has not been analysed in a multi-year window around the event. Evidence of earnings management around classical IPOs suggests that a similar phenomenon may occur in ECOs, which has not been analysed so far. Also, it is unclear whether ECO characteristics can explain the cross-sectional distribution of performance results: Answering this question will help firms to design ECOs more efficiently.<sup>27</sup>

Regarding long-term price performance, evidence is mixed. Parent firms are found to underperform<sup>28</sup>, to perform in line with<sup>29</sup>, and to outperform<sup>30</sup> benchmark firms.

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<sup>20</sup> See Allen/McConnell (1998), p. 165.

<sup>21</sup> See Hulburt/Miles/Woolridge (2002), p. 95-99.

<sup>22</sup> See Powers (2003), p. 32.

<sup>23</sup> See Powers (2003), p. 40.

<sup>24</sup> See Klein/Rosenfeld/Beranek (1991), p. 450.

<sup>25</sup> See Kranenburg/Perotti/Rossetto (2004) for a description of ECOs as real options.

<sup>26</sup> See Hulburt (2003), p. 30.

<sup>27</sup> For example, it is unclear how the stake retained relates to subsequent operating performance. While Boone/Haushalter/Mikkelsen (2003) find that parent firm operating performance improves only when the entire stake is carved out, and subsidiary firm operating performance is unaffected, Powers (2003) finds a negative relation between subsidiary firm operating performance and the percentage of shares sold.

<sup>28</sup> See Madura/Nixon (2002), p. 172. Negative performance is exclusive to distressed parents.

<sup>29</sup> See Vjih (1999), p. 285-290.

<sup>30</sup> See Anslinger/Carey/Fink/Gagnon (1997), p.166.

Similarly, subsidiary firms are found to underperform IPO<sup>31</sup> and benchmark firms<sup>32</sup>, to perform in line with IPO<sup>33</sup> and benchmark firms<sup>34</sup>, and to outperform benchmark firms<sup>35</sup>. Discrepancy in results is driven by differing test designs resulting from the disagreement about an appropriate methodology. Further, it is unclear whether ECO characteristics can explain the cross-sectional distribution of results. Also, the relationship between long-term operating performance and long-term price performance has not been analysed.

Regarding internal capital markets (ICMs), there exist empirical studies and theoretical models supporting the notion both of efficient and of inefficient ICMs. Discrepancy in results suggests that the relative level of ICM efficiency depends on specific firm characteristics, rather than being low or high in general as suggested by some of the models. Previous studies use spin-offs and asset sales to analyse ICMs, while ECOs have not been used to that avail. It is unclear whether investors are able to discern efficient from inefficient ICMs, and what the conditions are required for an ICM to be efficient.

Regarding the second event, the determinants of the decision of whether to reacquire or completely sell off the subsidiary firm have not been analysed in detail. It is unclear whether factors such as the parent firm's leverage, the subsidiary firm's valuation level, industry association, and the institutional setting of the parent firm's home country influence the decision. This study addresses these open issues.

### 1.3 Key research question and structure of thesis

Three key research questions form the framework for the entire thesis.

- What are the sources of value creation in European equity carve-outs, both in the short term and in the long term?
- What can researchers learn about the efficiency of internal capital markets with the help of equity carve-outs?
- What factors determine the eventual wind-up of ECO structures through reacquisitions or sell-offs?

The structure of the thesis is based on these research questions and the identified research gaps related to the short-term price performance following the announcement

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<sup>31</sup> See Prezas/Tarimcilar/Vasudevan (2000), p.130-134.

<sup>32</sup> See Madura/Nixon (2002), p.172. Negative performance is exclusive to subsidiaries carved out of distressed parent firms,

<sup>33</sup> See Schikowsky/Schiereck/Völkle/Voigt (2005).

<sup>34</sup> See Vijh (1999), p. 285-290.

<sup>35</sup> Annema/Fallon/Goedhard (2002) find that subsidiaries gaining full independence outperform the S&P500, while subsidiaries remaining under the control of the parent underperform the S&P500 in the two years after the event. Powers (2003) finds a positive performance in his sample of 181 ECOs in the three years after the event, but results are due to positive first year performance. In each of the years 2-5, sample firms underperform.

of the ECO (chapter 3), long-term operating and price performance of parent and subsidiary firms following an ECO (chapter 4 and chapter 5), the efficiency of internal capital markets using ECOs as research objects (chapter 6), and the nature and determinants of the second event following the initial ECO (chapter 7). Each of these chapters is structured similarly: Following an introductory paragraph detailing the specific research question<sup>36</sup>, the relevant literature is reviewed, followed by a description of the data and methodology used, a presentation of the empirical results and their economic interpretation, and a summarizing conclusion. The following paragraphs provide an overview of the specific issues addressed in each chapter.

Chapter 2 has two objectives. First, it defines the research object and differentiates it from similar portfolio and financial restructuring mechanisms. Second, the efficient market hypothesis is presented, and potential violations are discussed. Market efficiency is the yardstick against which abnormal price performance is assessed.

Chapter 3 analyses the short-term price performance of firms announcing an ECO. An event study framework is used to address several questions. First, are positive abnormal returns constant across time and countries? If capital markets become more efficient across time, the changing relative value of internal vs. external capital markets may impact the level of abnormal returns. Similarly, abnormal returns may differ as a function of cross-country varying development states of capital markets. Second, is there a pattern in returns across three additional dates (first rumour date, bookbuilding date, first trading date) on which markets receive information about the impending ECO? Since the last two dates are known in advance, any systemic pattern could yield profitable trading strategies. Third, do abnormal returns differ on 'clean' vs. 'contaminated' announcement dates? Companies may choose to link ECO announcements to other news, causing part of the generally claimed announcement period returns to be attributable not to the ECO itself. Fourth, do non-announcing companies with future ECO candidates show abnormal price reactions to ECO announcements by other firms? Investors could either sell the non-announcing firms, because they have not yet performed an ECO, or buy them as future ECO candidates.

Chapter 4 analyses long-term operating performance (LTOP) of parent and subsidiary firms. According to the divestiture gains hypothesis, operating performance should improve following the ECO. Firms could also engage in earnings management (similar to previous findings for IPOs and SEOs), by using discretionary accounting mechanisms to render themselves more attractive to capital markets, followed by a decline in earnings as the measures are reverted. LTOP is analysed using growth and profitability measures. The cross-section of LTOP is analysed in a multivariate regression framework as a function of various event and firm characteristics to identify the sources of positive operating performance development.

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<sup>36</sup> In addition to the introductory section each main chapter is preceded by a journal-type abstract succinctly summarizing the key findings of the respective chapter.

Chapter 5 analyses long-term price performance (LTPP) of parent and subsidiary firms. Extant studies offer contradicting results because of a lacking consensus on how to appropriately assess abnormal LTPP. Consequently a large variety of methodologies are applied to assure robustness of results. In addition to post-event LTPP, pre-event LTPP is also analysed. Two hypotheses are tested: First, is there a relationship between pre-event LTPP and short-term price performance? A positive short-term price performance could be merely a reaction to a negative pre-event LTPP; alternatively a positive short-term price performance could be positively linked to pre-event LTPP, indicating that the latter serves as a signalling mechanism reducing informational asymmetry between parent firm and future investors. Second, the relationship between pre- and post-event LTPP is analysed to assess whether managers market-time the ECO to occur in periods of high relative prices and valuation levels. The cross-section of LTPP is analysed in a multivariate regression framework as a function of various event and firm characteristics to identify the sources of positive price development.

Chapter 6 addresses two specific questions regarding the efficiency of internal capital markets (ICM) using ECOs as a research object. First, how do investors view ICMs? Announcement period returns are regressed on ICM size and efficiency measures, controlling for other factors influencing abnormal returns as previously identified. If investors view ICMs negatively, parent firms with larger and less efficient ICMs should experience higher announcement period returns. In addition to absolute ICM measures, change measures are used to assess whether changes in ICM size and efficiency are related to announcement period returns. Second, what are the conditions for ICM efficiency? The mixed results in existing literature on ICM efficiency suggest that firm-specific factors are likely to influence relative ICM efficiency. Literature offers two contradictory views on when ICMs are efficient, ultimately differing in their conclusion on whether firms with related or *unrelated* business segments are more likely to have efficient ICMs. These hypotheses are tested by regressing announcement period returns on the correlation between parent and subsidiary firm cash flows.

Chapter 7 addresses two key questions regarding the second event: First, what is the frequency of reacquisitions vs. sell-offs in Europe, relative to the US? If there is trade-off between internal and external capital markets, and the latter are more developed in the US than in Europe, ICMs are more valuable in Europe, and reacquisitions (i.e., re-establishments of partially closed ICMs) should be more frequent in Europe. Second, what are the determinants of the second event decision? Hypotheses on the impact of relative subsidiary firm valuation levels, the parent firm's debt burden, ICM size and efficiency, the parent firm's industry and country, and the development state of financial markets are developed and tested.

Chapter 8 summarises and discusses the key findings of the empirical analyses in the present study, identifies recurring themes, and highlights areas for future research.

## 2 Definitions and theoretical foundations

This chapter has two objectives. First, it defines the research object (section 2.1) and analyses empirically identified and theoretical reasons of why firms engage in an ECO (section 2.2). Second, it presents the basic concepts of the efficient market hypothesis and reviews evidence for and against market efficiency (section 2.3).

### 2.1 Description of research object

This section proceeds by first placing the specific research object into a general context (section 2.1.1). ECOs are then defined in detail by listing typical characteristics (section 2.1.2), by differentiating them from similar portfolio and financial restructuring mechanisms (section 2.1.3), and by distinguishing two forms of ECOs (section 2.1.4). The construction of the sample is described (section 2.1.5), and some summary descriptive statistics are provided (section 2.1.6).

#### 2.1.1 Corporate restructuring as the overarching concept

Corporate restructuring can broadly be defined as “a major change in the composition of a firm’s assets combined with a major change in its corporate strategy”<sup>37</sup>. It has attracted the attention of scholars in various fields, including financial, management and organizational research. The general goal of corporate restructuring, as evidenced by many company announcements, is to create shareholder value.<sup>38</sup> According to Bowman/Singh (1993), corporate restructuring comprises three different dimensions: First, *portfolio restructuring* refers to material changes in the firm’s asset holdings through acquisitions, divestitures, liquidations, spin-offs and equity carve-outs. Second, *financial restructuring* refers to material changes in a firm’s capital and ownership structure through public-to-private transactions (e.g., leveraged buyouts), private-to-public transactions (IPOs), leveraged recapitalizations and debt-to-equity swaps. Third, *organizational restructuring* refers to material changes in the firm’s structure and the redesign of hierarchies. As pointed out by Heugens/Schenk (2004), organizational restructuring often follows in the wake of portfolio or financial restructuring.<sup>39</sup> A survey of existing studies by Bowman/Singh/Useem/Bhadbury (1999) finds that financial restructuring yields the most tangible returns, while portfolio restructuring also yields positive but on average lower returns. The value effects of organizational restructuring are more mixed and dependent on the specific circumstances.

As indicated by Bowman/Singh (1993), an ECO seems most often associated with portfolio restructuring. However, ECOs are also a type of IPO (namely of the subsidiary

<sup>37</sup> Hoskisson/Turk (1990), p. 459.

<sup>38</sup> See Bowman/Singh (1993), p. 6.

<sup>39</sup> See Heugens/Schenk (2004), p. 88.

firm), i.e., a mechanism of financial restructuring for the parent firm of the carved-out subsidiary firm. This dual nature renders ECOs both a unique measure for parent and subsidiary firms, and an interesting and complex research topic for academics.

### 2.1.2 Definition of an equity carve-out

Schipper/Smith (1986) define an equity carve-out (ECO) as “the initial public offering of some of the stock of a wholly owned subsidiary”<sup>40</sup>. Similarly, Vijh (1999) states that “in an equity carve-out, a parent firm raises money by selling part or all of the equity in a wholly owned subsidiary to the public”<sup>41</sup>. For the purpose of this study, I define an ECO as follows:

*An equity carve-out (ECO) is the initial public offering by an exchange-listed parent firm of shares in a majority-controlled legally separated subsidiary firm to the public.*

The individual elements of the definition are explained next.

First, an ECO is an initial public offering, i.e., a going public, of a subsidiary firm. Therefore practitioners also refer to ECOs as ‘sub-IPOs’. A going-public is defined using five criteria<sup>42</sup>: A privately held company is converted into a (totally or partially) publicly held company; the equity is offered to a broad range of investors; it is possible for the first time for investors to buy shares in the company; the shares are offered in a secondary market, allowing regular trading to take place; and the transaction leads to a cash inflow for either the issuing company, the selling shareholders, or both.

Second, the parent firm is exchange-listed. This requirement is important for this study because one of the research objectives is to analyse the long-term value impact of an ECO. Value is measured as the share price development of the parent firm.

Third, the subsidiary firm must be majority-controlled, i.e., the parent firm’s ownership of the voting capital must be in excess of 50%. This is more relaxed than the ‘wholly-owned’ requirement by Vijh (1999), and takes into consideration that in some cases there may exist (non-listed) minority positions in the subsidiary firm. This definition is in line with Kaserer/Ahlers (2000).<sup>43</sup>

Fourth, the subsidiary firm must be a separate legal entity. This separate legal entity has either existed prior to the announcement of the ECO, or is created in the process leading up to the public offering.

Fifth, the offer is made to the public. Generally, this takes the form of an offer to the general public. However, it does not preclude the parent firm from favouring existing shareholders in the allocation of shares. Indeed, there are demands for the introduction

<sup>40</sup> Schipper/Smith (1986), p. 154.

<sup>41</sup> Vijh (1999), p. 274.

<sup>42</sup> See Mettler (1990), p. 19.

<sup>43</sup> See Kaserer/Ahlers (2000), p. 552.