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**A COMPREHENSIVE ANALYSIS OF THE SHAREHOLDER
VALUE CREATION FROM SWEDISH SPIN-OFFS**

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Abstract

This thesis investigates the universe of Swedish tax-exempt Lex ASEA spin-offs since the start of the new millennium from the perspective of short-term and long-term stock price performance. The intention to spin off a subsidiary is viewed positively by investors, represented by a significant increase of the market's valuation of the company's equity by 2.82% on the date of announcement. The reaction closely arises on the announcement date, indicating fast and efficient pricing of expected future benefits from the new corporate structure. The group of firms divesting their subsidiary within the same industry and a relatively large portion of their market capitalization shows the largest abnormal returns, indicating that divestment size and corporate focus are determinant factors of abnormal returns. From evaluation of post-transaction performances of spin-offs, parents and value-weighted spinoff-parent combinations it cannot be statistically concluded that neither of the entities represent superior long-term investments compared to an index benchmark nor the hypothetical original firm. However, over a two-year investment horizon the spin-offs have outperformed index by 20.78 percentage points, over 10 percentage points better than their parents. Consequently, immediate value is created for shareholders of Swedish firms undertaking spin-off restructurings, whereas the long-term wealth effect is inconclusive but supportive of semi-strong form efficiency in the Swedish stock market.

Keywords: Corporate Restructurings, Divestitures, Spin-offs, Abnormal Returns

JEL-Classification: G34

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Contents

1	Introduction	1
1.1	Background	1
1.2	Purpose	2
1.3	Research Questions	2
1.4	Delimitations	3
2	Theoretical Framework and Empirical Evidence	3
2.1	Theoretical Framework	3
2.1.1	Corporate Restructuring	3
2.1.2	Efficient Market Hypothesis	4
2.1.3	Definitions and Types of Divestitures	5
2.2	Empirical Evidence	6
2.2.1	Research on Short-Term Spin-Off Performance	7
2.2.2	Research on Long-Term Spin-Off Performance	8
2.2.3	Research on Swedish Spin-Off Performance	9
2.2.4	Research on Sources of Abnormal Return	10
2.3	Hypotheses	11
3	Data and Methodology	12
3.1	Data Description	12
3.2	Event Study Methodology	14
3.3	Model Specifications	15
3.3.1	Short-Term Reaction Model	16
3.3.2	Long-Term Performance Model	18
3.3.3	Sources of Abnormal Return Model	21
4	Results and Analysis	21
4.1	Results	21
4.1.1	Short-Term Reaction Results	22
4.1.2	Long-Term Performance Results	23
4.1.3	Sources of Abnormal Return Results	25
4.2	Analysis	25
5	Conclusions	29
6	References	31
7	Appendix	33

1 Introduction

The introduction intends to establish the framework of this research by first providing a brief background of spin-offs, formulating the problem into research questions and lastly presenting the purpose and delimitations of the study.

1.1 Background

Restructuring through spin-offs are usually motivated by the belief that large companies can unlock value by focusing the operations to the core business, thereby reducing inefficiencies from overdiversification. Separating parts of the company through a spin-off is a tax-efficient type of divestiture and thus beneficial compared to other types of divestiture modes, such as straight sell-offs (Veld & Veld-Merkoulova, 2004). These are two out of many potential reasons why spin-offs can generate value for shareholders, which is why the restructuring is initiated in the first place. Among numerous other studies, Scheutz (1988) and Hite & Owers (1983) find empirical signs of investors increasing their valuation of firm equity when spin-offs are announced. Also, there is evidence of positive long-term abnormal returns *after* the distribution of shares, suggesting that the full value creation is not efficiently captured into the stock price at announcement date (Cusatis, Miles & Woolridge, 1993). Consequently, to measure the full value creation for the shareholders, it is important to measure abnormal returns at announcement, but also returns for the parent and the spin-off firm after the separation, and potential determinants of such return anomalies.

Investigating the short- and long-term performance of the spin-off, parent and combined entity is interesting and valuable from several perspectives. From *existing shareholders'* point of view, a spin-off is a result of a stock dividend such that the shareholders of the parent firm end up owning stock in two companies instead of one. Shareholders hence seek evidence in the relevant question if a portfolio of the two stocks can yield abnormal returns compared to the original single entity structure. Evidence of successful restructurings thereby become valuable decision basis also for *external investors* searching for outperforming companies to invest in. *Managers* have strategic interest in research about the wealth effects of running the firm as a large conglomerate or as separated stand-alone entities. Together with simultaneous research of potential factors determining abnormal performance associated with spin-offs, such as improved corporate focus and relative size of the divestment, would extend the managerial understanding of how to best divest.

These reasons, and the fact that the field has not been thoroughly researched in Sweden the last decade motivates the study. Divestiture research has somehow always been overshadowed by the more frequently studied area of mergers and acquisitions. As large companies

tend to get even larger over time, either internally or from M&A activity, the relative importance of divestitures increase. The firm might reach a point where the diversification- and scale benefits instead turn to be a source of inefficient capital allocation such that a divestiture can release values from the conglomerate discount. This type of restructuring conglomerates has gained in popularity in Sweden since implementation of the Lex ASEA regulation in 1991. Since then, there are no tax consequences from conducting a spin-off, and the new regulation improved the conditions for spin-off research as it incentivizes pure spin-offs and hence the comparability of shareholder value creation across firms. The post-Lex ASEA setting enables up-to-date research about the tipping point where large Swedish companies or conglomerates choose to spin off part of the firm, and the performance effects from doing so. The empirical results serve both investing- and managerial purposes.

1.2 Purpose

The aim of the thesis is to contribute to existing spin-off literature by (a) extending the understanding of how existing shareholders' wealth is affected by a spin-off decision, both immediately and over longer horizons, (b) continuing the evaluation of spin-off as an investment target for external investors, and (c) investigating the drivers behind potential value creation. Combining these investment perspectives along with insights about factors behind successful divestments will better explain how shareholder wealth is affected by spin-off restructurings and hence provide valuable research to the field.

1.3 Research Questions

Following the problem discussion contextualized in the background, the research has been divided into three parts to get a comprehensive understanding of the impacts of a spin-off decision, from the perspective of an existing shareholder. The next coming three research questions is what each sub study intends to answer.

Q1: Does the Swedish stock market evaluate spin-offs positively in terms of immediate share-price reaction upon announcement?

Q2: Do spin-offs create shareholder wealth in the long run?

Q3: What factors can possibly explain any abnormal returns, if found?

1.4 Delimitations

The study is delimited to Swedish spin-off transactions fulfilling the Lex ASEA requirements, to build a homogeneous sample of pure spin-offs. The parent company must be listed on Nasdaq Stockholm or First North prior to the restructuring, and the spin-off must start trading at either of the two marketplaces. Betsson AB is the single exception as it was initially listed on NGM Equity at the time of announcement, but traded at Nasdaq Stockholm at the time of the transaction. Hence, spin-off stocks listed on Aktietorget or NGM Equity are excluded from the sample, and data accessibility has confirmed the choice of market delimitations used to filter down the final sample. Spin-off transactions occurring between 2000-01-01 up until present time define the research period, where the first transaction in our sample took place 2000-06-08 and the last one 2018-03-23.

2 Theoretical Framework and Empirical Evidence

This section presents the relevant theoretical framework and corresponding concepts, and provides empirical evidence of prior spin-off research. Together, they help form the testable hypotheses for this study.

2.1 Theoretical Framework

The theoretical framework provides general knowledge about corporate restructurings and motives behind spin-offs. Additionally, it covers the efficient market hypothesis, which provides relevant basis for hypothesis testing. Lastly, it defines and differentiates spin-offs and other types of divestments, and introduces the criteria to qualify as a tax-exempt Lex ASEA spin-off, which later on will define this thesis' sample selection criteria.

2.1.1 Corporate Restructuring

A firm can adapt to new strategies by restructuring for instance its financials, ownership and operations. The new structures could be implemented through e.g. mergers, divestments, dividends or share repurchases. There are multiple reasons why corporate restructurings are undertaken (Cusatis *et al.*, 1993; Tübke, 2005). The main objective is however to create shareholder value by organizing the firm optimally, where one way to restructure is through a spin-off procedure. As corporate mergers can create synergies and economies of scale, corporate demergers oppositely have the objective of eliminating negative synergies and dis-economies of scale. More specifically, frequently mentioned motives behind restructurings are: (a) increase focus on the core business, (b) decrease asymmetric information between

the subsidiary and the external capital market, (c) receive a fair and more accurate valuation by eliminating conglomerate discounts, and (d) better align interests from recontracting. Although a spinoff-restructuring is a non-cash, non-tax transaction with a pro-rata distribution of shares to existing shareholders, the organizational restructuring is believed to create value derived from above reasons.

Large conglomerates serve well in picturing prospective companies to undertake corporate restructuring as a strategy to create shareholder value. One of its subsidiaries may operate within a business area that is far from the original core business, hence providing little synergies to the other units under the conglomerate umbrella. Not least, separation of the varying businesses allows to fit the capital structure optimally to each industry characteristics. The business-units may also be in different stages of the business cycle; i.e. if the subsidiary is subject to an expansive stage of growth, whereas the rest of the firm is considered to be a mature value-firm. In this case, it can be argued that capital is more easily raised and efficiently allocated as independent entities. Related to the argument of information asymmetry, the price system will be more informative when the subsidiary is reported separately and priced through its own newly issued stock. Value can thus be created when the subsidiary is allowed to more transparently access the capital markets and thereby eliminate the external investors' current undervaluation.

Following this argumentation, the relative size of the spin-off and cross-industry divestments should be factors that magnifies the spin-off related abnormal return. The larger the portion of assets divested, the larger the potential wealth effect of the organizational improvement (Krishnaswami & Subramaniam, 1999; Desai & Jain, 1999). Spinning off a subsidiary to another industry implies that the divestment actualizes a strategy to regain focus of the core business, with the previously mentioned benefits. Consequently, these are factors employable in testing the underlying hypothesis that the subsidiaries are worth more on their own.

2.1.2 Efficient Market Hypothesis

The stock market efficiency can be evaluated in light of the stock market reactions associated with spin-offs. In an efficient market, any expected improvements from the restructuring would be reflected in the price immediately at the announcement. Consequently, abnormal returns persisting beyond this date provide evidence of an imperfectly efficient market.

Fama (1970) started theorizing about the pricing efficiency in capital markets and his Efficient Market Hypothesis (EMH) is still a used assumption in monitored and liquid markets. The theory states that available information is reflected in the price of the security, and markets can according to Fama be categorized into three degrees of efficiencies. *Weak form*

efficiency states that stock prices reflect all historical information. If markets experience weak form efficiency, investors cannot use historical information nor prior price movements to predict future prices superiorly, since all historic facts are already incorporated into the current price. *Semi-strong form efficiency* states that prices quickly adjust to new public information from e.g. financial reports, press releases or updated market views. Hence, the only source of information that can be used to achieve abnormal returns is non-public insider information. The highest degree of efficiency, *strong form efficiency*, implies that the stock price not only reflects historical information and the latest public news, but also insider information. In this case, even if an investor possessed insider information, it would not constitute a superior investment base.

2.1.3 Definitions and Types of Divestitures

There are various modes of divestiture of corporate assets. Since our research is delimited to spin-offs, and more specifically corporate spin-offs in accordance with Swedish Lex ASEA tax regulation, the section starts off by providing the necessary definitions for this specific study.

A *sell-off* is simply the sale of assets to another company who incorporates these assets. A *buy-out* is a transaction where parts or the whole firm is taken private by either the management, employees or external investors. In a *tracking stock* transaction, new shares are issued which are designated to track the earnings of the subsidiary company. These shares are distributed as a tax-free dividend to existing shareholders. An *equity carve-out* could be described as a type of IPO-transaction as part of the stock in an existing or newly created subsidiary is sold. A *split-up* is an activity where the parent firm spins off all its subsidiaries through a stock dividend to its existing shareholders and ceases to exist. A *split-off* is similar to a spin-off and split-up in the sense that a stock dividend is paid out to separate a subsidiary from the parent firm. However, the distinguishing property is that shareholders have to relinquish their shares in the parent company to receive shares in the newly listed subsidiary (Tübke, 2005).

Finally, a *spin-off* could be defined as a distribution of stock in an existing or newly created subsidiary through a stock dividend. The distribution is made on pro-rata basis to current shareholders, such that the ownership structure of the spin-off is proportionally identical to the parent's immediately after the transaction. Since 1991 this type of corporate restructuring is a tax-exempt activity in Sweden if it fulfills the criteria of the Lex ASEA framework, hence departing from the main rule of taxable dividends. The regulation which eliminates the tax-related barriers to spin off subsidiaries was introduced in an attempt to simplify and promote corporate restructuring. If *all* shares in the subsidiary is distributed to

current shareholders, no immediate tax effect is triggered. That is, the taxation of potential capital gains is deferred until the shareholders sell the shares. According to 16-16 a §§ in chapter 42 of the Swedish Income Tax Law, a spin-off is conducted in accordance with Lex ASEA if and only if:

- The parent company is a Swedish listed company, or foreign company located in an EEA country.
- The shares must be distributed on a pro-rata basis to current shareholders to avoid targeted dividends. The pro-rata distribution implies that shares are apportioned with respect to current ownership in the parent company.
- The spin-off firm must be a subsidiary of the parent firm.
- The parent's stock must be listed.
- The parent's entire holding in the subsidiary must be paid out.

(Swedish Code of Statutes, 2008)

For research purpose, the tax considerations of the Lex ASEA regulation is not the primary interest, but the properties the regulation comes with. Before 1991 the parent usually kept a majority stake in the spin-off, but the regulation has pushed companies towards "pure spin-offs". The parent hence lose formal control of the new firm as all shares in the subsidiary must be distributed to be classified as a Lex ASEA-dividend. Also, the decision to spin off part of the firm is allowed to be evaluated independently of tax regulations, which may have hampered prospective spin-offs before Lex ASEA was introduced. Together this provides a more homogeneous and comparable sample of spin-offs, which is why this research is delimited to spin-offs fulfilling the Lex ASEA regulation. The U.S. has a longer tradition of exempting certain stock dividends from immediate taxes, which can partly explain the more frequent spin-off activity and occurrence of related research overseas.

2.2 Empirical Evidence

Corporate spin-offs have been widely studied since the 1980s with most research on listed companies in the United States, as seen in the summary Table 2.1. The studies have mainly focused on the short-term value creation from such restructurings, i.e. the stock market performance around the corporate event, and so far less on motives and explanations for any abnormal returns, nor how the restructuring should be conducted optimally. A joint conclusion from these studies is that a spin-off decision is rewarded with a significant stock price appreciation in the range of 2.62% to 4.82% on the date of announcement. Evidence of

the long-term wealth effects are more diverse, where some authors have found outperforming parents, spin-offs and spinoff-parent combinations, whereas other have not. It is however unclear how appropriately the results from these international studies can be generalized to the market and time of interest of this study.

2.2.1 Research on Short-Term Spin-Off Performance

Studies evaluating the stock market reaction at the announcement date of the spin-off decision, are commonly set up as event studies with various event windows, e.g. a 3-day window around the press release, denoted [-1,1] onwards. Hite & Owers (1983), Schipper & Smith (1983) and Miles & Rosenfeld (1983) all conclude that the announcement returns are positive and significant for their U.S. samples, with significant cumulative abnormal returns of 3.30%, 2.84% and 3.34% respectively. Table 2.1 summarizes the details of the relevant U.S. and European studies.

Table 2.1 Studies of Short-Term Wealth Effects Associated With Spin-Off Announcements

Study	Market	Period	Sample Size	Event Window	CAAR %
Hite & Owers (1983)	U.S.	1963-1981	123	[-1,0]	3.30***
Miles & Rosenfeld (1983)	U.S.	1963-1980	55	[0,1]	3.34***
Schipper & Smith (1983)	U.S.	1963-1981	93	[-1,0]	2.84***
Desai & Jain (1999)	U.S.	1975-1991	144	[-1,1]	3.84***
Krishnaswami & Subramaniam (1999)	U.S.	1978-1993	118	[-1,1]	3.28***
Veld & Veld-Merkoulova (2004)	W.E. ¹	1987-2000	156	[-1,1]	2.62***
Sudarsanam & Qian (2007)	W.E. ¹	1987-2005	157	[-1,1]	4.82***

¹ Western Europe; ***significance at the 1% level; **significance at the 5% level; *significance at the 10% level.

Veld & Veld-Merkoulova (2004) later found similar significant results for 156 European spin-offs announced between 1987-2000. Average abnormal returns (*AAR*) of 1.19% were found on the event date and cumulative average abnormal returns (*CAAR*) of 2.62% for the 3-day window around the event. Interestingly, they also presented results for the Swedish subsample over the 1987-2000 period, strictly preceding our research period. The Swedish firms showed insignificant *AAR* of 0.57% and *CAAR* of 0.82% and were the only exception from the otherwise significant European results.

2.2.2 Research on Long-Term Spin-Off Performance

The short-term event studies have been followed by a number of studies evaluating the long-term wealth effects from spin-off restructurings. Table 2.2 provides the core evidence of previous long-term research. It is however worth noting that these studies have solely focused on the post-separation performance, hence neglecting price impacts sourcing from the very initiation of the spin-off process. Cusatis *et al.* (1993) were the pioneers by studying 146 spin-offs in the United States between 1965-1988. They studied the stock market return of the spin-offs, parent companies, and a value-weighted spinoff-parent combination, up to three years after the transaction, i.e. the paper investigates the wealth effects beyond the immediate announcement reaction. The result showed positive abnormal returns for all three, and takeover activity was the single most important factor explaining the excess returns. When controlling for takeovers by excluding them from the sample, no abnormal returns were longer revealed.

Table 2.2 Studies of Long-Run Stock Market Performance Associated With Spin-Offs

Study	Market	Period	Type	Sample Size	T ₆ (%)	T ₁₂ (%)	T ₂₄ (%)	T ₃₆ (%)
Cusatis <i>et al.</i> (1993)	U.S.	1965-1988	Combined	141		4.7	18.9**	13.9
			Parent	131	6.8*	12.5**	26.7***	18.1
			Spin-off	146	-1.0	4.5	25.5**	33.6**
Desai & Jain (1999)	U.S.	1975-1991	Combined	155		7.7	12.7	19.8***
			Parent	155		6.5	10.6	15.2
			Spin-off	162		15.7***	36.2***	32.3***
McConnell <i>et al.</i> (2001)	U.S.	1989-1995	Combined					
			Parent	80	8.6	13.5	19.2	5.1
			Spin-off	96	8.9	7.2	5.8	-20.9
Veld & Veld-Merkoulova (2004)	W.E. ¹	1987-2000	Combined	45-61	-2.2	-2.3	4.2	2.0
			Parent	68-106	3.9	-0.7	6.5	-0.4
			Spin-off	53-70	12.0	12.6	13.7	15.2
Sudarsanam & Qian (2007)	W.E. ¹	1987-2002	Combined	129		-2.3	8.3	8.4
			Parent	129		-3.9	6.2	7.1
			Spin-off	142		7.2	17.5	23.0*

¹ Western Europe; ***significance at the 1% level; **significance at the 5% level; *significance at the 10% level.

When evaluating the long-run performance, the returns are calculated separately for the parent and the spin-off. For the parent, returns are calculated from the first trading day

without ownership rights to the spin-off, referred to as the ex-dividend date. For the spin-off, returns are naturally calculated from the initial trading day. Most papers have focused on the performance of the spin-off entity in an attempt to evaluate the investment strategy of buying newly listed spin-off firms. Cusatis *et al.* (1993) however study the combined spinoff-parent performance, hence considering the effects on both entities of the divided firm. Periods up to three years after the date of separation (denoted T) with subintervals of 6, 12, and 24 months have been investigated in Cusatis *et al.* (1993), McConnell, Ozbilgin & Wahal (2001), Desai & Jain (1999), Veld & Veld-Merkoulova (2004) and Sudarsanam & Qian (2007). All the studies use a matched-firm procedure to calculate the benchmark return, identifying similarly sized firms based on market value within the same industry.

2.2.3 Research on Swedish Spin-Off Performance

The topic has not been as extensively studied in the Swedish market and most existing research comes from bachelor- and master theses. This could at least partly be explained by the relatively young tradition of executing pure spin-offs in Sweden, which has always been a prerequisite in e.g. the United States. Before the Lex ASEA regulation was implemented in 1991, parent firms usually kept part of the ownership in the spin-off (i.e. the spin-off was not pure), which complicated the research setting. Any Swedish studies dated before 1991 is therefore of less importance when it comes to comparability with both international and modern findings, which limits the scope of relevant Swedish evidence.

As previously mentioned, Veld & Veld-Merkoulova (2004) studied the reaction of Swedish spin-offs as part of their European sample, where they find insignificant 3-day $CAAR$ of 0.82% and non-significant 0.57% event day AAR . In the paper, they partly attribute the low $CAAR$ and insignificant results to the negative abnormal returns associated with Swedish banks divesting large property divisions during the Swedish loan crisis in the 1990s.

Scheutz (1988) studied the reactions on announcement and the following 18 months for the full population of spin-offs performed in Sweden during 1983-1984. The study found statistically significant average abnormal returns, but also several companies with negative abnormal returns. From the lack of consensus, he concluded that spin-offs do not necessarily result in abnormal returns. Besides the quantitative part, Scheutz performed a qualitative study focusing on the motives behind eight spin-offs. However, the research by Scheutz is not fully comparable as it was performed before the new Lex ASEA regulation which, as previously mentioned, is critical for the research approach of this study. The spin-offs studied by Scheutz would be defined as equity carve-outs today as none of them were pure spin-offs. Also, the limited sample size of 13 spin-offs in the quantitative study makes the results less robust for generalization outside the sample population. Undeniably, there is

room for up-to-date research in the Swedish market.

Daneshvar Minabi *et al.* (2005) found that spin-offs outperformed equity carve-outs 12 months, 24 months and 36 months after the transaction. Brink & Falk (2009) focused only on the announcement day reaction and found significant positive abnormal returns. Holmgren *et al.* (2016) studied the performance of the spin-off unit specifically and found significant positive abnormal return for 6 months, 12 months, 18 months and 24 months respectively, when compared to a benchmark of similar firms.

2.2.4 Research on Sources of Abnormal Return

In the existing literature, the sources of gains in spin-offs have been extensively investigated, although the empirical evidence is more ambiguous than the announcement reaction results. Two of the most frequently studied factors are relative size and cross-industry. In the early 1980s, Hite & Owers (1983) and Miles & Rosenfeld (1983) focused on the relative size of the spin-off, and were later followed by Krishnaswami & Subramaniam (1999) and Veld & Veld-Merkoulova (2004). All found positive and significant results, indicating that announcement period gains were higher the larger portion of the parent-firm's assets were divested. In Europe, Veld & Veld-Merkoulova (2004) further investigated the relationship between the parent firm's long-run abnormal return and the spin-off's relative size. The results were insignificant and contrary, where relative size was a negative determinant in the first year and positive over a two year sample. All studies proxied the relative size of the spin-off by the change in the parent's market value of equity.

The other factor, cross-industry, captures the subsequent gains from firms focusing on their core business. The findings of Krishnaswami & Subramaniam (1999), Desai & Jain (1999) and Veld & Veld-Merkoulova (2004) suggest that announcement abnormal returns for the focus increasing spin-offs are larger than for non-focus increasing spin-offs. Veld & Veld-Merkoulova's (2004) breakdown of the abnormal return showed that the sub-sample of firms that increased their corporate focus had an average abnormal return of 3.57%, whereas non-focus increasing firms experienced substantially lower abnormal returns of 0.76%. The statistically significant difference suggest that the motive behind the spin-off impacts the price reaction. Furthermore, to capture the full impact of the managerial action, Desai & Jain (1999) also studied long-run performance in the U.S. and found focus increasing spin-offs as a positive determinant. The corresponding long-term evidence from the European market deviates, where industry focus has a negative non-significant effect (Veld & Veld-Merkoulova, 2004). To assess whether the spin-off was focus increasing, the parent firm's two-digit Standard Industry Classification (SIC) code was compared to the newly created spin-off's code, and diverging SIC-codes classify as a cross-industry spin-off.

2.3 Hypotheses

With respect to the positive effects the restructuring is aimed to generate, as well as earlier empirical findings, the expectation is to find abnormal returns around the spin-off event. Consequently, the first hypothesis is that spin-offs create significant shareholder values in terms of share price reactions around the announcement. The corresponding statistical null hypothesis tested for rejection can be stated as: Announcement of corporate spin-offs have no significant impact on the share price.

H1: Spin-offs create shareholder value in terms of significant share price reactions around the announcement.

For the investigation of the long-term wealth effects, it is tested whether the two firms combined value-weighted returns outperform the hypothetical return of the original firm as if the transaction did not take place. Furthermore, the long-term returns are evaluated against an index-benchmark to measure the performance relative to the market overall. Returns are calculated from the transaction date, usually occurring several months after announcement, meaning that information about the spin-off should already be reflected in the price. In line with the Efficient Market Hypothesis' semi-strong degree of efficiency, any expected improvements from the restructuring would be captured into the price immediately at the public statement, and the long-term abnormal return is not expected to significantly deviate from zero. As abnormal return beyond what is incorporated in the price around announcement is unanticipated, the corresponding null hypothesis stating that the return in excess of the benchmark return for periods of 6, 12, 18 and 24 months equals zero is not expected to be rejected.

H2: Spin-offs create shareholder value through significant long-term abnormal stock returns.

The third hypothesis investigates spin-off factors that could possibly explain the abnormal return found in the event study. In line with earlier research of the impact from specific spin-off factors, relative size of the spin-off and cross-industry divestments are separately evaluated as significant determinants of abnormal performance. The associated null hypotheses state that the relative size of the spin-off, and cross-industry divestments cannot individually explain the abnormal returns.

H3a: The relative size of the spin-off is a determinant factor of abnormal return.

H3b: Cross-industry divestment is a determinant factor of abnormal return.

3 Data and Methodology

The data necessary for this quantitative study is presented, followed by the methodologies used to derive its results. Besides introducing the general event study methodology, the particular methodologies used for the short-term, the long-term and the factor analysis test are set forth.

3.1 Data Description

The dataset consists of companies listed on a Swedish stock exchange which have completed a spin-off, or recently announced their intention to pay out part of its business as a stock dividend to its existing shareholders through a spin-off transaction. The parent company must have been listed on the Swedish stock market any time between January 1, 2000 and December 31, 2017. Furthermore, the spin-off transaction had to be approved as Lex ASEA by the Swedish Tax Agency. All the Lex ASEA approved spin-offs were then further evaluated based on additional criteria to determine whether the transaction qualifies to be included in the study. First, there must be a clear identifiable press release from the parent company which announced their intention to spin-off a subsidiary. Second, the announcement does not coincide with significant M&A activity. Consequently, the assets of the parent company and the spin-off after the transaction are very similar to the assets of the conglomerate prior to the transaction. This excludes all firms who make a simultaneous acquisition of another company or a seasoned equity offering.

The sample used to measure long-run stock performance of the parent, spin-off and spinoff-parent combination have to fulfill further criteria. In this sample, only the completed spin-off transactions are included. Similar to Veld & Veld-Merkoulova (2004), a different sample is used for each of the four different time intervals, 6 months, 12 months, 18 months and 24 months. For each time interval sample, only the firms who have traded longer than the time period interval are included, i.e. the 6-month interval sample only consist of firms who have traded for at least 6 months after the transaction. If the stock of a parent company or spin-off company has been delisted any time during the 24 month performance assessment period, the last price is used for performance measurement purposes for all remaining intervals, which is similar to the methodology used by Cusatis *et al.* (1993). An additional sample, which only includes firms that have traded for at least 24 months after the transaction, is studied, for the purpose of analyzing a constant sample over time.

The main sources of financial data are Bloomberg, Wharton Research Data Services (WRDS), Thomson Reuters Eikon and Nasdaq Stockholm. Daily price data for official trading days is collected for all companies in the study for the purpose of calculating actual

return and also to estimate expected returns. An official trading day with missing price data is replaced with the average of the previous trading day and the next trading day. To find all historical Swedish spin-off transactions, Nasdaq Stockholm's corporate action database is used. Thereafter, all spin-off transactions are checked for Lex ASEA approved status in the Swedish Tax Agency database. For the Lex ASEA approved transactions, the official listing date of the spin-off, first trading day for the parent company without rights to the spin-off and distribution of acquisition cost are recorded from the Swedish Tax Agency database. Furthermore, Cision News Portal is used, complementary to the companies' websites, to find the official press release, where the announcement of the spin-off transaction was first documented. Each press release is closely investigated from additional criteria, e.g. significant M&A activity or seasoned equity offering. The sources have also been used to detect any prior statements about spin-off activity prior to the official press release, thereby verifying that the press release is the first announcement of the spin-off intentions.

The study of the short-term announcement reaction includes a sample of 48 parent firms, and the list of firms with corresponding spin-offs is presented in Table 7.9 in the appendix. The last company to be included is the Modern Times Group - Nordic Entertainment Group transaction, which was announced March 23, 2018. The transactions are widely dispersed in the sample, which indicates that there is no plausible problem of time clustering events. The most active year was 2001, where a total of seven parent companies spun off nine subsidiaries. Data for long-term performance incorporate all returns up to March 20, 2018. Therefore, the sample size goes down with the study horizon as some transactions are recently made, and the samples are thus different for each period. Table 3.3 shows the sample size n for each long-term performance test and period.

Table 3.3 Sample Specification

Firm Status	Type	T₆	T₁₂	T₁₈	T₂₄
Trading firms	Parent	40	37	37	33
	Spin-off	46	43	42	34
Delisted firms	Parent	4	4	4	4
	Spin-off	1	1	2	6
Pre-mature firms ¹	Parent	0	3	3	7
	Spin-off	0	3	3	7
Sample Size, n	Parent	44	41	41	37
	Spin-off	47	44	44	40

¹ Denote the sub-group of firms which have not yet traded beyond the interval threshold.

The 6-month stock market performance consist of 44 parent companies and 47 spin-off companies. For the 12-month sample, it contains a total of 41 parent companies and 44 spin-off companies. In the 18-month interval, 41 parent companies and 44 spin-off companies are studied. In the final 24-month sample, 37 parent companies and 40 spin-off companies are included.

3.2 Event Study Methodology

In order to investigate the effect of corporate spin-off decisions, an event study methodology is used, which is consistent with previous studies. An event study is a statistical method, which examines the behavior of the firm's stock price around an event, and can be used to analyze how a corporate event impacts the stock price (Kothari & Warner, 2006). The methodology can be applied to measure the announcement effect for a short-horizon around a corporate event and thus help quantify the effect of a specific corporate policy decision, in this case corporate spin-off. Furthermore, long-horizon event studies, generally defined as event windows longer than 12 months, are commonly used but should be carried out with caution due to its low power and susceptibility to the joint-test problem. An event study also serves the purpose of testing the market efficiency hypothesis.

In this thesis, multiple events and event windows are studied to test the different hypotheses. To measure the short-term wealth effect associated with spin-off announcements, the formal announcement, e.g. the official press release, by the parent company is the event. On the contrary, the listing date of the spin-off company and first trading day for the parent company without rights to the spin-off are used to assess the long-run stock market performance. As the results of an event date analysis relies on the date chosen, it is crucial to define the event date correctly, transparently and objectively. The event date is defined as the parent's formal announcement of its intention to spin off a subsidiary. This date is denoted t_0 .

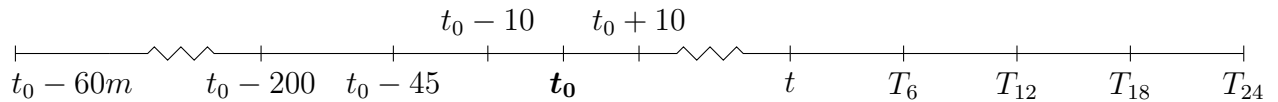
An event window is chosen around the event that could possibly incorporate price reactions due to the new information. The full event window ranges from $t_0 - 10$ to $t_0 + 10$, a total of 21 trading days; 10 prior to the announcement and 10 past the announcement. This range allows to capture reactions from potential information leakages prior to the official announcement, as well as possible reactions in the days following the announcement. This is a frequently used event window in comparable studies (Veld & Veld-Merkoulova, 2004; Sudarsanam & Qian, 2007). Additional windows are studied independently; abnormal return on the announcement day itself, t_0 , cumulative abnormal return in the interval from $t_0 - 1$ to $t_0 + 1$, and also pre- and post-event windows. These windows allow to investigate the

effect more narrowly around the event. Also, prior studies provide good comparable for these particular windows. Analyzing abnormal returns in three complementary intervals provide comprehensive evidence for answering Hypothesis 1.

3.3 Model Specifications

An event study methodology relies on subtracting an estimated expected return from the observed return to extract the price impact of the event. There are various ways to come up with the expected return (Brooks, 2014). A mean adjusted, market adjusted or market model, used in this study, can be applied to estimate the expected return during the event window. Unlike the other models, the market model considers the individual firm’s relationship to the market as it is derived from the Ordinary Least Square regression of daily or monthly individual returns on the market return. In this study, *OMX Stockholm Price Index* (OMXSPI) is chosen to represent the market return, as a wide Swedish share index corresponds to the sample. In the short-term reaction model, the market model is estimated over a period of 155 trading days starting day $t_0 - 200$ and ending $t_0 - 45$, similar to the estimation window employed in a comparable paper by Krishnaswami & Subramaniam (1999), and in line with the 100-300 days for daily observations suggested by Brooks (2014). The length of the estimation window is set to be reflective of the firm’s current characteristics, i.e. by not starting too far back in time, and by leaving a gap to the event to exclude impact from potential leakages from the event. The 155-day estimation window used fulfills these criteria, and the data has moreover been screened for other affecting events that would have violated the appropriate use of the estimation window as a normal period. When estimating the expected return for this long-term test, monthly returns from five years prior announcement are used, hence better matching the length of the estimation period with the forecast period. The full set of relevant dates and intervals for the models are shown in Figure 1 below.

Figure 1. Event Study Timeline



The regression is shown in equation 1, where t ranges from day -200 to -45 in the short-term reaction model and from 60 months prior to the announcement to day -45 in the long-term performance model. The former is estimated from daily observations and the latter from monthly observations.

$$r_{i,t} = \alpha_i + \beta_i r_{m,t} + \varepsilon_{i,t} \quad (1)$$

The regression generates a linear relationship between the returns, represented by an intercept α and the market correlation coefficient β . These are used to estimate the expected return R in the event window for each firm i . Equation 2 shows the calculation of the expected return for firm i at time t .

$$R_{i,t} = \hat{\alpha}_i + \hat{\beta}_i r_{m,t} \quad (2)$$

In the short-term reaction model, the full 21-day event window ranges from $t_0 - 10$ to $t_0 + 10$. Similarly, the long-term performance model's full two-year event window ranges from t to T_{24} , generating approximately 500 individual daily expected returns.

3.3.1 Short-Term Reaction Model

In order to investigate *H1*, the abnormal return for the parent firm has to be estimated from the stock price reaction associated with spin-off decisions. Initially, the daily actual return for the parent firm, $r_{i,t}$, is calculated for each day in the event window, using an arithmetic return approach. Similarly, the expected return, derived from the above market model, is calculated for each day in the event window.

Measurement of Abnormal Returns

Abnormal return, $AR_{i,t}$, is given by subtracting the expected return $R_{i,t}$ from the actual return $r_{i,t}$ for each day in the event window. The sum of these abnormal returns, CAR_i , is the excess return attributable to the spin-off decision for firm i .

$$AR_{i,t} = r_{i,t} - R_{i,t} \quad (3)$$

$$CAR_i(t, T) = \sum_{t=1}^T AR_{i,t} \quad (4)$$

The average cumulative abnormal return for the full sample is denoted as $CAAR$. If $CAAR$ is significantly different from zero using statistical tests, the null hypothesis can be rejected, that spin-off announcements have no impact on shareholder wealth in terms of share price reaction.

$$CAAR(t, T) = \frac{1}{N} \sum_{i=1}^N CAR_i(t, T) \quad (5)$$

Statistical Testing

The methodology to test the significance of the empirical results against the hypotheses proceeds as follows:

The null hypothesis is set up to test the hypothesis statistically. It states that the cumulative abnormal return for each firm and for various intervals within the event window is hypothesized to be zero. Consequently, the average CAR for the full sample is tested if it deviates from zero.

$$H_0 = CAAR(t, T) = 0$$

$$H_1 = CAAR(t, T) \neq 0$$

Each firm's variance of abnormal returns is estimated from the 155-day estimation window, where $T_0 = -200$ denotes the start of the window and $T_1 = -45$ the last day. From there, the standard deviation for firm i can be derived, as shown in equation 6, in line with Brooks (2014).

$$\hat{\sigma}_{AR_i}^2 = \frac{1}{T_1 - T_0 - 2} \sum_{t=T_0}^{T_1} \hat{\varepsilon}_{i,t}^2 \quad (6)$$

$$\hat{\sigma}_{AR_i} = \sqrt{\hat{\sigma}_{AR_i}^2} \quad (7)$$

By dividing the abnormal return with the estimated standard deviation, a test-statistic can be obtained. An average test-statistic is calculated in (9) to test the significance of the overall sample. Further, the cumulated abnormal returns are tested similarly, but additionally standardized with the square root of event window days, as in equation 10 (Brooks, 2014).

$$t_{AR_i} = \frac{AR_{i,t}}{\hat{\sigma}_{AR_i}} \quad (8)$$

$$t_{AAR} = \frac{1}{N} \sum_{i=1}^N t_{AR_i} \quad (9)$$

$$t_{CAR_i(t,T)} = \frac{CAR_i(t, T)}{\hat{\sigma}_{CAR_i(t,T)}} = \frac{CAR_i(t, T)}{\sqrt{(T - t + 1)\hat{\sigma}_{AR_i}^2}} \quad (10)$$

$$t_{CAAR} = \frac{1}{N} \sum_{i=1}^N t_{CAR_i(t,T)} \quad (11)$$

3.3.2 Long-Term Performance Model

Aside from the short-term announcement reactions, the study examines how the shareholder wealth is affected by a spin-off decision presuming a buy-and-hold strategy up to two years following the distribution, hypothesized in *H2*. Previous studies have evaluated the value-weighted actual return of the spinoff-parent combination against the performance of comparable firms (Cusatis *et al.*, 1993). Here, the long-term actual returns are analyzed from three perspectives. First, the value-weighted actual return is calculated for the spinoff-parent combination over periods of 6, 12, 18 and 24 months after the completion date and compared to the original firms' market model expected return, as if the spin-off did not take place. This is the main benchmark used for *H2* & *Q2*, and serves to answer the question whether the buy-and-hold shareholder is better off from the spin-off restructuring or if remaining as the original unit would have been more valuable. Second, besides comparing the spinoff-parent combined return to the hypothetical original firm, it is also evaluated against an index benchmark. Meaning that it is compared to what the market has returned for the same set of time intervals, investment horizons more precisely. Third, the long-term performance of the spin-off and parent are evaluated separately, again using the index as benchmark. This way, the long-term analysis is finalized by proposing an ex-post investment strategy with portfolio selection based on evaluation of the both units' separate performance.

The return for each unit is calculated by weighting the two firms by their relative size, using relative market capitalization at the distribution date. This results in a weighted return representative to what an investor would have earned on the parent firm stock alone if the spin-off was still a subsidiary and not listed on its own. The calculations of relative market capitalization between the parent firm and spin-off proved to be unreliable, due to encountered difficulties in finding a consistent measure of market capitalization. The parents' and spin-offs' market value of equity on the completion day of the spin-off transaction diverged between the different databases. Therefore, to proxy relative market capitalization, the official distribution of acquisition cost determined by the Swedish Tax Agency was used. This measure corresponds to the change in the market value of the parent firm's shares that can be attributed to the dividend, the spun off subsidiary, paid out to its existing shareholders.

For each entity, the parent firm i and spun off subsidiary j , the T -month buy-and-hold return is calculated through daily accumulation starting from day $t = 1$ according to:

$$BHR_i(t, T) = \prod_{t=1}^T (1 + r_{i,t}) - 1 \quad (12)$$

$$BHR_j(t, T) = \prod_{t=1}^T (1 + r_{j,t}) - 1 \quad (13)$$

The T -month buy-and-hold return for a security is the product of its daily gross returns, contrary to the sum methodology employed in the CAR calculations, from time t to T , where $r_{i,t}$ is the daily logarithmic return for firm i at time t and T is the calendar period from date t (Brooks, 2014). The same methodology is independently applied to all time intervals, i.e. to measure the specific 6-, 12-, 18- and 24-month return.

Measurement of Abnormal Returns

The hypothetical T -month buy-and-hold abnormal return for firm i , as if the spin-off decision did not take place, is represented by the notation $BHAR_i(t, T)$. First, the parent firm and spin-off firm's actual buy-and-hold return from time t to T are calculated separately. Second, the two firm's respective buy-and-hold returns are weighted by their relative size, ρ , represented by their fraction of the market capitalization at the distribution date. Thereafter, the T -month buy-and-hold abnormal return is calculated by subtracting the estimated T -month buy-and-hold expected return for the original parent firm, obtained from the market model, from the weighted T -month buy-and-hold return.

$$BHAR_i(t, T) = \rho \prod_{t=1}^T (1 + r_{i,t}) + (1 - \rho) \prod_{t=1}^T (1 + r_{j,t}) - \prod_{t=1}^T (1 + R_{i,t}) \quad (14)$$

Similarly, another spinoff-parent combined T -month buy-and-hold abnormal return is calculated using an index benchmark, denoted $R_{m,t}$, rather than the market model. This return represents the wealth development of an existing shareholder in the parent firm, who decides to keep shares in both the spin-off and parent after the stock dividend, in relation to the market. The corresponding index buy-and-hold return is computed at the firm- and time interval level.

To evaluate whether either of the parent or the spin-off alone outperform the market portfolio after separation their respective buy-and-hold abnormal returns are estimated. The actual buy-and-hold return less the index buy-and-hold return is assessed at thresholds of 6, 12, 18 and 24 months after the ex-date for the parent and initial trading date for the spin-off.

Equations 15 and 16 below specify how the abnormal returns are calculated for the parent and spin-off respectively, where $R_{m,t}$ denotes the daily matched index return.

$$BHAR_i(t, T) = \prod_{t=1}^T (1 + r_{i,t}) - \prod_{t=1}^T (1 + R_{m,t}) \quad (15)$$

$$BHAR_j(t, T) = \prod_{t=1}^T (1 + r_{j,t}) - \prod_{t=1}^T (1 + R_{m,t}) \quad (16)$$

The average T -month buy-and-hold abnormal return is denoted $ABHAR(t, T)$. If $ABHAR$ is significantly different from zero using statistical tests, the null hypothesis can be rejected, that spin-off restructuring does not generate long-term abnormal returns.

$$ABHAR(t, T) = \frac{1}{N} \sum_{i=1}^N BHAR_i(t, T) \quad (17)$$

Statistical Testing

The long-term results are tested in a similar way as the short-term results. The abnormal return, defined as the value-weighted spinoff-parent combined buy-and-hold return in excess of the expected return, is expected to be zero under the null.

$$H_0 = ABHAR(t, T) = 0$$

$$H_1 = ABHAR(t, T) \neq 0$$

The standard deviation of abnormal buy-and-hold abnormal returns are first calculated across the sample, for each time period respectively. It is thereafter used for calculation of the test-statistic, and for each interval divided by the square root of number of months in the specific interval, n , in line with Lyon, Barber & Tsai (1999).

$$\hat{\sigma}_{BHAR(t,T)} = \sqrt{\frac{\sum_{i=1}^N (BHAR_i(t, T) - ABHAR(t, T))^2}{N - 1}} \quad (18)$$

$$t_{ABHAR(t,T)} = \frac{ABHAR(t, T)}{\hat{\sigma}_{BHAR(t,T)}/\sqrt{n}} \quad (19)$$

3.3.3 Sources of Abnormal Return Model

In an attempt to better understand the sources of value creation, hypothesized in *H3a* and *H3b*, the significant abnormal event date returns have been decomposed in a sample sorting procedure. A similar approach was used by Veld & Veld-Merkoulova (2004) among others. The sample firms are sorted with respect to the sorting variables size and whether the restructuring increases the corporate focus or not, which are characteristics believed to explain abnormal returns. The size factor, *large spin-off*, separates the spin-offs of above-average relative size from the ones below average relative size, where relative size describes the fraction of the parent that is spun off, approximated by the relative market capitalization at the time of separation. A *focus increasing spin-off* implies that the parent is restructuring to regain focus on its core business. This is approximated by industry classifications; where a focus increasing restructuring is defined by the spin-off being categorized within a different industry in the Industry Classification Benchmark (ICB) compared to the parent. A similar code methodology was used by Krishnaswami & Subramaniam (1999), Desai & Jain (1999) and Veld & Veld-Merkoulova (2004). The analysis is thereafter conducted by comparing the announcement date returns for each sub-group to determine whether the group-characteristic is associated with deviating returns from the comparison group.

4 Results and Analysis

The results and analysis is separated into two parts. In the results, the thesis' empirical results from each model are separately presented along with its corresponding statistical inference. The implications of the results, the relation to earlier research, and what it means to investors in terms of investment strategy follows in the analysis.

4.1 Results

The empirical results of the short-term announcement reactions, three different measures of long-term abnormal performance, and potential sources of abnormal returns are presented. The long-term study of firms associated with completed spin-offs firstly investigates the return of the spinoff-parent combination in relation to the expected return of the hypothetical original firm, using a market model methodology. Second, the same spinoff-parent combination return is compared to the return of the OMXSPI index. Third, the parent and spin-off returns are separately benchmarked against the OMXSPI index. The first measure attempts to provide basis for shareholder decision making regarding spin-offs, whereas the last two measures present evidence for external investors.

4.1.1 Short-Term Reaction Results

The hypothesis related to the short-term reaction, $H1$, states that spin-off decisions are associated with abnormal returns around the announcement date. This is tested through the null hypothesis that $AAR(t_0) = 0$ on the announcement date and $CAAR(t, T) = 0$ for selected intervals and over the entire event window. The empirical results for the various intervals within the event window is presented in Table 4.4 below.

Table 4.4 Abnormal Stock Returns for Parent Firms in the Event Window

	Interval					
	[0]	[-1,0]	[-1,1]	[-10,-1]	[1,10]	[-10, 10]
AAR & CAAR	2.82%	2.70%	2.93%	0.61%	-0.12%	3.30%
	(2.30**)	(1.66*)	(1.58)	(0.70)	(0.94)	(1.06)
Sample Size, n	48	48	48	48	48	48
Percent Positive	73%	75%	69%	48%	56%	71%

The significance of the means is tested using a t-statistic, presented in parentheses. **significance at the 5% level.

Results show that a clear majority, 73% of firms, experience positive abnormal returns on the event date when announcing its intention to spin off a subsidiary. The significance of the abnormal price reaction depends on the interval studied. The parents' abnormal return on the event date is on average 2.82%, which is significant at the 5% level. When the abnormal returns are cumulated over 3 days and 21 days around the event respectively, no significant abnormal returns are evident. Similarly, the returns in the pre- and post-event windows do not show evidence of being significantly impacted by the spin-off event. This suggests that the decision to divest a subsidiary through a spin-off is rewarded with a stock-price appreciation of 2.82% on the event date, a result obtained by chance with less than five percent probability. Consequently, the empirical results give confidence in rejecting the null hypothesis that spin-off decisions generate no abnormal returns.

4.1.2 Long-Term Performance Results

The null hypothesis $ABHAR(t, T) = 0$ is applied to test whether firms associated with completed spin-offs generate long-term abnormal returns from time t to T . It tests multiple holding periods independently, the spinoff-parent returns combined and separately, and with different benchmark returns. The results for the various buy-and-hold holding periods-and returns are presented in the tables in the section, and the results for the constant sample size approach are presented in Table 7.13 in the appendix.

Table 4.5 Buy-and-Hold Abnormal Returns for Spinoff-Parent Combination:
Market Model Approach

	Holding period			
	T ₆	T ₁₂	T ₁₈	T ₂₄
Mean Combined Return	-1.50%	-2.42%	2.60%	8.11%
Mean Expected Return	5.35%	9.93%	17.59%	27.69%
Mean Abnormal Return	-6.86%	-12.35%	-14.99%	-19.58%
	(-0.72)	(-1.16)	(-1.09)	(-1.11)
Sample Size, n	44	41	41	37
Percent Positive	39%	34%	32%	38%

The significance of the means is tested using a t-statistic, presented in parentheses. **significance at the 5% level.

The average combined entity's abnormal return is negative and non-significant regardless of the holding horizon investigated. A negative abnormal return indicates that the spin-off and parent perform worse separately than they would have done as a single entity. During the first six months, the combined return is 6.86% less than its expected return. The same type of trend is observed for the subsequent periods, resulting in a negative 19.58% abnormal return over 24 months. The distribution of abnormal returns is similar across the holding periods, with proportions of positive observations ranging between 32% and 39%.

The same portfolio returns are subsequently benchmarked against the Swedish market index to extend the analysis by providing historical portfolio performance estimates for external investors. The sample results in Table 4.6 show that an investor who stayed invested in a portfolio including both the parent- and spin-off stock after the separation historically earned negative abnormal returns compared to the Swedish stock market portfolio over the first year, but performed better in the following year. The 12-month holding period has the lowest abnormal return, negative 3.06%, while the highest abnormal return of 9.93% was earned after 24-months. The abnormal returns are however not significantly different from zero at any conventional levels, thereby weakening the results' applicability as basis for investment decision looking forward.

Table 4.6 Buy-and-Hold Abnormal Returns for Spinoff-Parent Combination:
Index Approach

	Holding period			
	T₆	T₁₂	T₁₈	T₂₄
Mean Combined Return	-1.50%	-2.42%	2.60%	8.11%
Mean Expected Return	0.69%	0.64%	-1.47%	-1.82%
Mean Abnormal Return	-2.19%	-3.06%	4.08%	9.93%
	(-0.24)	(-0.34)	(0.39)	(0.88)
Sample Size, <i>n</i>	44	41	41	37
Percent Positive	52%	44%	46%	57%

The significance of the means is tested using a t-statistic, presented in parentheses. **significance at the 5% level.

When the parent's and spin-off's buy-and-hold returns are separately evaluated against the returns of the Swedish market index, differences in abnormal returns are found, presented in Table 4.7. The parents have performed worse than the market during the first year, but outperformed the market by nearly ten percentage points over a two-year holding period. The spin-offs have generated returns in excess of the market return for all holding periods. None of the parent nor spin-off returns are significantly deviating from the index return. Hence, it is not statistically verifiable that the long-run performances are abnormal.

Table 4.7 Buy-and-Hold Abnormal Returns for Spin-Off and Parent Separately:
Index Approach

	Holding period			
	T₆	T₁₂	T₁₈	T₂₄
<i>Panel A: Parent</i>				
Mean Return	-4.48%	-3.68%	1.86%	7.88%
Mean Expected Return	0.69%	0.64%	-1.47%	-1.82%
Mean Abnormal Return	-5.17%	-4.32%	3.33%	9.70%
	(-0.44)	(-0.39)	(0.28)	(0.82)
Sample Size, <i>n</i>	44	41	41	37
Percent Positive	45%	39%	44%	57%
<i>Panel B: Spin-off</i>				
Mean Return	8.33%	5.79%	13.02%	21.10%
Mean Expected Return	3.04%	1.21%	-0.75%	0.32%
Mean Abnormal Return	5.29%	4.58%	13.77%	20.78%
	(0.44)	(0.40)	(1.04)	(1.28)
Sample Size, <i>n</i>	47	44	44	40
Percent Positive	57%	48%	55%	60%

The significance of the means is tested using a t-statistic, presented in parentheses. **significance at the 5% level.

4.1.3 Sources of Abnormal Return Results

Potential wealth determinants are traced in a sample sorting procedure. The results of the test designed to increase the understanding of potential value sources, are presented in Table 4.8. The firms that increased their corporate focus by spinning off the subsidiary to another industry generated lower average abnormal returns than their non-focus increasing counterparts.

Table 4.8 Abnormal Stock Returns for Parent Firms on Announcement Day

	Focus Increasing	Non-Focus Increasing	Large Spin-off	Small Spin-off
AAR	2.59% (2.40**)	2.94% (1.90*)	3.19% (2.44**)	2.48% (1.77*)
Sample Size, n	16	27	20	23
Percent Positive	69%	74%	75%	70%

The significance of the means is tested using a t-statistic, presented in parentheses.**significance at the 5% level.

Dividing the sample into firms that divested subsidiaries of either above or below the sample average relative size shows that the larger the fraction spun off, the larger the average abnormal return. More specifically, the group of firms who spun off the largest portion generated significant abnormal returns of 3.19%, 0.71 percentage points higher than the smallest spin-offs. The group of focus increasing spin-offs returned 2.59% with statistical significance, whereas the non-focus increasing spin-offs returned 2.94%.

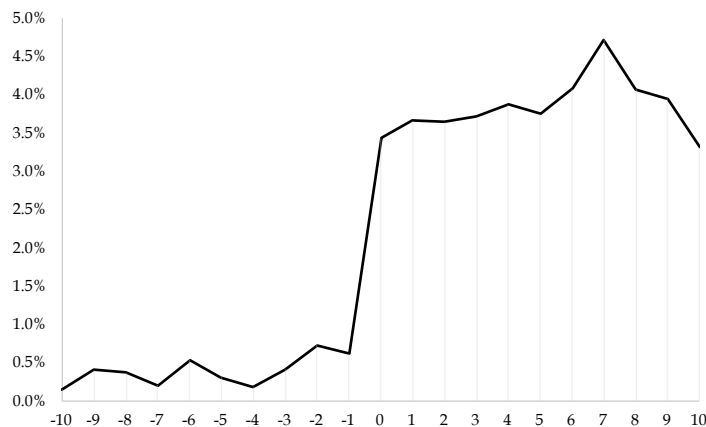
4.2 Analysis

Following decades of conglomerate building, and improved conditions for spin-offs after implementation of the Lex ASEA regulation, spin-offs have become a popular divestiture mode also in the Swedish market. *Theory* suggests that spin-offs are value creating by eliminating various diseconomies of scale, *reality* has in this Swedish research shown to be both supportive and non-supportive of such ideas.

The significant abnormal return of 2.82% found at announcement date are in line with previously reported results in the U.S. and European papers reviewed in the section for empirical evidence. Although results are significant exclusively for the most narrowly defined event windows, in contrast to other studies finding abnormal results also for wider windows, it confirms that a spin-off decision has a significant price impact. Hence, the immediate positive wealth effects from spin-off restructurings are shown to hold also for Swedish firms in a current time setting. The abnormal returns however strictly originates from the announcement date, as confirmed by the absence of significant abnormal returns reported in

the pre- and post-event windows, $[-10,-1]$ and $[1,10]$. This conclusion is supported by the steep increase of cumulative abnormal returns at the time t_0 , noticeable in Figure 2. In other words, the days prior to and after announcement are not associated with any significant abnormal price reactions, implying that information leakages are inessential and that pricing occurs immediately and efficiently at the time of announcement, in line with the semi-strong form of the efficient market hypothesis.

Figure 2. Cumulative Average Abnormal Return (CAAR) in the Event Window



The announcement reaction is of comparable size to what numerous U.S. studies found, presented in Table 2.1. The European sample study by Veld & Veld-Merkoulova (2004) is particularly interesting because of the three-day *CAAR* findings of 2.62%, comparable to the 2.93% observed in this research setting. Their one-day abnormal return of 1.19% was however notably lower than the 2.82% found here. Together this suggests that the reaction is of similar magnitude, but captured into the stock price more efficiently around the event date in this current research. Veld & Veld-Merkoulova's (2004) insignificant reaction results for the Swedish sub-sample is contrasted by the significant announcement reaction found here. This discrepancy is not unexpected as the studies covers two non-overlapping sampling periods, where the prior one clearly includes negative outliers and divestments in a pre-Lex ASEA environment.

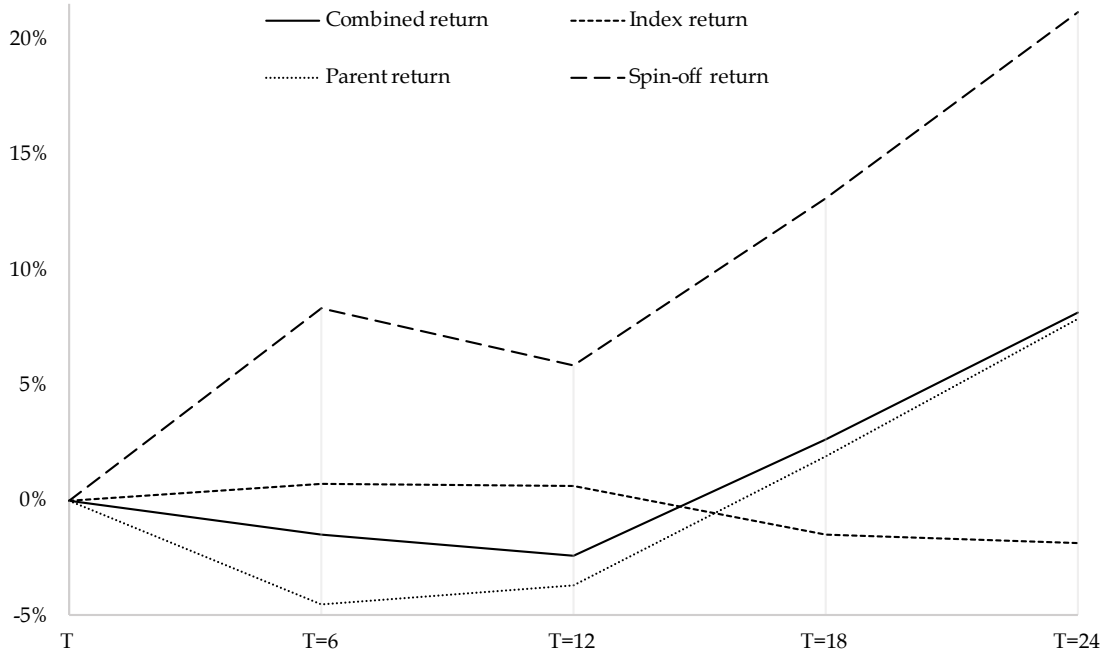
When extending the investment horizon, no significant evidence of long-term superior performance for neither the parent, spin-off nor the spinoff-parent combination were found. This result is in line with comparable research conducted in the U.S. and Europe, although early U.S. research by Cusatis *et al.* (1993) and Desai & Jain (1999) have shown evidence of spin-offs, parents and spinoff-parent combinations outperforming their benchmarks. The results found in the recent European papers by Veld & Veld-Merkoulova (2004) and Sudarsanam & Qian (2007) have obvious similarities with the results for this Swedish sample.

First, there are no evidence of significant outperformance for any of the entities and combinations. Second, the spinoff-parent combined return is abnormally negative during the first year, but turn positive during the second year. Third, the parents have performed worse than their benchmark during the first year, but outperformed from there on. The positive six-month result of 3.9% found by Veld & Veld-Merkoulova (2004) is the single exception, but the methodology is somehow questionable as they used significantly different sample sizes for each holding period. Fourth and lastly, the spin-offs have consistently yielded abnormal returns in the long term and belonging sub-intervals.

The thesis' empirical results are inconclusive with regard to providing future parent shareholders basis for a spin-off restructuring decision. The market model was designed to enable the analysis of the combined actual return to the hypothetical return of the original firm, as if the spin-off did not take place. The expected return obtained from this methodology was arguably too high, which can be attributed to the daily compounding of the alpha value under the buy-and-hold approach. The sample average two-year expected return is approximately 30% higher than the index benchmark, making the two-year abnormal return -19.58% as opposed to 9.93%. The results indicate that spin-off restructurings generate negative abnormal returns for the conglomerate shareholders and therefore they should not vote for a spin-off ex-ante. However, the abnormal returns obtained using the index approach make the market model methodology and its result more questionable because of the strong influence from the estimation period on the expected return.

Figure 3 shows the historical stock price development of the parent, spin-off, spinoff-parent portfolio, and the Swedish market index from time t up to two years after the separation. The stock performance of the combined entity is dominantly driven by the return of the parent, as the sample average spin-off accounted for 25.2% of the total market capitalization. The parent stock performed poorly during the first year, but investor recovered their initial investment after 18 months. As a result, a long investment strategy in a portfolio containing both the spin-off stock and parent stock, or only the parent stock, generated negative return relative to index performance in the first year, but positive return over an 18-month and 24-month holding period. The superior single investment, although not statistically significant, appeared to be a long investment in only the spin-off stock, as it outperformed the index by 20.78 percentage points over the first two years after its listing. The magnitude of this abnormal return was similar to earlier European research, who found 13.7% and 17.5% respectively.

Figure 3. Buy-and-Hold Raw Returns for Spin-Off, Parent, Spinoff-Parent Combination and Index Benchmark



As the parent stock remunerate investors with a significant 2.82% return on the announcement day, and non-significant 3.30% return over 21-days around the event, investing in companies who are likely to spin-off a subsidiary would have been a profitable investment strategy ex-post. With respect to past announcement return and long-term performance of all entities, an investor should have bought a potential spin-off, earned the announcement reaction return, held the parent stock until its rights to the spin-off stock dividend expired, sold the parent stock on the ex-dividend date, invested the proceeds from the sale in additional spin-off shares, and remained long the spin-off stock two years following its listing. Following this argumentation, investment vehicles exposed to spin-offs such as spin-off funds or ETFs would likewise have been more attractive than a corresponding index investment during this period. However, as none of the entities' long-term returns are significantly abnormal, they should serve as empirical description of past performance and hence not as an investment strategy statistically ensuring superior returns in the future. The proposed investment strategy has generated abnormal returns on average, and it is up to each and every investor's risk preference to decide if this is sufficient evidence to invest or not.

The results from the sample sorting procedure supports the expected positive impact from divesting larger portions, as the group of firms who spun off subsidiaries of above-average relative size generated significant abnormal returns exceeding the comparison group by 0.71 percentage points. The larger the fraction spun off, the larger the announcement

abnormal return, which is in line with theory and earlier U.S. and European evidence. The group of focus increasing firms have returned lower significant abnormal returns than the non-focus increasing group. Therefore, cross-industry divestments show an opposite impact to the theoretical idea that larger abnormal returns can be expected when the subsidiary is spun off to another industry, *ceteris paribus*. Prior research by Veld & Veld-Merkoulova (2004) arrived with negative cross-industry coefficient in a long-term OLS-regression. It is however more surprising that the abnormal price reaction for focus increasing spin-offs are lower than non-focus increasing spin-offs at announcement, as divesting an unrelated business is arguably the main idea behind the restructuring.

5 Conclusions

Consistent evidence of how shareholders evaluate proposed spin-off restructurings have emerged after frequent research on spin-off announcements, mainly conducted on U.S. listed firms. If the abnormal returns persist in the long run is less clear cut, simultaneously serving as an evaluation of market efficiency. Comprehensive analysis of what conditions Swedish spin-offs can expect, is however relatively undiscovered so far.

This study confirms that the immediate spin-off wealth effects previously documented in other markets are also evident in the Swedish markets. Since the start of the new millennium, spin-off transactions fulfilling the Lex ASEA criteria for tax-exempt stock dividends, i.e. pure spin-offs, have on average been rewarded with a stock-price appreciation of 2.82% on the announcement date. A reaction significantly attributable to the positive restructuring effects expected by investors. This reaction closely originates from the announcement date, with neither insignificant information leakages nor prolonged pricing.

Long-term investigations covering a two-year period after the transaction date suggests that neither parents, spin-offs nor portfolios of post separation spinoff-parent combinations outperform benchmark returns at conventional statistical levels. The absence of significant abnormal returns give support to what can be expected from the semi-strong form of market efficiency over longer horizons. For investing purposes however, the spin-offs have generated abnormal returns of 20.78 percentage points over a two-year holding period following the separation, while the parents' abnormal returns were approximately 10 percentage points lower than the spin-offs' in all 6-months subintervals. When the value-weighted spinoff-parent combined returns are evaluated against an expected return of the hypothetical original firm, the combined entity generates negative abnormal returns, thereby providing no indication of shareholders benefiting from a spin-off restructuring in the long-run.

Further, the understanding of the short-term and long-term performance are extended by an analysis of the sources of spin-off value creation. Although a multitude of factors certainly impacts investor expectations and hence the price reaction, investigation of two potential determinants of abnormal returns suggest that large and non-focus increasing spin-offs are associated with larger abnormal returns. The part of the sample that divests the largest fraction have generated significant abnormal returns of 3.19% compared to 2.48% for the smallest spin-offs, and focus increasing spin-offs returned 2.59%, a stock price reaction 0.35 percentage points lower than announcements of non-focus increasing spin-offs.

Finally, a translation of this newly found evidence into an investment-strategy can be designed based on the following positions. Investors should screen the Swedish market for firms likely to spin off a subsidiary, buy the parent stock, and earn the significant announcement reaction return. Then, sell the parent stock on the ex-dividend date, i.e. once its right to the dividend of the spin-off stock has expired, invest the proceeds from the sale in additional spin-off shares, and hold the spin-off stock two years following its listing.

Suggestions for Future Research

Spin-offs have become a common corporate restructuring strategy, and the phenomena can undergo further well-needed investigation as the number of completed transactions extend the available dataset. So far, the lion's share of research have focused on the price reactions at announcement of the spin-off decision, and the results are relatively agreed upon. Less investigated is the long-term performance of spin-offs and the parent units. There is room for more research on this topic, especially in relating the long-term performance to relevant benchmarks such as matching firms, or most preferably, to the hypothetical original firm as this study sets off to discover. Continuing this approach with refined methodologies, would provide existing shareholders with general decision basis in the crossroad of a spin-off.

Moreover, the explanatory variables behind the consistently found abnormal returns need further investigation. Positive reactions on declared spin-off intentions reasonably have multiple explanations, and sophisticated multiple regression analysis can possibly improve the understanding of the true wealth determinants. This research area should be emphasized after times with research primarily based on stock price performance.

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7 Appendix

Table 7.9 Sample Description

Year	Parent	Spin-off	Relative Size	Cross Industry	Spin-off Reaction	T ₆	T ₁₂	T ₁₈	T ₂₄
1999	Bure Equity AB	Capio AB	30.0%	✓	✓	✓	✓	✓	✓
2000	G&L Beijer AB	Beijer Electronics AB	53.0%		✓	✓	✓	✓	✓
2000	Investment AB Öresund	TMT One	18.0%	✓	✓	✓	✓	✓	✓
2000	AssiDomän AB	Billerud AB	8.0%		✓	✓	✓	✓	✓
2001	Industriförvaltnings AB Kinnevik	Transcom WorldWide	9.0%		✓	✓	✓	✓	✓
2001	Teleca AB	Epsilon AB	9.0%		✓	✓	✓	✓	✓
2001	Teleca AB	Sigma AB	19.1%			✓	✓	✓	✓
2001	Bergman & Beving AB	Addtech AB	35.0%		✓	✓	✓	✓	✓
2001	Bergman & Beving AB	Lagercrantz Group	27.0%			✓	✓	✓	✓
2001	HQ.SE Holding AB	HQ.SE Fonder AB	49.0%		✓	✓	✓	✓	✓
2001	Atle AB	Studsvik AB	4.0%	✓	✓	✓	✓	✓	✓
2001	Lundin Oil AB	Lundin Petroleum AB	12.0%		✓	✓	✓	✓	✓
2003	Fabege AB	Bostadsaktiebolaget Drott	24.0%		✓	✓	✓	✓	✓
2004	ITAB Industrier AB	ITAB Shop Concept AB	48.0%		✓	✓	✓	✓	✓
2004	Poolia AB	Uniflex AB	14.0%		✓	✓	✓	✓	✓
2004	Fabege AB	Wihlborgs Fastigheter AB	15.0%		✓	✓	✓	✓	✓
2004	Gunnebo AB	Gunnebo Industrier AB	16.0%		✓	✓	✓	✓	✓
2005	Kinnevik Investment AB	Invik & Co. AB	11.0%		✓	✓	✓	✓	✓
2005	Fastighets AB Balder	Enlight International AB	52.0%	✓	✓	✓	✓	✓	✓
2005	Bilia AB	Catena AB	22.0%	✓	✓	✓	✓	✓	✓
2005	Betsson AB	Net Entertainment	22.0%		✓	✓	✓	✓	✓
2006	Securitas AB	Securitas Direct AB	11.0%	✓	✓	✓	✓	✓	✓
2006	Securitas AB	Securitas Systems AB	18.0%			✓	✓	✓	✓
2006	Securitas AB	Loomis AB	10.0%			✓	✓	✓	✓
2006	Electrolux AB	Husqvarna AB	45.0%		✓	✓	✓	✓	✓
2006	Scribona AB	Carl Lamm	39.0%	✓	✓	✓	✓	✓	✓
2006	Westergyllen AB	Forshem Group AB	64.0%	✓	✓	✓	✓	✓	✓
2006	Peab AB	Peab Industri AB	32.0%		✓	✓	✓	✓	✓
2008	Hexagon AB	Hexpol AB	6.0%	✓	✓	✓	✓	✓	✓
2008	Cloetta Fazer AB	Cloetta AB	4.7%		✓	✓	✓	✓	✓
2010	Lundin Petroleum AB	EnQuest Plc	21.0%		✓	✓	✓	✓	✓
2010	Modern Times Group AB	CDON Group AB	4.0%		✓	✓	✓	✓	✓
2010	Haldex AB	Concentric AB	39.0%	✓	✓	✓	✓	✓	✓
2010	Intoi AB	Deltaco AB	45.0%		✓	✓	✓	✓	✓
2011	Poolia AB	Dedicare AB	16.0%	✓	✓	✓	✓	✓	✓
2012	Vitrolife AB	Xvivo Perfusion AB	23.0%		✓	✓	✓	✓	✓
2013	XANO Industri AB	AGES Industri	49.0%	✓	✓	✓	✓	✓	✓
2014	Unibet Group Plc	Kambi Group Plc	6.5%		✓	✓	✓	✓	✓
2014	Header Compression Sweden	Effnetplattformen AB	47.0%		✓	✓	✓	✓	✓
2015	NCC AB	Bonava AB	35.0%	✓	✓	✓	✓	✓	
2015	DistIT AB	Alcadon Group AB	30.0%	✓	✓	✓	✓	✓	
2016	BioGaia AB	Infant Bacterial Therapeutics	0.9%		✓	✓	✓	✓	
2016	Addtech AB	AddLife AB	16.0%	✓	✓	✓	✓	✓	✓
2016	NGEx Resources Inc.	Filo Mining Corp.	13.0%		✓	✓	✓	✓	
2016	SCA	Essity AB	79.5%	✓	✓	✓			
2017	Atlas Copco AB	Epiroc AB	-	-	✓				
2017	Lundin Petroleum AB	International Petroleum Corp.	7.5%		✓	✓			
2017	Bergman & Beving AB	Momentum Group AB	33.0%		✓	✓			
2017	Autoliv AB	Veoneer AB	-	-	✓				
2017	Hemfosa Fastigheter AB	Nyfosa AB	-	-	✓				
2017	Getinge AB	Arjo AB	17.0%		✓				
2018	Modern Times Group AB	Nordic Entertainment Group	-	-	✓				
			25.2%	16	48	47	44	44	40

Table 7.10 Parent Buy-and-Hold Return

Parent	Year	T ₆	T ₁₂	T ₁₈	T ₂₄
Addtech AB	2016	3.30%	12.48%	12.52%	44.33%
AssiDomän AB	2000	2.28%	2.28%	2.28%	2.28%
Atle AB	2001	1.25%	1.25%	1.25%	1.25%
Bergman & Beving AB	2001	-13.75%	-3.81%	-18.01%	-8.29%
Bergman & Beving AB	2017	-41.43%			
Betsson AB	2005	103.23%	76.17%	85.95%	139.05%
Bilia AB	2005	-35.49%	-10.8%	-32.71%	-50.99%
BioGaia AB	2016	9.78%	31.40%	28.9%	
Bure Equity AB	1999	-29.11%	-66.06%	-59.91%	-89.42%
Cloetta Fazer AB	2008	-0.79%	-0.79%	-0.79%	-0.79%
DistIT AB	2015	10.77%	-10.99%	-16.00%	
Electrolux AB	2006	40.79%	69.36%	8.27%	-24.11%
Fabege AB	2003	9.79%	55.30%	24.42%	45.80%
Fabege AB	2004	-4.1%	-0.36%	14.36%	13.21%
Fastighets AB Balder	2005	-20.08%	-29.2%	-0.88%	-15.47%
G&L Beijer AB	2000	-21.36%	-21.36%	-11.06%	-16.15%
Gunnebo AB	2004	-1.73%	1.96%	-6.82%	3.08%
Haldex AB	2010	-86.23%	-67.41%	-68.97%	-59.07%
Header Compression Sweden	2014	2.75%	-0.25%	7.60%	21.62%
Hexagon AB	2008	-70.65%	-57.46%	-39.2%	-42.19%
HQ.SE Holding AB	2001	-17.09%	-34.28%	-33.09%	-34.17%
Industriförvaltnings AB Kinnevik	2001	-29.6%	-62.02%	-59.17%	-21.96%
Intoi AB	2010	-7.43%	47.49%	60.61%	55.30%
Investment AB Öresund	2000	-5.99%	-4.99%	14.10%	-1.77%
ITAB Industrier AB	2004	-10.47%	2.81%	9.82%	54.83%
Kinnevik Investment AB	2005	46.58%	16.64%	84.37%	73.04%
Lundin Oil AB	2001	-14.98%	-14.98%	-14.98%	-14.98%
Lundin Petroleum AB	2010	6.49%	68.28%	102.84%	100.50%
Lundin Petroleum AB	2017	2.19%			
Modern Times Group AB	2010	-20.23%	-42.45%	-44.54%	-60.97%
NCC AB	2015	7.82%	20.7%	-16.84%	
NGEx Resources Inc.	2016	14.18%	-36.24%	-21.88%	
Peab AB	2006	-22.99%	-52.81%	-74.98%	-54.83%
Poolia AB	2004	9.98%	20.57%	58.01%	82.47%
Poolia AB	2011	-55.57%	-60.75%	-68.96%	-68.14%
SCA	2016	29.58%			
Scribona AB	2006	-46.54%	-50.27%	-54.38%	-49.76%
Securitas AB	2006	11.74%	-14.74%	-22.15%	-19.35%
Securitas AB	2006	39.99%	-38.20%	-31.35%	28.86%
Teleca AB	2001	-15.86%	-13.65%	-13.27%	-6.38%
Unibet Group Plc	2014	34.07%	53.50%	142.46%	119.45%
Vitrolife AB	2012	11.59%	50.63%	91.16%	175.42%
Westergyllen AB	2006	8.62%	36.10%	48.72%	-30.21%
XANO Industri AB	2013	-32.36%	-23.98%	-11.40%	0.08%
Average		-4.48%	-3.68%	1.86%	7.88%

Table 7.11 Spin-Off Buy-and-Hold Return

Spin-off	Year	T ₆	T ₁₂	T ₁₈	T ₂₄
AddLife AB	2016	38.79%	56.24%	53.19%	64.70%
Addtech AB	2001	-13.33%	-33.95%	-48.43%	-31.39%
AGES Industri	2013	-24.79%	-10.25%	-23.63%	-31.82%
Alcadon Group AB	2015	36.07%	46.57%	45.01%	
Beijer Electronics AB	2000	-23.41%	-16.04%	-32.52%	-38.31%
Billerud AB	2000	75.39%	65.52%	60.46%	80.11%
Bonava AB	2015	17.64%	40.22%	8.25%	
Bostadsaktiebolaget Drott	2003	8.49%	8.49%	8.49%	8.49%
Capio AB	1999	24.39%	-8.08%	12.64%	-21.08%
Carl Lamm	2006	14.82%	13.80%	24.02%	15.93%
Catena AB	2005	-1.42%	17.73%	14.90%	7.54%
CDON Group AB	2010	6.71%	-2.56%	2.50%	-8.73%
Cloetta AB	2008	33.93%	51.06%	84.76%	85.99%
Concentric AB	2010	-1.15%	26.45%	30.64%	66.12%
Dedicare AB	2011	12.31%	46.88%	52.69%	-9.02%
Deltaco AB	2010	-31.60%	-24.22%	-21.80%	-7.37%
Effnetplattformen AB	2014	5.20%	5.14%	49.82%	45.96%
Enlight International AB	2005	-24.47%	-57.63%	-83.17%	-90.11%
EnQuest Plc	2010	15.21%	20.89%	-21.40%	3.44%
Epsilon AB	2001	-57.11%	-50.24%	-81.03%	-78.17%
Essity AB	2016	-3.51%			
Filo Mining Corp.	2016	69.96%	39.64%	39.97%	
Förshem Group AB	2006	25.69%	-27.37%	-43.12%	-89.53%
Gunnebo Industrier AB	2004	27.38%	51.18%	81.41%	103.80%
Hexpol AB	2008	-75.62%	-60.54%	-29.49%	-8.83%
HQ.SE Fonder AB	2001	-16.28%	-14.34%	-15.70%	-24.22%
Husqvarna AB	2006	21.44%	17.18%	-14.42%	-34.98%
Infant Bacterial Therapeutics	2016	-17.35%	-24.14%	63.89%	
International Petroleum Corp.	2017	5.35%			
Invik & Co. AB	2005	55.48%	75.85%	133.70%	208.24%
ITAB Shop Concept AB	2004	23.36%	80.37%	99.91%	111.41%
Kambi Group Plc	2014	104.30%	93.97%	183.17%	221.67%
Lagercrantz Group	2001	-8.01%	-47.07%	-57.75%	-46.26%
Loomis AB	2006	26.80%	28.02%	15.31%	43.17%
Lundin Petroleum AB	2001	-19.94%	18.99%	46.89%	175.03%
Momentum Group AB	2017	42.29%			
Net Entertainment	2005	12.97%	36.25%	80.13%	172.09%
Peab Industri AB	2006	-8.91%	-31.83%	-61.06%	-61.06%
Securitas Direct AB	2006	3.44%	-1.83%	34.38%	36.96%
Securitas Systems AB	2006	-15.11%	-16.80%	-41.62%	-70.08%
Sigma AB	2001	34.65%	-80.59%	-78.69%	-77.75%
Studsvik AB	2001	-27.61%	-16.44%	-27.07%	-11.95%
TMT One	2000	-8.56%	-17.40%	-10.37%	-25.22%
Transcom WorldWide	2001	10.54%	-43.91%	-50.00%	-13.41%
Uniflex AB	2004	9.41%	30.40%	63.56%	136.10%
Wihlborgs Fastigheter AB	2004	4.57%	-63.26%	-55.83%	-53.99%
Xvivo Perfusion AB	2012	3.35%	32.47%	80.52%	90.50%
Average		8.33%	5.79%	13.02%	21.10%

Table 7.12 Announcement Reaction

Parent	Year	Day 0 AR [0]	3-day CAR [-1,1]	21-day CAR [-10, 10]
Bure Equity AB	1999	0.33%	-0.29%	3.32%
G&L Beijer AB	2000	12.65%	10.03%	27.99%
Investment AB Öresund	2000	1.42%	3.37%	4.65%
AssiDomän AB	2000	-2.28%	-1.50%	17.98%
Industriförvaltnings AB Kinnevik	2001	5.40%	5.59%	25.05%
Teleca AB	2001	-1.79%	-8.02%	0.74%
Bergman & Beving AB	2001	4.21%	4.64%	10.13%
HQ.SE Holding AB	2001	3.02%	3.33%	12.45%
Atle AB	2001	19.41%	22.96%	24.52%
Lundin Oil AB	2001	2.73%	1.58%	-13.40%
Fabege AB	2003	-0.18%	-0.67%	7.69%
ITAB Industrier AB	2004	1.71%	2.94%	-4.76%
Poolia AB	2004	0.04%	-0.01%	0.54%
Fabege AB	2004	0.94%	3.94%	3.65%
Gunnebo AB	2004	1.33%	6.51%	6.32%
Kinnevik Investment AB	2005	-1.83%	0.26%	-0.36%
Fastighets AB Balder	2005	4.02%	-0.03%	11.00%
Bilia AB	2005	-0.88%	6.34%	-8.42%
Betsson AB	2005	11.31%	10.22%	12.25%
Securitas AB	2006	9.31%	7.60%	5.53%
Electrolux AB	2006	3.43%	2.73%	2.06%
Scribona AB	2006	1.71%	0.59%	-7.77%
Westergyllen AB	2006	-1.54%	4.10%	-4.59%
Peab AB	2006	4.72%	6.09%	10.91%
Hexagon AB	2008	-0.88%	-1.22%	-16.42%
Cloetta Fazer AB	2008	17.79%	13.83%	16.14%
Lundin Petroleum AB	2010	1.81%	2.04%	7.25%
Modern Times Group AB	2010	1.44%	2.32%	0.30%
Haldex AB	2010	0.55%	-2.80%	5.60%
Intoi AB	2010	8.61%	8.52%	17.62%
Poolia AB	2011	0.70%	-15.59%	-31.63%
Vitrolife AB	2012	0.99%	1.25%	1.66%
XANO Industri AB	2013	-2.04%	-2.28%	4.48%
Unibet Group Plc	2014	0.06%	2.61%	3.96%
Header Compression Sweden	2014	9.08%	15.53%	15.21%
NCC AB	2015	-5.18%	-6.58%	4.47%
DistIT AB	2015	4.27%	1.02%	6.34%
BioGaia AB	2016	-3.66%	-6.55%	-23.22%
Addtech AB	2016	3.41%	5.40%	6.77%
NGEx Resources Inc.	2016	-2.75%	2.95%	9.74%
SCA	2016	6.89%	6.08%	1.08%
Atlas Copco AB	2017	0.71%	-1.79%	-2.44%
Lundin Petroleum AB	2017	0.74%	-0.17%	-9.79%
Bergman & Beving AB	2017	-0.10%	5.89%	-12.64%
Autoliv AB	2017	10.97%	11.68%	12.60%
Hemfosa Fastigheter AB	2017	5.65%	8.14%	6.81%
Getinge AB	2017	-7.00%	-2.25%	-5.31%
Modern Times Group AB	2018	4.00%	0.09%	-7.41%
Average		2.82%	2.93%	3.30%

Table 7.13 Buy-and-Hold Abnormal Returns for Fixed Sample

	Holding period			
	T₆	T₁₂	T₁₈	T₂₄
	<i>Panel A: Combined</i>			
Mean Combined Return	-3.77%	-3.31%	3.35%	9.41%
Mean Expected Return	5.37%	9.40%	17.34%	27.69%
Mean Abnormal Return	-9.14%	-12.71%	-13.99%	-18.28%
	(-0.94)	(-1.14)	(-0.98)	(-1.03)
Sample Size, <i>n</i>	37	37	37	37
Percent Positive	38%	35%	35%	43%
	<i>Panel B: Parent</i>			
Mean Return	-6.22%	-4.21%	2.76%	7.88%
Mean Expected Return	0.00%	-0.71%	-3.27%	-1.82%
Mean Abnormal Return	-6.21%	-3.50%	6.03%	9.70%
	(-0.51)	(-0.31)	(0.49)	(0.82)
Sample Size, <i>n</i>	40	40	40	40
Percent Positive	41%	41%	46%	57%
	<i>Panel C: Spin-off</i>			
Mean Return	6.03%	3.81%	10.40%	21.10%
Mean Expected Return	2.78%	-0.07%	-2.36%	0.32%
Mean Abnormal Return	3.25%	3.88%	12.76%	20.78%
	(0.27)	(0.33)	(0.93)	(1.28)
Sample Size, <i>n</i>	37	37	37	37
Percent Positive	53%	45%	53%	60%

The significance of the means is tested using a t-statistic, presented in parentheses. **significance at the 5% level.