Norwegian School of Economics
Bergen, Autumn 2021

Corporate Spin-offs

An empirical study of shareholder value creation through corporate spin-offs on the Nordic stock exchanges

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Master thesis, MSc in Economics and Business Administration, Finance

NORWEGIAN SCHOOL OF ECONOMICS

Abstract

In this thesis we examine short- and long-term shareholder value creation associated with Nordic corporate spin-offs from January 1, 1998 to July 31, 2021. We perform an event study on a sample of 119 spin-off announcements. The main objective is to determine if spin-off announcements have a significant positive impact on the market valuation of the firms. Furthermore, we create calendar-time portfolios returns regressed against the Fama-French three factor model to control for long-term value creation. The long-term sample consists of 52 parent- and spin-off firms for a period of 6-, 12-, 18- and 24-months. In addition, we test for the following value creating factors information asymmetry, corporate focus and relative size of the spin-off both at the announcement date and long-term.

Our results show that Nordic spin-offs generate a cumulative average abnormal return of 2.27% from the day prior to the day after the announcement. The result is statistically significant at the 1% level. This is in-line with previous European and US studies on spin-offs. We do not find statistically significant results at the 1% level with respect to information asymmetry, corporate focus and relative size at announcement.

We find no evidence on shareholder value creation from corporate spin-off over a 24-month period. The abnormal returns are not statistically significant for any periods. The previous European study also show no evidence of long-term abnormal returns from spin-offs. Furthermore, the three value creating factors information asymmetry, corporate focus and relative size do not yield statistically significant abnormal return at the 1% level for any of the periods.

Preface

This thesis is written as a part of our Master's degree in Financial Economics the Norwegian School of Economics.

The thesis work has been both educational and challenging throughout the process. We have applied knowledge from previous research as well as courses taught at NHH in this thesis. In the process, we have expanded our understanding within corporate finance and more specifically corporate spin-offs. In sum the study has given us valuable experience which will be useful for future work.

We would like to thank Associate Professor Konrad Raff for his work as our supervisor on this thesis. He has provided us with invaluable feedback and guidance on our thesis. We would also express our thanks to family and friends for the support provided on the thesis.

Norwegian School of Economics

Bergen, December 2021

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Abbreviations	
AR	Abnormal Return
AAR	Average Abnormal Return
BHAR	Buy-and-Hold Abnormal Return
CAAR	Cumulative Average Abnormal Return
CAR	Cumulative Abnormal Return
FF3	Fama-French Three Factor
HML	High-Minus-Low
IBES	Institute of Brokerage for Investment Services
IPO	Initial Public Offering
$MCap_P$	Market Capitalization Parent
$MCap_S$	Market Capitalization Spin-off
NAICS	North American Industry Classification System
NPV	Net Present Value
OBX	Oslo Stock Exchange
OLS	Ordinary Least Square
OMXH25	Helsinki Stock Exchange
OMXS30	Stockholm Stock Exchange
SDC	Securities Data Company
SIC	Standard Industry Classification
SMB	Small-Minus-Big
USD	United States Dollar
US	United States

1. Introduction

This thesis investigates shareholder value creation associated with Nordic corporate spin-offs. We investigate the value creation on the announcement of the spin-off and a period of two years following the listing of the spin-off subsidiary. In this section we present background and motivation for this thesis, our main research question and the structure of this paper.

Between 1960 and 1980 there was a period of conglomeration and diversification in European and US financial markets (Shleifer and Vishny, 1991). During this period, firms bought unrelated businesses to increase scale and diversify income streams. This led to an increase of mid- to large size conglomerates. As this activity reinforced stock prices and generated shareholder returns, investors were willing to pay a premium – the "conglomerate premium" for such firms.

In the following period from the 1980s, conglomerates faced complex challenges from managing all the different business units they had bought in the previous period (Davis et al, 1994). As a result, the "conglomerate premium" quickly became a conglomerate discount. This discount reflected that different business units were more valuable separately. A reinforcing factor is that the financial markets in the period became more open and accessible. This gave investors the opportunity to diversify their portfolio with several individual pure play businesses, instead of getting diversification through buying conglomerates (Davis et al, 1994). This change in fate for conglomerates, now trading at a discount, led to an increase of divestitures in both related and unrelated businesses. (Davis et al, 1994). As a result, corporate spin-offs were high on the agenda for conglomerates and large business units. The increased recognition of spin-offs as a divestment alternative after the 1980s makes it an interesting topic for a master thesis.

The increased recognition of corporate spin-offs led to increased studies on the topic in the US. In Europe the recognition of the topic increased in the early 2000s. This paper contributes to the growing literature of this topic. To the best of our knowledge there has not been conducted studies on the shareholder value creation associated with Nordic spin-offs. The differences in characteristics for the Nordic region compared to the US and Europe could therefore yield different results.

The motivation to investigate the Nordic financial markets are the shared characteristics within the Nordic countries. First and foremost, the financial systems in the Nordics are known for their stability. Secondly, the countries have a high living standard and low-income disparity, as well as social similarities with free healthcare, education and guaranteed pension payments. Furthermore, the countries are small and open economies with a high level of trade between the countries (Mjøset, 2009). The countries except Norway have similar stock exchange rules as they are a part of the Nasdaq Nordic. On the other hand, there are some differences in sectors and industry composition in the Nordic countries. Norway is relatively large in asset heavy offshore industries like the oil-, gas- and shipping sector. Finland has a large proportion of firms in the industrial, materials and technology sector. While Sweden is big in the financial-, industrial- and technology sector. Lastly, the health-care sector is the dominate sector in Denmark.

Denmark is excluded from the study due to too small sample size of four announced spin-offs. This will most likely yield invalid results when examining Denmark due to small sample bias. The value creation associated with spin-off will therefore be investigated for the three countries Norway, Sweden and Finland.

The shareholder value creation is through ownership restructuring. Spin-off is an appropriate separation method if the management finds the division undervalued because the value creation goes solely to the shareholders. The reason is that there is no cash inflow to the firm in spin-offs. The separation of the firms leads to an improvement in accuracy of the information for the two separate listed firms. Following the spin-off subsidiary becomes an independent listed firm with its employees, assets, management, products and technology. Furthermore, the improvement in managerial efficiency could also lead to better investments decisions through improved capital allocation and corporate focus. The result of these factors could lead to greater market value for the separate firms compared to one consolidated unit. Our main research question is based on the background and motivation:

Do Nordic corporate spin-offs create shareholder value?

To answer our research question, we investigate the value creating factors for short- and long term. The research question is investigated from a passive investor which holds the initial investment from spin-off announcement and two-year following the listing of the spin-off subsidiary. The short-term shareholder value creation is investigated at and around the

announcement day of corporate spin-off through a multiple event study. We test if there is a significant abnormal return on and around the announcement day. The investigation of the long-term shareholder value creation is measured on a Fama-French three factor regression for a period of 6-, 12-, 18- and 24-month. Performance is measured separately for parent, spin-off subsidiary and proforma portfolios. Additionally, for both the short- and long-term effect we investigate several factors that could explain the increase in shareholder value. The factors are corporate focus, information asymmetry and relative size of the spun-off subsidiary.

This thesis is structured in the following way: **Section 2 Literature** presents the definition and empirical studies conducted on the topic of corporate spin-off. We further develop our hypotheses in the literature section. **Section 3 Methodology** is a general description of the event study and the calendar portfolio regression on Fama-French three factors. **Section 4 Data** presents and gives an overview of the data sample of spin-offs in the financial markets in the Nordic countries. In **Section 5 Analysis** we provide our analysis and results following a discussion in light of previous research on spin-offs. Finally, **Section 6 Conclusion** we summarize the findings and conclude.

2. Literature

The literature section starts off with the definition of corporate spin-off. Thereafter, we explain the value creation factors for shareholders used in our research on spin-offs. This is supplemented with empirical findings and studies from the spin-off literature. The literature is a point of reference when we develop our hypotheses and analyse the data. At the end we present our developed hypotheses under each section with the associated empirical findings and literature.

2.1 Spin-off definition

A corporate spin-off is defined as a distribution of 100% of its ownership in an independent firm as a non-cash stock dividend to existing shareholders. The spun-off subsidiary becomes a listed independent firm with its own employees, assets, management, products and technology. Existing shareholders receive the equivalent of the equity loss in the parent firm in the new spin-off listed subsidiary (Fontinelle, 2021).

2.2 Main ownership restructuring alternatives

There are several different ownership restructuring alternatives to spin-offs. The main ones are equity carve-out, sell-off, split-off and tracking stock issues. Equity carve-out is a partial separation of an asset where the shareholders sell a part of the spin-off to external investors through an IPO. Sell-off is a cash or stock sale of assets from parent firm to a strategic or financial buyer. Split-off is when shareholders are offered a trade-off for parent firm stocks in exchange for stocks in the subsidiary. Tracking stock issues gives the investors an opportunity to gain exposure to only a specific part of the firm (DePamphilis, 2019). The difference between the ownership restructuring options is illustrated in Figure 1 below.

Figure 1 - Restructuring alternatives

	Alternatives	Description
Ownership restructuring	Equity carve-out	- Partial sales in subsidiary to external investors of assets IPO
	Tracking stock issues	- Buy shares in specific part of the firm
	Spin-off	- 100% Distribution of shares in subsidiary to existing shareholders
	Sell-off	- Cash or stock sale of asset to external strategic or financial buyer
	Split-off	- Trade-off parent shares for subsidiary shares

*Notes.*The figure presents the main restructuring alternatives and their characteristics.

2.3 The choice between spin-offs, carve-outs and tracking stock issues

Chemmanur and Liu (2010) conducted a study on "Institutional trading, information production, and the choice between spin-offs, carve-outs, and tracking stock issues ". They found that all the three options resulted in increased institutional information about the firm. The conclusion of the study is that "In equilibrium, insiders with the most favourable private information choose to implement spin-offs; those with less favourable private information implement carve-outs; those with even less favourable private information implement tracking stock issues; and those with unfavourable private information retain a consolidated structure." (Chemmanur and Liu, 2010). This indicates that the announcement of spin-off as an ownership restructuring choice is when the management finds the subsidiary attractive for the investors with more favourable private information.

2.4 Value creation associated with spin-off

In this subsection we present motivation, previous empirical studies and evidence on value creation factors for shareholders associated with spin-offs. We thereafter develop our hypotheses in-line with these factors.

2.4.1 Evidence on performance of spin-off

One of the main objectives of the management is to maximize shareholder value (Friedman, 1970). The management of the firm would not suggest to spin-off a subsidiary if the net

present value (NPV) of the project is negative. The motivation for spin-off is the improvement accuracy of information on the two separated listed firms. Later in the literature section we comment on the potential value creating factors.

Abnormal returns associated with spin-off announcements have been investigated in several previous studies for the US- and European financial markets. All the recognized previous empirical results conclude that spin-off creates shareholder value at announcement. Previous acknowledged studies with positive announcement effect are Miles and Rosenfeld (1983), Daley et al (1997), Desai and Jain (1999), Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004). These studies find a cumulative average abnormal return (CAAR) from day before to the day after announcement [t-1, t+1] between 2.62% and 3.84%, all significant at the 1% level (See table below).

Table 1 - Announcement results from previous studies

Author(s)	Published	Sample market	Time-period	Firms (N)	Event study CAAR	Event window
Miles and Rosenfeld	1983	US	1963-1980	55	3.34%***	(0,1)
Daley et al.	1997	US	1975-1999	85	3.40%***	(-1,0)
Desai and Jain	1999	US	1975-1991	144	3.84%***	(-1,1)
Krishnaswami and Subramaniam	1999	US	1978-1993	118	3.25%***	(-1,1)
Veld and Veld-Merkoulova	2004	Europe	1987-2000	156	2.62%***	(-1,1)

Notes. The table present characteristic and results on previous studies of spin-off announcement. The characteristics of the studies are presented in column 1-5 and 7. The results is presented in cumulative average abnormal return in column 6.
Significance levels: ***1%, **5%, and *10%.

Previous studies on the long-term effects spin-offs show mixed results. Desai and Jain (1999) study on spin-offs in the US financial markets finds that the subsidiary yields abnormal return for the different calendar-portfolios at the 1% level. While their results are not statistically significant for the parent. The proforma calendar portfolio for 36 months shows an abnormal return of 19.82% with a significant value at the 1% level. Veld and Veld-Merkulova study on spin-offs in the European financial markets do not find any statistically significant results (See table below).

Table 2 - Long-Term results from previous studies

Author(s)	Published	Sample market	Time-period	Firms (N)	Firms	Abnormal return			
						6M	12M	24M	36M
Desai and Jain	1999	US	1975-1999	155	Parent	NA	6,51 %	10,58 %	15,18%
				162	Spin-off	NA	15.69%***	36.19%***	32.32%***
				155	Proforma	NA	7,69 %	12,70 %	19.82%***
Veld and Veld-Merkoulova	2004	Europe	1965-2000	68-106	Parent	3,88 %	-0,65 %	6,49 %	−0,41%
				53-70	Spin-off	11,96 %	12,58 %	13,72 %	15,15%
				45-61	Proforma	-2,23 %	-2,33 %	4,24 %	2,01%

Notes. The table present characteristic and results on previous studies for proforma, parent and spin-off subsidiary portfolio long-term. The characteristics of the studies are presented in column 1-6. The results are presented in abnormal return in column 7-10. Significance levels: ***1%, **5%, and *10%.

Following management interest in maximizing shareholder value and previous empirical studies, we have developed the hypotheses:

Hypothesis one: *Announcement of spin-off yields positive abnormal return for the shareholders*

Hypothesis two: *The long-term effect of spin-off yields positive abnormal return for the shareholders*

2.4.2 Decrease information asymmetry

One of the factors that can explain shareholder value creation through spin-off is the decrease information asymmetry. Management would propose to spin-off a division and increase information transparency for a firm if it was undervalued by uninformed investors. This indicates that firms with a high level of information asymmetry have a higher potential in decrease of information asymmetry. A completed spin-off increases information transparency through improved accuracy of the information processing for both firms. The value of improvement in information processing could be reflected in separately published financial reports, management, employees, technology and assets.

Habib et al (1997) study on “Spin-offs and information” suggest that a firm can increase information transparency by spin-off. Their findings are that spin-offs lead to two distinct effects through increased number of traded securities. The first effect is that it reduces uncertainty by uninformed investors about the value of the divisions in the firm. The second

effect is that it improves the quality of the managers investment decision with for instance separately published financial reports (Habib et al., 1997).

Krishnaswami and Subramaniam (1999) study on "Information asymmetry, valuation and the corporate spin-off decision" finds that firms that engage in spin-offs have a relatively higher level of information asymmetry compared to similar size and industry matched counterparts. Furthermore, they find that the information asymmetry decreases after the spin-off. To test the information asymmetry, they use Institute of Brokerage for Investment Services (IBES) estimates on earnings forecasted and measures the information asymmetry in five different ways. The value gains associated with spin-offs are therefore positively related to increased information transparency following a spin-off. Moreover, firms with larger growth opportunities in need of external capital, raise more capital following a spin-off. This indicates that the increased information transparency following a spin-off makes the firm more attractive when approaching the capital markets to raise funds (Krishnaswami and Subramaniam,1999).

Veld and Veld-Merkoulova (2004) study on 156 spin-offs in different European countries do not find any relation between the level of information asymmetry and size of the abnormal return. This is contrary to Krishnaswami and Subramaniam (1999). A factor which could explain the different results is that they investigated different financial markets. The two mentioned studies are on the US financial markets, while Veld and Veld-Merkoulova (2004) investigates the European financial markets. However, it questions the value creation effect associated with the increase in information transparency. Following the previous studies and motivation on increased information transparency related to spin-off, we have developed the following hypotheses:

Hypothesis three: *High level of information asymmetry at announcement of spin-off yields positive abnormal returns for the shareholders*

Hypothesis four: *High level of information asymmetry at announcement of spin-off yields positive long-term abnormal returns for the passive investor*

2.4.3 Increase corporate focus

In a cross-industry spin-off, the spin-off subsidiary operates in a different industry then the parent firm. The value creating factor is the increase in corporate focus. For instance, a

separate management with increased focus on core operations would likely lead to an increase in operating performance. In an intra-industry spin-off, the spin-off subsidiary operates in the same industry as the parent firm. One explanation for intra-industry spin-off are the different characteristics between the parent and spin-off subsidiary. The parent could spin-off the growth division while starting to pay dividend for its operations. Intra-industry spin-off would lose more positive synergies then cross-industry since the parent and spun-off firm have more similar operations.

The motivation behind cross-industry spin-off is in-line with Berger and Ofek (1995) findings on diversification effects on firm value. Their result show that stand-alone values are 13-15% higher as individual business segments. Furthermore, the loss is smaller for diversified firms within the same sector defined by the same two-digit Standard Industry Classification codes (SIC-codes). This implies that cross-industry spin-off is a way to increase shareholder value by separating unrelated business units.

Daley et al (1997) study on ”Corporate focus and value creation Evidence from spin-offs” finds that at the announcement of spin-off create shareholder value only for firms with two different SIC-codes. It is in-line with their hypothesis “spin-offs create value by removing unrelated businesses and allowing managers to focus attention on the core operations they are best suited to manage” (Daley et al, 1997). Other empirical studies on corporate spin-off created by Desai and Jain (1999), Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004) finds that intra-industry spin-offs also create shareholder value. This indicates that cross-industry spin-offs outperform and create higher return for shareholders at announcement.

Desai and Jain’s (1999) empirical study on “Firm performance and focus: long-run stock market performance following spin-offs” investigates both the short- and long-term effects on stock market performance of increase in corporate focus associated with spin-offs in the US financial market. They find that focus-increasing spin-offs yield a significantly higher abnormal return for the stocks compared to non-focus increasing. They use cross-sectional regressions to investigate and provide evidence of the outperformance calculated as return on assets. Furthermore, they find that non-focus increasing spin-offs are more likely to spin-off underperforming subsidiaries. On the other hand, Veld and Veld-Merkoulova (2004) study on European spin-offs find no significant long-term abnormal return for focus-increasing

spin-offs compared to non-focus increasing. Following the previous studies on increased corporate focus through spin-offs, we have developed the following hypotheses:

Hypothesis five: *Announcement of cross-industry spin-off yields positive abnormal returns for the shareholder*

Hypothesis six: *Cross-industry spin-off yields positive long-term abnormal returns for the passive investor*

2.4.4 Relatively large size of spin-off subsidiary

Previous studies find that the larger the relative size of the spun-off subsidiary is the larger value creation for the shareholders. The probability of efficiency improvement is higher in cases when a large part of the firm is spun-off. This is corresponding with a higher increase of firm focus with separate management for firms. Also, a larger part spun-off would result in more negative synergies being eliminated. The elimination of value-destroying activities would increase the total value.

Chemmanur and Yan (2004) have a different explanation why a large relative size of the spun-off firm creates more shareholder value. They argue that takeover possibility from rivals increase more when a large size of the firm is spun-off. The new firm size is smaller and firm size could be used less to maintain control over the firm. Increased takeover possibility could increase shareholder value.

Miles and Rosenfeld (1983), Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004) conclude that the return on the announcement of the spin-off is higher when the relative size of the spun-off market capitalization is higher. Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004) also investigate the long-term outperformance for the relative size factor. However, they do not find any significant results.

Following the previous studies on relative size of the market capitalization on spun-off subsidiary, we have developed the following hypotheses:

Hypothesis seven: *Announcement of relatively large spin-off size yields positive abnormal returns for the shareholder*

Hypothesis eight: *Relatively large spin-off size yields positive long-term abnormal returns for the passive investor*

2.5 Summary of hypotheses

We have developed eight hypotheses based on previous studies and potential value creating factors for the shareholders. The summary of our hypotheses is presented in Table 3 below.

Table 3 - Summary of hypotheses

Performance of spin-off	H1	Announcement of spin-off yields positive abnormal return for the shareholders
	H2	The long-term effect of spin-off yields positive abnormal return for the shareholders
Information asymmetry	H3	High level of information asymmetry at announcement of spin-off yields positive abnormal returns for the shareholders
	H4	High level of information asymmetry at announcement of spin-off yields positive long-term abnormal returns for the passive investor
Corporate focus	H5	Announcement of cross-industry spin-off yields positive abnormal returns for the shareholder
	H6	Cross-industry spin-off yields positive long-term abnormal returns for the passive investor
Relative size	H7	Announcement of relatively large spin-off size yields positive abnormal returns for the shareholder
	H8	Relatively large spin-off size yields positive long-term abnormal returns for the passive investor

Notes. The table present a summary of our hypotheses categorised with each value creating factor.

3. Methodology

In the following section, we present the applied methodologies to capture the announcement and long-term effect of spin-offs stock return. First, we present the financial model and method used to investigate the announcement effect of spin-offs. Second, we describe the model and method used to investigate long-term stock returns for parent, spin-off and proforma portfolios. Finally, we discuss the method used to test for the shareholder value creating factors.

3.1 Stock return: short-term effect

We first present the financial model and method used for calculating abnormal return at spin-off announcement. We employ the standard market return model on in an event study. We further describe how we test for significant values. Lastly, we discuss limitations and how we adjust for these errors.

3.1.1 Event study methodology

"Using financial market data, an event study measures the impact of a specific event on the value of a firm. The usefulness of such a study comes from the fact that given rationality in the marketplace, the effects of an event will be reflected immediately in security prices" (MacKinlay, 1997). The premise of the event study is a semi-efficient form of market efficiency. Semi-efficient form assumes stock prices adjust according to new public information. The only method to gain abnormal returns on investment is by having access to material non-public information (See Appendix A). Furthermore, the event must be unanticipated and there must be no confounding effects during the event window. The assumption about no confounding effect during the event window is crucial since it is difficult to isolate the impact of the different events (McWilliams and Siegel, 1997).

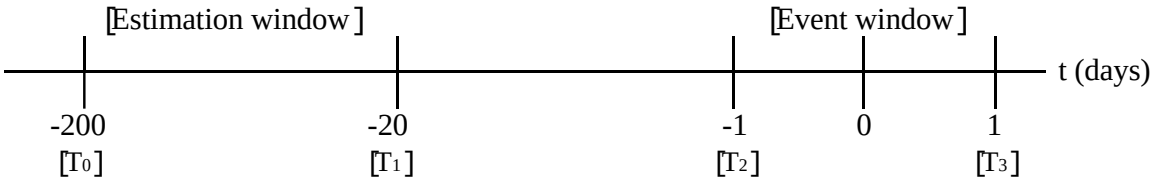
We establish a benchmark to calculate normal performance of stocks without the occurring event. We use the standard market model as a benchmark to calculate expected return. Brown and Warner (1985) and MacKinlay (1997) use the same model in their studies. This model assumes a linear relationship between the market portfolio and normal performance of assets. The market model is expressed in equation (1).

$$E(R_{i,t}) = \alpha_i + \beta_i(R_{mkt,t}) + \varepsilon_{i,t} \qquad (1)$$

α_i denotes the least squares estimates of the intercept, β_i for the slope and $\varepsilon_{i,t}$ is the error term for each of the firms in the dataset at time t. The expected value of the error term is zero. The α_i and β_i are estimated by the ordinary least square method (OLS) during the estimation window. $R_{mkt,t}$ denotes the return of a specific stock market index. The index used for Norway is OBX, Sweden OMX Stockholm 30 and Finland OMX Helsinki 25. The firms are matched to the indices corresponding to where it is listed. The indices serve as a proxy for the market portfolio. Using country specific indices will better capture the return in the specific country compared to one common index.

To calculate expected return in the event window, we use an estimation window from 200 (t-200) days to 20 (t-20) days prior to spin-off listing date. The estimation window captures the firms expected return and avoids potential information leakage prior to the announcement. The main event window is one day prior (t-1) to one day after announcement (t+1). It is chosen to capture potential information leakage and late publication on announcement day (Mackinley, 1997). The main timeline of the event study is illustrated under in Figure 2:

Figure 2 - Event study



Notes. The figure presents the timeline for estimation- and main event window. T_0 to T_1 is the estimation window and T_2 to T_3 is the main event window.

Daily abnormal return (AR) represents the difference between realized and estimated expected return. $R_{i,t}$ denotes realized return and $E(R_{i,t})$ the expected return for the benchmark. $AR_{i,t}$ denotes the abnormal return at time *t* for each firm. The calculation of daily abnormal return for each firm are expressed in equation (2).

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \qquad (2)$$

The estimate of cumulative abnormal return (CAR) is the sum of abnormal return for multiple event days in the event window. The period in the main event window from Figure 2 is between T2 and T3. Calculation of cumulative abnormal return for each firm is expressed in equation (3).

$$CAR_i(T_2, T_3) = \sum_{t=T_2}^{T_3} AR_{i,t} \quad (3)$$

Average abnormal return (AAR) is calculated to establish if a spin-off announcement on average leads to abnormal return for shareholders. AAR_t denotes the abnormal return for the period t. Average abnormal return is calculated separately for each day in the event window. This approach reduces the risk of results biased to firm specific news and isolates the spin-off announcement effect. Calculation of average abnormal return are expressed in equation (4).

$$AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{i,t} \quad (4)$$

Finally, we calculate cumulative average abnormal return (CAAR) as the sum of average abnormal return. T2 and T3 values will change based on the investigated event window. Different event windows are interesting to investigate for potential information leakage prior and over or under reactions to the event reflected in stock price adjustments in the days after the event. Calculation of cumulative average abnormal return are expressed in equation (5).

$$CAAR_{T_3} = \sum_{t=T_2}^{T_3} AAR_t \quad (5)$$

3.1.2 Signficance test

The calculated CAAR will be tested to determine if it is significantly different from zero. There are two categories of significance testing, parametric- and nonparametric tests. Parametric are when specific assumptions have been made about the distribution of abnormal return. While the nonparametric test is free of specific assumptions concerning the distribution of returns (MacKinlay, 1997). Brown and Warner (1985) find evidence that as the sample of securities increases, mean abnormal return in a cross-section of securities converges towards normality. Additionally, when using the standard market model and daily data the parametric tests are well specified (Brown and Warner, 1985). We therefore assume

that CAAR is independent and identically distributed and perform a parametric t-test to test for significance. The t-test is expressed in equation (6).

$$t = \frac{CAAR_T}{\sqrt{\sigma_T^2}}\ ,\ \sigma_T^2 = L\sigma^2(AAR_t) \qquad (6)$$

$\sigma^2(AAR_t)$ denotes the variance of average abnormal return and L denotes number of days in the event window. An increase in number of days in the event window leads to a higher variance in CAAR. The significance levels are presented at the 10%, 5% and 1% confidence interval. We reject the null hypothesis if CAAR is significant at the 1% level.

3.1.3 Limitations of event studies and the standard market model

MacKinlay (1997) states there several drawbacks using a single factor model. This could result in measurement errors and biased results. On the other hand, he argues more advanced models do not always result in more precise results (MacKinlay, 1997). We therefore use the standard market model for the event study.

One drawback using an event study is that it is unclear if the market information is released during trading hours or after the close of the stock exchange (Peterson, 1989). To address this problem, we have manually checked the whole sample. In some cases, we were unable to find the announcement publication time. This problem is mitigated by including the day after announcement in our main event window

Another limitation with event studies is missing returns in estimation- and event windows. Brown & Warner (1985) uses available data and removes periods with missing data from the analysis. Peterson (1989) argues the technique "…achieves the greatest sample size without affecting the identification of individual day price changes" (Peterson,1989). To address this issue, we use the same method as Brown & Warner (1985).

3.2 Stock return: long-term effect

First, we present the chosen return type and proforma portfolio weights. The method employed for calculating long-term returns is the calendar-time approach. We further describe how we test for significant values. Lastly, we discuss limitations of long-term performance model.

3.2.1 Return types and portfolios weights

Average abnormal returns (AAR) and buy-and-hold abnormal returns (BHAR) are two methods to calculate long-term returns. BHAR has been criticized for being more skewed since it assumes independence of each firm's abnormal return. Mitchell and Safford (2000) argue that firm events will cluster by industry over time. This leads to returns that are not independently distributed. On the other hand, Barber and Lyon (1997) argues that BHAR better capture and display the actual abnormal returns. At the same time, they acknowledge that AAR has fewer statistical issues. For instance, AAR avoids extreme skewness like the cross-correlation problem. To avoid skewness the AAR will be applied through this study.

There are different opinions on using equal-weighted or value-weighted portfolios. Loughran and Ritter (2000) argue that equal-weighted portfolios better capture spin-off returns. Furthermore, with value-weighted portfolios the spin-off anomalies could disappear. Fama (1998) on the other hand argues that value-weighted better capture the anomalies and actual return for the passive investor. Since we investigate the shareholder value creation for the passive investor, the value-weighted portfolio will be implemented.

3.2.2 Calendar-time portfolio

The long-term effect will be tested for the parent, spin-off, and proforma portfolios. To calculate the long-term shareholder value creation, we employ the monthly calendar-time approach. This approach is also used by Fama (1998), Mitchell and Stafford (2000) and McConnell et al (2001).

The proforma portfolio is value-weighted by market capitalization of the parent and the spin-off. It is first calculated at the listing date of the spin-off. The calculation is shown in equation (9). Spin-offs listed after July 2019 and their respective parent are excluded from the sample as we have less than 24 months of data. The parent-, spin-off- and proforma-portfolio are separately divided into the four portfolios for periods of 6-, 12-, 18- and 24-month.

Firm returns are compared to an appropriate benchmark to estimate abnormal returns. The benchmark for each firm as presented in 3.1.1. We use the Fama-French three factor (FF3) model like McConnell et al (2001) to estimate abnormal returns. Abnormal return is

calculated by subtracting the risk-free rate from portfolio return. Abnormal return is then regressed against the Fama-French three factors, shown in equation (7).

$$R_{p,t} - r_{f,t} = \alpha_p + \beta_{p1}(R_{M,t} - r_{f,t}) + \beta_{p2}SMB + \beta_{p3}HML + \varepsilon_{p,t} \qquad (7)$$

Where $R_{p,t}$ denotes portfolio monthly return and $r_{f,t}$ denotes the monthly risk-free rate. $R_{M,t}$ denotes monthly index return which presented in 3.1.1. SMB denotes the small minus big factor and HML the high minus low factor. α_p denotes the portfolio intercept and $\beta_{p1} - \beta_{p3}$ denotes the coefficients to the corresponding factor. $\varepsilon_{p,t}$ denotes the error term for each portfolio.

3.2.3 Significane test

The regression generates values for alpha and beta coefficients. Alpha denotes the abnormal return for each period and beta denotes volatility of return for each factor. The alpha and beta coefficients are tested using a t-test. The T-value is estimated from equation (8).

$$t = \frac{X}{s/\sqrt{n_i}} \qquad (8)$$

Where X denotes tested alpha and beta coefficients. s denotes the standard deviation for the respective coefficient tested. n_i is the number of observations used when calculating the coefficient. The significance levels are presented at the 10%, 5% and 1% confidence interval. We reject the null hypothesis if the alpha coefficient is significant at the 1% level.

3.2.4 Limitations of long-term performance model

According to Fama (1998) all models for expected returns are incomplete descriptions of the systematic patterns in average returns during any sample period. This is caused by constant AAR while the standard error decreases by the number of days/months. Therefore, the Fama-French three factor model will not be able to explain the abnormal return value fully.

3.3 Factor variable test

In this subsection, we first incorporate the potential value creating factors increased corporate focus, increased information transparency and relatively large size of the spin-off subsidiary into our models. Secondly, we describe how we test for significance values.

3.3.1 Announcment testing of factors

We divide the announcement datasample into two subsamples for each of the value creating factors based on the corresponding dummy variable. The six subsamples are tested using an event window from one day prior (t-1) to one day after announcement (t+1). Furthermore, the subsamples mean CAAR is t-tested for statistically significant value. Finally, we t-test mean difference in CAAR between the subsamples for each value creating factor. The significance levels are presented at the 10%, 5% and 1% confidence interval. We reject the null hypothesis if CAAR difference is significant at the 1% level.

3.3.2 Long-term testing of factors

We divide the long-term spin-off datasample into two subsamples for each of the value creating factors based on the corresponding dummy variable. The six subsamples are extracted from the proforma portfolio since the study investigates the passive investor value creation. Subsamples are regressed with the methodology presented in section 3.2. The subsamples are tested for 6-, 12-, 18- and 24-month periods. The significance levels are presented at the 10%, 5% and 1% confidence interval. We reject the null hypothesis if the alpha coefficient is significant at the 1% level.

4. Data

In the following section we present the collected data. First, we present the spin-off data sample and collection of relevant data. Secondly, we describe how we implement the dummy variables for the value creating factors. Thirdly, we provide descriptive statistic for the Nordic sample. Finally, limitations and validation of the data is discussed.

4.1 Spin-off data sample

The date of spin-off announcements is collected from Bloomberg and Refinitiv Securities Data Company (SDC) databases. The short and long-term data on Nordic firms was collected from the SDC database. Results from Bollaert and Delanghe (2015) suggest that overall SDC is one of the most precise databases on M&A. The edge comes from accuracies in the announcement date of M&A transactions (Bollaert and Delanghe, 2015). This is in-line with our experience when comparing announcement date of spin-offs in the two databases. However, checking the databases we found several mistakes in the announcement day for both the databases. As a result, we manually validated and corrected the entire dataset of spin-off announcements. If we were unable to find the date, we used data from SDC. The spin-off data collected from SDC and Bloomberg is illustrated in the Table 4 below.

Table 4 - Full sample

Criteria	Refinitiv Securities Data Company	Bloomberg
Deal type	Demerger	Spinoff
Geographical focus	Nordic	Nordic
Countries	4	4
Time period	1998-2021	1998-2021
Observations	203	198

Notes. The table presents the search criteria for each database and corresponding observations. Row 2-5 are the search criteria and row 6 present the output of observations.

4.1.1 Dataset for announcement

The main reason we go from 203 in the SDC and 198 in the Bloomberg database to the 119 parent firms is duplicate firms for the two databases. The other factors are pending or withdrawn spin-offs, other significant firm news published at the same day, partial spin-offs,

spin-off subsidiary trading prior to the announcement and spin-off listed on non-Nordic exchange. Similar to Veld and Veld-Merkoulova (2004) we investigate completed spin-offs for the short-term effects. A spin-off is defined as completed if we find the name of the spun-off subsidiary in the SDC database.

4.1.2 Dataset for long-term

The final number of parent observations for the event study is 119 and 52 for the long-term performance. The difference in the samples is because of missing data long-term. Several firms had missing close price or market capitalization in SDC. Without these values we are unable to include the parent/spin-off pair in the proforma portfolio and they are removed from the sample. Duplicated close price used to calculate returns over several months was another reason for exclusion from the long-term sample.

4.2 Data collection of stock indices, FF3 and relevant firm data

The stock indices OBX for Norway, OMXS30 for Sweden and OMXH25 for Finland are downloaded from SDC Datastream. Indices are used to benchmark shareholder value creation both around announcement date and long-term. Further, the FF3 European stock market aggregates are downloaded from Kenneth French's library to investigate long-term effects (French, 2021). The firm's financial information data is downloaded from SDC. This includes market capitalization, daily close price, monthly close price, IBES mean forecasted revenue, IBES standard deviation on forecasted revenue, NAICS subsector industry code and listing date of spun-off subsidiary. All the data is denoted in USD to remove bias effects in currency fluctuations.

4.3 Variable description

In this subsection we describe the dummy variables used to measure shareholder value creation from information asymmetry, corporate focus and relative size to measure.

4.3.1 Information asymmetry

Information asymmetry is measured by the standard deviation of earnings forecast similar to Krishnaswami and Subramaniam (1999). We use IBES on standard deviation for the firm's next year earnings and divide it by the IBES mean on next year earnings. The factor is estimated on the last day of the fiscal year prior to the spin-off announcement. This is to investigate potential value creation associated with increased information transparency. Large differences in next year predicted earnings between brokers are an indication of lack of public information about the firm. Lack of public information is an indication of high information asymmetry. The dummy variable is one if the standard deviation is above the median and zero otherwise.

4.3.2 Corporate focus

In-line with the methodology used in Desai and Jain (1999) and Veld and Veld-Merkoulova (2004) studies, we use sector codes to measure value effect on increased corporate focus. A cross-industry spin-off is an indication of improved corporate focus. This is defined by different NAICS subsector code between parent and spun-off firm. Subsector code is used to separate industries with few similarities, for instance chemical manufacturing and wood product manufacturing. If the three-digit code differs between the parent and spun-off firm the dummy variable is one and zero for otherwise.

4.3.3 Relative size

We use the same methodology as Desai and Jain (1999) and Veld and Veld-Merkoulova (2004) for the relative size factor. The relative size is calculated using market capitalizations on day of listing for the spin-off. The calculation is shown in equation (9).

$$Relative\ Size = \frac{MCap_S}{MCap_P + MCap_S} \qquad (9)$$

The probability of efficiency improvements is higher in the cases where a large part of the firm is spun-off. This indicates a larger potential for shareholder value creation. If the relative size of a spin-off is over the median the dummy variable turns one and zero otherwise.

4.4 Data characteristics

4.4.1 Overview of completed Nordic spin-offs

Table 5 shows 119 completed spin-offs announcements by country and year for the Nordic countries. Sweden has had the highest number of announced spin-offs from 1998 to 2021. The number of announced spin-offs seems to correlate with the financial markets prior to 2010. In the period leading up to the dotcom bubble in 2001 and financial crisis in 2008 the number of announced spin-offs was slightly higher than the average of the sample. Furthermore, it is low during and in the years following the crisis. In the period after 2010 the number of announced spin-offs is relatively stable. The year with the most announced spin-offs is 2005 with 13 announcements and the year with the lowest is 2009 with zero announcements.

Table 5 - Spin-off announcement by country and year

Year	Norway	Finland	Sweden	Total
1998			3	3
1999	1	1	2	4
2000	3		4	7
2001	2		3	5
2002			1	1
2003	2		2	4
2004	3	1	4	8
2005	3	1	9	13
2006	2		8	10
2007	4		1	5
2008	2	1	2	5
2009				0
2010			3	3
2011	1	1	1	3
2012	1		4	5
2013	1	2	3	6
2014	1	1	1	3
2015	1		3	4
2016	1		6	7
2017			5	5
2018	1	1	3	5
2019	2		2	4
2020	3		4	7
2021	1		1	2
Total	35	9	75	119

Notes. The table presents the number of spin-offs announcement per year for each Nordic country. Column 2-4 show observation for each country and column 5 present total for the Nordic sample.

4.4.2 Overview of completed Nordic spin-offs long-term

Table 6 shows the dataset with long-term observations by country and year for the Nordic countries. Sweden has the highest number of listed spin-offs followed by Finland and Norway. In-line with the spin-off announcement Sweden has had the highest number of listed spin-offs with long-term data. The number of announced- to listed spin-offs for Norway have decreased drastically from 35 to 5. We find no clear correlation between listed spin-off and the financial markets performance. The year with the most listed spin-offs was 16 in 2016 and lowest in 2002 and 2003 with zero.

Table 6 - Listed spin-off by country and year with long-term data

Year	Norway	Finland	Sweden	Total
1999		1	1	2
2000			1	1
2001			1	1
2002				0
2003				0
2004	1			1
2005		2	3	5
2006		1	3	4
2007			1	1
2008			2	2
2009			1	1
2010		1	2	3
2011	1		3	4
2012		1	1	2
2013		1	1	2
2014	1	1	3	5
2015			1	1
2016	1	1	6	8
2017			5	5
2018			2	2
2019	1		1	2
Total	5	9	38	52

Notes. The table presents the number of listed spin-offs per year for each Nordic country. Column 2-4 show observation for each country and column 5 present total for the Nordic sample.

4.4.3 Spin-off market capitalization and relative size by country

Table 7 illustrates the mean value of market capitalization and the mean relative size of the Nordic spin-offs. The mean value and mean relative size are highest in Norway. The mean value in Norway is almost twice as large as the mean value of Sweden and Finland. The mean relative size is highest in Norway followed by Finland and Sweden. The mean value of the spin-offs of the data sample is 1383 million USD. Essity AB increases the mean of the sample substantial with a listing value close to 20 billion USD. The mean relative size of the spin-off in our sample is 34.03%. This is in-line with Veld and Veld-Merkoulova (2004) European study with a mean of 33.51%. Previous US studies tend to have a smaller mean relative size around 20% (Desai and Jain, 1999; Krishnaswami and Subramaniam,1999).

Table 7 - Value and relative size for spin-off per country

Country	Spin-offs (N)	Mean value	Mean relative size
Norway	5	2451	40.88%
Finland	9	1236	36.72%
Sweden	38	1278	32.49%
Mean	52	1383	34.03%

Notes. The table shows the number of listed spin-offs for each Nordic country. The mean spin-off market capitalization at listing date is denoted in million USD. Converted to USD using historical daily exchange rate at listing date of spin-off, calculated in SDC Datastream. The mean relative size for the spin-offs is calculated in equation (9).

4.4.4 Spin-off market capitalization and relative size by sector

Table 8 illustrates the mean market capitalization and mean relative size for each subsector in our sample. As mentioned in section 4.4.3 the mean proportion spun-off for the whole sample is 34.03%. The relative size per subsector ranges from 5% to 79 %. The number of observations per subsector is low. This leads to a high level of spin-off specific characteristic explaining the mean value and proportion spun-off. Furthermore, there are a total of 22 spin-off subsidiaries within the manufacturing sector defined by the same two-digit NAICS sector code. The two highest number of spin-offs for the sample is in the chemical- and machinery manufacturing subsectors.

Table 8 - Value and relative size for spin-off per sector

Subsector	Observation (N)	Mean value	Mean relative size
Administrative and Support Services	3	180	21 %
Amusement, Gambling, and Recreation Industries	1	33	10 %
Broadcasting (except Internet)	1	1592	65 %
Chemical Manufacturing	4	863	18 %
Computer and Electronic Product Manufacturing	3	112	49 %
Construction of Buildings	2	781	20 %
EEACM*	1	43	39 %
Electronics and Appliance Stores	1	23	40 %
Fabricated Metal Product Manufacturing	1	6	10 %
Food Manufacturing	1	15	9 %
Hospitals	1	827	66 %
Machinery Manufacturing	5	3904	35 %
Merchant Wholesalers, Durable Goods	2	166	34 %
Merchant Wholesalers, Nondurable Goods	2	3055	21 %
Mining (except Oil and Gas)	1	56	22 %
Miscellaneous Manufacturing	2	426	23 %
Nonstore Retailers	1	91	5 %
Oil and Gas Extraction	1	434	6 %
Paper Manufacturing	1	19937	79 %
Primary Metal Manufacturing	1	145	58 %
Professional, Scientific, and Technical Services	3	149	39 %
Publishing Industries (except Internet)	2	91	43 %
Real Estate	3	2573	30 %
SCCOFIRA*	2	222	48 %
Specialty Trade Contractors	1	738	31 %
Support Activities for Mining	2	1228	48 %
Transportation Equipment Manufacturing	2	1990	33 %
Waste Management and Remediation Services	1	22	76 %
Wood Product Manufacturing	1	39	43 %
Mean	52	1383	34 %

EEACM* = Electrical Equipment, Appliance, and Component Manufacturing
SCCOFIRA* = Securities, Commodity Contracts, and Other Financial Investments and Related Activities
Notes. The table shows the number of listed spin-offs for each NAICS subsector with characteristics. The mean spin-off market capitalization at listing date is denoted in million USD. Converted to USD using historical daily exchange rate at listing date of spin-off, calculated in SDC Datastream. The mean relative size for the spin-offs is calculated in equation (9).

4.5 Data collection and validation

There are three different options to base event studies with respect to spin-offs on. The first is the first public date the spin-off is mentioned. The second is the date of announcement confirmation from the board of directors. The third is the date the spin-off is approved by

shareholders. As we investigate the initial market reaction of the spin-off announcements, we used the first date the spin-off is publicly mentioned. Bloomberg and SDC often reported different announcement days because they were inconsistent with the three announcement options. Therefore, we went through all the spin-offs individually validated the dates by checking the first press release and compared to the two databases. We mainly used sources where firm news is published and the firm's investor relations webpage to verify the announcement date of the firms.

The details published at the first press date vary between firms. While some firms publish detailed information on the spin-off process at announcement, others publish more details in the period between announcement and listing date. As a result, this can lead to the potential value creation of a spin-off not being fully captured at announcement.

The difference in the sample sizes between announced and listed spin-offs are because of missing long-term data. Several firms had missing close price or market capitalization monthly observations in SDC even though they were listed. We therefore removed the firms trading less than two years from the spin-off listing date in the sample. This is illustrated with a decrease from 119 announced to 52 listed on long-term data. As a consequence of this we could miss out on potential value- and destroying-activities like acquisition of parent or spin-off, delisting and bankruptcy. Since we did not know if it was a limitation in the SDC database or the value- or destroying-activities.

The Fama-French factors are not available for each separate country or combined for the Nordic countries. We therefore use the European Fama-French three factors. The Nordic countries are weighted into the factors and are therefore the most accurate to use. This could impact the explanatory power the factors have in the analysis.

5. Analysis

In the following section, we present our analysis of the stock market reaction to spin-off announcements and the result of the short-term hypotheses. First, we present our findings with respect to the short-term hypotheses. Second, we analyse the long-term results and the FF3 factors with the result of the long-term hypotheses. Then, the result from our value creating factors for announcement and long-term are presented with the corresponding hypotheses. Lastly, the summary of the hypotheses results is presented.

5.1 The stock market reaction to spin-off announcement

The spin-offs announcements are tested for five different event windows to investigate shareholder value creation. The five event windows are in the interval between ten days before announcement and ten days after. The event window ranging from ten days before to ten days after to is cover potential information leakage and over- or underreaction. The main event window from one day before to one day after announcement captures the main shareholder value effect. The event window at announcement day captures only the initial market reaction to the announcement.

Table 9 illustrates relevant descriptive statistics for the 119 parent firms on ten days before to ten days after the announcement day. The average abnormal return is 1.89% sample at announcement date (t0). This is the highest average abnormal return for the full event window. Announcement date also has the most firms with positive abnormal return with 66.3% of the sample. This is in-line with the study conducted by Veld and Veld-Merkulova (2004). They present an AAR of 1.25% and firms with a positive abnormal return with 66.8% of their sample on announcement day.

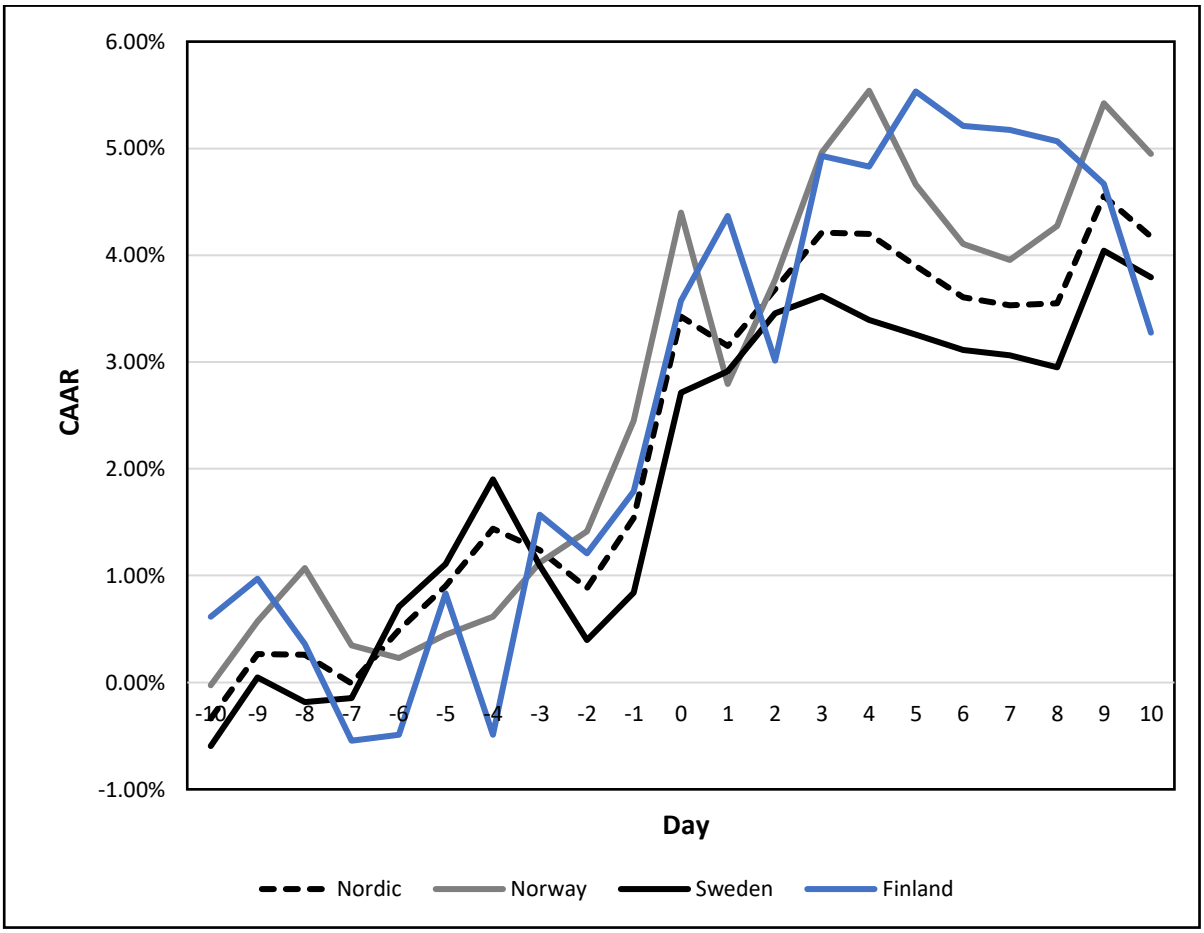
Table 9 - Daily statistics for full event window

Day	AAR	CAAR	Median	Max	Min	Positive
-10	-0.34%	-0.34%	-0.17%	0.11	-0.13	42.86%
-9	0.60%	0.27%	0.08%	0.16	-0.11	50.70%
-8	-0.01%	0.26%	-0.09%	0.13	-0.10	49.46%
-7	-0.27%	-0.01%	-0.23%	0.14	-0.12	41.82%
-6	0.50%	0.49%	-0.05%	0.14	-0.07	49.38%
-5	0.41%	0.90%	0.04%	0.11	-0.07	51.61%
-4	0.54%	1.44%	-0.10%	0.14	-0.06	45.71%
-3	-0.20%	1.24%	-0.36%	0.10	-0.09	38.67%
-2	-0.35%	0.88%	-0.05%	0.07	-0.15	48.65%
-1	0.65%	1.54%	0.18%	0.10	-0.10	54.26%
0	1.89%	3.42%	0.61%	0.15	-0.08	66.39%
1	-0.27%	3.15%	-0.26%	0.17	-0.13	46.07%
2	0.53%	3.68%	0.09%	0.12	-0.08	50.85%
3	0.53%	4.21%	0.16%	0.13	-0.13	53.73%
4	-0.01%	4.20%	-0.13%	0.13	-0.09	45.33%
5	-0.30%	3.90%	-0.29%	0.10	-0.12	41.43%
6	-0.29%	3.61%	-0.37%	0.09	-0.14	41.30%
7	-0.08%	3.53%	-0.14%	0.11	-0.14	48.21%
8	0.02%	3.55%	0.07%	0.09	-0.08	52.87%
9	1.01%	4.55%	0.56%	0.13	-0.03	57.63%
10	-0.38%	4.17%	-0.24%	0.04	-0.05	38.46%

Notes. The table reports daily statistics ten days before to ten days after announcement of spin-off. The following statistics presented are average-, cumulative average-, median-, max-, min- and positive abnormal return. The statistics of the abnormal return are estimated using the standard market model. The returns are winsorized at the 0.5% tails. The returns are USD-denominated stock return for the parent firms. Converted to USD using historical daily exchange rate, calculated in SDC Datastream. The indices used are the daily return on the Norway OBX, Sweden OMX Stockholm 30 and Finland OMX Helsinki 25. Firms are matched to the corresponding index based on the country where it is listed. Total observations of completed spin-off are 119 parent firms. The firm must have over 100 return observations in the estimation period (-200,-20) to be included. Column Positive shows the sample percentage with positive AR for each day.

Figure 3 illustrates CAAR at close price for the 119 parent firms ranging from ten days prior to ten days after the announcement. Average abnormal return is positive for all the three countries at announcement days. The CAAR for the Nordic countries increased 1.89% from 1.54% to 3.42% on the announcement date (t0). The countries also yield an average abnormal return on the day before the announcement. This could indicate information leakage. Sweden, Norway and the Nordic sample yield a negative average abnormal return on the day after the announcement. This could indicate an overreaction to the announcement of spin-off.

Figure 3 - Announcement daily CAAR



Notes. The figure shows CAAR on the Y-axis and ten days before to ten days after the announcement of spin-offs on the X-axis. The graphs present CAAR for each country and the Nordic sample. The returns are winsorized at the 0.5% tails. Total observations of completed spin-off are 119 parent firms. Firm data are from the Securities Data Company (SDC) Platinum database.

Table 10 illustrates CAAR for the Nordic countries. The main event window is from t-1 to t+1. The other event windows are included to test for potential information leakage, and over- or underreaction.

Table 10 - CAAR for different event windows

Interval	Cumulative average abnormal returns		
	Mean %	T-value	P-value
All (N = 119)			
t-10 to t-1	1.54*	1.36	0.09
t-1	0.65**	1.82	0.03
t0	1.89***	5.28	0.00
t-1 to t+1	2.27***	3.66	0.00
t+1 to t+10	0.75	0.66	0.25
Norway (N = 35)			
t-10 to t-1	2.45	0.09	0.12
t-1	1.04*	1.58	0.06
t0	1.95**	2.97	0.00
t-1 to t+1	1.38	1.21	0.11
t+1 to t+10	0.55	0.27	0.40
Sweden (N = 75)			
t-10 to t-1	0.84	0.56	0.29
t-1	0.45	0.94	0.18
t0	1.87***	3.92	0
t-1 to t+1	2.52***	3.05	0
t+1 to t+10	1.08	0.72	0.24
Finland (N = 9)			
t-10 to t-1	1.79	0.64	0.26
t-1	0.58	0.66	0.26
t0	1.78**	2.00	0.02
t-1 to t+1	3.16**	2.05	0.02
t+1 to t+10	-0.3	-0.11	0.54

Notes. The table reports mean cumulative average abnormal returns for the different event window using return generated process at announcement for completed spin-offs. The mean cumulative average abnormal returns are estimated using the standard market model. The returns are winsorized at the 0.5% tails. The returns are USD-denominated stock return for the parent firms. Converted to USD using historical daily exchange rate, calculated in SDC Datastream. The indices used are the daily return on the Norway OBX, Sweden OMX Stockholm 30 and Finland OMX Helsinki 25. Firms are matched to the corresponding index based on the country where it is listed. N denotes the number of firms in each sample. The firm must have over 100

observations in the estimation period (-200,-20) to be included. T-value shows the t-value result for each event window. Significance levels: ***1%, **5%, and *10%.

The AAR for the Nordic sample is 1.89% at the 1 % significant level on the announcement day (t0). All countries have similar AAR on announcement day with Norway at 1.95%, Sweden with 1.87% and Finland with 1.78%. The AAR in Sweden is statistically significant at the 1% level, while Norway and Finland are statistically significant at the 5% level.

The Nordic sample yields a CAAR of 2.27% for the main event window [t-1,t+1] and is statistically significant at the 1% level. The finding is in-line with previous studies by Daley et al (1997), Desai and Jain (1999), Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004). Finland has the highest CAAR of 3.16% for the three days and is significant at the 5% level. Sweden is second with a CAAR of 2.52% and is significant at the 1% level. Norway is third with a CAAR of 1.38%, however it is not statically significant.

The AAR is 0.65% on the day prior to announcement for the Nordic sample. This is statically significant at the 5% level. Further, Norway is the country with statistically significant positive AAR at the 10% level for (t-1) event window. The Nordic sample has a CAAR of 1.54% for the event window ten days prior to the announcement [t-10,t-1] and is statistically significant at the 10% level. This indicate that information leakage is an issue. However, most of shareholder value creating is at announcement day. This indicates a semi-strong form of market efficiency. (See appendix A).

The Nordic sample has a CAAR of 0.75% for the ten days after the announcement [t+1, t+10]. This indicate an underreaction at the announcement day. However, this is not statistically significant.

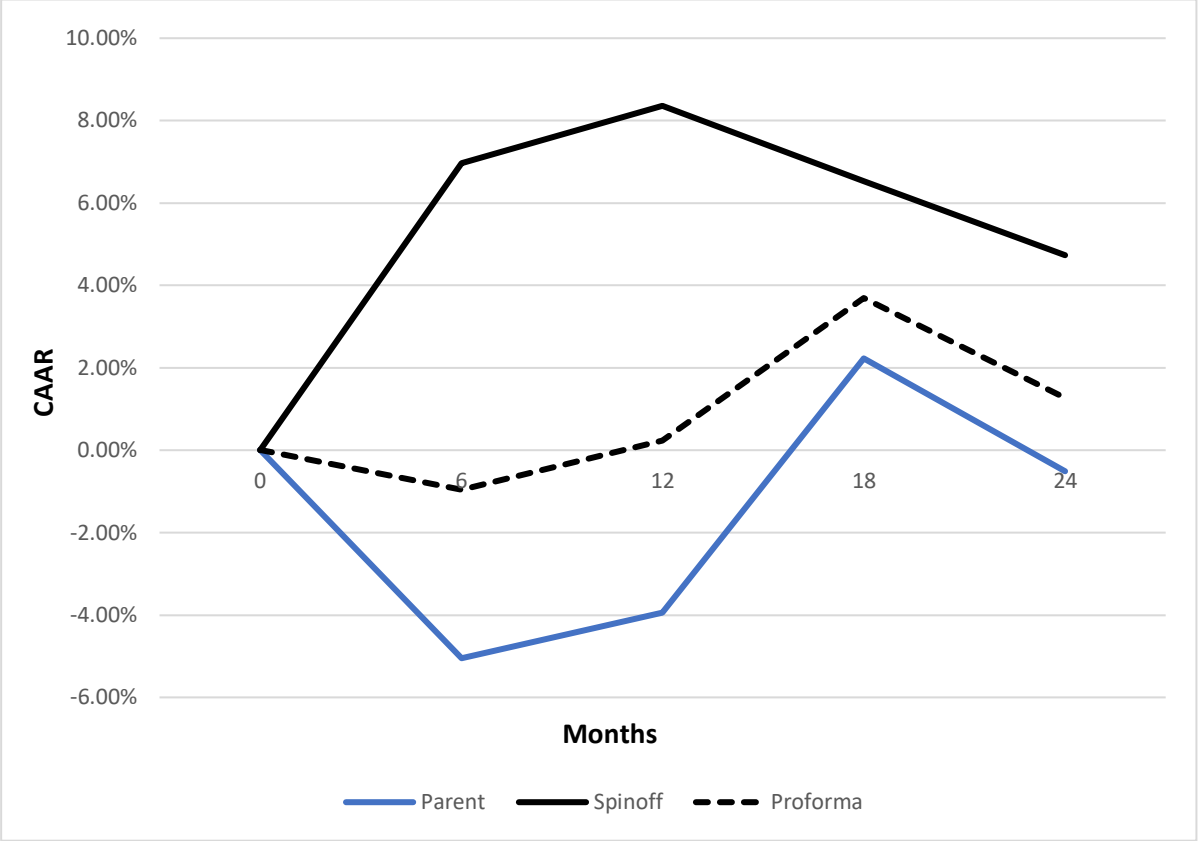
The results show significant positive CAAR values for our main event window [t-1, t+1] for the Nordic sample. Following this we reject the null hypothesis, which support our hypothesis that spin-off announcements are value-creating for the shareholders.

5.2 Long-term stock performance

Figure 4 illustrates the CAAR for parent, spin-off and proforma portfolios. The parent portfolio has a CAAR of -5% for the first 6 months. The CAAR for the parent portfolio increased by 6% between 12 and 18 months to 2%. The spin-off subsidiary portfolio has a

CAAR of 7% for the first 6 months. After 12 months the CAAR decreases by 2% every 6 months for the spin-off subsidiary portfolio. The proforma portfolio has CAAR close to zero for all periods except after 18 months where it has a CAAR of 4 %.

Figure 4 - CAAR long-term



Notes. This figure shows the CAAR on the Y-axis and months after spin-off listing date on the X-axis. The graphs present parent, spin-off and proforma portfolio. The returns are winsorized at the 0.5% tails. Total observations of parent and spin-off pairs are 52. Firm data are from the Securities Data Company (SDC) Platinum database.

Table 11 illustrates the results from the FF3 regression on average monthly portfolio returns for the parent-, spin-off- and value-weighted proforma portfolios. The European risk-free rate is subtracted from the portfolio returns and regressed against the FF3 factors. Portfolios are separately regressed for the periods 6-, 12-, 18- and 24-month periods. Alpha and beta coefficients are tested with a one-sided t-test.

Table 11 - Summary FF3 regression for different portfolios

	Proforma			
	6M	12M	18M	24M
Alpha	-1.70%	-2.10%	-0.50%	-1.76%
Indexreturn	0.90***	1.05***	1.01***	1.01***
SMB	0.48***	0.52***	0.43***	0.34***
HML	0.10	-0.01	-0.02	-0.02
Adj R^2	25.50%	28.50%	28.80%	29.70%
	Parent			
	6M	12M	18M	24M
Alpha	-9.83%	-5.98%	0.26%	-1.54%
Indexreturn	0.76***	0.98***	0.93***	0.94***
SMB	1.063***	1.83***	0.91***	0.82***
HML	0.50**	0.17	0.15	0.09
Adj R^2	22.70%	27.20%	27.60%	27.80%
	Spin-off			
	6M	12M	18M	24M
Alpha	13.18%	5.14%	2.83%	1.03%
Indexreturn	1.18***	1.17***	1.15***	1.167***
SMB	0.89**	1.10***	1.02***	0.84***
HML	-0.34	-0.43**	-0.48***	-0.38***
Adj R^2	23.70%	27.90%	28.20%	28.70%

Notes. The table reports the annual abnormal return (Alpha) and Fama-French three factor model results for the proforma, parent and spin-off subsidiary portfolio. The abnormal return for 6-, 12-, 18- and 24-month periods is estimated using the Fama-French three factor model. The returns are winsorized at the 0.5% tails. Alpha is the USD-denominated stock return of the proforma, parent and spin-off subsidiary portfolio. Converted to USD using historical monthly exchange rate, calculated in SDC Datastream. The indices used are the monthly return on the Norway OBX, Sweden OMX Stockholm 30 and Finland OMX Helsinki 25. Firms are matched to the corresponding index based on the country where it is listed. SMB and HML are European risk factors downloaded from Kenneth French's library. Total observations for parent and spin-off pair are 52. Significance levels: ***1%, **5%, and *10%.

The market coefficient is significant at the 1% level for the three different portfolios over the period of 6-, 12-, 18- and 24-month periods. Market return is highly significant in explaining returns of calendar-portfolios in the sample. The proforma portfolio has coefficients close to one and performs like the market. The spin-off subsidiary portfolio outperforms the market in bull markets with coefficient above 1. The parent portfolio underperforms the market in a bull market with coefficients below 1.

The small minus big (SMB) factor is significant at 1% level for all periods and portfolios except for spin-off for a period of 6 months, except for spin-off for a period of 6 months. The 6-month SMB factor is significant at the 5% level for the spin-off subsidiary portfolio. The SMB coefficient has therefore highly explanatory power in explaining the returns of the calendar-portfolios in the sample. All portfolios have positive coefficients which indicates that they contain an overweight in small-cap firms

The parent portfolio loads positively on the high minus low (HML) factor. This implies that the portfolio has a high book-to-market ratio. However, the results are not statistically significant. The spun-off subsidiary always has a negative coefficient for the HML factor and has some significant values at 18 and 24 months. This indicates that subsidiaries have low book-to-market ratio and can be characterized as growth stocks. The HML factor loads close to zero and is insignificant for all periods in the proforma portfolio. HML coefficient therefore fails to explain returns for the proforma portfolio.

Adjusted R^2 shows how much of the variation in abnormal return can be explained by the model. The higher the adjusted R^2 is the more the three independent variables explain the variation in the dependent variable. The increase in data points explains the increase in adjusted R^2 for the portfolios on long term.

Parent abnormal return

The parent portfolio shows negative abnormal returns for the different periods except for the 18 months period, where it shows a small positive abnormal return. The 6 months period has an annual abnormal return of -9.83%. The annual abnormal return increases from the 6-month period until the 18-month period and stays close to zero afterwards. Further, abnormal returns for the parent portfolio are statistically insignificant in all periods. This result differs from Desai and Jain (1999) ’s results from the US, where they find significant positive abnormal returns (See table 2). The European study find mixed results for abnormal returns.

Veld and Veld-Merkoulova find no statistically significant results for the parent on any of the portfolios in any of the time periods (See table 2).

Spin-off abnormal return

The spin-off subsidiary portfolio shows insignificant positive annual abnormal return for all periods. The annual abnormal return decreases from 13.18% to 1.03% between the 6- and 24-month periods. These results differ from Desai and Jain (1999), where abnormal returns increase over time and are statistically significant. The result also differs from Veld and Veld-Merkoulova (2004) study. Their results increase steadily from the 6- to 24-months, however their results are also insignificant.

Proforma abnormal return

The proforma portfolio shows insignificant small negative abnormal return for all periods. The annual abnormal return ranges between -2.10% and -0.50% for all periods. The tendency is close to zero since the annual abnormal return is value-weighted between the parent- and spin-off subsidiary portfolio. Veld and Veld-Merkoulova (2004) present higher abnormal returns, however their results are insignificant as well. Desai and Jain (1999) find a significant abnormal return of 19.8% for the 36 months portfolio. As a result of insignificant negative annual abnormal return, we do not find support for the second hypothesis that the long-term effect of spin-offs yields positive abnormal return for the passive investor.

5.3 Value creating factors

In this subsection, we analyse the potential value creating factors increased corporate focus, increased information transparency and relatively large size of the spun-off subsidiary into our models. First, we test the value creating factors at spin-off announcement for the main event window [t-1,t+1] for the parent firm. Secondly, we test the value creating factors on long-term for the proforma portfolio.

5.3.1 Value creating factors at spin-off announcement

Table 12 shows the CAAR for each of the subsamples in the main event window one day before to one day after the announcement [t-1, t+1]. Means and differences in mean are tested using one sided t-test.

Table 12 - Results factor testing for main event window

	High Information Asymmetry		Low Information Asymmetry		Difference
	Mean	N	Mean	N	Mean
CAAR	0.31%	25	2.88%***	25	-2.57%**
T-value	0.29		2.88		1.71
P-value	0.39		0.00		0.04
	Cross-industry		Intra-industry		Difference
	Mean	N	Mean	N	Mean
CAAR	3.84%***	74	1.88%**	31	1.96%*
T-value	4.87		1.79		1.55
P-value	0.00		0.04		0.06
	Relative Large size		Relative Small size		Difference
	Mean	N	Mean	N	Mean
CAAR	4.14%***	29	2.87%***	28	1.27%
T-value	3.99		3.02		0.96
P-value	0.00		0.00		0.17

Notes. The table reports mean cumulative average abnormal returns for the main event window T-1 to T+1 for each of the factor variables using return generated process. Each factor are presented with dummy variable equal to 1 in column 1 and dummy variable 0 in column 2. Column 3 present the difference mean CAAR between the dummy variables. The mean cumulative average abnormal returns are estimated using the standard market model. The returns are winsorized at the 0.5% tails. The returns are USD-denominated stock return for the parent firms. Converted to USD using historical daily exchange rate, calculated in SDC Datastream. The indices used are the daily return on the Norway OBX Sweden OMX Stockholm 30 and Finland OMX Helsinki 25. Firms are matched to the corresponding index based on the country where it is listed. N denotes the number of firms in each subsample. The firm must have over 100 observations in the estimation period (-200,-20) to be included. Significance levels: ***1%, **5%, and *10%.

Information asymmetry

High level of information asymmetry yields a lower mean CAAR of 0.31% compared to low level of information asymmetry with a mean of 2.88% at the spin-off announcement. The difference in mean CAAR is -2.57%. The mean CAAR is statistically significant at the 1% level for low information asymmetry and not significant at high level of information asymmetry. The difference in mean CAAR is significant at the 5% level. This result is contrary to Krishnaswami & Subramaniam (1999) study on the US-market which concludes that firms with a high level of information asymmetry outperformed the one with low level of information asymmetry. However, it is in-line with the results with Veld and Veld-Merkoulova (2004) study. Their results are that firms with low level of information asymmetry outperformed the firms with high level of information asymmetry with a mean CAAR difference of 2.01%. Our results indicate a reverse value creating factor for information asymmetry. Firms with low information asymmetry have higher CAAR than firms with high information asymmetry. Following this we do not find support for the third hypothesis that high level of information asymmetry at announcement of spin-off yield statistically significant abnormal returns for the shareholder.

Corporate focus

Cross-industry spin-offs yield a higher mean CAAR of 3.84% compared to intra-industry with a mean of 1.88%. The difference in mean CAAR is 1.96%. The cross-industry mean CAAR is significant at the 1% level, intra-industry at the 5% level and the difference at the 10% level. This is in-line with previous studies on spin-offs in the US and European financial markets. Desai and Jain (1999), Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004) find that cross-industry spin-offs create more shareholder value than intra-industry spin-offs. Veld and Veld-Merkoulova (2004) find a CAAR mean difference of 2.8%, which is significant at the 5% level. Our findings indicate that cross-industry has slight evidence of being value creating factor for the shareholder holders. However, as the mean difference is only statistically significant at the 10% level, we do not find support for the fifth hypothesis that announcement of cross-industry spin-off yields positive abnormal returns for the shareholders.

Relative size

When the spun-off subsidiary is relatively large, it yields a mean CAAR of 4.14%. This compares to a mean CAAR of 2.88% when the subsidiary is relatively small. Both means are statistically significant at the 1% level. However, mean CAAR is statistically insignificant. Miles and Rosenfeld (1983), Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004) finds statistically significant values for both for the mean CAAR and the mean difference. As a result of insignificant mean difference, we do not find support for the seventh hypothesis that announcement of relatively large spin-offs yields positive abnormal return for the passive investor.

5.3.2 Value creating factors long-term

Table 13 illustrates the results from FF3 regression for each for the six subsamples for the proforma portfolio. The subsamples are separately regressed for a period 6-, 12-, 18- and 24-month period. The alpha and beta coefficients are tested with a one-sided t-test.

Table 13 - Results factor testing long-term

	6 months					
	Information Asymmetry		Corporate Focus		Relative Size	
	High	Low	Cross	Intra	Large	Small
Alpha	-2.77%	-9.14%*	-1.50%	1.57%	-6.23%*	3.48%
Index Return	0.82***	1.07***	0.91***	0.87***	0.86***	0.96***
SMB	0.47**	0.41*	0.59***	0.17	0.57***	0.43***
HML	0.15	-0.07	0.12	0.01	0.06	0.15
Adj R^2	30.50%	32.40%	23.90%	30.40%	29.00%	22.40%
N	19	17	34	18	27	25

	12 months					
	Information Asymmetry		Corporate Focus		Relative Size	
	High	Low	Cross	Intra	Large	Small
Alpha	-1.33%	-3.65%	-1.25%	-3.17%	-3.85%	-0.14%
Index Return	0.49***	1.25***	1.09***	0.94***	1.11***	0.97***
SMB	0.49***	0.35**	0.60***	0.23	0.55***	0.47***
HML	0.10	-0.07	0.00	-0.11	-0.12	0.09
Adj R^2	29.90%	42.80%	29.70%	25.50%	34.60%	22.20%
N	19	17	34	18	27	25
	18 months					
	Information Asymmetry		Corporate Focus		Relative Size	
	High	Low	Cross	Intra	Large	Small
Alpha	-1.63%	-1.78%	-0.62%	-0.10%	-0.43%	-0.50%
Index Return	0.94***	1.24***	1.09***	0.95***	1.04***	0.97***
SMB	0.31***	0.47***	0.49***	0.20	0.43***	0.43***
HML	0.00	-0.12	0.02	-0.11	-0.09	0.04
Adj R^2	29.40%	44.10%	30.80%	23.50%	34.80%	22.60%
N	19	17	34	18	27	25
	24 months					
	Information Asymmetry		Corporate Focus		Relative Size	
	High	Low	Cross	Intra	Large	Small
Alpha	-2.45%	-3.82%*	-2.59%	-0.49%	-1.24%	-2.30%
Index Return	0.99***	1.23***	1.01***	1.01***	1.02***	1.01***
SMB	0.32***	0.43***	0.43***	0.27**	0.43***	0.34***
HML	-0.02	-0.17**	0.01	-0.08	0.15	0.04
Adj R^2	30.60%	42.70%	30.20%	28.40%	34.60%	24.70%
N	19	17	34	18	27	25

Notes. The table reports the annual abnormal return (Alpha) and Fama-French three factor model results for the proforma portfolio for each of the value creating factor variables. Column 2,4,6 present each dummy variable equal to 1 and column 3,5,7 present the dummy variables equal to 0. The abnormal return for each factor for 6-, 12-, 18- and 24-month periods is estimated using the Fama-French three factor model. The returns are winsorized at the 0.5% tails. Alpha is the USD-denominated stock return of the proforma portfolio. Converted to USD using historical monthly exchange rate, calculated in SDC Datastream. The indices used are the

monthly return on the Norway OBX, Sweden OMX Stockholm 30 and Finland OMX Helsinki 25. Firms are matched to the corresponding index based on the country where it is listed. SMB and HML are European risk factors downloaded from Kenneth French's library. Total observations for parent and spin-off pair are 52 for corporate focus and relative size. Total observations for information asymmetry are 36 due to unavailable or uncovered brokers estimates. Significance levels: ***1%, **5%, and *10%.

Information asymmetry

The long-term results for the information asymmetry factor reveal negative annual abnormal returns for all periods. The high information asymmetry sample yields higher returns compared to the low information asymmetry sample for all periods. Low information asymmetry annual abnormal return ranges between -1.78% and -9.14%. The low information asymmetry has annual abnormal return of -9.14% at 6 months and -3.82% for 24 months both statistically significant at the 10% level. All the abnormal returns for high information asymmetry are insignificant. This indicates that information asymmetry factor does not yield any shareholder value creation for the passive shareholder.

The index return coefficient is significant at 1% level for all periods for both high and low information asymmetry. High information asymmetry always has an index coefficient below one, and low information asymmetry always has an index coefficient above one. All else equal in a bull market high information asymmetry would perform worse than the market while low information asymmetry would outperform the market. The SMB factor is significant at 1% level for most periods, but the differences between high and low information asymmetry samples are low. Both high and low information asymmetry samples are tilted towards small cap firms. The HML factor is only significant at 5% level for low information asymmetry for 24 months and has overall has no conclusive results.

Veld and Veld-Merkolouva (2004) results are different from ours. They find that low information asymmetry outperforms high information asymmetry. As a result of insignificant negative abnormal returns, we do not find support for the fourth hypothesis that high level of information asymmetry at announcement of spin-off yields positive long-term abnormal returns for the passive investor.

Corporate focus

The long-term results for the cross-industry factor reveal no outperformance of the intra-industry in annual abnormal return for the calendar-portfolio over 24 months. Intra-industry

yields a higher alpha for all the different calendar-portfolios except for the 12-months. The annual abnormal returns for both subsamples are not statistically significant in all periods. This indicates that there is no long-term effect for the passive shareholder on the corporate focus factor

The index return coefficient for both subsamples range around 1. It is significant at the 1% level for both subsamples in all the periods. This indicates that the portfolio's performance is close of the index. We find no conclusive results for the FF3 loadings. It would therefore not add any insights to the analysis.

Desai and Jain (1998) find that cross-industry spin-offs outperform intra-industry spin-offs over the long term. Their results for one year are abnormal returns of 3.83% for focus-increasing spin-offs. This is significant at the 5% level. For the other periods, most of their results are not statistically significant. However, there is a trend of positive abnormal return for cross-industry spin-offs and negative abnormal return for intra-industry spin-offs. Overall, our finding is that cross-industry spin-offs yield insignificant negative abnormal returns. Following this we do not find support for the sixth hypothesis that cross-industry spin-off yields positive long-term abnormal returns for the passive investor.

Relative size

The long-term results of the large relatively size of the spun-off subsidiary reveal no outperformance of small relative size in annual abnormal return over 24 months. Both samples have insignificant abnormal returns for all periods, except large relative size who has -6.23% AAR in the 6-month period, with the 10% significance level. This indicates that there is no long-term effect for the passive shareholder with respect to the relative size factor.

The index return coefficient is significant at 1% level for all periods for both large and small relative size. The values shift around one for both samples. The SMB factor is positive and significant for both the subsamples but the difference between the two samples is negligible. The positive results indicate that the firms in the samples share the same risk characteristics as small firms. We found no significant results with respect to the HML factor in both subsamples.

Veld and Veld-Merkoulova (2004) results on the relatively large size of the spun-off subsidiary factor are negative abnormal returns for the first 12 months and positive for the 24 months. While our results point to negative annual abnormal returns for the relatively large size of the spun-off subsidiary in all four portfolios. Following this we do not find support for the eight hypothesis that relatively large spin-off size yields positive long-term abnormal returns for the passive investor.

5.4 Summary of hypotheses results

Table 14 summarize the value creating factors for the passive shareholder associated with spin-offs and serves as a concluding framework.

Table 14 - Summary of accepted and rejected hypotheses

Abnormal Return	Hypotheses	Parent	Spin-off	Proforma
Announcement	H1	Yes***		
Calendar Portfolio	H2	No	No	No
Factors				
Announcement				
Information Asymmetry	H3	Possibly, opposite of hypotheses**		
Corporate Focus	H5	Possibly*		
Relative Size	H7	No		
Calendar Portfolio				
Information Asymmetry	H4			No
Corporate Focus	H6			No
Relative Size	H8			No

Notes. The table present a summary of accepted and rejected hypotheses. Significance levels: ***1%, **5%, and *10%.

6. Conclusion

We have examined short- and long-term shareholder value creation associated with corporate spin-offs from January 1, 1998 to July 31, 2021 on the Nordic stock exchanges.

Using an event study at the time of spin-off announcement on our sample of 119 parent firms, we find a significant cumulative abnormal return of 2.27% from the day prior to the day after the announcement [t-1, t+1]. We find no evidence for impact of relative size on shareholder value creation in the short-term. Increased corporate focus shows a slight positive association with increased abnormal returns. Cross-industry spin-offs has a 1.96% higher cumulative average abnormal return (CAAR) compared to intra-industry spin-offs. Contrary to our hypothesis, parent firms with high information asymmetry have 2.57% lower CAAR, compared to firms with low-information asymmetry. This is contrary to previous studies on corporate spin-offs.

We create calendar-portfolios using our dataset of 52 parent and spin-off pairs and regress returns against the Fama-French three factor model. We find no evidence for shareholder value creation from corporate spin-offs over a 24-month period. Most of the explanatory factors have insignificant values. Low level of information asymmetry and relatively large size of spun-off subsidiary show weak significance in the 6-month period with average abnormal returns of -9.14% and -6.23% respectively.

With this thesis we extend the literature on shareholder value creation associated with corporate spin-off in the Nordic financial market. We find that spin-off announcements create shareholder value at announcement date and in our main event window. This is in-line with previous research on European and US corporate spin-offs. We find no evidence of shareholder value creation for the passive shareholder in the long-term. The three value creating factors presented have low significance and fail to explain the shareholder value creation. We conclude that corporate spin-offs in the Nordics create value as a result of significant abnormal return at the spin-off announcement date.

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Appendix

Appendix A - Efficient market hypotheses

Fama published a study in 1970 about “Efficient capital markets: A review of theoretical and empirical work. The theory in this study states that the financial markets are “informationally efficient” if all available information is reflected in the price of the stocks. Which leads to the conclusion that if the financial markets are “informationally efficient” investors cannot make risk-adjusted profits with trading. Therefore, it should be impossible for the investors to outperform the financial market by market timing and stock selection, the only way to obtain a higher return is to increase the risk profile. The logic behind the efficient market hypotheses is the Random Walk Theory. The Random Walk theory assumes that the past movement of a stock price cannot be used to predict future movement. This theory has been discussed since it was published in 1970. Opponents of the theory suggest that it is possible to outperform the market, in other words stocks could deviate from their fair market value based on public information. (Fama,1970)

Further Fama formalized three forms of market hypotheses to explain the efficiency of the financial markets. The three different hypotheses are weak-, semi-strong- and strong form (Fama, 1970).

Weak form efficiency states that future asset prices are not influenced by past events. All historical information is reflected in the stock prices. Technical analysis can therefore not be used to outperform the financial markets.

Semi strong form assumes that stock prices adjust according to new public information. Fundamental and technical analysis cannot be used to outperform the financial markets. Access to material non-public information is the only method to gain abnormal returns on investment.

Strong form efficiency states that all information in the financial markets both public and private is reflected in the stock price. This implies that trade on inside information would not effect the stock price.

Most of the financial markets are considered to be the semi strong form efficient. The reason is that stock price increases/decreases on new good/bad public information.