Stockholm School of Economics Department of Accounting Master's Thesis within Accounting & Financial Management May 2009

Do spin-offs affect shareholder wealth?

A study among Swedish publicly traded companies of the share price reaction upon announcement of spin-offs according to Lex ASEA

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Abstract: A wide range of international studies have shown that voluntary spin-offs made by publicly traded companies have had significant positive effects on shareholder wealth. However, updated and comprehensive research of the Swedish stock market is not available. The purpose of this thesis is to investigate the effects from Swedish spin-offs on shareholder wealth. This is investigated using an event study, where share price reactions upon announcement of spin-offs during the period May 1991-December 2008 have been studied. The final sample contains 33 spin-offs. In addition, the study investigates whether cross-industry and intra-industry spin-offs, where the parent company and the spun off entity belong to different and the same industry classification, respectively, have different effects on shareholder wealth. The results for the whole sample indicate that spin-offs create statistically significant abnormal returns, amounting to 3.32% upon announcement and 3.42% cumulated for the studied event window. Corresponding returns excluding outliers also display statistical significance and amount to 1.88% upon announcement and 6.65% cumulated over the event window. An analysis of intra-industry versus cross-industry spin-offs indicates that, contrary to prior research, intra-industry spin-offs result in significantly higher cumulative abnormal returns than cross-industry spin-offs for the studied event window, amounting to 13.16%. For the full sample, no difference in abnormal return is observed upon announcement. When adjusting for outliers, intra-industry spin-offs result in significantly higher abnormal returns than cross-industry spin-offs, amounting to 3.00% upon announcement and 8.61% cumulated over the event window. It should however be noted that the final intra-industry and cross-industry samples merely constitute 15 and 17 observations, respectively.

Key words: Spin-off, Lex ASEA, shareholder wealth, event study, abnormal return, cross-industry, intra-industry

Tutor: Stina Skogsvik

Presented:

Friday, 29 May 2009 13:15-17:00 P.M. Room 350

Acknowledgements

The authors would like to direct a special thank you their tutor Stina Skogsvik, ABG Sundal Collier, Karl Eidem and Henrik Andersson for their input and feedback. The authors would also like to thank their families and friends for their encouragement and support.

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Glossary

Definition	Description
Announcement	Date of first spin-off announcement
AR	Abnormal Returns
ĀR	Average abnormal returns
CAPM	Capital Asset Pricing Model
CAR	Cumulative Abnormal Returns
CAR	Average cumulative abnormal returns
Cross-industry	Parent company and spun-off entity pertain to different industries
H ₀	Statistical null hypothesis
H_1	Statistical alternative hypothesis
Hypothesis 1	Research hypothesis 1
Hypothesis 1: H ₀	Statistical null hypothesis of research Hypothesis 1
Hypothesis 2	Research hypothesis 2
Hypothesis 2: H ₀	Statistical null hypothesis of research Hypothesis 2
Intra-industry	Parent company and spun-off entity pertain to the same industry
Non-significant	Not statistically significant
Parent company	The (listed) parent company conducting the spin-off
Spun-off entity	Entity announced to be spun-off from the parent company
T ₀	Statistical denomination for date of first spin-off announcement

1. Introduction

A corporate spin-off takes place when the shareholders receive a "*pro-rata distribution of separate equity claims on a subset of the original firm's net assets*" (Schipper and Smith, 1983). Previous studies, mainly conducted in the United States, have found that such spin-offs yield abnormal returns ("ARs"). The wealth effects from different spin-off characteristics have also been studied, identifying potential factors that affect the magnitude of the observed abnormal returns. Such factors include, inter alia, which industry the parent company and spun-off entity belongs to, the spun off entity's size relative the parent company, reasons for spin-offs as communicated by company management, tax and regulatory pressure as well as managerial efficiency (Daley et. al., 1997; Johnson et. al., 1994). Even though the area has been extensively studied in the United States, the subject has received little attention in Swedish research in recent years. Since the prerequisites for value creation are not necessarily the same in different markets, further research is needed to test whether results found in international studies are applicable for Swedish companies.

1.2 Background

Companies occasionally announce that they intend to spin off a part of the company. Common reasons include that the division to be spun off is not part of the core business, or that there are limited synergies between the entities. In both cases, a spin-off can enable management in both the parent company and the spun off entity to increase focus. Such a transaction, where a division is spun off and listed as a separate company, without changing the ownership structure of the spun off entity, is in Sweden referred to as a 'Lex ASEA' transaction. Lex ASEA is a tax regulation which makes the transaction tax exempt, since the shareholders may postpone taxation of the capital gain created when the shareholders receive shares in the spun off company as a dividend, until they sell those shares. We will study spin-offs according to Lex ASEA in order to understand the effects that the transactions have on shareholder wealth.

1.3 Purpose

Our main purpose with this paper is to cover the current research gap regarding the effects on shareholder wealth that arise from voluntary spin-offs in Sweden according to Lex ASEA.

Our purpose is furthermore to investigate whether the effects on shareholder wealth differ depending on whether the spun off entity belongs to the same or to a different industry than the parent company (i.e. intra-industry or cross-industry). The studies that have been carried out in Sweden are either several years old, narrow in their period of study or narrow in their gross sample of transactions. By attaining our purpose, we hope to provide an updated view of the Swedish market which can be used by shareholders, company executives and financial advisors when evaluating potential spin-offs according to Lex ASEA. Such evaluations may be conducted on the basis of the market's reaction when comparable companies have announced an intention to spin off a part of the company. In addition, the study may also serve as supporting information for other actors on the financial market such as financial analysts, private equity investors and mutual fund managers.

1.4 Research questions

We intend to investigate whether spin-offs affect shareholder wealth and whether the effects on shareholder wealth differ between intra-industry and cross-industry spin-offs.

This area is studied by posing the following research questions:

i) Do abnormal returns emerge for Swedish publicly traded companies when announcing spin-offs?

ii) Are the levels of abnormal returns affected by whether the spin-offs are conducted intraindustry or cross-industry?

1.5 Delimitations

The transactions selected for this study only include Swedish, listed companies that fulfill a set of criteria (see *filtering* in the methodology section). All transactions included are spinoffs that have been executed according to the Lex ASEA method under supervision of the Swedish National Tax Agency. Hence, no equity carve outs or sell-offs are included in the study. Furthermore, since only Lex ASEA transactions are included, we do not study any transactions that were carried out prior to the ASEA-transaction in 1991. Consequently, our study is limited to the period between May 28, 1991 and 31 December 2008.

1.6 Disposition

The thesis begins with a walk-through of the theoretical framework applied in the study. In addition to being used in the analysis, the theories presented are used to help formulate hypotheses and to identify the expected contributions from this study. Next, the methodology and research design are explained in detail in order to give the reader a clear understanding of the methods used, the rationale behind them and how the study has been carried out. The methodology section includes a description of the data collection, where we provide a detailed account of what sources that have been used and how the data sample has been selected. In the results section, we present the results obtained in the study. The results either accept or reject the hypotheses posed. In the analysis section, the results are analyzed with the aid of theoretical frameworks and previous research results. After the analysis, the findings and conclusions drawn from the study are summarized and suggestions for further research are provided. The thesis ends with our summarized conclusions, a discussion of the study's robustness, reliability and validity as well as a discussion of whether the findings in this study can be generalized and applied in a broader context.

2. Theoretical framework

This section gives an account of theories and approaches used in previous research that are deemed relevant for our study. In addition, a summary of the regulatory framework surrounding Lex ASEA, the formulation of appropriate hypotheses as well as expected contributions from this study are included. The theoretical frameworks presented will constitute a foundation and important points of reference for our study.

2.1 The efficient market hypothesis

According to the efficient market hypothesis, only new information can affect the price of a financial asset. The hypothesis rests on the assumption that all investors act rationally, have access to new information at the same point in time and are capable to interpret the information accurately. In addition, it is assumed that there are no transaction costs and that investors have the same expectations (aktiespararna.se). The market is assumed efficient if it fully and correctly reflect all relevant information in market prices. In a fully efficient market, security prices will immediately respond to new relevant information. This makes it impossible for investors to discover opportunities for abnormal returns through technical or fundamental analysis. The underlying financial assets' risk is the only factor attributable to the yielded return. Hence, abnormal returns should not occur (Arnold, 2005).

The capital market's main objective is to allocate ownership of the economy's capital stock. Ideally, this should be achieved in an efficient market where prices provide signals for proper resource allocation. In such a market, investors can choose among ownership in different firms under the assumption that the share prices at all times fully reflect all information available. In the capital market, capital is attracted to the firms that are able to make the most profitable investments. Since the market is assumed to be perfectly competitive, the company that presents the most lucrative investment prospects will obtain the most capital and thereby be able to expand. Companies that demonstrate poor performance or unattractive investment prospects may have difficulties to attract new capital. However, if the market is inefficient, an efficient allocation of capital will not be achieved. The stock market promotes transparency of listed companies toward investors, in order to maximize market efficiency (aktiesparana.se).

Since the definition of an efficient market is too general to be tested empirically, the market efficiency is divided into three levels of strength, which are determined on the basis of the information efficiency (Fama, 1970). The three levels of strength are described below.

The weak level

Market prices reflect all historical price information and are only changed due to a "random walk", i.e. new information reaching the market. The information subset is merely historical price or return sequences. Consequently, the price of a financial asset on any given day can be predicted by the previous day's price plus the expected return of the asset and an unpredictable random factor. Hence, any analysis based on previously known facts cannot yield abnormal returns, since market prices already reflect all historical information available (Fama 1970, 1991).

The semi-strong level

The semi-strong level of market efficiency states that the price of a financial asset, in addition to all the historical prices, also reflects all available public information (Fama 1970, 1991). Public information consists of a combination of macro and company specific data. In the semi-strong market, prices of financial assets already reflect all available information. The only way to achieve abnormal returns is to use so-called inside information (Arnold, 2005).

The strong level

All information is reflected in market prices – including inside information. In this case, no investor can have an information advantage. Since the strong level of market efficiency reflects all information, no information asymmetry exists. Thus, not even inside information can be used to achieve abnormal returns (Arnold, 2005).

2.2 Abnormal returns

Abnormal returns generated by a specific security or portfolio occur when the actual return differs from the expected return. The expected rate of return is estimated based on an asset pricing model, using historical prices of the specific financial asset and the market portfolio. Abnormal returns can be both positive and negative (Investopedia.com).

2.3 Agency theory

Agency theory concerns the relationship between a principal (e.g. shareholders) and an agent of the principal (e.g. company executives). A conflict of interest may arise between shareholders and executives due to differing goals and asymmetric information. The problem with asymmetric information is particularly present in large publicly traded companies with owners widely dispersed and having limited insight into the company. Information asymmetry may lead to inefficient management and value destruction, if executives pursue objectives which are not compatible with maximizing shareholder value. If executives' incentives are not aligned with the maximization of shareholder value, the value of the company tends to decline over time (Arnold, 2005; Kim and Nofsinger, 2007).

It has been proven that firms engaging in spin-offs have higher levels of information asymmetry compared to their peers and the information asymmetry problems decrease significantly post spin-off. Furthermore, the gains arising from spin-offs are positively related to the degree of information asymmetry prevailing (Krishnaswami and Subramaniam, 1999).

2.4 The incentive-signalling hypothesis

Disturbance in the market can occur as a result of information asymmetry between the different parties. The party with the information advantage (e.g. company executives) can overcome this asymmetry by sending signals to the less informed party (e.g. shareholders) in order to help the less informed party to interpret information accurately (Spence, 1973). The incentive-signalling hypothesis was introduced by Stephen A. Ross, who argued that since managers possess information unavailable to the market, the choice of managerial incentive schemes as well as the company's financial structure signals information to the market. For example, according to the theory, the value of firms would rise with leverage since increasing leverage increases the market's perception of value (Ross, 1977).

2.5 Motives behind spin-off

Increased transparency

Spin-offs can have positive effects, in terms of transparency, as the spun off entities will publish financial reports that are separated from the parent companies. This eliminates the possibility to "hide" disappointing results from shareholders, resulting in higher transparency

and increasing the possibilities for monitoring of management. Consequently, higher transparency leads to better corporate governance and increased efficiency in company management (Glassman, 1998). Hence, spin-offs facilitate the implementation of efficient internal governance and control practices (Seward and Walsh, 1996). These findings are supported in recent research, which shows that parent companies have weaker corporate governance structure than non-spin-off parent companies, and that an improvement in corporate governance of post-spinoff firms is positively and significantly associated with the long-run spinoff performance (Qian and Sudarsanam, 2007).

Higher transparency does not only enable better monitoring possibilities – it may also provide a more accurate valuation of the spun off entity. One reason for the increased transparency is that the spun off entity often enjoys a higher degree of analyst and investor attention post spin-off than before. This further enhances the transparency and leads to a more efficient determination of the share price (Pearson, 1998).

Financial controlling

Companies within the same corporate group often have the same required rate of return on new investments. After a spin-off, both the parent company and the spun off entity will be able to set a required rate of return that is better suited for their respective operations. Hence, a spin-off may decrease the risk to reject projects with positive net present values (Chemmanur and Paeglis, 2001).

Effects on existing contracts and contracting flexibilities

In some cases, a spin-off may increase value gains as it enables companies to assign a specialized set of contracts to the parent company as well as to the spun off entity. In such cases, the contracts can be tailored and optimized to the specific entities and hence enhance value. Just as mergers can create economies of scale in contracting among similar operations, spin-offs may eliminate diseconomies of scale among dissimilar operating units (Hite and Owers, 1983). Since the optimal set of contracts depend on the company's operations, asset base, characteristics of investments etc., these optimal sets may vary over time. Thus, a spin-off may enable both the parent company and the spun off entity to specialize in the contracts in which they have a comparative advantage, resulting in higher flexibility in terms of both operations, investments and potential future M&A activities. Such spin-offs are value enhancing given that the gains from higher contracting flexibility outweighs the cost of the

spin-off (Jensen and Meckling, 1976; Myers, 1977; Smith and Warner, 1979; Veld and Veld-Merkoulova, 2001).

Strategic reasons

The parent company may wish to focus management's effort and incentives on its core business, thus needing to slim down the non-core operations. The parent may also believe that the spun off entity can develop its business more successfully on a stand alone basis. It has been shown that companies with low profitability and a high degree of diversification display a stronger share price reaction upon announcement of a spin-off than other companies (Markides, 1996). Similarly, it has been proven that companies engaging in spin-offs with the motive to increase focus on the core business, display higher abnormal returns upon announcement than other companies (Veld and Veld-Merkoulova, 2001). Previous studies have also found that abnormal returns appearing around the announcement of corporate spin-offs represent, at least partially, the re-creation of value destroyed at the time of an earlier acquisition (Allen et. al., 1995).

Furthermore, it has been shown that firms with strong growth opportunities and firms in need of external capital are more prone to engage in spin-offs. They also raise more capital following a spin-off. This is consistent with the view that firms mitigate information asymmetry before approaching the capital market for funds (Krishnaswami and Subramaniam, 1999). However, even though voluntary spin-offs and sell-offs result in positive abnormal returns upon announcement, such transactions often occur after a period of abnormally negative returns. This suggests that the announcement is preceded by a period of negative information about the firm (Alexander et. al., 1984).

Regulatory and fiscal constraints

Large corporations are often subject to stricter legal and financial regulations than smaller firms. When a relatively small division or subsidiary is spun off from a large corporate group, the regulatory requirements for the spun off entity may decrease significantly. Hence, wealth can be created from tax and regulatory advantages (Schipper and Smith, 1983).

2.6 Alternatives to spin-offs

In addition to spin-offs, there are several other ways of splitting up companies. One common way is to perform an equity carve-out, i.e. to sell out a certain part of the company to the public. In general, only a part of the company is sold, while the other part is retained by the parent company, which continues to be a major influence (Frank and Harden, 2001). Another common way to split up a company is to conduct a sell-off, i.e. to sell the subsidiary in a traditional M&A transaction. It has been shown that abnormal returns emerge when announcing sell-offs as well. However, the abnormal returns from spin-offs "outperform" abnormal returns stemming from sell-offs on the announcement day (Rosenfeld, 1984).

A common reason for conducting a spin-off is that the company is considered to be undervalued. In such a case, a spin-off is a more suitable way of separation than equity carveouts or sell-offs. By retaining ownership, the shareholders can enjoy the potential value gain created when the market realizes the true value of the previously undervalued spun off company (Krishnaswami and Subramaniam, 1999). Another way of separation is to perform a management buyout, where the controlling interest of a subsidiary is acquired by the management team, often backed up financially by private equity investors (Investopedia.com).

2.7 Lex ASEA

Lex ASEA is applicable when a Swedish, or in some cases foreign, parent company under certain conditions distributes shares of a subsidiary to its own shareholders without triggering any immediate dividend tax for the owners. Instead, the recipient of the dividend is taxed when the shares are sold. When shares are sold, the owners use a certain percentage of the value paid for the shares in the parent company in order to calculate an acquisition price of the shares in the spun off entity. The percentage used for the calculation is normally calculated by the Swedish National Tax Agency (Skatteverket.se, Aktiesparana.se).

2.8 Comparable research within the area

Swedish studies

Since the Lex ASEA regulatory framework in Sweden is relatively new, the number of comparable studies is very limited. Studies that have been conducted either focus on other time periods (Scheutz, 1988; Daneshvar Minabi et. al; 2005, Albertsson et. al., 2008; Eriksson and Ho, 2006) or are carried out using other methods (Karlsson and Spängs, 2004). Despite thorough searching, we have been unable to find any studies that cover the whole Lex ASEA-

period, i.e. from 1991 to 2009 or prior years. Hence, the result in this study may differ from other Swedish research due to lack of full comparability.

The best comparable Swedish studies are Scheutz (1988) and Albertsson et. al. (2008). Scheutz has both a quantitative and a qualitative approach, as the author study the companies for a longer period of time and conduct in-depth case studies. The author does not focus on the reaction on announcement day alone, but rather on announcement and the following 18 months. For the studied period, statistically significant abnormal returns are observed, indicating that abnormal returns were sustainable. Schutz however pointed out that a significant share of the spin-offs resulted in negative abnormal returns and hence concluded that spin-offs are not necessarily resulting in abnormal returns. Further, the results observed were weaker than comparable studies conducted in the US.

Albertsson et. al. is an undergraduate study which concludes that abnormal returns occur on announcement as well as for the 5 and 10 day period following announcement. No significant abnormal returns are observed for the whole period. Further, the study does not observe any significant declines in abnormal returns after announcement. However, some tendencies for share price reaction one week before announcement are observed, though no statistical tests are conducted of those tendencies. The Albertsson study concludes that abnormal returns emerge in connection with announcement; but that the 10 day window prior to announcement does not exhibit significant abnormal returns and hence strong evidence for information leakage are not found. However, the authors point out that significant abnormal returns are observed for day t_{0-6} , making them unable to fully discard information leakage.

A general comment regarding the Swedish research that has been conducted is that it mainly constitutes undergraduate studies and no recently conducted professional study exists.

International studies

The area of spin-offs has attracted great interest from many prominent researchers, not least in the United States. Much effort was put into the area already in the early 1980s, by authors including (Hite and Owers, 1983), (Schipper and Smith, 1983), and (Miles and Rosenfeld, 1983). Since then, many comprehensive studies including (Cusatis et. al., 1993), (Johnson et. al., 1994) and (Desai and Jain, 1999) has been carried out.

International studies have found cumulative abnormal returns ("CAR") until announcement ranging between 2.2% and 17.5%, where the returns seem to be larger for studies that are carried out over longer periods of time. For example, the (Miles and Rosenfeld, 1983) study, which studies a period of 120 days before announcement, observes cumulative abnormal returns until announcement of approximately 17.5%. For the whole period, cumulative abnormal returns range from 0.2% to 67.2%. Only one of our reference studies, (Schipper and Smith, 1983), do not find statistical significance for the whole period.

The best comparable international studies are carried out by (Miles and Rosenfeld, 1983) and (Johnson et. al., 1994). Miles and Rosenfeld focus on whether size of the parent companies may be a source of excess returns. The study includes a total of 181 days and 55 companies and observes ARs for t_0 and CARs for the whole period amounting to 0.82% and 22.1%, respectively. ARs at t_{0+1} amount to 2.52%. Second, they study a relatively long event window, where significant abnormal returns occur prior to announcement (CARs amount to 16.65% at t_{0-1}). Conclusions from the study include that abnormal returns are observed both prior to announcement and in connection with announcement as well as the fact that larger parent companies result in higher abnormal returns than smaller parent companies. Johnson et. al. conducts an analysis where several factors are studied as potential source of excess returns. The study includes a total of 21 days and 113 companies and results in ARs for t₀ and CARs for the whole period amounting to 3.42% and 3.59%, respectively. Results indicate that returns were previously observed in older studies are positive and highly significant for recently conducted transactions as well. The proportion of equity spun-off is also found to have a significant relationship to AR, with proportion accounting for approximately 16% of the variation in AR. Both CARs prior and after announcement are only borderline significant, with CARs prior to announcement being positive, while CARs after announcement are negative.

Exhibit 1: Summary table of previous research

Professional studies

			Samp	ole size	_		C	AR
Author(s)	Year	Period	Initial	Final	Area	Interval ¹⁾	Interval	t ₀
Qian & Sudarsanaman	2007	1985-2005	367	170	Europe	-10 to +10	6.5%	3.5%
Veld & Veld-Merkoulova	2004	1987-2000	n/a	156	Europe	-10 to +10	4.1%	1.2%
Desai & Jain	1999	1975-1991	246	155	US	-36 to $+36^{2)}$	n/a	3,8% ²⁾
Krishnaswami & Subramaniam	1999	1979-1993	212	118	US	-30 to +30	n/a	3.2%
Daley et. al	1997	1975-1991	212	85	US	-1 to day 0	n/a	3,4% ⁵⁾
Seward & Walsh	1996	1972-1987	194	78	US	+1 to +25	2.6%	n/a
Allen et. al	1995	1962-1991	73	40	US	-4 to +4	9.0%	2.2%
Johnson et. al	1994	1980-1991	155	113	US	-10 to +10	3.6%	4.3%
Cusatis et. al	1993	1965-1988	231	146	US	0 to $+36^{3}$	67.2%	n/a
Scheutz	1988	1983-1984	23	23	Sweden	0 to $+18^{3}$	9.0%	n/a
Rosenfeld	1984	1963-1981	93	35	US	-30 to +30	6.1%	8.4%
Schipper & Smith	1983	1963-1981	177	93	US	-90 to +40	0.2%	2.2%
Hite & Owers	1983	1962-1981	n/a	123	US	-50 to $+50^{4)}$	6.3%	7.3%
Miles & Rosenfeld	1983	1963-1980	92	55	US	-120 to +60	22.1%	17,5% ⁶⁾

Student studies

			Samj	ple size			C	CAR
Author(s)	Year	Period	Initial	Final	Area	Interval ¹⁾	Interval	t ₀
Daneshvar Minabi et. al	2005	1991-2001	n/a	37	Sweden	0 to $+36^{3}$	33% ⁷⁾	n/a
Albertsson et. al	2008	1998-2008	52	30	Sweden	-10 to +10	3.24%	2.5%
Karlsson & Spängs	2004	1996-2004	n/a	23	Sweden	-5 to +5	0.6%	3.9%
Eriksson & Ho	2006	2000-2005	25	25	Sweden	-6 to +6	10%7)	8.8% ⁷⁾
1)	Where an	nouncement = da	ıy 0					
2)	Refers to	months (i.e. $t_0 =$	month 0). I	Ranges fror	n -36 months	to +36 months after	er execution	
3)	Refers to	$t_0 + months$						
4)	Refers to	-50 days to +50	days after	execution				
5)	Only for	announcement da	ıy, i.e. AR a	and not CA	R			
6)	High CA	R before annound	ement (16.	65% at t ₋₁)				

7) Approximated from graph since to table with results exists

2.9 Hypotheses

The main underlying assumption behind our hypotheses is the efficient market hypothesis. We assume that the stock market is efficient to the semi-strong level, i.e. that all publicly available information are reflected in the share prices. Hence, the only way to receive a higher return than the estimated is to use insider information (or to simply be fortunate). In addition, we will take the incentive-signalling hypothesis into account as it may explain why parties with information advantage (e.g. management) send signals to the party with less information (the market). The incentive-signalling hypothesis is closely related to agency theory, as it analyses the risks of asymmetric information and sub-optimization. For example, shareholders

may want to decrease the risk for sub-optimization by spinning off a subsidiary and thereby decrease the degree of asymmetric information.

It is our opinion that the theories above to a large extent can be used as a background to understanding practical arguments for spin-offs, further described below, such as increased transparency, better financial controlling and enabling of stronger ownership. To summarize, we believe that the theoretical background provides a framework of motives to why companies perform spin-offs. This framework constitutes important effects on shareholder wealth and hence our first hypothesis ("Hypothesis 1") is that announcements of spin-offs will have a significant effect on shareholder wealth. In order to study the effects from announcements of spin-offs on shareholder wealth, we have formulated the following question:

"Do abnormal returns emerge for Swedish publicly traded companies when announcing spinoffs?"

Hypothesis 1 is stated formally, in null form, below:

H_{0:} Abnormal returns do not emerge in connection with spinoff announcements.

The method used will generate empirical results including observed returns, which will be tested for statistical significance. This result will be used in order to either accept or reject the null hypothesis. However, even though the testing of Hypothesis 1 will provide information whether spin-offs affect shareholder wealth, it will not give any indication about what specific spin-offs characteristics that the effect derives from. As we have described previously, spin-offs might eliminate diseconomies of scale among dissimilar operating units, it enables both the parent company and subsidiary to specialize in the contracts in which they have a comparative advantage as well as decrease the risk for projects with positive net present values to be rejected. It has also been proved that companies who have focus on their core business as motive for the spin-off enjoys higher abnormal returns upon announcement than other companies. The common denominators between these characteristics are that there is an underlying difference between the parent company and the spin-off. In order to test this difference statistically, we need to identify a clear variable that determine whether the firms are different or not. We believe that the most explicit distinction of difference is if the parent

company and the spun-off entity pertain to the same industry or not. Hence, we intend to study if the effect on shareholder wealth is different between spin-offs that are conducted intra-industry and spin-offs conducted cross-industry.

This second hypothesis ("Hypothesis 2") will be relevant even if we accept the above null hypothesis, since the larger group in Hypothesis 1 may fail to recognize effects that can be found by analyzing the two smaller groups, i.e. intra-industry and cross-industry, in Hypothesis 2. In order to study the difference between intra-industry and cross-industry spin-offs, we have formulated the following research question:

Are the levels of abnormal returns affected by whether the spin-offs are conducted intraindustry or cross-industry?

Hypothesis 2 is stated formally, in null form, below:

H_{0:} No differences in abnormal returns are observed between intra-industry and cross-industry spin-offs.

2.10 Contribution from the study

The contribution from this study will be two-folded;

- i) It is the first study performed in recent years that takes *all* Swedish spin-offs into account since the inception of Lex ASEA
- ii) The study analyzes the effect from the above transactions on shareholder wealth according to if the parent and spun-off unit pertain to the same industry or not. This analysis have not been done for the Swedish market previously

The benefits of these two contributions include the possibility for future research to compare this study with similar research made on companies in other geographical areas, in order to analyze potential differences and resemblances of the results. Further, the broader scope of transactions used in Hypothesis 1 in this study is expected to result in more reliable statistical results due to the larger amount of data compared to other recent previous Swedish studies. The broader scope also ensures higher data quality, since we have not been forced to include uncertain transactions or disturbing factors (e.g. announcements coinciding with release of financial reports) in order to reach "critical mass". Hypothesis 2 provides an extension in terms of an analysis of wealth effects from difference in industry classification. The outcome can be compared with results from similar international studies and is useful as an indication of similarities and/or differences both between individual companies and spin-offs in general between countries.

3. Methodology

3.1 Event study introduction

We have addressed our research questions by carrying out an event study. Provided that the market is efficient and rational, the effects of a certain event will immediately affect share prices. The implications on shareholder wealth of a certain event can thus be determined by examining movements in share prices. Hence, an event study is appropriate when testing for abnormal returns at a specific date or time period. This method is consistent with previous studies. Statistically significant abnormal returns at announcement or accumulated over the entire event window, would support that spin-offs cause abnormal returns and hence affect shareholder wealth.

3.2 Data sample

We have used the public list of spin-offs according to Lex ASEA from the Swedish National Tax Agency as a gross list for potential transactions to study. The list contains total of 96¹ spin-offs announced by 70 parent companies during the period May 1991 through December 2008. In order to determine the date of announcement, and whether the transaction can be used in our study, we have mainly used the databases Affärsdata and Cision Wire Newsroom, where company news and press releases have been collected. In addition, we have collected press releases from company websites and, in some cases, we have been in direct contact with the companies' Investor Relations or Legal departments.

Each transaction on the list has been evaluated on the basis of certain criteria's that needs to be met in order for the observation to qualify into our final sample. An overview of the filtering process can be found below.

¹ Parent companies that announce more than one spin-off during the same date, or conduct a split of the company, are regarded as one spin-off due to the announcement being the same day.

Exhibit 2: The filtering process

Parent companies listed on Swedish stock exchange during the analyzed period, which conducts a spin-o according to the Swedish regulatory framework	ff
Spin-off approved by Skatteverket to be executed according to Lex ASEA (i.e. during the period 28 May 1991-31 December 2008)	
There needs to be a clear identifiable announcement date of proposal for the spin-off. I.e. market rumors and gradual statements made by company officials, leading up to the formal announcement, disqualifies the observation	
Announcement is not preceded by public statements from senior company executives or directors, for example in interviews (in such cases, we have used the statement from executives as announcement)	
Announcement is not dependant on regulatory approval (in that case, we use the date of the regulatory approval as announcement)	
Announcement does not coincide with announcement of other significant news including; i) M&A activities (acquisition, divesture, partial sell-off) ii) Changes in senior management team iii) Profit warnings of any kind iv) Financial reports v) Share issues	

The final sample consists of 34 spin-offs (96 less 62 exclusions), carried out by 32 different parent companies. In the appendix, we have disclosed a list of the final sample, including announcement dates, alphabetically by parent firm. The most recent spin-off that qualified into our final sample was announced in October 2006. During the whole period between 1991 and 2006, spinoffs are dispersed widely, with a high of six transactions taking place in 1995. The sample is diverse with respect to industry representation. Relative size of the spun off units ranges between 4.2% (Active Properties) and 61.0% (Enator) of the combined company prior to the spin-off (Skatteverket.se).

3.3 Event date specification

As the result of this study is dependent on the announcement date chosen for each transaction, the validity of this announcement is crucial. Our aim when searching for the correct announcement dates has been to formalize the process, thus minimizing subjectivity and increasing consistency and transparency.

Spinoffs usually involve more than one announcement. The first "announcement" may be an intention declared by the CEO or Chairman in the media. The next step is typically a formal announcement, through a press release, declaring that the board will propose a spinoff at a shareholder meeting. This is often followed by an announcement that the transaction has been completed. In all such cases, the first announcement of the entire chain of events is chosen as the event date, in our paper referred to as t_0 . The rationale for this is that if the market regards it likely that the proposal will pass, the main share price reaction will take place upon announcement of proposal and not when the decision has been formally made. However, if the first indication of spinoff is regarded merely as rumors and originates from a source other than company officials, this 'announcement' is disregarded. In most cases, t_0 represents the announcement saying that the board will propose a spinoff at the next shareholder meeting.

The announcement date of a transaction is extracted mainly from Affärsdata. Company websites and Cision Wire have been used as complements. Documents located in Affärsdata include the time the document was released. If an announcement was made after the market's close, the event date is defined as the next trading day. If the announcement was made on a non-trading day, the first trading day following the announcement is considered to be the event date. News items related to the individual firms appearing during the year prior to the announcement date are examined to ensure that the correct announcement date is identified. In the same way, share prices prior to the announcement have been examined in order to detect and follow up significant price gains.

3.4 The event window

The event window used in this study includes 20 trading days prior to announcement and 20 trading days post announcement. The point of investigating abnormal returns before and after the announcement date, t_0 , is to include effects from potential information leakage before t_0 as well as study the share price development in the days following the announcement.

In order to test our hypotheses, we will mainly focus on the abnormal returns on two event windows. The first window is the abnormal returns observed upon t_0 . The second window constitutes the cumulative abnormal returns over the entire 41 day event window.

In addition, we have investigated accumulated abnormal returns for several intervals within the event window in order to comprehensively analyze the effects of the full sample when testing Hypothesis 1. These intervals are accounted for below, together with short commentary. A corresponding analysis will not be conducted in the test for Hypothesis 2 due to the relatively small size of each group.

Interval	Comment
-20 through -2	Investigates reactions from possible information leakage prior to announcement
-10 through -2	Investigates reactions from possible information leakage prior to announcement
-20 through +1	Investigates reactions from possible information leakage prior to announcement as well as reactions upon announcement
-10 through +1	Investigates reactions from possible information leakage prior to announcement as well as reactions upon announcement
-1 through +1	Investigates reactions upon announcement. The inclusion of one day on either side limits the risk of not catching the full 'immediate' reaction
-1 through +10	Investigates reactions upon announcement as well as possible reactions in the days following announcement
-20 through +20	Includes reactions from possible information leakage prior to announcement, reactions upon announcement as well as possible reactions in the days following announcement
-1 through +20	Investigates reactions upon announcement as well as possible reactions in the days following announcement
+2 through +10	Investigates possible reactions in the days following announcement
+2 through +20	Investigates possible reactions in the days following announcement

3.5 Share price information

Datastream has been used to obtain share price information on the parent companies as well as the market portfolio, defined as Affärsvärldens General Index ("AFGX"). Prices are adjusted for splits and dividends. The share price information is used to calculate normal and abnormal returns.

Time series of share prices have also served as a supporting tool in the event date specification process. In cases where we have identified sharp share price movements prior to the assumed date of announcement, we have further reviewed news articles and press releases around those dates to ensure that no relevant statements are over-looked.

3.6 Abnormal returns measurement

Abnormal returns, AR_{it} (company i, day t), for the parent companies conducting the spin-offs are obtained with the aid of the *market model*. Abnormal return is defined as actual return, R_{it}, less expected (normal) return. The market model is used in order to calculate expected return. The model is a statistical regression approach (ordinary least squares) to finding a company's β , i.e. its price movements relative the market portfolio, AFGX. The regression also provides an intercept, α , and a standard error of the estimate, ε . The regression uses data consisting of daily returns for each company's share as well as for AFGX during a period of 120 days before the event window. This period is called the *estimation period*. The return of the market portfolio is denoted R_{mt} . Thus, abnormal returns are calculated as:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

The event window in our study stretches from 20 days before announcement to 20 days after, i.e. t_{20} to t_{20} . The estimation period stretches from t_{-140} to t_{-21} . It is important that the estimation period and event window do not overlap, since an overlap could blur the results observed in the event window.

For a sample of N observations, the average daily abnormal return, AR_t, for day t is calculated as:

$$\overline{AR}_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \qquad t = -20, \dots, +20.$$

The statistical significance of all AR_t is then tested. The effect of the spin-off announcement on shareholder value during the event window is also examined using cumulative abnormal returns, CARs. The CAR from day t_1 to t_2 is calculated as:

$$\overline{CAR}_{t_1,t_2} = \sum_{t=t_1}^{t_2} \overline{AR}_t$$

CAR is calculated and tested for a number of different intervals, both within the event window as well as over the whole window.

To test the statistical significance of AR and CAR we calculate the standardized abnormal return for company i on day t, SAR_{it}, and the standardized cumulative abnormal return over a certain interval, SCAR_i, where:

$$SAR_{it} = \frac{AR_{it}}{\varepsilon_i}$$

and

$$SCAR_{i} = \sum_{t=t1}^{t_{2}} SAR_{it} / (t_{2} - t_{1} + 1)^{1/2}$$

 ε_i is the time series standard deviation (error) for company i estimated from the market model regression. The average standardized abnormal return, SAR_t, and the average standardized cumulative abnormal return, SCAR, are given, respectively, by:

$$\overline{SAR}_t = \frac{1}{N} \sum_{i=1}^N SAR_{it} \qquad t = -20, \dots, +20$$

and

$$\overline{SCAR} = \frac{1}{N} \sum_{i=1}^{N} SCAR_i$$

We assume that the abnormal returns, AR_{it} , are independent and identically distributed with finite variance. Consequently, the test statistics, T, ("t-values" or "t-statistics") for a sample of N securities on day t and the test statistics over the period t₁ through t₂ equal:

$$T = \overline{SAR}_i \cdot (N)^{1/2}$$

and

$T = \overline{SCAR} \cdot (N)^{1/2}$

The t-statistics are compared to critical t-values, t_{crit} , in order to either reject or accept the null hypotheses (Newbold et. al., 2003). The tests performed in this study are two sided, and hence the critical t-values equal:

$t_{crit} = t_{N-1,\alpha/2}$

The number of observations, N, is subtracted by 1 to obtain the number of degrees of freedom, v. The null hypotheses will be rejected if the t-statistic, t, is either greater than the critical t-value or less than the negative critical t-value. I.e. the null hypotheses will be rejected if:

$$t > t_{N-1,\alpha/2}$$
 or if $t < -t_{N-1,\alpha/2}$

3.7 Difference in abnormal returns

In order to address Hypothesis 2, we need to categorize our observations into cross-industry and intra-industry spin-offs (see Appendix for a specification per company). We have used the industry classification 'ICB Supersector', downloadable from Datastream, to determine whether the parent company and the spun off entity pertain to the same industry or not.

Daily abnormal returns as well as cumulative abnormal returns for the entire event window are calculated for each respective group. The final step is to calculate t-statistics for the difference in abnormal returns in order to determine whether possible differences are statistically significant. Average AR₀ or CAR_(-20,+20) for the cross-industry group is denoted \overline{X} and for the intra-industry group \overline{Y} . The t-statistic, t, is calculated as:



 S^2 represents the variance of the respective samples. The test is a two-sided and we thus test both whether the calculated t-statistic is greater than the critical t-value or less than the negative critical t-value. I.e. we test whether:

$$\frac{\overline{X} - \overline{Y}}{\sqrt{\frac{S_{\overline{X}}^2}{N_{\overline{X}}} + \frac{S_{\overline{Y}}^2}{N_{\overline{Y}}}}} t > t_{\nu,\alpha/2} \qquad \frac{\overline{X} - \overline{Y}}{\sqrt{\frac{S_{\overline{X}}^2}{N_{\overline{X}}} + \frac{S_{\overline{Y}}^2}{N_{\overline{Y}}}}} t < -t_{\nu,\alpha/2}$$
or

v represents the number of degrees of freedom, and is calculated using the following formula:

$$v = \frac{\left[\frac{S_{\overline{X}}^2}{N_{\overline{X}}} + \frac{S_{\overline{Y}}^2}{N_{\overline{Y}}}\right]^2}{\left(\frac{S_{\overline{X}}^2}{N_{\overline{X}}}\right)^2} + \frac{\left(\frac{S_{\overline{Y}}^2}{N_{\overline{Y}}}\right)^2}{N_{\overline{Y}} - 1}$$

4. Empirical results

4.1 Hypothesis 1

Hypothesis 1 tests whether the announcement of corporate spin-offs results in abnormal returns. The null hypothesis states that such announcements do not give rise to abnormal returns, i.e. H_0 : $\overline{AR_t} = 0$. A rejection of the null hypothesis would hence indicate that abnormal returns occur in connection with the announcement of spin-offs. The table below displays the daily average abnormal returns, $\overline{AR_t}$, for the sample and illustrates results both including and excluding outliers over the entire event window. In addition, the table presents the observed t-statistics and whether they are statistically significant.

Exhibit 3: Overview of observed abnormal returns

				t-value excl	Nevel					t-value excl	Nevel
Day		outliers	t-value	outliers	outliers	Day	\overline{AR}_{t}	outliers	t-value	outliers	outliers
t ₋₂₀	0,17%	0,17%	0,83	0,83	33	t ₊₁	0,69%	0,43%	2,46++	1,14	24
t ₋₁₉	-0,16%	0,00%	0,16	0,09	30	t +2	0,05%	0,05%	0,55	0,06	31
t ₋₁₈	-0,21%	-0,02%	0,15	0,09	31	t +3	-0,32%	-0,41%	-1,55	-1,39	27
t ₋₁₇	-0,18%	-0,36%	-1,02	-1,33	32	t +4	-0,55%	-0,19%	-1,01	-0,81	32
t ₋₁₆	0,18%	0,33%	0,43	0,74	32	t +5	0,05%	0,05%	0,48	0,48	33
t ₋₁₅	-0,06%	-0,20%	-0,35	-0,59	32	t ₊₆	-0,39%	-0,37%	-1,22	-1,23	27
t ₋₁₄	0,19%	0,06%	0,88	0,56	32	t +7	0,10%	-0,10%	0,83	-0,01	32
t ₋₁₃	0,08%	0,08%	0,07	0,07	33	t +8	-0,42%	-0,45%	-1,46	-1,32	30
t ₋₁₂	0,70%	0,01%	1,25	0,44	31	t +9	-0,52%	-0,55%	-0,53	-1,54	26
t ₋₁₁	0,22%	0,22%	0,70	0,70	33	t ₊₁₀	-1,27%	-0,05%	-2,92+++	-0,05	30
t ₋₁₀	-0,42%	-0,23%	-0,62	-0,29	32	t ₊₁₁	0,09%	0,34%	0,65	1,23	30
t _9	0,08%	0,40%	0,73	0,98	27	t ₊₁₂	0,37%	0,77%	1,01	1,54	29
t ₋₈	-0,02%	-0,02%	0,04	0,04	33	t ₊₁₃	-0,40%	0,18%	-0,78	0,57	28
t ₋₇	0,94%	0,68%	2,09++	1,21	32	t ₊₁₄	0,12%	0,12%	0,39	0,39	33
t ₋₆	1,21%	0,50%	2,59++	1,49	31	t ₊₁₅	0,20%	0,04%	0,66	0,23	32
t ₋₅	-0,52%	-0,61%	-1,99+	-1,93+	30	t +16	0,05%	-0,13%	-0,28	-0,39	32
t ₋₄	-0,15%	-0,33%	-0,60	-1,06	30	t ₊₁₇	-0,10%	-0,50%	0,15	-1,30	26
t ₋₃	0,00%	0,00%	0,33	0,33	33	t ₊₁₈	0,03%	0,03%	0,77	0,31	31
t ₋₂	-0,41%	-0,36%	-0,45	-1,16	26	t ₊₁₉	0,15%	0,01%	0,14	-0,20	32
t ₋₁	0,64%	0,04%	2,56++	0,67	30	t ₊₂₀	-0,14%	0,00%	-0,41	-0,18	32
t _o	3,32%	1,88%	9,14+++	5,94+++	30						

+ Significant at the 0.1 level

++ Significant at the 0.05 level

+++ Significant at the 0.01 level

As illustrated by the table, AR upon announcement amounts to 3.32% (1.88% if excluding outliers), which is significant at the 0.01 level. The same level of significance prevails with outliers excluded. For the full sample, AR at day t₁ and t₊₁ are significant at the 0.05 level. However, the observed abnormal returns at day t₋₁ and t₊₁ diminish when adjusting for outliers. Positive abnormal returns are observed at other days prior to announcement as well. AR at both t₋₆ and t₋₇ display significance at the 0.05 level. These abnormal returns also diminish when excluding outliers. Negative abnormal returns are observed at t₊₁₀ does not display any statistical significance when adjusted for outliers, whereas the abnormal return at t₋₅ remains significant at the 0.1 level after the adjustment.

Cumulative abnormal returns, t-statistics and indications of statistical significance for selected intervals within the event window are shown in the table below.

				CARt		t-value excl.	N excl.
	Interval			excl. outliers	t-value	outliers	outliers
-20	through	-2	1.65%	1.65%	1.20	1.20	33
-10	through	-2	0.72%	0.00%	0.71	0.00	31
-20	through	+1	6.31%	5.50%	4.13+++	4.07+++	32
-10	through	+1	5.38%	5.38%	4.70+++	4.70+++	33
-1	through	+1	4.66%	3.59%	8.17+++	6.57+++	31
-1	through	+10	1.39%	2.53%	2.11++	2.76++	32
-20	through	+20	3.42%	6.65%	2.32++	3.31+++	31
-1	through	+20	1.77%	4.71%	2.05++	3.31+++	31
+2	through	+10	-3.27%	-1.47%	-2.28++	-1.50	31
+2	through	+20	-2.89%	0.06%	-1.04	0.01	31

Exhibit 4: Overview of observed cumulative abnormal returns

+ Significant at the 0.1 level

++ Significant at the 0.05 level

+++ Significant at the 0.01 level

For the full sample as well as with outliers excluded, all intervals including the announcement day, t_0 , exhibit abnormal returns. These intervals excluding outliers are significant at the 0.01 level, except the interval t_{-1} through t_{+10} , which is significant at the 0.05 level. Full sample CARs for the intervals including t_0 are significant as well, however at lower levels of significance when moving toward the end of the event window. The main reason is that a few companies' share prices decline steeply post the initial positive reaction. This is particularly

the case for the Korsnäs share, which has an observed AR during day t_{+10} and day t_{+13} , of - 28.6% and -20.3%, respectively. CAR for the entire event window, t_{-20} through t_{+20} , amount to 3.42% (6.65% if excluding outliers). The so called pre-CARs, i.e. intervals prior to t_0 , do not display significant abnormal returns. The post-CARs for the full sample however indicate negative abnormal returns amounting to -3.27% for the interval t_{+2} through t_{+10} , significant at the 0.05 level. However, when adjusting for outliers, no statistical significance is observed.

Since Hypothesis 1 is based on the research question "*Do abnormal returns emerge for Swedish companies when announcing spin-offs?*", the interpretation of the time period where abnormal returns are measured are of importance. The event window investigated is specified to 41 days surrounding the announcement day. In order to test our hypotheses, we focus on two periods; the announcement date (AR), t₀, and the entire event window (CAR), specified as day t_{-20} through t_{+20} . The results in this section indicate that Hypothesis 1: H₀, stating that spin-offs do not affect shareholder wealth, is rejected at the 0.01 level at t₀. For CAR over the entire event window, the null hypothesis is rejected at the 0.05 level.

Since the effect from outliers is large enough to bias the results, we believe that the results excluding outliers give a better view of the outcome. We will therefore use the results excluding outliers when testing both our hypotheses. When adjusting for outliers, both AR at announcement and CAR for the entire event window are significant at the 0.01 level. The null hypothesis can hence be rejected at the 0.01 level. Consequently, the results from the test of Hypothesis 1 indicate that spin-offs have a statistically significant positive effect on shareholder wealth. This is consistent with results from previous Swedish and international studies.

4.2 Hypothesis 2

Hypothesis 2 tests whether *differences* in abnormal returns are observed between intraindustry and cross-industry spin-offs. The null hypothesis states that such differences do not occur, i.e. H₀: $AR_{Xt} - AR_{Yt} = 0$. X represents the cross-industry sample and Y represents the intra-industry sample. A rejection of the null hypothesis would hence indicate that differences in abnormal returns are observed between intra-industry and cross-industry spinoffs. The table below illustrates the average daily abnormal returns, AR_t , the t-statistics and whether the returns are significant.

	Cross-ir	ndustry	Intra-ind	ustry		Cross-industry		Intra-industry		
Day	AR _{t,cross}	t-value	A R _{t,intra}	t-value	Day	A R _{t,cross}	t-value	AR _{t,intra}	t-value	
t ₋₂₀	0.13%	0.39	0.06%	0.44	t ₊₁	0.24%	0.97	1.28%	2.66++	
t ₋₁₉	-0.41%	0.03	0.05%	0.06	t +2	-0.46%	-0.57	0.20%	0.54	
t ₋₁₈	-0.37%	-0.69	-0.11%	0.82	t +3	-0.50%	-1.73	0.08%	0.02	
t ₋₁₇	-0.13%	-0.68	-0.53%	-1.39	t +4	-0.72%	-0.68	-0.15%	-0.28	
t ₋₁₆	-0.44%	-0.96	0.91%	1.71	t +5	-0.08%	-0.09	0.45%	1.32	
t ₋₁₅	-0.26%	-0.51	0.12%	-0.07	t +6	0.18%	-0.16	-1.01%	-1.57	
t ₋₁₄	0.53%	1.67	-0.05%	-0.21	t ₊₇	-0.48%	-0.68	0.53%	1.47	
t ₋₁₃	0.08%	0.00	0.14%	0.22	t ₊₈	-0.89%	-1.84+	-0.02%	-0.40	
t ₋₁₂	1.25%	1.08	0.28%	1.05	t +9	-1.38%	-1.92+	0.56%	1.55	
t ₋₁₁	0.24%	0.67	0.14%	0.19	t ₊₁₀	-1.67%	-2.09+	-1.03%	-2.38++	
t ₋₁₀	-0.54%	-0.72	-0.44%	-0.44	t ₊₁₁	-0.20%	0.34	0.15%	0.05	
t ₋₉	-0.12%	0.55	0.24%	0.32	t ₊₁₂	0.54%	1.62	0.22%	-0.18	
t ₋₈	-0.09%	-0.24	0.08%	0.36	t +13	-0.61%	-0.99	-0.16%	-0.07	
t ₋₇	1.17%	2.07+	0.77%	0.93	t ₊₁₄	-0.19%	-0.51	0.50%	1.17	
t ₋₆	1.25%	1.45	1.00%	1.80+	t +15	-0.30%	-0.40	0.94%	1.75	
t ₋₅	-0.81%	-2.22++	-0.21%	-0.54	t ₊₁₆	0.23%	-0.27	-0.12%	-0.08	
t _4	-0.46%	-1.18	0.22%	0.40	t ₊₁₇	-0.10%	0.24	-0.07%	0.02	
t ₋₃	0.37%	0.98	-0.15%	0.01	t ₊₁₈	-0.84%	-1.02	1.05%	2.28++	
t ₋₂	-0.97%	-1.34	-0.11%	0.08	t ₊₁₉	-0.28%	-0.87	0.68%	1.17	
t ₋₁	0.68%	1.91+	0.01%	0.43	t ₊₂₀	0.07%	0.02	-0.51%	-0.88	
t _o	3.04% ¹⁾	5.65+++	3.88% ¹⁾	7.58+++						

Exhibit 5: Daily abnormal returns and t-values for cross-vs. intra-industry spin-offs

1) Excluding outliers, the abnormal return observed amounts to 0.88%. No outliers exist in the intra-industry sample.

As can be observed in the table, the full sample in both groups display abnormal returns upon announcement at the 0.01 level. Furthermore, it can be observed that the intra-industry group displays higher abnormal returns at t_0 compared to the cross-industry group. The difference has been tested and the results are presented in the table below.

				CAR _(-20,+20)			
	All included	Exc	cl. outliers	All included		Excl. outliers	
$\overline{\mathbf{X}} - \overline{\mathbf{Y}}$		-0,84%	-3,00%		-13,16%		-8,61%
t-value		-0,421	-2,27++		-2,39++	-	2,67++
Degrees of freedom, v		28	23		21		29

Exhibit 6: Difference in abnormal returns for cross-industry, X, vs. intra-industry, Y, spin-offs

+ Significant at the 0.1 level

++ Significant at the 0.05 level

+++ Significant at the 0.01 level

The difference in abnormal returns at t_0 , with all observations included, is not statistically significant. However, when excluding outliers, the difference is significant at the 0.05 level. The t-statistic is negative, meaning that the intra-industry group displays significantly higher abnormal returns than the cross-industry group, at t_0 . When regarding cumulative abnormal returns, the difference is significant as well. For the period t_{20} through t_{20} , intra-industry spinoffs generate higher returns both including and excluding outliers amounting to 13.16% and 8.61%, respectively. Both results are significant at the 0.05 level.

In the light of these results, our research question behind Hypothesis 2, "*Are the levels of abnormal returns affected by whether the spin-offs are conducted intra-industry or cross-industry?*", can be answered. Similar to the approach used in Hypothesis 1, we mainly use announcement date, t_0 , and the entire event window, t_{20} through t_{+20} , in order to test Hypothesis 2. The results from Hypothesis 2: H_0 , stating that no differences in abnormal returns are observed between intra-industry and cross-industry spin-offs, display mixed indications. When adjusting for outliers, the differences in both AR at announcement and CAR for the entire event window, amount to 3.00% and 8.61%, respectively, both significant at the 0.05 level. The null hypothesis can hence be rejected at the 0.05 level. Consequently, the results from Hypothesis 2 indicate that shareholder wealth is affected by whether the spin-off is conducted intra-industry or cross-industry. Furthermore, the results show that intra-industry spin-offs have a significantly more positive impact on shareholder wealth than cross-industry spin-offs.

5. Analysis

5.1 Hypothesis 1

When studying CAR graphically over the 41 day event window, three main occurrences should be pointed out.



Exhibit 7: Cumulative abnormal return

The abnormal returns increase noticeably approximately a week before the announcement date. These returns are statistically significant and pose an interesting observation. However, it is difficult to draw any firm conclusions about what caused this reaction. One possible reason is that one or a few outliers experienced significant abnormal returns due to factors outside the scope of this study and therefore affect the result for the whole population. In order to adjust for such events, we have calculated daily abnormal returns excluding outliers. The results show that the daily returns decreased to insignificant levels during this period. However, the increase in CAR is still noticeable.

Another reason for the exhibited returns, apart from outliers, may be that the market partly anticipates a spin-off, for example due to analyst speculations. A third possible reason for the returns occurring approximately a week prior to announcement is information leakage. The occurrence of abnormal returns prior to announcement has been observed in other studies as well, notably in Miles and Rosenfeld (1983) and Johnson et. al. (1994). In these studies, information leakage and market anticipation have been forwarded as plausible explanations for this phenomenon. It should be noted that the analysis conducted in this study merely

adjusts for the effects of outliers. Hence, we are unable to determine which, if any, of the other two possible reasons that caused the returns observed.

Another striking observation when analyzing the CAR graph is the steep increase upon announcement. The abnormal return upon announcement amounts to 3.32% and is statistically significant at the 0.01 level. This significance is valid when adjusting for outliers as well, indicating that spin-offs do affect shareholder wealth positively upon announcement. One more interesting observation is that CAR decreases significantly a week or so post announcement, to a large extent off-setting the preceding positive abnormal returns. For the period t_{+2} through t_{+10} , CAR amounts to -3.27% which is significant at the 0.05 level. However, when adjusting for outliers, the observed decline is no longer significant. In addition, the negative returns are reversed after approximately a week. One plausible explanation for the decline is that the market over-reacts upon announcement. For example, further analysis from the market post announcement may indicate that less value is created than first expected. Negative returns following announcement have been found in previous studies as well (Johnson et. al., 1994), however the causes have not been analyzed. Therefore, we cannot draw a firm conclusion about the reasons behind the abnormal negative returns following announcement.

5.2 Hypothesis 2

The results from Hypothesis 2, indicating that intra-industry spin-offs yield significantly higher abnormal returns than cross-industry spin-offs, are quite the opposite compared to results from previous studies. In addition, the results contradict much of the theoretical framework that has been applied and pose an interesting finding that requires further analysis. One possible explanation for the different results is that the prerequisites for value creation may differ between the Swedish and US financial market. Certain tax and company specific factors could be adjusted for in order to see whether the results are affected. However, such analysis is outside the scope of this study. It should be noted that the strength of the results from Hypothesis 2 is low due to the small sample in each group.

Exhibit 8: Cumulative abnormal return for cross-industry spin-offs



Exhibit 9: Cumulative abnormal return for intra-industry spin-offs



When observing CAR graphically, three main occurrences are observed. Firstly, it is evident that both groups experience a noticeable increase in CAR prior to announcement, around the same time and of similar magnitude. The difference between the groups is even less when adjusting the cross-industry group for outliers (no outliers exist in the intra-industry group). This illustrates that the observed increase pre announcement for the full sample was not the result of one or a couple of companies, but rather a consistent incident throughout the sample. This finding is consistent with our previously stated plausible explanations, saying that market anticipation and/or information leakage could affect shareholder wealth prior to announcement of a spin-off.

Secondly, there are evident differences between the two groups in terms of the post announcement development. The cross-industry sample displays a large decline in CAR following t_0 , whereas the intra-industry sample continues upward. The difference is large and prevails when excluding outliers as well. Further analysis is needed in order to better understand the underlying dynamics behind this difference. However, the samples used in this

study are too small for such analysis to be meaningful. The difference in CAR for the crossindustry group when excluding outliers is substantial. The reason is that the cross-industry group contains one extreme outlier in Korsnäs. However, also with outliers, excluded there is a large difference in CAR between the groups.

5.3 Analysis of the results compared to previous studies

Compared to Swedish studies

As stated in the theoretical framework, the two best comparable Swedish studies are written by Scheutz (1988) and Albertsson et. al. (2008). Consistent with the results in this study, Scheutz finds statistically significant CARs for the studied intervals including the announcement date. There are however significant differences between the studies. The main factor affecting comparability between Scheutz' research and this study is the studied time period. This is an important difference, since the Lex ASEA regulations did not exist during the period of 1983-1984 studied by Scheutz. Furthermore, Scheutz does not study share price reactions prior to announcement, but focuses instead on the development for a longer period of time starting at t_0 .

Contrary to this study, Albertsson et. al. do not find a significant CAR for their studied interval of t_{-10} through t_{+10} . In addition, their study does not display the kind of decline in CAR, post announcement, as our study does. Albertsson et. al. also tests a few intervals starting at t_0 which, on the other hand, display significant CARs. Consistent with our study, they do not obtain significant CARs for intervals prior to the announcement day. An important difference compared to our study, is that they include spin-off announcements that coincide with the release of year-end reports. Furthermore, Albertsson et. al. study a shorter period of time, including only 10 days on either side of the announcement day. Neither of these two Swedish studies excludes outliers in their analysis.

Compared to other Swedish undergraduate papers, our study differs mainly in two ways – scope and criteria for net sample. Regarding scope, our study includes the whole 18 year Lex ASEA period, compared to previous studies which range between 8 to 10 years. Regarding the criteria used to arrive at a meaningful net sample; this study has applied stricter criteria on the transactions compared to previous undergraduate papers. For example, announcements that coincide with year-end and interim reports have not been filtered away in some other

studies. Furthermore, a Swedish study of the difference between cross-industry and intraindustry transactions has not previously been made. The above factors decrease, to some extent, the comparability between previous Swedish studies and this study.

Compared to international studies

Two comparable international studies include Miles and Rosenfeld (1983) and Johnson et. al. (1994). The results from Miles and Rosenfeld are more or less in line with the results from our Hypothesis 1. However, some differences between our studies, potentially affecting the results, should be pointed out. Firstly, the authors do not take into account whether announcement takes place during the day or after the closing of the market. Consequently, since they conclude that many transactions are announced after closing, the main share price reactions are observed at t_{+1} . Secondly, they study a longer time period, where significant abnormal returns occur prior to announcement. At t_{-1} CAR amounts to 16.65%, to be compared with our CAR for the full sample, amounting to 2.30% at t_{-1} . In our study, we observe abnormal returns prior to announcement; however, such returns diminish when adjusting for outliers. Since Miles and Rosenfeld (1983) do not show results excluding outliers, it is not possible to see whether their observed abnormal returns prior to announcement the returns for several companies in the sample. Post announcement, the authors observe an increasing CAR, contrary to our results.

The results from Johnson et. al. (1994) are well in line with our results from Hypothesis 1. The main factors affecting comparability between Johnson et. al. and our Hypothesis 1 are the number of days and the sample size. Similar to our study, Johnson et. al. observe positive abnormal returns prior to announcement as well as negative CAR post announcement, studying the full sample. However, after exclusion of outliers the results in our study become insignificant whereas the results in Johnson et. al. remain at significant levels. The similarities in results indicate that the effects on shareholder wealth arising from announcement of spin-offs in Sweden are comparable, in general, to effects in the US.

When it comes to the results from Hypothesis 2, noteworthy differences between our study and US research can be found. Daley et. al. (1997) concludes that intra-industry spin-offs do not generate any significant abnormal returns, whereas cross-industry spin-offs generated significant abnormal returns upon announcement. Both Desai and Jain (1999) and Krishnaswami and Subramaniam (1999) also conclude that abnormal returns stemming from cross-industry spin-offs are significantly larger than the corresponding abnormal returns for the intra-industry spin-offs – both in the long and short run. In our study, we find that crossand intra-industry spin-offs both generate significant abnormal returns upon announcement. However, outliers excluded, companies conducting intra-industry spin-offs achieve a significantly higher AR upon announcement and CAR for the entire event window, compared to companies conducting cross-industry spin-offs.

These findings indicate that the Swedish market may react differently to certain spin-offs than the US market. The different results could be a result of differences in the regulatory frameworks surrounding spin-offs in these two countries. Even though both countries allow tax exemptions for the shareholders, the overall regulatory burden may differ significantly. For example, in the United States, strict anti-trust laws may force companies to sell or spin off a part of the company to increase competition (U.S. Department of Justice). Possible regulatory differences could provide a plausible explanation for why results in our study differ from previous US research when it comes to intra-industry versus cross-industry spin-offs.

5.4 Analysis of the results through theoretical frameworks

Existing theories have concluded that spin-offs have a positive effect on shareholder wealth. One reason is the fact that spin-offs can act as a means to increase focus on core business. The positive effects from increased focus leads to higher abnormal returns for cross-industry spinoffs compared to intra-industry spin-offs, according to US research. Other reasons provided for the higher returns for cross-industry spin-offs include elimination of diseconomies of scale, enabling of specialization as well as enhanced financial controlling.

Efficient market hypothesis

The results of this study illustrate that significant market reactions occur upon announcement of new information. Furthermore, the reaction occurs in a relatively short period of time and investors seem to interpret the information in a similar, positive, manner. This indicates that the market is efficient. In an efficient market, the yielded return should be caused only by the underlying financial asset's risk. Assuming that it is not possible to predict a spin-off announcement by fundamental analysis of available information, a spin-off announcement could be regarded as an upside risk and hence our findings go in line with the efficient market hypothesis. This is further strengthened by the fact that significant abnormal returns occur upon announcement. The announcement would not yield abnormal returns if it would be possible to predict a spin-off through analysis of publicly available information. Due to the significant positive share price reaction, investors who have access to inside information would be able to enjoy abnormal returns if they used that information. These characteristics are closely related to the semi-strong level of market efficiency.

Even though our results are generally in line with the efficient market hypothesis, there are also two slight contradictions. Firstly, the observed drop in share prices several days after announcement could be interpreted as a response to an initial over-reaction, indicating that the share prices do not fully and correctly reflect all available relevant information in the share prices at once. This is however not a strong argument against the efficient market hypothesis, since the drop excluding outliers is statistically insignificant and followed by a recovery.

Secondly, some share price reactions are observed prior to announcement. As stated previously, there are several plausible explanations for these reactions, such as the effect from outliers, market anticipation and information leakage.

The incentive-signalling hypothesis

This study has found significant abnormal returns for companies conducting a spin-off. One plausible explanation for the market's positive reaction is that the increased transparency achieved by engaging in spin-offs, is viewed as positive by shareholders and other market participants. The benefit of increasing transparency is that asymmetric information is decreased, which, in turn, benefits the shareholders. This notion was studied by Krishnaswami and Subramaniam (1999), where a relationship between low-transparency companies conducting spin-offs and significant returns were observed.

Such results are in line with the incentive-signalling hypothesis, since this theory also suggests how to overcome asymmetric information. In terms of spin-offs, the incentive-signalling hypothesis could be interpreted in the following way. Management, which is the party with an information advantage, can overcome the information asymmetries by sending signals to the less informed party, in this case, the shareholders. The signals help the shareholder to interpret information more accurately, leading to positive wealth effects since the increased transparency lowers the risk of investing in the company.

However, contrary to Krishnaswami and Subramaniam (1999), we find that intra-industry spin-offs generate significantly higher abnormal returns compared to cross-industry spin-offs. This does not necessarily contradict the incentive-signalling hypothesis, but indicates that the possible transparency issues in the United States are not applicable to the same extent in the Swedish market. For example, different accounting standards across countries can affect transparency, resulting in different importance of increased.

Agency theory

According to agency theory, spin-offs can be considered a means of reducing asymmetric information. Since asymmetric information is greatest in large publicly traded companies with dispersed ownership, splitting up the company decreases the company size and hence decreases the risk for transparency issues. This can explain why both intra- and cross-industry spin-offs result in significant abnormal returns. In order to draw firm conclusions regarding this topic, a study of abnormal returns arising from spin-offs by companies with different levels of transparency should be conducted. Such an analysis is however outside the scope of this study.

Motives behind spin-off

One important motive behind spin-offs that is frequently discussed in previous studies is to increase focus on core business. It is argued that companies announcing cross-industry spin-offs with this motive display significantly higher returns upon announcement. Since our results indicate that cross-industry spin-offs do not generate higher returns than intra-industry spin-offs, the need arises to compare with other important motives as well. The argument of increasing focus is often coupled with the argument saying that the spin-off enhances transparency and visibility toward the market. As previously stated, low transparency tend to be related to company size. Thus, company size may to a greater extent than industry, explain differences in abnormal return upon announcement.

In addition, tailored contracting possibilities for the parent company and the spun-off entity are commonly discussed as an important motive behind a spin-off. It is generally agreed that the optimal set of contracts depend on different characteristics, such as operations, asset base and characteristics of investments and that they may vary over time. Such characteristics are not necessarily related to industry, but may just as well vary with the size of operations, balance sheet composition etc. Thus, it is possible that an analysis of different contracting possibilities for the parent company and the spun off entity would provide an explanation of the difference found between our results and the results from previous research.

6. Conclusion

6.1 Conclusion from the results obtained in study

Our empirical results show that spin-offs conducted in Sweden according to Lex ASEA, have significant positive effects on shareholder wealth. The results also provide indications of positive abnormal returns prior to announcement and negative abnormal returns post announcement. However, the significance of such pre- and post-announcement effects diminishes when adjusting for outliers. Furthermore, the results from our test of differences in abnormal returns between intra-industry and cross-industry spin-offs show that intra-industry spin-offs create significantly higher abnormal returns than cross-industry spin-offs.

The conclusion that spin-offs positively affect shareholder wealth is well documented and has been found in numerous previous studies. This study confirms that such wealth effects are valid for recent Swedish transactions. The conclusion that intra-industry spin-offs create higher abnormal returns than cross-industry spin-offs, however, contradicts results from previous research. This indicates that the prerequisites for value creation, including regulatory frameworks, differ between markets. It could also indicate that other factors, such as company size, have larger effects on the outcome of a spin-off, outweighing the industry effect. The analysis of such other factors is outside the scope of this study, but provides an interesting opportunity for further research. It should however be emphasized that the results from the intra-industry vs. cross-industry tests are of low statistical strength due to the small samples. Hence, firm conclusions cannot be drawn solely from the results obtained.

In summary, our evidence supports theory stating that spin-offs have significant positive effects on shareholder wealth. However, the sources of these returns remain largely unexplained in this study. There is reason to believe that differences between which industries the parent company and spun-off entity pertain to is one such source, however, more research will be needed in order to provide clarifying results. Our suggestions for further research are presented below.

6.2 Suggestions for further research

Little research has been conducted on spin-offs in Europe. Although extensive research has been conducted in the US, there is need for more European studies, since results from US studies are not necessarily applicable to the European markets. This is for example illustrated by the difference between the results from our Hypothesis 2 and the results from US studies. Below, we provide suggestions for topics which we believe are the most important to focus on when conducting further research within the area.

Comprehensive European studies of abnormal returns, both upon announcement and during longer periods of time, would be highly interesting. Such studies should preferably be conducted on a pan-European basis, with results sorted both on an aggregated level, by country as well as by industry. Furthermore, analyses of the factors affecting abnormal returns upon spin-off announcements would be interesting. Several approaches could be applied for such a study. One suggestion would be to conduct a regression on the abnormal returns and various possibly explanatory variables such as company capital structure, size of operations, industry classification, relative size of spun off entity compared to parent company, credit rating of parent company etc. Such analysis could hopefully provide further insights with regards to characteristics affecting abnormal returns and perhaps provide an explanation for the significantly larger abnormal returns from intra-industry spin-offs found in this study.

In addition to the above suggested analyses, it would be interesting to conduct a comparison between the general spin-off conditions in Europe vis-à-vis in the United States. Such a comparison could include distribution between industries, balance sheet compositions, regulatory and fiscal frameworks, average costs of conducting a spin-off etc. The results would be useful when contrasting results from European studies to those of US studies.

7. Robustness, reliability and validity

It is of high importance that the results found in a study are reliable. Similarly, in order to be useful, results and conclusions should also be applicable in the real world. Consequently, reflections regarding robustness, reliability and validity are essential. It increases the transparency of the study and enables the reader to critically assess the strengths and weaknesses of a study and ensures that the research is of high quality (Rienecker and Jørgensen, 2008).

7.1 Robustness

The results presented in this study are dependent on the delimitations and operationalizations made. Furthermore, potential weaknesses in design of the study will affect the results and hence our conclusions. Before conclusions can be drawn regarding whether the results can be generalized and applied to other samples, an analysis of the robustness needs to be carried out. Two important factors to analyze are the effects of outliers and the model used to calculate abnormal returns.

Outliers

This paper tests two hypotheses, Hypothesis 1 and Hypothesis 2. Results from tests of both hypotheses are accounted for both including and excluding outliers. For Hypothesis 1, the significance of the results from the event study is similar both including and excluding outliers. This is an indication of robustness. For Hypothesis 2, the significance of the results differs depending on whether outliers are included or excluded. Thus, the conclusions drawn from the study differ depending on the same. Furthermore, in Hypothesis 2, the two samples studied are small, leading to low statistical strength. Consequently, the robustness in results from Hypothesis 2 is lower than for Hypothesis 1. Further investigation will hence be needed before firm conclusions can be drawn regarding the difference in wealth effects from cross-industry and intra-industry spin-offs on the Swedish market.

Model used

In order to increase transparency, a thorough description of how the study has been conducted can be found in the methodology section. We have used the market model to estimate expected returns, which is frequently used in similar studies conducted by, inter alia, Schipper and Smith (1983), Hite and Owers (1983) and Krishnaswami and Subramaniam (1999).

Nonetheless, concerns could be raised with regards to the applied methodology. For example, other models such as CAPM, the Mean Adjusted Return (MAR) approach (Miles and Rosenfeld, 1983), the Matched-Firm Return Adjustment procedure (Cusatis et. al., 1993) or the Fama and French three factor model (Fama and French, 1993) could be applied instead of the market model. Had another model been applied, the results obtained may have differed slightly. However, different models will yield qualitatively similar results when estimating short-run abnormal returns since the statistical problems are trivial for a short event window (Kothari and Warner, 2006). Hence, the risk for substantially differing results with another model can be regarded as small. Consequently, we believe that the robustness in our results with respect to the calculated abnormal returns can be regarded as high.

7.2 Reliability

The degree of possibility to replicate a study and obtain the same results is described by its reliability. Reliability is for example dependent on the absence of random factors, subjective assessments as well as calculation errors. This study is conducted in the same fashion as several prior studies on spin-offs, making the methodology well established and used in previous research. All underlying delimitations and filtering criteria to arrive at our net sample are clearly accounted for in the introduction and methodology section. The information is almost exclusively collected from publicly available and reliable sources such as Datastream, Affärsdata, Cision Newsroom and the Swedish National Tax Agency. Furthermore, the collected data is cross-checked between these sources. A potential degree of subjectivity, however, arises from the fact that the announcement dates have been chosen by assessment of news articles and company press releases, since there is no database listing the announcement dates. This poses a potential reduction in reliability, since other researchers may interpret and evaluate certain news articles differently. Apart from this potential issue, we regard the reliability of the study as high.

7.3 Validity

The validity of a study refers to whether it measures what it is intended to measure. In our study, this question refers to whether the model, event window and industry classifications used are suitable to measure spin-off effects on shareholder wealth. The model has been discussed in the robustness section above. Regarding the event window and chosen intervals, there are risks associated with the determination of announcement dates. For example, there is

a risk that news articles are published several hours later than the actual announcement, resulting in an assignment of an incorrect date for the announcement. In our study, the risk of time lag significantly impacting the results is small since we investigate several intervals within the event window for Hypothesis 1. This is however not the case for the test of Hypothesis 2, since this test only focuses on measuring differences in AR upon announcement and CAR for the entire event window, between two groups.

The current test construction serves it purpose; however, one could argue that testing more intervals for Hypothesis 2 would further increase its validity. The industry classifications used in Hypothesis 2 are downloaded from Datastream. Since the classifications used are quite broad, one may argue that the results observed in Hypothesis 2 have limited validity. However, we opine that the classifications used are relevant and suitable for our purpose, i.e. to classify parent companies and spun-off entities as belonging to either the same or different industries. We are however aware that a more narrow classification could yield a different outcome. To summarize, even though the validity can be questioned in some respects, we believe that that it, in general, can be regarded as strong.

7.4 Possibility to generalize

The possibility to generalize the results from this study refers to the possibility to apply the results on other populations and time periods. Results observed in this study are not applicable on other groups than Swedish companies, since the results from Hypothesis 2 indicate that shareholder wealth effects may differ between markets. However, it should be noted that the Hypothesis 1 results indicate that spin-offs in general have the same wealth effects across different markets. Furthermore, our results from Hypothesis 2, saying that the announcement of intra-industry spinoffs generate significantly higher abnormal returns than the announcement of cross-industry spin-offs, cannot be generalized to samples outside the Swedish market. This is clearly illustrated by the difference in our conclusions from Hypothesis 2 compared to result from prior, international research.

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Appendix 1

Date of		
announcement	Parent company	Spun off entity
2006-10-19	Peab	Peab Industri
2006-07-04	Active Capital	Active Properties
2005-12-19	Betsson	Net Entertainment
2005-09-08	Bilia	KFAB
2004-12-20	Gunnebo	Gunnebo Industrier
2004-12-13	Fabege (Wihlborgs)	Wihlborgs Fastigheter
2004-09-08	Poolia	Uniflex
2004-04-15	INAC	Iniris
2004-03-11	ITAB	ITAB Shop Concept
2003-06-04	Fabege (Drott)	Bostads AB Drott
2002-12-12	Peab	Brinova
2001-11-28	Pharmacia Corp	Monsanto
2000-11-21	Bure Equity	Observer
2000-04-18	MTG	Metro
2000-02-22	Öresund	TMT One
1999-09-16	Fjällräven	Friluftsbolaget
1999-09-01	HQ. SE Holding	Hagströmer & Qviberg
1998-01-29	Skanska	Drott
1997-07-30	Sweco (Humleg.)	Sweco Gruppen
1997-04-11	Midway Holding	Liljeholmen
1997-04-02	Sandblom & Stone	Firefly
1997-02-17	Bylock & Nordsjöfrakt	Gorthon Lines
1996-12-18	Rörviksgruppen (deln.)	Rörvik Timber
1996-12-06	Latour	Fagerhult, SÄKI
1996-02-29	Celsius	Enator
1995-12-29	Kinnevik	Netcom
1995-12-19	Jacobsson & Widmark	Benima Ferator
1995-12-13	Sparbanken	Tornet
1995-11-02	SE-Banken	Diligentia
1995-11-02	Handelsbanken	Näckebro
1994-04-14	Aga	Frigoscandia
1993-04-29	Korsnäs (Birka Kraft)	Korsnäs Ind. (Korsnäs)
1991-05-28	Asea/ABB	Incentive (Gambro)

Studied sample of spin-offs

Appendix 2

Sample divided into cross-industry and intra-industry spin-offs²

Cross industry spin-offs Parent company Sector Spun off entity Sector Active Capital Active Properties Personal & Household Goods Real estate Chemicals Industrial Goods & Services Frigoscandia Aga Asea/ABB Industrial Goods & Services Incentive (Gambro) Health Care KFAB⁵ Bilia Retail Industrial Goods & Services Bure Equity Financial Services (Supersector) Observer Industrial Goods & Services Fjällräven² Retail Personal & Household Goods Friluftsbolaget Handelsbanken Real Estate Banks Näckebro INAC³ Travel & Leisure Iniris Industrial Goods & Services Kinnevik Financial Services (Supersector) Netcom Telecommunications Korsnäs (Birka Kraft) Utilities Korsnäs Ind. (Korsnäs) Personal & Household Goods Midway Holding Financial Services (Supersector) Liljeholmen Personal & Household Goods **Construction & Materials** Peab Brinova Real Estate Pharmacia Corp Health Care Monsanto Food & Beverage SE-Banken Banks Diligentia Real Estate Skanska **Construction & Materials** Drott Real Estate Sparbanken4 Real Estate Banks Tornet Sweco (Humleg.) Real Estate Sweco Gruppen **Construction & Materials** 1) ACAP Invest 5) Acquired by Volvo 2) Fenix Outdoor 3) Betting Promotion Sweden

4) Swedbank

Inter industry spin-offs								
Parent company	Sector	Spun off entity	Sector					
Betsson	Travel & Leisure	Net Entertainment	Travel & Leisure					
Bylock & Nordsjöfrakt ¹	Industrial Goods & Services	Gorthon Lines	Industrial Goods & Services					
Celsius	Industrial Goods & Services	Enator	Industrial Goods & Services					
Fabege (Drott)	Real Estate	Bostads AB Drott	Real Estate					
Fabege (Wihlborgs)	Real Estate	Wihlborgs Fastigheter	Real Estate					
Gunnebo	Industrial Goods & Services	Gunnebo Industrier	Industrial Goods & Services					
HQ. SE Holding ²	Financial Services (Supersector)	Hagströmer & Qviberg	Financial Services (Supersector)					
ITAB ³	Industrial Goods & Services	ITAB Shop Concept	Industrial Goods & Services					
Jacobsson & Widmark	Industrial Goods & Services	Benima Ferator	Industrial Goods & Services					
MTG	Media	Metro	Media					
Peab	Construction & Materials	Peab Industri	Construction & Materials					
Poolia	Industrial Goods & Services	Uniflex	Industrial Goods & Services					
Rörviksgruppen (deln.)	Construction & Materials	Rörvik Timber	Construction & Materials					
Sandblom & Stone	Industrial Goods & Services	Firefly	Industrial Goods & Services					
Öresund	Financial Services (Supersector)	TMT One	Financial Services (Supersector)					
1) Rederi AB Transatlantic								
2) Avanza Bank Holding								
3) Xano Industri								

² Latour is not included in either of the groups since the company simultaneously spun off one cross-industry entity (Fagerhult) and one intra-industry entity (SäkI)