

PURE-PLAY CREATION

WILL INCREASED FOCUS ON CORE BUSINESS LINES UNLEASH SHAREHOLDER VALUE?

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ABSTRACT

Industrially and globally diversified firms are valued at a discount to a portfolio of pure-play comparable businesses. Hence any firm with non-core activities should be able to unleash shareholder value through elimination of the diversification discount by streamlining the firm through divestments/spin-offs/equity carve-outs. Using event study methodology all transactions during the period 1995-2006 undertaken by Swedish listed firms are examined. The central contribution of this paper is that the transactions are linked to positive abnormal returns of 1.0-1.5% (statistically significant at the 1% level) on the days surrounding the announcement. Further, several explanations for why the total effect might in fact be much larger than the observed figures indicate are identified. The findings are in line with previous international studies and prevailing finance theory.

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1. Introduction

In 2002 Skandia announced the divestment of its US operations in a deal valued at \$1.2bn. After the divestment announcement the share price skyrocketed, up more than 23%, and the market capitalization increased by \$600mm¹ overnight. Management stated that the reason for the divestment was to focus on the European markets.

The market appears to value industrially and globally² diversified firms at a discount to a portfolio of pure-play³ comparable businesses. Berger and Ofek (1995) find an implied 13-15% average discount due to diversification.

The diversification discount seems to be most pronounced for the classic conglomerates, comprised of a wide range of businesses. Highly diversified firms experience a higher discount than less diversified firms, with the pure-play firms experiencing no diversification discount. Hence any firm with non-core activities should be able to unleash shareholder value through elimination of the diversification discount by streamlining the firm through divestments/spin-offs/equity carve-outs.⁴

The focus of this paper will be on the possibility to reduce the diversification discount through divestments. Specifically, divestments during the period 1995-2006, undertaken by Swedish firms listed on the Stockholm Stock Exchange, will be examined using event study methodology. The hypothesis is that divestment announcements are linked to

¹ Assuming a SEK/USD exchange rate of 8.

² Denis, Denis and Yost (2002) find similar magnitude of the discount associated with industrial as with global diversification. The Skandia case is an example of global diversification.

³ A firm with a single core line of business. Often referred to as a focused firm.

⁴ Divestment: The firm sells an asset or division. Equity carve-out: The firm transfers an asset or division into a separate legal entity and offers the shares in the new entity in an initial public offering (IPO). Spin-off: The firm transfers an asset or division into a separate legal entity and distributes the shares of the new entity to the firm's current shareholders. For the purpose of this paper, these three forms of divesting business units are treated equal since the achieved effect of less diversification is the same. The signal to the market may be different for the three strategies of divestment. However, it is beyond the scope of this paper to investigate such effects and they should not interfere with the estimations of reduction of the diversification discount. Hereafter the term divestment will be used as a collective name for divestments, spin-offs and equity carve-outs.

positive abnormal returns as divestments decrease the diversification of firms, hence the diversification discount applied by the market should be reduced.

The central contribution of this paper is that divestments by Swedish listed firms are linked to positive abnormal returns of 1.0-1.5% (statistically significant at the 1% level) on the days surrounding the announcement. Further, several explanations for why the total effect might in fact be much larger than the observed figures indicate are identified. The findings are in line with previous international studies and prevailing finance theory. The theoretical and practical implications are several. Academically, it is the most recent study to investigate the topic on Swedish data. Practically, it is shown that all diversified firms leave money on the table, making them potential targets for hostile suitors. The active manager can unleash this shareholder value, thereby strengthening the firm's acquisition currency, through the creation of a pure-play; while in the case of passive management, the window is wide open for corporate raiders to liberate the value and fill their, and the starving shareholders', pockets while management is left in the cold.

The paper is organized as follows: Section 2 presents the theoretical framework, Section 3 describes the sample and data, Section 4 outlines the methodology used in the study, Section 5 presents the results, in Section 6 the results are analyzed and the study is concluded in Section 7. Finally, topics for further research are suggested in Section 8.

2. Theory

The question of whether corporate diversification creates or destroys value has attracted a large interest from both the academic and the business community over the last decades, and it is possible to spot a shift in attitude over time. The rather well established notion of the 1960s and 1970s was that corporate diversification could be a source of shareholder wealth, whereas recent research gives more support to increased focus of firms' operations as a means to increase firm value.

To establish a theoretical framework for the study, of whether divestiture announcements have a positive effect on stock returns, various theoretical arguments presented in previous research are reviewed. Understanding why firms increase focus requires however also an understanding of the forces that led to diversification; both global and industrial. Therefore both potential benefits and costs of corporate diversification are examined. Further, arguments for why the market seems to value diversified firms at a discount are presented and previous empirical findings of share price reactions on announcements of focus increasing activities of firms (such as divestitures) are examined. Finally, the hypothesis of this paper is discussed.

2.1. Potential benefits of corporate diversification

Several authors have presented various aspects of diversification that can potentially increase shareholder value. These arguments are presented below.

The concept of internal capital markets has historically been an argument for the creation of diversified firms. It is pointed to the information advantages enjoyed by management regarding investment opportunities, which should allow them to allocate resources more efficiently than external investors (Williamson 1975). The problem of asymmetric information between internal and external investors could therefore be decreased and firms could, by utilizing internal capital markets, avoid turning down positive NPV projects otherwise not recognized by external investors (Myers and Majluf 1984).

Lewellen (1971) argues that diversified firms have a greater debt capacity than focused firms because of a lower volatility in earnings. Thus, the diversified firm could be valued higher due to an increased tax-shield. Shleifer and Vishny (1992) also state that conglomerates may sustain a higher leverage because they can sell off assets across a spectrum of industries, hence choose to divest assets in the industries that experience the least liquidity problems in economic downturns, thereby avoiding a fire sale; a discount on the sold assets.

Majd and Myers (1987) state that corporate diversification is associated with reduced tax payments. The tax advantage arises because of the tax system's asymmetric treatment of gains and losses. Since tax is paid when income is positive but money is not received when income is negative, diversified firms may smooth out income across divisions, which potentially could result in lower overall tax payments for the firm. Further, the internal capital markets enable transfers of cash flows between divisions avoiding the dividend tax associated with such transfers between separate firms.

2.2. Potential costs of corporate diversification

The potential costs associated with corporate diversification have received much attention in literature in the last decade. Recent evidence indicates that firms are becoming increasingly focused and that more focused firms are valued higher than diversified firms (Servaes 1996). This is explained by the so called diversification discount, which implies that the market regards diversification as a cost to the firm.⁵ The frequently quoted paper by Berger and Ofek (1995) find an implied diversification discount of 13-15%. Studies on Swedish data find similar results, ranging from 12%, found by Ekman and Fengler (1997), to 28-39%, found by Nordbäck and Rosenius (2003). Many theories as to the cause of the market applying a discount to diversified firms have been presented.

Stulz (1990) states that diversified firms demonstrate inferior capabilities at evaluating the chances of success in new projects than focused firms. Diversified firms may therefore have a problem of overinvestment, which implies investment in negative NPV

⁵ See for example Mansi and Reeb (2002).

projects. Berger and Ofek (1995) point to the same problem of overinvestment and also identify the problem of cross-subsidization of underperforming divisions. Further, they find the benefits of diversification, such as increased debt capacity and tax benefits, to be offsetting but of minor magnitude.

Whited (2001) opposes the inefficient investment theory, that diversified firms are prone to overinvestment and poor capital expenditure decisions, and finds the results in the literature to be artifacts of measurement error and the correlation between investment opportunities and liquidity. Whited concludes this by investigating the measurement error introduced by utilizing Tobin's q as a proxy for investment opportunities instead of the unobservable marginal q , the managers' expected investment opportunities.

The agency problem has been presented as another cost of diversification. Empire building behavior of managers destroys shareholder value as firm size may be prioritized over profitability. Denis, Denis and Yost (2002) identify three ways in which the manager enjoys private benefits of managing a large, diversified, corporation: the power and prestige associated with managing a large corporation, the remuneration package is, on average, positively correlated with firm size and the decreased volatility of the firm's cash flows reduces the risk of the manager's relatively undiversified personal portfolio. Scharfstein, Stein (2000) further discuss the agency problem and points out the risk of CEOs investing in "pet" projects that generate disproportionately high private benefits.

Denis, Denis and Yost (2002) identify further costs which arise due to the agency problems linked to industrial and global diversification. Deadweight losses may arise due to the costs of coordinating corporate policies across diversified firms and the difficulties in monitoring divisional managers. These costs may outweigh the benefits of, at least, global diversification.

The theory of the diversification discount arising due to endogenous choices by the firms is presented by Graham, Lemmon, Wolf (2002). They argue that the discount is a result of the firms acquiring underperforming targets. Thus the appropriate benchmark for

evaluating the divisions of a conglomerate should not be industry averages as the divisions were underperforming their peers prior to the acquisition. Indeed, conglomerates are valued lower than a portfolio of pure-play peers valued at the industry average multiple; but it should not be regarded as a diversification discount. Instead, the benchmark multiple for each division should be lower than the industry average; then the resulting sum-of-the-parts valuation would reflect the market's valuation, implying no diversification discount. Maksimovic and Phillips (2002) argue along the same lines; they find that the diversification discount arises due to lower productivity in non-core segments compared to industry peers. The main driver of the diversification discount are the peripheral segments of the firm, which show significantly lower productivity, while main segments can be on par with industry peers.

Lamont and Polk (2001) approach the relative pricing of diversified firms by examining expected required returns and expected future cash flows. They find that the returns on diversified firms vary systematically with the relative valuation. It is argued that the expected returns are related to risk, liquidity and mispricing; however they do not find any significance in their empirical tests. Thus it is not explained why diversified firms require a higher expected return; only that they do require a higher expected return, which is in line with the diversification discount argument. They conclude that the diversification discount is both an expected return phenomenon and an expected cash flow phenomenon.

2.3. Empirical evidence on divestment reactions

Other findings which also support the presence of a diversification discount are the observed increases in shareholder value following divestments. Studies of whether announcements of divestitures have a positive impact on abnormal returns have been presented by several authors. Jain (1985) and Rosenfeld (1984) both find positive abnormal returns, statistically significant at the 1% level, on the announcement day of the divestment using an event study methodology. Other authors have reported similar findings using other event windows surrounding the day of announcement. Klein (1986), for example, finds a statistically significant abnormal return around the announcement day, at the 1% level.

Alexander et al. (1984) also find positive abnormal returns on the day of announcement but argue that divestments generally take place after periods of abnormally negative performance created by the release of negative information about the firm; hence muting the positive impact of the divestment announcement. Jain (1985) also finds that the divesting firms exhibit negative performance in the period preceding the announcement.

John and Ofek (1995) investigate the importance of focus as a motivation for divestitures and find that refocusing is the major explanation for divestments. A significant increase in operating performance of the remaining assets when the divestiture increases the focus of the business is found and the abnormal return to the divesting firm is found to be higher for focus-increasing divestitures. Comment and Jarrell (1995) also find corporate focus to be in line with shareholder wealth maximization. A further benefit identified is that large focused firms are less often targeted in hostile takeover attempts.

2.4. Hypothesis

As stated above, there are several theories and empirical studies which imply that shareholder wealth can be unleashed through an increased focus on core business lines. This kind of pure-play creation should therefore make a strong case for managers as it may be the source of untapped shareholder wealth through a more favorable market valuation.

The phenomenon of diversification discount is also present on the Swedish market. Diversified Swedish firms should therefore be able to increase their firm value by increasing the focus on core operations and the streamlining could be achieved through divestments. The hypothesis of this paper is that divestment announcements are linked to positive abnormal returns as divestments reduce the firms' diversification hence should reduce the associated diversification discount. The hypothesis will be investigated using a sample of divestments, undertaken by Swedish firms listed on the Stockholm Stock Exchange, during the period 1995-2006.

3. Sample and data

The initial sample consists of 1244 transactions⁶ undertaken by firms listed⁷ on the Stockholm Stock Exchange (SSE) between the years 1995-2006.⁸ The sample is gathered from Dealogic.⁹ Using different criteria, presented below, the sample is narrowed down to only include relevant transactions.

Transactions where the deal value is undisclosed are excluded from the sample. These transactions tend to be divestments of smaller operations, relative to the disclosed divestments, and are therefore of less interest in the study. Further, Klein (1986) finds no statistical significance of abnormal returns for firms which do not disclose divestment values. Excluding observations with undisclosed transaction values, the sample is reduced to 604.

Partial divestments should only yield an effect proportional to the stake divested, thus including transactions of partial stakes would potentially introduce a downward bias of the observed abnormal returns. Hence the data is further limited, similar to John and Ofek (1995), to transactions where the divested stake is 100% of the divested entity. This reduces the sample to 392.

A cutoff point for the transaction value at \$25mm is introduced. It is assumed that only divestments of at least 5%¹⁰ of the average market capitalization will have an impact on the market's valuation of the firm. The average market capitalization for a firm listed on the SSE is SEK12.9bn (\$1.6bn¹¹) (YE2005), using data from OMX, operator of the SSE. As can be seen from Diagram 3.1 however, the distribution of market capitalizations on

⁶ Defined as divestments.

⁷ A-list and O-list.

⁸ January 1, 1995 – March 2, 2006.

⁹ Dealogic is a key provider of information to the financial services industry and has long standing relationships with major investment banks. The firm employs over 300 professionals globally and has offices in London, New York, Hong Kong and Tokyo. Please refer to www.dealogic.com for more information about Dealogic.

¹⁰ Rosenfeld (1984) uses 10% of market capitalization per each firm as the limit. Since the average market capitalization is used in this study, the limit is set lower.

¹¹ Assuming an exchange rate of SEK/USD 8. As these are back-of-the-envelope calculations, such an approximation should be fair.

the SSE has a very high kurtosis; which impacts the average such that a 5% limit could potentially exclude many transactions undertaken by smaller firms. Firms with a market capitalization larger than SEK40bn (\$5bn) are therefore excluded from the calculation of the average; this yields a more even distribution as shown in Diagram 3.2. The adjusted average market capitalization is SEK4.0bn (\$500mm). Thus, 5% of \$500mm yields the cutoff point of \$25mm. It could have been argued that the cutoff level should be determined relative to firms' individual market capitalizations. However, there are several arguments in favor of an absolute cutoff level such as that the spread and broad impact of news (beyond the analysts and brokers covering the specific firms) should be correlated to the absolute size of the divestment; newspaper headlines rarely report divestment announcements as percentage of market capitalization. Further, the methodology of applying an absolute cutoff value is employed by for example Jain (1985). After the introduction of a cutoff level, the initial sample is reduced to 224 observations.

Non-Swedish divestors, firms listed on the SSE but not incorporated in Sweden, are excluded, which decreases the sample to 221.

Diagram 3.1

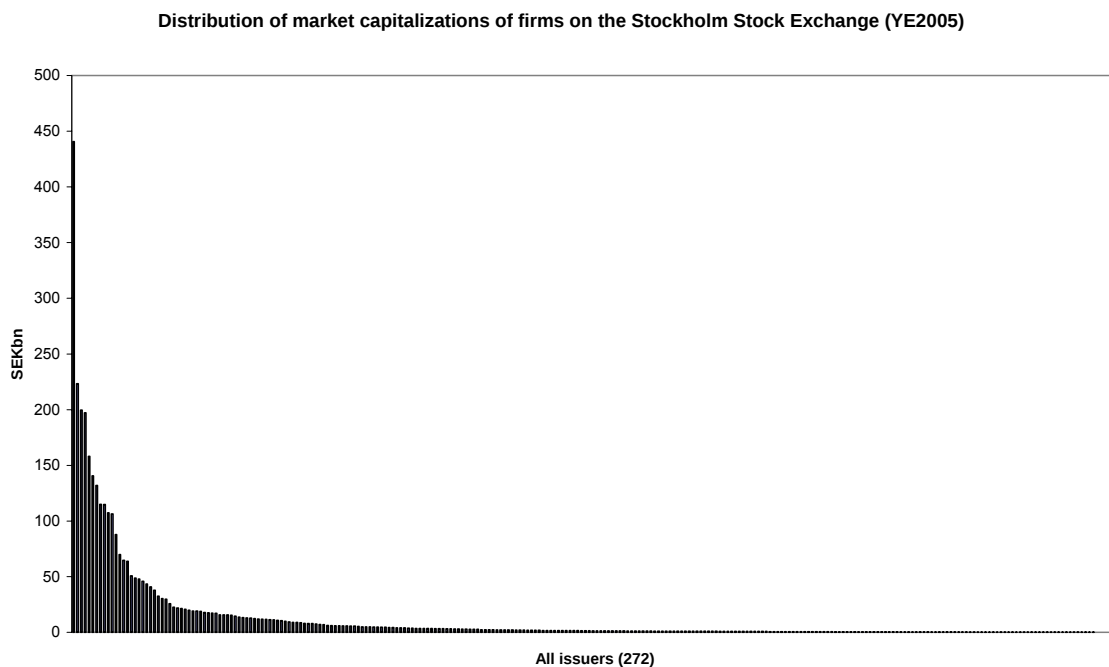
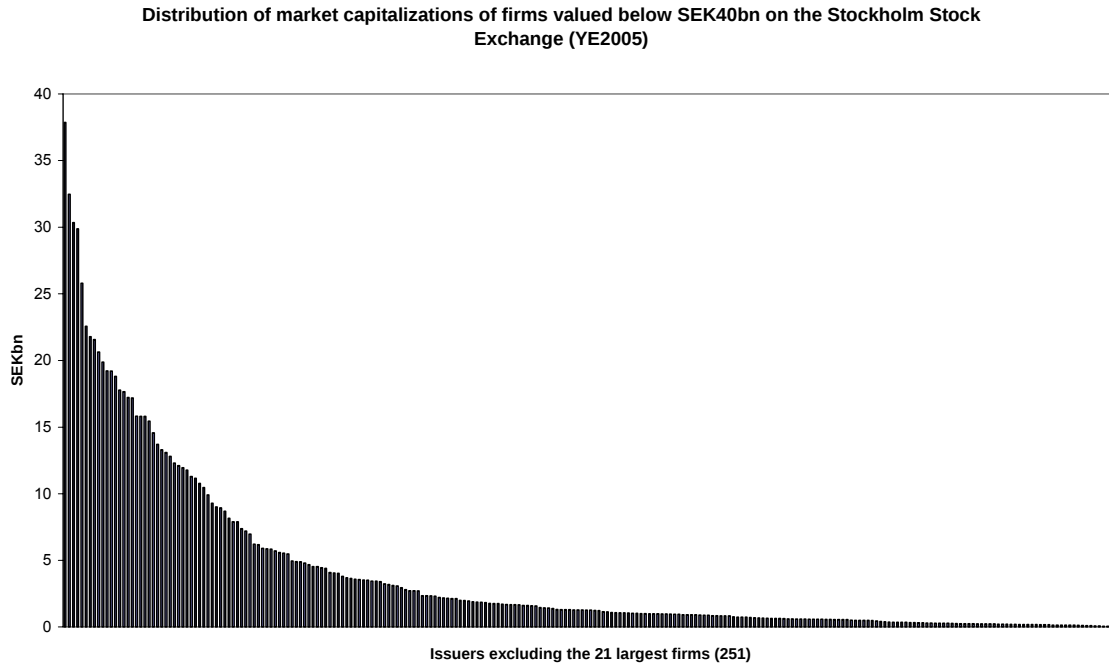


Diagram 3.2

The aim of the study is to investigate the reduction of diversification discount accomplished through focus-increasing divestments, thus transactions which are a part of firms' operations are eliminated; for example construction firms divesting newly constructed buildings. Transactions undertaken by investment companies are also excluded from the sample as the potential discount of these companies are affected by other factors.¹² These exercises reduce the sample to 179. Sale-and-lease-back transactions are regarded as restructurings of the balance sheets, and not operational divestments, thus excluded from the sample. After these transactions have been eliminated the sample is reduced to 173.

Transactions involving real estate portfolios are removed from the sample.¹³ These observations may not strictly be regarded as focus-increasing divestments; in many cases they are a part of the firms' operations. However, the divestments still have the potential to reduce firms' geographical diversification and are therefore of some interest. Hence

¹² See for example Anderson & Born (1993).

¹³ Similar to John and Ofek (1995).

these observations are not eliminated altogether but instead put in a separate subsample which is studied individually. The set of real estate transactions includes 52 observations.

The initial sample, excluding the real estate transactions, will be referred to as the base sample. It consists of 121 transactions split between 106 divestments, 11 spin-offs, and 4 equity carve-outs. No trends regarding the form of divestment can be observed; the spin-offs in the base sample are distributed evenly across time and the equity carve-out subsample is too small to use for any inferences.

Transactions with two or more divestors are treated as separate observations. There is one such occurrence in the base sample (a divestment). This enlarges the base sample to 122 observations. Offsetting the increase are transactions which occur on the same date and by the same firm (divestor), these are treated as a single observation as to not double-count the effect. One such transaction appears (an equity carve-out), reducing the base sample to 121 observations.

Share price data for all the divesting firms for the dates surrounding the transaction announcement¹⁴ was collected. The data was, whenever possible, obtained directly from OMX.¹⁵ The data for now-delisted firms was obtained from the TRUST database. All share price data was adjusted for splits and rights issues. There was an issue with missing share price data for one observation (a divestment), which subsequently was removed from the sample. The final base sample thus consisted of 120 observations; split between 106 divestments, 11 spin-offs and 3 equity carve-outs. The elimination process is summarized in Table 3.1. Please find a complete list of base sample transactions in Appendix 2.

¹⁴ The day the information was publicly available.

¹⁵ Data obtained from www.stockholmsborsen.se during the period April 3 to April 7, 2006.

Table 3.1

Elimination criteria	Remaining sample
Initial sample	1244
Undisclosed transaction value	604
Divested stake less than 100%	392
Cutoff at transaction value > \$25mm	224
Non-Swedish divestors	221
Transactions which are part of firms' operations; investment companies	179
Sale-and-lease-back transactions	173
Real estate transactions	121
Two divestors in the same transaction	122
Transaction on the same date and same firm	121
Missing share prices	120
Base sample	120

The same data collection methodology was applied to the real estate sample. One firm was engaged in two transactions on the same date, thus reducing the real estate sample by one. Further, one transaction included two divestors, increasing the sample by one observation. Share price data proved to be more of a challenge for the often heavily transformed, and in some cases now defunct real estate firms, resulting in 11 missing observations. Thus the final real estate sample consisted of 41 observations. The elimination process is summarized in Table 3.2. Please find a complete list of real estate transactions in Appendix 4.

Table 3.2

Elimination criteria	Remaining sample
Initial sample	52
Transaction on the same date and same firm	51
Two divestors in the same transaction	52
Missing share prices	11
Real estate sample	41

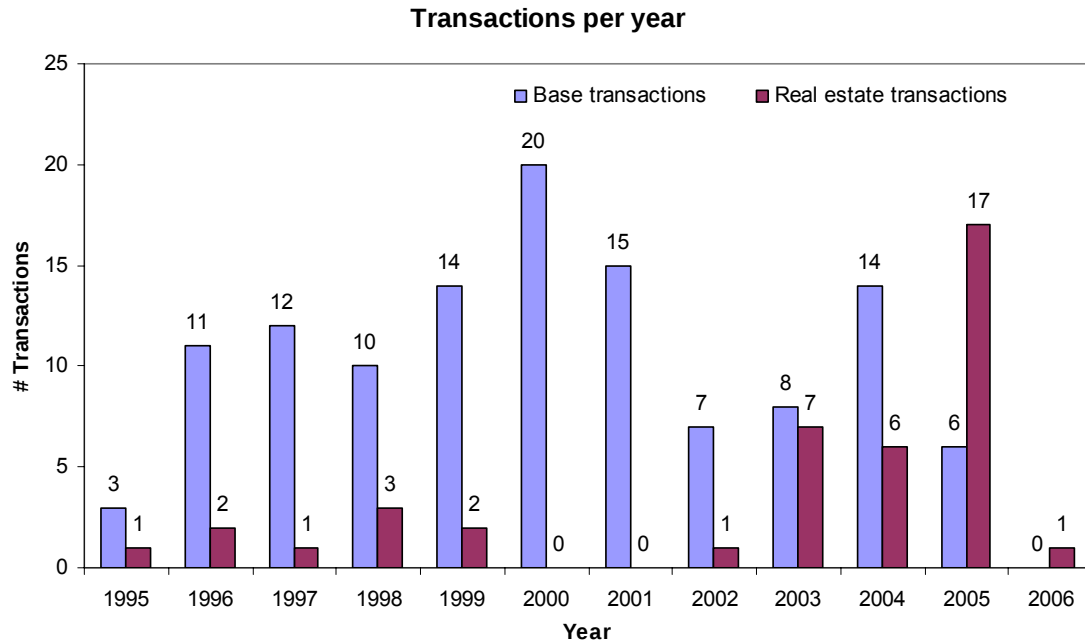
Diagram 3.3

Diagram 3.3 above illustrates the two samples of transactions over time. It is interesting to note the relatively low number of real estate transactions until 2003, when there is a significant surge in activity. The base sample of transactions is more evenly distributed over the period, with the peak of activity occurring in 2000.

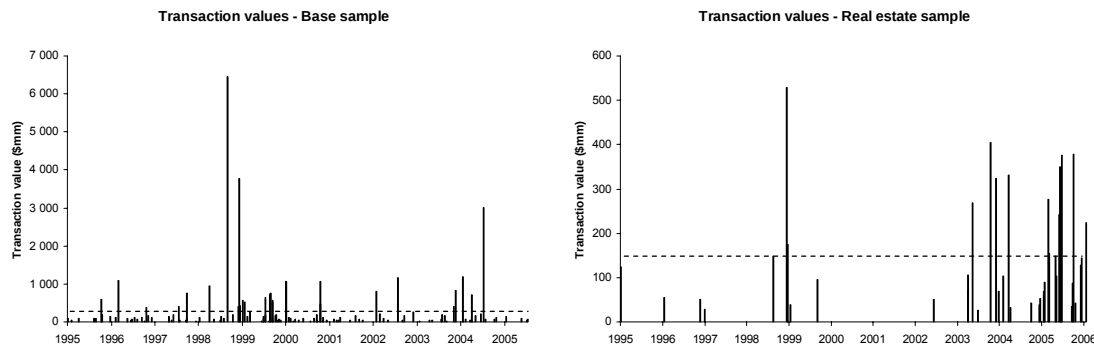
Diagram 3.4

Diagram 3.4 above shows the transaction values over time for the base and real estate samples respectively. The dotted lines represent the average transaction values for the two samples. The size of the base sample transactions appear to be evenly distributed over time; while the real estate sample transactions appear to increase significantly in size during the activity surge in 2003 going forward. An overview of the cross-sectional variations of the base and real estate samples are illustrated in Table 3.3 below.

Table 3.3**Transaction value statistics**

(\$mm)	Base sample	Real estate sample
Number of observations (#)	120	41
Max	6 447	529
Min	25	26
Average	333	154
Median	108	105

The average market capitalization for a firm on the SSE was, as noted previously, approximately SEK12.9bn (\$1.6bn¹⁶) (YE2005). Hence, the average transaction in the base sample amounted to approximately 21% of the average market capitalization. As can be seen in Diagram 3.4, the average is heavily affected by a few large transactions; the median transaction amounted to 7% of average market capitalization. The average and median are more in line for the real estate sample, indicating fewer large influential transactions (as illustrated in Diagram 3.4 above).

The largest transaction in the base sample occurred in 1999, when Volvo divested its automotive operations to Ford for approximately \$6.5bn. The smallest transaction in the base sample occurred in 2004 when Capio divested its elderly care business to Attendo Care for \$25mm. The smallest transaction in the real estate sample took place in 2003, when Wallenstam divested a real estate portfolio for \$26mm to a private investor. The largest transaction in the real estate sample occurred in 1998, when Swedbank (FöreningsSparbanken) sold the office and retail complex Gallerian in central Stockholm, to AMF Pension for \$529mm.

¹⁶ Assuming an exchange rate of SEK/USD 8.

4. Methodology

To analyze the data and investigate the presence of abnormal returns in connection with a divestment announcement an event study will be used. The event study methodology used will be based heavily on the framework presented by MacKinlay (1997).

4.1. Event windows

Calendar time is translated into event time, where $\tau=0$ is the announcement day. Since there may exist information leakages prior to an announcement, and reactions in the market may be lagged, different event windows will be used to capture these effects. Obviously there is a downside of extending the event window; it further dilutes the returns and obtaining statistically significant results becomes increasingly difficult. Keeping this in mind, the following set of event windows has been chosen (event time interval presented in square brackets):

- **1-day:** Announcement day, [0]
- **2-day:** The announcement day and 1 trading day after the announcement day, [0,1]
- **5-day:** 3 trading days prior to the announcement day to 1 trading day after the announcement day, [-3,1]

The 1-day window is chosen in order to capture the immediate market reactions, following the announcement of a divestiture. As the announcement day is defined as the day when the information is publicly available, the 1-day window may however not be able to fully reflect the market's reaction since the announcement might have taken place late in the day or even after the market has closed. Hence, the day after the announcement may be the first day that the market can trade on the new information, which is why also a 2-day window is used. The 5-day event window is chosen to capture any run-up effect, stemming from information leakage and rumors, occurring the 3 days preceding the announcement. The 5-day window also includes the first day after the announcement to control for the possibility of the announcement taking place after the market's close, as

discussed previously. Further, the chosen event windows correspond to those of other papers,¹⁷ which enables comparison with previous results.

4.2. Abnormal returns

Abnormal returns (*AR*) have been estimated as,

$$\text{Abnormal Return} = \text{Actual return of divesting firm} - \text{Normal return}$$

Two methods for estimating normal returns have been used: the Market model and the Constant mean return model.

In the Market model, normal return has been defined as the return on the OMX index.¹⁸ An alternative approach would have been to estimate the beta for each firm and calculate the normal return during the event window period using the CAPM. However, the return on the index should serve as a good approximation of normal return, especially across a large sample of firms. Further, the estimation errors linked to the estimation of the beta are avoided. Thus, in the market model,

$$AR = \text{Actual return of divesting firm} - \text{Return on OMX30}$$

The Constant mean return model assumes a constant mean return of each individual security. The mean return for each security has been estimated in the 120 day period prior to the first day in the longest event window,¹⁹ and the abnormal return has been calculated for each security as,

$$AR = \text{Actual return of divesting firm} - \text{Mean return of divesting firm}$$

The observed abnormal returns are aggregated across the sample, and the hypothesis of an abnormal return different from zero is tested on the sample aggregated cumulative abnormal return. If the abnormal returns are found to be statistically significant, and of

¹⁷ See for example John and Ofek (1995) and Klein (1986).

¹⁸ OMX30 index. The OMX30 is highly correlated with the OMX_PI (All Share Index). OMX_PI could not be used since the data is not available for the entire period of the sample (only dates back to 1996-01-02).

¹⁹ Chosen on the basis of MacKinlay (1997).

the correct sign, it will be in favor of the theory of unleashing shareholder value through divestments.

4.3. Formally, the event study methodology

Sample Aggregated Cumulative Abnormal Returns (*SACAR*) for day τ in the event window is calculated as the Sample Aggregated Abnormal Return (*SAAR*) accumulated over time,

$$SACAR(\tau_1, \tau_2) = \sum_{\tau} SAAR_{\tau} \quad \tau = \tau_1, \dots, \tau_2 \quad \text{where } SAAR_{\tau} = (\sum_i AR_{i\tau}) / N \quad i = 1, \dots, N$$

To perform hypothesis testing, the variance is required. The variance is calculated by,

$$Var(SACAR(\tau_1, \tau_2)) = \sum_{\tau} Var(SAAR_{\tau}) \quad \tau = \tau_1, \dots, \tau_2$$

$$\text{where } Var(SAAR_{\tau}) = (\sum_i \sigma_{ei}^2) / N^2 \quad i = 1, \dots, N$$

and the variance of the error term, σ_{ei}^2 , is estimated by,

$$s_{ei}^2 = \sum_{\tau} (AR_{i\tau})^2 / (L_1 - 2) \quad \tau = T_0 + 1, \dots, T_1; \quad L_1 = T_1 - T_0$$

The estimation window, L_1 , is set to 120 days²⁰ prior to the longest event window.

4.3.1. Hypotheses

$H_0 : SACAR = 0$; The event has no overall effect on the average cumulative abnormal returns

$H_1 : SACAR > 0$; The event has a positive effect on the average cumulative abnormal returns

4.3.2. Test statistic

$$t = \frac{SACAR - 0}{Std(SACAR)} \quad \text{which is } t\text{-distributed with } n-1 \text{ degrees of freedom}$$

Decision rule: If $t_{obs} > t_{crit}$ the null hypothesis is rejected.

The hypothesis will be tested on both the base sample of 120 observations and the real estate sample of 41 observations.

²⁰ Chosen on the basis of MacKinlay (1997).

4.4. Testing single observations

To test single observations for statistically significant effects (whether the abnormal return of a single observation is different from zero), the Standardized Cumulative Abnormal return (*SCAR*) is obtained from,

$$SCAR_i(\tau_1, \tau_2) = CAR_i(\tau_1, \tau_2) / \sqrt{\sigma_i^2(\tau_1, \tau_2)}$$

where, $CAR_i(\tau_1, \tau_2) = \sum_{\tau} AR_{i\tau}$

and the variance of the Cumulative Abnormal Return (*CAR*) is approximated by,

$$\sigma_i^2(\tau_1, \tau_2) = (\tau_2 - \tau_1 + 1) \sigma_{ei}^2$$

and the variance of the error term, σ_{ei}^2 , is estimated by s_{ei}^2 as above.

4.4.1. Hypotheses

$H_0 : SCAR = 0$; The null hypothesis is that the event has no effect on the abnormal return

$H_1 : SCAR > 0$; The alternative hypothesis is that the event has a positive effect

4.4.2. Test statistic

$t = SCAR_i(\tau_1, \tau_2)$ which is t -distributed with $L_I - 2$ degrees of freedom.

Decision rule: If $t_{obs} > t_{crit}$ the null hypothesis is rejected.

The test is performed on each individual observation and the results of the hypothesis tests are aggregated for the entire sample to investigate the frequency of statistical significance of individual abnormal returns. The exercise is performed on both the base and real estate sample.

5. Results

The results presented below have been divided into two subsections, one for the base sample and one for the real estate sample.

5.1. Base sample

The overview of the cross-sectional variation in Table 5.1.1 reveals that the most successful transaction resulted in a 1-day abnormal return of over 30% (Q-Med divested part of its North American operations, a deal valued at \$160mm, in an effort to refocus its resources on other geographical markets²¹), while the least successful transaction resulted in an abnormal return of around –6%. In this deal, Perstorp divested its surface materials operation for \$173mm;²² the Market model estimates the abnormal return at –6%, while on a Constant mean return model basis, the deal looks more promising, –2% abnormal return. On average the abnormal returns are positive and a larger proportion of abnormal returns are positive than negative. Please find a complete list of abnormal returns for each transaction in Appendix 3.

Table 5.1.1

Base sample	Cumulative Abnormal Return (CAR)					
	Market model			Constant mean return model		
	1-day	2-day	5-day	1-day	2-day	5-day
Max	32.8%	30.0%	25.4%	30.8%	31.0%	27.7%
Min	-5.7%	-10.9%	-15.8%	-6.4%	-16.2%	-17.9%
Average	1.0%	0.8%	1.5%	1.0%	0.7%	1.0%
Median	0.1%	0.1%	0.7%	0.2%	0.4%	0.2%
% Positive returns	52.5%	51.7%	56.7%	52.5%	56.7%	53.3%
% Negative returns	47.5%	48.3%	43.3%	47.5%	43.3%	46.7%

5.1.1. Event study

The results of the event study, on the base sample of 120 observations, are presented in Table 5.1.1.1. The test statistics are presented for both the Market model and the Constant mean return model frameworks. The hypothesis testing is performed at the 1, 5 and 10% significance levels using a Student's *t*-distribution with 119 degrees of freedom.

²¹ *Svenska Dagbladet* (February 11, 2003).

²² “This transaction will further sharpen Perstorp’s focus. We will now be able to concentrate our resources on chemicals and flooring, areas in which we see major growth opportunities” Perstorp Chief Executive Åke Fredriksson said in a statement (*Reuters News* March 2, 2000).

Table 5.1.1.1

Base sample	Market model (AR=Return - index return)			Constant mean return model (AR=Return - mean return)		
	5-day	2-day	1-day	5-day	2-day	1-day
SACAR	1.5%	0.8%	1.0%	1.0%	0.7%	1.0%
t-observed	3.071	2.642	4.578	1.986	2.070	4.238
1% significance level						
t-critical	2.358	2.358	2.358	2.358	2.358	2.358
Reject null hypothesis	Yes	Yes	Yes	No	No	Yes
5% significance level						
t-critical	1.658	1.658	1.658	1.658	1.658	1.658
Reject null hypothesis	Yes	Yes	Yes	Yes	Yes	Yes
10% significance level						
t-critical	1.289	1.289	1.289	1.289	1.289	1.289
Reject null hypothesis	Yes	Yes	Yes	Yes	Yes	Yes

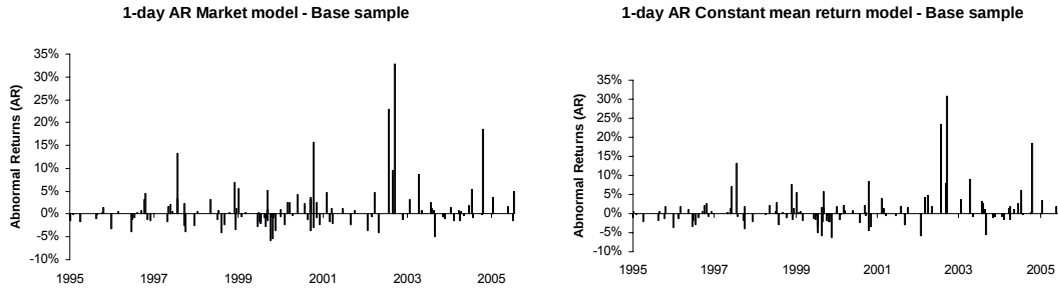
Student's t-distribution, 119 d.f.

As can be seen in Table 5.1.1.1 the results are rather similar using the two models. The observed *t*-statistic decreases across the event windows when the abnormal returns are calculated using the Constant mean return model as opposed to the Market model. The null hypothesis of no overall effect on the abnormal returns following a divestment announcement is rejected at the 1% level for all three event windows using the Market model to estimate abnormal returns, while the Constant mean return model finds statistical significance at the 1% level for the 1-day event window and at the 5% level for the 2-day and 5-day windows.

The level of the sample aggregate cumulative abnormal return (*SACAR*) following a divestment announcement is for the 1-day event window estimated to 1.0%, for the 2-day event window 0.7-0.8% and for the 5-day event window 1.0-1.5%. Overall, the observed abnormal returns may appear to be at a fairly low level, however they are indeed positive and statistically significant, which supports the argument of releasing shareholder value through divestments. Further, the higher *SACAR* for the 5-day window indicates a run-up of the share price preceding a divestment announcement; perhaps the run-up occurs for an even longer period of time, due to information leakage and rumors, implying a cumulatively greater abnormal return attributable to divestments.

5.1.2. Individual Abnormal Returns

Diagram 5.1.2.1



Examining Diagram 5.1.2.1 above, the distribution of the abnormal returns appears to be fairly even over time, except for a few outliers. The results of the two models of measuring abnormal returns appear to be rather similar; the proportion of positive abnormal returns is 52.5% for both models (see Table 5.1.1).

Returning to the cases mentioned in Section 3, the Volvo deal received mixed reactions from the market. The abnormal return on the announcement day was a mere 0% on a Constant mean return model basis, and an even more disappointing –2% on a Market model basis. The Capio deal on the other hand was embraced by the market rendering a 2% 1-day abnormal return on a Constant mean return model basis and 1% on a Market model basis.

As can be seen in Diagram 5.1.2.1 above, there are several real winners in the base sample. The Q-Med deal (over 30% abnormal return as mentioned previously), Skandia's divestment of its US operations²³ (over 23% abnormal return) and IBS' float of its UK subsidiary in an equity carve-out²⁴ (over 18% abnormal return) are the three most exceptional.

²³ "Over the last couple of years we've seen dramatic changes in the US market. In the short term, we have much better prospects in [European] markets" said Lars-Eric Petersson, Skandia Chief Executive. (*Economist Intelligence Unit* December 20, 2002).

²⁴ "The disposal is a significant step in the strategic development of IBS to focus operations on core business areas. With a substantially strengthened balance sheet, as a result of the sale, IBS will now accelerate its strategic measures to focus on supply chain management for certain vertical markets" IBS said (*Nordic Business Report* March 17, 2005).

Please find diagrams of the distributions of abnormal returns over time for all event windows in Appendix 1.

5.1.3. Testing single observations

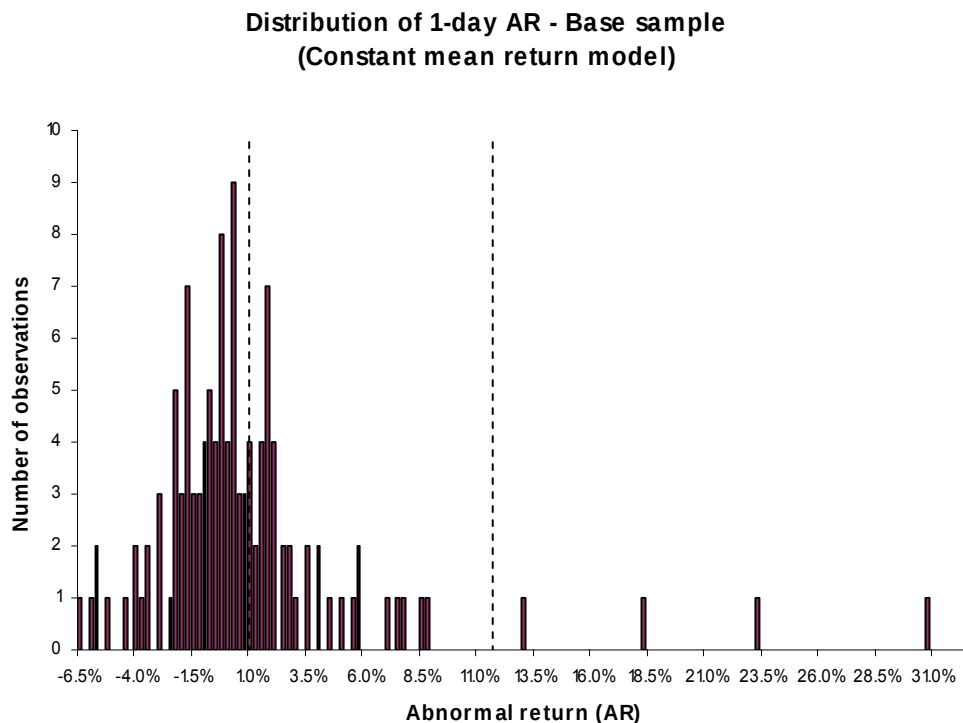
Table 5.1.3.1

Base sample	Market model (AR=Return - index return)			Constant mean return model (AR=Return - mean return)		
	5-day	2-day	1-day	5-day	2-day	1-day
Total number of observations	120	120	120	120	120	120
1% significance level						
# of significant AR	7	10	13	9	9	12
% significant observations	5.8%	8.3%	10.8%	7.5%	7.5%	10.0%
5% significance level						
# of significant AR	14	16	16	14	13	17
% significant observations	11.7%	13.3%	13.3%	11.7%	10.8%	14.2%
10% significance level						
# of significant AR	19	20	24	16	19	18
% significant observations	15.8%	16.7%	20.0%	13.3%	15.8%	15.0%

Table 5.1.3.1 above summarizes the results of the tests of the individual observations. Intuitively, and at first glance, the proportion of individually statistically significant abnormal returns may appear to be lower than what could have been expected from the event study results (Table 5.1.1.1). However, from an econometric perspective that is not the case. The power of the individual tests is much lower than the cumulative tests, which is one of main reasons for aggregating the returns across a sample and performing an event study. Instead, the proportion found to be individually statistically significant could indicate presence of outliers in the sample.

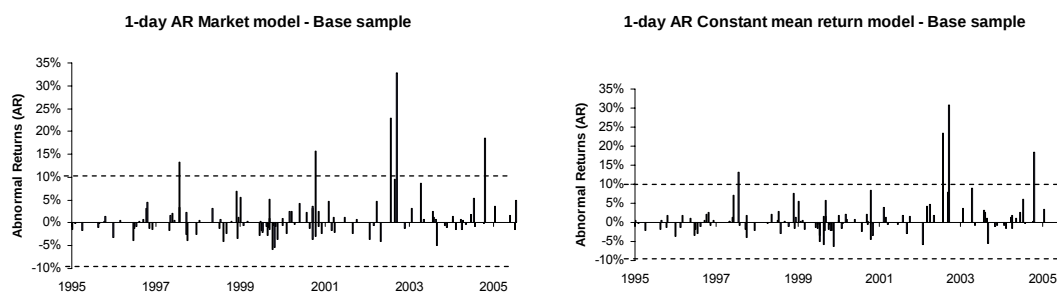
5.1.4. Comparison between individual and overall effects

To further illustrate the difference between the event study (overall effect) and individual tests, Diagram 5.1.4.1 below illustrates the distribution of abnormal returns. The two dotted lines indicate the sample average abnormal return (1.0%) and the average abnormal return for the individually statistically significant observations (11.7%). Thus, the resulting proportion of individually statistically significant results, as presented in Table 5.1.3.1, should not appear that low any longer. However, the distribution may further indicate the presence of outliers distorting the event study results.

Diagram 5.1.4.1

5.1.5. Event study excluding outliers

A test whether outliers exert an unbalanced influence on the overall effects of divestments is performed. Again the event study methodology is applied to the base sample, excluding outliers. Outliers are classified as abnormal returns greater (less) than 10% (−10%) for the 1-day event window. Diagram 5.1.5.1, similar to Diagram 5.1.2.1, indicates the cutoff levels for outliers. Examining the diagram, 10% appears to be a reasonable level. Further, from an intuitive perspective the cutoff level could be argued to make sense.

Diagram 5.1.5.1

Five observations are classified as outliers using the Market model approach, and four observations as outliers using the Constant mean return model approach.

Table 5.1.5.1

Base sample	Market model (AR=Return - index return)		Constant mean return model (AR=Return - mean return)	
	1-day	1-day	1-day	1-day
Excluding outliers	Yes	No	Yes	No
SACAR	0.8%	1.0%	0.7%	1.0%
t-observed	3.516	4.578	3.066	4.238
1% significance level				
t-critical	2.360	2.358	2.359	2.358
Reject null hypothesis	Yes	Yes	Yes	Yes
5% significance level				
t-critical	1.658	1.658	1.658	1.658
Reject null hypothesis	Yes	Yes	Yes	Yes
10% significance level				
t-critical	1.289	1.289	1.289	1.289
Reject null hypothesis	Yes	Yes	Yes	Yes
Sample size (N)	115	120	116	120
Degrees of freedom	114	119	115	119

Student's t-distribution

The results from the event study are presented in Table 5.1.5.1 above. Since the outliers are classified on the 1-day abnormal returns basis, only the 1-day results are relevant. The observed abnormal returns are still found to be statistically significant for all chosen levels (1, 5 and 10%) for the base sample excluding outliers. The decrease in the test statistic (*t*-observed) was expected as influential results are excluded, but the value is still rather high. The sample aggregate cumulative abnormal return (*SACAR*) remains fairly low and it drops by 0.2 (Market model) to 0.3 (Constant mean return model) percentage points as was expected when the sample excludes outliers.

The results of the event study on the base sample, excluding outliers, are encouraging and indicate robustness of the previous (Section 5.1.1) event study results.

5.2. Real estate sample

The overview of the cross-sectional variation in Table 5.2.1 indicates that the observed range of abnormal returns for the real estate sample is narrower than for the base sample. The maximum observed abnormal return following a divestment announcement is 7% for the 1-day window, as opposed to over 30% for the base sample. However, the 2-day

window appears to best reflect the market's reaction to divestments in the real estate sample; the maximum cumulative abnormal return is in the region of 13%. This successful deal was undertaken by Realia, who sold a property portfolio in the Stockholm region.²⁵ On average the abnormal returns are positive and a larger proportion of abnormal returns are positive than negative. Please find a complete list of abnormal returns for each transaction in Appendix 5.

Table 5.2.1

Real estate sample	Cumulative Abnormal Return (CAR)					
	Market model			Constant mean return model		
	1-day	2-day	5-day	1-day	2-day	5-day
Max	6.7%	13.5%	11.2%	6.6%	12.7%	12.2%
Min	-6.5%	-6.1%	-5.6%	-4.6%	-6.3%	-7.3%
Average	0.5%	0.6%	1.3%	0.5%	0.7%	1.0%
Median	0.5%	0.4%	1.0%	0.3%	0.4%	1.0%
% Positive returns	56.1%	53.7%	61.0%	56.1%	58.5%	56.1%
% Negative returns	43.9%	46.3%	39.0%	43.9%	41.5%	43.9%

5.2.1. Event study

The results of the event study on the real estate sample of 41 observations are presented below. Hypothesis testing is performed using both the Market model and the Constant mean return model to estimate abnormal returns.

Table 5.2.1.1

Real estate sample	Market model (AR=Return - index return)			Constant mean return model (AR=Return - mean return)		
	5-day	2-day	1-day	5-day	2-day	1-day
SACAR	1.3%	0.6%	0.5%	1.0%	0.7%	0.5%
t-observed	1.945	1.426	1.599	1.605	1.862	1.631
1% significance level						
t-critical	2.423	2.423	2.423	2.423	2.423	2.423
Reject null hypothesis	No	No	No	No	No	No
5% significance level						
t-critical	1.684	1.684	1.684	1.684	1.684	1.684
Reject null hypothesis	Yes	No	No	No	Yes	No
10% significance level						
t-critical	1.303	1.303	1.303	1.303	1.303	1.303
Reject null hypothesis	Yes	Yes	Yes	Yes	Yes	Yes

Student's t-distribution, 40 d.f.

As can be seen in Table 5.2.1.1, the results of the hypothesis testing are similar using both the Market model and the Constant mean return model. The null hypothesis of no abnormal returns following a divestment announcement is rejected for all event windows

²⁵ The transaction was, according to the firm, part of the strategy of focusing on properties with a higher return and development prospects (*Realia, Company Press Release*, October 5, 2004).

at the 10% level. At the 5% level, the null is rejected for different windows (5-day and 2-day) for the two models of estimating abnormal returns; however, observing the t -statistics for the event windows which are not rejected at this level, the values are fairly close to the critical levels.

The level of the sample aggregate cumulative abnormal return (*SACAR*) is found to be 0.5% for the 1-day event window, reaching a maximum of 1.3% for the 5-day window. The level is lower than for the base sample.

Overall, the results imply a weaker relationship between positive abnormal returns and announcements of divestments for the real estate sample firms than for the base sample firms.

5.2.2. Individual Abnormal Returns

Diagram 5.2.2.1

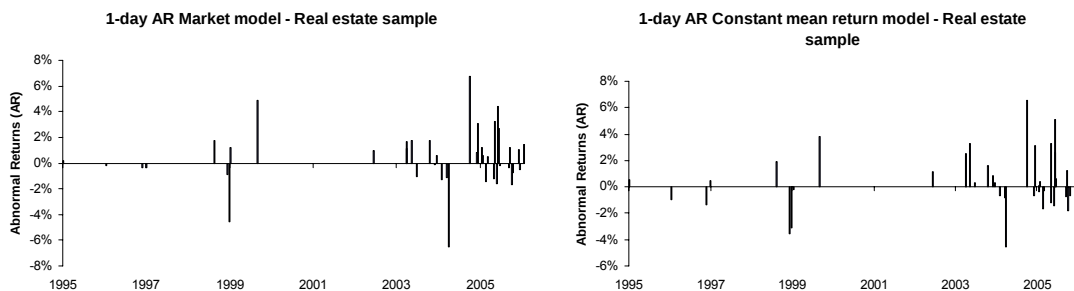


Diagram 5.2.2.1 above shows the distribution of the 1-day abnormal returns for the real estate sample. The magnitude of the abnormal returns appears to increase over time. The results of the two models of measuring abnormal returns appear to be rather similar.

Please find diagrams of the distributions of abnormal returns over time for the other event windows in Appendix 1.

5.2.3. Testing single observations

Table 5.2.3.1

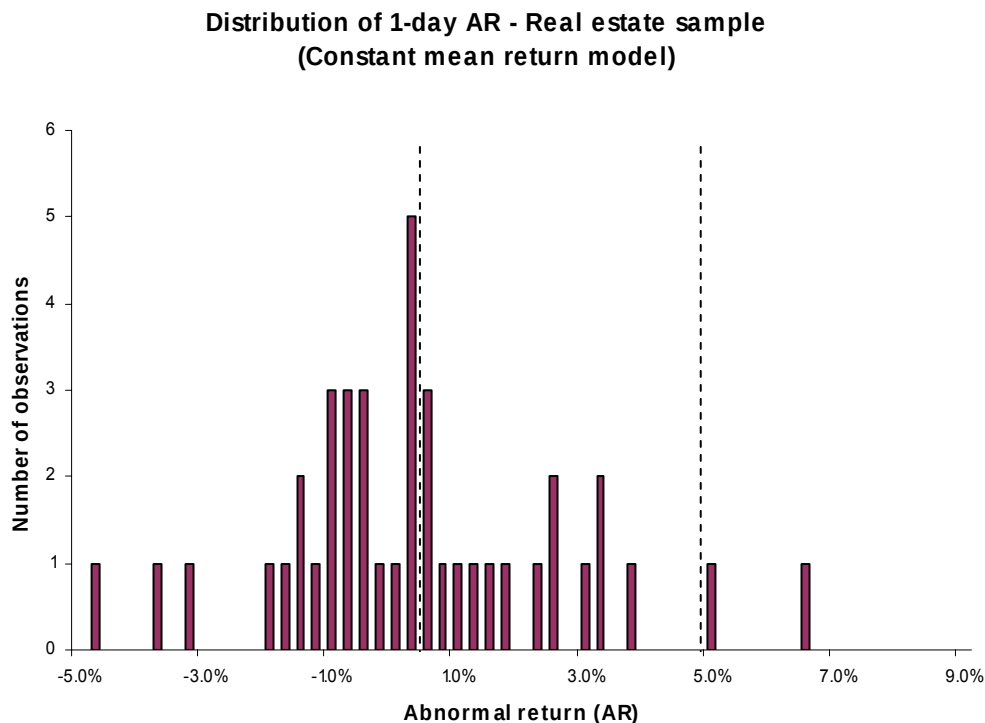
Real estate sample	Market model (AR=Return - index return)			Constant mean return model (AR=Return - mean return)		
	5-day	2-day	1-day	5-day	2-day	1-day
Total number of observations	41	41	41	41	41	41
1% significance level						
# of significant AR	0	1	2	4	2	3
% significant observations	0.0%	2.4%	4.9%	9.8%	4.9%	7.3%
5% significance level						
# of significant AR	4	3	5	4	3	8
% significant observations	9.8%	7.3%	12.2%	9.8%	7.3%	19.5%
10% significance level						
# of significant AR	6	5	7	5	6	9
% significant observations	14.6%	12.2%	17.1%	12.2%	14.6%	22.0%

Please find the results of the tests of the individual observations in Table 5.2.3.1 above. The results were, in relation to the observed event study results and the observed proportions of the individual tests for the base sample, expected.

5.2.4. Comparison between individual and overall effects

A comparison of the event study results and proportion of individually statistically significant observations for the real estate sample offers no real surprises. The proportion of individually statistically significant observations harmonizes with the observed event study results.

Diagram 5.2.4.1 illustrates the distribution of abnormal returns; the dotted lines indicate the sample average abnormal return (0.5%) and the average abnormal return for the individually statistically significant observations (5.0%). The significant difference between the two averages further illustrates the difference between overall and individual statistical significance tests.

Diagram 5.2.4.1

5.2.5. Event study excluding outliers

The overall effect of divestments for the real estate sample was not found to be statistically significant at the 1% and 5% level for the 1-day event window (please refer to Table 5.2.1.1). Further, the sample does not include any abnormal returns greater (less) than 10% (–10%) for the 1-day window (please refer to Diagram 5.2.2.1). Further, the distribution (Diagram 5.2.4.1) appears rather symmetrical and does not indicate that outliers should exert an unbalanced influence on the event study results. Thus it is not meaningful to perform the exercise of excluding outliers from the real estate sample.

6. Analysis

The results of the event studies indicate a positive abnormal return linked to divestment announcements. This is in favor of the hypothesis of releasing shareholder value by streamlining the business; thereby reducing the diversification discount. The results indicate that the correction in valuation of the firm by the market is immediate; but there may also be a run-up effect as indicated by the 5-day event window.

The observed levels of *SACAR* for the base sample imply a range of 0.7-1.5% abnormal returns for the different event windows. As indicated by the 5-day event window there seems to be a run-up effect prior to the announcement day. The run-up could potentially be longer than what is captured by the 5-day window; however, this effect is difficult to isolate and estimate as there are several factors which could potentially affect the share price over a longer period of time. The rumors surrounding larger divestments especially, can start several months prior to the official announcement of the intent of the firm to undertake the divestment. Hence, the run-up is not necessarily due to information leakages or insider trading, but rather the market revising its estimated probabilities of possible transactions materializing. Basically, the trading is based on no new information, but leads to a run-up in the share price; this dilutes the observed effect around the actual announcement of a transaction. Further, the possibility exists that the run-up trading may have induced unrealistic expectations which may also lead to negative corrections of the share price on the announcement day.

The lower *SACAR* and lower observed *t*-statistics in the 2-day window compared to the 1-day window, indicates that there does not seem to be a lagged effect of the market's reaction on divestment announcements. Hence, the relevant range of abnormal returns, as indicated by the event study, is 1.0-1.5%. The level may at first glance not appear to be a strong argument for undertaking divestments to unleash shareholder value locked up by the diversification discount. However, as previously discussed, the run-up effect may have already corrected the price, to reflect the divestment. Further, theory suggests that firms prior to the divestment announcement experience negative performance which

could further dampen the effect of the divestment. Thus, the total effect on the shareholder value of a divestment may be much larger than indicated by the event study.

The real estate sample does not exhibit the same characteristics as the base sample. The event study results indicate that there does exist a diversification discount which can be reduced through divestments, but the link appears to be weaker than for the base sample firms. Perhaps information leakage is a more influential factor in the real estate industry, which would explain the run up effect observed for the 5-day event window; also the 2-day window indicates the presence of a lagged effect. Further, the market may apply a lower discount on geographical diversification; which is what most real estate transactions reduce. Theory argues that the magnitude of industrial and global diversification is similar, however the real estate transactions tend not to be cross-border and the geographical diversification discount should be lower for regional than global, cross-border, diversification. Another explanation to the lower observed abnormal returns following real estate divestments could be that many of these transactions can be attributed to the firms' regular operations, buying and selling property, thus should not be regarded as focus-increasing divestments, thereby diluting the findings.

The results obtained using the Market model and Constant mean return model to estimate abnormal returns are very similar, which is an indication of robustness in the tests performed. A further indication of robustness of the event study is that the event study results are very similar also after excluding outliers; the results are still statistically significant at all levels tested.

6.1. Excess returns and value creation

John and Ofek (1995) have presented a methodology to calculate excess returns on divestments. The excess return for the divested business equals the excess increase in market capitalization of the divestor following the divestment (calculated as abnormal return for the announcement day multiplied by market capitalization of the divestor on the day preceding the announcement), divided by the deal value. Thus, the excess value does not originate from the divested business but from the elimination of negative synergies, i.e. the factors causing the diversification discount, in the remaining business.

This paper has presented several examples of divestment announcements which have been extremely well received by the market, rendering abnormal returns in excess of 30%. One of the previously discussed cases is Skandia, whose share price rose more than 23% after the firm announced the divestment of its US operations in a deal valued at \$1.2bn. At the time of divestment, Skandia was valued at \$2.7bn.²⁶ After the divestment announcement the market value increased to \$3.3bn; an increase in market capitalization of \$600mm overnight. Using the methodology presented by John and Ofek (1995), the excess return of the divested business can be readily estimated. In the Skandia case, the excess return of the divestment is 52%²⁷ which is, by any standard, an excellent return on investment.

Another remarkable deal previously discussed is the IBS equity carve-out; over 18% abnormal return on the announcement day. In excess return terms, this amounts to a return on divestment decision of 24%²⁸ and an excess increase in market capitalization of \$26mm.²⁹

There are several reasons for the excess returns observed for the divested business. In a perfectly competitive market, the sale price of a business should correspond to its fair value, resulting in the divestment being a zero NPV project. However, firms may evaluate projects differently; for example the business divested could be a better fit for the acquiror or the decrease in diversification for the divestor could eliminate negative synergies and release value by reducing the diversification discount. Further, the increase in market capitalization following the value release strengthens the firm's acquisition currency and makes the firm less susceptible to hostile takeover attempts as the divestment releases the potential value hostile suitors previously may have identified.

Returning to the cases with returns which are in line with the average findings, significant excess returns may still be achieved and several millions of value can be released.

²⁶ Assuming a SEK/USD exchange rate of 8.

²⁷ $(\$2.7\text{bn} \times 23\%) / \$1.2\text{bn} = 52\%$. All excess return calculations are back-of-the-envelope using approximate numbers.

²⁸ $(\$143\text{mm} \times 18\%) / \$108\text{mm} = 24\%$.

²⁹ $\$143\text{mm} \times 18\% = \26mm .

TeliaSonera's divestment of Telia Finans in 2004, a deal valued at \$165mm, resulted in a 1-day abnormal return of 1%. The excess increase in market capitalization was \$224mm³⁰ and the excess return realized through the divestment was 136%.³¹

The completely average case: a firm with a market capitalization of \$1.6bn, a divestment of \$333mm (see Table 3.3) and a 1-day abnormal return of 1%. The excess increase in market capitalization would be \$16mm³² and the excess return realized through the divestment would be 5%.³³ Capturing part of the run-up effect, the 5-day window cumulative abnormal return of 1.5% renders an excess return of 7%³⁴ and an excess increase in market value of \$24mm.³⁵

The cases presented above reveal that sometimes astonishing returns and excess increases in market capitalization can be realized through divestments. Indeed, the excess return calculations are heavily dependent on the firm size; however, the absolute value increases for the firms, for the average SSE firm and transaction \$16-24mm, is still a recognized and accepted number by the market; the unleashed value can at any time be realized by the shareholders simply by selling their shares in the open market.

6.2. Relating the value release to the diversification discount

The diversification discount on the Swedish market has been estimated by previous studies to be in the range of 12-39%. Thus, it should be possible to release the entire value locked up by the diversification discount by focusing the business through divestments and creating a pure-play. The observed abnormal returns of 1.0-1.5% linked to divestment announcements by Swedish firms may appear low in comparison to the total diversification discount. However, there are several factors which mute the observed abnormal returns following divestment announcements. As previously discussed the run-up effect, due to rumors and possible information leakage, may extend beyond three days prior to the announcement day; thus much of the abnormal returns associated with the

³⁰ $\$22.4\text{bn} \times 1\% = \224mm .

³¹ $(\$22.4\text{bn} \times 1\%) / \$165\text{mm} = 136\%$.

³² $\$1.6\text{bn} \times 1\% = \16mm .

³³ $(\$1.6\text{bn} \times 1\%) / \$333\text{mm} = 5\%$.

³⁴ $(\$1.6\text{bn} \times 1.5\%) / \$165\text{mm} = 7\%$.

³⁵ $\$1.6\text{bn} \times 1.5\% = \24mm .

divestment announcement may already have been discounted into the share price. Further, negative performance exhibited by firms prior to divestments, as suggested by previous research, may mute the positive abnormal return associated with the divestment announcement. Theory has also suggested that focus increasing divestments are more positively received by the market than general divestments; since this paper does not distinguish between focus increasing and other divestments, the observed abnormal return should be biased downwards (Section 8.1 discusses reasons for not classifying the observations according to a focus criterion). Hence, the actual abnormal returns associated with divestments should be larger than what is observed in this paper.

Additionally, it should be noted that far from all divestments will reduce a firm's diversification completely, thereby creating a pure-play; most firms are still diversified, although to a lesser extent, after a divestment. Since the diversification discount is proportional to the degree of diversification, the abnormal return associated with divestments should exhibit the same characteristic; i.e. the abnormal return should be proportional to the reduction in diversification.

6.3. Comparison with previous research

Table 6.3.1

Study	Announcement day		Headline number			Market	Year	Methodology ¹	Sample N
	AR	Significance	CAR	Significance	Event window ²				
Fridberg & Nylin	1.0%	1.0%	0.8%	1.0%	[0,1]	SWE	2006	MMI	120
Fridberg & Nylin	1.0%	1.0%	0.7%	1.0%	[0,1]	SWE	2006	CMRM	120
John & Ofek	1.4%	1.0%	1.5%	1.0%	[-1,1]	INT'L	1995	MMB	258
Klein	0.2%	N/A	1.1%	1.0%	[-1,1]	US	1986	MMB	202
Jain	0.4%	1.0%	0.7%	1.0%	[-4,0]	US	1985	MMB	1 062
Rosenfeld ³	1.8%	1.0%	2.3%	1.0%	[0,1]	US	1984	CMRM	62
Alexander et al	N/A	N/A	0.2%	25.0%	[0,1]	US	1984	CMRM	53
Alexander et al	N/A	N/A	0.4%	7.2%	[0,1]	US	1984	MMI	53
Average	1.0%		1.4%						
Median	0.9%		1.3%						

Note: Averages and medians exclude the Fridberg & Nylin study. Exclude studies with less significance than 1%.

¹ Methodology to estimate abnormal returns,

MMI, Market Model Index return

MMB, Market Model Beta return

CMRM, Constant mean return model

² Event windows for the other studies have been adjusted +1 day to match authors' definition of $\tau=0$.

³ All figures relate to the sell-off sample.

Previous event studies have used a variety of event windows to study the announcement day effects. In the overview above (Table 6.3.1), both the headline number, defined as the paper's main event window, presented by each study and the announcement day average abnormal returns, to the extent the numbers were available, are included. The event windows reported in Table 6.3.1 for each of the previous studies have been adjusted by +1 day to align the definitions of $\tau=0$. The previous studies define $\tau=0$ as the day of

publication in the Wall Street Journal, and notes that the announcement probably occurred on the day before ($\tau=-1$); thus, as the definition of $\tau=0$ used in this paper is the day of the announcement, the way previous studies' event windows are reported have been adjusted for comparison purposes.

To enable fair comparisons between the findings in this paper and the average and median of previous studies' findings, the average and median calculations in Table 6.3.1 only include studies with statistical significance at the 1% level. However, when comparing the results, it is important to bear in mind that the samples differ across the studies. Most of the previous research papers look at US firms, the studies investigate data from different time periods, and the methodology for estimating abnormal returns differ. The effect of using different methods to estimate abnormal returns should be rather minor however, as pointed out by MacKinlay (1997).

Comparing the findings in this paper of the average abnormal return on the announcement day of a divestment to the findings in previous research the results are found to be in line. Further, it is interesting to compare the headline numbers, and they are in the same range. The difference in event windows between the headline numbers impacts the comparability; but they provide a strong indication of divestment events being linked to positive abnormal returns. Thus it is in line with the theory of unleashing shareholder value through divestments.

As pointed out previously, the time periods and region of study differ between this and previous studies. Since the results still are in line, it is an indication that the phenomenon of diversification discount, and the potential release of value through divestments, is a global phenomenon which prevails over time.

7. Conclusions

Value locked away by the diversification discount can be unleashed through divestments. The findings of this paper show that the observed abnormal returns following a divestment announcement are in the range 1.0-1.5%; statistically significant at the 1% level.

The total effect may however be larger than what the observed figures indicate. Several factors have been identified that mute the observed abnormal returns following divestment announcements; abnormal returns associated with divestment announcements may already have been discounted into the share price due to an extended run-up effect and divestments may be preceded by periods of negative performance offsetting the positive effect of an announcement. Further, divestments do not necessarily create pure-play firms; firms may still be diversified, though to a lesser extent, after divestments. The abnormal returns following divestments should therefore be proportional to the reduction in diversification; hence on average the observed returns for a large set of divestments could be expected to be fairly low.

The base and real estate samples examined exhibit different characteristics; the abnormal returns following divestments undertaken by real estate firms are found to be lower and less statistically significant. Several factors explaining these results have been identified; such as the difference in level of diversification between regional and global and the nature of transactions.

The findings of this paper are in line with previous international research, indicating that the diversification discount is a global phenomenon which can be eliminated through the creation of pure-plays.

8. Topics for further study

8.1. Focus classification criteria

An interesting further step would be to classify the divestments according to a focus criterion, similar to the study by John and Ofek (1995). The data could be classified in two groups, one for focus increasing divestments and one with all the other divestments. The focus criterion would however need to be defined differently than in John and Ofek (1995). They use SIC codes,³⁶ and compare the divested division's SIC code to the SIC code of the entire firm, and if the codes differ the transaction is classified as an increase in corporate focus. The approach would not be possible for the Swedish transactions, since SNI codes³⁷ are only reported on a firm basis and not per division as in the US. It would however be possible on the transactions where the divestment is a separate legal entity. As this would reduce the sample, and perhaps bias the sample to only include certain types of transactions, a different focus criterion for classifying the transactions would need to be identified.

8.2. Explaining the factors affecting the abnormal returns

Explaining the factors affecting the level of abnormal returns observed on the day of announcement of divestment would be an interesting topic to investigate quantitatively. There are several approaches; a suggestion would be to run an OLS regression on the cumulative abnormal returns (*CAR*) versus various explanatory variables. These could for example include deal value, a dummy variable for disclosed/undisclosed deal value, credit rating of divestor, a dummy for each type of transaction (divestment, equity carve-out, spin-off), a dummy for focus-increasing divestment, relative deal value to divestor market value, acquiror characteristics such as industrial or financial buyer, size of acquiror (perhaps large firms are more prone to overpaying), capital structure of divestor, divestor track record, and ownership structure of divestor (perhaps firms with concentrated ownership undertake divestments that give the large shareholders private benefits). Previous studies exist on the topic and may be extended to the Swedish market. However, it is beyond the scope of this paper to investigate this topic further.

³⁶ Standard Industrial Classification.

³⁷ Svenskt Näringslivs Index, the Swedish equivalent of SIC.

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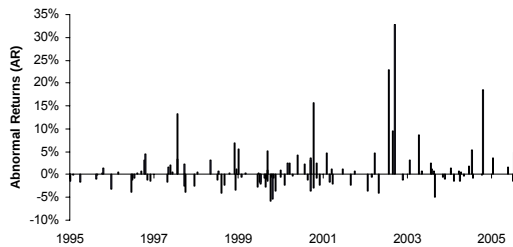
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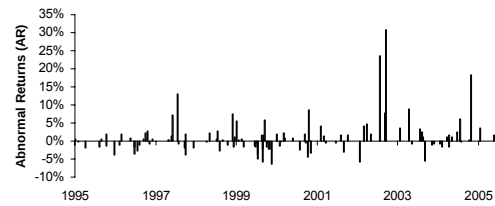
Appendix 1: Abnormal returns versus time

Base sample

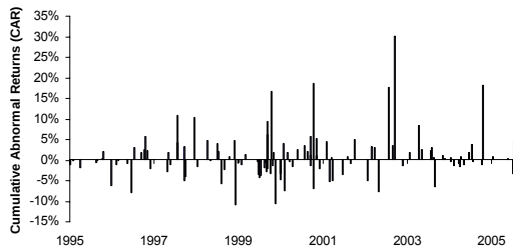
1-day AR Market model - Base sample



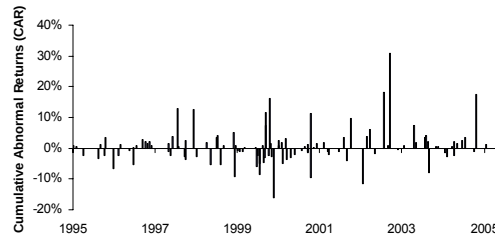
1-day AR Constant mean return model - Base sample



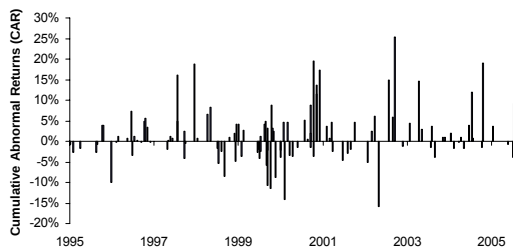
2-day CAR Market model - Base sample



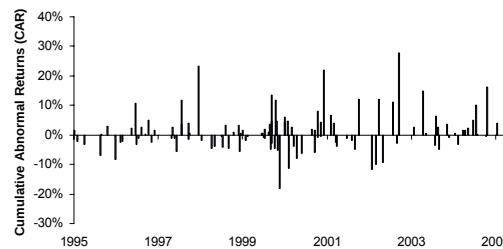
2-day CAR Constant mean return model - Base sample



5-day CAR Market model - Base sample

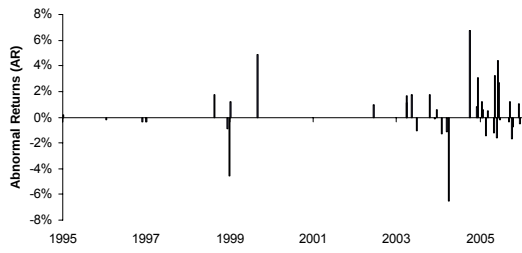


5-day CAR Constant mean return model - Base sample

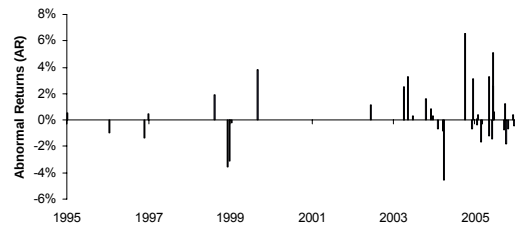


Real estate sample

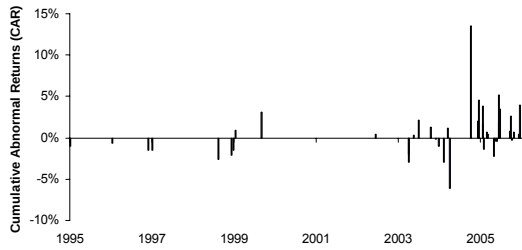
1-day AR Market model - Real estate sample



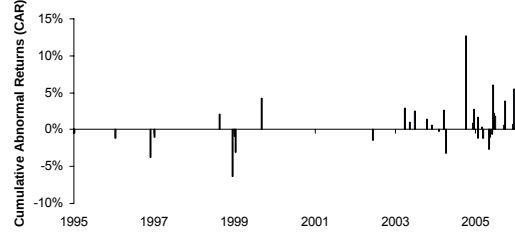
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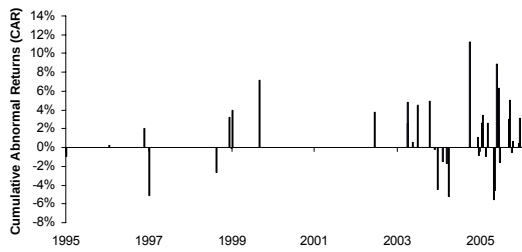
2-day CAR Market model - Real estate sample



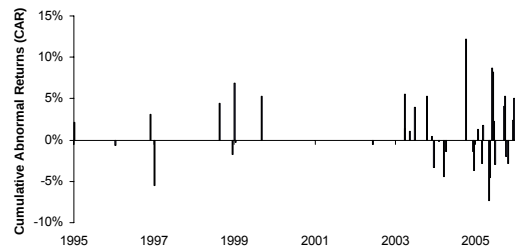
2-day CAR Constant mean return model - Real estate sample



5-day CAR Market model - Real estate sample



5-day CAR Constant mean return model - Real estate sample



Appendix 2: Base sample transactions

Announcement Date	Divested unit (Target)	Acquirer	Divestor	Deal Value (\$mm)	Type of divestment
1995-06-01	Bennett Travel Group AB	Hogg Robinson plc	Volvo AB	93	D
1995-06-30	Seeger Gruppe	Trans Technology Corporation	SKF AB	43	D
1995-08-30	Falcon Bryggerier AB	Spira Invest AB/Carlsberg AS/Sinebrychhoff Oy Ab	Volvo AB	95	D
1996-01-09	PWA-Kunststoff GmbH	AssiDoman AB	Svenska Cellulosa AB	86	D
1996-01-24	Victor Hasselblad AB	Existing Management (MBO)	Incentive AB	87	D
1996-03-05	Celsius Information Systems AB	Existing Shareholders	Celsius AB	585	S
1996-03-11	Frigoscandia Equipment Holding AB	FMC Corporation	ASG AB	183	D
1996-05-21	Data Capture Group	PSC Incorporated	Spectra-Physics AB	140	D
1996-07-05	Stora Byggprodukter AB	Industri Kapital (IBO)	Stora Kopparbergs Bergslags AB	130	D
1996-07-25	Skandinaviska Elverk AB	Gullspang Kraft AB	Incentive AB	1 085	D
1996-10-08	PWA Dekor GmbH	Munksjo AB	Svenska Cellulosa AB	105	D
1996-11-13	Skoogs VVS AB	Dahl International AB	Skoogs AB	41	D
1996-11-20	Ericsson Business Networks AB (Karlskrona Production Unit)	Flextronics International Ltd	Telefonaktiebolaget LM Ericsson	82	D
1996-12-11	Perstorp AB (Automotive supply and related operations)	Collins & Alkman Corp	Perstorp AB	108	D
1996-12-31	Hansa Bryggeri A/S	Investor Group	Volvo AB	64	D
1997-02-06	Husqvarna Sewing Machines AB	Industri Kapital AB (IBO)	Electrolux AB	129	D
1997-02-28	Cerbo AB	Existing Management (MBO)	Munksjo AB	27	D
1997-03-17	Oslogda Enskilda Bank	Den Danske Bank A/S	Lundbergföretagen AB	368	D
1997-04-03	Tour & Andersson Hydronics	IMI plc	Incentive AB	158	D
1997-04-29	FlexLink Systems AB	Scandinavian Equity Partners AB (IBO)	SKF AB	119	D
1997-09-22	Skandia International Insurance Company	Hannover Rueckversicherungs AG	Skandia Forsakrings AB	138	D
1997-09-25	Hagglunds Vehicle AB	Alvis plc	Incentive AB	129	D
1997-10-15	Compentia Industri AB	Santassio - JOT Oyj	Svedala Industri AB	54	D
1997-10-29	Molnlycke Clinical Products	Tamro Oyj/Nordic Capital Svenska AB (IBO)	Svenska Cellulosa AB	199	D
1997-12-15	Frigoscandia AB	Security Capital Industrial Trust	ASG AB	399	D
1997-12-19	Hagglunds Drives AB	Alle AB	Incentive AB	46	D
1998-02-16	TAC AB	Scandinavian Equity Partners AB (IBO)	Incentive AB	52	D
1998-02-18	Statshypotek Fastigheter	Existing Shareholders	Svenska Handelsbanken AB	751	S
1998-02-20	Skandia International Insurance Company/Skandia UK Insurance Plc	Farfax Financial Holdings Ltd	Skandia Forsakrings AB	75	D
1998-05-08	Elekta Neurosurgical Instruments	Nitinol Medical Technologies Inc	Elekta AB	33	D
1998-06-03	SCHROCK CABINET CO.	FORTUNE BRANDS INC.	Electrolux AB	108	D
1998-08-31	Drott AB	Existing Shareholders	Skanska AB	956	S
1998-10-02	Electrolux AB (Professional Cleaning Equipment division)	NKT Holding AS	Electrolux AB	66	D
1998-11-27	Telelam Care AB	Existing Shareholders	Securitas AB	39	S
1998-12-06	Volvo Truck Corporation (Lindesberg Plant)	Meritor Automotive Inc	Volvo AB	135	D
1998-12-28	Protég Extincteurs/Protég Incendie	Williams Plc	Securitas AB	89	D
1999-01-28	Volvo Car Corporation	Ford Motor Company	Volvo AB	6 447	D
1999-03-10	Meto AG	Existing Shareholders	Essette AB	186	S
1999-04-22	Sandvik AB (Saws & Tools Division)	Snap-On Inc	Sandvik AB	394	D
1999-05-03	Scancem AB	Heidelberger Zement AG	Skanska AB	3 780	D
1999-05-10	Finnsement Oy/Lohja Rudus Oy	CRH Plc	Scancem AB	436	D
1999-05-31	Swedish Match AB (Cigarette Operations)	Austria Tabakwerke AG	Swedish Match AB	560	D
1999-06-21	Trygg-Hansa AB (Non-Life Insurance Operations)	Royal & Sun Alliance Insurance Group plc	Skandinaviska Enskilda Banken - SEB	511	D
1999-07-12	Celsius AB (Kockums Naval Systems)	Howaldtswerke-Deutsche Werft AG	Celsius AB	151	D
1999-07-29	Electrolux AB (Beverage Vending Machine Business)	Existing Management (MBO)	Electrolux AB	267	D
1999-11-08	Fichtel-Sauche SA (Lock & Door Division)	Assa Abloy AB	Gunnabo AB	29	D
1999-11-19	Electrolux AB (Commercial Refrigeration Unit)	United Technologies Corp	Electrolux AB	144	D
1999-11-26	Naringskredit NLK	OM Gruppen AB/Catella Holding AB	Volvo AB	64	D
1999-12-09	Vesta Forsikring AS	Unidamark AS	Skandia Forsakrings AB	643	D
1999-12-10	National Insurance & Guarantee Corp Plc	Credit Suisse Group	Skandia Forsakrings AB	195	D
2000-01-10	Holmen AB (Domajo Pulp Plant)	Domstar AB	Holmen AB	30	D
2000-01-18	Telefonaktiebolaget LM Ericsson AB (Energy System Business)	Emerson Electric Co	Telefonaktiebolaget LM Ericsson	726	D
2000-01-25	Pren AB	Rodamco Continental Europe NV	Skanska AB	752	D
2000-02-03	AssiDoman Ssepap AS	Frantschach AG	AssiDoman AB	516	D
2000-02-04	AssiDoman AB (DynaSep Paper Mills, Sack Converting, Barrier Coating Operations)	Frantschach AG	AssiDoman AB	516	D
2000-02-07	Hotellus International AB	Pandox Hotellfastigheter AB	Scandic Hotels AB	89	D
2000-03-02	Perstorp Surface Materials AB	Decorative Surfaces Holding AB (IBO)	Perstorp AB	173	D
2000-03-06	Effekt Fritz Fuss GmbH & Co KGaA (eff-eff Alarms activities)	Caradon Plc	Assa Abloy AB	180	D
2000-03-20	Hasselfors Tra AB (Biomass-Fuelled Heating Plant)	Sydskraft AB	AssiDoman AB	41	D
2000-03-27	Sifo Group AB (Research & Consulting)	WIPF Group Plc	Sifo Group AB	70	D
2000-04-12	Exactium Ltd	Pivotal Corp	Industrial & Financial Systems AB - IFS	41	D
2000-05-31	Modo Paper AB	Metsa-Serla Oyj	Svenska Cellulosa AB - SCA	1 070	D
2000-05-31	Modo Paper AB	Metsa-Serla Oyj	Svenska Cellulosa AB - SCA	1 070	D
2000-06-22	Starkki Oy AB	Danske Trelast AS	Trelleborg AB	127	D
2000-07-03	Hagstromer & Qvberg Fondkommission AB	Existing Shareholders	HQ SE Holding AB	83	D
2000-07-28	Neopac AS	Jefferson Smurfit Group plc	Svenska Cellulosa AB	28	D
2000-08-10	Assa Abloy AB (Chubb Safes business)	Gunnabo AB	Assa Abloy AB	81	D
2000-09-12	Ericsson Microelectronics Europe AB	Eurodis Electron Plc	Telefonaktiebolaget LM Ericsson	41	D
2000-10-20	Piergo AB	Existing Shareholders	Perstorp AB	106	D
2000-12-20	SM Motors Plc Ltd	Wearnes International Ltd	Volvo AB	27	D
2001-01-15	Saab Marine Electronics AB	Emerson Electric Co	Saab AB	86	D
2001-02-08	Forsakrings AB Volvia (Car-Related Insurance Business)	If Skadeforsakring Holdings AB	Volvo AB	59	D
2001-02-09	Lagercrantz Group AB + AddTech AB	Existing Shareholders	Bergman & Beving AB	188	C
2001-02-15	AKA Industriprodukter AB/Gustaf Fagerberg Holding AB	Industriinvest AB	Hexagon AB	27	D
2001-03-08	Telefonaktiebolaget LM Ericsson (Enterprise Direct Sales Operations)	Apax Partners & Co Ltd (IBO)	Telefonaktiebolaget LM Ericsson	465	D
2001-03-12	AssiDoman AB (Corrugated & Containerboard)	Kappa Alpha Holdings	AssiDoman AB	1 066	D
2001-04-02	Studvik AB	Existing Shareholders	Alle AB	36	S
2001-04-03	Sapa AB (Aluminium Foil Rolling Operations)	Pechiney SA	Sapa AB	112	D
2001-05-04	Epsilon AB	Existing Shareholders	Sigma AB	51	S
2001-07-03	SBL Vaccin AB	PowderJect Pharmaceuticals plc	Active Biotech AB	70	D
2001-07-27	Cloetta Fazer AB (Handel Trading Business)	Valora Holding AG	Cloetta Fazer AB	51	D
2001-08-10	Lundin Petroleum AB	Existing Shareholders	Lundin Oil AB	55	S
2001-08-21	Autoplastic AB	Glide Investment Management BV (IBO)	Sapa AB	116	D
2001-11-12	AeroThrust Corp	Windstar Capital LLC	Saab AB	51	D
2001-12-27	Telefonaktiebolaget LM Ericsson AB (central London property)	BP Plc	Telefonaktiebolaget LM Ericsson	170	D
2002-01-28	Volkswagen Sweden AB	Volkswagen AG	Scania AB	81	D
2002-03-01	Din Bil Sverige AB	Volkswagen AG	Scania AB	43	D
2002-06-19	Nordea AB (General Insurance Operations)	Tryg i Danmark smba	Nordea AB	809	D
2002-07-25	Cardo Rail AB	Vestlar Capital Partners Inc (IBO)	Cardo AB	211	D
2002-08-20	Telia Finland Oy (Mobile Phone Operations and Distribution)	Finnnet Group	Telia AB	85	D
2002-09-26	Telefon AB LM Ericsson (Product Development Operations Erisoft and Infotech)	Tietoerator Oyj	Telefonaktiebolaget LM Ericsson	53	D
2002-12-20	American Skandia Inc	Prudential Financial Inc	Skandia Forsakrings AB	1 161	D
2003-01-28	Host International AB (Swedish credit portfolio)	Aktiv Kapital ASA	Host International AB	47	D
2003-02-10	HA North American Sales AB	Medicis Pharmaceutical Corp	Q-Med AB	160	D
2003-04-23	Conhem AB	EQT Northern Europe (IBO)	TeliaSonera AB	258	D
2003-06-18	Clean Chemical AB	Segulah II LP (IBO)	Medivir AB	27	D
2003-09-08	Bolden AB (Fabrication and Technology Sales Unit)	Outokumpu Oy	Bolden AB	54	D
2003-09-30	Inkassosentralen AS	Aktiv Kapital ASA	Nordea AB	37	D
2003-12-18	Scandinavian IT Group AB	Computer Sciences Corp	SAS AB	66	D
2003-12-24	Skandia Life Insurance Co (Japan)	Millea Holdings Inc	Skandia Forsakrings AB	186	D
2004-01-15	Telia Finans AB	Rabobank Nederland	TeliaSonera AB	165	D
2004-01-27	NGX Canada Inc	TSX Group Inc	OM HEX AB	29	D
2004-03-30	Bostads AB Drott	Existing Shareholders	Fabege A/B	365	S
2004-04-16	Ainax AB	Existing Shareholders	Volvo AB	823	S
2004-06-14	NCC AB (Ready mix concrete plants)	Betongindustri AB/AB Fardig Betong	NCC AB	30	D
2004-06-14	Finance for Danish Industry A/S - FIH	Kaupthing Bunadabanki hf	Svebank (ForeningsSparbanken AB)	1 178	D
2004-07-05	SDI Media AB	Warburg Pincus LLC (IBO)	Modern Times Group AB - MTG	60	D
2004-08-17	Sonera zed Oy	Grupo Wisdom	TeliaSonera AB	37	D
2004-08-30	Atlas Copco AB (Electric tools manufacturing unit)	Tehtronic Industries Co Ltd	Atlas Copco AB	704	D
2004-09-01	Capio Omorg AB	Attendo Care AB	Capio AB	25	D
2004-10-01	Skanska Services AB	3i Group plc (IBO)	Skanska AB	204	D
2004-11-12	SSAB HardTech AB	Corporation Gestamp SL	Swedish Steel Corp - SSAB	204	D
2004-12-07	Gambro Healthcare Inc	DalVita Inc	Gambro AB	3 005	D
2004-12-22	Myresjöhus	Industri Kapital AB (IBO)	Skanska AB	74	D
2005-03-02	Multicom Security AB	GMT Communications Partners Ltd	TeliaSonera AB	79	D
2005-03-17	IBS OPENSystems plc	Worknet Purchase	IBS AB	59	C
2005-06-13	Hexagon Automation AB	Segulah AB (IBO)	Hexagon AB	151	D
2005-10-14	Celero Support AB	Coor Service Management AB	Volvo AB	87	D
2005-11-28	Skanska Modul AB	3i Group plc (IBO)	Skanska AB	45	D
2005-12-08	Jelbak Group AB	Polaris Private Equity A/S (IBO)	SAS AB	81	D
Max				6 447	
Min				25	
Average				333	
Median				108	

Note: Type of divestment: D, Divestment; S, Spin-off; C, Equity carve-out.

Appendix 3: Base sample returns

Announcement		Cumulative Abnormal Return (CAR)					
		Market model			Constant mean return model		
		1-day	2-day	5-day	1-day	2-day	5-day
1995-06-01	Volvo AB	-1.47%	-1.19%	-0.84%	0.47%	0.94%	1.57%
1995-06-30	SKF AB	-0.21%	-0.09%	-2.57%	-0.17%	0.70%	-2.15%
1995-08-30	Volvo AB	-1.62%	-1.84%	-1.72%	-2.05%	-2.43%	-3.18%
1996-01-09	Svenska Cellulosa AB	-1.09%	-0.58%	-2.77%	-1.73%	-3.51%	-7.03%
1996-01-24	Incentive AB	-0.22%	-0.12%	-0.82%	0.65%	1.29%	0.23%
1996-03-05	Celsius AB	0.39%	0.28%	3.87%	-1.32%	-2.38%	-0.16%
1996-03-11	ASG AB	1.51%	2.13%	3.94%	1.82%	3.60%	3.03%
1996-05-21	Spectra-Physics AB	-3.21%	-6.21%	-9.99%	-3.79%	-6.60%	-8.13%
1996-07-05	Stora Kopparbergs Bergslags AB	0.16%	-1.06%	-0.30%	-1.20%	-2.41%	-2.60%
1996-07-25	Incentive AB	0.55%	-0.20%	1.33%	1.94%	1.23%	-2.05%
1996-10-08	Svenska Cellulosa AB	0.02%	-0.79%	0.74%	0.95%	-0.89%	2.42%
1996-11-13	Skoogs AB	-3.88%	-7.86%	7.36%	-3.51%	-5.27%	10.75%
1996-11-20	Telefonaktiebolaget LM Ericsson	-1.21%	0.03%	-3.33%	-1.73%	0.12%	-3.07%
1996-12-11	Perstorp AB	-0.72%	3.10%	1.26%	-2.83%	0.97%	-1.28%
1996-12-31	Volvo AB	0.37%	0.01%	0.35%	-0.98%	0.04%	2.47%
1997-02-06	Electrolux AB	0.81%	1.92%	-0.15%	0.64%	2.67%	0.20%
1997-02-28	Munksjö AB	3.12%	2.68%	4.87%	2.19%	2.11%	5.06%
1997-03-17	Lundbergforetagen AB	4.49%	5.61%	5.57%	2.76%	1.67%	-0.11%
1997-04-03	Incentive AB	-1.14%	2.24%	3.33%	-0.84%	2.20%	-2.38%
1997-04-29	SKF AB	-1.51%	-2.06%	-0.14%	0.52%	0.74%	1.44%
1997-09-22	Skandia Forsakrings AB	-1.73%	-2.81%	-2.00%	0.37%	-1.06%	-0.97%
1997-09-25	Incentive AB	1.74%	1.75%	0.19%	0.27%	1.62%	2.59%
1997-10-15	Svedala Industri AB	2.05%	-1.01%	1.12%	1.27%	-2.33%	-1.07%
1997-10-29	Svenska Cellulosa AB	0.46%	0.23%	0.62%	7.18%	3.88%	-5.49%
1997-12-15	ASG AB	13.27%	10.81%	16.12%	13.04%	13.08%	11.83%
1997-12-19	Incentive AB	3.34%	4.20%	4.99%	-0.70%	0.48%	3.80%
1998-02-16	Incentive AB	-2.59%	-4.97%	-4.17%	-1.82%	-2.64%	-1.47%
1998-02-18	Svenska Handelsbanken AB	2.29%	3.25%	2.40%	1.89%	2.61%	4.05%
1998-02-20	Skandia Forsakrings AB	-3.91%	-3.92%	-0.48%	-4.00%	-3.85%	0.44%
1998-05-08	Elektro AB	-2.55%	10.35%	18.87%	-2.06%	12.70%	23.18%
1998-06-03	Electrolux AB	0.60%	-1.68%	0.85%	0.08%	-2.70%	-1.74%
1998-08-31	Skanska AB	0.16%	4.83%	6.58%	-0.28%	1.89%	-4.43%
1998-10-02	Electrolux AB	3.24%	-0.19%	8.41%	2.18%	-5.39%	-3.71%
1998-11-27	Securitas AB	-1.24%	3.98%	-1.65%	0.45%	3.46%	-0.31%
1998-12-06	Volvo AB	0.71%	2.06%	-5.28%	2.80%	4.08%	-4.07%
1998-12-28	Securitas AB	-4.09%	-5.65%	-2.46%	-2.89%	-5.45%	3.31%
1999-01-28	Volvo AB	-2.29%	-2.21%	-8.65%	0.23%	0.94%	-4.56%
1999-03-10	Esselte AB	0.25%	0.80%	0.91%	-1.13%	-0.01%	1.08%
1999-04-22	Sandvik AB	6.83%	4.79%	2.05%	7.58%	5.16%	3.40%
1999-05-03	Skanska AB	-3.40%	-10.91%	-4.90%	-1.54%	-9.31%	-5.40%
1999-05-10	Scancem AB	1.13%	0.18%	4.19%	1.19%	1.02%	0.66%
1999-05-31	Swedish Match AB	5.64%	-0.67%	4.19%	5.61%	-0.88%	1.67%
1999-06-21	Skandinaviska Enskilda Banken - SEB	-0.52%	-1.05%	-3.70%	0.29%	-0.98%	-1.65%
1999-07-12	Celsius AB	0.08%	0.24%	2.68%	0.46%	-0.93%	-0.45%
1999-07-29	Electrolux AB	0.33%	1.23%	-0.06%	-1.80%	0.29%	0.02%
1999-11-08	Gunnebo AB	-2.68%	-0.36%	-2.59%	-1.36%	0.23%	0.53%
1999-11-19	Electrolux AB	0.38%	-3.49%	-1.83%	-1.67%	-5.96%	0.65%
1999-11-26	Volvo AB	-1.74%	-4.30%	-4.06%	-0.47%	-2.35%	-0.71%
1999-12-09	Skandia Forsakrings AB	-1.57%	-3.60%	-2.35%	-5.04%	-8.51%	-1.07%
1999-12-10	Skandia Forsakrings AB	-2.03%	-3.78%	1.15%	-3.48%	-4.98%	1.91%
2000-01-10	Holmen AB	-0.88%	-1.82%	4.09%	1.59%	0.80%	0.87%
2000-01-18	Telefonaktiebolaget LM Ericsson	-2.74%	-0.61%	4.95%	-5.86%	-4.54%	3.57%
2000-01-25	Skanska AB	-0.99%	-2.90%	-5.79%	-2.17%	-3.20%	-4.88%
2000-02-03	AssiDoman AB	1.06%	6.22%	-2.25%	1.63%	7.51%	4.68%
2000-02-04	AssiDoman AB	5.15%	9.51%	3.10%	5.84%	11.74%	13.46%
2000-02-07	Scandic Hotels AB	-1.50%	-2.02%	-10.62%	0.09%	0.17%	-2.82%
2000-03-02	Perstorp AB	-5.75%	-3.34%	-11.39%	-1.76%	-2.34%	-4.57%
2000-03-06	Assa Abloy AB	-0.48%	16.60%	8.74%	-0.52%	16.14%	11.64%
2000-03-20	AssiDoman AB	-5.39%	-1.30%	3.26%	-2.08%	1.38%	4.81%
2000-03-27	Sifo Group AB	-0.81%	1.81%	2.39%	-2.18%	-2.81%	-5.29%
2000-04-12	Industrial & Financial Systems AB - IFS	-3.64%	-10.54%	-8.81%	-6.41%	-16.17%	-17.94%
2000-05-31	Svenska Cellulosa AB - SCA	-0.50%	-3.29%	-3.81%	0.43%	2.52%	4.39%
2000-05-31	Holmen AB	0.99%	-4.83%	-2.10%	1.93%	1.01%	6.15%
2000-06-22	Trelleborg AB	0.10%	3.94%	4.53%	-1.51%	1.88%	4.71%
2000-07-03	HQ SE Holding AB	-2.32%	-7.47%	-14.18%	-0.36%	-4.86%	-11.19%
2000-07-28	Svenska Cellulosa AB	2.60%	1.85%	4.72%	2.22%	3.12%	2.49%
2000-08-10	Assa Abloy AB	2.41%	-0.45%	-3.39%	0.91%	-3.82%	-3.90%
2000-09-12	Telefonaktiebolaget LM Ericsson	-0.28%	-1.71%	-3.56%	0.00%	-2.99%	-7.93%
2000-10-20	Perstorp AB	4.38%	2.57%	-1.52%	0.83%	-2.07%	-6.26%
2000-12-20	Volvo AB	2.18%	3.59%	5.01%	-2.41%	-0.64%	-0.21%
2001-01-15	Saab AB	-1.29%	1.98%	0.48%	-0.03%	0.61%	1.91%
2001-02-08	Volvo AB	3.23%	5.82%	8.67%	2.01%	1.36%	1.51%
2001-02-09	Bergman & Beving AB	3.54%	0.98%	-1.54%	0.39%	-1.38%	-5.74%

		Cumulative Abnormal Return (CAR)					
Announcement Date	Divestor	Market model			Constant mean return model		
		1-day	2-day	5-day	1-day	2-day	5-day
2001-02-15	Hexagon AB	-3.68%	-1.27%	2.04%	-0.43%	-1.22%	-0.59%
2001-03-08	Telefonaktiebolaget LM Ericsson	-2.98%	-6.94%	-3.54%	-4.37%	-9.57%	-0.82%
2001-03-12	AssiDoman AB	15.66%	18.63%	19.61%	8.53%	11.20%	7.93%
2001-04-02	Atle AB	2.41%	5.32%	13.77%	-0.14%	0.04%	-0.38%
2001-04-03	Sapa AB	-0.86%	1.13%	11.49%	-3.45%	0.13%	4.42%
2001-05-04	Sigma AB	-2.24%	-2.08%	17.32%	0.09%	1.49%	21.90%
2001-07-03	Active Biotech AB	4.79%	4.54%	3.74%	4.06%	1.95%	6.71%
2001-07-27	Cloetta Fazer AB	-1.76%	-5.20%	0.69%	1.29%	-0.15%	3.86%
2001-08-10	Lundin Oil AB	1.09%	0.70%	4.52%	-0.52%	-1.04%	-2.36%
2001-08-21	Sapa AB	-2.03%	-4.94%	-2.39%	-0.02%	-2.00%	-3.98%
2001-11-12	Saab AB	1.13%	-3.47%	-4.71%	-0.59%	-1.18%	-1.20%
2001-12-27	Telefonaktiebolaget LM Ericsson	0.03%	0.97%	-2.81%	1.75%	3.48%	-1.83%
2002-01-28	Scania AB	-2.27%	-0.97%	-2.00%	-2.97%	-3.86%	-4.90%
2002-03-01	Scania AB	0.65%	4.91%	4.53%	1.67%	9.66%	12.16%
2002-06-19	Nordea AB	-3.67%	-4.99%	-5.20%	-5.75%	-11.64%	-11.67%
2002-07-25	Cardo AB	-0.54%	3.32%	2.49%	4.22%	3.81%	-9.86%
2002-08-20	Telia AB	4.68%	3.08%	6.00%	4.72%	6.22%	12.27%
2002-09-26	Telefonaktiebolaget LM Ericsson	-4.16%	-7.71%	-15.82%	1.81%	-1.72%	-9.18%
2002-12-20	Skandia Forsakrings AB	23.02%	17.80%	14.99%	23.49%	18.18%	11.07%
2003-01-28	Hoist International AB	9.60%	3.58%	5.78%	7.86%	0.96%	-2.95%
2003-02-10	Q-Med AB	32.79%	30.04%	25.36%	30.79%	31.03%	27.74%
2003-04-23	TeliaSonera AB	-1.14%	-1.45%	-1.23%	-0.06%	-0.47%	0.07%
2003-06-18	Medivir AB	3.27%	1.86%	4.32%	3.59%	0.72%	2.62%
2003-09-08	Boliden AB	8.71%	8.32%	14.57%	8.93%	7.35%	14.85%
2003-09-30	Nordea AB	0.82%	2.56%	2.86%	-0.84%	1.73%	0.59%
2003-12-18	SAS AB	2.43%	2.37%	-1.41%	3.22%	3.45%	-3.64%
2003-12-24	Skandia Forsakrings AB	1.12%	3.03%	3.58%	2.62%	3.99%	6.35%
2004-01-15	TeliaSonera AB	0.70%	0.61%	0.05%	1.14%	2.01%	2.61%
2004-01-27	OM HEX AB	-5.04%	-6.44%	-3.84%	-5.62%	-7.82%	-4.75%
2004-03-30	Fabege A/B	-0.48%	1.19%	1.00%	-1.17%	0.62%	3.57%
2004-04-16	Volvo AB	-0.90%	0.43%	0.94%	-0.84%	0.66%	-0.86%
2004-06-14	NCC AB	1.36%	-0.49%	2.03%	-0.15%	-1.41%	0.06%
2004-06-14	Swedbank (ForeningsSparbanken AB)	0.66%	0.63%	1.92%	-0.74%	-0.07%	0.52%
2004-07-05	Modern Times Group AB - MTG	-1.33%	-1.27%	-1.66%	-1.70%	-2.72%	-3.32%
2004-08-17	TeliaSonera AB	0.79%	-0.83%	-0.34%	1.21%	0.64%	1.60%
2004-08-30	Atlas Copco AB	-1.35%	-1.57%	0.08%	-1.59%	-2.41%	1.33%
2004-09-01	Capio AB	0.57%	0.80%	1.02%	1.76%	2.09%	1.64%
2004-10-01	Skanska AB	-0.29%	-0.99%	-1.75%	1.17%	1.66%	2.21%
2004-11-12	Swedish Steel Corp - SSAB	1.83%	1.80%	3.86%	2.54%	2.38%	5.00%
2004-12-07	Gambro AB	5.39%	3.72%	12.03%	5.97%	3.43%	9.94%
2004-12-22	Skanska AB	-0.76%	-0.27%	0.65%	-0.16%	-0.01%	0.13%
2005-03-02	TeliaSonera AB	-0.09%	-1.18%	-1.55%	0.38%	-0.94%	-0.27%
2005-03-17	IBS AB	18.51%	18.26%	19.00%	18.31%	17.39%	16.32%
2005-06-13	Hexagon AB	3.62%	0.81%	3.60%	3.54%	1.26%	3.99%
2005-10-14	Volvo AB	1.63%	0.47%	-0.74%	1.79%	0.13%	-3.43%
2005-11-28	Skanska AB	-1.45%	-3.23%	-3.93%	-1.44%	-3.72%	-4.81%
2005-12-08	SAS AB	4.84%	4.83%	9.17%	5.23%	4.94%	8.77%
Max		32.79%	30.04%	25.36%	30.79%	31.03%	27.74%
Min		-5.75%	-10.91%	-15.82%	-6.41%	-16.17%	-17.94%
Average		1.01%	0.83%	1.52%	1.00%	0.69%	1.05%
Median		0.09%	0.11%	0.71%	0.16%	0.39%	0.17%
% Positive returns		52.50%	51.67%	56.67%	52.50%	56.67%	53.33%
% Negative returns		47.50%	48.33%	43.33%	47.50%	43.33%	46.67%

Appendix 4: Real estate sample transactions

Announcement Date	Divested unit (Target)	Acquiror	Divestor	Deal Value (\$mm)
1995-01-05	MTL Funding (Berkeley) Ltd.Mortgage Trust Ltd	First National Building Society	Skandinaviska Enskilda Banken - SEB	125
1996-01-17	Hotels (Sheraton Skyline)	ITT Corp (NV)	Skandia Forsakrings AB	65
1996-11-26	Fortos Fastigheter AB	Fabege AB	Volvo AB	52
1997-01-03	Tornet AB (nine hotels)	Pandox Hotellfastigheter AB	Tornet AB	28
1998-06-15	Columna Fastigheter AB:Blockfield Properties NV (Properties)	Realia Fastighets AB	Columna Fastigheter AB	149
1998-12-11	Föreningsparbanken AB - Swedbank (IT & Gallerian Properties)	AMF Pension	Föreningsparbanken AB - Swedbank	529
1998-12-24	Dios AB Anders (Foreign Properties)	Andantino BV	Dios AB Anders	174
1999-01-12	Hotels (Bryggen SAS)	Eiendomsspar AS	SAS AB	38
1999-09-02	Fastighets AB Balder (Swedish Hotel Operations)	Choice Hotels Scandinavia ASA	Fastighets AB Balder	96
2002-06-13	Shopping Centres (Shopping Mall in Lund)	Rodamco Europe NV	Whiborgs Fastigheter AB	52
2003-04-01	Tornet AB (Eleven Properties in Alta, Stockholm)	JM AB	Tornet AB	71
2003-04-01	JM AB (Eleven Properties in Morby)	Tornet AB	JM AB	107
2003-05-13	Nordea AB (Property Holdings)	Consortium	Nordea AB	269
2003-06-27	Wallenstam Byggnads AB (Three Properties)	Private Investor	Wallenstam Byggnads AB	26
2003-10-17	Property Portfolio (Klara Zenit)	Commerz Grundbesitz-Investmentgesellschaft GmbH	Whiborgs Fastigheter AB	406
2003-12-01	Property Portfolio (97 Properties in Finland, Norway and Sweden)	CDC IXIS	Nordea AB	324
2003-12-22	Property Portfolio (24 properties)	Undisclosed Bidder	Whiborgs Fastigheter AB	70
2004-02-05	Property Portfolio (13 Properties)	Investor Group	Whiborgs Fastigheter AB	103
2004-03-16	Property Portfolio (Stockholm buildings)	Undisclosed Acquiror	Skandia Forsakrings AB	332
2004-04-01	Property Portfolio (Swedish estate)	Undisclosed Acquiror	Whiborgs Fastigheter AB	33
2004-10-05	Property Portfolio (Properties in Fitja, Sweden)	Acta Kapitalförvaltning AB	Realia AB	43
2004-12-09	Property Portfolio (Elefanten 17, office complex in Stockholm)	Oppenheim Immobilien-Kapitalanlagegesellschaft mbH	Fabege AB	39
2004-12-16	Hotels (Aronsborgs Konferenshotell)	Gjensidige NOR ASA	Capona AB	53
2005-01-19	Property Portfolio (Portfolio in Soedertälje, Sweden)	Keops A/S	LjungbergGruppen AB	61
2005-01-20	Property Portfolio (Property Portfolio in Vaesteraas, Sweden)	Akelius Fastigheter AB	Fastighets AB Tornet	69
2005-01-26	Property Portfolio (Portfolio in Loeddekoeping, Sweden)	Undisclosed Acquiror	Fastighets AB Tornet	90
2005-02-23	Property Portfolio (Portfolio in Stockholm, Sweden)	Keops AS	Whiborgs Fastigheter AB	277
2005-03-07	Property Portfolio (25 apartments in Karlstad, Sweden)	Kungäleden AB	Fastighets AB Tornet	154
2005-05-03	Property Portfolio (Office Properties, Central Stockholm, Sweden)	AP Fastigheter AB	Whiborgs Fastigheter AB	148
2005-05-09	Property Portfolio (Office Properties, Norra Stationsgatan in Stockholm, Sweden)	DIFA Deutsche Immobilien Fonds AG	Whiborgs Fastigheter AB	105
2005-05-29	Property Portfolio (40 Properties in Gävle, Kungsbacka Molndal and Vasteras, Sweden)	Undisclosed Acquiror	Fastighets AB Tornet	242
2005-06-10	Hotels (Portfolio of 16 Hotels in Sweden)	Hotelleiendom AS	Capona AB	349
2005-06-13	Shopping Centres (MultiCenter and St Per Shopping Centres, Vasteras and Uppsala, Sweden)	Undisclosed Acquiror	Fastighets AB Tornet	215
2005-06-23	Property Portfolio (Portfolio of Properties in Marievik and Kista, Sweden)	Niam AB (IBO)	Fabege AB	377
2005-06-15	Shopping Centres (Retail Centres in Akermynlan, Kallhall and Frungen, Sweden)	Citycon Oyj	Fabege AB	34
2005-06-23	Hotels (Six hotel properties, Sweden)	NorGani Hotels ASA	Capona AB	87
2005-10-07	Property Portfolio (11 properties, Sweden)	Keops Eiendomsholding AS	Fabege AB	379
2005-12-20	Property Portfolio (A portfolio of commercial properties in Solna, Kista nad Stockholm in Sweden)	Fabege AB	JM AB	43
2005-12-05	Property Portfolio (Office, retail and residential properties in Skjutagossan 12 and Fyrkanten 11 in Stockholm)	AFA Sjukforsakring AB	Fabege AB	129
2005-12-15	Property Portfolio (Portfolio of 15 properties in Uppsala, Sweden.)	Investor Group	Fastighets AB Tornet	144
2006-01-20	Property Portfolio (71 retail properties, Sweden)	Boulbee Land plc	Kungäleden AB	223
Max				529
Min				26
Average				154
Median				105

Appendix 5: Real estate sample returns

		Cumulative Abnormal Return (CAR)					
Announcement		Market model			Constant mean return model		
Date	Divestor	1-day	2-day	5-day	1-day	2-day	5-day
1995-01-05	Skandinaviska Enskilda Banken - SEB	0.16%	-1.07%	-0.92%	0.56%	-0.46%	2.19%
1996-01-17	Skandia Forsakrings AB	-0.23%	-0.65%	0.21%	-1.00%	-1.18%	-0.64%
1996-11-26	Volvo AB	-0.32%	-1.51%	2.05%	-1.34%	-3.74%	3.09%
1997-01-03	Tornet AB	-0.36%	-1.56%	-5.11%	0.47%	-1.07%	-5.47%
1998-08-15	Columna Fastigheter AB	1.77%	-2.56%	-2.61%	1.91%	2.11%	4.49%
1998-12-11	Foreningssparbanken AB - Swedbank	-0.92%	-2.06%	3.20%	-3.55%	-6.30%	-1.71%
1998-12-24	Dios AB Anders	-4.59%	-1.53%	-0.08%	-3.14%	-0.84%	6.91%
1999-01-12	SAS AB	1.20%	0.94%	3.95%	-0.20%	-3.02%	-0.33%
1999-09-02	Fastighets AB Balder	4.90%	3.09%	7.13%	3.83%	4.31%	5.26%
2002-06-13	Wihlborgs Fastigheter AB	0.96%	0.49%	3.75%	1.16%	-1.46%	-0.48%
2003-04-01	Tornet AB	1.68%	-2.03%	2.60%	2.51%	2.85%	1.35%
2003-04-01	JM AB	1.16%	-2.91%	4.77%	2.40%	2.79%	5.59%
2003-05-13	Nordea AB	1.78%	0.33%	0.52%	3.29%	0.95%	1.01%
2003-06-27	Wallenstam Byggnads AB	-1.04%	2.13%	4.51%	0.34%	2.45%	3.95%
2003-10-17	Wihlborgs Fastigheter AB	1.75%	1.25%	4.88%	1.64%	1.48%	5.33%
2003-12-01	Nordea AB	-0.10%	-0.20%	-0.16%	0.81%	0.62%	0.46%
2003-12-22	Wihlborgs Fastigheter AB	0.59%	-0.99%	-4.44%	0.33%	0.10%	-3.29%
2004-02-05	Wihlborgs Fastigheter AB	-1.32%	-2.93%	-1.50%	-0.67%	-0.27%	-0.14%
2004-03-16	Skandia Forsakrings AB	-1.14%	1.15%	-1.73%	-0.86%	2.66%	-4.44%
2004-04-01	Wihlborgs Fastigheter AB	-6.51%	-6.14%	-5.22%	-4.57%	-3.24%	-1.33%
2004-10-05	Realia AB	6.74%	13.54%	11.24%	6.56%	12.69%	12.23%
2004-12-09	Fabege AB	0.83%	2.01%	1.04%	-0.66%	0.92%	-1.39%
2004-12-16	Capona AB	3.10%	4.59%	-0.85%	3.12%	2.77%	-3.65%
2005-01-19	LjungbergGruppen AB	0.35%	1.59%	2.52%	0.09%	-0.16%	1.20%
2005-01-20	Fastighets AB Tornet	1.24%	3.87%	3.41%	-0.35%	1.69%	0.64%
2005-01-26	Fastighets AB Tornet	0.59%	-1.43%	2.05%	0.37%	-1.23%	1.31%
2005-02-23	Wihlborgs Fastigheter AB	-1.41%	0.65%	-0.94%	-1.66%	0.39%	-2.89%
2005-03-07	Fastighets AB Tornet	0.47%	0.47%	2.63%	-0.27%	-1.15%	1.76%
2005-05-03	Wihlborgs Fastigheter AB	-1.24%	-2.27%	-5.56%	-1.20%	-2.70%	-7.29%
2005-05-09	Wihlborgs Fastigheter AB	3.23%	-0.40%	-4.54%	3.29%	-1.05%	-4.50%
2005-05-29	Fastighets AB Tornet	-1.59%	-0.44%	8.86%	-1.43%	-0.67%	8.74%
2005-06-10	Capona AB	4.42%	5.19%	6.35%	5.07%	6.06%	8.19%
2005-06-13	Fastighets AB Tornet	2.72%	1.91%	2.12%	2.58%	2.25%	2.24%
2005-06-23	Fabege AB	-0.22%	3.50%	-1.60%	0.60%	1.80%	-2.98%
2005-09-15	Fabege AB	-0.31%	0.80%	3.04%	-0.78%	0.63%	4.13%
2005-09-23	Capona AB	1.20%	2.57%	5.03%	1.26%	3.92%	5.31%
2005-10-07	Fabege AB	-1.69%	-0.25%	-0.51%	-1.84%	0.05%	-1.96%
2005-10-20	JM AB	-0.76%	0.73%	0.70%	-0.71%	0.09%	-2.84%
2005-12-05	Fabege AB	1.07%	0.44%	0.39%	0.38%	0.77%	2.39%
2005-12-15	Fastighets AB Tornet	-0.53%	4.00%	3.12%	-0.41%	5.42%	5.00%
2006-01-20	Kungsleden AB	1.48%	-0.24%	-2.35%	0.57%	-1.34%	-6.71%
Max		6.74%	13.54%	11.24%	6.56%	12.69%	12.23%
Min		-6.51%	-6.14%	-5.56%	-4.57%	-6.30%	-7.29%
Average		0.47%	0.59%	1.27%	0.45%	0.73%	0.99%
Median		0.47%	0.44%	1.04%	0.34%	0.39%	1.01%
% Positive returns		56.10%	53.66%	60.98%	56.10%	58.54%	56.10%
% Negative returns		43.90%	46.34%	39.02%	43.90%	41.46%	43.90%