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The Effect of Regulation Changes in the Swedish Insider Dealing Law on Abnormal Returns Pre and Post Insider Dealing Announcements:

Evidence using an Event Study Methodology in conjunction with a Difference-in-differences Methodology

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ABSTRACT

This paper examines what effect the law change in Sweden, as of July 1st 2005, had on corporate insiders' ability to generate abnormal returns post the announcement of insider transactions. We find that the law change had no significant impact on corporate insiders' ability to generate abnormal returns post announcement, indicating that market participants anticipate insider transactions to be as informative as they were prior to the legislation change. The announcement effect is measured using an event study methodology, while the impact of the law is measured using a difference-in-differences methodology. In the latter, German insider trading announcements are chosen as a control group. The result is robust using both the market model and market adjusted returns, and across corporate insider types. Moreover, controlling for clustered trades and stock recommendations does not alter the result. In addition, we find that both purchase and sale transactions are informative, suggesting that sales are even more informative in the Swedish market during the 20031001 - 20070330 period.

Keywords: Abnormal returns, Difference-in-differences, Event study, Insider trading, Law and Finance, Securities law, Signalling effect

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I. Introduction

In 1933 the U.S. Congress acknowledged in the Securities and Exchange Act that insider dealing on non-public information does not benefit financial markets and was consequently banned.[1] Since then many countries have followed by implementing insider dealing regulations (allowing corporate insiders to trade in the company's stock as long as they trade on information known to the public).[2] However, the academic debate about the costs and benefits of insider dealing among law and economic scholars is still ongoing due to the many areas of research; from firm specific- to broader stock market- efficiency theories.[3]

One side opposes regulatory restrictions and promotes corporate insiders to trade on non-public information. Manne (1966) argues that stock prices will be more informative and thus better reflect the firm's true value. The uncertainty associated with the disclosure of news might be costly for firms if the news ex post turns out to be incorrect, which in turn might lead to corporations ex ante delaying their news disclosures, making the market less efficient. However, this can be offset by allowing corporate insiders to trade on private information. The insider trades will then indirectly reflect the unannounced news.[4] Moreover, Manne (1966) finds that allowing insider dealing motivates entrepreneurial innovation, since it is the best way to compensate entrepreneurs for their work.[5] Carlton & Fischel (1983) add by arguing that insider dealing is efficient since it reduces agency costs. Given that a compensation based criteria is used to select managers, insider dealing can help sorting superior from inferior managers by the amount of valuable information they create.[6]

Opposite views theorize that allowing corporate insiders to trade on non-public information will decrease stock price informativeness, crowd out information collection by outside investors, reduce market liquidity, promote agency problems and will from a fairness perspective give corporate insiders' the benefit of using information which cannot legally be obtained by outside investors. Fishman & Hagerty (1989) argue that the information asymmetry will discourage outside investors from independently gather information which might lead to less informative stock prices. Moreover, Glosten (1989) and Leland (1992) show that insider dealing on private information

[1] Rule 10b-5 of the Securities Exchange Act of 1934
[2] Bhattarcharya and Daouk (2002) describe that insider trading regulations exist in 83 out of 103 countries with a well-developed capital market.
[3] Beny (2006, p. 239)
[4] Carlton & Fischel (1983, p. 868)
[5] Manne (1966)
[6] Carlton & Fischel (1983, p. 868)

leads to market inefficiencies created by a sub optimal risk sharing; market makers will due to the existence of more informed traders reduce the liquidity in the market.[7] Easterbrook (1981) and Brudney (1979) find that the absence of insider regulation will create an incentive for corporate insiders to delay the disclosure of information to the market place.[8] Ausubel (1990) argues that the lack of insider dealing regulation will result in outsider investors expecting corporate insiders to take advantage of them in a later stage and hence discouraging an initial investment by outsiders. However, an effective regulation is expected to increase outside investors anticipated return on investment which would increase firms' availability of outside investments. Rather than earning money on insider transactions, Ausubel claims that corporate insiders can be indirectly compensated by the increase in outside investments and thereby a Pareto improvement can be reached.[9]

We address this field of research by investigating what impact the implementation of SFS 2005:377 and the amendment of SFS 2000:1087 in July 2005 had on corporate insiders' ability to generate abnormal returns in Sweden. Our investigation is threefold. First, we determine whether insider trade announcements generate abnormal returns in Sweden prior to the legislation change, using an event study framework. Second, we test whether the law change had a significant impact on the market reaction of insider trade announcements using a difference-in-differences methodology. Finally, we investigate possible differences between corporate insider types and control for stock recommendations.

Our hypothesis is that the abnormal returns generated by corporate insiders after the change in legislation (i.e. post July 1st 2005) are lower than the abnormal returns generated prior to the change in legislation.[10] In general, the law change has put further restrictions on insider dealing.[11] SFS 2005:377 §3 states that the threshold for evidence needed to convict corporate insiders using non-public information has decreased substantially. All companies are now required to keep a log over what non-public information each corporate insider possesses.[12] Some corporate insiders are now prohibited to trade 30 days prior to earning announcements.[13] The stated changes give us reason to believe that the signalling effect of insider dealing announcements has been reduced, and equally so for different insider types. In addition, we expect purchase announcements to yield positive abnormal returns whereas sales

[7] Glosten(1989, p. 228) and Leland (1992, p. 860)
[8] Ausubel (1990)
[9] Ausubel (1990, p. 1038)
[10] This refers to absolute values; strictly speaking we expect the abnormal returns for sales to be higher, i.e. less negative.
[11] The Swedish insider dealing law, its definition of a corporate insider, of non-public information and how the regulation has changed from 1990 until 2005 is described in detail in Section II
[12] §10a SFS 2000:1087
[13] The restriction concerns CEOs, Directors and accountants. See further details in section II.

announcements are expected to yield negative abnormal returns. Prior to insider dealing announcements we expect abnormal returns not to be significantly different from zero. Our hypotheses are stated more explicitly in Table 1.

The efficient market hypothesis stated by Fama (1970) argues that securities fully reflect all available information. The degree of market efficiency was divided into three categories; weak-form, semi-strong and strong-form. The strong-form, states that all information, both public and private, is incorporated in security prices. However, due to the existence of positive news and trading costs it is considered to be false.[14] The weak form, testing whether prices are fully reflected by historical prices, is widely supported in the finance literature.[15] Since then, scholars have attempted to examine the speed of price adjustments to different news announcements (the semi-strong hypothesis). Fama (1991) concludes that event studies are the cleanest evidence of semi-strong market efficiency, since it allows for a precise measurement of the speed of price adjustments to news announcements and partially eliminates the joint-hypothesis problem, especially when using daily data.[16] Moreover, it is argued that the typical result of event studies is that stock prices, on average, seem to adjust within a day to event announcements. Insider dealing regulation per se, indicates that corporate insiders are better informed about a company's true value, and it is hence reasonable to expect that corporate insider transactions have a signalling value. Therefore, upon publication the signalling value should, given efficient markets, be reflected in security prices.

Numerous studies have examined whether corporate insiders generate abnormal returns while trading in their company's stock. Early studies such as Jaffe (1974a) shows that corporate insiders are able to earn abnormal returns during the period 1962-1968 by looking at data from the 200 largest companies listed on the Center for Research in Securities Prices (CRSP). Jaffe calculates if the corporate insiders for a company-month are net purchasers or sellers of shares and defines those as events, in order to detect abnormal returns.[17] Finnerty (1976) analyses transactions on the NYSE between 1967 and 1972 using a similar method as Jaffe. Finnerty finds that corporate insiders outperform the market and that there is a significant relationship between insider transactions and subsequent news announcements of financial and accounting results.[18] Fidrmuc et al. (2006) examine directors' dealings on FTSE during the 1991 - 1998 period using an event study framework on daily returns,

[14] Information is costly, and because of that, security prices cannot perfectly reflect the available information since the researchers would hence get no compensation (Grossman and Stiglitz 1980)
[15] Fama (1970, p. 388)
[16] Fama (1991, pp. 1601,1607)
[17] Jaffe (1974a, p. 101)
[18] Finnerty (1976, pp. 205, 213)

calculating cumulative average abnormal returns using the market model for a period of 41 days centered on the announcement day. In addition, market adjusted returns are calculated to verify the robustness of the results. Fidrmuc et al. find that directors' purchases and sales trigger an immediate market reaction of 3.12% and -0.37%, respectively, looking at a [0, 2] event window.[19] It is suggested that sales transactions are less informative than purchases since sale transactions can be motivated by liquidity needs, a theory previously well documented.[20] In addition, no evidence is found supporting that CEOs are more informative than other corporate insiders.[21] The results found by Fidrmuc et al. are widely documented in studies covering major capital markets during different time periods, including Sweden[22]. The majority of the studies find that corporate insiders earn significant abnormal returns, purchases are more informative than sell transactions and that insider transactions in small companies are more informative than in large companies.[23] Baesel and Stein (1979) find that bank directors earn higher abnormal returns than ordinary insiders, especially when considering purchases, which are believed to be more informative. Jeng (2003) explains the size effect by the lower transparency in small companies, resulting in a higher signalling effect from insider dealing. In contrast to most studies, Eckbo and Smith (1998) find that corporate insiders do not earn abnormal returns, when examining the 1985 - 1992 period on the Oslo Stock Exchange. The result is reached using an event study approach based on replicating portfolios, which according to Eckbo and Smith better mimics the true performance of insider trades than a traditional event study approach.[24] Lakonishok and Lee (2001), find, while studying companies traded on NYSE, AMEX and Nasdaq during the 1975-1995 period, that insider transactions do not have a economically significant impact on the stock price around the transaction- nor the announcement day. However, the abnormal returns for management transactions of a 5 day event window, [0,4], are significantly different from zero, yielding 0.13% for purchases and -0.23% for sales. The abnormal returns are of higher magnitude for smaller firms and around the transaction day, suggesting that large firms are more efficiently priced than small firms and that information about the insider trades have leaked to the market prior to the announcement day. Moreover, Lakonishok and Lee find that for longer investment horizons (6 months to 12 months) insider trades are informative and consequently

[19] [0,2] is shorthand for a three day event window starting at the announcement day, 0, and ending two days after.
[20] Jeng et al. (2003)
[21] Fidrmuc et al. (2006, pp. 2946, 2950)
[22] Hjertstedt & Kinnander (2000) during the 19960101-19990831 period, Hansson & Hjemgård (2002) during the 19980101-20020228 period, Skog & Sjöholm (2006) during the 19910101-20041231 period, Feiyang & Nogeman (2008) during the 20040101-20080630 period. The studies find significant abnormal returns on the Stockholm Stock Exchange jointly covering the 19911001-20080630 period.
[23] Seyhun (1992, 1997), Lin & Howe (1990), Jeng et al. (2003), Pope et al. (1990)
[24] Eckbo & Smith (1998, p. 468)

concludes that the market under reacts to the information signalled by corporate insiders.[25] Furthermore, the study shows that aggregate insider trading is a good predictor of overall market movements as documented by Seyhun (1988, 1992).

Fidrmuc et al. (2006) stress the importance of the regulatory framework when explaining abnormal returns after announcement. Fidrmuc et al. suggest that it is likely that the observed larger abnormal returns in the UK (compared to the US, Lakonishok and Lee, 2001) are explained by the significantly shorter reporting period after the transaction day in the UK, 6 days compared to 40 days in the US. Therefore, UK transactions are expected to be more informative and US transactions are more likely to be based on stale information.[26] Jaffe (1974a) examines the effect of three important case law decisions following the Securities and Exchange Act of 1933-1934 on corporate insiders' trading characteristics. He finds that there is no significant change in profitability or trading volume following any of the case law decisions. Moreover, he does not find any combined effect of the rulings.[27] Furthermore, Jaffe argues that one explanation for the observed result is that amendments and increased restrictiveness do not change corporate insiders' ability to earn small abnormal returns without being detected. It is hard for the SEC to prove that small abnormal returns are due to the use of private information. Bhattacharya and Daouk (2002) offer a similar explanation by arguing that insider regulations are easily implemented but often not enforced and hence neither changing the corporate insiders' nor the market's trading behaviour. Fernandes and Ferreira (2008) and Beny (2006) examine what effect insider trading law enforcements have on stock price informativeness, i.e. on firm-specific stock return variation.[28] For developed countries they find that stock prices become more informative (greater firm specific variation is observed due to increased informed trading by outsiders whom are no longer crowded out by corporate insiders) after the enforcement. Klinge et al. (2005) confirm that significant abnormal returns are generated on the announcement day in the 2002 - 2004 period, following the implementation of the insider regulations in Germany 2002. Hansson and Hjemgård (2002) investigate the effect of the implementation of SFS 2000:1086 and SFS 2000:1087 in Sweden on the 1st of January 2001. Using a similar method as Eckbo and Smith (1998) they find that the law changes did not have a significant impact on corporate insiders' ability to generate abnormal returns.

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[25] Lakonishok & Lee (2001, pp. 82, 88, 90)
[26] Fidrmuc et al. (2006, p. 2936)
[27] Jaffe (1974a, p. 93)
[28] Fernades & Ferreira (2008, p. 1846) rely on French and Roll (1986) and Roll (1988), who "shows that a significant proportion of stock return variation is not explained by market movements and is unrelated to public announcements. They suggest that firm-specific return variation measures the rate of information incorporation into prices via trading. Accordingly, high firm-specific return variation indicates that the stock price is tracking its fundamental value more closely and stock markets are more efficient."

We add to the literature in several ways. First, we add by testing whether the increased legislation as of 2005 will reduce the abnormal returns generated by corporate insiders after the announcement day in the Swedish market. Second, like Klinge et al. (2005) we use unique observations, i.e. for each security we eliminate overlapping events in order to reduce correlation between events.[29] Third, to the best of our knowledge there are no other studies examining insider trading law changes using a difference- in- difference approach. The chosen methodology is preferred since it allows us to control for systematic trends in the Swedish market.[30] It is of importance that the chosen control group is unaffected by the legislation change in Sweden or is subject to other changes during that period. Given the requirements, further discussed in section III, we have chosen to use insider trades in Germany as the control group. Legislations, similar to the ones in Sweden, were implemented prior to 2003 in Germany and as in Sweden it is documented that corporate insiders earn significant abnormal returns.[31] Finally, we add to the literature by controlling for corporate news events around the announcement date. Givoly & Palmon (1985) stress the importance of not routinely accepting that abnormal returns are generated by a trade itself but can be realized from subsequent disclosure of firm specific information.[32] Womack (1996) and Barber et al. (2001) find that stock recommendations generate abnormal returns on a short term horizon as well as up to six months following with expected signs, positive- and negative returns for buy- and sell recommendations respectively. Brav & Lehavy (2003) examine a large number of stock recommendations in the 1989 - 1991 period and find that sell recommendations generate higher returns than buy recommendations. After verifying that stock recommendations significantly explain abnormal returns in both Sweden and Germany, we control for insider transactions with a stock recommendation in an 11 days period centered on the announcement day.

Our empirical findings, reached using a difference-in-differences methodology, suggest that the law change had no significant impact on corporate insiders' ability to generate abnormal returns post announcement, indicating that market participants anticipate insider transactions to be as informative as they were prior to the legislation change. The finding is robust over insider types and when controlling for unique insider trades and recommendations. Furthermore, we find that purchases and sales announcements both generate significant abnormal returns on the Swedish and

[29] Klinge et al. (2005, p. 20) finds that using non-overlapping observations yields more significant positive abnormal returns for purchases and significant negative abnormal returns for sales.
[30] The methodology is widely used when examining policy changes. (Meyer, 1995, p. 151) and Bertrand et al. (2003, p. 2)
[31] Betzer & Theissen (2005), Dymke et al. (2008)
[32] Since 1985 many papers have tried to analyze the relation between insider transaction and different types of corporate news; bankruptcy (Seyhun & Bradley, 1997), earning announcements (Noe, 1999), dividend initiations (John & Lang, 1991)

German market respectively over the 20031001 - 20070330 period, where sales announcements seem to be more informative. No significant abnormal returns are observed prior to announcement. However, over a longer time period than [-5,-1] our findings suggest that especially Large owners time the market.

The remainder of this paper is organized as follows: Section II describes the legal development of insider trading in Sweden and in Germany. Section III provides a description of the obtained data, descriptive statistics of the samples and discusses the methodology. In Section IV our empirical findings are presented. In Section V we summarize the results, present our conclusions and suggest topics for further research.

II. Change in regulation

Although there are contradicting theories regarding the effect of insider dealing regulation, the Organization of Securities Commissions[33] (IOSCO) has since the early 1980's worked towards a high standard of insider dealing regulation in order to maintain just and efficient markets. Since the implementation of Articles 1-4 of the Insider Dealing Directive (Directive 89/592/EEC) the EU has strived towards the completion of a single European market for financial services by harmonizing a regulatory framework. However, due to different legal systems, heterogeneous legacy regulatory structures and a "minimum requirement" status of the directives, the result of the implementation was very diverse across the EU Member states. In 2003, another attempt was made by Articles 1-4 of the Market Abuse Directive (Directive 2003/6/EC) to make the regulatory system more homogenous across Member states.[34] The directive resulted in the passing of SFS 2005:377 and the amendment of SFS 2000:1087, which are the law changes we examine, enacted in July 2005 for the Swedish capital market. For our control group, Germany, the corresponding directives were implemented from 1994 to 2003.

A. Sweden

In 1990 a framework prohibiting corporate insiders to trade on private information was passed for the Swedish capital market. The law, SFS 1990:1342, stipulates in §4 that any employee is prohibited to trade in financial instruments of the company if the corporate insider, due to the nature of his or her work, possesses non-public information which upon publication would significantly affect the price of the financial

[33] Which the Swedish Financial Supervisory Authority is a member of
[34] Comparative implementation of EU directives (I)- Insider dealing and market abuse, The British Institute of International and comparative Law, December 2005, pp. 2-7

instrument.[35] He or she is prohibited to trade for own account or behalf of third party as long as the information has not been publicly known or as long as the information will impact the price upon release. Moreover, §8-12 SFS 1990:1342 demand certain employees to disclose their transactions to the Swedish Financial Supervisory Authority, Finansinspektionen (FI) within 14 days after the acquisition or disposal. The employees in question are; directors of the parent company or of its subsidiaries, managing director or deputy managing director of the company or of its subsidiaries (CEO, vice CEO, CFO), auditor or deputy auditor, other long term positions that can be assumed to expose the insider to non-public information or investors owning more than 10% of the market capitalization or more than 10% of the voting rights. In addition, the report obligation also applies to family members (spouse, civil partner, minor and corporations where the insider is highly influential). However, the reporting obligation does not cover transactions below 200 shares or if the transaction amount is below a market value of SEK 50 000. §20 SFS 1990:1342 states that if a corporate insider violates §4 he or she will be fined or sentenced to a maximum of 2 years in prison.[36] If the transactions size is significant the accused can be imprisoned for up to 4 years. If corporate insiders or their companies fail to report the transactions or lists of current corporate insiders they will be fined of SEK 15 000 to SEK 350 000.[37] As of the 1st of January 2001 SFS 2000:1086 & SFS 2000:1087 were enforced, replacing SFS 1990:1342. The legislation stipulates that illegal insider dealing and unfair stock price manipulation is subject of an increased penalty scale.[38] In addition, the reporting obligation period was decreased from 14 calendar days to 5 trading days. As of July 1st 2005, SFS 2005:377 and amendment SFS 2005:382 in SFS 2000:1087 were enforced. The main changes that could affect the insider trading behaviour were

- The threshold of evidence needed to convict has been significantly reduced and in addition, the penalty scale has increased[39]
- §10a SFS 2000:1087 demands companies to keep a log of when and what non-public information the corporate insider is exposed to. If the company fails to do so, a fine will be imposed according to §21
- §15 stipulates that the corporate insiders CEOs, Directors and Accountants are prohibited to trade in the company's share 30 days prior to the publication of earning announcements

[35] §4 SFS 1990:1342
[36] Given that the crime does not have a higher penalty in the Swedish penal code (Brottsbalk).
[37] §22 SFS 1990:1342
[38] §5 & §9 SFS 2000:1086
[39] §3 SFS 2005:377

B. Germany

Since the implementation of the Insider Dealing Directive to the German Securities Trading Act (Wertpapierhandelsgesetz, hereinafter WpHG) in 1994, §14 WpHG prohibits corporate insiders to exploit or transfer non-public information. Similar to the Swedish insider law, insider information is defined as any specific information not known by the public, which in the case of disclosure would be likely to have a significant effect on the stock price of the respective company (§ 15WpHG).[40] In July 2002 the law was amended, stating that corporate insiders such as senior managers, directors and family members with possible superior knowledge are required, according to §15a WpHG, to report their transactions to the public as well as to the regulatory authority, die Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin).

III. Data and methodology

A. Data sources

Our empirical analysis encompasses insider transactions in Swedish and German stocks between October 1, 2003 and March 30, 2007 which were reported to the respective regulatory authorities in Sweden and Germany, the Swedish Financial Supervisory Authority[41] (hereinafter FI) and the Federal Financial Supervisory Authority[42](hereinafter BaFin). For each insider transaction the regulatory authorities provide information regarding the announcement day, the trading day, the number of securities traded, security type (stock, options etc.), nature of transaction (purchases, sales), insider type (CEO, Director, Large owners, Others), insider connection (spouse etc.) and the name of the company concerned as well as the company's Securities Identification Number (ISIN). From Thompson Datastream we obtain daily data regarding total return index, unadjusted price and market value. The respective market indexes were also obtained from Datastream. For the Swedish market we acquire the firm-dates of corporate news announcements of annual reports, interim reports, preARs[43], Annual General Meetings (AGM) and Extra General Meetings (EGM) from SIS Ownership Data Corporation.[44] The stock recommendation data for Sweden and Germany was provided by Wharton Research Data Services (I/B/E/S estimates). The acquired data consists of the publication date of the stock

[40] Comparative implementation of EU directives (I)- Insider dealing and market abuse, The British Institute of International and comparative Law, December 2005, pp. 28,29,32
[41] Finansinspektionen
[42] Die Bundesanstalt für Finanzdienstleistungsaufsicht
[43] Preliminary result for the fiscal year (Bokslutskommunike)
[44] SIS Ägarservice AB

recommendation, type of recommendation (strong buy, buy, hold, sell), name of the recommendation provider (name of the analyst and bank), SEDOL code and the listed name of the company in question. Table 2 presents the initial number of observations and the adjustments made in order to construct the datasets used in the paper.

B. Descriptive statistics

We only consider insider transactions made in stocks, meaning that transactions in derivatives, subscription rights, stocks paid out as dividends, repurchase agreements and bonus remunerations have been excluded from the initial sample.[45] Reason being that some transactions have not been an active choice made by the insider.[46] Even in the presence of an active choice, the provided dataset is insufficient in terms of calculating the price of stock options.[47] Our insider transaction data encompasses 2003-10-01 to 2007-03-30 with a total of 8 134 transactions in Sweden and 3 567 transactions in Germany after making the adjustments as described in Table 2. The insider transactions are distributed over 409 companies in Sweden and Germany respectively, listed in Appendix. Since the data from the regulatory authorities as well as Datastream includes all companies existing over the stipulated time interval, our data does not suffer from any survivorship bias. Many companies have several share classes, some more liquid than others. The most liquid share class is most likely to best reflect the effect of the insider trade announcement. Therefore, for each firm, we combine the insider trade announcements of the different stock classes (e.g. A, B and C in Sweden) and use the most liquid class to calculate returns.

A detailed description of the samples is presented in Table 3 to 6, putting further emphasis on the differences between the two samples used throughout the thesis, namely; the Entire sample and the intra-firm non-overlapping (hereinafter Unique) sample. The Unique sample excludes intra-firm transactions taking place within a range of 10 days around announcement. The adjustment reduces the number of observations by 6 008 and 2 151 in Sweden and Germany respectively. Moreover, the tables illustrate the differences between types of insiders examined. In line with SFS 2000:1087 and FI's classification of corporate insiders we have constructed 4 groups of insiders. First, we define Management as the group containing trades conducted by CEOs, Vice CEOs and CEOs of subsidiaries. Second, the group Directors is formed containing trades done by directors in a company or its subsidiaries. Third, we define

[45] Previous studies such as Finnerty (1976), Pope et al. (1990) have conducted their analysis using the same approach.
[46] Jaffe (1974a) excludes option since they are exercised due to institutional factors rather than as a result of special information.
[47] No other information than the number of options and their transaction- and announcement date was obtained from FI.

Large owners, as trades by corporate insiders owning at least 10% of the outstanding shares. The fourth group, Others, contain trades by employees with non-public information, accountants and employees temporary exposed to insider information. The German insider data is constructed in a similar fashion, apart from not explicitly defining the group Large owners, which leaves us with three insider groups for the German data.

For each firm-publication announcement day we aggregate the insider transactions in number of shares. The adjustment reduces the number of observations with 5 536 and 5 917 in Sweden and Germany respectively. Furthermore, firm- publication day aggregated transaction values of zero or below a nominal value of SEK 5 000 or EUR 500 were deleted from Swedish- and German sample respectively. Transactions below the stipulated minimum are assumed to have no signalling effect.

Considering the Entire sample, illustrated in Table 3 and 4, the number of insider transactions in both Sweden and Germany has increased in the second period regardless of transaction- or insider type. In Sweden Directors stand for the most number of trades whereas Large owners trades the least throughout the time period. In terms of mean- and median value of transactions, Large owners are higher than the other insider types, especially for purchases. The median value for Management and Directors is about the same. The group Others have the lowest median and mean value of transactions. In Germany the distribution of trades between Management and Directors is quite similar, as well as the median value of transactions between the two groups. The number of trades conducted by Others is low and does not exceed the minimum value of 30 observations required to fulfil the central limit theorem. The Unique sample (Table 5 and 6) follows a similar pattern as the Entire sample.

In terms of industry presence (Table 7 and 8) Industrials, Financials and Technology are the sectors exposed to the most insider transactions for purchases as well as sales in Sweden and in Germany. Industrials and Financials, for respective country, are above the average market value across industries.[48] The mean and median values of transactions for sales are on average higher than of purchases. The same relation holds in the German market (Table 6 and 7).

Considering the descriptive statistics we find no evident biases. However, the number of observations for the insider group, Others, in the German market (approximately 4% of all insider transaction) is significantly less than the equivalent number in the Swedish market (approximately 30% of all insider transactions). This

[48] Calculated on a sector basis by adding the market value of the firm on each announcement day and dividing by the total number of transactions, i.e. the contribution of a firm to the average market value of the industry is value weighted by the number of trades the firm has in the period and dependent upon when in the period the transaction(s) were registered.

gives us reason to believe that the groups are treated differently between the two countries and might be of little value to compare. In addition, results related to the group Others will be insufficiently grounded in empirical evidence. The group Large owners is only registered to FI and not to BaFin and may therefore be biased. As a consequence, we add difference-in-differences regressions on the groups Management and Directors excluding the two groups Others and Large owners in order to control for potential biases.

Table 9 and 10 provide descriptive statistics and regression analysis for stock recommendations. We test, using over 9 000 observations for Sweden and Germany respectively whether stock recommendations generate abnormal returns two days post announcement (announcement day being day one). In line with previous studies we find that buy (sell) recommendations generate abnormal positive (negative) returns on the announcement day and the day following. [49] On the two days following announcement we observe for buy recommendations, average cumulative abnormal returns (CAR[0,1]) of 0.69% and 0.51% in Sweden and Germany respectively. Sell recommendations generate a CAR[0,1] of -0.23% in Sweden and -0.57% in Germany. All coefficients are significant at the 1% significance level.[50] The results suggest that our intention of increasing the robustness of the difference-in-differences estimate by controlling for recommendations is justified. Table 9 shows to what extent stock recommendations are clustered around insider trading announcements in Sweden and in Germany.

During the 20031001 - 20070330 period 2 381 Corporate Events are observed covering 259 companies as seen in Table 11. It is more likely to observe a Corporate Event prior than after an announcement of an insider transaction. The imposed law, as of July 1st 2005 prohibits CEOs, Directors and accountants to trade 30 days prior to earning announcements, therefore we expect the number of insider announcements with a quarterly report post the trade announcement to decrease. No decrease is however observed, but the number of trades with a quarterly report within 20 trading days of a trading announcement is low (both prior and post the law change). One explanation might be that not all corporate insiders are prohibited to trade prior to earning announcements, and that it is those trades we observe. Since, the number of firms with quarterly reports and the number of quarterly reports have increased, another explanation is that our data provider, SIS, has increased its coverage over the time period. Finally, in this context, Table 11 is misleading since the base of the

[49] Womack (1996), Barber et al. (2001)

[50] The results are obtained by regressing CARs for the specified event windows against buy- and sell recommendations using robust variance estimators and suppressing the constant term. The ARs' and the CARs' following are estimated using market adjusted returns, i.e. $\varepsilon_{it} = R_{it} - R_{mt}$. As a robustness check regressions using year fixed effects yield the same significance and expected signs.

statistics is the announcement day and not the trading day. Table 12 illustrates percentiles and median values of the date difference between the transaction- and the announcement day. On average, the date difference is about 4 days meaning that if the announcement day is interpreted as the trading day some insider transactions are wrongly classified as occurring prior to Corporate Events.

In the context of interference from the Corporate Events studied, only quarterly report announcements have a significant effect in a five day period. The number of quarterly report announcements inside the [0,4] event window are few, and assuming that the incorporation of quarterly report announcements in stock prices is fast, the effect from quarterly report announcements is not likely to alter the results of the abnormal returns after the insider trade announcements.

C. Methodology

Our thesis is about two events: the announcement of the insider trade and the change in legislation. The intention of the legislation is to reduce the return an insider could gain by trading on insider information. The effectiveness of the change in legislation should be reflected in how the market receives the announcement of the insider trade. We want to respectively measure the effect of the two events occurring and since an effect is the difference between what did happen and what would have happened if the event did not occur, we need one counterfactual model for each event. For the insider trading announcements we use an event study methodology, using the market model to first estimate the counterfactual normal returns and then deduct them from the actual returns. Correspondingly, we employ a difference-in-differences methodology where German insider trading announcements are used as a control group, in order to measure the difference between the law taking place and the law not taking place.

C.1. Event study

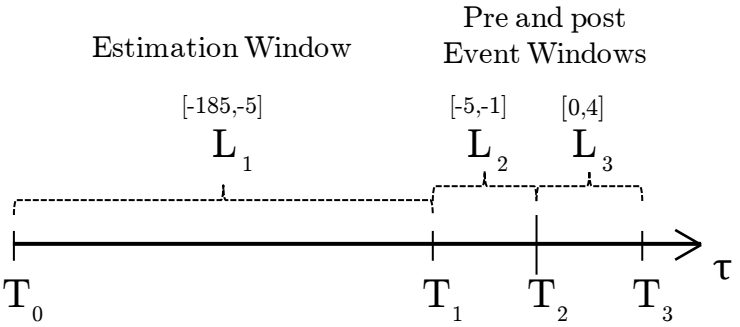
To estimate if there are any abnormal returns due to insider trading announcements, we use an event study methodology as defined by MacKinlay (1997).[51] We first use the market model to predict a stock's ex ante expected returns, i.e. normal returns.[52]

[51] The event study methodology is widely used in corporate finance, with examples including how firms' value is affected by changes in the regulatory environment or by earnings announcements, and it has also got acceptance from the U.S. Supreme Court for determining materiality in insider trading cases. MacKinlay (1997, p. 37), Campbell, Lo, MacKinlay (1997, p. 149), and Mitchell and Netter (1994)

[52] Adding additional explanatory factors to reduce the variance of the abnormal return is possible but the marginal explanatory power of additional factor to the market is small and the gains from employing multifactor models are limited (MacKinlay, 1997, p. 18). Another alternative to the market model, a purely statistical model, is the use of CAPM, an economic model, i.e. deducting the risk-free rate from both the regressand and the regressor: $R_{i,t} - R_f = \alpha_i + \beta_i(R_{m,t} - R_f) + \varepsilon_{i,t}$. However, the restrictions imposed on the market model by the CAPM may be questionable since deviations from the CAPM predictions have been found (Fama and French, 1996). As a consequence of the fact that certain event studies could be sensitive to the specific CAPM restrictions the use of the CAPM in event studies

Second, the ex ante expected returns are deducted from the ex post actual returns in order to calculate the abnormal returns. The basic notion is to disentangle the effects of two types of information on stock prices; information specific to the firm under question (e.g., insider trading announcements) and information likely to affect stock prices market-wide (e.g., change in interest rates etc.).[53] Third, we calculate a test statistic to determine if the observed abnormal returns are significant. Last, we test if the actual difference in abnormal returns prior and post the law change is significant.

The main period of interest is one trading week post the insider trading announcement, which is the $L_3 = T_3 - T_2$ period, shown in the graph below. Also of interest, is the five trading days prior to announcement, $L_2 = T_2 - T_1$ period, since it might show tendencies of information leakage or market timing.



We index returns in event time using τ, where $\tau = 0$ is the event date, i.e. the announcement date of the insider transaction. $\tau = T_0 + 1$ to T_1 constitutes the estimation window with length $L_1 = T_1 - T_0$, $\tau = T_1 + 1$ to T_2 represents the event window before the event with length $L_2 = T_2 - T_1$, and $\tau = T_3 + 1$ to T_2 denotes the event window after the event with length $L_3 = T_3 - T_2$.

We use log returns calculated on the return index (RI) obtained from Datastream, which uses adjusted closing prices corrected for dividends and stock splits.[54, 55]

$$r_t = \ln(RI_t / RI_{t-1}) \qquad (1)$$

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has almost ceased (MacKinlay, 1997, p. 19). Also, there seems to be no good reason to use an economic rather than a statistical model in an event study (Campbell, Lo, MacKinlay, 1997).

[53] By comparison, a naïve way of measuring the abnormal returns of an insider trade would be to contrast the returns for the stock after the event with the returns for the stock during a control period before the event and test if the difference were significant. This constant returns model would however not disentangle the effect on stock returns from firm-specific events as opposed to market-wide information. Mitchell & Netter (1994)

[54] $RI_t = RI_{t-1} \cdot \frac{P_t + D_t}{P_{t-1}}$, where D_t is zero except when t is the exercise date of a dividend payment. The price, P, is the adjusted closing price, i.e. adjusted for any distributions or corporate actions occurring between the closing and the next trading day's open. The price is also adjusted for any rights issues, share splits etc. (Datastream)

[55] Although return form does not seem to be an important consideration in event studies Thompson (1988, p. 81), it might still be advantageous using log transformed returns, since it is likely to improve the normality of the return distribution. Henderson (1989, p. 287), Fama (1976, pp. 17-20)

The market model used to estimate the normal returns for net insider trade i and event time τ is

$$R_{i,\tau} = \alpha_i + \beta_i R_{m,\tau} + \varepsilon_{i,\tau} \quad (2)$$

$$E[\varepsilon_{i,\tau}] = 0 \quad Var[\varepsilon_{i,\tau}] = \sigma_\varepsilon^2, \quad (3)$$

where $R_{i,\tau}$, $R_{m,\tau}$ are the period τ returns for the security corresponding to trade i and the market portfolio, respectively, and $\varepsilon_{i,\tau}$ is the error term, which measures the firm's actual return from the fitted model, which is assumed to be; normally distributed with a zero mean and constant variance, not serially correlated, nor correlated across securities.[56] We use the broad based OMX all share and CDAX value weighted indexes for the market portfolio in Sweden and Germany respectively.[57]

The model's linear specification follows from the assumed joint normality of asset returns. Under general conditions, ordinary least squares (OLS) is a consistent and efficient estimation procedure for the market model parameters, estimated in a 180 day estimation window, $L_1 = T_1 - T_0$.[58] Thus the OLS estimators of the market model parameters for net insider trade i and time τ is:

$$\hat{\beta}_i = \frac{\sum_{\tau=T_0+1}^{T_1}(R_{i\tau}-\hat{\mu}_i)(R_{m\tau}-\hat{\mu}_m)}{\sum_{\tau=\tau_0+1}^{T_1}(R_{m\tau}-\hat{\mu}_m)^2} \quad (4)$$

$$\hat{\alpha}_i = \hat{\mu}_i - \hat{\beta}_i \hat{\mu}_m \quad (5)$$

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[56] Since, daily returns are non-normal (Brown and Warner, 1985, pp. 8-10, and Berry et al., 1990), the *normality* assumption is potentially weak. Fortunately, the same is not true of the residuals, which either are so close to normal that this cannot be rejected or the power of the event study is not increased by using distribution-free test statistics (Brown and Warner, 1985, p. 25). Moreover, the residuals are most likely *serially-correlated* , which could be due to non-synchronous trading. The non-synchronous trading effect arises when asset prices are taken to be recorded at time intervals of one length when in fact they are recorded at time intervals of other, possibly irregular lengths. We look at closing prices, which we implicitly and incorrectly assume equally spaced at 24-hour intervals. Especially over weekends, the time distance between two closing prices is significantly larger than 24 hours, and since the probability that material news about a corporation will reach the market increases over time even if the market is not open, the stock volatility increases over time also during closing hours. An advantage with looking at a five day event window is that it in a non-holiday week always consists of one and only one weekend and thus making the event window actual length more similar between events. Two techniques have been suggested to correct for the bias (Scholes and Williams 1977) and Dimson (1979) by using leading and lagging betas and market returns respectively; but Reinganum (1982) and Theobald (1983) finds that the techniques is not significantly better than the OLS estimates. Yet a potential problem is that there might be a correlation between the residuals and the firm-day return index. If for example the probability that purchases occurs during a bear market increase, the conditional expectation of the normal returns are misspecified, and that misspecification is induced into the error term. (Henderson, 1990)

[57] See Figure 1 for the development of each index respectively.

[58] MacKinlay (1997 p. 20) When employing the market model we have also tested regressing the stock returns on a market index for 120 and 260 day period prior to the event window, yielding similar results. A longer estimation window reduces noise, but does not capture trends as good as a shorter window. The chosen estimation period of 180 days is also observed in previous studies. It is possible to regress on a period both before and after the event period, but using an estimation period prior to the event window is the most common and usually gives similar results (MacKinlay, 1997 and Henderson, 1989).

$$\hat{\mu}_i = \frac{1}{L_1}\sum_{\tau=T_0+1}^{T_1} R_{i\tau} \text{ and } \hat{\mu}_m = \frac{1}{L_1}\sum_{\tau=T_0+1}^{T_1} R_{m\tau} \qquad (6)$$

$$\hat{\sigma}_{\varepsilon_i}^2 = \frac{1}{L_1-2}\sum_{\tau=T_0+1}^{T_1}\left(R_{i,\tau} - \left(\hat{\alpha}_{i,\tau} + \hat{\beta}_i R_{m,\tau}\right)\right)^2 \qquad (7)$$

In order to draw overall inferences, the abnormal return observations must be aggregated over time and across securities. For a sample of N insider trading announcements, defining $\overline{AR}_\tau$ as the sample average abnormal return, we have

$$\overline{AR}_\tau = \frac{1}{N}\sum_{i=1}^{N}\widehat{AR}_{i\tau} = \frac{1}{N}\sum_{i=1}^{N}\hat{\varepsilon}_{i\tau} \qquad (8)$$

$$\bar{\sigma}_\tau^2 = \mathrm{Var}[\overline{AR}_\tau] = \frac{1}{N^2}\sum_{i=1}^{N}\sigma_{\hat{\varepsilon}_{i\tau}}^2 \qquad (9)$$

Aggregating the sample average abnormal returns over event window time, defining $\overline{CAR}(\tau_1,\tau_2)$ as the sample average cumulative abnormal return from $\tau_1$to τ_2, we have

$$\overline{CAR}(\tau_1,\tau_2) = \sum_{\tau=\tau_1}^{\tau_2}\overline{AR}_\tau \qquad (10)$$

$$\bar{\sigma}_{\tau_1,\tau_2}^2 = \mathrm{Var}[\overline{CAR}(\tau_1,\tau_2)] = \sum_{\tau=\tau_1}^{\tau_2}\bar{\sigma}_\tau^2 \qquad (11)$$

As a test statistic for the significance of abnormal returns, we use

$$J_1 = \frac{\overline{CAR}_{\tau_1,\tau_2}}{\sqrt{\bar{\sigma}_{\tau_1,\tau_2}^2}} \sim^a N[0,1] \qquad (12)$$

To test if the actual difference in abnormal returns around insider dealing announcement is significantly different prior and post the law change, we first estimate the sample difference, $\overline{CAR}_{\tau_1,\tau_2}^{PostLaw} - \overline{CAR}_{\tau_1,\tau_2}^{PreLaw}$, and then use the test statistic[59]

$$t_1 = \frac{\overline{CAR}_{\tau_1,\tau_2}^{PostLaw} - \overline{CAR}_{\tau_1,\tau_2}^{PreLaw}}{\sqrt{\bar{\sigma}_{\tau_1,\tau_2}^{2\ PreLaw} + \bar{\sigma}_{\tau_1,\tau_2}^{2\ PostLaw}}} > t_{\vartheta;\alpha} \qquad (13)$$

$$\vartheta = \frac{\left(\bar{\sigma}_{\tau_1,\tau_2}^{2\ PreLaw} + \bar{\sigma}_{\tau_1,\tau_2}^{2\ PostLaw}\right)^2}{\frac{\left(\bar{\sigma}_{\tau_1,\tau_2}^{2\ PreLaw}\right)^2}{N^{PreLaw}-1} + \frac{\left(\bar{\sigma}_{\tau_1,\tau_2}^{2\ PostLaw}\right)^2}{N^{PostLaw}-1}} \qquad (14)$$

In addition, to control that our model is robust we also use market adjusted returns, which corresponds to letting alpha be zero and beta be one in the market model, i.e. the abnormal return is calculated as the difference between the stock

[59] Newbold et al. (2003, pp. 343)

return and the market index.

Unique event windows are constructed by removing all net insider trading announcements interfering with each other five days prior or post the event, i.e. for the [-5,4] period. The purpose is to ensure that the abnormal returns measured around an insider trade announcement are actually due to the insider trading announcement rather than another. The high frequency of insider trades makes it not feasible to use unique event windows across securities; instead we use Unique event windows for each security respectively. This usage of intra-firm-unique event windows lessens the more severe forms of correlation between events. However, calendar time clustering across securities could also cause correlation between the error terms (abnormal returns) of different securities, especially since we use the same benchmark index. Also, Unique event windows gives fewer observations, which decreases the power of the tests, i.e. the probability to reject the null hypothesis given that the alternative hypothesis is true, and creates a potential selection bias.

C.2. Difference-in-differences

The test statistic, t_1, used to detect the potential change of abnormal returns around insider trade announcements post the law change, only measures the actual change. This is however problematic, since the actual change could be due to exogenous factors or trends that the model does not control for.[60] This shortcoming can however be abridged using a difference-in-differences approach as stipulated by Ashenfelter and Card (1985).[61] The idea is that we have two groups and two time periods. One group (Swedish corporate insiders) is exposed to a treatment (the law change) in period two but not prior. Meanwhile, the control group (German corporate insiders) is not exposed to the treatment in either period. The average difference in the control group is then subtracted from the difference in the treatment group, i.e. the difference-in-differences. We test the difference-in-differences regression equation (15) separately for insider purchases and sales using standard errors robust to heteroscedasticity.

$$\overline{\mathrm{CAR}}(\tau_1,\tau_2) = \gamma + \delta_1 Law + \delta_2 Swe + \delta_3 LawSwe + \varepsilon \qquad (15)$$

The dummy variable *Swe* (1=Sweden, 0=Germany) coefficient captures the effect of any potential difference between Sweden and Germany prior to the law change and thereby controls for the differences between the treatment and control group. *Law* is a time period dummy that is one after the law change (2005-07-01) and zero prior to

[60] There might be a time trend in the variables, or there might be institutional changes that for example lower the transaction costs, which could increase the incentive to trade on inside information.

[61] Difference-in-differences is a common methodology when measuring law changes. (Meyer, 1995) A benefit with the difference-in-differences methodology is that the regression framework is easily made robust to different variances for different groups and time periods. (Wooldridge, 2009)

the law. The *Law* dummy coefficient captures the effect of aggregated factors that would cause changes in CAR even in the absence of a law change, such as time trends. The interaction dummy *LawSwe* is unity when both *Law* and *Swe* are one. The interaction coefficient (δ_3) is the difference-in-differences estimator and it explains the average effect of the law in Sweden. The significance of the difference-in-differences coefficient, δ_3, is tested using a student t-test statistic (t_2).

The law change in Sweden was an implementation of the Articles 1-4 of the Market Abuse Directive (Directive 2003/6/EC) to make the regulatory system more homogenous across the EU Member states, causing them to change their insider dealing laws. This limited the number of possible candidates when searching for a suitable control group not affected by any insider dealing law change around the Swedish law change. Also, finding a control group inside Sweden proved difficult, since there was no group of corporate insiders unaffected by the law change.[62] In addition, a non- EU member like Norway, with a stable insider dealing law over the period in question, did not have an equally well functioning publication system and register of insider dealings. We found Germany to satisfy some important aspects of a good control group. The insider trading announcements should be in a country with an insider dealing law similar to the Swedish insider dealing law prior to the law change. An important aspect of the insider dealing law when measuring CARs around the announcement day is the reporting period, which is 5 days in both Sweden and Germany.[63] Also, the way of publishing insider dealing announcements is similar. Not only the law of the control group should remain as constant as possible; other exogenous factors could also disrupt the sample. If the two groups are affected by factors unrelated to the law change, e.g. different change in culture, different change in transaction costs, that affects the control group and treatment group differently over time, it will cause problems if not controlled for.[64]

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[62] Companies cross-listed on a foreign exchange still had to follow the Swedish insider dealing law.
[63] Fidrmuc et al. (2005)
[64] It is a common assumption that there are no omitted interactions affecting the results. This potential problem of the control group changing differently than the treatment group of reasons unrelated to the law can however be resolved by conducting a difference-in-differences-in-differences method, meaning that one combines a control group from the same country with a control group from a different country. The method is more robust than the normal difference-differences method; however, due to the wide spread implication of the law for the many types of corporate insiders in Sweden a control group based on corporate insiders in Sweden was not possible to find. (Meyer, 1995, pp. 153 -157)

IV. Empirical results

A. Detecting abnormal returns prior to the law change

It is only meaningful to examine the impact of a sharpening of the insider legislation if it can be shown that insider announcements generate abnormal returns in the first place. In the Swedish market we find that purchases and sales announcements generate significant abnormal returns prior to the law change at the Stockholm Stock Exchange as illustrated in Table 13 and 14. The results are in line with previous research globally[65] and in Sweden[66]. More specifically, the unique abnormal returns at the announcement day are in the expected direction (positive for purchases ($CAR_U[0,0]=0.22\%$) and negative for sales (CAR_U $[0,0]=-0.49\%$) but, in contrast to Klinge et al. (2005), they are only significant at about a 10% level for a one sided test.[67] However, the announcement day abnormal returns for the Entire sample are at similar levels as the Unique sample ($CAR[0,0]=0.21\%$ and $CAR[0,0]=-0.46\%$ for purchases and sales respectively) but significant. The same relationship holds when measuring CARs for up to three and five days post announcement. This indicates that the difference in significance between unique and non-unique observations is not due to the size of the abnormal returns but in observations (or standard errors). The purpose of using the Unique sample is to control for interaction effects due to clustering of announcements, but lack of observations for the Unique sample lowers the power of the test which makes it hard to reject the null hypothesis for abnormal returns in the magnitude of tenth of percents.[68] The magnitude of the observed CARs for purchases is more similar to Lakonishok and Lee's (2001) finding in the US than Fidrmuc et al.'s (2006) in the UK. This is surprising, since the date difference between transaction and announcement in Sweden is more similar to the UK than the US. A shorter reporting period should according to Fidrmuc et al. make the transaction more informative, observed as higher CARs. According to several scholars, the signalling effect of insider purchases should be stronger than that of sales. While there is a multitude of reasons for corporate insiders to sell, such as need for liquidity, portfolio diversification of stock options and stock bonuses, there is only one reason to buy: it is considered a good investment.[69] A contraire, we find that the sales announcements' abnormal returns already from day one are about twice as large as for purchases;

[65] Jaffe (1974a), Finnerty (1976), Fidrmurc et al. (2006), Seyhhun (1986), Klinge et al. (2005)

[66] Hjertstedt & Kinnander (2000), Hansson & Hjemgård (2002), Skog & Sjöholm (2006), Feiyang & Nogeman (2008)

[67] Our results regarding the Unique contra Entire samples stands in contrast to Klinge et al. (2005) which finds that the usage of non-overlapping observations yields more significant abnormal returns for purchases and significant negative abnormal returns for sales.

[68] Brown & Warner (1980, 1985)

[69] Campell, Lo, Mackinlay (1997)

moreover the CARs' on a three day and five day window are much higher. Since the negative abnormal returns continues at a constant rate also over a 20 day period (Figure 2) it seems that the sales opposed to the purchases captures a more fundamental aspect of the share price.

The CARs over a longer period of up to 20 days suggests that corporate insiders continue to generate abnormal returns beyond our main event window of five days.[70] However, first, a longer event window is beyond the scope of our investigation since it is not reasonable in a somewhat efficient market to expect that it takes more than a few days for the signalling effect of the insider trade announcement to be incorporated in prices.[71] Second, the method used is less suitable for longer event windows, since the risk for interaction affects becomes severe over time.

There are several and contradictory theories about the behaviour of the abnormal returns prior to the insider trade announcements. Therefore, we test against the null hypothesis of abnormal returns being zero. We find that CARs prior to announcement for both purchases and sales are insignificant. However, for a longer time horizon, especially sales transactions show a pattern of market timing (Figure 2), in which positive (negative) abnormal returns for sales (purchases) could be explained by the insider timing the market and selling (buying) at the right point in time.[72] Since the market timing concerns the transaction date (as opposed to the announcement date) and the sample average calendar time distance between insider transaction and announcement is about four days (Table 12), it is plausible that the five day event window to a large extent measures the time between trade and announcement which could not be timed by the insider and the effect of the market timing is thus diffused.[73] Instead, our five day event window could have captured a leakage of the inside information that the insider is assumed to posses between the transaction and the announcement date. This would then have been observed as positive abnormal returns for purchases and negative for sales, which is not observed. In some cases especially for Large owners it may be that the insider trade itself is large enough to affect the price on the transaction day. The insignificant CARs prior to the announcement of the insider trade emphasize the signalling effect, since it generates significant CARs already from day one.

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[70] As Brown & Warner (1980, pp. 228) points out that if the CAR's follow a random walk they can still easily give the appearance of a significant positive or negative drift, although none is present. This underscores the necessity of statistical tests of the CARs, since merely looking at figures could easily result in Type I errors.

[71] Fama (1991, pp. 1601, 1607). However, Lakonishok and Lee (2001) argues that the market does not incorporate the signalling effect of insider dealing as quickly as it is reasonable to believe.

[72] One way of accomplishing market timing is by timing the trade with news releases of which release time and likely outcome on the value of the company are known. For the news announcements we have studied, our sample suggests that insiders' trade to a similar extent after and prior to news announcements.

[73] Explain how we calculated the difference between announcement and trade. For further analysis, see Table 12 for the distribution of the calendar time difference between transaction and announcement.

Regarding insider types, we find that Directors and in particular Large owners generate higher and more significant abnormal returns than CEOs and Others post purchase announcements (Table 14). In line with our previous results, the pre announcement abnormal returns (CAR[-5,-1]) are insignificant. However, the market timing for longer time horizons, suggests that Large owners time the market better than other corporate insiders (Figure 4). For sales announcements all insider types are significant at the 5% level and most at the 1% level for the Entire sample, while for observations prior to announcement and for the Unique sample all insider types' sale transactions are insignificant (Table 14, Figure 5).

The German insider trading announcements seems also convey significant average cumulative abnormal returns after announcement prior to the law for the Entire sample and about similar CARs for the Unique sample with the expected signs for purchases and sales (Table 15 and 16, Figure 3). One difference is that the effect on the announcement day for purchases is lower than in Sweden; in Germany it is close to zero.

B. Change in AR over time in and between Sweden and Germany

Insider purchase announcement continue to generate significant abnormal returns also after the law in Sweden and have contrary to our hypothesis even risen (Table 15, Figure 6 and 7). The increase is for the Unique sample mainly on the announcement day, whereas for the Entire sample the effect is spread over the entire five day period. There is however no significant difference between the CARs coefficients pre and post law.[74] In Germany the CARs post announcements have risen to a greater extent than in Sweden, but as in Sweden the rise is insignificant. The effect of the announcement is after the law immediate in Germany and generates an intra-announcement day abnormal return of 0.51% ($CAR_U[0,0]$) (Table 15, Figure 8 and 9). The change in Sweden is that the effect of the announcement is more immediate ($CAR_U[0,0]$=0.62%) and then stays about constant ($CAR_U[0,2]$ and $CAR_U[0,4]$ is 0.53% and 0.52% respectively). This may be interpreted as if both the German and Swedish market has evolved to be more efficient in incorporating the signalling effect of purchase announcements. Considering the Entire sample, a similar pattern of announcement incorporation in returns is evident, although to a lesser degree. Since the CARs post purchase announcements in general has risen more in Germany than in Sweden the difference-in-differences (DD 1) are negative for the Unique- and the Entire sample up to five days after the announcements, the coefficients are larger in the Unique sample. The difference-in-differences coefficients are however non significant and thus we find

[74] As stated, we test a one-sided hypothesis of reduced CARs after the law change. A two-sided test does neither prove to be significant.

no evidence that the law change has had an impact on the market reaction to insider transaction announcements. Controlling for recommendations (DD 2) and considering only Management and Directors (DD 3) further verifies the non-significant impact of the law change.

The cumulative abnormal return prior to purchase announcement has not changed in Sweden at all according to the Unique sample and has decreased only slightly according to the Entire sample. In Germany the decrease is substantial (and significant for the Entire sample), which causes the difference-in-differences to be positive although not significant at the 5% level.

The sales announcement effect is significant in Sweden also after the law change, however the change is not (Table 16, Figure 6 and 7). Nevertheless, the tendency is in line with our hypothesis of increased abnormal returns and shows a slight increase in the CARs of about 0.2% in the Entire sample on the announcement day and up to two days after. For neither Sweden nor Germany the effect on the announcement day is as pronounced as prior the law, which contrasts the results for the purchases. Instead, in Germany, quite the opposite effect is observed, where the announcement day abnormal return has increased the most causing a larger difference between a one day and a three day or a five day event window. The difference on the announcement day is significant at the 5% level for the Unique sample. Although the change in CARs in Sweden is rather insubstantial, it takes after the law change time for the market to incorporate the effect of the sales announcement, as in Germany and in contrast to purchases. The difference-in-differences for announcement returns is insignificant and the direction is against our hypothesis of increased abnormal returns in the Unique sample.

We observe positive CARs prior to the sales announcement in Sweden after the law change similar to those before the law, indicating that corporate insiders' market timing persists (Table 16, Figure 6 and 7). In Germany, insider sales' CARs pre announcement is significantly reduced with as much as -0.78% in the entire sample, yet they are still positive after the law change. The reduction in sales announcement CARs in Germany after the law change in conjunction with the zero or slightly positive change in Sweden, causes the difference-in-differences to be positive but not significant against a two-sided alternative hypothesis. The difference-in-differences is of high magnitude relative to the general levels that the cumulative abnormal returns are at; still the difference-in-differences is not significant.

When measuring the results on an insider type basis there are only two types of insiders that have enough number of trades in Sweden and Germany to be considered for a difference-in-differences methodology; CEOs and Directors. In Table 17-20, 23 and 24 we present the results from the two subgroups separately and jointly. In line with the results from the Entire sample for all insider types, but in contrast to our

hypothesis, we observe a positive rather than the expected negative change of abnormal returns for insider purchase announcements on the announcement day. The result is observed for both CEOs and Directors separately for the Unique- and the Entire sample. However, on the following days after the announcement we observe some negative although insignificant changes of CARs for CEOs (Unique- and Entire sample) and Directors (Unique- but not Entire sample). The changes of CARs after announcement in Germany are also positive and insignificant for CEOs and Directors separately. The difference-in-differences for CEOs $CAR_U[0,4]$ is -1.57% and almost significant at the 5% level. Also for Directors, the purchases post announcement CAR's for three and five days have a negative but insignificant difference-in-differences.

V. Conclusion

This paper examines what effect the law change in Sweden, as of July 1st 2005, had on corporate insiders' ability to generate abnormal returns post the announcement of insider transactions. We find that the law change had no significant impact on corporate insiders' ability to generate abnormal returns post announcement, indicating that market participants anticipate insider transactions to be as informative as they were prior to the legislation change. A similar result was observed by Hansson and Hjemgård (2002) when examining the law change as of 2001 in the Swedish market. Jaffe (1974a) and Bhattacharya and Daouk (2002) find regulatory changes to have no effect on corporate insiders' ability to generate abnormal returns when examining markets outside Sweden. In contrast to previous studies we employ a difference-in-differences methodology to control for exogenous factors. The result is robust with respect to intra-firm announcement correlation since the same result is obtained using a unique sample controlling for the problems associated with the effect that clustered trades generate. The robustness is further corroborated by controlling for stock recommendations and by analyzing different insider types. In addition to the difference-in-differences framework, a statistical test for the mean difference in CAR prior and post the law change in Sweden shows that the change is insignificant. As a final measure of robustness we conduct the same analysis using market adjusted returns in addition to the market model, which confirm the results.

There are several possible reasons why we did not observe the law change to have a significant effect. The most intuitive explanation is that the law change was not sufficient in convincing market participants that corporate insiders' ability to earn abnormal returns on private information had decreased. This means that the actual

behaviour of corporate insiders could nevertheless have changed, making the law change in fact effective on restricting the use of private information (an aspect not specifically examined in this paper since the focus lies on the announcement- rather than the transaction day). Still, as long as the market does not believe in the effectiveness of the law, the market will not be efficient since it will wrongly interpret insider trades as informative. Bhattacharya and Daouk (2002) stress that legislation changes will first be effective when enforced. Moreover, Jaffe (1974a) argues that the magnitude of corporate insiders' abnormal returns is undetectable by law enforcers and will consequently not affect the use of private information, a phenomena incorporated by the market. The changes in the Swedish insider dealing legislation of increased monitoring, an increased penalty scale and a decreased threshold for prosecution, has proven not sufficient in convincing the market, perhaps since they do not affect the regulatory authorities ability to detect and prove a relationship between abnormal returns and insider information.

Another possibility is that the methodology used is not suitable for investigating the law change. The chosen control group might have been subject to exogenous factors that were not present in the treatment group, and hence another control group might have proven better. For example, the observed substantial increase in the abnormal returns for purchases post announcement is slightly unexpected. Is this caused by a general time trend or is it some exogenous factor specific to the German market? One reason to the increase in abnormal returns could be that the market over time has come to realize that corporate insiders earn abnormal returns and thereby to a larger extent incorporate the signalling effect of insider purchases. Another reason might be that the information is more widely available and easily accessible. A final reason could be that insiders to a larger extent trade on insider information, which in turn is incorporated in the prices at announcement. The mentioned reasons could explain the observed time trend in the control and the treatment group, which our difference-in-differences methodology controls for. We find it unlikely that another control group would increase substantially more than the purchase announcements in Germany without being affected by exogenous factors.

In terms of insider trading characteristics we find, in contrast to previous findings, that both purchases and sales are informative. Our result indicates that sales might even be more informative in the Swedish market under the period examined. Moreover, for purchases Large owners seem to have the highest signalling power and the best market timing, whereas for sales the different types of insiders signalling effect seem to behave similarly.

The external validity of our thesis is hard to determine. Given that our thesis is correct in concluding that the law change did not have a significant effect on the abnormal returns pre and post insider trading announcements, is it likely that a

similar law change would yield no significant effect in another country? When conducting natural experiments there are always numerous of specific factors such as; individual characteristics, culture, history and location, which potentially could interact with the treatment and thereby change the effect of the treatment when the setting is changed. Still, the insignificant effect of the Swedish law change is in line with previous studies on law changes and law enforcements in other markets. Conversely, on the basis of law changes not having an effect, it is hard to determine what the necessary measures of legislation change would be to significantly decrease the abnormal returns insider trade announcements generate.

This paper does not aim at examining the abnormal returns earned by corporate insiders per se. It attempts to shed light on the market reaction to regulatory change and identifying certain insider trading characteristics in the Swedish market. Future work might investigate the law change from a transaction day perspective (rather than an announcement day perspective) or considering corporate insiders' actual holding size and horizon.

VI. Literature

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Laws and Directives

Insider Dealing Directive (Directive 89/592/EEC)

Insiderlag (1990:1342)

Insiderstrafflag (2000:1086)

Lag (2000:1087) om anmälningsskyldighet för vissa innehav av finansiella instrument (Anmälningsskyldighetslagen, AnmL)

Lag (2005:377) om straff för marknadsmissbruk vid handel med finansiella instrument (Marknadsmissbrukslagen, MmL)

Lag (2005:382) om ändring i lagen (2000:1087) om anmälningsskyldighet för vissa innehav av finansiella instrument

Market Abuse Directive (Directive 2003/6/EC)

Wertpapierhandelsgesetz (WpHG), German Securities Trading Act

Table 1.

Specification of the Hypotheses and the Test Statistic Employed

	Hypothesis and Test Statistic		
	Events Pre Announcement	Events Post Announcement	Test Statistic
Detecting Abnormal Returns			
Purchases	$H_1 \neq 0$	$H_1 > 0$	J_1
Sales	$H_1 \neq 0$	$H_1 < 0$	
Examining the Law Change			
Actual Change [CAR]			
Purchases	$H_1 \neq 0$	$H_1 < 0$	t_1
Sales	$H_1 \neq 0$	$H_1 > 0$	
Difference-in-differences [CAR]			
Purchases	$H_1 \neq 0$	$H_1 < 0$	t_2
Sales	$H_1 \neq 0$	$H_1 > 0$	

The hypotheses are also tested for the corporate insider types; Management and Directors. A possible difference between the two types is however not tested for.

Table 2.

Description of the Samples and the Necessary Corrections Made to Obtain the Final Dataset

Table 2.1 Sweden

Sample Description for the 20031001-20070330 Period

	Purchases	Sales	No. of Transactions
Initial dataset			39 502
Security type*			-10 266
Transaction type**			-13 867
Insider transactions in Sweden***	8 948	6 421	15 369
Incomplete (inconsistent Buy/Sell obs.)			-13
Firm-day clustering	-3 136	-2 400	-5 536
Beta (180 days estimation)			-1 140
Daily net trades =0			-339
Transactions below SEK 5 000	-144	-63	-207
Number of observations (Entire sample)	4 450	3 684	8 134
Unique sample	1 257	935	2 126

* All security types other than stock purchases and sales have been eliminated, e.g. American depository receipts, options, right issues ** Unidentified observations, corrections, pension related transactions have also been removed. ***The number of transactions stated are obtained after matching the insider trades with stock returns. The match resulted in some missing values which explains why the first three lines does not add up to the stated number below the line.

Table 2.2 Germany

Sample Description for the 20031001-20070330 Period

	Purchases	Sales	No. of Transactions
Initial dataset			14 138
Security type*			0
Transaction type**			-1 908
Insider transactions in Germany***	5 087	5 408	10 495
Incomplete (inconsistent Buy/Sell obs.)			0
Firm-day clustering	-2 740	-3 177	-5 917
Beta (180 days estimation)			-877
Daily net trades =0			-123
Transactions below EUR 500	-8	-3	-11
Number of observations (Entire sample)	1 822	1 745	3 567
Unique sample	683	733	1 416

* All security types other than stock purchases and sales have been eliminated, e.g. American depository receipts, options, right issues ** No unidentified observations, corrections or pension related transactions was found in the obtained dataset ***The number of transactions stated are obtained after matching the insider trades with stock returns. The match resulted in some missing values which explains why the first three lines does not add up to the stated number below the line.

Table 3.

Descriptive Statistics for the Entire Sample in Sweden

Purchases and Sales by Insider Type							
	Purchases			Sales			
Entire Sample	Pre Law	Post Law	Total	Pre Law	Post Law	Total	Entire Sample
Number of firms:	312	338	384	276	314	367	409
Number of firms pre law:							330
Number of firms post law:							374
Number of transactions:	**1 923**	**2 527**	**4 450**	**1 633**	**2 051**	**3 684**	**8 134**
Management	454	547	1 001	327	458	785	1 786
Directors	919	1 327	2 246	729	839	1 568	3 814
Large shareholders	310	410	720	382	376	758	1 478
Other insiders	495	710	1 205	474	858	1 332	2 537
Mean value of transactions ('000)	**4 503**	**5 431**	**5 030**	**5 614**	**7 636**	**6 739**	**-300**
Management	1 868	2 410	2 164	3 639	6 673	5 409	-1 165
Directors	4 477	7 950	6 529	7 049	12 084	9 743	-161
Large shareholders	15 577	18 378	17 172	10 624	10 988	10 805	2 824
Other insiders	597	504	542	572	1 427	1 123	-332
Median value of transactions ('000)	**131**	**193**	**168**	**313**	**395**	**358**	**15**
Management	144	198	179	341	575	484	19
Directors	140	264	200	413	528	471	27
Large shareholders	712	974	829	918	387	671	-13
Other insiders	68	92	81	160	308	245	-17
Stdev. of transactions ('000)	**35 303**	**38 621**	**37 222**	**35 078**	**68 526**	**56 214**	**47 151**
Management	16 450	21 836	19 570	19 134	63 691	50 190	36 539
Directors	30 041	48 065	41 671	36 279	74 877	60 134	50 721
Large shareholders	71 017	74 899	73 216	41 834	51 592	46 898	62 709
Other insiders	5 323	1 683	3 647	1 295	5 868	4 789	4 364
Max value of transactions ('000)	**845 837**	**890 226**	**890 200**	**623 500**	**2 160 000**	**2 160 000**	
Management	338 398	495 175	495 200	284 900	1 346 000	1 346 000	
Directors	630 791	890 226	890 200	617 600	1 346 000	1 346 000	
Large shareholders	845 837	890 226	890 200	400 300	775 400	775 400	
Other insiders	104 929	32 230	104 900	18 000	145 200	145 200	
Min value of transactions ('000)	**5**	**5**	**5**	**6**	**5**	**5**	
Management	6	5	5	6	5	5	
Directors	5	6	5	6	5	5	
Large shareholders	7	5	5	8	5	5	
Other insiders	5	5	5	7	5	5	

Table 4.

Descriptive Statistics for the Entire Sample in Germany

Purchases and Sales by Insider Type							
	Purchases			Sales			
Entire Sample	Pre Law	Post Law	Total	Pre Law	Post Law	Total	Entire Sample
Number of firms:	175	276	329	194	237	305	409
Number of firms pre law:							259
Number of firms post law:							356
Number of transactions:	**566**	**1 256**	**1 822**	**740**	**1 005**	**1 745**	**3 567**
Management	312	708	1 020	361	493	854	1 874
Directors	228	520	748	340	457	797	1 545
Other insiders	26	28	54	39	55	94	148
Mean value of transactions ('000)	**580**	**1 073**	**920**	**1 665**	**5 169**	**3 683**	**-1 332**
Management	268	277	275	1 145	3 761	2 655	-1 060
Directors	1 059	2 210	1 859	2 017	6 439	4 553	-1 449
Other insiders	120	91	105	3 408	7 247	5 654	-3 553
Median value of transactions ('000)	**46**	**33**	**36**	**122**	**144**	**134**	**2**
Management	41	34	36	127	238	186	5
Directors	56	32	37	120	88	99	-5
Other insiders	20	27	24	134	166	157	-49
Stdev. of transactions ('000)	**2 570**	**11 077**	**9 310**	**8 436**	**35 538**	**27 572**	**20 527**
Management	861	2 868	2 435	5 009	32 144	24 662	16 803
Directors	3 877	16 832	14 202	9 938	38 934	30 253	24 077
Other insiders	239	213	224	16 074	35 078	28 699	22 997
Max value of transactions ('000)	**34 431**	**212 200**	**212 200**	**111 300**	**646 600**	**646 600**	
Management	8 098	70 788	70 788	65 122	646 600	646 600	
Directors	34 431	212 200	212 200	111 300	529 000	529 000	
Other insiders	1 110	992	1 110	99 978	252 300	252 300	
Min value of transactions ('000)	**1**	**1**	**1**	**1**	**1**	**1**	
Management	1	1	1	1	1	1	
Directors	1	1	1	2	1	1	
Other insiders	2	5	2	2	1	1	

Table 5.

Descriptive Statistics for the Unique Sample in Sweden

Purchases and Sales by Insider Type							
	Purchases			Sales			
Unique Sample	Pre Law	Post Law	Total	Pre Law	Post Law	Total	Entire Sample
Number of firms:	254	275	343	212	237	316	409
Number of firms pre law:							330
Number of firms post law:							374
Number of transactions:	**588**	**626**	**1 214**	**438**	**474**	**912**	**2 126**
Management	122	141	263	89	89	178	441
Directors	327	322	649	181	189	370	1 019
Large shareholders	60	71	131	80	76	156	287
Other insiders	148	196	344	144	201	345	689
Mean value of transactions ('000)	**3 784**	**5 073**	**4 449**	**4 019**	**5 985**	**5 041**	**378**
Management	3 981	4 685	4 358	2 687	3 972	3 330	1 255
Directors	5 491	5 745	5 617	5 327	10 581	8 011	669
Large shareholders	11 320	10 393	10 818	14 802	9 997	12 461	-1 836
Other insiders	226	295	265	381	683	557	-147
Median value of transactions ('000)	**99**	**166**	**122**	**192**	**316**	**252**	**19**
Management	144	165	158	324	934	742	28
Directors	108	225	173	370	489	443	41
Large shareholders	321	850	581	816	1 497	941	-32
Other insiders	45	66	56	112	182	144	-7
Stdev. of transactions ('000)	**31 458**	**40 778**	**36 553**	**23 651**	**37 858**	**31 834**	**34 917**
Management	30 780	42 046	37 180	7 324	9 839	8 673	29 456
Directors	41 226	38 038	39 646	21 019	56 880	43 253	41 493
Large shareholders	27 825	33 059	30 661	50 788	25 209	40 348	38 007
Other insiders	922	678	792	785	1 368	1 169	1 079
Max value of transactions ('000)	**630 800**	**560 600**	**630 800**	**384 000**	**567 600**	**567 600**	
Management	338 400	495 200	495 200	59 425	63 250	63 250	
Directors	630 800	547 300	630 800	203 000	567 600	567 600	
Large shareholders	142 900	189 000	189 000	384 000	157 000	384 000	
Other insiders	9 456	4 819	9 456	6 320	11 490	11 490	
Min value of transactions ('000)	**5**	**5**	**5**	**7**	**7**	**7**	
Management	8	5	5	9	10	9	
Directors	5	6	5	12	10	10	
Large shareholders	8	5	5	11	12	11	
Other insiders	6	6	6	7	7	7	

Table 6.

Descriptive Statistics for the Unique Sample in Germany

Purchases and Sales by Insider Type							
	Purchases			Sales			
Unique Sample	Pre Law	Post Law	Total	Pre Law	Post Law	Total	Entire Sample
Number of firms:	144	237	293	162	211	281	391
Number of firms pre law:							332
Number of firms post law:							233
Number of transactions:	**231**	**452**	**683**	**289**	**444**	**733**	**1 416**
Management	141	284	425	161	222	383	808
Directors	82	160	242	119	207	326	568
Other insiders	8	8	16	9	15	24	40
Mean value of transactions ('000)	**384**	**1 602**	**1 190**	**2 709**	**6 833**	**5 207**	**-2 122**
Management	414	313	347	1 852	3 904	3 041	-1 259
Directors	366	3 961	2 743	3 222	10 399	7 780	-3 296
Other insiders	25	164	95	11 258	981	4 835	-2 863
Median value of transactions ('000)	**56**	**42**	**49**	**200**	**189**	**195**	**-8**
Management	62	44	51	279	282	279	5
Directors	53	37	45	170	139	148	-14
Other insiders	17	18	17	180	121	134	-38
Stdev. of transactions ('000)	**1 264**	**14 265**	**11 638**	**12 075**	**33 413**	**27 149**	**21 373**
Management	1 028	1 692	1 504	7 113	20 160	16 042	11 219
Directors	1 642	23 736	19 379	14 330	44 041	36 276	30 676
Other insiders	27	342	245	33 270	3 095	20 412	15 866
Max value of transactions ('000)	**14 400**	**212 200**	**212 200**	**111 300**	**416 000**	**416 000**	
Management	6 114	25 625	25 625	65 122	270 400	270 400	
Directors	14 400	212 200	212 200	111 300	416 000	416 000	
Other insiders	84	992	992	99 978	12 150	99 978	
Min value of transactions ('000)	**1**	**1**	**1**	**1**	**1**	**1**	
Management	1	1	1	1	1	1	
Directors	2	1	1	2	2	2	
Other insiders	2	7	2	8	17	8	

Table 7.

Descriptive Statistics by Industry in Sweden

Purchases by Industry

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Entire Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	108	171	279	6%	3 568 942	2 420 132	2 864 833	121 410	289 600	171 185	2 863	4 797	3 992
Industrials	527	711	1 238	28%	3 963 621	6 534 981	5 440 388	116 800	160 500	137 375	5 138	9 482	7 026
Consumer Goods	131	202	333	7%	1 368 022	4 616 942	3 338 839	101 500	311 675	217 000	6 586	7 171	6 838
Health Care	156	241	397	9%	1 217 875	5 637 419	3 900 772	74 350	200 000	146 500	2 037	3 991	3 335
Consumer Services	196	334	530	12%	1 633 267	4 231 840	3 270 858	156 719	178 325	169 381	6 175	8 511	7 471
Telecom	34	22	56	1%	4 819 825	841 236	3 256 808	641 830	111 363	316 700	34 934	47 701	43 209
Utilities	50	20	70	2%	4 334 738	556 076	3 255 120	25 730	38 995	28 380	1 967	530	822
Financials	410	474	884	20%	11 641 821	9 311 517	10 392 314	309 250	218 000	252 000	8 159	13 346	10 915
Technology	311	352	663	15%	1 099 009	1 468 722	1 295 297	96 500	186 625	138 300	3 752	5 758	5 361
Total	1 923	2 527	4 450		4 502 935	5 431 408	5 030 182	130 800	192 800	168 072	5 532	8 700	7 249

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Unique Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	36	52	88	7%	9 671 235	2 520 261	5 445 660	94 690	161 375	123 880	3 058	5 481	4 603
Industrials	177	164	341	28%	5 996 585	2 687 002	4 404 879	99 300	155 150	121 500	5 635	7 418	6 527
Consumer Goods	49	47	96	8%	2 068 881	12 793 423	7 319 438	94 500	298 500	195 000	9 341	9 728	9 544
Health Care	52	59	111	9%	1 411 124	259 598	799 051	68 270	96 950	80 000	2 381	3 565	2 945
Consumer Services	60	90	150	12%	321 190	6 461 062	4 005 113	87 750	175 700	122 250	9 799	11 603	10 874
Telecom	9	9	18	1%	8 172 663	1 432 413	4 802 538	581 660	105 500	200 000	14 798	66 860	38 827
Utilities	7	6	13	1%	533 720	30 860	301 631	33 150	16 260	26 460	1 528	349	998
Financials	91	105	196	16%	3 704 489	12 088 436	8 195 889	140 000	202 000	155 750	7 366	11 883	9 680
Technology	107	94	201	17%	1 933 325	1 313 897	1 643 642	98 340	125 932	111 000	773	6 418	3 370
Total	588	626	1 214		3 783 757	5 072 993	4 448 553	98 586	165 700	121 500	5 264	8 808	7 085

Sales by Industry

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Entire Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	67	164	231	6%	5 092 094	5 301 753	5 240 943	265 000	195 400	202 500	2 863	4 797	3 992
Industrials	442	605	1 047	28%	4 218 475	7 496 536	6 112 675	149 880	286 000	200 200	5 138	9 482	7 026
Consumer Goods	126	180	306	8%	2 750 110	6 088 962	4 714 140	188 650	849 500	458 250	6 586	7 171	6 838
Health Care	112	138	250	7%	2 799 801	7 625 632	5 463 659	156 864	605 250	378 850	2 037	3 991	3 335
Consumer Services	174	256	430	12%	4 914 044	5 631 730	5 341 317	445 375	486 191	473 938	6 175	8 511	7 471
Telecom	31	11	42	1%	24 525 209	3 753 908	19 085 107	807 500	400 000	701 168	34 934	47 701	43 209
Utilities	12	31	43	1%	34 251 301	8 181 913	15 457 091	224 175	202 000	202 000	1 967	530	822
Financials	322	273	595	16%	8 695 415	3 973 919	6 529 081	594 000	603 000	597 000	8 159	13 346	10 915
Technology	347	393	740	20%	4 250 715	13 449 488	9 136 009	498 000	298 850	362 700	3 752	5 758	5 361
Total	1 633	2 051	3 684		5 613 650	7 635 508	6 739 282	312 500	395 000	357 890	5 532	8 700	7 249

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Unique Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	13	32	45	5%	1 987 704	19 604 601	14 515 275	265 000	147 340	179 025	3 058	5 481	4 603
Industrials	128	146	274	30%	1 786 954	4 011 825	2 972 469	122 440	276 300	162 600	5 635	7 418	6 527
Consumer Goods	39	50	89	10%	3 654 771	2 993 808	3 283 443	254 000	767 500	480 000	9 341	9 728	9 544
Health Care	41	25	66	7%	631 811	18 558 116	7 422 078	136 000	101 650	132 800	2 381	3 565	2 945
Consumer Services	49	65	114	13%	9 539 461	9 632 786	9 592 672	508 000	357 000	424 688	9 799	11 603	10 874
Telecom	5	3	8	1%	782 598	272 023	591 132	882 880	121 808	724 918	14 798	66 860	38 827
Utilities	4	3	7	1%	237 319	152 867	201 125	169 575	91 125	91 800	1 528	349	998
Financials	56	54	110	12%	7 738 839	2 939 051	5 382 579	295 500	536 000	412 000	7 366	11 883	9 680
Technology	103	96	199	22%	4 191 932	2 333 580	3 295 440	201 500	259 500	232 100	773	6 418	3 370
Total	438	474	912		4 019 293	5 984 926	5 040 905	192 050	316 400	251 950	5 264	8 808	7 085

Market values are calculated on a sector basis by adding the market value of the firm on each announcement day and divide by the total number of transactions, i.e. the contribution of a firm to the average market value of the industry is value weighted by the number of trades the firm has in the period and dependent upon when in the period the transaction(s) were registered.

Table 8.

Descriptive Statistics by Industry in Germany

Purchases by Industry

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Entire Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	42	137	179	10%	260 407	317 683	304 244	49 754	46 629	47 400	4 039	4 580	4 411
Industrials	147	242	389	21%	252 024	3 370 915	2 192 311	55 692	61 722	60 093	757	3 047	2 232
Consumer Goods	68	107	175	10%	283 055	301 213	294 157	50 414	23 600	31 350	3 290	7 897	5 765
Health Care	19	113	132	7%	272 808	176 857	190 668	70 000	19 749	23 701	853	258	376
Consumer Services	84	180	264	14%	2 447 144	1 592 776	1 864 620	77 499	40 250	47 041	611	562	583
Telecom	5	7	12	1%	179 600	113 056	140 783	24 200	60 000	42 945	11 328	129	5 106
Utilities	1	10	11	1%	1 177 865	304 653	384 036	1 177 865	72 863	73 425	26 338	26 024	26 045
Financials	106	185	291	16%	351 281	645 031	538 029	45 255	42 002	42 986	3 551	4 589	4 182
Technology	94	275	369	20%	117 373	96 529	101 839	22 500	20 800	21 000	1 772	919	1 220
Total	566	1 256	1 822		580 072	1 073 179	919 996	46 463	33 000	36 000	2 117	2 948	2 643

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Unique Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	26	56	82	12%	373 113	591 206	522 055	73 500	48 208	49 464	6 369	4 677	5 206
Industrials	57	88	145	21%	315 544	6 486 970	4 060 961	85 698	60 339	64 000	466	2 728	1 892
Consumer Goods	22	38	60	9%	626 191	380 351	470 493	71 140	22 200	54 769	4 256	4 958	4 664
Health Care	12	45	57	8%	261 089	209 487	220 351	69 400	24 476	31 500	518	351	395
Consumer Services	26	66	92	13%	343 186	804 218	673 926	58 344	44 500	47 500	464	545	514
Telecom	5	1	6	1%	179 600	345 000	207 167	24 200	345 000	107 100	13 571	171	7 615
Utilities	1	6	7	1%	1 177 865	479 801	579 524	1 177 865	335 336	468 430	26 338	23 014	23 430
Financials	32	59	91	13%	738 855	360 661	493 652	52 000	46 000	49 920	2 981	3 723	3 489
Technology	50	93	143	21%	187 609	199 761	195 512	26 960	34 000	30 600	2 070	1 775	1 901
Total	231	452	683		383 631	1 601 770	1 189 779	56 000	41 983	48 600	2 339	2 698	2 566

Sales by Industry

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Entire Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	56	79	135	8%	2 323 967	18 175 517	11 600 059	92 753	177 800	138 453	4 039	4 580	4 411
Industrials	140	277	417	24%	1 265 429	4 664 202	3 523 127	117 404	199 850	172 900	757	3 047	2 232
Consumer Goods	81	66	147	8%	1 699 114	5 856 328	3 565 619	705 000	298 600	495 550	3 290	7 897	5 765
Health Care	23	57	80	5%	1 405 113	697 682	901 069	470 000	91 350	144 406	853	258	376
Consumer Services	115	91	206	12%	1 812 637	3 942 327	2 753 423	147 538	87 500	125 587	611	562	583
Telecom	7	8	15	1%	950 543	404 438	659 287	990 000	162 750	480 000	11 328	129	5 106
Utilities	-	4	4	0%	.	8 183 079	8 183 079	.	3 505 404	3 505 404	26 338	26 024	26 045
Financials	132	184	316	18%	818 330	4 526 836	2 977 714	59 915	104 076	85 150	3 551	4 589	4 182
Technology	186	239	425	24%	2 320 425	3 403 521	2 929 507	127 250	141 000	132 060	1 772	919	1 220
Total	740	1 005	1 745		1 664 829	5 169 387	3 683 214	122 404	144 000	134 400	2 117	2 948	2 643

	Number of Transactions				Mean Value of Transactions			Median Value of Transactions			Average Market Value		
Unique Sample	**Pre Law**	**Post Law**	**Total**	**%of Tot**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**	**Pre Law**	**Post Law**	**Total**
Basic Materials	19	43	62	8%	6 126 118	17 398 596	13 944 127	210 525	275 641	274 720	6 369	4 677	5 206
Industrials	62	115	177	24%	969 044	5 070 270	3 633 682	186 177	170 400	172 900	466	2 728	1 892
Consumer Goods	24	26	50	7%	1 668 234	12 661 889	7 384 935	410 050	445 425	410 050	4 256	4 958	4 664
Health Care	16	32	48	7%	646 701	689 114	674 976	415 000	326 170	345 899	518	351	395
Consumer Services	46	53	99	14%	3 638 015	4 008 739	3 836 483	264 500	230 000	237 688	464	545	514
Telecom	5	7	12	2%	1 144 760	327 929	668 275	1 020 000	154 000	325 750	13 571	171	7 615
Utilities	-	1	1	0%	.	2 606 666	2 606 666	.	2 606 666	2 606 666	26 338	23 014	23 430
Financials	30	76	106	14%	3 193 589	8 781 243	7 199 832	63 000	95 500	90 000	2 981	3 723	3 489
Technology	87	91	178	24%	3 300 550	5 129 324	4 235 485	220 000	224 641	222 320	2 070	1 775	1 901
Total	289	444	733		2 708 961	6 833 310	5 207 203	200 000	189 000	195 000	2 339	2 698	2 566

Market values are calculated on a sector basis by adding the market value of the firm on each announcement day and divide by the total number of transactions, i.e. the contribution of a firm to the average market value of the industry is value weighted by the number of trades the firm has in the period and dependent upon when in the period the transaction(s) were registered.

Table 9.

Descriptive Statistics for Stock Recommendations

	Buy			Sell			Hold			Total
	Pre Law	Post Law	Total	Pre Law	Post Law	Total	Pre Law	Post Law	Total	
Sweden										
Number of recommendations*	1 846	2 681	4 527	1 147	1 603	2 750	876	856	1 732	9 009
Number of recommendations within insider trade windows:**										
CAR [-5,-1]	191	242	433	105	135	240	-	-	-	673
CAR [0,0]	35	47	82	19	28	47	-	-	-	129
CAR [0,2]	64	75	139	40	51	91	-	-	-	230
CAR [0,4]	113	142	255	64	83	147	-	-	-	402
Germany										
Number of recommendations	2 155	2 301	4 456	633	641	1 274	1 710	2 080	3 790	9 520
Number of recommendations within insider trade windows:**										
CAR [-5,-1]	40	74	114	40	109	149	-	-	-	263
CAR [0,0]	11	22	33	9	24	33	-	-	-	66
CAR [0,2]	16	34	50	16	48	64	-	-	-	114
CAR [0,4]	23	68	91	24	82	106	-	-	-	197

* Defined as net recommendations per firm-day observation ** Recommendations are documented to generate highly significant ARs a few days following its announcment (Elton (1986),Schipper(1991), Womack (1996), Brown(2000)). The statisitc shows if the net sum of recommendations are different from zero for a period corresponding to the stated event window and one day prior to the event window

Table 10.

Cumulative Abnormal Returns for Recommendations Pre and Post the Announcement day

	Purchases		Sales	
	CAR	t-statistics	CAR	t-statistics
Sweden				
CAR [0,0]	0.46%	10.82 ***	-0.11%	-1.960 **
CAR [0,1]	0.69%	12.77 ***	-0.23%	-2.45 ***
Germany				
CAR [0,0]	0.34%	9.14 ***	-0.40%	-4.95 ***
CAR [0,1]	0.51%	10.61 ***	-0.57%	-5.44 ***

Regression of CAR$[t_1,t_2]$ against Buy- and sell- recommendations using robust variance estimators and suppressing the constant term As a check of robustness the same regression have been performed controlling for year fixed effects, yielding similar results. The ARs' and the CARs' following are estimated using market adjusted returns, i.e. $\varepsilon_{it} = R_{it} - R_{mt}$. ***,**,* = level of significance 99%, 95% and 90% respectively. The number of observations exceed 9000 for all regresssions.

Table 11.

Descriptive Statistics for Corporate Events

	Type of Corporate Event*									Quarterly Report Observations by Insider Type**			
	Pre AR		Quarterly Report		EGM		AGM		Total	CEOs		Directors	
	Pre Law	Post Law	Pre Law	Post Law	Pre Law	Post Law	Pre Law	Post Law		Pre Law	Post Law	Pre Law	Post Law
Number of observations***:	207	379	600	1,358	97	130	435	533	2 381				
Number of companies:	202	238	195	242	58	82	220	233	259				
Number of insider trade announcements with at least one corporate event within X trading days prior **X**													
-5	57	137	176	358	18	23	103	84		50	91	77	155
-10	102	271	292	680	38	40	190	196		83	176	129	302
-15	133	367	380	947	61	54	274	287		112	239	164	413
-20	169	446	470	1 217	74	71	387	351		135	294	207	539
-25	198	526	543	1 425	85	90	413	466		155	331	239	633
-30	234	585	604	1 611	110	114	549	484		172	376	279	709
Number of insider trade announcements with at least one corporate event within Y trading days post **Y**													
5	5	3	20	31	14	20	26	33		1	6	11	11
10	12	12	41	60	25	37	64	74		2	8	22	22
15	23	22	62	96	37	53	103	104		4	13	37	37
20	34	36	107	185	52	68	171	170		18	33	54	80
25	49	96	161	381	67	83	226	239		31	70	83	174
30	63	143	241	613	75	96	294	353		58	141	119	271

* PreAR = Preliminary results for the fiscal year (Bokslutskommunike), EGM= Extra General Meeting, AGM= Annual General Meeting. The number of Corporate Events observed pre and post insider trade announcements include all insider transactions. ** The statistics are documented in detail for CEOs and Directors since they are the only insiders whom are affected by the law change related to trading prior to earning announcements, i.e. being the only groups prohibited to trade 30 calendar days prior to quarterly reports. ***The number of observations is measured two months around the actual periods (since e.g. a corporate event occuring 30 days prior to the law is also captured in the post law insider announcement sample).

Table 12.

Date Difference Between Transaction- and Announcement Day in Sweden and Germany

Purchases								
	Sweden				Germany			
	Entire Sample		Unique Sample		Entire Sample		Unique Sample	
	Pre Law	Post Law	Pre Law	Post Law	Pre Law	Post Law	Pre Law	Post Law
Mean	4.00	3.67	4.19	3.56	4.57	3.73	5.36	4.19
Stdv	3.85	3.26	4.11	3.42	4.95	3.66	6.06	4.14
Percentiles								
1%	0	0	0	0	0	0	0	0
5%	0	0	0	0	0	0	0	0
10%	1	1	1	0	0	0	0	0
20%	1	1	1	1	1	1	1	1
30%	2	2	2	1	1	1	1	2
40%	2	2	3	2	2	2	2	3
50%	3	3	3	3	4	3	4	3
60%	4	4	4	4	5	4	5	4
70%	5	5	5	4	5	5	6	5
80%	6	6	6	5	7	6	7	6
90%	7	7	8	7	9	7	14	8
95%	11	8	12	9	14	11	20	11
99%	21	17	21	19	26	18	26	24
N	**1 923**	**2 527**	**588**	**626**	**566**	**1 256**	**231**	**452**

Sales								
	Sweden				Germany			
	Entire Sample		Unique Sample		Entire Sample		Unique Sample	
	Pre Law	Post Law	Pre Law	Post Law	Pre Law	Post Law	Pre Law	Post Law
Mean	4.38	4.03	5.04	3.95	4.45	4.50	5.53	4.83
Stdv	3.79	3.22	4.72	3.54	4.63	4.01	5.77	4.71
Percentiles								
1%	0	0	0	0	0	0	0	0
5%	0	0	1	0	0	0	0	0
10%	1	1	1	1	1	1	1	1
20%	1	1	2	1	1	1	1	1
30%	2	2	2	2	2	2	2	2
40%	3	3	3	3	2	3	3	3
50%	4	4	4	3	3	4	4	4
60%	5	4	5	4	4	5	5	5
70%	6	5	6	5	5	6	6	6
80%	6	6	7	6	6	6	7	7
90%	7	7	11	7	9	8	14	9
95%	11	9	15	10	14	12	20	14
99%	21	17	25	21	26	23	29	25
N	**1 633**	**2 051**	**438**	**474**	**740**	**1 005**	**289**	**444**

Table 13.

Cumulative Abnormal Returns Prior to the Law Change in Sweden

	CAR[-5,-1]	CAR[0,0]	CAR[0,2]	CAR[0,4]	Df
Purchases					
Unique Sample					
Coeff.	**0.08%**	**0.22%**	**0.48%**	**0.48%**	**558**
J-statistic	0.19	1.14	1.44	1.13	
p-value*	0.850	0.126	0.074	0.129	
Entire Sample					
Coeff.	**0.34%**	**0.21%**	**0.40%**	**0.54%**	**1767**
J-statistic	1.61	2.20	2.42	2.58	
p-value	0.108	0.014	0.008	0.005	
Sales					
Unique Sample					
Coeff.	**0.06%**	**-0.49%**	**-0.79%**	**-1.18%**	**404**
J-statistic	0.07	-1.31	-1.21	-1.41	
p-value	0.944	0.095	0.113	0.080	
Entire Sample					
Coeff.	**0.35%**	**-0.46%**	**-0.92%**	**-1.42%**	**1543**
J-statistic	0.95	-2.74	-3.19	-3.82	
p-value	0.342	0.003	0.001	0.000	

* A one-sided significance test is used for event windows after the announcement date, testing for postive abnormal returns for purchases and testing for negative abnormal returns for sales. A two-sided test is used for the event window CAR[-5.-1] since we test for abnormal returns different from zero. The test statistic used is J_1 (eq. 12).

Table 14.

Cumulative Abnormal Returns Prior to the Law Change by Insider Type in Sweden

	Purchases					Sales				
	CAR[-5,-1]	CAR[0,0]	CAR[0,2]	CAR[0,4]	Df	CAR[-5,-1]	CAR[0,0]	CAR[0,2]	CAR[0,4]	Df
Unique Sample										
Managment	**0.58%**	**0.23%**	**0.25%**	**0.37%**	**117**	**-0.29%**	**-0.56%**	**-0.91%**	**-1.13%**	**82**
J-statistic	0.78	0.70	0.43	0.49		-0.22	-0.93	-0.86	-0.83	
p-value*	0.438	0.243	0.333	0.311		0.828	0.177	0.194	0.203	
Directors	**-0.31%**	**0.27%**	**0.36%**	**0.57%**	**308**	**-0.59%**	**-0.50%**	**-1.24%**	**-1.38%**	**169**
J-statistic	-0.47	0.89	0.71	0.86		-0.47	-0.90	-1.28	-1.10	
p-value*	0.640	0.186	0.240	0.194		0.638	0.184	0.101	0.135	
Large Owners	**-0.77%**	**0.81%**	**1.77%**	**1.26%**	**57**	**2.04%**	**-0.17%**	**-0.44%**	**-0.96%**	**77**
J-statistic	-0.58	1.35	1.71	0.94		1.29	-0.24	-0.36	-0.61	
p-value*	0.565	0.089	0.044	0.173		0.197	0.404	0.361	0.272	
Other	**0.42%**	**0.08%**	**0.19%**	**0.40%**	**143**	**1.22%**	**-0.45%**	**-0.63%**	**-0.85%**	**129**
J-statistic	0.67	0.27	0.38	0.64		1.64	-1.36	-1.10	-1.14	
p-value*	0.502	0.394	0.352	0.261		0.101	0.086	0.136	0.128	
Entire Sample										
Managment	**0.34%**	**0.28%**	**0.16%**	**0.42%**	**426**	**0.01%**	**-0.44%**	**-1.12%**	**-1.49%**	**308**
J-statistic	0.98	1.83	0.58	1.23		0.02	-1.93	-2.85	-2.93	
p-value*	0.325	0.034	0.279	0.110		0.983	0.027	0.002	0.002	
Directors	**0.08%**	**0.26%**	**0.39%**	**0.67%**	**852**	**0.34%**	**-0.60%**	**-1.03%**	**-1.45%**	**679**
J-statistic	0.23	1.63	1.40	1.86		0.55	-2.16	-2.13	-2.31	
p-value*	0.822	0.052	0.081	0.032		0.582	0.016	0.017	0.010	
Large Owners	**0.63%**	**0.50%**	**0.83%**	**0.78%**	**251**	**0.50%**	**-0.33%**	**-0.72%**	**-1.20%**	**364**
J-statistic	0.88	1.56	1.50	1.10		0.92	-1.35	-1.69	-2.20	
p-value*	0.378	0.059	0.067	0.136		0.358	0.089	0.045	0.014	
Other	**0.54%**	**0.18%**	**0.32%**	**0.54%**	**473**	**0.15%**	**-0.32%**	**-0.98%**	**-1.50%**	**444**
J-statistic	1.64	1.20	1.24	1.64		0.29	-1.37	-2.40	-2.83	
p-value*	0.101	0.115	0.107	0.051		0.770	0.085	0.008	0.002	

* A one-sided significance test is used for event windows after the announcement date, testing for postive abnormal returns for purchases and testing for negative abnormal returns for sales. Since the abnormal returns prior to the announcement date is expected to be zero, the event winow CAR[-5.-1] is tested with a two-sided significance test. The test statistic used is J_1 (eq. 12).

Table 15.

Cumulative Abnormal Returns for Purchases Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

	Purchases								
	Sweden			Germany			Difference-in-differences		
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)	(3)
Unique Sample									
CAR[0,4]	**0.48%**	**0.52%**	**0.04%**	**0.36%**	**1.10%**	**0.74%**	**-0.71%**	**-0.56%**	**-1.08%**
Test statistic	1.13	1.80	0.07	0.74	3.32	1.27	-1.11	-0.46	-1.55
p-value	0.129	0.036	0.528	0.229	0.000	0.898	0.133	0.322	0.061
df	558	571	984	208	407	405	1744	1659	1 372
CAR[0,2]	**0.48%**	**0.53%**	**0.05%**	**0.40%**	**0.89%**	**0.49%**	**-0.44%**	**-0.76%**	**-0.57%**
Test statistic	1.44	2.35	0.12	1.07	3.45	1.07	-0.84	-0.69	-1.00
p-value	0.075	0.010	0.547	0.143	0.000	0.858	0.201	0.246	0.159
df	558	571	984	208	407	405	1744	1698	1 372
CAR[0,0]	**0.22%**	**0.62%**	**0.41%**	**-0.01%**	**0.51%**	**0.53%**	**-0.12%**	**-0.03%**	**0.02%**
Test statistic	1.14	4.83	1.76	-0.06	3.48	2.02	-0.34	-0.09	0.04
p-value	0.127	0.000	0.961	0.523	0.000	0.978	0.365	0.465	0.516
df	558	571	984	209	409	407	1747	1719	1 375
CAR[-5,0]	**0.08%**	**0.08%**	**0.00%**	**-0.25%**	**-0.66%**	**-0.42%**	**0.42%**	**0.31%**	**0.79%**
Test statistic	0.19	0.28	0.00	-0.51	-2.01	-0.71	0.49	0.34	0.86
p-value	0.850	0.779	1.000	0.609	0.045	0.475	0.627	0.735	0.391
df	558	571	984	209	409	407	1747	1579	1 375
Entire Sample									
CAR[0,4]	**0.54%**	**0.77%**	**0.23%**	**0.63%**	**0.95%**	**0.32%**	**-0.08%**	**0.46%**	**-0.25%**
Test statistic	2.58	5.88	0.93	2.14	5.02	0.90	-0.23	0.59	-0.63
p-value	0.005	0.000	0.823	0.016	0.000	0.816	0.409	0.723	0.263
df	1767	2285	3057	521	1134	961	5707	5411	4 298
CAR[0,2]	**0.40%**	**0.59%**	**0.20%**	**0.46%**	**0.64%**	**0.17%**	**0.02%**	**0.59%**	**0.06%**
Test statistic	2.42	5.80	1.02	2.02	4.35	0.64	0.08	0.82	0.20
p-value	0.008	0.000	0.846	0.022	0.000	0.738	0.531	0.795	0.578
df	1767	2285	3057	521	1134	961	5707	5541	4 298
CAR[0,0]	**0.21%**	**0.34%**	**0.13%**	**0.04%**	**0.29%**	**0.25%**	**-0.12%**	**-0.09%**	**0.01%**
Test statistic	2.20	5.70	1.15	0.32	3.44	1.58	-0.61	-0.39	0.04
p-value	0.014	0.000	0.876	0.373	0.000	0.943	0.271	0.348	0.518
df	1767	2285	3057	522	1136	963	5710	5608	4 301
CAR[-5,0]	**0.34%**	**0.08%**	**-0.26%**	**0.10%**	**-1.03%**	**-1.13%**	**0.87%**	**0.74%**	**1.38%**
Test statistic	1.61	0.61	-1.04	0.32	-5.46	-3.22	1.82	1.46	2.65
p-value	0.108	0.542	0.297	0.746	0.000	0.001	0.068	0.144	0.008
df	1767	2285	3057	522	1136	963	5710	5152	4 301

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including all insider types in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events. (3) attempts to make the countries as comparable as possible. This is achived by excluding two insider groups; Large Owners and Others. Large Owner transactions are excluded from the Swedish data since they are reported to FI but not to BaFin. The group Others is excluded in both countries since the group is treated differently between the two countries. In Sweden the group Others stand for approximately 30% of all transactions whereas the group only stands for about 4% of the transactions in Germany.

Table 16.

Cumulative Abnormal Returns for Sales Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-in-differences Between the Countries

	Sales								
	Sweden			Germany			Difference-in-differences		
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)	(3)
Unique Sample									
CAR[0,4]	**-1.18%**	**-1.06%**	**0.12%**	**-0.61%**	**-0.44%**	**0.17%**	**-0.05%**	**-0.35%**	**0.05%**
Test statistic	-1.41	-3.13	0.13	-1.32	-1.32	0.30	-0.08	-0.28	0.06
p-value	0.080	0.001	0.447	0.093	0.094	0.380	0.532	0.610	0.476
df	404	423	533	262	402	514	1491	1413	1 085
CAR[0,2]	**-0.79%**	**-0.85%**	**-0.06%**	**-0.63%**	**-0.30%**	**0.33%**	**-0.39%**	**-0.46%**	**-0.11%**
Test statistic	-1.21	-3.23	-0.08	-1.76	-1.17	0.74	-0.74	-0.40	-0.18
p-value	0.113	0.001	0.534	0.040	0.121	0.229	0.770	0.655	0.571
df	404	423	533	262	402	514	1491	1442	1 085
CAR[0,0]	**-0.49%**	**-0.48%**	**0.01%**	**-0.55%**	**-0.12%**	**0.42%**	**-0.41%**	**0.09%**	**-0.38%**
Test statistic	-1.31	-3.16	0.03	-2.64	-0.83	1.66	-1.24	0.28	-0.97
p-value	0.095	0.001	0.486	0.004	0.203	0.049	0.892	0.390	0.835
df	404	423	533	262	402	514	1491	1466	1 085
CAR[-5,0]	**0.06%**	**0.14%**	**0.08%**	**1.17%**	**0.71%**	**-0.46%**	**0.54%**	**0.58%**	**0.89%**
Test statistic	0.07	0.40	0.08	2.53	2.13	-0.81	0.73	0.74	1.02
p-value	0.944	0.690	0.933	0.012	0.034	0.418	0.466	0.458	0.307
df	404	423	533	262	402	514	1491	1364	1 085
Entire Sample									
CAR[0,4]	**-1.42%**	**-1.04%**	**0.38%**	**-0.75%**	**-0.72%**	**0.03%**	**0.35%**	**1.06%**	**0.36%**
Test statistic	-3.82	-6.32	0.93	-2.68	-3.32	0.09	0.81	1.33	0.72
p-value	0.000	0.000	0.176	0.004	0.000	0.466	0.209	0.091	0.237
df	1543	1786	2136	687	922	1387	4938	4696	3 354
CAR[0,2]	**-0.92%**	**-0.77%**	**0.15%**	**-0.57%**	**-0.58%**	**0.00%**	**0.15%**	**0.70%**	**0.18%**
Test statistic	-3.19	-6.04	0.47	-2.63	-3.42	-0.02	0.44	0.94	0.45
p-value	0.001	0.000	0.319	0.004	0.000	0.507	0.329	0.173	0.326
df	1543	1786	2136	687	922	1387	4938	4786	3 354
CAR[0,0]	**-0.46%**	**-0.29%**	**0.17%**	**-0.35%**	**-0.13%**	**0.22%**	**-0.05%**	**0.07%**	**0.06%**
Test statistic	-2.74	-3.92	0.92	-2.79	-1.33	1.39	-0.24	0.33	0.22
p-value	0.003	0.000	0.179	0.003	0.091	0.083	0.596	0.371	0.413
df	1543	1786	2136	687	922	1387	4938	4862	3 354
CAR[-5,0]	**0.35%**	**0.38%**	**0.03%**	**1.18%**	**0.39%**	**-0.78%**	**0.81%**	**0.95%**	**0.79%**
Test statistic	0.95	2.31	0.06	4.20	1.81	-2.21	1.70	1.86	1.40
p-value	0.342	0.021	0.949	0.000	0.070	0.027	0.089	0.063	0.161
df	1543	1786	2136	687	922	1387	4938	4525	3 354

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including all insider types in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events. (3) attempts to make the countries as comparable as possible. This is achived by excluding two insider groups; Large Owners and Others. Large Owner transactions are excluded from the Swedish data since they are reported to FI but not to BaFin. The group Others is excluded in both countries since the group is treated differently between the two countries. In Sweden the group Others stand for approximately 30% of all transactions whereas the group only stands for about 4% of the transactions in Germany.

Table 17.

Cumulative Abnormal Returns for CEO's Purchases Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

CEO	Purchases							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	0.37%	-0.08%	-0.45%	-0.03%	1.10%	1.12%	-1.57%	-1.16%
Test statistic	0.49	-0.12	-0.45	-0.04	2.65	1.52	-1.59	-0.64
p-value	0.313	0.549	0.327	0.516	0.004	0.936	0.057	0.261
df	117	127	238	131	252	252	627	600
CAR[0,2]	0.25%	0.16%	-0.09%	0.37%	0.55%	0.18%	-0.28%	-0.74%
Test statistic	0.43	0.31	-0.12	0.78	1.72	0.32	-0.33	-0.43
p-value	0.334	0.379	0.453	0.218	0.043	0.627	0.370	0.332
df	117	127	238	131	252	252	627	611
CAR[0,0]	0.23%	0.76%	0.53%	0.12%	0.44%	0.32%	0.21%	-0.14%
Test statistic	0.69	2.56	1.18	0.45	2.40	0.98	0.38	-0.21
p-value	0.245	0.006	0.881	0.328	0.009	0.836	0.646	0.417
df	117	127	238	132	254	254	630	620
CAR[-5,-1]	0.58%	-0.08%	-0.66%	-0.64%	-0.82%	-0.17%	-0.48%	-0.73%
Test statistic	0.77	-0.12	-0.66	-1.06	-1.98	-0.24	-0.35	-0.49
p-value	0.441	0.904	0.511	0.291	0.049	0.812	0.724	0.627
df	117	127	238	132	254	254	630	565
Entire sample								
CAR[0,4]	0.42%	0.11%	-0.32%	0.58%	1.01%	0.43%	-0.75%	0.52%
Test statistic	1.22	0.40	-0.72	1.52	3.85	0.93	-1.35	0.46
p-value	0.111	0.346	0.237	0.065	0.000	0.823	0.088	0.676
df	426	488	838	288	630	566	1 832	1 738
CAR[0,2]	0.16%	0.10%	-0.06%	0.50%	0.47%	-0.03%	-0.04%	0.92%
Test statistic	0.58	0.45	-0.18	1.69	2.34	-0.07	-0.08	0.87
p-value	0.280	0.326	0.429	0.046	0.010	0.472	0.469	0.808
df	426	488	838	288	630	566	1 832	1 778
CAR[0,0]	0.28%	0.33%	0.04%	0.08%	0.27%	0.19%	-0.15%	0.10%
Test statistic	1.83	2.68	0.23	0.47	2.34	0.93	-0.49	0.26
p-value	0.034	0.004	0.590	0.318	0.010	0.824	0.312	0.604
df	426	488	838	289	632	568	1 835	1 797
CAR[-5,-1]	0.34%	0.30%	-0.04%	-0.57%	-1.45%	-0.88%	0.84%	0.60%
Test statistic	0.98	1.10	-0.09	-1.48	-5.54	-1.91	1.11	0.73
p-value	0.326	0.272	0.927	0.139	0.000	0.056	0.267	0.466
df	426	488	838	289	632	568	1 835	1 637

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Table 18.

Cumulative Abnormal Returns for CEO's Sales Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

CEO	Sales							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	-1.13%	-1.29%	-0.17%	-0.47%	-0.71%	-0.25%	0.08%	1.29%
Test statistic	-0.82	-1.86	-0.11	-0.78	-1.50	-0.32	0.08	0.64
p-value	0.206	0.033	0.543	0.219	0.068	0.627	0.467	0.261
df	82	85	122	147	202	303	516	492
CAR[0,2]	-0.91%	-1.26%	-0.36%	-0.42%	-0.62%	-0.20%	-0.16%	-0.46%
Test statistic	-0.86	-2.35	-0.30	-0.91	-1.68	-0.33	-0.20	-0.23
p-value	0.197	0.011	0.618	0.183	0.047	0.631	0.578	0.592
df	82	85	122	147	202	303	516	502
CAR[0,0]	-0.56%	-0.48%	0.08%	-0.66%	-0.21%	0.45%	-0.37%	-0.66%
Test statistic	-0.92	-1.56	0.12	-2.47	-1.00	1.31	-0.65	-1.20
p-value	0.179	0.062	0.454	0.007	0.160	0.095	0.741	0.885
df	82	85	122	147	202	303	516	510
CAR[-5,-1]	-0.29%	-0.25%	0.04%	1.22%	0.57%	-0.65%	0.70%	0.29%
Test statistic	-0.22	-0.36	0.03	2.03	1.19	-0.85	0.55	0.22
p-value	0.830	0.719	0.977	0.044	0.236	0.394	0.580	0.828
df	82	85	122	147	202	303	516	470
Entire Sample								
CAR[0,4]	-1.49%	-0.81%	0.68%	-0.85%	-0.47%	0.39%	0.30%	1.82%
Test statistic	-2.93	-2.34	1.11	-2.22	-1.49	0.78	0.43	1.52
p-value	0.002	0.010	0.133	0.014	0.068	0.218	0.332	0.064
df	308	400	564	333	453	696	1 494	1 420
CAR[0,2]	-1.12%	-0.54%	0.58%	-0.68%	-0.47%	0.21%	0.37%	1.21%
Test statistic	-2.84	-2.02	1.22	-2.29	-1.95	0.55	0.72	1.06
p-value	0.002	0.022	0.111	0.011	0.026	0.291	0.235	0.144
df	308	400	564	333	453	696	1 494	1 448
CAR[0,0]	-0.44%	-0.32%	0.12%	-0.51%	-0.17%	0.34%	-0.22%	0.17%
Test statistic	-1.93	-2.05	0.44	-2.95	-1.19	1.54	-0.65	0.52
p-value	0.028	0.020	0.329	0.002	0.117	0.062	0.741	0.301
df	308	400	564	333	453	696	1 494	1 475
CAR[-5,-1]	0.01%	0.22%	0.21%	1.54%	0.18%	-1.36%	1.58%	1.65%
Test statistic	0.02	0.65	0.35	4.01	0.56	-2.76	2.07	2.02
p-value	0.983	0.516	0.728	0.000	0.572	0.006	0.039	0.044
df	308	400	564	333	453	696	1 494	1 351

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Table 19.

Cumulative Abnormal Returns for Director's Purchases Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

Director	Purchases							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	0.57%	0.22%	-0.36%	0.76%	1.10%	0.34%	-0.70%	0.45%
Test statistic	0.86	0.48	-0.45	0.93	1.92	0.34	-0.72	0.24
p-value	0.194	0.314	0.327	0.179	0.028	0.632	0.237	0.595
df	308	287	531	69	149	137	813	775
CAR[0,2]	0.36%	0.30%	-0.07%	0.31%	1.40%	1.10%	-1.17%	-0.44%
Test statistic	0.70	0.86	-0.11	0.48	3.18	1.42	-1.49	-0.26
p-value	0.241	0.196	0.457	0.316	0.001	0.921	0.069	0.396
df	308	287	531	69	149	137	813	792
CAR[0,0]	0.27%	0.71%	0.45%	-0.14%	0.62%	0.76%	-0.31%	-0.25%
Test statistic	0.89	3.58	1.25	-0.37	2.45	1.70	-0.61	-0.47
p-value	0.186	0.000	0.894	0.644	0.008	0.955	0.270	0.319
df	308	287	531	69	149	137	813	803
CAR[-5,-1]	-0.31%	0.42%	0.73%	0.51%	-0.39%	-0.91%	1.63%	1.65%
Test statistic	-0.47	0.94	0.91	0.63	-0.69	-0.91	1.39	1.34
p-value	0.641	0.350	0.364	0.533	0.490	0.365	0.163	0.180
df	308	287	531	69	149	137	813	752
Entire Sample								
CAR[0,4]	0.67%	0.78%	0.11%	0.59%	0.84%	0.25%	-0.14%	1.90%
Test statistic	1.86	3.95	0.27	1.17	3.00	0.43	-0.25	1.52
p-value	0.032	0.000	0.608	0.121	0.001	0.668	0.402	0.935
df	852	1 185	1 356	207	482	341	2 726	2 602
CAR[0,2]	0.39%	0.74%	0.35%	0.35%	0.81%	0.46%	-0.11%	2.29%
Test statistic	1.40	4.82	1.10	0.90	3.73	1.02	-0.23	1.99
p-value	0.081	0.000	0.864	0.183	0.000	0.846	0.408	0.977
df	852	1 185	1 356	207	482	341	2 726	2 652
CAR[0,0]	0.26%	0.52%	0.25%	0.05%	0.29%	0.25%	0.01%	-0.18%
Test statistic	1.63	5.81	1.38	0.20	2.31	0.95	0.03	-0.61
p-value	0.052	0.000	0.916	0.421	0.011	0.828	0.512	0.271
df	852	1 185	1 356	207	482	341	2 726	2 684
CAR[-5,-1]	0.08%	0.37%	0.28%	1.17%	-0.47%	-1.64%	1.93%	1.83%
Test statistic	0.22	1.84	0.69	2.33	-1.68	-2.85	2.92	2.68
p-value	0.822	0.065	0.489	0.021	0.093	0.005	0.004	0.008
df	852	1 185	1 356	207	482	341	2 726	2 531

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Table 20.

Cumulative Abnormal Returns for Director's Sales Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

Director	Sales							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	-1.38%	-0.95%	0.43%	-0.62%	-0.21%	0.41%	0.01%	-2.18%
Test statistic	-1.10	-1.60	0.31	-0.83	-0.41	0.46	0.01	-0.99
p-value	0.136	0.055	0.379	0.203	0.341	0.322	0.495	0.840
df	169	166	241	106	184	200	625	589
CAR[0,2]	-1.24%	-0.84%	0.40%	-0.67%	0.01%	0.69%	-0.28%	-1.90%
Test statistic	-1.27	-1.82	0.37	-1.17	0.03	0.99	-0.34	-0.98
p-value	0.102	0.036	0.355	0.123	0.513	0.163	0.631	0.837
df	169	166	241	106	184	200	625	599
CAR[0,0]	-0.50%	-0.45%	0.06%	-0.34%	-0.04%	0.29%	-0.24%	0.42%
Test statistic	-0.90	-1.68	0.09	-1.01	-0.19	0.73	-0.50	0.75
p-value	0.185	0.047	0.464	0.158	0.424	0.234	0.692	0.228
df	169	166	241	106	184	200	625	610
CAR[-5,-1]	-0.59%	0.13%	0.72%	0.83%	1.06%	0.23%	0.49%	0.58%
Test statistic	-0.47	0.21	0.52	1.11	2.11	0.26	0.43	0.49
p-value	0.640	0.830	0.606	0.268	0.036	0.797	0.668	0.625
df	169	166	241	106	184	200	625	579
Entire Sample								
CAR[0,4]	-1.45%	-1.20%	0.25%	-0.61%	-1.01%	-0.40%	0.65%	0.73%
Test statistic	-2.31	-4.16	0.36	-1.37	-3.01	-0.73	0.97	0.55
p-value	0.011	0.000	0.361	0.085	0.001	0.766	0.166	0.291
df	679	717	958	316	416	626	2 128	2 055
CAR[0,2]	-1.03%	-1.04%	-0.01%	-0.39%	-0.74%	-0.35%	0.33%	0.27%
Test statistic	-2.12	-4.67	-0.03	-1.14	-2.84	-0.81	0.59	0.22
p-value	0.017	0.000	0.511	0.128	0.002	0.790	0.279	0.413
df	679	717	958	316	416	626	2 128	2 082
CAR[0,0]	-0.60%	-0.29%	0.31%	-0.20%	-0.11%	0.09%	0.22%	-0.06%
Test statistic	-2.15	-2.27	1.00	-0.99	-0.72	0.35	0.61	-0.17
p-value	0.016	0.012	0.158	0.162	0.235	0.363	0.271	0.569
df	679	717	958	316	416	626	2 128	2 103
CAR[-5,-1]	0.34%	0.46%	0.12%	0.66%	0.58%	-0.07%	0.19%	0.30%
Test statistic	0.55	1.60	0.17	1.49	1.74	-0.14	0.26	0.39
p-value	0.583	0.111	0.866	0.138	0.083	0.893	0.798	0.700
df	679	717	958	316	416	626	2 128	2 015

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Table 21.

Cumulative Abnormal Returns for Others' Purchases Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

Others	Purchases							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	0.40%	0.87%	0.46%	3.56%	1.55%	-2.01%	2.47%	-0.35%
Test statistic	0.64	1.98	0.60	1.07	0.69	-0.50	0.57	-0.05
p-value	0.262	0.025	0.726	0.163	0.265	0.315	0.714	0.479
df	143	183	265	6	4	10	336	316
CAR[0,2]	0.19%	0.63%	0.44%	1.93%	2.21%	0.28%	0.17%	-1.84%
Test statistic	0.38	1.84	0.74	0.75	1.26	0.09	0.06	-0.30
p-value	0.353	0.034	0.770	0.241	0.138	0.534	0.523	0.382
df	143	183	265	6	4	10	336	326
CAR[0,0]	0.08%	0.50%	0.42%	-1.31%	0.90%	2.21%	-1.78%	1.45%
Test statistic	0.27	2.54	1.22	-0.88	0.89	1.22	-1.06	0.98
p-value	0.394	0.006	0.889	0.793	0.212	0.875	0.145	0.837
df	143	183	265	6	4	10	336	328
CAR[-5,-1]	0.42%	-0.23%	-0.65%	-0.33%	-0.95%	-0.62%	-0.03%	-0.14%
Test statistic	0.67	-0.51	-0.84	-0.10	-0.42	-0.15	-0.01	-0.03
p-value	0.505	0.608	0.400	0.923	0.695	0.881	0.994	0.979
df	143	183	265	6	4	10	336	293
Entire Sample								
CAR[0,4]	0.54%	0.58%	0.04%	1.58%	1.51%	-0.07%	0.11%	0.69%
Test statistic	1.64	2.64	0.10	1.60	1.75	-0.05	0.07	0.27
p-value	0.051	0.004	0.539	0.061	0.048	0.479	0.529	0.606
df	473	639	859	24	20	44	1 156	1 076
CAR[0,2]	0.32%	0.32%	0.00%	0.94%	1.50%	0.56%	-0.56%	0.65%
Test statistic	1.24	1.89	0.01	1.23	2.24	0.55	-0.51	0.26
p-value	0.107	0.029	0.505	0.115	0.018	0.708	0.306	0.602
df	473	639	859	24	20	44	1 156	1 114
CAR[0,0]	0.18%	0.08%	-0.10%	-0.42%	0.77%	1.19%	-1.29%	-0.48%
Test statistic	1.20	0.82	-0.54	-0.96	1.99	2.03	-2.06	-0.84
p-value	0.116	0.205	0.294	0.826	0.030	0.976	0.020	0.201
df	473	639	859	24	20	44	1 156	1 129
CAR[-5,-1]	0.54%	-0.71%	-1.26%	-1.20%	-1.23%	-0.03%	-1.22%	-1.02%
Test statistic	1.64	-3.22	-3.15	-1.21	-1.42	-0.02	-0.85	-0.58
p-value	0.102	0.001	0.002	0.236	0.171	0.981	0.393	0.564
df	473	639	859	24	20	44	1 156	984

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Table 22.

Cumulative Abnormal Returns for Others' Sales Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

Others	Sales							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	-0.85%	-1.22%	-0.37%	-3.29%	0.37%	3.66%	-4.03%	2.83%
Test statistic	-1.13	-2.45	-0.41	-0.91	0.37	0.98	-2.94	1.05
p-value	0.130	0.008	0.660	0.195	0.642	0.178	0.998	0.148
df	129	180	235	7	14	8	330	311
CAR[0,2]	-0.63%	-0.81%	-0.17%	-4.02%	0.06%	4.09%	-4.26%	2.94%
Test statistic	-1.09	-2.10	-0.25	-1.44	0.08	1.41	-2.52	1.02
p-value	0.138	0.019	0.598	0.096	0.532	0.098	0.994	0.154
df	129	180	235	7	14	8	330	319
CAR[0,0]	-0.45%	-0.58%	-0.13%	-1.32%	0.06%	1.38%	-1.50%	2.57%
Test statistic	-1.36	-2.60	-0.31	-0.82	0.13	0.83	-2.61	1.44
p-value	0.088	0.005	0.622	0.220	0.552	0.216	0.995	0.075
df	129	180	235	7	14	8	330	326
CAR[-5,-1]	1.22%	0.24%	-0.98%	4.95%	-1.64%	-6.59%	5.61%	5.83%
Test statistic	1.64	0.49	-1.09	1.38	-1.65	-1.77	1.89	1.88
p-value	0.104	0.627	0.276	0.211	0.121	0.115	0.060	0.061
df	129	180	235	7	14	8	330	298
Entire Sample								
CAR[0,4]	-1.50%	-0.92%	0.58%	-1.06%	-0.62%	0.44%	0.14%	0.13%
Test statistic	-2.83	-4.30	1.02	-1.15	-1.26	0.42	0.15	0.10
p-value	0.002	0.000	0.155	0.130	0.106	0.337	0.441	0.460
df	444	763	591	36	51	56	1 294	1 208
CAR[0,2]	-0.98%	-0.61%	0.37%	-1.12%	-0.19%	0.92%	-0.55%	0.12%
Test statistic	-2.40	-3.71	0.84	-1.56	-0.51	1.14	-0.69	0.09
p-value	0.008	0.000	0.202	0.064	0.306	0.130	0.756	0.463
df	444	763	591	36	51	56	1 294	1 240
CAR[0,0]	-0.32%	-0.27%	0.05%	-0.26%	0.02%	0.28%	-0.22%	0.59%
Test statistic	-1.37	-2.83	0.21	-0.62	0.10	0.59	-0.61	1.01
p-value	0.085	0.002	0.415	0.271	0.540	0.278	0.728	0.156
df	444	763	591	36	51	56	1 294	1 266
CAR[-5,-1]	0.15%	0.35%	0.20%	2.34%	0.79%	-1.56%	1.75%	1.65%
Test statistic	0.29	1.66	0.35	2.53	1.60	-1.48	1.68	1.47
p-value	0.771	0.098	0.728	0.016	0.115	0.144	0.094	0.141
df	444	763	591	36	51	56	1 294	1 152

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Table 23.

Cumulative Abnormal Returns for CEOs and Directors Purchases Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

CD	Purchases							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	0.40%	0.17%	-0.23%	0.25%	1.10%	0.85%	-1.08%	-0.10%
Test statistic	0.73	0.46	-0.34	0.51	3.28	1.44	-1.55	-0.08
p-value	0.234	0.323	0.367	0.306	0.001	0.924	0.061	0.469
df	389	380	684	201	402	392	1 372	1 307
CAR[0,2]	0.34%	0.29%	-0.04%	0.35%	0.87%	0.52%	-0.57%	-0.28%
Test statistic	0.79	1.01	-0.08	0.92	3.35	1.14	-1.00	-0.23
p-value	0.216	0.157	0.467	0.180	0.000	0.873	0.159	0.408
df	389	380	684	201	402	392	1 372	1 335
CAR[0,0]	0.21%	0.70%	0.49%	0.03%	0.51%	0.48%	0.02%	-0.12%
Test statistic	0.85	4.16	1.65	0.15	3.41	1.81	0.04	-0.28
p-value	0.199	0.000	0.950	0.441	0.000	0.965	0.516	0.390
df	389	380	684	202	404	394	1 375	1 355
CAR[-5,-1]	-0.16%	0.22%	0.38%	-0.24%	-0.66%	-0.42%	0.79%	0.84%
Test statistic	-0.28	0.59	0.56	-0.50	-1.98	-0.71	0.86	0.85
p-value	0.779	0.558	0.574	0.617	0.049	0.480	0.391	0.398
df	389	380	684	202	404	394	1 375	1 254
Entire Sample								
CAR[0,4]	0.53%	0.63%	0.10%	0.58%	0.94%	0.35%	-0.25%	0.99%
Test statistic	1.88	3.77	0.30	1.91	4.88	0.98	-0.63	1.16
p-value	0.030	0.000	0.618	0.028	0.000	0.835	0.263	0.878
df	1 148	1 541	1 916	496	1 113	900	4 298	4 086
CAR[0,2]	0.32%	0.57%	0.24%	0.44%	0.62%	0.18%	0.06%	1.33%
Test statistic	1.47	4.37	0.96	1.85	4.17	0.65	0.20	1.69
p-value	0.071	0.000	0.832	0.033	0.000	0.741	0.578	0.954
df	1 148	1 541	1 916	496	1 113	900	4 298	4 174
CAR[0,0]	0.21%	0.44%	0.22%	0.07%	0.28%	0.21%	0.01%	-0.02%
Test statistic	1.68	5.85	1.53	0.48	3.28	1.33	0.04	-0.07
p-value	0.047	0.000	0.937	0.315	0.001	0.908	0.518	0.473
df	1 148	1 541	1 916	497	1 115	902	4 301	4 223
CAR[-5,-1]	0.14%	0.33%	0.19%	0.16%	-1.03%	-1.19%	1.38%	1.25%
Test statistic	0.49	1.96	0.58	0.53	-5.36	-3.29	2.65	2.27
p-value	0.626	0.050	0.563	0.600	0.000	0.001	0.008	0.023
df	1 148	1 541	1 916	497	1 115	902	4 301	3 927

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Table 24.

Cumulative Abnormal Returns for CEOs and Directors Sales Around Announcement in Sweden and Germany Pre and Post the Law Change, the Difference in Each Country and the Difference-In-Differences Between the Countries

CD	Sales							
	Sweden			Germany			Difference-in-differences	
	Pre Law	Post Law	Change	Pre Law	Post Law	Change	(1)	(2)
Unique Sample								
CAR[0,4]	-1.26%	-1.15%	0.11%	-0.53%	-0.47%	0.06%	0.05%	-1.11%
Test statistic	-1.18	-2.38	0.09	-1.14	-1.37	0.10	0.06	-0.77
p-value	0.120	0.009	0.463	0.128	0.086	0.459	0.476	0.778
df	222	222	309	254	387	508	1 085	1 026
CAR[0,2]	-1.16%	-1.06%	0.10%	-0.53%	-0.32%	0.21%	-0.11%	-1.30%
Test statistic	-1.41	-2.84	0.11	-1.46	-1.19	0.46	-0.18	-0.97
p-value	0.081	0.003	0.456	0.073	0.117	0.321	0.571	0.833
df	222	222	309	254	387	508	1 085	1 046
CAR[0,0]	-0.58%	-0.56%	0.02%	-0.52%	-0.13%	0.39%	-0.38%	0.14%
Test statistic	-1.21	-2.60	0.03	-2.51	-0.85	1.51	-0.97	0.36
p-value	0.114	0.005	0.487	0.006	0.197	0.065	0.835	0.360
df	222	222	309	254	387	508	1 085	1 064
CAR[-5,-1]	-0.51%	0.12%	0.63%	1.06%	0.80%	-0.25%	0.89%	0.78%
Test statistic	-0.48	0.25	0.54	2.26	2.32	-0.44	1.02	0.86
p-value	0.631	0.806	0.590	0.025	0.021	0.662	0.307	0.390
df	222	222	309	254	387	508	1 085	994
Entire Sample								
CAR[0,4]	-1.46%	-1.08%	0.37%	-0.73%	-0.73%	0.01%	0.36%	0.95%
Test statistic	-2.81	-4.49	0.65	-2.51	-3.18	0.02	0.72	1.03
p-value	0.003	0.000	0.258	0.006	0.001	0.493	0.237	0.153
df	862	972	1 227	650	870	1 321	3 354	3 212
CAR[0,2]	-1.03%	-0.91%	0.12%	-0.54%	-0.60%	-0.06%	0.18%	0.50%
Test statistic	-2.58	-4.88	0.27	-2.39	-3.38	-0.20	0.45	0.58
p-value	0.005	0.000	0.393	0.009	0.000	0.581	0.326	0.282
df	862	972	1 227	650	870	1 321	3 354	3 264
CAR[0,0]	-0.59%	-0.31%	0.28%	-0.35%	-0.14%	0.22%	0.06%	0.09%
Test statistic	-2.53	-2.85	1.09	-2.72	-1.36	1.31	0.22	0.35
p-value	0.006	0.002	0.138	0.003	0.088	0.096	0.413	0.362
df	862	972	1 227	650	870	1 321	3 354	3 311
CAR[-5,-1]	0.31%	0.36%	0.05%	1.11%	0.37%	-0.74%	0.79%	0.84%
Test statistic	0.61	1.50	0.08	3.81	1.62	-2.00	1.40	1.42
p-value	0.544	0.134	0.933	0.000	0.105	0.046	0.161	0.156
df	862	972	1 227	650	870	1 321	3 354	3 103

The J_1-statistic is used to detect if the CARs are significant before and after the law respectively (eq. 12). The t_1 statistic is used for testing the change over time in CARs in Sweden and Germany respectively (eq. 13). The difference-in-diffferences test statistic (t_2) is obtained from the OLS regression (eq 15). For the difference-in-differences results: (1) is the base case scenario including the stated insider type in Sweden and Germany respectively. (2) Same as in (1) but controls for recommendation events.

Figure 1.

The Development of OMX and CDAX During the Examined period, Indexed at 100 in January 2003. On the Primary Axis the Number of Monthly Purchases, Sales and Net Trades are Shown for Sweden and Germany Respectively

Figure 1.1 Number of Monthly Purchases and Sales in Sweden (OMX on the secondary axis)

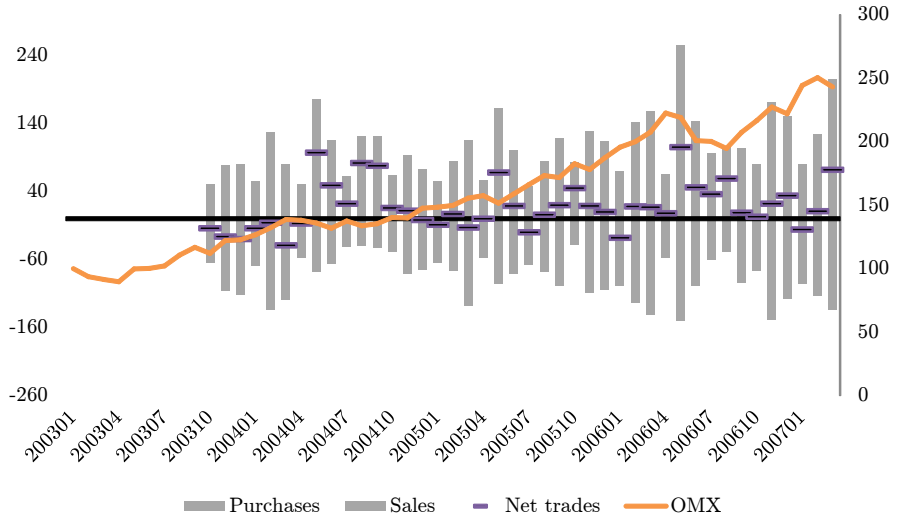


Figure 1.2 Number of Monthly Purchases and Sales in Germany (CDAX on the secondary axis)

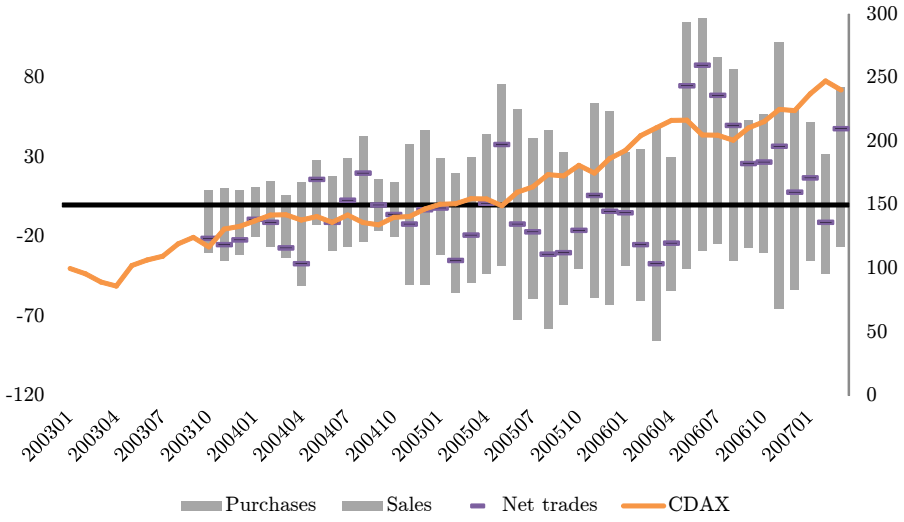


Figure 2.

Cumulative Abnormal Returns 20 Days Prior and Post the Announcement Day in Sweden Prior to the Law Change

Figure 2.1 CAR Prior to the Law Change(Indexed 20 Days Prior to the Announcement Day)

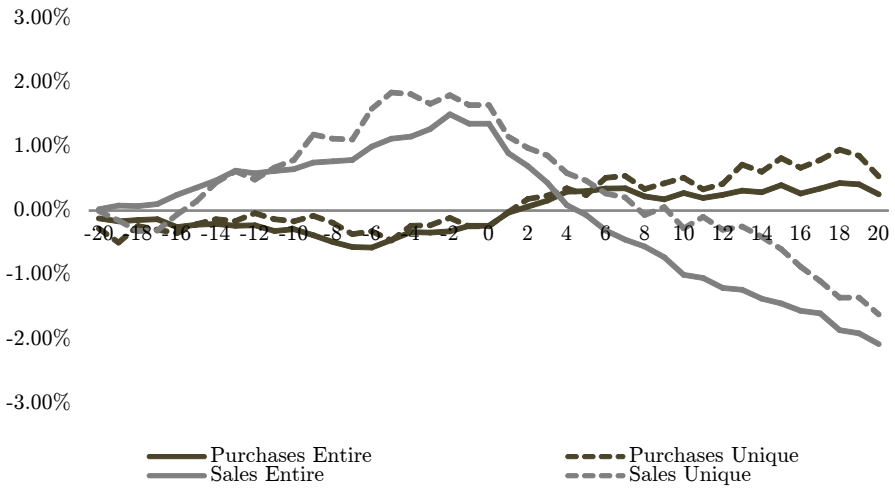


Figure 2.2 CAR Prior to the Law Change (Indexed on the Announcement Day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 3.

Cumulative Abnormal Returns 20 Days Prior and Post the Announcement Day in Germany Prior to the Law Change

Figure 3.1 CAR Prior to the Law Change (Indexed 20 Days Prior to the Announcement Day)

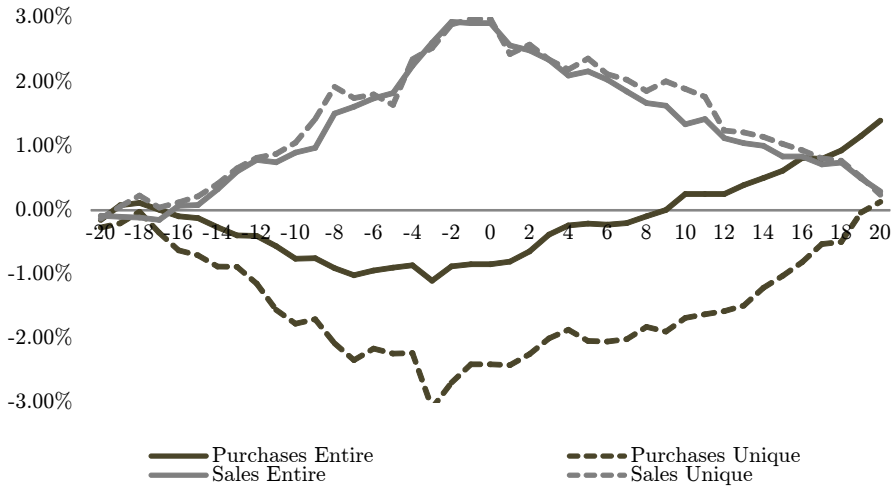


Figure 3.2 CAR Prior to the Law Change (Indexed on the Announcement Day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 4.

Cumulative Abnormal Returns for Purchases 20 days Prior and Post the Announcement day in Sweden Prior to the Law Change Using the Entire Sample

Figure 4.1 CAR Prior to the Law Change (Indexed 20 Days Prior to the Announcement Day)

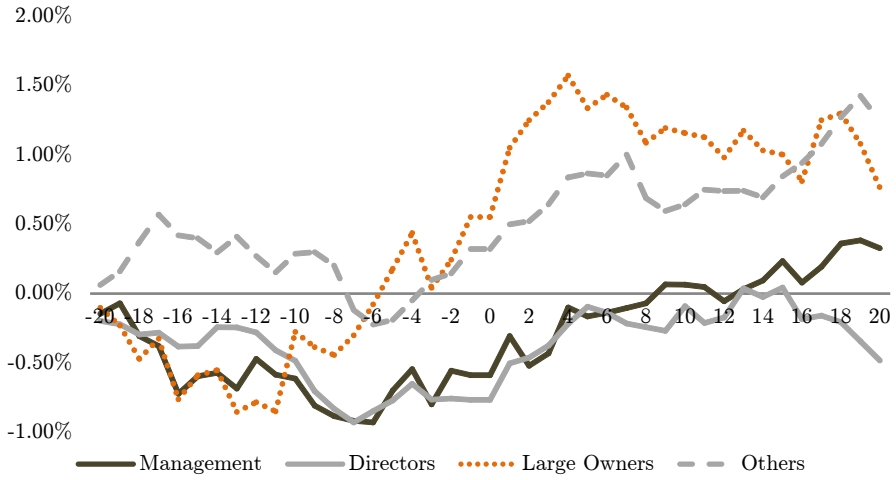
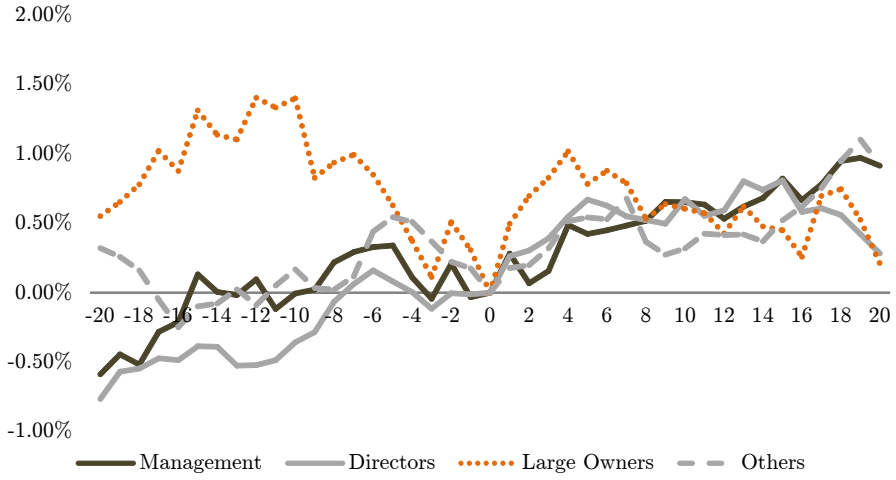


Figure 4.2 CAR Prior to the Law Change (Indexed on the Announcement Day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 5.

Cumulative Abnormal Returns for Sales 20 Days Prior and Post the Announcement Day in Sweden Prior to the Law Change Using the Entire Sample

Figure 5.1 CAR Prior to the Law Change (Indexed 20 Days Prior to the Announcement Day)

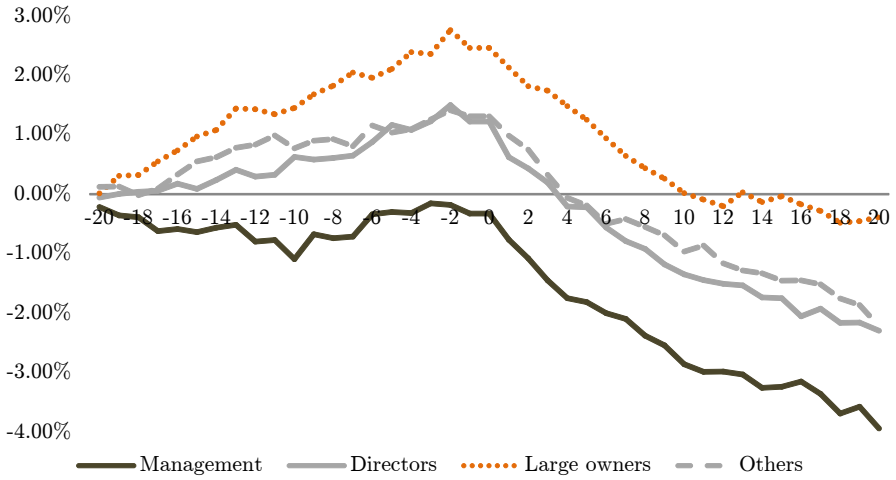
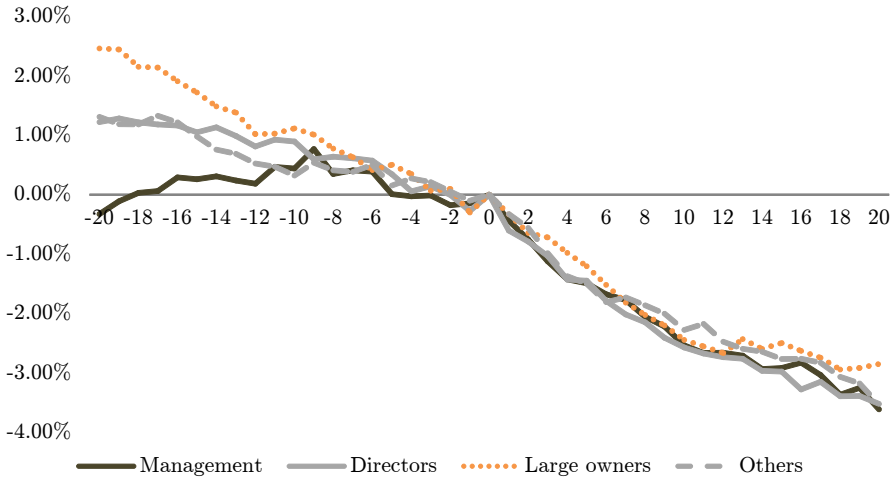


Figure 5.2 CAR Prior to the Law Change (Indexed on the Announcement Day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 6.

Cumulative Abnormal Returns 20 Days Prior and Post the Announcement Day in Sweden Prior and Post the Law Change Using the Entire Sample

Figure 6.1 CAR Pre and Post the Law Change (Indexed 20 Days Prior to the Announcement Day)

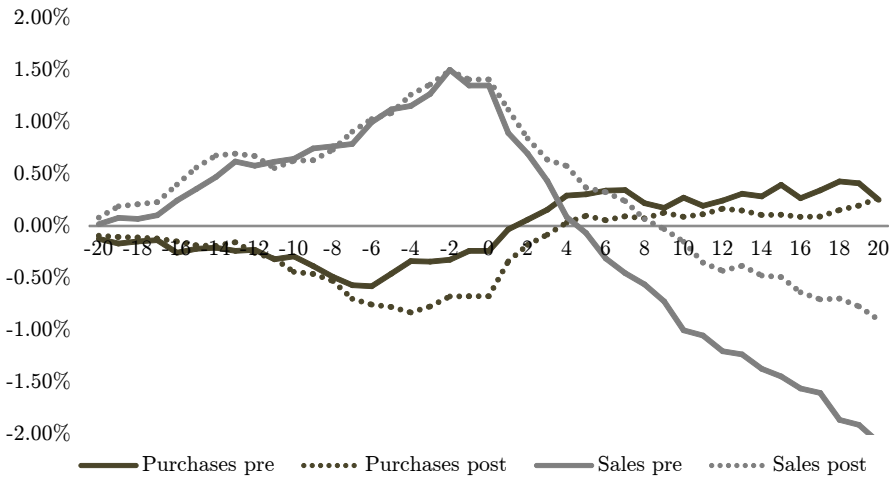


Figure 6.2 CAR Pre an Post the Law Change (Indexed on the Announcement Day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 7.

Cumulative Abnormal Returns 20 Days Prior and Post the Announcement Day in Sweden Prior and Post the Law Change Using the Unique Sample

Figure 7.1 CAR Pre and Post the Law Change (Indexed 20 Days Prior to the Announcement day)

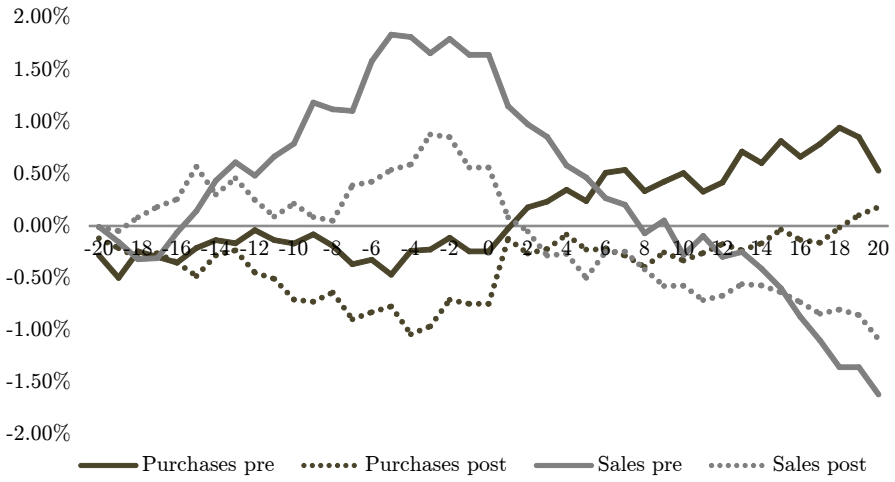
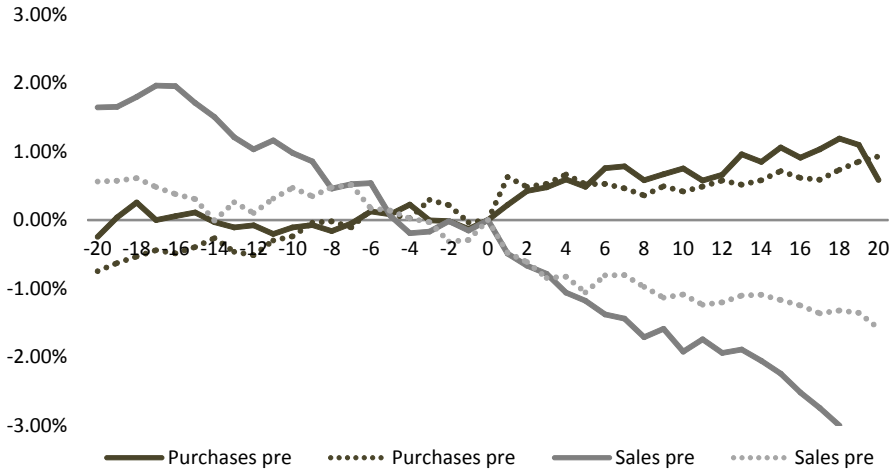


Figure 7.2 CAR Pre and Post the Law Change (Indexed on the Announcement day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 8.

Cumulative Abnormal Returns 20 Days Prior and Post the Announcement Day in Germany Pre and Post the Law Change Using the Entire Sample

Figure 8.1 CAR Pre and Post the Law Change (Indexed 20 days prior to the Announcement day)

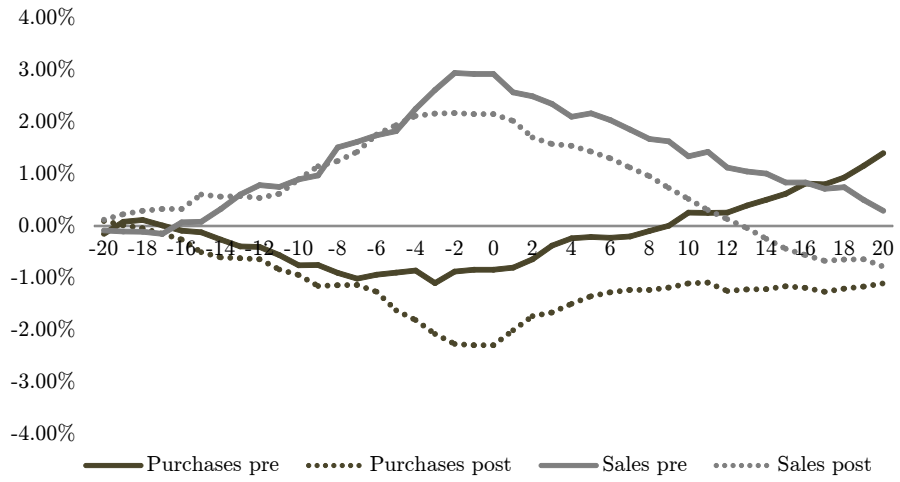
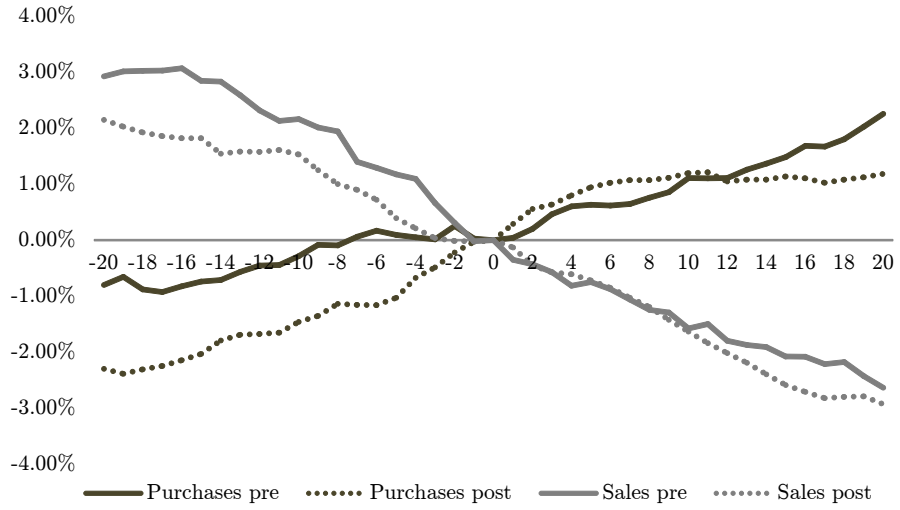


Figure 8.2 CAR Pre and Post the Law Change (Indexed on the Announcement day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 9.

Cumulative Abnormal Returns 20 Days Prior and Post the Announcement Day in Germany Pre and Post the Law Change Using the Unique Sample

Figure 9.1 CAR Pre and Post the Law Change (Indexed 20 days Prior to the Announcement day)

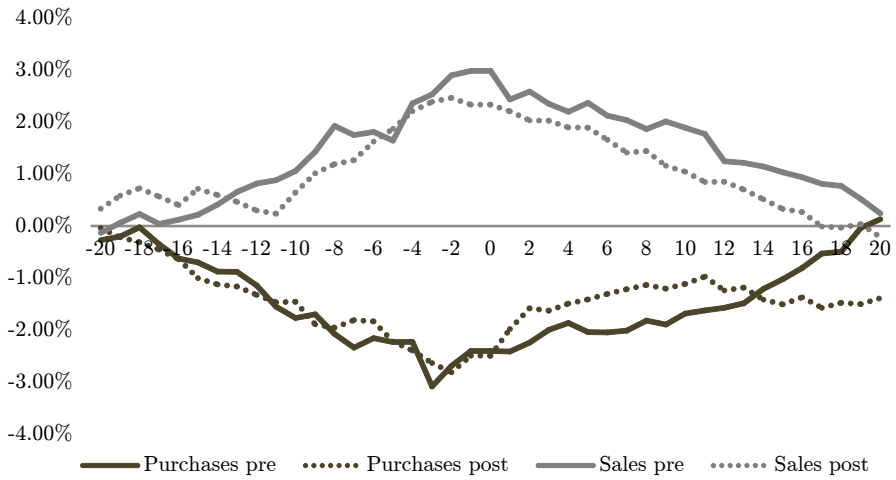
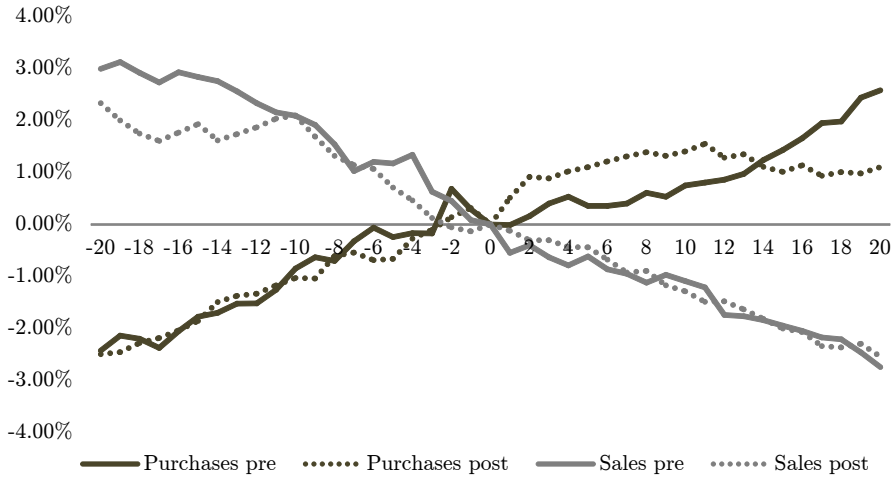


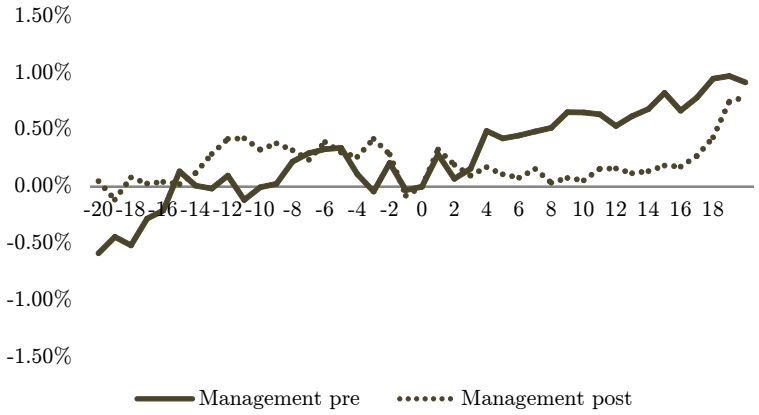
Figure 9.2 CAR Pre and Post the Law Change (Indexed on the Announcement day)*

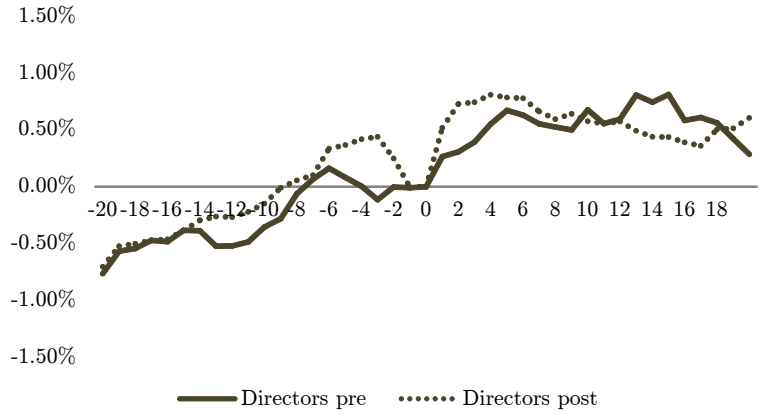


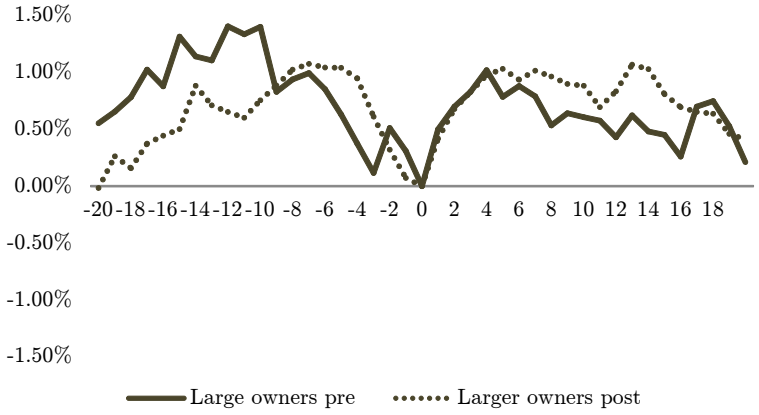
*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

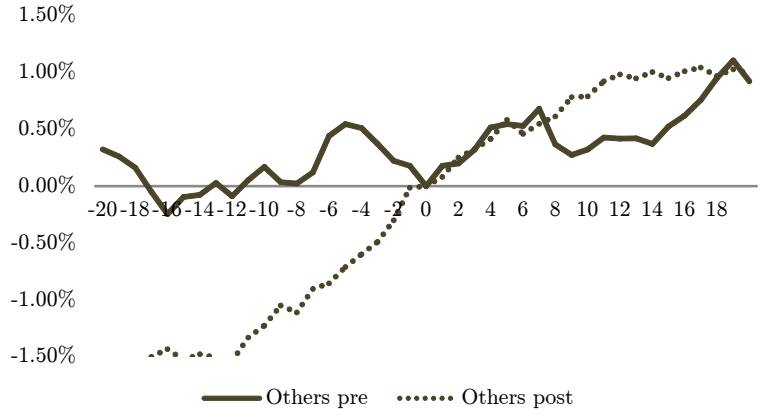
Figure 10.

Cumulative Abnormal Returns for Purchases 20 Days Prior and Post the Announcement Day in Sweden Pre and Post the Law Change by Insider Type Using the Entire Sample





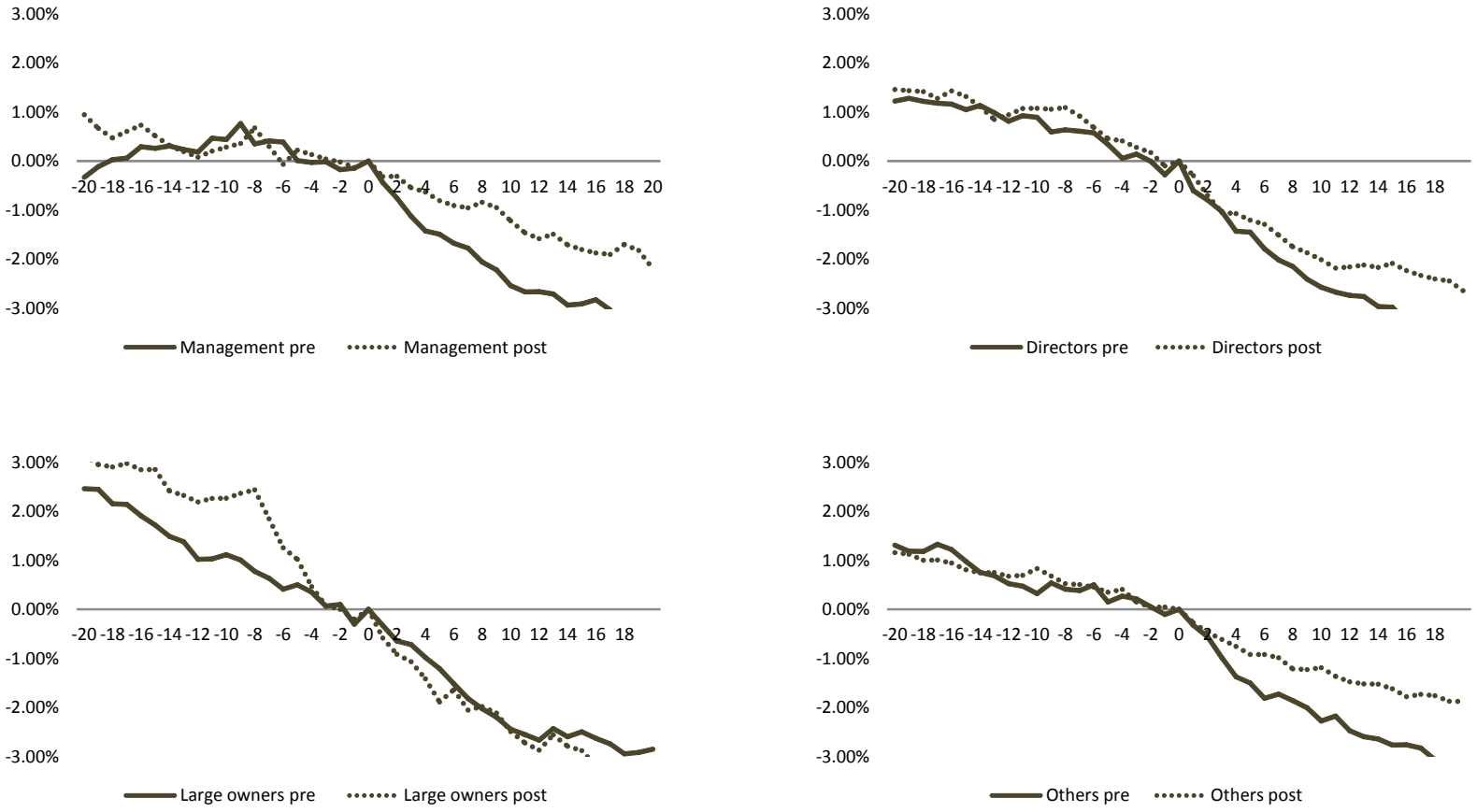




*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 11.

Cumulative Abnormal Returns for Sales 20 Days Prior and Post the Announcement Day in Sweden Pre and Post the Law Change by Insider Type Using the Entire Sample



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Figure 12.

Cumulative Abnormal Returns Differences (Pre and Post the Law Change) 5 Days Prior and Post the Announcement Day in Sweden and Germany Using the Entire- and the Unique Sample

Figure 12.1 CAR Differences for Purchases (Indexed on the Announcement day)*

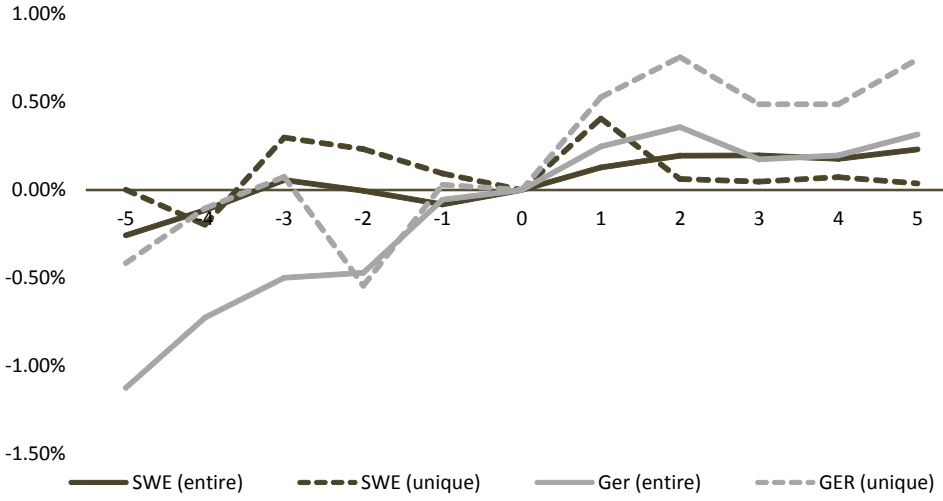
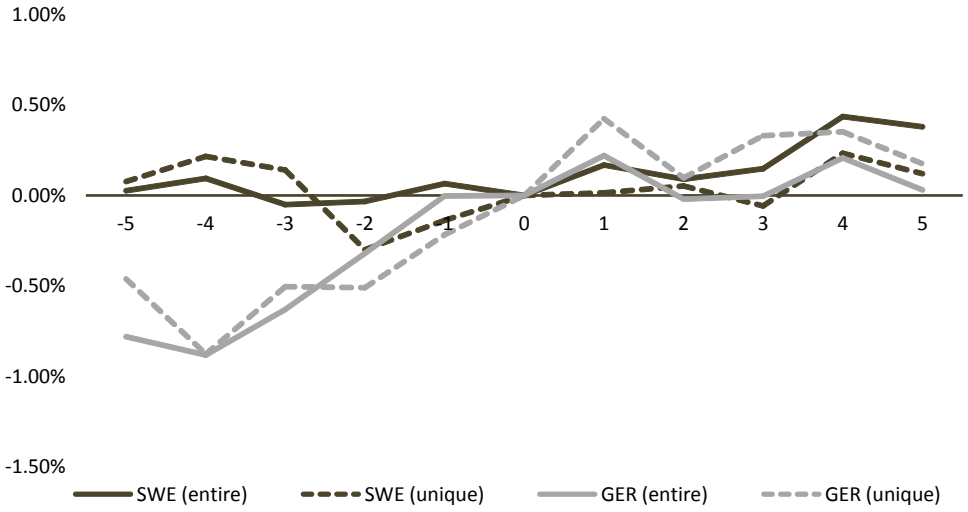


Figure 12.2 CAR Differences for Sales (Indexed on the Announcement day)*



*The CAR is indexed on the announcement day in order to visualise the generated abnormal returns pre and post announcement. CARs prior to announcement from time [-X,-1,] is read at time -X, i.e. from X trading days before the announcement to closing one day prior the announcement.

Appendix. Firm list

Firm list Sweden

Company Name	Company Name
360 HOLDING	BIOPHAUSIA 'A'
3L SYSTEM	BIOSENSOR APPLICATIONS SWEDEN 'A'
A-COM	BIOTAGE
ABB (OME)	BIOVITRUM
ACADEMEDIA 'B'	BOLIDEN
ACANDO 'B'	BONG LJUNGDAHL
ACAP INVEST	BORAS WAFVERI 'B'
ACCELERATOR NORDIC 'B'	BOREVIND
ACTIVE BIOTECH	BOSS MEDIA DEAD - 21/04/08
ADDNODE 'B'	BOSTADS AB DROTT DEAD - 01/10/04
ADDTECH 'B'	BREDBAND2 I SKANDINAVIEN
AF 'B'	BRINOVA FASTIGHETER
AFFARSSTRATEGERNA 'B' DEAD - 01/02/10	BRIO 'B'
AIK FOTBOLL 'B'	BROSTROM DEAD - 02/03/09
ALFA LAVAL	BTS GROUP
ALTERO 'B'	BURE EQUITY
AMHULT 2 'B'	C2SAT 'B'
ANOTO GROUP	CAPIO DEAD - 20/11/06
AQUA TERRENA INTERNATIONAL	CARDO
ARCAM 'B'	CARL LAMM DEAD - 18/08/08
ARENA PERSONAL DEAD - 05/02/09	CASHGUARD 'B' DEAD - MERGED 257541
ARK TRAVEL DEAD - 08/02/08	CASTELLUM
AROS QUALITY GROUP	CATECH 'B'
ARTIMPLANT	CATENA
ASPIRO	CENTRAL ASIA GOLD
ASSA ABLOY 'B'	CHEMEL
ATLAS COPCO 'B'	CHERRYFORETAGEN 'B'
ATRIUM LJUNGBERG 'B'	CISION
AU HOLDING	CISL GRUPPEN DEAD - 13/02/08
AUDIODEV 'B' DEAD - 18/06/09	CLAS OHLSON 'B'
AUTOLIV SDB	CONCORDIA MARITIME 'B'
AVALON ENTERPRISE 'B'	CONFIDENCE INTERNATIONAL 'B'
AVANZA BANK HOLDING	CONNECTA
AVONOVA SVERIGE	CONSILIUM 'B'
AXFOOD	COUNTERMINE 'B'
AXIS	CREATIVE ANTIBIOTICS SWEDEN
AXLON GROUP	CTT SYSTEMS
B&B TOOLS 'B'	CUSTOS DEAD - 02/01/07
BALLINGSLOV INTERNATIONAL DEAD - 13/12/08	CYBERCOM GROUP EUROPE
BE GROUP	D CARNEGIE & CO DEAD - 24/12/08
BEIJER ALMA 'B'	DACKE GROUP NORDIC
BEIJER ELECTRONICS	DAGON
BENCHMARK OIL & GAS	DIAMYD MEDICAL 'B'
BERGS TIMBER 'B'	DIGITAL VISION
BETSSON 'B'	DIMENSION DEAD - 20/02/04
BETTING PROMOTION SWEDEN	DIN BOSTAD SVERIGE DEAD - 30/09/09
BIACORE INTERNATIONAL DEAD - 13/09/06	DORO
BILIA 'A'	DUROC 'B'
BILLERUD	EL&INDSMON.SVENSKA DEAD - 31/08/07
BINAR ELEKTRONIK B DEAD - DEAD 12/12/03	ELANDERS 'B'
BIOGAIA 'B'	ELECTROLUX 'B'

Firm list Sweden

Company Name	Company Name
ELEKTA 'B'	HEMTEX
ELEKTRONIKGRUPPEN BK 'B'	HENNES & MAURITZ 'B'
ELOS 'B'	HEXAGON 'B'
ELVERKET VALLENTUNA	HIFAB GROUP
EMPIRE 'B'	HIQ INTERNATIONAL
ENACO DEAD - 16/02/09	HL DISPLAY 'B'
ENEA	HOGANAS 'B'
ENIRO	HOIST INTERNATIONAL B DEAD - 17/07/04
ENTRACTION HOLDING 'B'	HOLMEN 'B'
ERICSSON 'B'	HOME PROPERTIES DEAD - DEAD 11/05/09
EUROCINE VACCINES	HOMEMAID
EUROVIP GROUP 'B'	HQ
FABEGE 'B' DEAD - TAKEOVER 505155	HQ FONDER DEAD - 26/10/05
FAGERHULT	HUFVUDSTADEN 'C'
FAST PARTNER	HUMAN CARE H C
FASTIGHETS BALDER 'B'	HUSQVARNA 'B'
FAZER KONFEKTYR SERVICE DEAD - 26/01/09	IAR SYSTEMS DEAD - T/0 690556
FEELGOOD SVENSKA	IBS 'B'
FENIX OUTDOOR	ICM KUNGSHOLMS
FINGERPRINT CARDS 'B'	IDL BIOTECH 'B'
FINMETRON 'B'	INDUSTRIAL & FINANCIAL SYSTEMS 'B'
FINNVEDEN 'B' DEAD - DEAD 21/02/05	INDUSTRIVARDEN 'C'
FIREFLY	INDUTRADE
FOCAL POINT 'B' DEAD - T/O BY 695636	INIRIS 'B' DEAD - 21/06/07
FOLLOWIT HOLDING	INTELLECTA 'B'
FORSSTROM HIGH FREQUENCY	INTENTIA INTERNATIONAL 'B' DEAD - T/O 14746M
FRANGO 'B' DEAD - 25/10/04	INTERNATIONAL GOLD EXPLORATION (OME)
FRONTYARD 'B' DEAD - 27/10/04	INTIUS
G & L BEIJER	INTOI
GAMBRO 'B' DEAD - 20/07/06	INTRUM JUSTITIA
GAMERS PARADISE HOLDING 'B' DEAD - 06/03/06	INVESTOR 'B'
GANT COMPANY DEAD - 21/03/08	INVIK & CO 'B' DEAD - 20/08/07
GENERIC SWEDEN	INWAREHOUSE DEAD - 30/05/08
GENLINE HOLDING	JC DEAD - T/O BY 257554
GETINGE	JEEVES INFORMATION SYSTEMS
GEVEKO 'B'	JELLO
GEXCO	JM
GLOBAL GAMING FACTORY X DEAD - 09/09/09	KABE HUSVAGNAR 'B'
GLOCALNET DEAD - T/O BY 255248	KAPPAHL HOLDING
GLYCOREX TRANSPLANTATION	KARLSHAMNS DEAD - 14/11/05
GORTHON LINES DEAD - MERGED 307065	KARO BIO
GOTLAND REDERI B DEAD - 22/03/04	KAROLIN MACHINE TOOL DEAD - 04/02/08
GRANINGE DEAD - 20/02/04	KINDWALLS 'B'
GUIDE LINE TECHNOLOGY	KINNEVIK 'B'
GUNNEBO	KLICK DATA 'B'
GUNNEBO INDUSTRIER DEAD - 02/10/08	KLIPPAN DEAD - 05/05/06
HAKON INVEST	KLOVERN
HALDEX	KNOW IT
HAMMAR INVEST 'B'	KOPPARBERG MINERAL 'B'
HAVSFRUN INVESTMENT 'B'	KUNGSLEDEN
HEBA 'B'	LAGERCRANTZ 'B'
HEBI HEALTH CARE DEAD - 10/07/09	LAMMHULTS DESIGN GROUP
HEDSON TECHNOLOGIES INTERNATIONAL	LATOUR INVESTMENT 'B'

Firm list Sweden

Company Name	Company Name
LB ICON DEAD - 27/07/06	NOLATO 'B'
LBI INTERNATIONAL	NORDEA BANK
LEDSTIERNAN 'B'	NORDIC SERVICE PARTNERS HOLDINGS 'B'
LGP ALLGON HOLDING DEAD - 29/05/04	NORDNET SECURITIES BANK
LIFEASSAYS 'B'	NOTE
LINDAB INTERNATIONAL	NOVACAST TECHNOLOGIES 'B'
LINDEX DEAD - 21/01/08	NOVESTRA
LINKMED	NOVOTEK 'B'
LUCENT OIL	NRS TECHNOLOGIES HOLDING DEAD - 28/08/06
LUNDBERGFORETAGEN 'B'	OBDUCAT 'B'
LUNDIN MINING SDB	ODEN CONTROL 'B' DEAD - 01/07/09
LUNDIN PETROLEUM	OEM INTERNATIONAL 'B'
MAHLER INTERNATIONAL AB	OMX DEAD - 05/05/08
MALMBERGS ELEKTRISKA	ONE MEDIA HOLDING
MANDAMUS DEAD - DEAD-20/11/03	OPCON
MANDATOR	OPTIMAIL 'A' DEAD - 24/01/06
MAXPEAK	OPTIMUM OPTIK 'B' DEAD - DEAD 01/07/04
MEDA 'A'	OPUS PRODOX
MEDCAP	ORC SOFTWARE
MEDIROX 'A'	ORESUND INVESTMENT
MEDIVIR 'B'	OREXO
MEGACON DEAD - 24/12/09	ORTIVUS 'B'
MEKONOMEN	PA RESOURCES 'B'
MICRO SYSTEMATION 'B'	PANAXIA SECURITY
MICRONIC LASER SYSTEMS	PANDOX DEAD - 20/02/04
MIDELFART SONESSON 'B'	PARADOX ENTERTAINMENT
MIDWAY HOLDINGS 'B'	PARTNERTECH
MIRIS HOLDING	PAYNOVA
MOBYSON	PEAB 'B'
MODERN TIMES GROUP MTG 'B'	PERGO DEAD - 02/04/07
MODUL 1 DATA	PHONERA
MSC KONSULT 'B'	POLYPLANK
MULTIQ INTERNATIONAL	POOLIA 'B'
MUNTERS	POWERWAVE TECHNOLOGY (OME) DEAD - 10/06/06
NAN RESOURCES DEAD - TAKEOVER 28216H	PRECIO SYSTEMUTVECKLING
NARKES ELECTRISKA DEAD - 03/11/06	PRECISE BIOMETRICS
NCC 'B'	PREVAS 'B'
NEFAB 'B' DEAD - 03/12/07	PRICER 'B'
NEONET	PROACT IT GROUP
NET INSIGHT 'B'	PROBI
NETONNET	PROFFICE 'B'
NEW WAVE GROUP 'B'	PROFILGRUPPEN 'B'
NGS NEXT GENERATION SYSTEMS SWEDEN	PROTECT DATA DEAD - 13/02/07
NIBE INDUSTRIER 'B'	PUSH DEVELOPMENT DEAD - 31/12/08
NILORNGRUPPEN 'B' DEAD - 01/07/09	Q-MED
NISCAYAH GROUP 'B'	RADIO FREQUENCY INVESTMENT GROUP SWEDEN
NOBEL BIOCARE (OME) DEAD - 12/05/08	RATOS 'B'
NOBIA	RAYSEARCH LABORATORIES

Firm list Sweden

Company Name
READSOFT 'B'
REDERI AB TRANSATLANTIC 'B'
REJLERKONCERNEN 'B'
RELATION AND BRAND 'B'
RESCO 'B' DEAD - 19/04/06
REZIDOR HOTEL GROUP
RIDDARHYTTAN RESOURCES DEAD - 28/11/05
RKS B DEAD - 20/08/04
RNB RETAIL AND BRANDS
RORVIK TIMBER
ROTTNEROS
SAAB 'B'
SAK I
SALUS ANSVAR 'B'
SANDVIK
SAPA DEAD - T/O 936884
SARDUS DEAD - 30/04/07
SAS
SBT LANDSKRONA 'B' DEAD - DEAD 18/01/05
SCA 'B'
SCAN MINING DEAD - 10/12/07
SCANIA 'B'
SCRIBONA 'B'
SEB 'C'
SECO TOOLS 'B'
SECTRA 'B'
SECURITAS 'B'
SECURITAS DIRECT DEAD - 18/08/08
SEMCON
SENEA DEAD - 27/12/06
SENSYS TRAFFIC
SERVAGE 'B'
SHELTON PETROLEUM
SIGMA B
SINTERCAST
SKANDIA FORSAKRINGS DEAD - 06/06/06
SKANDITEK INDUSTRI FORVALTNINGS DEAD - 25/01/10
SKANSKA 'B'
SKF 'B'
SKISTAR 'B'
SNOWOLVERINE 'B'
SOFTRONIC 'B'
SONG NETWORKS HOLDING DEAD - EXPLORATION 11/01/05
SRAB SHIPPING 'B'
SSAB 'B'
STARBREEZE
STAVRULLEN FINANS 'B'
STILLE
STORMFAGELN
STRALFORS 'B' DEAD - 19/06/06
STRAND INTERCONNECT 'B' DEAD - 13/01/09
STUDSVIK
SVEDBERGS 'B'
SVENSKA HANDELSBANKEN 'B'
SVERIGES BOSTADSRATTSCENTRUM
SVITHOID TANKERS 'B' DEAD - 14/10/08
SVOLDER 'B'
SWECO 'B'
SWEDBANK 'A'
SWEDE RESOURCES
SWEDISH MATCH
SWITCHCORE
TANGANYIKA OIL SDB DEAD - 24/12/08
TAURUS ENERGY 'B'
TECHNOLOGY NEXUS DEAD - 28/09/09
TELE2 'B'
TELECA 'B' DEAD - 03/03/09
TELELOGIC DEAD - T/O BY 906187
TELIASONERA
TELIGENT DEAD - 04/11/08
TICKET TRAVEL
TIVOX 'B' DEAD - 26/08/05
TMG INTERNATIONAL
TORNET FASTIGHETS 'B' DEAD - 16/06/06
TRACTECHNOLOGY
TRACTION 'B'
TRADEDOUBLER
TRANSFERATOR 'A'
TRELLEBORG 'B'
TRETTI
TRICORONA
TRIMERA
TRIO INFORMATION SYSTEMS DEAD - 14/08/06
TURNIT 'B' DEAD - T/O BY 690556
TV4 'A' DEAD - 05/03/07
UNIFLEX 'B'
VBG GROUP
VENUE RETAIL GROUP 'B'
VITA NOVA VENTURES
VITEC SOFTWARE GROUP 'B'
VITROLIFE
VLT 'B' DEAD - 03/11/08
VOLVO 'B'
VOSTOK GAS SDB DEAD - 02/02/09
WALLENSTAM 'B'
WAYFINDER SYSTEMS DEAD - 17/02/09
WIHLBORGS FASTIGHETER
WIKING MINERAL
WM-DATA 'B' DEAD - T/O BY 901940
XANO INDUSTRI 'B'
XPONCARD DEAD - 20/06/08
XTRANET
ZODIAK TELEVISION 'B' DEAD - 18/08/08

Firm list Germany

Company Name	Company Name
313 MUSIC JWP	BECHTLE
3U HOLDING	BEIERSDORF
4 SC	BERENTZEN-GRUPPE PREFERENCE
AAP IMPLANTATE	BERLINER EFFEKTENGESELLSCHAFT
AAREAL BANK	BERTRANDT
ABACHO	BETA SYSTEMS SOFTWARE
ACTION PRESS HOLDING	BIEN-ZENKER
ADCAPITAL	BIJOU BRIGITTE MODISCHE ACCESSOIRES
ADESSO	BILFINGER BERGER
ADIDAS	BIOFRONTERA
ADLER REAL ESTATE	BIOLITEC
ADLINK INTERNET MEDIA	BIOTEST
ADVA OPTICAL NETWORKING	BKN INTERNATIONAL
ADVANCED INFLIGHT ALLIANCE	BMP
ADVANCED PHOTONICS TECHNOLOGIES	BMW
AGIV REAL ESTATE	BORUSSIA DORTMUND
AGOR	BOSS (HUGO)
AGROB IMMOBILIEN	BURGBAD
AHLERS	BUSINESS MEDIA CHINA
AIXTRON	CAATOOSEE
ALBIS LEASING	CANCOM IT SYSTEME
ALEO SOLAR	CAPITAL STAGE
ALIGNA	CARL ZEISS MEDITEC
ALL FOR ONE MIDMARKET	CASH LIFE
ALLERTHAL-WERKE	CASH MEDIEN
ALLGEIER HOLDING	CBB HOLDING
ALLIANZ	CCR LOGISTICS SYSTEMS
ALNO	CELESIO
ALPHAFORM	CENIT SYSTEMHAUS
ALTANA	CENTROTEC SUSTAINABLE
AMADEUS FIRE	CEOTRONICS
ANALYTIK JENA	CEWE COLOR HOLDING
ARBOMEDIA	CINE-MEDIA FILM GEYER-WERKE
ARCANDOR	CINEMAXX
ARISTON REAL ESTATE	CO DON
ARQUES INDUSTRIES	COLEXON ENERGY
ARTNET	COLONIA REAL ESTATE
ATOSS SOFTWARE	COMDIRECT BANK
AUGUSTA TECHNOLOGIE	COMMERZBANK
AURUBIS	COMPUTEC MEDIA
AXEL SPRINGER	COMPUTERLINKS
AZEGO	COMTRADE
B+S BANKSYSTEME	CONCORD INVESTMENT BANK
BAADER BANK	CONERGY
BALDA	CONSTANTIN FILM
BASF	CONSTANTIN MEDIEN
BASLER	CONTINENTAL
BAUER	COR&FJA
BAYER	CREATON PREFERENCE
BAYWA	CROPENERGIES
BEATE UHSE	CTS EVENTIM

Firm list Germany

Company Name	Company Name
CURANUM	EVOTEC
CURASAN	FAME FILM & MUSIC ENTERTAINMENT
D LOGISTICS	FIELMANN
D+S EUROPE	FORTEC ELEKTRONIK
DAIMLER	FRANCOTYP-POSTALIA HOLDING
DATA MODUL	FREENET
DEAG DEUTSCHE ENTERTAINMENT	FRESENIUS
DELTICOM	FRESENIUS MEDICAL CARE
DEMAG CRANES	FRITZ NOLSGLOBAL EQUITY SERVICES
DEPFA BANK GENUSSCHEINE 6.5% 01/07/2009	FROSTA
DESIGN HOTELS	FUCHS PETROLUB
DEUTSCHE BALATON	FUNKWERK
DEUTSCHE BANK	GEA GROUP
DEUTSCHE EFFECTEN UND WECHSEL - BETEILIGUNGSGESELLS	GENERALI DEUTSCHLAND HOLDING
DEUTSCHE EUROSHOP	GERATHERM MEDICAL
DEUTSCHE IMMOBILIEN HOLDING	GESCO
DEUTSCHE LUFTHANSA	GFK
DEUTSCHE POST	GFT TECHNOLOGIES
DEUTSCHE POSTBANK	GIRINDUS
DEUTSCHE REAL ESTATE	GOYELLOW MEDIA
DEUTSCHE TELEKOM	GRAMMER
DEUTZ	GREENWICH BETEILIGUNGEN
DLO DEUTSCHE LOGISTIK OUTSOURCING	GRENKELEASING
DOCCHECK	GROUP BUSINESS SOFTWARE
DOCTOR SCHELLER COSMETICS	GWB IMMOBILIEN
DOUGLAS HOLDING	H & R WASAG
DR REAL ESTATE	HAHN-IMMOBILIEN -BETEILIGUNGS
DRESDNER FACTORING	HAMBORNER REIT
DRILLISCH	HANSA GROUP
DVB BANK	HAWESKO HOLDING
DYCKERHOFF	HCI CAPITAL
E ON	HEIDELBERGCEMENT
E-M-S NEW MEDIA	HEIDELBERGER BETEILIGUNGS HOLDING
ECKERT & ZIEGLER STRAHLEN & MEDIZINTECHNIK	HEIDELBERGER DRUCKMASCHINEN
EDDING PREFERENCE	HEILER SOFTWARE
EDEL	HELIAD EQUITY PARTNERS
EECH GROUP	HENKEL
EINBECKER BRAUHAUS	HESSE NEWMAN CAPITAL
EINHELL GERMANY	HOCHTIEF
ELEXIS	HORNBACH HOLDING PREFERENCE
ELMOS SEMICONDUCTOR	HORNBACH-BAUMARKT
ELRINGKLINGER	HYMER
EMPRISE	HYPO REAL ESTATE BANKGENUSSCHEINE 30/6/2010
ENERGIEKONTOR	I FAO
EPIGENOMICS	IBS
ERLUS	IDS SCHEER
ESTERER	IKB DEUTSCHE INDUSTRIEBANK
EUROKAI	IM INTERNATIONAL MEDIA
EUWAX	INFINEON TECHNOLOGIES

Firm list Germany

Company Name	Company Name
INTEGRALIS	MEDIGENE
INTERHYP	MEDION
INTERSEROH	MEDISANA
INTERSHOP COMMUNICATIONS	MENSCH UND MASCHINE SOFTWARE
INTERTAINMENT	MERCK KGAA
INTICA SYSTEMS	MERKUR BANK
IPG INVESTMENT PARTNERS GROUP	MISTRAL MEDIA
ISRA VISION	MLP
ITELLIGENCE	MME MOVIEMENT
ITN NANOVATION	MOLOGEN
IVG IMMOBILIEN	MOOD AND MOTION
IVU TRAFFIC TECHNOLOGIES	MORPHOSYS
JAXX	MTU AERO ENGINES HOLDING
JENOPTIK	MWB FAIRTRADE WERTPAPIERHANDELSBANK
JETTER	NEMETSCHEK
JOH FREIDRICH BEHRENS	NESCHEN
JUNGHEINRICH	NET
K + S	NETLIFE
KAMPA	NEXUS
KAP-BETEILIGUNGS	NORDEX
KIZOO	NORDWEST HANDEL
KLASSIK RADIO	NOVAVISIONS
KOENIG & BAUER	NOVEMBER
KONTRON	NUCLETRON ELECTRONIC
KPS	ODEON FILM
KROMI LOGISTIK	OHB TECHNOLOGY
KRONES	OLDENBURGISCHE LANDESBANK
KUKA	ONVISTA
KUNERT	ORBIS
KWS SAAT	OVB HOLDING
LANDESBANK BERLIN HOLDING	P & I PERSONAL & INFORMATIK
LANG & SCHWARZ WERTPAPIERHANDELSBANK	PAION
LANXESS	PANDATEL
LEIFHEIT	PARAGON
LEONI	PARK & BELLHEIMER
LEWAG HOLDING	PATRIZIA IMMOBILIEN
LHA INTERNATIONALE LEBENSMITTEL HANDELSAGENTUR KR	PC-WARE INFORMATION TECHNOLOGIES
LINDE	PEH WERTPAPIER
LINTEC INFORMATION TECHNOLOGIES	PETROTEC
LLOYD FONDS	PFEIFFER VACUUM TECHNOLOGY
LPKF LASER & ELECTRONICS	PFERDEWETTEN
LS TELCOM	PFLEIDERER
LUDWIG BECK	PHOENIX SOLAR
M TECH TECHNOLOGIE UND BETEILIGUNGS	PIPER GENERALVERTRETUNG DEUTSCHLAND
MAGIX	PIRONET NDH
MAN	PIXELPARK
MANIA TECHNOLOGIE	PLENUM
MARBERT HOLDING	PORSCHE AUTOMOBIL HOLDING PREFERENCE
MARENAVE SCHIFFAHRTS	PRIMACOM
MARSEILLE-KLINIKEN	PRIMION TECHNOLOGY
MASTERFLEX	PRIVATE VALUE
MATERNUS-KLINIKEN	PRO DV SOFTWARE
MAX AUTOMATION	PROCON MULTIMEDIA
MEDIANTIS	PROSIEBEN SAT 1 MEDIA
MEDICLIN	PULSION MEDICAL SYSTEMS

Firm list Germany

Company Name	Company Name
PUMA RUDOLF DASSLER SPORT	SYMRISE
PVA TEPLA	SYNAXON
Q-CELLS	SYSKOPLAN
Q-SOFT VERWALTUNGS	SYZYGY
QSC	TA TRIUMPH-ADLER
R STAHL	TAG IMMOBILIEN
RATIONAL	TAKKT
REALTECH	TDMI
REPOWER SYSTEMS	TDSINFORMATIONSTECHNOLOGIE
RHEINMETALL	TECHNOTRANS
RM RHEINER MANAGEMENT	TELEGATE
ROHWEDDER	TELES
RWE	TEUTONIA ZEMENTWERK
S&R BIOGAS ENERGIESYSTEME	THIELERT
SALZGITTER	THYSSENKRUPP
SANACORP PHARMAHOLDING	TIGTHEMIS INDUSTRIES GROUP
SAP	TIPP24
SCHALTBAU HOLDING	TIPTEL
SCHLOTT GRUPPE	TOMORROW FOCUS
SCHNIGGE WERTPAPIERHANDELSBANK	TRANSTEC
SCHUMAG	TRAVEL24.COM
SECUNET SECURITY NETWORKS	TRIPLAN
SENATOR ENTERTAINMENT	TUI
SGL CARBON	UMS UNITED MEDICAL SYSTEMS INTERNATIONAL
SHS VIVEON	UNITED INTERNET
SIEMENS	UNITED LABELS
SILICON SENSOR INTERNATIONAL	USU SOFTWARE
SIMONA	UTIMACO SAFEWARE
SINGULUS TECHNOLOGIES	UZIN UTZ
SINNERSCHRADER	VALORA EFFEKTEN HANDEL
SINO	VALUE MANAGEMENT & RESEARCH
SIXT	VBH HOLDING
SKW STAHL-METALLURGIE HOLDING	VERBIO VEREINIGTE BIOENERGIE
SLOMAN NEPTUN SCHIFFAHRTS	VESTCORP
SM WIRTSCHAFTSBERATUNGS	VILLEROY & BOCH
SNP SCHNEIDER-NEUREITHER & PARTNER	VISCOM
SOFTING	VIVANCO GRUPPE
SOFTLINE	VOSSLOH
SOFTWARE	VWD VEREINIGTE WIRTSCHAFTSDIENSTE
SOLARPARC	W O M WORLD OF MEDICINE
SOLARWORLD	WACKER CHEMIE
SOLON	WASGAU PRODUKTIONS & HANDELS
SPARTA	WCM BETEILIGUNGS -UND GRUNDBESITZ
SPLENDID MEDIEN	WESTGRUND
STADA ARZNEIMITTEL	WIGE MEDIA
STINAG STUTTGART INVEST	WINCOR NIXDORF
STRATEC BIOMEDICAL SYSTEMS	WIRECARD
SUNWAYS	XING
SYGNIS PHARMA	ZAPF CREATION