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Independent and Informed

An analysis of how informed Swedish independent directors are.

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ABSTRACT

This paper examines how informed independent directors are about the company they serve as a director of. By examining purchases in the firm's stock reported to the Swedish financial supervision authority we find that independent directors do not earn lower returns than CEO:s and dependent directors. Thus we interpret that Swedish independent directors are sufficiently informed about the company to monitor its executives. This is contrary to earlier literature in the area. A potential explanation for our result is that Swedish CEO:s might share more information with the board of directors since Sweden have a more collectivistic culture than the United States, where the previous study on the topic was conducted. Another possible explanation to our result is that our sample suffers from a selection bias. Due to a loophole in the Swedish insider trading regulation insiders are not obliged to report their trading in an endowment.

Keywords: Independent directors, Insider trading, Corporate governance

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1. Introduction

In order to improve corporate governance and prevent further corporate scandals (such as WorldCom and Enron) policymakers around the world have issued national corporate governance codes, a type of soft law. One of the central themes in corporate governance codes is the independence of the board of directors. Briefly, it means that the majority of directors should be independent with regards to the company and its' executive management.[2] The policymakers' rationale for independent directors is that they should be better monitors of shareholders' interests than dependent directors. Thus it is expected that independent directors should enhance corporate governance and shareholder value.

However, how efficient independent directors are as monitors and corporate governance policy is debated. In particular independent directors have been accused of being less informed about the company than dependent directors and inferior monitors of the executive management than dependent directors (McDonald, 2003). In line with this Adams and Ferreira (2010) propose that an independent board should be expected to be less informed about the company than a dependent board. They argue that a CEO will share more information with a dependent board since it monitors less intensely. Accordingly independent directors might not have the desired effect.

The purpose of this paper is to shed some light on how informed Swedish independent directors are and thereby give a first glance at the effectiveness of independent directors as a corporate governance policy in Sweden. Expressed differently, the purpose is to examine *if Swedish CEO:s are better informed about the company than independent directors*. We also include and examine dependent directors information level. Since dependent directors has deeper personal connections to the firm they might be treated more favourable by CEO:s than independent directors and thus receive more information.

We follow Ravina and Sapienza's (2010) methodology[3] and replicate the central part of their paper. This mean that we measure how informed corporate insiders are about the firm they work for by the profits they earn when they trade in the company's stock. By analysing corporate insiders' purchases and sales reported to the Swedish authority of financial supervision, for the period 2010-2014, we find that Swedish CEO:s do not earn higher market-adjusted returns from their trading in the firm's stock than Swedish directors. Therefore we argue that Swedish CEO:s, dependent directors and independent directors are equally informed about the company.

The contribution of this paper to the existing literature is two-folded. Firstly, it will contribute to the evaluation of independent directors as a corporate governance policy

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[2] In the Swedish corporate governance code an independent director is defined as a director; that has not been employed by the company; that does not work as a consultant for the company; that does not have a significant business relationship with the company; and that does not have a family relationship with a person who should be considered to be a dependent director.

[3] We follow Ravina and Sapienza's paper and methodology very closely. Where we deviate in any substantial way we point this out. Otherwise, nothing should be interpreted as our methodical ideas.

in Sweden. Secondly, it will take a first look at the difference in the information level between independent and dependent directors.

Indeed Ravina and Sapienza's (2010), in a recent study conducted on American firms, argue that independent directors are less informed about the company than its' executives. Nevertheless this does not necessarily imply that Swedish CEO:s also possess more information about the company than its' independent directors. Especially if Adams and Ferreira's explanation to why an independent board should be expected to be less informed is correct; the CEO:s decision to share or withhold information from the board of directors might depend on culture. In fact, previous literature argues that culture is an important factor to consider when evaluating the efficiency of a corporate governance policy (e g Cheung and Chang, 2012). In particular a collectivistic culture has been reported to have a positive effect on business ethics and considerations to stakeholders (Husted 2008; Blodgett *et al*, 2001). Therefore in a more collectivist country than the USA, such as Sweden[4], the CEO might share information with the board to a larger extent, which both is the ethically correct decision and the most beneficial decision for the firm's stakeholders.

The rest of the paper is structured as follows. First, section 2 presents earlier literature that relates to our paper. In the light of the presented literature we also formulate our hypotheses for this study in section 2. Thereafter, in section 3 we elaborate our (read: Ravina and Sapienza's) methodology in more depth and describe the data set. In section 4 we present our empirical result: that there is no significant difference in the market-adjusted returns earned by CEO:s, dependent directors and independent directors. Next, in section 5 we argue that this means that the groups of insiders examined in this paper are equally informed about the company, which is contrary to what Ravina and Sapienza report. Thus we propose two theories to why our result differs from theirs. Firstly, we argue that a loophole in the Swedish insider regulation could explain the result; insiders are not obliged to report trading through an endowment to the Swedish financial supervision authority. Secondly, we argue that our result might be derived to cultural differences and in particular that Sweden is a more collectivistic country than the United States. This might have the affect that Swedish CEO:s share more information with the board of directors. In section 6 we apply several robustness tests to our result and in section 7 we discuss our result and relate it to previous literature. Last, in section 8 we suggest that our result does not support the proposition that independent directors are uninformed about the company.

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[4] According to Hofstede's cultural dimensions Sweden is considered to be a more collectivistic country than the USA (The Hofstede center).

2. Relation to earlier literature

Briefly, this paper relates to three distinct topics in the literature. First, it relates to literature that discusses the effectiveness of independent directors as a corporate governance policy. Secondly, it relates to literature that investigates how informed corporate insiders are in general. Thirdly, and the topic our paper is most related to, is how the information level differs between different types of corporate insiders. Beneath we present the three topics in the just mentioned order. Thereafter, in the light of the findings of previous research, we formulate our hypotheses for this study.

2.1 The relation between firm performance and independent directors

Several papers evaluate and discuss the relation between an independent board and firm performance. Yet, few of them manage to empirically confirm that an independent board enhances firm performance. In accordance with policymakers Hermalin and Weisbach (1998) argue that an independent board should be a better monitor of the executive management than a dependent board. Dependent boards have the drawback that they have deeper personal ties to the CEO and the executive management. Due to dependent directors' deeper personal connections with the firm an independent board has a lower cost of monitoring. The lower cost of monitoring should induce an independent board to monitor the CEO more intensely and thus increase shareholder value.

Mehran (1995) provides a rare empirical support for the proposition that independent directors actually increase shareholder value. Mehran analyses the relationship between executive compensation and firm performance. He finds that equity-based executive compensation increases firm performance. Further he finds that board independence is positively related with a higher level of equity-based executive compensation. Which, is an indirect support of that an independent board adds value.

Bhagat and Black (2002) take a more direct approach to investigate if an independent board enhances firm performance. They examine if board independence enhances long-term firm performance by testing if board independence correlates with long-term performance measures (e g return on assets and Tobin's q). Their results imply that there is no correlation between board independence and long-term firm performance. In line with this Ferris *et al* (2003) find that appointing an outside director in 1995 had no effect on the firm's book-market ratio two years later in 1997.

Further some studies actually suggest that there exists a negative relation between independent directors and firm performance. Both Vermack (1996) and Agrawal and Knober (1996) report a negative correlation between outside directors[5] and Tobins Q. Klein (1998) finds correlation between a change in market capitalisation and the proportion of independent directors. Yet, she does not find a significant correlation when she examines the relation to stock return and return on asset.

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[5] Outside directors are essentially the same as independent directors. An outside director is defined as a director who does not work for the firm or is a stakeholder in the firm.

Adams and Ferriera (2007) give a possible explanation to the non-correlation, and in some cases the negative relation, between board independence and firm performance. They argue that an independent board will be less informed than a dependent board, which decreases its ability to give valuable advice to the CEO. Their reasoning is that a CEO will share less information with an independent board since, *ceteris paribus,* an independent board will monitor the CEO more intensely. Thus the CEO can extract private benefits by not sharing information. Cohen *et al* (2012) in fact report that the executive management tries to avoid monitoring by the board by appointing overly sympathetic persons to the board of directors – or "Cheerleaders", as Cohen *et al* denote them. Thus, in order to further investigate the relation between firm performance and independent directors we need to analyse how informed independent directors are relative to the CEO. Therefore a measure of how informed corporate insiders are about the company is necessary.

2.2 Information revealed by insiders' insider trading

The general and accepted view is that stock prices are the weighing of all market participants views of the firm. Thus no abnormal returns can be made from trading in the stock, unless the investor in question has some sort of *private information* (Fama, 1970 and Fama, 1991). Therefore the profitability of corporate insiders' trading in the firm should be a good measure of the level of information they possess about the firm.

In the literature there is overwhelming support of that corporate insiders earn abnormal returns from their insider trading (see for example Rozeff and Zaman, 1988; Gregory *et al,* 1994; and Jaffe, 1974). Yet the profits earned by corporate insiders are not particularly large. Jaffe (1974) finds that insiders' abnormal returns are 2 per cent over a two-month return horizon. For a time-period of five month Jaffe shows that insiders earn an abnormal return of 5 per cent. Pratt and DeVere (1970) also find that the return increases with the return horizon. For a time period of three-years they find abnormal returns just over 30 per cent. Gregory *et al* (1994) focuses only on the profitability of UK director's trades and empirically confirms that they also earn abnormal returns, though not very large.

However the profitability of corporate insiders' trading seems to vary with the size of the firm. In particularly the abnormal returns have a tendency to be concentrated in smaller firms (Gregory *et al* 1994; Rozeff and Zaman, 1988). That might suggest that insiders' excess returns are just another proxy for a small size effect. Rozeff and Zaman, (1988) have taken this into account. By controlling for the market value of equity and the e/p-ratio and they show that the abnormal returns earned by insiders are reduced but still statistically and economically significant. Further the profitability is concentrated to insiders' purchases in the stock; sales do not reveal any information about the firm (Lakonishok and Lee, 2001).

Not only individual trades by corporate insiders have been shown to have information value. Also aggregated insider trading contains information. Zehun (1992) aggregates trades by corporate insiders in the United States and finds a strong correlation between past aggregated insider trades and future excess stock returns.

The result is still significant when Zehun controls for future real activity, dividend yields, past stock returns and term or credit spreads.

Thus we can conclude that the literature provides solid support for that directors' insider trading should be a *good indicator of the level of information* they possess about the company they serve as a director of. Then, what is the literatures opinion on any difference in information level between CEO:s, dependent and independent directors?

2.3 The difference in the information level between directors

As mentioned above Adams and Ferreira (2007) argue that how informed the board of directors are about the company will decrease with its' level of independence. Recently Ravina and Sapienza (2010), whose methodology we follow, empirically supported the proposition that independent directors are less informed about the company than its executive officers. They compared the market-adjusted returns executive officers and independent directors earn from their insider trading and found that independent directors executed less profitable trades. Although the difference was small it indicates that independent directors are less informed than the executive management. Thus executive officers seem to withhold information about the firm from independent directors in accordance with what Adams and Ferreira suggests. Further Ravina and Sapienza report that large outside owners (owner to more than 10 per cent of votes/capital) earned significantly less than both the executive management and independent directors; which suggests that owning a large stake in the firm is not necessarily associated with a more favourable treatment by executives.

Ravina and Sapienza (2010) also find that independent directors earn higher returns if he/she was a member of the audit committee. Further they find that the difference in information between executive and independent directors decreases with how good governed a firm is (Ravina and Sapienza, 2010).

2.4 Hypotheses

Adams and Ferreira suggested that a CEO withholds information from the board of the directors in order to avoid monitoring by it. Further Ravina and Sapienza empirically confirm that executives are better informed than independent directors in American listed companies. Thus we expect *that Swedish CEOs will earn higher returns than Swedish independent directors from their insider trading.*

Adams and Ferreira argue that the CEO decides whether he/she shares information with the board based on the whole boards level of independence Ravina and Sapienza's results is in line with this; large outsider blockholders were not better informed than independent directors. Thus it is likely that dependent directors who do not sit on the board receive the same amount of information as independent directors. Therefore we expect *that Swedish CEOs will earn higher returns than Swedish dependent directors from their insider trading*

3. Methodology and data

Let us turn to a presentation of the methodology in this paper; the research model, which we use to analyse the corporate insiders trade with; and a description of our data sample and from where we have collected it. We begin with the methodology and the research model.

3.1 Methodology and research model

3.1.1 Methodology

As earlier literature has reported corporate insiders earn abnormal returns compared to the market and arguable know more about the company than corporate outsiders. In our study we make use of the information revealed by the trades corporate insiders execute and report to the Swedish authority of financial supervision. We measure how much information Swedish directors and CEO:s possess about the company by the magnitude of the market-adjusted returns they earn when they trade in the stock of the company they are an insider of. Then, by using OLS regression analysis we examine whether there is a statistically significant difference between the returns earned by CEO:s, dependent directors and independent directors. If there is a significant difference between the returns earned by the three mentioned groups of insiders we hypothesize that the group in question which earn a smaller return possess less information about the company. Correspondingly if we do not find any significant difference between the group's returns we hypothesize that they are equally informed about the firm.

In order to derive the returns earned by corporate insiders we follow the methodology in earlier literature, and in particularly Ravina and Sapienza (2010). Thus we mimic CEO:s, dependent directors and independent directors' trades in the firm's stock using a buy and hold strategy. We mimic insiders' trades reported to the Swedish financial supervision authority for the period 2010-2014. Indeed there is data publicly available since 2006 but we chose a shorter time span such that we do not include the financial crisis of 2007-2008 in our sample; extraordinary market circumstance might potentially create a bias in our sample.

Our study examines only purchases and sales in the stock. According to earlier literature purchases reveal the most information about the firm; therefor these should be the most interesting transactions. Also Ravina and Sapienza (2010) report that sales did not reveal much information. Since we only investigate purchases and sales in the stock it means that we will not examine transactions in derivatives or convertibles with the firm's stock as the underlying asset. Indeed trades in them might reveal insiders' information level about the firm but the information contained in the trades are probably, to a larger extent than purchases and sales, distorted by stock options programmes and alike.

For each transaction executed by a CEO, a dependent director or an independent director we calculate the market-adjusted returns from holding the positions over five time horizons. The market-adjusted returns are computed by deducting the market

return from each transaction and time horizon, formally $r_{i,t} - r_{m,t}$. Alike Ravina and Sapienza we calculate the returns from holding the position for 1, 30, 60, 90 and 180 days.[6] According to previous literature the abnormal market-adjusted returns earned by insiders increases with time, for this reason the most interesting horizon is 180 days. The rationale for using market-adjusted returns is that we can neutralize the effect of the general business mode on the returns. Otherwise we cannot determine whether corporate insiders know more than the general investor.

Similarly to Ravina and Sapienza (2010) we control for *firm fixed effects* in our regressions for a number of reasons. One is that otherwise our result could be driven by a selection bias. There is a possibility that there exist some kind of firm characteristic that affects which kind directors who are appointed to the board of directors. It might be that certain companies choose directors that trade more intensively or are more engaged in their work and thus collect more information about the firm. It is also possible that a particular firm attribute enhances corporate insiders' ability to collect information about the firm (e g a transparent corporate culture). If such firm characteristics exist in our sample they could in fact explain our entire result (Ravina and Sapienza, 2010).

Another motivation to control for firm fixed effects is that dependent and independent directors might trade more intensive in stocks that have higher average returns, which could lead to an upward bias in our result. Lastly, including firm fixed effects ensures that our results are not driven by certain firm specific governance policies. For instance, Bettis Cole and Lemmon (2000) reported that a majority of American firms restrict corporate insider's trading (more than 90 per cent in their sample). We have not managed to find similar aggregated statistic over how many companies there is that restrict corporate insiders' trading in Sweden. Still, by observation, we can conclude that it is at least not unusual that Swedish companies have some kind of policy for trading in the firm's stock. In conclusion, by controlling for firm fixed effects we make sure that any time-invariant variation between the companies in our sample will be captured by the respective firm dummy (Ravina and Sapienza, 2010).

3.1.2 Research model

The model we use to examine whether the market-adjusted returns differs between our three groups of corporate insiders is, more or less, identical to Ravina and Sapienza (2010).[7] In its basic specification our research model is:

$$Return_{t+i} = \beta_0 + \beta_1 * Dep + \beta_2 * Ind + \beta_{250,1} * Firm\ fixed\ effects_{1,250} + \varepsilon_{t+1}$$

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[6] Indeed Ravina and Sapienza use the time horizon 0-days instead of 1-day. Since the price for the transaction is not reported to the Swedish supervision authority the 1-day horizon is the closest we can examine.
[7] Instead of the variable *Ind* they include a variable named *Large outside blockholder*. A large outside blockholder is defined as an owner of more than 10 per cent of the votes/capital in the firm that does not work for the firm.

Where *Return* is the market-adjusted return, in percentage, for the respective time horizon; *Dep* is a dummy variable equal to one if a dependent director executed the trade; *Ind* is a dummy variable equal to one if an independent director executed the trade; and *firm fixed effects* represents a dummy variable for each individual firm in our sample, except one that is dropped to avoid multicollinearity. Last, ε represents the residuals. All coefficients have the interpretations as a percentage point increase/decrease in *Return*. Alike Ravina and Sapienza we interpret the constant as CEO:s' market-adjusted returns from which we examine if dependent and independent director's returns deviate.[8]

3.2 Data

3.2.1 Sources of data

Our three major sources of data is the Swedish authority of financial supervision's insider trading register, the book series *Boards of directors and auditors*[9] (our translation) for the period 2010/2011-2014/2015 and the Bloomberg database. From the insider trading register we collect data over all trades executed by CEO:s and directors in Sweden. The register contains the date for the trade, type of transaction, number of shares acquired and stockholdings after the trade. However it does not report price of the trade, which is collected from Bloomberg.

CEO:s and directors in companies listed at a regulated stock exchange are obliged by law[10] to report his or her trades in the firm's share, unless their ownership are kept within an endowment insurance, which legally makes the insurance company the owner. Thus our data does not contain trades in endowment insurances.

Information covering whether a director is considered independent or not, with regards to the Swedish corporate governance code, is collected from the book series *Boards of directors and auditors*. Additionally we use the book series to sort out those directors that also serve as the CEO of the company. Data over firm characteristics, such as market capitalisation and book value of assets, are alike historical share prices collected from the Bloomberg database.

3.2.2 Data description

Our sample refers to the time period 2010-2014 and contains 3705 purchases and 1510 sales; in 251 different companies; executed by 854 different directors and 184 different CEO:s. Table 1 beneath reports the characteristics of the trading in our sample. Out of the total 3705 purchases 19 per cent are executed by CEO:s, 42 per cent by dependent directors and 39 per cent by independent directors. Corporate insiders execute few trades per person. For sales the equivalent numbers are 18 per

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[8] It can be argued that the constant also include an affect that cannot be attributed to the CEO:s' trading. If our model is incomplete with regards to explaining the returns the constant might capture some "noise" instead. We discuss this in more depth in section 6.

[9] Original title in Swedish: *Styrelser och Revisorer.*

[10] The official swedish name for the law is: Lag (2000:1087) om anmälningsskyldighet för vissa innehav av finansiella instrument.

cent, 49 per cent and 33 per cent. During the five years we examine each dependent director executed an average of 5,7 purchases. CEO:s and independent directors execute 3,90 and 2,75 purchases respectively. Thus dependent directors buy more often than both CEO:s and independent directors.

Two other factors that are important to consider are the monetary size of the executed transactions and the insiders' stock holdings. If corporate insiders do not put enough wealth at risk when they trade in the stock it is possible that the trades do not reflect how much information about the firm they have; the trading could be driven by other motivations than profit seeking (e g to increase control of the firm). In addition to being the most intensive buyer dependent directors also execute larger purchases and hold a larger position in the firm. On average purchases executed by a dependent director are worth SEK 18 million and the average holdings is SEK 767 million. However since the median values are SEK 310 000 and SEK 13 million respectively there is a considerable skewness in our sample. Next after dependent directors CEO:s makes the largest purchases: on average SEK 4,93 (0,2) millions and have the largest stock holdings: on average SEK 81 (1,74) millions – median values in parentheses. For independent directors the equivalent figures is SEK 1,25 (0,14) millions and SEK 11,18 (0,53) millions. The same relationship is presented in our sample of sales – see table 1. In conclusion the transaction sizes and stock holdings should be large enough to reveal insiders information about the firm.

Table 1: Trade characteristics				
Purchases	**Mean**	**Median**	**Std. Dev.**	**%**
Trade executed by				
CEO				19 %
Dependent Director				42 %
Independent Director				39 %
Stock holdings (MSEK)				
CEO	81,01	1,74	9,05	
Dependent Director	767,03	13,09	148,84	
Independent Director	11,18	0,53	1,17	
Transaction size (MSEK)				
CEO	4,93	0,20	63,84	
Dependent Director	18,16	0,31	125,34	
Independent Director	1,25	0,14	9,10	
Sales				
Trade executed by				
CEO				18 %
Dependent Director				49 %
Independent Director				33 %

Stock holdings (MSEK)			
CEO	76,71	3,86	22,03
Dependent Director	296,72	22,82	44,96
Independent Director	27,99	2,36	3,26
Transaction size (MSEK)			
CEO	12,96	0,82	104,80
Dependent Director	26,45	0,88	113,63
Independent Director	2,94	0,24	14,09

The table reports how large share of the trades that are executed by the respective type of insider. Further the table reports the transaction size and the size of insiders' the stockholdings. The value of stock holdings and the transaction size is reported in million SEK.

It is also important to consider how the insiders' trading is distributed over the year. If corporate insiders in our sample trade very infrequently it is possible that even if they outperform the market they might just be informed occasionally during the year. Thus, in order to be sure that directors consistently have enough information to monitor the executive management their trading should be evenly distributed over the year. Figure 1 beneath provides a description of when corporate insiders buy and figure 2 illustrates when insiders sell.

Figure 1: When do insiders buy?
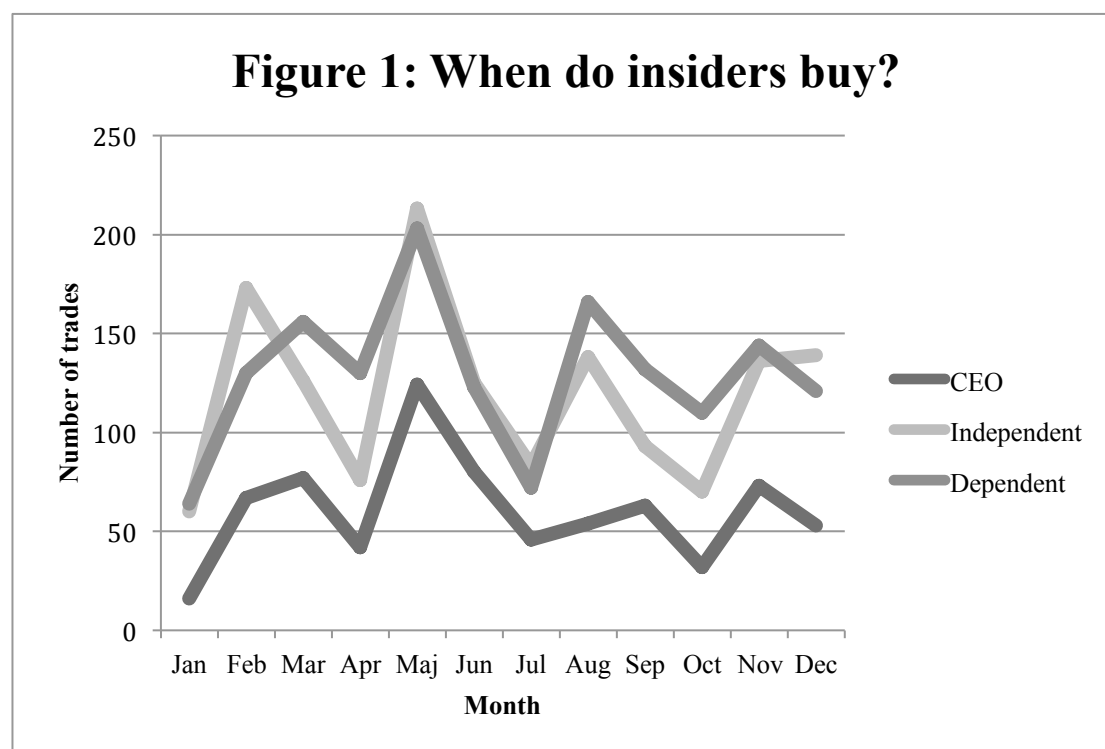
The figure shows how insiders' purchases are distributed over the year. Each line represents how the respective insiders' purchases are distributed. Each month shows the aggregated number of trades in the month over the sample's entire time period.

Figure 2: When do insiders sell?
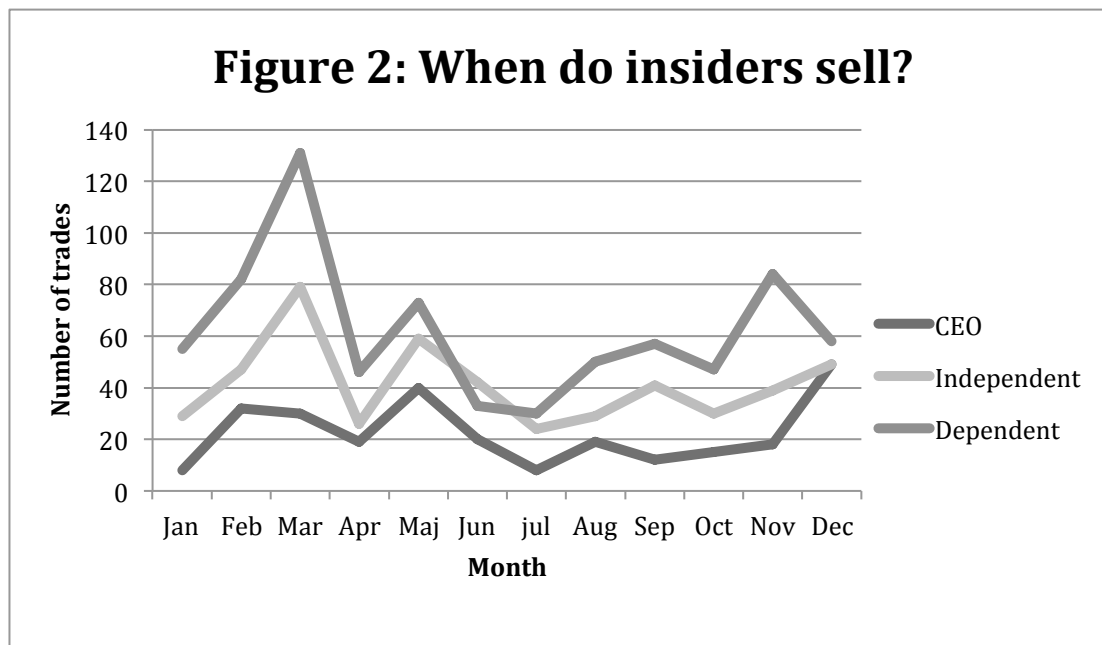
The figure shows how insiders' sales are distributed over the year. Each line represents how the respective insiders' sales are distributed. Each month shows the aggregated number of trades in the month over the sample's entire time period.

From figure 1 we can conclude that the buy-transactions in our sample are, more or less, uniformly distributed. Although there are four periods where the trading activity significantly decreases this should not arouse any concerns that insiders' are not informed during these periods of the years. In fact, the most likely reason to the decrease is that the insiders are more informed than general public. All four periods where the trading decreases occurs during the time frame when quarterly reports are released. Therefore it is logical that insiders reduce their trading to minimize the risk of illegal insider trading. Several firms also forbid their insiders to trade before the report, a so-called "quiet period". Further, the distribution of our trading is in line with what earlier literature reports (Ravina and Sapienza, 2010, p. 971).

Further figure 2 suggests that also sell-transactions are uniform over the year. It is an increase in the transaction in the end of the year, which probably is driven by tax reasons. There is also a substantial increase in March, which is hard to explain; it may be a coincidence; it might be derived to the publication of annual reports. Last table 2 reports firm characteristics in our sample.

Table 2: Firm characteristics

Purchases	Mean	Median	Std. Dev.	%	Observations
Book value of assets (MSEK)	47289,94	1818,00	264064,58		3705
Market cap (MSEK)	15546,46	1665,49	43060,49		3705
P/B	1,22	0,68	1,90		3705
Large cap				23 %	
Mid cap				30 %	
Small cap				47 %	

Sales					
Book value of assets (MSEK)	35853,30	2468,90	256419,28		1510
Market cap (MSEK)	8429,45	2379,06	23799,71		1510
P/B	1,38	0,82	1,99		1510
Large cap				16 %	
Mid cap				46 %	
Small cap				38 %	

The table reports the book value of assets, the market cap and P/B-ratio for the firms in our sample. Book value of assets and market capitalisation is reported in million SEK. Further the table reports how the trading is divided between large, mid and small cap firms.

4. Result

Table 3, panel A, regressions 1-5, report the result for purchases when we run the basic specification. We interpret a coefficient with a p-value less than 0,05 as significant. According to earlier literature the magnitude of the insiders abnormal returns increases with time; thus the 180-day horizon is the most interesting. For the majority of the horizons the constant is insignificant. For the two shortest time periods dependent directors significantly outperform the CEO but the effect disappears over time. Interestingly, and in line with what has been hypothesized, independent directors earn significantly less than the CEO:s over the 180 day horizon. The difference in the returns is 2,90 percentage point. Therefore at first glance there is some support for the hypothesis that Swedish CEO:s make more profitable trades than independent directors in Swedish listed firms.

However, as already presented, the average transaction size and the average stock holdings differs between CEO:s, dependent directors and independent directors. In particular, CEO:s on average execute larger transactions and owns a larger stake in the firm than independent directors. If this gives CEO:s higher incentives to trade better there might exist an upward bias in regressions 1-5 that increases any difference in the returns earned by CEO:s and independent directors (Ravina and Sapienza, 2010, p. 979). Hence, our significant result might be due to different incentives and not differences in knowledge about the firm.

Therefore, alike Ravina and Sapieza (2010) we rerun the regressions and control for holdings in the firm and the size of the transaction. The variable *Holdings* measures stock holdings in the firm scaled by SEK 1 billion to facilitate the interpretation of it. *Transaction* measures the transaction size as a share of market capitalisation.[11] We also include interaction terms for *Holdings* and *Transaction* with each type of director.

When we control for the value of the stock holdings and the transaction size the overall result (regressions 6-10 in Table 1, panel A) does change compared to our basic specification; there is no longer a significant difference between the CEO:s and independent directors' returns for the 180-days horizon. In general the added explanatory variables are insignificant and have no explanatory power. For the 180-days horizon we find that the interaction term between stock holdings and independent directors is significant. It suggests that if an independent director increases his/her holdings with SEK 1 billion the expected return decreases with 57,5 percentage points. Since the average stock holding for an independent director is SEK 11 million the effect is only marginal; an increase in the holdings with the SEK 10 million would lower the return with 0,57 percentage points. This is in line with what we expected; higher stock holdings seem to create incentives for better trading.

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[11] Whether Ravina and Sapienza's variable *Transaction* actually is defined, as a fraction of market capitalisation is unclear. Even though they clearly state that it is defined as a fraction of market capitalisation they interpret the variable as it instead measured the transaction size in SEK million. We choose to define *Transaction* as a fraction of market capitalisation since it is the stated definition. Rerunning the regression with the alternative definition does not affect our overall results.

Panel B reports the result for sales. Here we do find a significant difference between dependent directors and CEO:s. However sell-transactions do not seem to reveal any new information about the firm. Remember that since we apply a buy and hold strategy to calculate the returns from the sell-transactions a positive return means that the sell is badly timed and a negative return means that the sell is well timed. Our result suggests that mimicking dependent director's sell-transactions would yield an abnormal return of roughly 4 per cent. Therefore it is likely that the sell-transactions are not simply driven by expectations about poor performance in the company stock.

To sum up, we do not find any support for our first hypothesis; CEO:s does not earn significantly higher returns than independent directors. Further there is no support for our second hypothesis either; CEO:s does not earn significantly higher returns than dependent directors.

Table 3: CEO:s and directors trading, controlling for firm fixed effects

Panel A: Purchases

Market adjusted return of holding the individual position

	(1) Return (t+1)	(2) Return(t+30)	(3) Return(t+60)	(4) Return(t+90)	(5) Return(t+180)	(6) Return (t+1)	(7) Return(t+30)	(8) Return(t+60)	(9) Return(t+90)	(10) Return(t+180)
Constant	-0,12	1,45	5,97*	0,96	3,97	-0,13	1,47	5,99*	0,97	3,87
	(0,29)	(1,64)	(3,25)	(2,31)	(3,76)	(0,29)	(1,63)	(3,24)	(2,30)	(3,77)
Dependent Director	0,33**	1,14*	0,11	0,04	-1,39	0,33**	1,00	-0,10	-0,14	-1,52
	(0,15)	(0,62)	(0,83)	(1,08)	(1,41)	(0,16)	(0,64)	(0,85)	(1,12)	(1,46)
Independent Director	0,04	0,36	-0,87	-1,56	-2,90**	0,04	0,38	-0,82	-1,48	-2,57*
	(0,15)	(0,57)	(0,83)	(1,10)	(1,36)	(0,15)	(0,61)	(0,87)	(1,16)	(1,43)
Transaction						6,50	-134,45**	-136,67	-132,07	-87,10
						(7,04)	(53,43)	(112,36)	(122,02)	(116,41)
Holdings						0,25	-0,09	-1,28	-1,51	1,68
						(0,18)	(0,87)	(1,05)	(1,33)	(1,80)
Transaction x Dependent Director						-2,14	139,52**	141,48	137,38	89,37
						(7,31)	(53,79)	(112,67)	(122,20)	(117,32)
Holdings x Dependent Director						-0,25	0,07	1,24	1,46	1,64
						(0,18)	(0,86)	(1,05)	(1,33)	(1,80)
Transaction x Independent Director						-15,72	102,44	32,00	62,11	-74,62
						(10,89)	(68,08)	(121,10)	(138,52)	(153,43)
Holdings x Independent Director						2,62	-19,38	-27,71	-35,15	-57,56**
						(1,67)	(16,10)	(19,08)	(21,87)	(26,85)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3705	3705	3705	3705	3705	3705	3705	3705	3705	3705
R-squared	0,11	0,29	0,32	0,37	0,46	0,11	0,30	0,32	0,38	0,46
Robust standard errors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Sales

Market adjusted return of holding the individual position

	(1) Return (t+1)	(2) Return(t+30)	(3) Return(t+60)	(4) Return(t+90)	(5) Return(t+180)	(6) Return (t+1)	(7) Return(t+30)	(8) Return(t+60)	(9) Return(t+90)	(10) Return(t+180)
Constant	0,28	0,43	0,60	-1,98	-0,15	0,19	0,34	0,28	-2,47	-0,50
	(0,49)	(1,63)	(2,39)	(2,64)	(4,61)	(0,50)	(1,65)	(2,45)	(2,78)	(4,52)
Dependent Director	0,99	2,30*	4,35***	5,26***	4,21*	1,23*	2,52**	4,73***	6,00***	4,71**
	(0,72)	(1,24)	(1,55)	(1,70)	(2,26)	(0,74)	(1,21)	(1,51)	(1,71)	(2,29)
Independent Director	0,69	2,80**	2,58*	3,48**	0,90	0,93	3,03**	3,44**	4,79***	1,83
	(0,72)	(1,35)	(1,48)	(1,68)	(2,22)	(0,77)	(1,43)	(1,54)	(1,89)	(2,35)
Transaction						-55,67	-89,80	-190,78	-264,99	-278,36
						(44,22)	(152,07)	(168,51)	(161,95)	(208,75)
Holdings						-0,17	-0,91	-1,05	-1,26	-1,86*
						(0,21)	(0,71)	(0,78)	(0,78)	(0,99)
Transaction x Dependent Director						54,00	79,69	161,82	241,50	232,34
						(43,86)	(152,00)	(167,49)	(160,85)	(207,43)
Transaction x Independent Directo						63,77	50,42	207,75	290,31	169,99
						(168,67)	(168,67)	(178,45)	(177,25)	(240,38)
Holdings x Dependent Director						-0,02	0,75	0,61	0,82	1,66
						(0,23)	(0,75)	(0,83)	(0,99)	(1,37)
Holdings x Independent Director						0,56	-0,05	-2,49	-7,08	-4,57
						(0,75)	(4,98)	(5,11)	(6,18)	(7,93)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1510	1510	1510	1510	1510	1510	1510	1510	1510	1510
R-squared	0,21	0,24	0,37	0,36	0,49	0,21	0,24	0,38	0,36	0,50
Robust standard errors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The dependent variable is insiders' market-adjusted returns for the respective time horizon (1-, 30-, 60-, 90-, 180-days). That is the return of mimicking the insider's trade by taking a position the stock and subtracting the return from a short position in the market index multiplied by 100 such that the coefficients can be interpreted in percentage form. Dependent director is a dummy variable equal to one if the individual is a dependent director but not the CEO of the firm. Independent director is a dummy variable equal to one if the individual is an independent director. Transaction measures the transaction size as a share of market capitalisation. Holdings measure the individuals stock holdings in the firm, scaled by SEK 1 billion. Transaction * Dependent director is an interaction term between Transaction and Dependent director. Equivalent Transaction * Independent director is an interaction term between Transaction and Independent directors. Holdings * Dependent director is a interaction term between Holdings and Dependent directors and Holdings * Independent directors an interaction term between Holdings and Independent directors. The symbols ***, **, * indicate statistically significance at the 1%, 5%, and 10% levels, respectively. Panel A report our result for purchases and panel B report our result for sales.

5. Analysis

How should the reported result be interpreted? What does it imply about independent directors' knowledge about the firm they are a director of? Briefly our results suggest that Swedish CEO:s, dependent directors and independent directors possess the same level of information about the firm. Beneath we first discuss the implication of our finding and argue that Swedish CEO:s and directors is an equally informed crowd. Thereafter, since our result is contrary to our hypotheses, Ravina and Sapienza's (2010) result and what Adams and Ferriera (2007) argue we propose two non-competing theories that could explain our result.

5.1 Swedish CEO:s and directors; an equally informed crowd

Since our result indicates that buying when insiders are selling would actually yield a positive abnormal return we interpret that the sales are driven by other motives than profit seeking. Thus our analysis focuses solely on insiders' purchases.

5.1.1 CEO:s and independent directors

Our result does not suggest that CEO:s earn more than independent directors. Instead CEO:s and independent directors earn returns of the same magnitude from their insider trading. Since the profitability of the trades is a measure of the insiders' information level it implies that CEO:s and independent directors are equally informed in Sweden. This means that our result suggests that in Sweden independent directors can collect enough information about the firm such that they can monitor the CEO and his/her executive management.

5.1.2 CEO:s and dependent directors

Regarding our second hypothesis that CEO:s earn more than dependent directors we do not find the expected result. CEO:s and dependent directors earn market-adjusted returns of the same magnitude. Thus, a practical implication, in the light of the recently stated, seems to be that the CEO:s does not favour dependent directors and share more information with a them than with an independent director.

5.1.3 Insiders do not possess more information than the market

Surprisingly the constant is insignificant for all of our five time horizons. It implies that corporate insiders do not outperform the market in their trading. Therefore the result suggests that insiders are equally formed as the market. At least, any information advantage is not large enough, or of such a nature, that insiders can profit from it.

5.2 Why are Swedish CEO:s equally informed as Swedish directors?

Compared to earlier literature our result is surprising. Foremost we do not find that insiders significantly outperform the market. Further we do not find the expected different between CEO:s and directors returns. According to us there are two likely explanations to these results. It may be that informative trades are "hidden" within an endowment and it may be that Swedish CEO:s share more information with the board of directors than American CEO:s. Let us first develop our theory regarding "the hidden trades".

5.2.1 Trades hidden within the frame of endowment policies

Sweden has a unique loophole in its insider trading regulation.[12] This loophole allows corporate insiders to trade in the firm's stock without reporting the trades to the supervision authority if the trades are executed inside an endowment. This might potentially introduce a large selection bias in our sample; informative trades might be "hidden" inside endowments and therefore not recorded in our sample.

   Two reasons speak for a selection bias. Firstly, well-timed trades might arouse suspicions of illegal insider trading, or in fact is illegal insider trading. Therefore insiders have motives for not report very well timed trades. Secondly, endowment insurances offer a favourable taxation of capital gains. Therefore it is economically optimal to execute profitable trades in an endowment. Endowment policies, however, has a downside. The investor is not the legal owner of the shares and cannot exercise right associated with owning the shares (e g voting rights). Thus if the end of the purchase is to gain control of the firm the transaction in question cannot be executed inside an endowment. Expressed differently, trades that are executed through an endowment are more likely to be driven by profit seeking and transactions outside an endowment are to a larger extent driven by a desire to gain control of the firm.

   During 2011 the Swedish financial supervision authority conducted a survey to better comprehend whether insider transactions are hidden within an endowment. They asked companies that offer endowment insurances to anonymously report if corporate insiders had endowment insurances and whether they held positions in stocks that they are insider of through the endowment. Out of roughly 900 insiders with an endowment 200 had shares in a firm of which they are insiders. Compared with 2008, there has been a large increase in the number of insiders who are doing this sort of trading through endowments. On an annual basis the growth rate was 68 per cent between 2008 and 2011. In line with this there is also a remarkable large difference between the median value of both stock holdings and transaction size among dependent directors in our sample (Finansinspektionen, 2011).

   In conclusion there is possible that there is large dark number of trades executed by CEO:s and directors that we cannot examine. Due to the benefits an endowment offers it is also probable that these trades in general are more informative than the

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[12] The legal requisite that triggers an obligation to report the trading is tied to ownership. Therefore corporate insiders in Sweden do not have to report their insider trading if their trades are through an endowment.

reported trades. Thus an explanation to our result is simply that we cannot examine the trades that reveal the most information about the firm.

5.2.2 CEO shares more information

Although a likely explanation to our result is that the most informative trades are "hidden", the transaction sizes in our sample tell another story. Even if the overall goal is to gain control the average transaction size is too large for not assuming that directors do no neglect the economics of the trade. An explanation to our results may therefore be derived from Adams and Ferriera's (2007) reasoning.

As mentioned above, they argue that an independent board are likely to be less informed since the CEO would share more information with a dependent board. Correspondingly, an explanation to why we do not find any difference in the information level in Sweden could be that CEO:s share more information with the board of directors than what is expected in the literature. Let us elaborate this explanation.

A reason that has been underlined by the literature to why the effectiveness of a corporate governance policy can differ between various countries is different cultures (Chan and Cheung, 2012). Ethical decision-making and the importance of social norms, which is closely related to good corporate governance, have also shown to vary substantially between cultures (Coffee, 2001; Blodgett *et al*, 2001). Especially variations depending on a collectivistic and an individualistic culture have been extensively researched.

Blodgett *et al* (2001) argue that in a more collectivistic country decision-makers to a large extent considers the decisions effect on the firm's stakeholders, which includes shareholders. In line with this Husted (2008) argues that in a more collectivistic country decisions makers are more likely to include moral considerations in their decisions.

The CEO's decision to share information or not with the board can be framed as a moral decision; it is the CEO's legal duty to act in the firm's best interest. Further sharing information should increase both shareholders and other stakeholders' welfare. Thus, in a more collectivistic culture decision-makers considers the decisions' effect on stakeholders and the moral sphere of the decision. Therefore CEO:s in a collectivistic country should be expected to share more information with the board of directors. Hence Swedish CEO:s should be expected to share more information with the board of directors than American CEO:s. This could explain why our result deviates from Ravina and Sapienza's (2010).

6. Robustness tests

Including firm fixed effects in our regressions manages several problems mentioned above but can potentially increase the average returns of contrarian investors (Lakonishok and Lee 2001; Jenter 2005). In the regressions with firm fixed effects the coefficients of the insider dummies should be interpreted as the directors return over or below the firm average. Thus, if insiders buy after price declines their returns are compared to the firm average for the sample's time span, which makes it possible that the difference is positive but the absolute level of the return is not. Consider the following example: if an investor earns −5 per cent on a trade but the average return for the firm is −15 per cent between 2010 and 2014. Then the difference is positive and 10 per cent but the absolute level of the return is negative. This has the potential to distort our result (Ravina and Sapienza, 2010, p. 980, see note 17 for the presented example). Therefore we rerun all regressions reported in table 1 panel A without controlling for firm fixed effects.

Rerunning the regressions without controlling for firm fixed effects substantially alters the result. Now the constant is significant for the majority of our five time horizons. Further dependent directors earn significantly less than CEO:s for the three longest time horizons. For the 180-day horizon our result suggests that CEO:s earn an abnormal market-adjusted return of 5,18 per cent. Furthermore, at the same horizon, dependent directors on average earn 4,92 per cent less than CEO:s. Thus we can conclude that contrarian investors do not inflate our returns. Instead the previous insignificant differences widen and we find significant results.

Whether we control for firm fixed effects or not essentially determine this paper's finding. Including firm fixed effects eliminates almost all significant terms compared to when we do not control for firm fixed effects. This result could probably be derived to some kind of composition effect; independent directors could trade more often in firms that have a lower average return – typically larger firms (Ravina and Sapienza, 2010).

In order to ensure that there are no outliers that affect the results we trim the data over purchases by 1 per cent based on the 180 days return (not reported). This does not alter our overall conclusion; independent directors are still less informed than CEO:s. However now our result suggest that dependent directors earn significantly less than CEO:s through their insider trading. This strengthens our expectations that dependent directors are not treated more favourable than independent directors.

Table 4: CEO:s and directors trading, without controlling for firm fixed effects

Purchases	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Market adjusted return of holding the individual position	Return (t+1)	Return(t+30)	Return(t+60)	Return(t+90)	Return(t+180)	Return (t+1)	Return(t+30)	Return(t+60)	Return(t+90)	Return(t+180)
Constant	0,09	2,21***	2,55***	3,32***	4,99***	0,08	2,40***	2,83***	3,52***	5,18***
	(0,10)	(0,44)	(0,62)	(0,77)	(1,08)	(0,11)	(0,46)	(0,65)	(0,81)	(1,13)
Dependent Director	0,22*	-0,72	-1,46*	-2,15**	-4,72***	0,22*	-0,88	-1,71**	-2,33**	-4,92***
	(0,12)	(0,53)	(0,75)	(0,93)	(1,31)	(0,13)	(0,55)	(0,78)	(0,96)	(1,35)
Independent Director	0,01	-0,85	-1,44*	-2,39**	-2,95**	0,02	-0,52	-0,75	-1,48	-1,53
	(0,12)	(0,54)	(0,76)	(0,94)	(1,32)	(0,13)	(0,57)	(0,80)	(0,98)	(1,38)
Transaction						12,40	-96,41	-160,33	-167,60	187,65
						(17,29)	(74,78)	(105,27)	(129,82)	(182,48)
Holdings						-0,04	-1,20	-1,46	-0,49	-0,02
						(0,36)	(1,54)	(2,17)	(2,68)	(3,76)
Transaction x Dependent Director						-8,14	98,86	160,47	163,52	181,60
						(17,41)	(75,30)	(106,00)	(130,72)	(183,74)
Holdings x Dependent Director						0,03	1,15	1,43	0,48	0,07
						(0,36)	(1,55)	(2,17)	(2,68)	(3,77)
Transaction x Independent Director						-10,33	106,46	35,05	27,21	-130,59
						(22,30)	(96,45)	(135,76)	(167,44)	(235,35)
Holdings x Independent Director						0,53	-46,80***	-73,95***	-85,88***	-114,84***
						(2,04)	(8,81)	(2,41)	(15,30)	(21,51)
Firm fixed effects	No	No	No	No	No	No	No	No	No	No
Observations	3705	3705	3705	3705	3705	3705	3705	3705	3705	3705
R-squared	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	0,01
Robust standard errors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The dependent variable is insiders' market-adjusted returns for the respective time horizon (1-, 30-, 60-, 90-, 180-days). That is the return of mimicking the insider's trade by taking a position the stock and subtracting the return from a short position in the market index multiplied by 100 such that the coefficients can be interpreted in percentage form. Dependent director is a dummy variable equal to one if the individual is a dependent director but not the CEO of the firm. Independent director is a dummy variable equal to one of the individual is an independent director. Transaction measures the transaction size as a share of market capitalisation. Holdings measures the individuals stock holdings in the firm, scaled by SEK 1 billion. Transaction * Dependent director is an interaction term between Transaction and Dependent director. Equivalent Transaction * Independent director is an interaction term between Transaction and Independent directors. Holdings * Dependent director is a interaction term between Holdings and Dependent directors and Holdings * Independent director is an interaction term between Holdings and Independent directors. The symbols ***, **, * indicate statistically significance at the 1%, 5%, and 10% levels, respectively.

Further we also test if our result holds even if we include two typical risk factors: the price-to-book ratio and firm size. The motivation for this test is that there is a possibility that the constant captures an affect that cannot be attributed to CEO:s trading and information about the firm. Instead the constant could capture an affect that stems from that our model might be incomplete in explaining the returns earned by directors. The result from these regressions is reported in table 5.

Table 5: CEO and directors trades: controlling for firm size and P/B ratio					
Purchases: Market-adjusted return of holding the individual position					
	(1)	(2)	(3)	(4)	(5)
	Return (t+1)	Return(t+30)	Return(t+60)	Return(t+90)	Return(t+180)
Constant	-0,08	2,72	8,72***	3,89	8,50**
	(0,30)	(1,73)	(3,36)	(2,38)	(3,70)
Dependent Director	0,34**	1,34**	0,54	0,50	-0,72
	(0,15)	(0,60)	(0,80)	(1,06)	(1,41)
Independent Director	0,04	0,43	-0,70	-1,37	-2,59*
	(0,15)	(0,57)	(0,81)	(1,09)	(1,35)
Size	-0,001	-0,01*	0,05***	-0,07***	-0,01***
	(0,006)	(0,009)	(0,01)	(0,01)	(0,03)
Price-Book ratio	-0,03	-1,20***	-2,53***	-2,63***	-3,88***
	(0,06)	(0,40)	(0,38)	(0,38)	(0,79)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	3705	3705	3705	3705	3705
R-squared	0,11	0,30	0,34	0,39	0,47
Robust standard errors	Yes	Yes	Yes	Yes	Yes

The dependent variable is insiders' market-adjusted returns for the respective time horizon (1-, 30-, 60-, 90-, 180-days). That is the return of mimicking the insider's trade by taking a position the stock and subtracting the return from a short position in the market index multiplied by 100 such that the coefficients can be interpreted in percentage form. Dependent director is a dummy variable equal to one if the individual is a dependent director but not the CEO of the firm. Independent director is a dummy variable equal to one of the individual is an independent director. Size is the market capitalisation scaled by SEK 1 million. Price-book ratio is the market capitalisation as a as a share of the book value of the firm's assets. The symbols ***, **, * indicate statistically significance at the 1%, 5%, and 10% levels, respectively.

When we rerun our basic specification the constant becomes significant and suggest that CEO:s on average earn 8,5 per cent from their trading. Further the two risk factors are significant. However our overall results does not change, both dependent and independent directors' returns are not significantly different from CEO:s'. Therefore we can conclude that the constant actually seems to contain information that cannot be attributed to CEO:s' trading. But there is still no significant difference in the returns earned by CEO:s and the two groups of directors.

In additional not reported tests we extended the analysis of insiders' returns. Firstly we examined whether any difference in the insiders' returns depend on whether the firm is a large cap, mid cap or small cap firm. Secondly we examined if directors' return was affected by committee membership (audit committee, remuneration committee and nomination committee) and meeting attendance.[13] Neither of these two extensions had any significant effect on the market-adjusted returns.

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[13] Meeting attendance and information over committee membership was hand-collected for a subsample of the firms that have set up an audit committee, a remuneration committee and a nomination committee. The information was collected from the firms' corporate governance reports.

7. Discussion

From a policy viewpoint our result supports independent directors as an efficient corporate governance policy in Sweden. Critics' primary – and single – argument against independent directors is that they are not sufficiently knowledgeable about the company to monitor its executives. That is not the image of independent directors this paper reflects. Our result suggests that independent directors are as informed about the company as CEO:s. In fact, our result even imply that CEO:s and directors are equally knowledgeable about the firm as the market. Thus the simple implication from this paper for Swedish policymakers is to maintain independent directors as a corporate governance policy. Further our result suggest that dependent directors are not treated more favourable by CEO:s.

Our result is contrary to Ravina and Sapienza's (2010) findings and what Adams and Ferriera (2007) propose. The result is however in line with earlier literature that has empathized the importance of culture and institutional environment when evaluating the effectiveness of corporate governance policies. As elaborated in section 5 it is possible that our result differs since CEO:s might share more information with the board in Sweden. Another notable finding is that CEO:s and directors earn returns of the same amount as the market when they trade in the company's stock. Earlier literature has unanimously found that insiders significantly outperform the market when they trade in the company's stock.

However one should be a little cautious to give our result a too large significance yet. As mentioned there is a loophole in the Swedish insider regulation that potentially prevent us from examine a complete sample of insider transactions in Swedish firms. Fortunately we will soon be able to at least estimate to what extent our sample suffers from a selection bias due to the loophole. From 1th July 2016, as a consequence of a new EU regulation (MAR)[14], trades executed inside an endowment have to be reported to the supervision authority. Therefore trades by insiders that previously have been "hidden" within an endowment will become visible for the general public.

This event gives a rare opportunity to examine insiders' trading that future research should exploit. Since the legislative change forces insiders out in the light there are several questions that could be interesting to examine. First, it is interesting to examine whether there is an increase in the number of insider transactions that is reported to the Swedish financial supervision authority or not. If there is a substantial increase in the number of reported transaction there is likely that our sample suffers from a selection bias. Thus a second topic for future research is to replicate Ravina and Sapienzas' study once again in Sweden and investigate whether our result still holds. Another issue that is interesting to examine is whether the profitability of insiders' returns, before and after the legislative change, differs. By doing this we can potentially obtain a glimpse of whether insider previously hid trades that revealed a lot of information about the firm.

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[14] MAR stands for *market abuse regulation*.

8. Conclusion

This paper examines how informed independent directors are about the company they serve as a director of. We investigate purchases reported to the Swedish financial supervision authority and examine whether independent directors earn less from their trading in the firm's stock than CEO:s and dependent directors. Among our three groups of corporate insiders there is no significant difference in the returns earned from their trading.   Thus we argue that independent directors have enough information to monitor the executive management.

Our result is unexpected since Ravina and Sapienza (2010) reports the opposite result and Adams and Ferriera argue that the CEO will withhold information from an independent board. A potential explanation to this result is simply that Swedish CEO:s share more information with the board of directors than CEO:s in the United States. A reason to why Swedish CEO:s might share more information is cultural differences between Sweden and the United States. In particularly Sweden has a more collectivistic culture, which could have the effect that CEO:s take more ethical decision and to a larger extent considers effects on the firm's stakeholders from their decisions.

However, our results have to be interpreted with some cautiousness. Due to a loophole in the Swedish insider regulation directors are not obliged to report their trading if it is conducted in an endowment. This may potential introduce a large selection bias in our result. Fortunately, from 1th July 2016 insiders also need to report trades executed in an endowment. Thus an estimation of the potential selection bias can be made. If there a sufficiently large selection bias a topic for future research is to replicate this study and examine whether our results still hold. Yet, the legislative change per se will provide a rare opportunity to examine insiders trading.

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