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Institutional selling around forced CEO-turnover

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## 1. Introduction

The emerging role of institutional ownership in corporate governance has become a widely-discussed topic in studying investor behavior in recent decades as institutions have become the majority owner of US corporations. Our research report an average institutional ownership between 70 and 80 percent of US stock listed corporations. (Denis, Denis, & Sarin, 1997) report that this growing presence of outside institutional blockholders increase the likelihood of an executive turnover to appear. Similarly, (Parrino, Sias, & Starks, 2003) report that institutions on average decrease their holdings prior to forced CEO-turnovers with the greatest sell-off appearing in the four quarter immediately prior to forced turnover. They investigate how institutional ownership fractions change in firms where CEO is forced from position compared with voluntary CEO turnover. “The wall street walk”, “the wall street rule” or as the paper is titled, “*Voting with their feet*”, are all common expressions for investor`s behavior for selling off shares when they are dissatisfied with a firm`s performance or as an act of governance.

We seek to replicate part of the study by Parrino et al., (2003) to investigate if there is still a trend among intuitional investors to “vote with their feet”, using more recent available data from 2010-2015. We will examine whether institutions sell their holdings leading up to forced CEO-turnover and why they might sell by studying institutional ownership fractions in the two years prior to forced CEO-turnover and using voluntary turnovers as a benchmark. We investigate three possible hypotheses on why institutional investors might choose to sell prior to forced CEO-turnover:

- H1: Abnormal returns tend to be negative in the years leading up to forced CEO turnover and institutional investors are momentum traders.
- H2: Institutions abandon securities that subsequently force their CEO from office because institutions favor more prudent securities and shares of such firms become less prudent in the years prior to forced CEO turnover.
- H3: Institutions are better informed and thus can choose to sell their shares prior to forced turnover in anticipation of negative abnormal returns.

Our examination of institutional ownership around forced CEO-turnover provide interesting insight with respect to institutional investor`s behavior. As tested for, we find that institutional shareholders on average decrease their holdings by

6,22% in the two years prior to forced CEO-turnover. This decrease is statistically significantly more negative than in firms experiencing voluntary CEO-turnover. However, we find weak significant differences between control firms and forced turnover firms, indicating that some of the decrease could be explained by the industry movements. Further, we find that these firms suffer a negative market-adjusted abnormal return of 22,90% in the same two years. We establish a significant positive relationship between change in institutional ownership and return, supporting H1 that institutions are momentum traders. However, large differences between abnormal and nominal change in institutional ownership reflects that this relationship cannot fully explain the institutional selling. Also, while the overall institutional ownership fraction decreases in the years leading up to forced CEO-turnover, the amount of institutions holding shares remain somewhat constant. We test for window-dressing and find some evidence to support for this phenomenon.

We find some support for H2 that institutions favor more prudent stocks. Specifically, forced turnover firms have significantly lower performance than voluntary turnover firms and control firms in the two years prior to turnover. In addition, we find these firms more volatile in daily return preceding turnover. Within these firms, we observe that dividend paying firms perform better than non-dividend paying firms but we find no evidence that non-dividend paying firms experience more negative fraction change of institutional shareholders prior to forced turnover than dividend paying firms. Without further empirically investigation of H3 that institutional shareholders are better informed, we do a qualitative examination of change in number of institutional investors and find results which implies institutional investors are better informed than individual investors and that large institutional stakeholders are better informed than smaller institutional stakeholders.

The remainder of the paper is organized as follows. Section 2 present earlier research within institutional activism. Section 3 describes the data. Section 4 examine the institutional ownership and the change in ownership composition prior to forced turnover. Section 5 investigate hypothesizes why institutional investors might choose to sell. Section 6 conclusion.

## 2. Prior research on institutional shareholder's activism

In theory, the relationship between management and shareholders is commonly known as principal agent theory (Ross, 1973). The agent makes decisions on behalf of the principal. Our research concerns the governance issue of institutional shareholders and their indirect activism through selling large position of shares when dissatisfied with management.

Lowenstein, (1988) is cited in numerous research within the discussed field and has played a central role in the agenda of emerging role of institutional shareholders suggesting that there is a conflict of interest in the investment time horizon between long-term management and short-term institutional shareholders.

Edmans & Manso, (2011) discuss shareholder's tendency of competing in trading more than private benefit, meaning competing in trade profits before governing own firms. Nofsinger & Sias, (1999) contributed important evidence that institutional investors' trading or herding, impact share prices more than individual investors. They find a positive relationship between the fraction of institutional shareholders and the share price supporting the suggestion made by Lowenstein, (1988).

With respect to institution's governance technique, McCahrey, Sautner, & Starks, (2016) report that almost 50% of their respondents had exited their holdings in firms as a governance mechanism. Support for this research, Levit, (2014) claims that activist investors lose credibility and the ability to influence managers if influence is attempted public. Further support that investors prefer to influence change behind the scenes (Carleton, Nelson, & Weisbach, 1998) and (Becht, Franks, Mayer, & Rossi, 2009). Companies might prefer to influence behind the curtain because publicly trying to engage in change-making activities might give signals to other investors that there is a problem in the firm and thus result in reduced share prices, inflicting losses on the initiating investor (Keasey, Thompson, & Wright, 2005).

Asymmetric information is believed to be substantial between small and large shareholders. Ali, Klasa, & Zhen Li, (2008) find support for this hypothesis that larger institutional stakeholders are better informed than smaller institutional stakeholders prior to earnings announcements.

### 3. Data

Challenger, Gray & Christmas, Inc has provided us with data containing all CEO turnovers in the US from 2010 to 2016. The data contains dates of CEO departures, the name of the firm in which the turnover appears and the reason for the departure. To sort the turnovers reported by Challenger, Gray & Christmas Inc to fit with our research we apply some restrictions on which companies we choose to involve:

- 1) The turnover must occur between 2012-2015
- 2) The companies must be listed on NYSE or NASDAQ.

Most of the data are sorted by Challenger, Gray and Christmas Inc but we also apply the same classification criteria suggested by (Parrino et al., 2003) to classify a turnover into forced or voluntary in order to further validate which category a turnover should be in. We require a wall street newspaper to either:

- 1) report that the CEO is fired or forced from position.
- 2) not report the reason for the departure.
- 3) not report the retiring of the CEO at least six months before the turnover.

For those turnovers that cannot be proven to be forced per one or more of these criteria will be excluded from the forced turnover sample. The turnovers that are not classified as forced are assumed voluntary. The voluntary turnovers sample will, in the empirical analysis, serve as a benchmark when examining the change in institutional ownership structure. Institutional ownership data is gathered from Bloomberg Terminal database as we find their data more accurate than the Thomson Reuters database which in many cases reported institutional ownership levels far above 100%. This has been attributed by Thompson Reuters to short selling and differences in the dates ownership is reported by investors.

Institutional ownership data from Bloomberg Terminal only goes back to 2010 and allow us only to use turnover samples between 2012 and 2015, which have limited the timespan of this research somewhat, in order to gather data two years prior and two years post turnover. Out of 197 turnovers in this time range, we obtain 47 forced and 151 voluntary turnovers.

To account for industry trends, we create a control sample containing the nearest comparable firms by industry and market capitalization to the forced turnover sample that has not experienced any CEO-turnover in the event-window. There were some cases where we did not find a control firm. Out of 47 forced turnover

firms, we are left with 41 control firms. For all firms in the forced, voluntary and control sample we gather quarterly and daily returns, dividend payout history, quarterly reported fraction of institutional ownership and number of institutional shareholders. All variables for every firms in our samples are gathered from Bloomberg L.P. database. Institutional investors are classified as those investors being required to file F-13 forms.

#### **4. Examination of institutional ownership**

We begin our empirical analysis by examining the institutional ownership in the two years prior to turnover. We apply the same methodology as (Parrino et al., 2003).

##### ***4.1 Ownership levels***

*Table 1*, reports the mean and median number institutional shareholders, the percentage ownership held by institutional shareholders and market capitalization in the two years prior to turnover for the forced, voluntary and control sample. Neither the fraction nor the number of institutional shareholders differ significantly between any of the samples. The forced turnover sample has actually more number of institutional shareholders than the voluntary sample which was different from expected. However, voluntary turnover firms have on average significantly higher fraction of institutional ownership. The raw material does not give significant result besides that those firms experiencing forced CEO turnover tend to occur in smaller firms than in the voluntary sample by market capitalization. Point to remember is that when examining raw data, differences can be due to biased population samples. However, examining changes in institutional ownership, reported in *Table 2*, provide more useful insight.



**Table 1**

Institutional ownership two years prior to CEO turnover in forced, control and voluntary turnover sample.

The table reports the mean and median characteristics of the three samples and the t-statistics from an equality test in means. Reported z-statistics is from Wilcoxon rank-sum tests of whether the forced turnover sample, the control sample and the voluntary turnover sample is drawn from the same distribution. Institutional ownership fraction is given in percentage.

**Panel A**

	Forced		Control		Voluntary		Forced = control		Forced = voluntary	
	Mean	Median	Mean	Median	Mean	Median	t-stat	z-stat	t-stat	z-stat
Number institutional shareholders	526	308	589	366	421	259	-0,45	0,82	1,16	0,71
Institutional ownership (%)	74	78	85	87	77	83	-1,75*	1,55	-0,50	0,87
Market capitalization (in millions)	1.6913.480	2.974.200	1.3517.850	3.566.303	8.536.036	2.122.479	0,38	0,75	-1,71*	0,94
Number of firms	41		36		120					

\* indicates statistically significant at the 10% level; \*\* at the 5% level and \*\*\* at the 1% level

#### ***4.2 Changes in institutional ownership***

*Table 2* reports the quarterly percentage change in mean market-adjusted compounded abnormal return, institutional ownership fraction and raw number change in number institutional shareholders in the four years surrounding turnover. We calculate mean-market adjusted compounded abnormal return four years surrounding turnover by applying the CAPM-model and use of industry-adjusted beta-values for every firm provided by Bloomberg Terminal databases. The results are reported in *Table 2, Panel A*. Reported t-statistics in parenthesis is from the null hypothesis that the means do not differ from zero. The last two rows in *Panel A* report t-statistics from equality test with the null hypothesis that forced turnover sample does not differs significantly from voluntary sample or control sample in means. Quarter 0 is the quarter of the turnover event. In the two years prior to forced CEO turnover, firms experience an average decrease in mean market-adjusted compounded abnormal return of -21,9%. The change in market-adjusted compounded abnormal return does not start trending negatively until in the last year prior to turnover. This is different from (Parrino et al., 2003) that reported negative change in abnormal return in both two years prior to forced turnover. T-statistics from equality tests show strong evidence that forced turnover firms suffer a more negatively change in market-adjusted compounded abnormal return in the year prior to and in the immediate quarters after turnover. *Panel B, in Table 2* reports the percentage change in institutional ownership fraction. Significant evidence show that firms lose fractions of institutional ownership in the two years prior to forced turnover to a greater extent than firms with voluntary turnovers. Forced CEO turnover firms experience on average 6,22% decrease in institutional ownership fraction in the two years prior to turnover with the greatest decrease appearing in the quarters immediate prior to turnover. T-statistics show that this decrease is significantly more negative than the change of voluntary sample. There is weak evidence of difference between the forced and the control sample indicating

**Table 2**

Panel A reports the quarterly mean market-adjusted compounded abnormal return for the forced, voluntary and control sample. Market-adjusted compounded abnormal return are in percentage and is computed by using CAPM. Returns are compounded per n quarters  $(1 + r)^n$ . T-statistics from the null hypothesis that their means equal zero are reported in parentheses in its respective periods where period 0 is the time of CEO turnover. T-statistics from equality test in means between forced sample, control and voluntary sample are reported below under t-statistics where the null hypothesis is that the samples do not differ in means. Panel B report the quarterly percentage change in institutional ownership fraction. Panel C report the quarterly raw change in number institutions holding the securities in the forced, control and voluntary sample.

**Panel A: mean market-adjusted compounded abnormal return (%)**

	36/24/115	30/21/114	45/35/118	48/35/120	49/36/121	46/36/121	45/36/121	46/36/120	33/24/114
Number observations	-7 thru 0	-7 thru -4	-3 thru -2	-1 thru 0	1 thru 2	3 thru 4	5 thru 8	1 thru 8	-7 thru 8
Forced	-21,90 (-3,41)***	10,03 (1,58)	-9,81 (-2,32)**	-12,20 (-3,46)***	-9,83 (-2,21)**	-6,20 (-1,66)	-7,49 (-1,25)	-20,96 (-2,59)**	-21,94 (-1,80)*
Control	1,40 (0,21)	2,5 (0,60)	2,25 (0,61)	-3,77 (-1,16)	-0,38 (-0,13)	-0,69 (-0,23)	-1,15 (-0,37)	4,53 (0,69)	18,51 (1,36)
Voluntary	2,30 (0,50)	8,50 (3,27)***	-0,81 (-0,47)	-3,49 (-1,90)**	-1,85 (-1,08)	3,07 (1,52)	-6,93 (-2,35)**	-3,02 (-0,71)	-2,38 (-0,31)*
t-statistics									
Ho: forced = control	-2,45**	0,90	-2,09**	-1,69*	-1,65	-1,10	-0,87	-2,36**	-2,20**
Ho: forced = voluntary	-2,71***	-0,26	-2,36**	-2,38**	-2,05**	-2,36**	-0,09	-2,10**	-1,25

**Panel B: % change in institutional ownership fraction**

Forced (N=37)	-6,22 (-2,56)**	-4,04 (-1,80)*	-4,41 (-2,07)**	0,37 (0,03)	-1,75 (-1,33)	0,77 (-0,53)	-1,31 (-1,39)	-1,05 (-2,99)**	-3,81 (-3,12)**
Control (N=35)	-1,76 (-2,40)**	-1,80 (-1,33)	-3,02 (-1,78)*	-0,90 (-1,22)	-0,92 (-1,87)*	-1,00 (-1,09)	-0,42 (-1,90)*	-1,76 (-2,12)**	-1,88 (-3,08)**
Voluntary (N=120)	-1,44 (-4,96)**	-1,10 (-3,09)**	-1,45 (-3,08)**	-0,57 (-1,60)	-1,46 (-3,90)**	0,40 (-0,96)	-1,44 (-3,24)**	-1,63 (-3,71)**	-1,69 (-5,44)**
t-statistics									
Ho: forced = control	-1,67*	-0,85	-0,50	0,63	-0,58	0,13	-0,90	0,80	-1,39
Ho: forced = voluntary	-3,32**	-2,14**	-2,02**	0,64	-0,30	-0,33	0,14	0,71	-2,42**

**Panel C: raw change in number of institutional shareholders**

Forced (N=37)	1,33 0,85	4,11 (1,44)	2,43 (0,95)	-1,15 (-0,54)	0,68 (0,24)	-2,42 (-0,67)	4,69 (2,17)**	1,57 (0,69)	1,93 (1,14)
Control (N=35)	8,19 (4,16)**	5,61 (2,05)**	7,93 (3,67)**	10,01 (3,23)**	12,54 (2,85)**	10,66 (2,58)**	11,12 (4,54)**	12,50 (4,21)**	10,29 (4,10)**
Voluntary (N=120)	5,80 (6,38)**	5,73 (4,71)**	6,74 (4,97)**	4,81 (3,85)**	4,24 (3,01)**	6,86 (5,62)**	6,62 (4,97)**	5,70 (5,83)**	5,87 (6,84)**
t-statistics									
Ho: forced = control	-2,72**	-0,36	-1,54	-3,06**	-2,37**	-2,38**	-1,96*	-2,97**	-2,88**
Ho: forced = voluntary	-2,56**	-0,61	-1,61	-2,50**	-1,25	-3,18**	-0,76	-1,96*	-2,29**

\* indicates statistically significant at the 10% level; \*\* at the 5% level and \*\*\* at the 1% level

that changes can be due to industry movements.

Panel C reports the change in number institutional shareholders and no statistically evidence show that firms experience any particular changes in the two years prior to forced turnover. In contrast, sample of control and voluntary turnovers experience a significant increase in all quarters resulting in an equality test showing a strong significant difference between forced and voluntary, and forced and control sample in both two years prior to turnover and in the quarters immediate after to turnover.

From *Table 2*, we see that institutional investors sell shares prior to forced turnover to a greater extent than voluntary turnovers. They also experience significant decrease in market performance. Number institutional shareholders are on a steady level prior to forced turnover, that can be caused by a combination of reluctant new institutional investors and institutional selling without selling off.

## 5. Possible reasons why institutional shareholders sell

We have introduced three possible hypotheses why institutional shareholders sell shares prior to forced turnover (momentum trading, favor of more prudent securities and better information). We also check for window dressing.

### 5.1 Momentum trading

We test whether there exists evidence of momentum trading prior to forced turnover beyond the level of general market trends by examining abnormal changes in institutional ownership. We estimate abnormal changes in institutional fraction and abnormal change in number institutional shareholders for each firm-specific quarter, using S&P 500 in the respective quarters as a benchmark. To create a benchmark, we run the following cross-sectional panel regression for S&P 500 with  $\Delta$  indicating change:

$$\Delta \text{ institutional ownership}_{i,t} = \alpha_t + \beta_t(\text{return}_{i,t}) + \varepsilon_{i,t}$$

The change in number institutional investors on the quarterly return and the change in institutional ownership fraction on the quarterly return for the respective quarters. We run this regression for every 16 quarters and use the average intercept and slope coefficient to further calculate the estimated abnormal change in institutional ownership. In these regressions, the average intercept represents

the general market-change in institutional ownership, both by the number of investors and by fraction of shares held by institutions. The average slope coefficient represents the general relationship between quarterly changes in institutional ownership and contemporaneous return. The average coefficients from the cross-sectional panel regressions are found in *Table 3, Panel A*.

We calculate the estimated change in institutional ownership for the forced, voluntary and control turnover sample by applying the same regression for these samples and the results from *Panel A*. The residuals are used as a measure of quarterly abnormal change in institutional ownership and are summed to reflect longer time-periods. *Panel B and C*, in *Table 3* report the mean residuals from the regression above for the forced turnover sample, the voluntary turnover sample and the control sample, and constitutes the mean abnormal change in institutional ownership. In *Panel B*, we find that the forced turnover sample experience significant negative abnormal change throughout the 4-year period we examine around turnovers, with a highly significant (1% level) -22,91% abnormal change in number of institutional investors in the quarters preceding CEO turnover. In contrast, the control sample shows no abnormal change except being slightly positive. The voluntary turnover sample exhibits a slight negative abnormal change before turnover, but not close to the levels observed in the forced sample. For the voluntary sample we see no abnormal change prior to turnover.

In *Panel C*, we find the same trend as in *Panel B* for forced sample, with negative mean abnormal change in institutional ownership two years prior to turnover. In contrast, the negative trend in institutional ownership for the voluntary turnover sample is much more similar to forced turnover. When we compare the mean abnormal changes in ownership in *Table 3* to the nominal change we observed in *Table 2*, we find that for the forced turnover sample there is a big difference in the change in number of institutional investors, -1,15% in nominal change against -22,91% in abnormal change in the quarter prior to turnover.

The difference also holds true when examining institutional ownership fractions, only reverse from number institutions, nominal change in fraction show larger change than abnormal change.

**Table 3**

We run the following cross-sectional panel regression for S&P 500,

$$(\Delta \text{institutional ownership})_{i,t} = \alpha_t + \beta_t(\text{return}_{i,t}) + \varepsilon_{i,t}$$

The change in number institutional investors on the quarterly return and the change in institutional ownership fraction on the quarterly return for the respective quarters. We run this regression for every 16 quarters and use the average intercept and slope coefficient to further calculate the estimated change in institutional ownership. The average intercepts represent the general market-change in institutional ownership. The average slope coefficient represents the general relationship between quarterly changes in institutional ownership and contemporaneous return. The average coefficients from the cross-sectional regressions are found in *Panel A*. Applying the results and the same regression in *Panel A*, we calculate the estimated change in institutional ownership for the forced, voluntary and control sample. The mean residuals serve as the abnormal change in number institutional shareholders and abnormal change in institutional ownership fraction and is reported in *Panel B* and *C* respectively. Abnormal changes over multiple periods are computed as the sum of residuals over the quarters. The last two rows of *Panel B* and *C* test the null hypothesis that the forced and control samples, and the forced and voluntary samples have equal means. T-statistics in parentheses test whether the mean is different from zero.

**Panel A**

	Average intercept (t-stat)				Average slope coefficient (t-stat)			
Change in number of inst. investors	7,78 (6,96)***				11,07 (4,14)***			
Change in % of Inst. ownership	0,00633132 (2,75)***				0,00200025 (1,63)*			

**Panel B: mean abnormal change in number of institutional shareholders**

Periods	-7 thru 0	-7 thru -4	-3 thru -2	-1 thru 0	1 thru 2	3 thru 4	5 thru 8	1 thru 8	-7 thru 8
Forced (N=37)	-44,26 (-3,71)***	-15,16 (-1,95)*	-7,07 (-1,25)	-22,91 (-3,42)***	-15,91 (-1,83)*	-23,44 (-2,96)**	-18,59 (-1,78)*	-57,93 (-2,61)**	-102,19 (-3,62)***
Control (N=35)	51,78 (2,42)**	15,17 (0,97)	16,08 (2,88)**	21,00 (2,75)***	29,49 (2,83)***	28,22 (2,61)**	43,69 (3,74)***	99,74 (3,75)***	148,57 (4,08)***
Voluntary (N=120)	0,09 (0,01)	3,21 (0,58)	-0,03 (-0,01)	-3,04 (1,06)	-8,77 (-2,32)**	-6,14 (-2,14)**	-9,57 (-1,41)	-24,30 (-2,45)**	-24,22 (-1,59)
t-statistics									
Ho: forced = control	-4,24***	-1,90*	-2,77***	-4,23***	-3,34***	-3,94***	-3,92***	-4,55***	-5,51***
Ho: forced = voluntary	-2,79***	-1,80*	-1,07	-3,21***	-0,88	-2,56**	-0,71	-1,60	-2,697**

**Panel C: mean abnormal change in institutional ownership fraction**

Forced	-0,45 (-0,21)	0,79 (0,37)	0,34 (0,29)	-1,56 (1,22)	-1,36 (-0,85)	-2,77 (-1,79)*	-1,00 (-0,54)	-5,12 (-2,19)**	-5,58 (-1,83)*
Control	3,16 (0,61)	-0,16 (-0,05)	2,11 (0,12)	1,21 (0,60)	1,21 (0,45)	0,66 (0,25)	1,88 (0,72)	3,71 (0,86)	6,69 (0,88)
Voluntary	-2,40 (-1,87)*	-0,79 (-0,61)	-0,74 (-0,94)	-0,90 (-1,44)	1,24 (1,89)*	-2,90 (-3,90)***	-0,80 (-0,75)	-2,45 (-1,83)*	-4,78 (-2,93)***
t-statistics									
H <sub>0</sub> : forced = control	-0,73	0,24	-0,78	-1,22	-0,87	-1,19	-0,92	-1,94*	-1,67*
H <sub>0</sub> : forced = voluntary	0,79	0,65	0,75	-0,52	-1,79*	0,08	-0,10	-1,03	-0,25

\* indicates statistically significant at the 10% level; \*\* at the 5% level and \*\*\* at the 1% level



These results suggest that the relationship between returns and changes in institutional ownership have a lesser effect than the general increase in institutional ownership. In other words, the intercept value is larger than the product of the coefficients and respective quarterly returns.

Positive relationship between institutional ownership and return suggest that there is a level of momentum trading in institutions. Some institutions sell off their positions in these firms because of poor performance, which can somewhat be explained by momentum trading. The same seems to be true of companies who experience voluntary turnovers but to a lesser degree. This evidence support H1, that institutions are momentum traders. However, large differences between abnormal change and nominal change in institutional ownership reflects that this relationship cannot fully explain the institutional selling.

### ***5.2 Window dressing***

Bildersee & Kahn, (1987) proposes “window-dressing” as an explanation for institutional selling. They suggest that buy and sell decisions are affected by end-of quarter reporting requirement. Applying the same methodology as (Parrino et al., 2003), we test for the possibility of window dressing as an explanation for institutional trading. We test the null hypothesis that the three first quarters equals the end quarter for all three samples and find low significant results that there exist any differences. *Appendix 1*, report significant difference in the change in institutional ownership between the end-quarter and the three first quarters for forced sample as the only result supporting the hypothesis. No variables in the voluntary or control sample showed any support of “window-dressing”. However, we know from previous results that forced turnover firms suffer more from bad performance than voluntary and control samples and would subsequently become a more likely subject of “window-dressing”. These findings indicate that institutions sell shares of forced turnover firms to a greater extent in the end-quarter than in the three first quarters and give some support of the hypothesis.

### ***5.3 Desire to hold more prudent stocks***

We test H2, that institutions sell prior to forced turnover because they favor more prudent securities by examining dividends and volatility in share prices. We test whether firms who pay dividends experience less institutional selloffs than firms

who do not pay dividends. Some institutions have restrictions on firms they are allowed to invest in based on the dividend policy of those firms, or rather whether or not they pay dividends. These restrictions are usually based on the institutions own investment policy. To uncover whether firms with dividend payments experience fewer selloffs, we separated the dividend paying firms from the non-dividend paying ones. Next, we compare the aggregate changes in institutional ownership over the year directly preceding the turnover date between dividend paying and non-dividend paying firms. The results are reported in *Table 4. Panel A* reports the average market adjusted abnormal return for each sample preceding turnover. The last two rows show the null hypothesis that the forced and control sample and the forced and voluntary sample have equal means. The last column show the t-values for a t-test of differences in mean for the null hypothesis that the mean for dividend paying firms are equal to the means of non-dividend paying firms.

**Table 4**

Institutional ownership changes in the year preceding turnover sorted by if the company pays dividends or not. T-statistics form the null-hypothesis that the mean equal zero is reported in parenthesis. T-statistics from the equality test that dividend paying firms equals no dividend paying firms are shown under t-statistics in the right column. For forced turnover sample, there are 18 dividend-paying firms and 32 non-dividend paying firms. For voluntary turnover sample, there are 69 dividend paying firms and 56 non-dividend paying firms, and for control sample there are 17 and 16 respectively.

<b>Panel A: mean market-adjusted compounded abnormal return</b>			
	Dividend	No Dividend	t-statistic $H_0$ : dividend = no dividend
Forced	-3,28 (-2,07)*	-6,37 (-3,68)***	1,21
Control	1,65 (1,41)	-1,05 (-0,63)	1,32
Voluntary	-0,12 (-0,17)	-2,95 (-1,76)*	1,67*
$H_0$ : forced=control	-2,50**	-2,09**	
$H_0$ : forced=voluntary	-1,94**	-1,31	
<b>Panel B: mean change in number of institutional investors holding shares</b>			
	Dividend	No Dividend	t-statistic $H_0$ : dividend = no dividend
Forced	-8,36 (-1,41)	5,82 (1,53)	-2,10**
Control	10,63 (2,77)**	8,17 (2,75)**	0,51
Voluntary	7,96 (4,93)***	3,36 (1,84)*	1,89*
$H_0$ : forced=control	-2,70**	-0,42	
$H_0$ : forced=voluntary	-3,75***	0,65	

**Panel C: mean percentage change in institutional ownership fraction**

	Dividend	No Dividend	t-statistic H <sub>0</sub> : dividend = no dividend
Forced	-0,33 (-0,66)	0,79 (1,20)	-1,35
Control	0,33 (0,96)	1,03 (0,98)	-0,63
Voluntary	0,12 (0,47)	0,64 (1,38)	-1,03
H0: forced=control	-1,09	-0,22	
H0: forced=voluntary	-0,80	0,20	

**Panel D: mean abnormal change in number institutional investors**

	Dividend	No Dividend	t-statistic H <sub>0</sub> : dividend = no dividend
Forced	-14,64 (-2,57)**	-3,86 (-1,97)*	-2,16**
Control	10,63 (2,66)**	7,82 (2,55)**	0,55
Voluntary	1,29 (0,81)	-3,27 (-1,84)*	1,92*
H0: forced=control	-3,59***	-3,32***	
H0: forced=voluntary	-3,77***	-0,21	

**Panel E: mean abnormal changes institutional ownership fraction**

	Dividend	No Dividend	t-statistic H <sub>0</sub> : dividend = no dividend
Forced	-1,03 (-1,99)*	0,02 (0,03)	-1,26
Control	0,04 (0,06)	1,25 (1,09)	-0,88
Voluntary	-0,49 (-2,02)**	-0,23 (-0,47)	-0,51
H0: forced=control	-1,17	-1,10	
H0: forced=voluntary	-0,97	0,32	

\* indicates statistically significant at the 10% level; \*\* at the 5% level and \*\*\* at the 1% level

The forced samples have significantly lower performance than the control sample (5% level) but we only register significant lower performance against the voluntary for the dividend paying group. We register significant difference between dividend paying and non-dividend paying groups in the voluntary sample but not in the forced or control samples. This might be due to a low number of dividend paying firms. *Panel B and C, in Table 4* report the raw number change in number institutional shareholders and the percentage change in institutional

ownership fraction respectively. We observe a difference in that dividend paying firms have a significantly higher degree of institutional selloffs than can be observed in the non-dividend paying firms in the forced sample. The same is true of the mean abnormal changes in number institutional shareholders in *Panel D* and *E*. We find no indication that there is a difference in either nominal or abnormal change of institutional fraction between dividend and no-dividend paying firms. In the voluntary turnover sample, the effect of dividends appears to be the reverse from what we found in the forced sample, but also significant although the difference between forced and voluntary samples are only significant for dividend paying group. Between the forced and control samples the difference in abnormal change in number of institutional owners are highly significant while only significant for the dividend paying group when estimating raw change in the number of institutional shareholders. These results show scant indications and provide poor evidence of non-dividend paying firms experience more selling than dividend-paying firms to support for H2. As another test for H2, we test differences in volatility of daily returns.

*Table 5* reports the standard deviation of daily return for each quarter in the two years prior and after turnover. In the two last columns is the t-statistics from the null hypothesis that the forced turnover sample equals voluntary and control sample in means. The forced turnover sample experience significantly more volatile share prices than voluntary and control sample. The volatility in the forced turnover date increase along as time approaches turnover date, followed by

**Table 5**

Standard deviation of daily return. We compute standard deviation of daily return for each quarter. The three first columns reports the mean standard deviation for each sample. The two last columns report the t-statistics from the null hypothesis that the forced turnover sample, control and voluntary sample respectively differ in means.

Quarter	Forced N = 37	Control N=35	Voluntary N=120	Ho: forced = control	Ho: forced = voluntary
t = - 7	2,52	1,77	1,70	1,94*	3,28***
t = - 6	2,46	1,73	1,79	2,43**	2,53**
t = - 5	2,03	1,53	1,75	2,08**	1,32
t = - 4	2,24	1,72	1,83	1,77*	1,70*
t = - 3	2,24	1,83	1,84	1,70*	1,91*
t = - 2	2,62	1,63	1,73	2,60**	2,91***
t = - 1	2,23	1,63	1,60	2,84***	3,65***
t = 0	2,70	1,89	1,73	2,25**	4,04***
t = 1	2,17	1,59	1,80	2,40**	1,54
t = 2	2,07	1,74	1,63	1,46	2,02**
t = 3	2,50	1,90	1,73	2,08**	3,56***
t = 4	2,57	1,64	1,56	2,75***	4,46***
t = 5	2,38	1,79	1,62	1,99**	3,27***

t = 6	2,40	1,76	1,65	2,45**	3,10***
t = 7	2,19	1,55	1,80	2,27**	1,09
t = 8	2,16	1,56	1,77	2,66***	1,05

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\* indicates statistically significant at the 10% level; \*\* at the 5% level and \*\*\* at the 1% level

decrease in volatility in the quarters after. Quarter 0, the quarter that the turnover appears, is the quarter with highest volatility in the event window. These findings support the previously discussed results with strong negative movements in market-adjusted compounded abnormal return. This also lends some support to the hypothesis that some institutional investors sell because they prefer holding more prudent securities.

#### **5.4 Institutional investors are better informed**

(Parrino et al., 2003) report evidence that the share of institutions who decrease their holdings, differ between type and size of institutions and find evidence that large institutions sell to a greater degree than small institutions. They use these findings to support the information-hypothesis on why institutions sell. We cannot conduct empirical test for different types of investors because of limited availability of necessary data. However, without further evidence, we discuss the hypothesis that institutional investors are better informed by examining the number change of institutional investors.

From previous reporting, we showed that the institutional ownership fraction decreases in the two years prior to forced turnover, and the opposite that individual or private ownership fraction increase in the same period. This, followed by a three-year period of negative abnormal return suggests that institutions are better informed than individual investors. In addition, as the total number institutional investors increase prior to forced turnover, the institutional ownership fraction declines. If H3 are accurate, that institutional investors sell because they are better informed, this relationship would imply that there also exist differences in information between types of institutional stakeholders. In appendix 2, we have gathered results from *Table 2* and combined it with mean net existing institutional buyers and sellers to better illustrate the reasoning. Mean net existing institutional buyers and sellers is simply calculated by taking the difference between existing institutional shareholders that increase their holdings and institutional investors that reduce their holdings without selling off. We see that the net number of existing institutional investors that change position is

heavily negative compared to the slightly positive change in total number institutional shareholders prior to forced turnover. This, while the overall institutional ownership fraction decrease, would imply that larger positions are reduced and that there is an increase of institutions holding smaller stakes in forced turnover firms prior to turnover. This relationship, followed by negative abnormal return, indicate that institutional investors that hold large stakes in forced turnover firms are better informed than those institutions that hold small stakes. However, we cannot from this reasoning prove support that there exist any informational differences between institutional investors, but relationships between fraction and number institutions points to this suggestion. This reasoning is supported by (Ali, Klasa, & Zhen Li, 2008) which suggest that institutional investors with medium stakes are better informed than institutions holding smaller stakes around earning announcements because they have higher incentives to develop private predisclosure information and trade on it. They suggest medium institutional stakeholders to account for better informed trades because holding large positions follow restrictions against trading on this type of information.

### ***5.5 Explanatory power***

Finally, we run a simple OLS regression in the two years prior to CEO-turnover, using the explanatory variables we have previously tested, with nominal and abnormal change in institutional ownership (both change in the number of institutional and the change in ownership fraction) to check the explanatory power of these variables. The results are reported in *Table 6*. The explanatory variables we use in the regression are company size (log of market capitalization), abnormal return and whether the sample firms pay dividends (dummy variable that is 1 if the company pays dividends, 0 otherwise). Included are also dummy variables for the control sample and voluntary CEO turnover sample (1 if the company in question is from the control sample, 0 otherwise). The same goes for the voluntary turnover sample. If these two dummy variables are significant, it indicates that the explanatory variables we use in the OLS regression cannot fully explain the change in institutional ownership. Since we include a number of variables, we will measure explanatory power by adjusted  $R^2$ . As seen in *Table 6*, we have no significant results when running the regression against nominal change in institutional ownership fraction and we also observe a very low adjusted  $R^2$ , below 1%. When running against abnormal change in ownership fraction we

observe significant values for the control dummy variable and the abnormal return. We also have a much higher  $R^2$  of 4%. For both nominal and abnormal change in the number of institutional investors we observe highly significant results for the control dummy variable 13,47 (2,55) and 20,34 (3,81) respectively. The voluntary dummy variable shows significant results for the abnormal change but not for the nominal change. The abnormal change also shows significant values for its constant. The last significant variable we find is abnormal return with highly significant values of 29,79 (4,56) and 21,89 (3,34) for nominal and abnormal change respectively. For these two dependent variables we have, for nominal change, 11,27% adjusted  $R^2$ , and for abnormal change 10,52% adjusted  $R^2$ .

**Table 6**

Here we run four simple OLS regression in the two years prior to CEO turnover with the dependent variables being nominal and abnormal change in number of institutional shareholders and ownership fraction. The independent variables are log of market capitalization, abnormal return, a dummy for dividend paying companies, a dummy for each of the control and voluntary samples.

Explanatory variable	Dependent variable			
	Change in number institutional shareholders	Change in institutional ownership fraction	Abnormal change in institutional shareholders	Abnormal change in institutional ownership fraction
Constant	-2,91 (-0,42)	0,09 (0,88)	-11,47* (-1,66)	-0,01 (-0,66)
Control sample dummy	13,47** (2,55)	0,05 (0,64)	20,34*** (3,81)	0,03** (2,17)
Voluntary sample dummy	6,6 (1,61)	0,06 (0,94)	7,08* (1,72)	0,01 (1,08)
Log Market cap	0,59 (0,3)	-0,08 (-1,05)	0,95 (0,48)	-0,01 (-0,5)
Dividend paying dummy	-0,99 (-0,25)	-0,01 (-0,25)	-2,07 (-0,52)	0,01 (0,45)
Abnormal return	29,79*** (4,56)	-0,02 (-0,25)	21,89*** (3,34)	0,051*** (2,66)
N	206	206	206	206
Adjusted $R^2$	0,1127	-0,0092	0,1052	0,0401

\* indicates statistically significant at the 10% level; \*\* at the 5% level and \*\*\* at the 1% level

The results of these regression support earlier findings that abnormal return has positively impact on nominal and abnormal change in institutional ownership. It strongly supports the hypothesis that institutions are momentum traders and is consistent with Lowenstein, (1988) suggesting that institutions are short-term

investors. We have significant values for the control and voluntary dummies indicating that abnormal return alone (or with the other variables as well) cannot fully explain the change in institutional ownership. The significant control dummy capture that forced turnover firms suffer more decline or not as much increase in institutional ownership than its industry does. In addition, voluntary dummy variable indicates that there is a difference in change of number institutional shareholders holding the security prior to CEO-turnover in which case the turnover is voluntary. That is, voluntary turnover firms experience higher positive number change in number institutional shareholders than forced turnover firms do prior to CEO-turnover.

## **6. Conclusion**

We investigate whether institutions sell their holdings leading up to forced CEO-turnover and why they might sell by studying institutional ownership around forced CEO-turnover. There is some evidence to support the theory that institutional investors sell when dissatisfied with management of companies they hold positions in. We find evidence of institutional investors engaging in momentum trading selling to private investors, institutional investors favor more prudent stocks in terms of avoiding securities suffering from poor performance and high volatility in share prices, and indications that some of this ownership change can be due to better information. The results show a shift in shareholder composition, lessening institutional ownership prior to forced turnover in favor of non-institutional investors.



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## Appendix

### Appendix 1

Appendix 1 reports abnormal return, change in institutional ownership fraction and abnormal change in institutional ownership, change in number institutions and abnormal change in number institutions for forced turnover sample. In forced turnover sample there is 4 turnovers in the first quarter, 16 in the second, 17 in the third and 15 in the last quarter of the fiscal year. The first three quarters is calculated by taking the average change of three first quarters and end-quarter is calculated taking the average change accruing in end-quarter. The last column reports the null hypothesis that the first three quarters and the end quarter have equal means. For voluntary and control sample, we find no significant results and is not reported.

	First three quarters.	End-quarter	$H_0$ : End-quarter = First three quarter
Forced N=52			
Abnormal return (%)	-6,6	-8,52	0,54
Change in number institutions.	1,52	-6,41	-1,17
Abnormal change in numb.inst.	-7,70	-9,36	-026
Change in inst. Ownership (%)	0,74	-0,81	-1,68*
Abnormal change in inst.own. (%)	-0,08	-1,06	-0,70

### Appendix 2

Appendix 2 reports change in total number institutional shareholders, mean net existing buyers and sellers, change in institutional ownership fraction from Table 2, Panel B and abnormal return from Table 2, Panel A for forced turnover sample. Mean net existing buyers and sellers is the net of existing institutional investors that increase their existing holdings and institutions that reduce their holding without selling off all their shares. The last two variables are described previous in the thesis in Table 2.

	36 -7 thru 0	30 -7 thru -4	45 -3 thru -2	48 -1 thru 0	49 1 thru 2	46 3 thru 4	45 5 thru 8	46 1 thru 8	46 1 thru 8	33 -7 thru 8
Number observations	1,33	4,11	2,43	-1,15	0,68	-2,42	4,69	1,57	1,93	
Change in number institutional shareholders	1,33	4,11	2,43	-1,15	0,68	-2,42	4,69	1,57	1,93	
Mean net existing buyers and sellers	-23,50	-23,50	-18,48	-28,52	-24,12	-16,56	-16,25	-18,43	-20,88	
Institutional ownership (%)	-6,22	-4,04	-4,41	0,37	-1,75	0,77	-1,31	-1,05	-3,81	
Abnormal return	-21,90	10,03	-9,81	-12,20	-9,83	-6,20	-7,49	-20,96	-21,94	