Does Financial Constraints of Corporate Activist Investors Matter?

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1 Introduction

Introduce the background and nature of the problem being investigated!

If any person acquires beneficial ownership of more than 5% of an issuer's securities he must file with the Stock Exchange Control (SEC) a Schedule 13(D) within 10 days after the acquisition of that stock. The crux is that beneficial ownership is not defined as whether the person owns the shares but as whether the particular person can vote the shares and thereby change or influence the control of the company (Morrison and Foerster LLP, 2015, p.24). Precisely this mindset is what constitutes shareholder activism, independent of the acquirers identity. In fact, a Schedule 13(D) has to be disclosed by most investor types such as individuals, hedge funds or corporations. In the words of Klein and Zur (2009, p.187), an "entrepreneurial activist is an investor who buys a large stake in a publicly held corporation with the intention to bring about change and thereby realize a profit on the investment".

Hedge fund activists seek to gain seats on the company's board, oppose an existing merger or liquidation of the firm, pursue strategic alternatives or replace the CEO (Klein and Zur, 2009, p.188). Motivation for corporate activist investors to acquire beneficial ownership is to overcome informational and integration barriers and thereby engage in a takeover or strategic cooperation (Huang et al., 2017, p.1). This action for change is mirrored by a positive market reaction at the announcement of the filing. Hence, when an investor's Schedule 13(D) filing becomes public, the firm that has been partially acquired experiences significant gains on its stock. In recent studies of what happens to the target's stock, Collin-Dufresne and Fos (2015, p.1564) find significant positive abnormal returns around the filing day for filings of all investor types. The evidence is consistent with Brav et al. (2008, p.1756) and Klein and Zur (2009, p.209) who report 8.4% and 7.2% abnormal returns respectively but in response to hedge fund activism. The only study inexplicitly noting a positive market reaction to corporate activist investors is by Brigida and Madura (2012, p.29). This study finds evidence on this matter, as targets of corporate activist investors experience 14% average abnormal returns around the filing date of a Schedule 13(D). The positive market reaction is consistent with the evidence of the market's anticipation that activism, likewise action for change, results in actual value improvement for the target.

The possible increase in value however, is dependent on the initiator of activism, as it is their own effort that brings the change (Collin-Dufresne and Fos, 2015, p.1563). So if the initiator of activism stands for the actual value improvement, its financial condition, especially in the case of corporate activists, should be related to the market's evaluation of the target's potential gains.

A recent example on this matter is the public's perception of China's largest private conglomerate, the HNA Group. Over the past few years they invested around $US40 billion in businesses around the world and have currently been of great interest to financial news. Not least because they built up a 9.9% stake of of around $US4 billion in Deutsche Bank in 2017, but also because of their complex and nontransparent financing methods. The financing of the group has come under strain as a result of an official crackdown on risky financing at acquisitive private enterprises in China. The highly leveraged group is now facing a potential cash-shortfall and liquidity issues resulting in a S&P global rating downgrade referring to a a „deteriorating liquidity profile" of HNA. Although the HNA Group is a private conglomerate, the financial appearance of the investor seems to be of great interest to other market participants. The Schedule 13(D) on 28 April, 2018 in which they announced their 9.9% stake in Deutsche Bank was followed by an increase in Deutsche Bank's value. This said, had the increase in value of Deutsche Bank been larger with an HNA Group financially less constrained and thereby more assertive?

Hence do financial constraints of corporate activist investors matter when the market anticipates a possible value improvement for the target? This thesis finds evidence that it does. The univariate tests show that targets of financially constrained corporations gain less when compared to targets of unconstrained investors. For instance, when financially constrained investors are identified by using the Whited-Wu index, the target's abnormal return is on average 10% higher had they been unconstrained. They have average abnormal returns of around 8% whereas targets of financially unconstrained firms experience average abnormal returns of around 18%. The significant difference of 10% in abnormal returns indicates that financial constraints of corporate activists investors matter. The multivariate analysis confirms that, other things being equal, the financial constraints of the investor are an important determinant of the abnormal returns of the target. Targets of constrained investors

The paper proceeds as follows. Section 2 reviews relevant literature on Schedule 13(D) filings, their effect on the market and the motivation of corporate equity ownership. Section 3 outlines the composition of the sample of filings and identifies the sample's corporate activist investors. Section 4 investigates the market's reaction to Schedule 13(D) filings. Section 5 analyses the univariate relation between target's abnormal returns and investor's financial constraints and Section 6 evaluates the cross-sectional effect of financial constraints on the target's gains.

2 Literature Review

2.1 Schedule 13(D) and Market Reactions – Institutional Investors and Corporations

Section 13(d) of the Exchange Act of 1934 was passed in order to increase regulation of tender offers and accumulations of stock. It acts as an early warning, signaling "every large, rapid aggregation or accumulation of securities, regardless of technique employed, which might represent a potential shift in corporate control" (Morrison and Foerster LLP, 2015, p.2). This means that under Section 13(d), anyone who becomes the beneficial owner of 5% of an issuer's equity securities registered under Section 12 of the Exchange Act must file with the SEC a Schedule 13(D) within 10 days after the acquisition. The filing informs shareholder about investors who could influence or change control of the issuing company (Giglia, 2016, p.110). The investors filing such a Schedule 13(D) can be broadly classified into institutional investors (e.g. hedge funds or mututal funds), other entrepreneurial activists (e.g. individual investors) (Klein and Zur, 2009, p.188) and relevant for this thesis, corporate investors. Amongst others, the filing specifies the security and the issuer subject to the filing, the identity and background of the filer, and the purpose of the transaction.

Whereas filing a Schedule 13(D) allows the investor to practice its voting power in an active manner, a passive investor can equivalently file a Schedule 13(G). It is a short-form filing that can be utilized if an investor holds a beneficial ownership interest passively, with no intent to change control of the company (Giglia, 2016). Therefore, corporations filing a Schedule 13(D)

confess to manage their investments actively, likewise confess to approach and interact with the target company and can therefore be called corporate activist investors.

So far, there exist many studies that examine the effect the disclosure of such an activist investment has on the target's stock. With regards to short-horizon event studies, all these studies find positive and significant abnormal returns around the Schedule 13(D) filing date.

Dealing with investor activism, especially filings disclosed by hedge funds, Brav et al. (2008, p.1730) find positive average abnormal returns in the range of 7% to 8% in the (-20,+20) event window. Klein and Zur (2009, p.188) have similar findings and observe 10.2% average abnormal stock returns on the target's stock. In a more recent study on investor activism by Denes et al. (2017, p.410), the average valuation effect is evaluated to be around 5%. A somehow different approach is found in a study of Greenwood and Schor (2009, p.363) who observe abnormal announcement returns of 2.36% for a sample of activist portfolio investors and document that the ability to force the target into a takeover is the driving force behind the abnormal market reaction. Nevertheless, all studies observe positive abnormal returns around the filing date and results only differ in magnitude.[1]

While all of these studies identify hedge fund activism, its motivation and the effect it has on the market, most of them leave filings submitted by corporations aside. Brigida and Madura (2012, p.29) however, note that if the acquirer is a non financial corporation abnormal returns in the (-10,-1) window are around 14%. The reaction implies the market perceives such corporate investments as value generating for target. Allen and Phillips (2000, p.2803) find abnormal returns of around 7% in the (-10,10) period on corporate purchase announcements which are significantly larger if the announcement is accompanied by strategic investments. Their sample however is based on purchase announcements and therefore differs from studies on the effect of Schedule 13(D) filings.[2] In addition Collin-Dufresne and Fos (2015) find a positive significant market reaction upon a more general sample of Schedule 13(D) filings, including

[1]Comparing the the abnormal returns across studies can be misleading as the authors used different models and event windows for estimating the abnormal returns. Greenwood and Schor (2009) use the market return model with matching portfolios and the CAR for aggregated abnormal returns; Brav et al. (2008) calculates the aggregated abnormal returns by subtracting the value-weighted market index from the buy-and-hold return; Klein and Zur (2009) use a similar approach with buy-and-hold returns but make more adjustments.

[2]In Allen and Phillips (2000, p.2801) sample, the mean fraction of equity acquired in the sample is 14%, and includes acquisitions of at least 5% of voting shares only.

corporate investors but not explicitly addressing them.
So what is the motivation of corporations to engage in active equity ownership, thereby disclosing a Schedule 13(D), and why are these investments anticipated to be value generating for the target?

2.2 Motives of Corporate Equity Ownership and Target's Value Increase

Corporate investments in other firms' equities can be be split into three broad categories. They can either be classified as ordinary, far more importantly as strategic and thirdly as stepping stones in a takeover process. In the sense of possibilities that might be reached, corporate ownership, in comparison to ownership by institutional investors, is unique (Allen and Phillips, 2000, p.2791).

Huang et al. (2017, p.1) suggest that corporations make strategic minority acquisitions in other companies when they confront informational or integration barriers. Therefore, one reason for corporations to acquire a partial stake is that in the presence of alliances or joint ventures, minority acquisitions help to align the incentives of both firms involved and thereby decrease contracting and monitoring costs (Allen and Phillips, 2000, p.2792). This especially is of importance, if the strategic cooperation involves relationship specific assets and the investing corporation might be concerned with a holdup problem.[3] Allen and Phillips (2000, p. 2793) show that in the years following a strategic investment, targets increase investment expenditures, exhibit substantive gains in operating cash flow and the partial stake leads to significant benefits for both firms.
The second motive behind corporate minority investments is that if asymmetric information has an adverse effect on cost and availability of external capital for the target, the investment can provide capital directly to the issuing firm or validate its investment opportunities (Allen and Phillips, 2000, p. 2792). This is supported by Ouimet (2013, p.1038) who finds that the investment helps to overcome asymmetric information and thereby helps to certify the target

[3]Ouimet (2013, p.1023) Defines the holdup problem as a decrease in the investors bargaining power in a renegotiation of the contract because the value of the initial investment is dependent on future cooperation with the target.

for other outside investors. This proposition is verified by **Liao2014** who finds that target firms issue new equity (debt) and raise their market capitalization thereby supporting the theory that equity stakes certify the investment opportunities of target firms. Target firms correspondingly increase their operating cash flows, sales and investment expenditures.

Thirdly, by acquiring partial stakes, corporations can effectively monitor or influence the target's management. When compared to institutional investors, a corporate investor has superior knowledge and operating expertise (Allen and Phillips, 2000, p.2792) and can thereby further increase the target's operational performance.

But acquiring a minority position also helps to better assess real options, notably that of expanding. The acquisition of a minority stake helps to better assess the target for a potential majority acquisition (Ouimet, 2013) and according to Huang et al. (2017, p.30) gather more information before launching a bid for takeover. In this sense, by decreasing informational barriers the investments can help as a stepping stone towards full control (Huang et al., 2017, p.3).

Because there exist two options two acquire full control of a publicly traded firm in the United States, either through a merger or through a tender offer (Offenberg and Pirinsky, 2015, p.2), Betton et al. (2008, p.1) use the term takeover "for any acquisition of corporate control through the purchase of the voting stock of the target firm, regardless of whether the bid is in the form of a merger agreement or a tender offer". Prior to the takeover bid, the corporations can also acquire a toehold where neither management nor target's shareholders know of the investor's takeover intention until the announcement of a Schedule 13(D) is due Eckbo (2009, p.158). Ultimately, takeovers are interlinked with offer premiums and target shareholders are compensated with premiums of around 45% relative to the target share price (Eckbo, 2009, p.154).

Concluding, corporations filing a Schedule 13(D) and thereby confessing to actively manage the investment have several reasons to do so. However, overcoming informational and integration barriers seems to pervade in almost all cases and there exists potential for actual value improvement. Strategic investments generate value through synergies, the target's financing validates investments opportunities and engaging in a takeover leads to offer premiums. So information contained in corporate Schedule 13(D) filings is of value to the market's target evaluation.

But beyond the motives of corporations to actively engage in another firm and the benefits such an investment brings to both, to what extent does the corporations financial condition matter when the market values such activist investments? While motives and benefits are conceivable, their successful implementation is dependent on the corporate investor. Thus if the investing company proxies for the target's value improvement, its financing capabilities should have an impact on the market's anticipation of present and future value of the target. At large, do financial constraints of corporate activist investors matter when the market reacts to Schedule 13(D) filings?

Under the assumption of perfect capital markets, the financial structure of the investor should be irrelevant to investment and the market, because "external funds provide a perfect substitute for internal capital" (**Fazzari2016**). This however, is not the case for financially constrained firms because they face an inelastic supply of external capital (Farre-mensa and Ljungqvist, 2013, p.1). Hence, financial constraints refer to the degree of access to external financing. Consequently, firms who are able to raise substantial amounts of external capital without much of an increase in the cost of capital are considered as unconstrained (Farre-mensa and Ljungqvist, 2013, p.1). This results in Whited and Wu (2006, p.531) measure of financial constraints, in which financial constraints affect the intertemporal substitution of investment today for investment tomorrow via the shadow price of scarce external funds – their investment policy is dependent on the cost of capital. Because constrained firms have less access to external financing, Fazzari et al. (1988, p. 142) argue that a constrained company's investment behavior is dependent on fluctuations in the companies cash flow and can therefore be unstable. As difficulties of external financing could also imply that the company is subject to information asymmetry, the quality of the investor's investment opportunities has not been evaluated comprehensively by providers of external finance (Fazzari et al., 1988, p.142). Furthermore, constrained firms appear to invest at a low rate, despite good investment opportunities (Whited and Wu, 2006, p.533). So financial constraints arise from friction such as information asymmetries that make external funds more costly than internal funds and lead to a different investment behavior compared to healthy firms. As the rational behind financial constrained firms is now comprehensible, this thesis focuses on whether financial constraints matter rather than analyzing why they should matter.

3 Data – Constructing the Sample

The data that is used to analyse the relation between the investor's financial condition and the market reaction to Schedule 13(D) filings, is primarily composed of information contained in the filings from SEC's Edgar database and secondly of data on stock and fundamentals, accessed through Wharton Research Data Services (WRDS). The sample of Schedule 13(D) filings is constructed as follows. First, using an automated search script, 48'626 filings from the 20 year period starting in January 1996 and ending in December 2016 were identified. The script identifies all Schedule 13(D) filings that appear on EDGAR and extracts the following information: name of filer and subject, the CUSIP of the underlying security and the filing date. Next, to only have filings submitted by corporations hence to separate corporate investors from institutional investors (i.e. hedge-funds or pension-funds), 10-K reports were cross-referenced with the initial sample of filings.[4] To be considered, the filer had to have a 10-K report submitted at least 12 months prior to the filing which reduced the sample to 3'325 filings. As daily stock returns and prices for the target's securities come from the Center for Research in Security Prices (CRSP) the subject not only had to have SEC's Cusip identifier but also an active link between Cusip and CRSP's Permno identifier. For estimating the market reaction to Schedule 13(D) filings, there had to be sufficient stock data for the remaining 1'467 filings. The data was only available to subject of 1'151 filings. The accounting fundamentals for identifying the investing corporation's financial condition were extracted from the Compustat database. To be included, the filer had to have a valid link between its 10K-CIK and Compustats's Gvkey indentifier. This further reduced the sample to 1'014 filings. In the next step and based on Fama & French's 48 industry classification, all filers belonging to the trading industry (industry code 47) were excluded. This was done for the reason that the investment behavior of corporations in this industry differs substantially from that of other industries. This left a sample 898 filings for which data on specific financials was only available for 644 investors. From the remaining 644 filings, the purpose of the transaction was manually extracted. During this process, Schedule 13(D/A) filings (amendments to previous filings)

[4] 10-K reports were used to identify corporations because "managers of publicly traded firms are required to produce public documents that provide a comprehensive review of the firm's business operations and financial condition and an important financial disclosure document created by managers to communicate with investors and analysts is the annual report filed pursuant to the Securities Exchange Act of 1934 the Form 10-K." (Loughran and Mcdonald, 2014, p. 1643)

that were mistakenly classified as original Schedule 13(D) filings and filings not submitted by corporations were excluded. This reduced the final sample to 494 filings.[5]

3.1 Measures of Financial Constraints

As financial constraints are not directly observable, three determining index-based and two univariate measures are established. Not least because recent literature has cast doubt on the usefulness (Khatami et al., 2014, p.109) of index-based measures but also as to increase the quality of results. The advantage of these five measures is that by allowing to separate the original sample into different sub-samples, a comparison within the sample is possible. A detailed listing of each scores components and calculation is presented in Appendix A.

The investor's dividend pay-out ratio is the first measure of financial constraints. The reason why firms are considered to be constrained if they pay low dividends is that they require investment finance that exceeds their internal cash flow and therefore retain all of the low-cost internal funds they can generate – the availability of external finance is uncertain (Fazzari et al., 1988, p.158). Following **Almeida2004** and Khatami et al. (2014, p.119), the dividend payout ratio is defined as the two year average of the ratio of total distributions (dividends and stock repurchases) divided by operating income at each point in time. After computing the dividend payout ratios for all companies on Compustat, the firms in the bottom (top) tercile of the annual payout distribution are then assigned to the financially constrained (unconstrained) group. This yields 249 constrained and 225 unconstrained investors for the initial sample of of Schedule 13(D) filings.

The investor's credit rating is the second identifier. Investors having a S&P 500 long term domestic issuer credit-rating at least 3 months prior to the filing are considered to be unconstrained, whereas those not having a rating are considered to be constrained. Credit ratings are an objective assessment of a firm's creditworthiness in terms of risk of default and is often

[5]The only exception were filings submitted by the Commerce Group Inc., which provides both insurance and, real estate, brokerage services. These filings were excluded because (1) the largest part of them were amendments, (2) the amount of filings submitted was disproportionately and (3) all purposes of the transaction were general investments in an investment fund.

required to raise debt from bank or capital market. (**heller2015**). They thus ease the access to outside financing. On the other hand there are many firms not publicly rated even though they may belong to the highest-ranked group regarding their creditworthiness. Hence some investors considered to be constrained are not truly constrained, thereby introducing an upward bias of average abnormal returns for targets belonging to constrained investors. Besides that, **heller2015** finds evidence that credit ratings might nonetheless be helpful measures of financial constraints.

The first index-based measure of financial constraints to be included is the Whited-Wu index. The index is based Whited and Wu (2006, p.543) findings who augment an intertemporal investment model where the shadow price represents the cost external finance. It includes the five variables cash flow to total assets (negative loeading), an indicator that takes the value one if the firm pays cash dividends (negative loading), the ratio of long-term debt to total debt (positive loading), the natural logarithm of assets (negative loading), the firms three digit industry sales growth (positive loading) and the firms sales growth (negative loading). Following Farre-mensa and Ljungqvist (2013, p.38) firms in the entire Compustat database are sorted into terciles based on their index value. Firms in the top tercile are coded as constrained whereas firms in the bottom tercile are coded as unconstrained. A pairing with the initial sample yields ... constrained investors.

The Kaplanz-Zingales in **as** also identifies financially constrained firms, but Farre-mensa and Ljungqvist (2013, p.29) note that it appears to be more of an outlier and Whited and Wu (2006) criticise, that it lacks parameter stability both across firms and over time. In addition, Khatami et al. (2014, p.111) and **Almeida2004** note that it yields groups of constrained and unconstrained firms that have different characteristics compared to those of other measures. Similar to Whited and Wu (2006, p.546), **hadlock2010** cast serious doubt on the validity of the KZ-index as a measure of financial constraints in a more recent study suggest that researchers consider alternative measures of financial constraints (**hadlock2010**).

Furthermore, constrained investors are grouped according to their HP-Index (SA-Index) as in **hadlock2010** It consists of the two quantities size and age. As for the previous indices, the HP-Index is computed for all companies on Compustat and dependent on their value, firms are

grouped into terciles with the top (bottom) tercile representing constrained (unconstrained) firms (Farre-mensa and Ljungqvist, 2013, p.29).

To further enrich the analysis, Edward I. Altman's (1968) Z-score identifies corporations in financial distress. Although distressed firms "behave differently from financially constrained firms" (Bhagat et al., 2005, p.461), the mentioned KZ-Index can allegedly also be used to identify distressed rather than constrained firms (Kim and Park, 2015, p.47). In addition the revised Z-score of Edward I Altman (2002, p.19) is in accordance with conventional credit ratings and therefore shows similarities with potential constraint measures. Furthermore, the Z-score allows to nearly use the full sample size and compared to the Whited-Wu index is not dependent on the scores of all firms on Compustat. In this case and under given limitations, the Z-score's can be appplicable. This thesis uses the original score (Edward I. Altman, 1968, p.607), which is applied to investors in the manufacturing industries (SIC industries 2000-3999) and the revised Z-score (Edward I Altman, 2002, p.17) for the reamaining investors (non-manufacutrers). The four variables included in both models all have a positive loading and the the score consists of working capital to total assets, retained earnings to total assets, earnings before interest and taxes (EBITA) to total assets and market value of equity to book value of total liabilites. the original model includes a fifth variable which is sales to total assets. Firms in the manufacturing industry below the threshold 1.81 are considered as distressed and those above 2.99 as not-distressed (Edward I Altman, 2002, p.14). For the remaining firms, a Z-score below 1.1 implies a state of distress and above 2.6 as not distressed (Sulub, 2014, p.175) Concluding, three index-based measures (WW-Index & Z-Score) and two univariate measures (dividend payout ratio & credit rating) are used to group the complete sample of corporate activist investors in several sub-samples of financially constrained and unconstrained investors.

With regards to the upcoming analysis, firms are classified as being in a good (bad) financial condition when they either belong to sample of strong (weak) firms, to the samples of undistressed (distressed) firms or to the sample of unconstrained (constrained) firms.

3.2 Descriptive Data

Table 1 identifies the sample's Schedule 13(D) filings based on several criteria. Column (1) presents information on all filings. In a first subdivision of the investors, Column (2) and (3) give information about filings submitted by investors grouped according to the dividend payout indenticator. This is done because this indicator gives the largest sub-samples and is recently used in Khatami et al. (2014, p.109) and therefore allows a meaningful interpretation of the results. Panel A shows that the total sample consists of 498 filings, with 109 submitted by strong and 83 by weak investors. The imbalance in filings for the two groups is due to the F-score's unequal distribution across investors.

	Complete Sample of Filings (1)	Subsample of Filings disclosed by strong Investors (2)	Subsample of Filings disclosed by weak Investors (3)
Panel A: Characteristics Schedule 13(D) Filings			
Filings	494	109	83
Number of individual Investors	392	100	76
Number of individual Investors	455	107	77
Filings per Period			
1997-2001	71	13	12
2002-2006	158	34	29
2007-2011	152	38	17
2012-2016	113	24	25
Panel B: Purpose of the Transaction			
Engaging into a Takeover	248	65	27
Investment Opportunity while Actively Monitoring the Target	88	16	22
Strategic Investment	63	15	8
Investor is compentsated through Issuer Stock	37	7	8
Investor is Subject to Merger	35	2	13
Engaging into a Proxy Fight	7	1	0
Issuer Financing	5	1	1
Other	11	2	4
Panel C: 48 Fama and French Industry Classifications of the Investor			
Business Services	88	19	9
Pharmaceutical Products	49	5	14
Patroleum and Natural Gas	47	12	7
Electronic Equipment	43	11	9
Communication	40	5	6
Computers	36	7	7
Medical Equipment	19	4	5
Machinery	15	1	3

The filings were submitted by 392 individual investors but 455 individual firms were subject to filings. This means that occasionally either one firm was investing in multiple targets (e.g. 6 filings submitted by AT&T) or a target was subject to more than one filing (e.g. four filings for investments in Clearwire Inc.). Across the sample however, multiple occurrences are not common.

The smallest amount of filings in the sample were disclosed in the 5-year period of 1997-2001. In the following ten years however, more than 60% of the sample filings were submitted. The largest amount of filings was in the 5-year prior to the financial crisis. It is noticeable that the number of filings in the years around the financial crisis is higher than the number of filings reported for the span of 2012-2016. An explanation could be the merger wave of 2007 (Huang et al., 2017, p.19) which lead to an increase of Schedule 13(D) disclosures. Also noticeable is that one quarter of the filings from this period were submitted by strong and only around 10% by weak corporations.

Panel B lists the extracted "Purpose of Transaction", which represents item 4 in Schedule 13(D) filings. The purpose is only explicitly stated if it occurred in at least five filings. Additionally, the purpose "engaging into a takeover" and "strategic investment" represent several purposes. According to Betton et al. (2008, p.1), filings disclosed with the purpose of a merger agreement, tender offer or hostile bid are grouped under the purpose "engaging into a takeover" and filings due to alliance agreements, license agreements, strategic acquisitions and joint ventures are grouped under the purpose "strategic investment". A detailed description on how the filings were categorized can be found in Appendix B. Remarkable is the fact that around half of the stock acquisitions were made in the course of engaging into a takeover process. This is interesting as for around 50% of the filings, the investor's financial condition should be a part of the market's target stock valuation. More than double the amount of these filings were submitted by strong corporations.

On the other hand, this ratio switches for filings in which the investor is subject to a merger – the target's shares were acquired to distribute them to own shareholders as a form of payment. With 88 filings, the second most reported purpose due to which the Schedule 13(D) were disclosed is because the target is considered to be a good investment opportunity while the corporation wants to actively monitor the investment. In the bottom line these filings do not

directly imply future collaboration between the two firms.

Following actively held investments, strategic investments are the third largest group of purposes due to which the filing was disclosed. Different to the former, they are based on the premise of future collaboration between investor and target. Although potentially of high interest, they represent only 10% of filings. Only 7 filings were submitted due to a proxy fight only 5 reported the investment's purpose was to finance the issuer.

These findings support the evidence on why corporation would actively hold equity ownership, while a majority of the filings are disclosed due to takeover activity or strategic investments. According to Fama & French's 48 industry classification code, panel C presents the major industries to which the investors belong to. Shown are only industries, in which at least 15 investing corporations operate. For the complete sample of investors, 42 out of the maximum 48 industries are represented. As mentioned previously, the sample is restricted by excluding the trading industry due the irregular investment behavior. The highest industry representation is that of business services with 88 filings, followed by the industries of pharmaceutical products and patroleum and natural gas.

a lot of investments typical in those industries?

4 Identifying the Investors prior to the Schedule 13(D) Filing and Measures of Financial Condition

After being familiar with general characteristics of the sample's filings, this section focuses on identifying the corporations prior to their Schedule 13(D) filing. Table 2 introduces the four different measures of financial condition. For each measure there exist two sub-samples. By the virtue of each measure, the two samples do not necessarily have to add up to the total number of filings. Hence for the F-score, separating weak from strong investors yields a sample of 109 strong and 83 weak firms. Applying the Z-score to the sample, 103 investors are identified as distressed and 351 as undistressed and according to the terciles from the Whited-Wu index, 164 investors are financially constrained and 165 are not. Only for the S&P credit rating do the two samples include all corporations with 238 firms missing a credit rating and 256 having

one. This means, there exist a total of eight sub-samples plus the initial one.
For each sub-sample, table 2 reports the mean [median] of several key financials. For the complete sample standard deviation and both, lowest and highest value are shown additionally. All reported data corresponds to the investor's fiscal year which is closest to the filing date and the reported values are winsorized at the 1% and 99% levels so that extreme values are replaced by the respective percentiles. This enables a presentation of more meaningful mean statistics (Klein and Zur, 2009, p.203). For simplicit y, firms categorized as weak, distressed, constrained or missing a credit rating are forthcoming considered to be in a unfavorable state whereas their counterparts are to be in a favorable state.

Panel A reports two ratios on profitability. The first one is returns on assets (ROA), defined as earnings before interest and taxes (EBITDA) to total assets and the second is the ratio of cash flow from operations to total assets. For all measures, those identified to be in the unfavorable state have a ROA which is significantly lower when compared to their counterparts. Furthermore, the average ROA for weak and distressed companies is negative meaning they made a loss in the fiscal year prior to the filing. Accordingly, their average cash flow is negative as well although now constrained firms have a negative value as well. his could have further implications as Bhagat et al. (2005) note that distressed firms have a negative cash-flow sensitifity and thereby invest more when cash is low. Again, the difference among the corresponding sub-samples is apparent across all measures.
Panel B reports ratios on cash balances and debt. Firms considered as weak and constrained and those missing a credit rating have higher cash and short-term investments compared to their counterparts. Only distressed firms have a lower ratio due to their very nature of having issues refinancing their debt. Constrained firms have the highest ratio with around 33% of the total asset value in cash and short-term investments. Similar, they and firms without a rating have considerably more cash when compared to their counter samples, reflecting their dependency on internal funds when it comes to investments (**arg**). With regards to weak and distressed firms, the difference in the cash to asset ratios are marginal. Book leverage, defined as long-term debt plus current debt to total assets (MacKay and Phillips, 2005, p.1440) is unsurprisingly the highest for distressed firms as it is one of the reasons they are considered distressed.

	Total Sample					F-Score		Z-Score		Whited-Wu Index		S&P Domestic Long Term Issuer Credit Rating	
	Mean	Median	Std. Dev.	Min.	Max.	Weak Investors	Strong Investors	Firms in Distress	Firms undistressed	Constrained Firms	Unconstrained Firms	Investors without Rating	Investors With Rating
						N=83	N=109	N=103	N=351	N=164	N=165	N=238	N=256
Panel A: Profitability													
Return on Assets	0.101	0.123	0.151	-0.573	0.398	-0.565 [-0.05]	0.172 [0.160]	-0.018 [0.042]	0.134 [0.138]	0.016 [0.055]	0.162 [0.152]	0.048 [0.087]	0.151 [0.142]
Cash-Flow / Assets	0.053	0.088	0.173	-0.918	0.320	-0.148 [-0.46]	0.134 [0.119]	-0.098 [0.154]	0.094 [0.102]	-0.038 [0.503]	0.109 [0.113]	0.005 [0.073]	0.098 [0.097]
Panel B: Cash Balances and Debt													
Cash and Short-Term Investments / Assets	0.215	0.152	0.205	0.001	0.830	0.253 0.188	0.181 [0.128]	0.192 [0.076]	0.238 [0.178]	0.337 [0.327]	0.129 [0.086]	0.313 [0.286]	0.124 [0.862]
Cash / Assets	0.144	0.100	0.146	0.001	0.746	0.166 [0.237]	0.136 [0.105]	0.148 [0.063]	0.154 [0.121]	0.224 [0.170]	0.084 [0.069]	0.208 [0.164]	0.084 [0.067]
Leverage	0.221	0.198	0.206	0.000	0.834	0.237 [0.179]	0.218 [0.197]	0.369 [0.345]	0.164 [0.141]	0.149 [0.032]	0.242 [0.228]	0.143 [0.055]	0.294 [0.259]
Short-Term Debt/Assets	0.028	0.007	0.054	0.000	0.353	0.023 [0.003]	0.019 [0.007]	0.052 [0.008]	0.024 [0.005]	0.023 [0.002]	0.037 [0.018]	0.021 [0.001]	0.033 [0.014]
Long-Term Debt/Assets	0.191	0.150	0.194	0.000	0.785	0.214 [0.145]	0.199 [0.157]	0.312 [0.279]	0.14 [0.109]	0.121 [0.013]	0.201 [0.187]	0.12 [0.019]	0.256 [0.210]
Panel C: Firm Size and Investment													
Market Value of Equity i	19936	1778	45564	4	422640	4'165 [567]	22'973 [3'269]	4'855 [523]	22'646 [2'499]	627 [307]	55'056 [25'127]	3'404 [543]	35'305 [7'367]
Size of the Firm	7.531	7.566	2.165	3.006	12.398	6.221 [6.074]	7.964 [7.929]	6.759 [7.6.838]	7.622 [7.567]	5.274 [5.423]	9.847 [9.944]	5.999 [6.038]	8.956 [8.759]
Tobin's Q	2.100	1.675	1.318	0.599	7.315	1.966 [1.489]	2.267 [1.807]	1.494 [1.235]	2.362 [1.982]	2.207 [1.689]	2.169 [1.854]	2.208 [1.741]	2.000 [1.632]

Weak and strong firms have a similar leverage whereas firms without a credit rating or constrained ones have higher leverage compared to the counter sample. Across all measures, the ratio of short-term debt to total assets is fairly small and only marginal differences among the sub-samples exist. Reflected in the companies leverage, long-term debt is the highest for distressed firms and unconstrained firms and those with a rating have a considerably higher long-term debt to asset ratio. This is comprehensible, as they have better access to external financing.
As Panel C reports financials on firm size and investment, all companies considered to be in the unfavorable state have a market value of equity significantly lower. The largest difference is among constrained and unconstrained firms. Similar differences are apparent in the size of the firms, defined as the natural logarithm of total assets. This suggests that size is an important determinant across all measures and independent of the measures. Lastly, Panel C presents Tobin's Q which proxies for investment opportunity (MacKay and Phillips, 2005, p.1441) and is computed according to Khatami et al. (2014, p.1). Constrained firms, likewise those without a rating have a higher Tobin's Q which may be due to their unexploited investment opportunities (Whited and Wu, 2006)

Concluding, firms in the unfavorable sub-samples are considerably smaller in size, less return on assets and small cash-flow and tend to have more cash. Compared to their counter-sample, constrained firms and those without a credit rating have less debt but higher values of Tobin's Q.

5 Market Returns to Initial 13(D) Filings – Abnormal Stock Returns

As this thesis seeks to analyze whether the financial condition of the activist corporate investor matter, abnormal share price reactions around the filing date identify the effect the 13(D) filing has on the target's stock, after accounting for general market movements. The set up of the event study performed for this purpose is as follows: The time line consists successively of the estimation window, in which parameter estimates are obtained, the event window for

which the abnormal returns are computed and the post event window. The filing date, as reported by the SEC and reported on EDGAR is set as the event day. For simplicity, the event window [x,y] is determined relative to the event day 0 with x days before and y days after the filing date. Abnormal returns are computed for various event windows. For that reason, the estimation window is set 120 days prior to the largest event window. With the largest event window starting 30 days before the event day, the estimation window begins 150 days prior to the actual event day.

The abnormal return $AR_{i,t}$ for the target's security i at day t is defined as the difference between the actual (observed) return $R_{i,t}$ and the expected return $E(R_{i,t}|Xt)$ given the absence of the event (MacKinlay, 1997, p.15):

$$AR_{i,t} = R_{i,t} - E(R_{i,t}|X_t) \tag{1}$$

The expected return $E(R_{i,t}|Xt)$ is the result of an estimation based the market model, in which the value-weighted NYSE/Amex/Nasdaq index from CRSP proxies for the market return $R_{M,t}$ and likewise is the independent variable (MacKinlay, 1997, p.18). [6] This yields the abnormal return $AR_{i,t}$

$$AR_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{M,t}) \tag{2}$$

To accommodate for a multiple period event window and to draw overall inferences of the Schedule 13(D) filings (MacKinlay, 1997, p.21), the abnormal returns $AR_{i,t}$ for target i are aggregated over the event window (τ_1, τ_2).

For robustness, two different methods in aggregation over time are used. The cumulative abnormal return $CAR_{i,(\tau_1,\tau_2)}$ and the abnormal buy-and-hold return $BHAR_{i,(\tau_1,\tau_2)}$.

The cumulative abnormal return $CAR_{i,(\tau_1,\tau_2)}$ for security i in event window (τ_1, τ_2), is the sum of the abnormal returns $AR_{i,t}$ from equation (2).

$$CAR_{i,(\tau_1,\tau_2)} = \sum_{t=1}^{T} AR_{i,t} \tag{3}$$

[6] For the expected return the market model assumes a constant and linear relation between the observed returns $R_{i,t}$ and the return of a market index $R_{m,t}$ (MacKinlay, 1997, p.18). The parameters are estimated by ordinary least squares regressions based on estimation-window observations of stock returns.

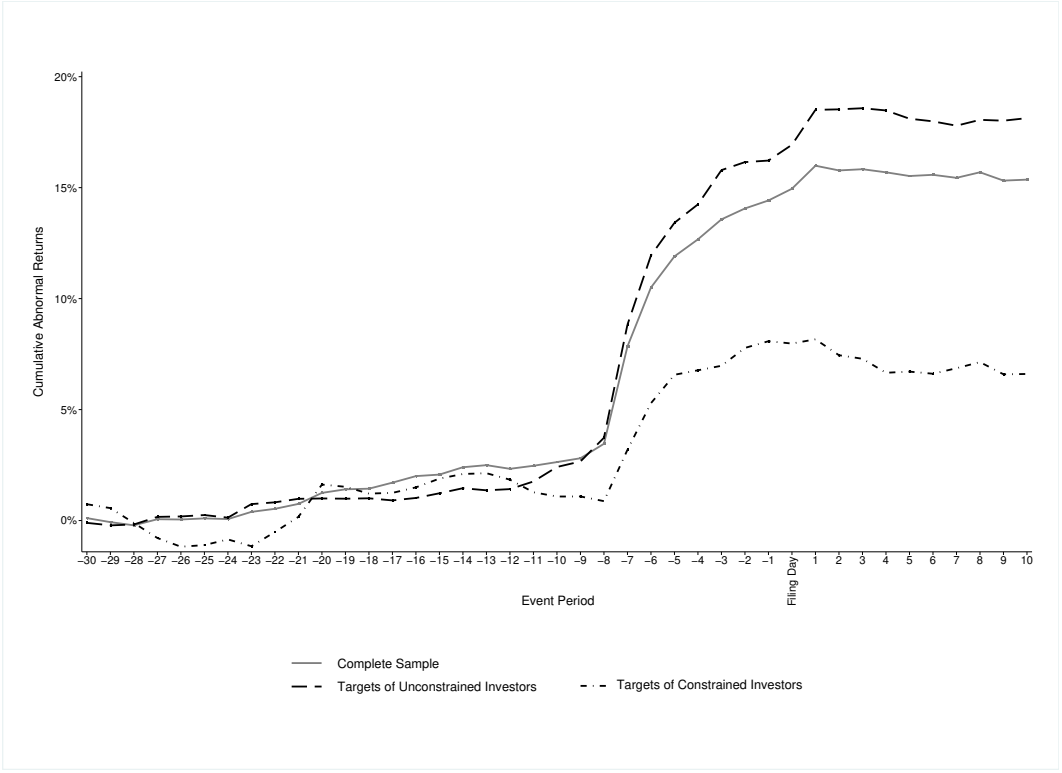
The second method of aggregation over time is the abnormal buy-and-hold return $BHAR_{i,(\tau_1,\tau_2)}$. It is independent from the results of equation (2) and no estimation window is required. The abnormal buy-and-hold returns $BHAR_{i,(\tau_1,\tau_2)}$ are the difference between the realized (observed) buy-and-hold returns and the normal buy-and-hold returns $R(R_{i,t}|X_t)$. But in contrast to the cumulative abnormal return, the buy-and-hold return mimics the investment strategy of investors that buy the stock and hold it for a longer period of time. In this sense, the actual (normal) buy-and-hold return on day t is the return on day t times its lagged return on day t_{-1}. This means that for the target's security i in the event window (τ_1, τ_2) the abnormal buy-and-hold return $BHAR_{i,(\tau_1,\tau_2)}$ is

$$BHAR_{i,(\tau_1,\tau_2)} = \prod_{t=\tau_1}^{\tau_2}(1 + R_{i,t}) - \prod_{t=\tau_1}^{\tau_2}(E(R_{i,t}|X_t) \tag{4}$$

Analogous to the estimation of normal returns for equation (2), the value-weighted NYSE/Amex/Nasdaq index from CRSP is used to calculate the normal buy-and-hold returns in the respective event windows (τ_1, τ_2) (Brav, 2009, p.25).

5.1 Abnormal Returns by Event-Windows

Graph 1 plots the times series of average cumulative abnormal returns for securities subject to all filings and subject to filings of constrained and unconstrained corporate investors. A first glance reveals that the abnormal returns on securities of the complete sample and those with an unconstrained investor evolve almost equally although at around day -5, targets of filings by constrained corporations start to gain more. For targets of constrained investors during the 41-day period abnormal returns are consistently positive and aggregate to almost 20%. Parallel, abnormal returns for the complete sample of targets aggregate to roughly 15% in the 41-day window which is around 5% more when compared to the 10.2% abnormal returns for hedge fund targets reported in Klein and Zur (2009, p.208). For firms subject to a filing disclosed by a constrained investor however, the aggregated time series of abnormal returns appears to be much different. In the beginning these firms experience negative abnormal returns and aggregate to a positive value around day -7. Additionally, their cumulated abnormal returns differ drastically in magnitude with a difference of around 15% compared to those of



unconstrained investors. This outcome is first evidence that financial constraints of corporate activist investors could matter. Striking is the fact that in all three cases,abnormal returns start to occur substantially in the [-11,-8] period, implying that valuable information – in any form – is available before the actual filing. As it is the investor's own actions that potentially increase the value of the target firm, a potential increase in their trading activity at the event date could explain the market's reaction. This approach is adopted from Collin-Dufresne and Fos (2015, p.1561) who analyze the trading strategy of informed Schedule 13(D) filers. Combining the following three findings from their research could be one explanation for the early rise in abnormal returns.

Firstly, they find that trading activity increases in the [-12,-9] period in which the reported event dates are clustered (date on which the 5% threshold is passed). Secondly, they show that close to 1% of outstanding shares are purchased on the event date, compared to only 0.10% and 0.15% on the days before and after the event date (Collin-Dufresne and Fos, 2015, p.1561). Thirdly they note that the prices move up when Schedule 13(D) filers trade. This could mean that firms drive prices up by their own trading at the event day which is consistent with the observations in Grap 1.

analyse for weak investors - it goes down!!!!

Detatched from these findings, Brigida and Madura (2012, p.31) find evidence of a substantial information leakage prior to the actual filing date and therefore suggest an event window no later than ten days before the filing. So another approach could be that the increase in abnormal returns is due to a leakage of information prior to the filing. To allow for the possibility that stock market participants knew about the pending stake before it was announced Allen and Phillips (2000, p.2802) choose their event window to be [-10,10] fir their analysis of equity ownership stakes where corporations hold at least 5% of stock. Klein and Zur (2009, p.207) also start their event window at day -30 to allow for the 10-day 13(D) filing window and possible prior leakage of information. **mcwilliams1999**

For the above mentioned reason, table III present the mean [median] cumulative and buy-and-hold abnormal returns for the following four event windows: Event window 1 is [-10,3] to allow for the 10-day filing window, information leakage and accommodate subsequent press coverage. The second event window is [-10,-6] to detach the possible effect of information leakages and event-date trading. Analogous the third event window [-5,3] aims to control for these two. This seems to be reasonable, as the aggregation of abnormal returns in Graph 1 decreases at around day -5, implying that information has been processed. The fourth event window is [-1,3] to accommodate for just the filing date and press coverage.
Column (1) presents the abnormal returns for the complete sample of filings. Column (2) and (3) show the abnormal returns for firms depending on the investor's condition. These sub-samples are based on Piotroski's F-score and are equal to those presented in Table II with 109 filings disclosed by strong and 85 disclosed by weak investors. Column (4) tests the difference in means [medians] of column (2) and (3). The null hypothesis to be tested is that the mean day abnormal return is equal to zero, and thus concerns the average effect of an event on returns to shareholders (Brown and Warner, 1985, p.7). If the average abnormal returns are independent, indentical distributed, and normal the test statistic is distributed Student-t under the null hyothesis. Two-tailed ttest Brown and Warner (1985, p.15) shows that results are not radically altered where there is clustering in event dates and hence dependence of the excess return measures. However, while extraction of the market factor via the market model appears

to be a sufficient adjustment for dependence, this result is for randomly selected securities. (Brown and Warner, 1985, p.22) domly selected securities.

How is the test conducted?

All returns presented in Table III are winsorized at the 1% and 99% level. This extensive presentation of abnormal returns is done for three reasons. Firstly, to check for robustness in abnormal returns, secondly as an attempt to accommodate for the time-effect and thirdly to test whether the corporate investor's financial condition matters independently of time.

Panel A presents the abnormal returns for the largest event window [-10+3]. Both, CAR and BHAR are positive and strongly significant at the 1% level with mean abnormal returns being 14.32% and 14.90% respectively. Consistent with Graph 1, targets of strong investors have a mean CAR and BHAR of around 17.6% which is around 10% higher when compared to the weak investors. These targets also outperform the sample with around 3%. The difference in abnormal returns is statistically significant at the 1% level for both, CAR and BHAR, showing the investor's financial condition does matter economically and statistically. These findings are supported by differences of around 7% in medians, both significant at the 1% level. The abnormal returns of around 14% are different to those observed in Klein and Zur (2009, p.208) but is supports Brigida and Madura (2012, p.29) findings that the abnormal returns are higher for non-financial corporations. The largest runup happens in the [-10,-6] event window, where abnormal returns aggregate to around 8.5%. These results are matching with Brigida and Madura (2012, p.32) who find that the target runup is greatest during the event window [-10,-6]. Again, targets of weak investors only gain 5.39% whereas those of strong investors have abnormal returns up to 10.30%. The difference in returns however, is significant at the 10% level for BHAR's only.

In Panel C, abnormal returns for the event window [-5,3] are shown with all targets having a mean CAR of 5.73%, significant at the 1% level. Here too, targets of strong investors outperform those of weak investors with around 5%, and the difference being significant at the 5% level. In the smallest event window [-1,3], targets' stocks gain 1.89% which is significant at the 1% level. The difference between targets' return of strong and weak investors is now around 0.5% but statistically not different from zero.

Concluding, mean abnormal returns for all targets and across all event windows are positive and significant at the 1% level and targets of weak investors are constantly outperformed by those of strong investors. Hence, by grouping the targets according to the general strength of the investor (identified by its F-score), targets of strong investors gain more. In addition, those targets belonging to strong investors have higher abnormal returns when compared to the total sample.

5.2 Abnormal Returns by Purpose

So far it has been shown that independent from the event window, targets of corporate investors in the favorable state gain significantly more when compared to those of investors in an unfavorable state. Attached thereto, this section aims to analyse whether this difference is existing independent from the transaction purpose. For this reason, Table 3 presents the mean [median] cumulative abnormal returns from the [-10,+3] event window for all ten sub-samples of the five measures of financial condition and the complete sample by their transaction purpose of the Schedule 13(D) filing. Identical to the previous section the measures among which the sample separation takes place are Piotroski's F-Score for general firm strength, Altman's Z-Score for determining investors in financial distress, Whited-Wu's index to identify financially constrained investors, likewise S&P's long-term issuer credit rating and lastly the investor's size. For comparison, Panel A shows the abnormal returns for the complete sample of targets (as in the previous section) and Panel B presents the abnormal returns by purpose where the filing's purpose "engaging into a takeover" involves merger agreements, tender offers and hostile bids and the purpose "strategic investments" represents alliance agreements, license agreements, strategic acquisitions and joint ventures. "Other" groups the remaining purposes representing 183 filings. the For each measure, Column (1) and (2) present abnormal returns for each of the two sub-samples. Column (3) tests the difference between column (1) and (2) and displays the t-statistic [Z-Statistics] of a parametric test [non-parametric test statistic].

As shown in the previous section, targets belonging to an investor in an unfavorable state are outperformed by those belonging to an investor in a better condition. The difference is the greatest between the sub-samples defined by the Whited-Wu index and the size of the investors for which targets of constrained or small investors gain around 10% less and the difference is significant at the 1% level.

– size and takeover –

Targets of filings with the purpose of engaging into a takeover, independent of their measure sub-sample, experience the strongest abnormal returns when compared to the two other purposes. The mean cumulative abnormal return for the complete takeover sample of 248 targets is

22.66% and significant at the 1% level. Nevertheless, a difference in abnormal returns among the two samples of each measure is visible again. The difference is the greatest among targets of constrained and unconstrained investors and of those missing a credit rating and those having one. For both measure, the difference is statistically significant at the 1% level. Strikingly, targets of investor identified to be in financial distress have a mean CAR of 25.65%, 4% higher when compared to undistressed firms. An explanation might be that the distressed companies equity claimants are up for a "gamble of ressurection" (Bhagat et al., 2005, p.451) in which they hope conditions may improve and the market interprets this behavior as promising for the target. For all measures, excluding the Z-score, is the difference in abnormal returns between the two sub-samples statistically significant at the 1% level and targets of investor in the favorable state gain more.

the 63 targets of companies that file the Schedule 13(D) due to a strategic investment experience 10.27% abnormal returns during the [-10,3] period which is significant at the 5% level. This is similar to Allen and Phillips (2000, p.2803) who find abnormal returns of 9.1% for targets if the equity ownership was due to an alliance or joint venture. Consistent across all measures, targets of firms in the favorable state have higher abnormal returns, although the difference is not significant. This might be due to the small sample size across the sub-samples. Between targets of strong and weak investors the difference in abnormal returns is the largest and is around 17%. This however does not allow overall conclusions as the two samples only include 15 and 8 filings. The difference in abnormal returns for samples of the Z-score and Whited-Wu index are small. Firms with a credit rating however have abnormal returns of 12.19% significant at the 10% level and those missing a credit rating have abnormal returns of only 4.14%. Targets of strong investors earn 17% more, although the sample size is very small with only 15 and 8 filings. But nonetheless, across all measures do firms belonging to an investor in a favorable state outperform those belonging to an investor in the unfavorable state.

For the 183 remaining filings, grouped as other purposes of transaction, the mean cumulative abnormal returns is 4.43% and significant at the 5% level. Constrained firms have a CAR almost non-existing of 0.34%. Surprisingly, targets of firms without a credit rating have abnormal returns of about 5.6%, significant at the 10% level and those of firms with a rating only have 3.17%. Targets of investors identified to be in financial distresss have a mean CAR

of 2.04%, 3.5% less when compared to undistressed firms. The difference is significant at the 10% level.

Concluding, the average cumulative abnormal return is positive across all purposes and for the most part, targets of firms in the unfavorable state are outperformed by those with an investor in the favorable state. This implies, that all measures have categorical power and the abnormal returns differ across the sub-samples in the way it was anticipated.

6 Cross Sectional Variation of Abnormal Returns

advantage of the multivariate analysis is that it allows us to draw ceteris paribus conclusions, which simple t-tests if means cannot do (Khatami et al., 2014, p.111)

Equally important as the average abnormal return subject of analysis in the previous section is its cross-sectional variation because it reflects the heterogeneity in market perceptions regarding the expected value generated by activism. Its advantage is that it allows to draw *ceteris paribus* conclusions, which simple t-tests of means cannot do. Does market anticipation depend on the investor? What is the relationship between financially constrained investors and target's abnormal returns among the sample of Schedule 13(D) filings? Table V reports the results from regressions exploring the cross-sectional variation in market response to corporate investor activism. The regression is constructed as follows

$$AR_i = \beta_0 + \beta_1 FC_i + \beta_2 NFV_i + \beta_3(FC_i * takeover) + \beta_4(FC_i * strategic) + \sum_{k=1}^{n} \beta_k + X_{k,i} + \epsilon_i \quad (5)$$

where AR_i, the dependent variable, is the cumulative abnormal return in the [-10,3] event window for target i. BFC is a dummy variable equal to 1 if in filing i the investor is classified as financially constrained and zero if otherwise. $X_{k,i}$ represents a vector of control variables of filing characteristics, with *takeover* and *strategic* being equal to one if the transaction purpose was due to engaging into a takeover or strategic investment respectively. Further, two

interaction terms between the dummy variables of purpose and the constrained indicator are included to test whether financial constraints might matter across purposes especially. For each classification – Whited-Wu index, HP-Index and credit rating – and its interaction term, the regression is performed separately. To minimize the risk of spurious inference a proxy for the business cycle *recession* and Tobin's Q for both investor and target are included. In addition, the regression controls for the target's *ROA*, *cash flow from operations to assets*, *leverage* and the size of the target. All regression have further controlled for industry fixed affects for both investor and target. Column (1), (3) and (5) show how event-window abnormal returns vary with whether the investor is identified to be financially constrained. Turning first to column (1), keeping everything else equal, activism of Whited-Wu-financially constrained investors generates generates abnormal returns 14.68% lower for the target when compared to unconstrained investors. For the HP-index, it is even more drastic with a difference of around 17.7%. The rating indicator shows that target of investors without a rating have abnormal returns 10.4% lower when compared to investor with a credit rating. All these estimates are significant at the 5% level. Hence, there is evidence that having a financially constrained investor does matter when the market evaluates potential gains for the target. Both takeover and strategic purpose influence the abnormal returns for the target. For columns (1), and (5), the purpose of takeover statistically significant at the 1% level. When compared to the base category, the purpose *other*, engaging into a takeover yields significantly higher abnormal returns. In column (1) the difference is around 20.15% and in column (3) around 18.11%. All things equal, the takeover purposes loses some of it's significance in influencing target's abnormal returns but is still significant at the 10% level. Only in column (1) is the purpose of strategic investment significant at the 10% level. In column (3) and (4) the size of the target is significant at the 10% level and keeping everything else equal decreases abnormal returns.

Column (2), (4) and (6) present the regression results from regressions including an interaction term between the dummy variables' purposes and the underlying financial constraints indicator. In this scenario, indicator of financial constraints lose their statistical significance. In columns (4) and (6) however, this effect is mitigated as the interaction between the purpose of strategic investment and the respective constraints indicator is significant at the 10% and 5% levels respectively. Other things being equal, the abnormal returns for the target are 37%

Table 1: Constraint Measures

	Constraints			
	(1)	(2)	(3)	(4)
VARIABLES	car_seven_mm	car_seven_mm	car_seven_mm	car_seven_mm
Whited-Wu Index	-0.0943***			
	(-2.9888)			
hp_indicator_2		0.0164		
		(0.3308)		
Dividend Payout Ratio			-0.0476*	
			(-1.8782)	
rating_indicator				-0.0010
				(-0.0374)
relsize	-0.2800***	-0.2774***	-0.2632***	-0.2761***
	(-4.2021)	(-4.3067)	(-4.5934)	(-4.5798)
takeover	0.1821***	0.1878***	0.2017***	0.1845***
	(5.1027)	(5.3377)	(6.1235)	(6.2645)
strategic	0.0520	0.0549	0.0222	0.0436
	(1.0199)	(1.0434)	(0.5148)	(0.9665)
investment	0.0523	0.0244	0.0757*	0.0564
	(1.1719)	(0.6240)	(1.9417)	(1.4550)
recession	0.0351	0.0027	-0.0166	-0.0008
	(0.9178)	(0.0732)	(-0.5112)	(-0.0265)
CF from Operations / Assets	-0.1676	-0.0164	-0.0163	0.0381
	(-1.4711)	(-0.1684)	(-0.1572)	(0.3923)
CF from Operations / Assets (Target)	0.0106	0.0078	0.0121	-0.0253
	(0.1977)	(0.1543)	(0.2341)	(-0.4439)
Tobin's Q	-0.0036	-0.0106	-0.0080	-0.0043
	(-0.3103)	(-0.9979)	(-0.7586)	(-0.4649)
Tobin's Q (Target)	-0.0207***	-0.0245***	-0.0227***	-0.0258***
	(-3.3555)	(-3.6770)	(-3.8943)	(-4.2064)
Fama-French industry code (17 industries) = 4, omitted	-	-	-	-
Constant	0.2235***	0.2076**	0.1993**	0.1873**
	(2.6882)	(2.3870)	(2.4461)	(2.3371)
Observations	401	398	458	521
R-squared	0.2509	0.2399	0.2404	0.2160

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

(27%) lower when the investor is financially constrained (has no credit rating). So if if the investor is financially constrained and the investment is made due to strategic cooperation, abnormal returns for the target are significantly lower. On the other hand, the interaction between financial constraints and engaging into a takeover is not significant in either case implying that investor's financial constraints matter especially when the investor acquires the stake for strategic purposes.

Concluding, results from table V indicate that financial constraints of corporate activists investors matter. Targets of constrained investor (in either classification) earn significantly less in the announcement period of a Schedule 13(D) filing. Furthermore, the investor's fin-

ancial constraints seem to matter to the market especially, when the filing is disclosed in the course of strategic investments.

7 Conclusion

Schedule 13(D) filings enjoy wide spread attention but and characteristics of minority acquisitions increasingly get into the focus of recent research. In this thesis, using a sample of Schedule 13(D) filings disclosed by corporation from the period 1996-2016, the effect of investor's financial constraints on target's gains is examined. The evidence presented is twofold. Firstly, target's of corporate activist investors experience significant gains around the filing date. Average abnormal returns are around 14%, in a [-10,3] window surrounding the filing date. They exceed those observed in the presence of hedge fund activism and are confirmation of the market's perception that corporate investor activism is an actual value improvement for the target. Secondly and far more importantly, this thesis provides evidence that investor's financial constraints matter when the market reacts to Schedule 13(D) filings, likewise evaluates possible value improvements for the target. On average provides evidence on the market's reaction subsequent to filings of corporate activist investors and analyses this thesis focuses on the relation between corporate activist investors and subsequent market reactions. On a sample of Firstly, targets of corporate activist investors experience significant gains of around 14% average abnormal returns around the filing date.

8 Appendix

8.1 Appendix A – Categroization of Filings

8.2 Appendix B – Financial Condition Measures

8.2.1 F-Score

Used from Piotroski (2000) and calculated according to Fama and French (2006) and Choi and Sias (2012). Each component contributes one point if the condition holds, zero otherwise.

1. Positive net income before extraordinary IB

$$IB > 0$$

2. Positive cash flow from operations $OANCF$– all investors had a reported cash flow format of 7. Therefore

$$OANCF > 0$$

3. Cash flow from operations is greater than net income

$$OANCF > IB$$

4. Growth in net income IB scaled by total assets AT from prior fiscal year end

$$\frac{IB}{AT}$$

5. Decrease in leverage from prior fiscal year end with leverage defined as the sum of long-term debt $DLTT$ and long-term debt due in one year $DD1$

$$\frac{DLTT + DD1}{AT}$$

6. Increase in liquidity from prior fiscal year end with liquidity defined as the ratio of current assets ACT to total liabilities LCT

$$\frac{ACT}{LCT}$$

7. No new common or preferred stock issued $SSTk$ over the previous year

$$SSTK = 0$$

8. Increase in gross margin from piror fiscal year end with gross margin defined as one minus the ratio of costs of goods sold $COGS$ to sales $SALE$

$$1 - \frac{COGS}{SALE}$$

9. Increase in asset turnover from prior fiscal year end with asset asset turnover defined as the ratio of sales $SALE$ to total assets at the beginning of the year AT_{t-1}

$$\frac{SALES}{AT_{t-1}}$$

8.2.2 Z-Score

The Z-score is computed according to Edward I. Altman (1968, p.549) and Edward I Altman (2002, p.14). For firms in manufacutring industries (SIC industries 2000-3999) the Z-score is

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

where firms with a score below the threshold of 1.81 are considered as distressed and those above 2.99 as not distressed (Edward I Altman, 2002, p.14).
For all remaining industries the Z-Score is

$$Z = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

where firms with a score smaller than 1.1 are considered as distressed (Edward I Altman, 2002, p.18) and firms with a score higher than 2.6 as not distressed (Sulub, 2014, p.175).

With $X_1 - X_5$ being

X_1 = Working capital to total assets $\frac{WCAP}{AT}$

X_2 = Retained earnings to total assets $\frac{RE}{AT}$

X_3 = Earnings before interest and taxes to total assets $\frac{EBIT}{AT}$

X_4 = Market value of equity to book value of total liabilities $\frac{PRCC_F * CSHO}{LT}$

X_5 = Sales to total assets $\frac{SALES}{AT}$

8.2.3 Whited-Wu Index

The Whited-Wu index is calculated according to Whited and Wu (2006, p.543) and Farre-mensa and Ljungqvist (2013, p.6).

$$I_{WW} = -0.091X_1 - 0.062X_2 + 0.021X_3 - 0.044X_4 + 0.102X_5 - 0.0354X_6$$

With $X_1 - X_5$ being

X_1 = Cash flow to assets $\frac{IB+DP}{AT}$

X_2 = 1 if firm pays a dividend, zero otherwise $DVC + DVP > 0$

X_3 = Long-term debt to total assets $\frac{DLTT}{AT}$

X_4 = size of the firm $log(at)$

X_5 = Average industry sales growth, estimated for each three digit SIC industry and each year separately $\frac{SALE_t}{SALE_{t-1}}$

X_6 = Sales growth $\frac{SALE}{SALE_{t-1}}$

Following convention, firms are sorted into terciles based on their index value in the previous year. Firms in the top tercile are coded as constrained and those in the bottom tercile are coded as unconstrained (Farre-mensa and Ljungqvist, 2013, p.38).

8.2.4 Control Variables

1. Return on assets

$$\frac{EBITDA}{AT}$$

2. Cash flow from operations to total assets

$$\frac{OANCF}{AT}$$

3. Cash and short-term investments to total assets

$$\frac{CHE}{AT}$$

4. Cash to total assets

$$\frac{CH}{AT}$$

5. Short-term debt to total assets

$$\frac{DLC}{AT}$$

6. Long-term debt to total assets

$$\frac{DLTT}{AT}$$

7. Book leverage according to (MacKay and Phillips, 2005, p.1440)

$$\frac{DLTT + DLC}{AT}$$

8. Size of the firm

$$log(at)$$

9. Tobin's Q according to (Khatami et al., 2014, p.120)

$$\frac{AT - CEQ - TXDB + CSHO * PRCC_C}{AT}$$

8.3 Appendix A

In order to compute the abnormal returns $AR_{i,t}$ for security i at time t in (1) the following models are used:

1. Market Model – For the expected return it assumes a constant and linear relation between the observed returns $R_{i\tau}$ and the return of a market index $R_{m\tau}$. The parameters are estimated by ordinary least squares regressions based on estimation-window observations. The value-weighted NYSE/Amex/Nasdaq index from CRSP is used as the market return $R_{M\tau}$.

$$R_{i,\tau} = \alpha_i + \beta_i R_{M,\tau} + \epsilon_{i,\tau} \tag{6}$$

with

$$E[\epsilon_{i,\tau}] = 0 \tag{7}$$

and

$$Var[\epsilon_{i,\tau}] = \sigma^2_{i,\tau} \tag{8}$$

This yields the abnormal return $AR_{i,\tau}$

$$AR_{i,\tau} = R_{i,\tau} - (\hat{\alpha}_i + \hat{\beta}_i R_{M,\tau}) \tag{9}$$

2. Market Return Model – The model is classified as the restricted market model with $\alpha_i = 0$ and $\beta_i = 1$. This means that there is no estimation window required and the abnormal return $AR_{i,\tau}$ is simply the difference between the observed return $R_{i,\tau}$ and the value-weighted NYSE/Amex/Nasdaq index return $R_{M\tau}$.

$$AR_{i,\tau} = R_{i,\tau} - R_{M,\tau} \tag{10}$$

Table 2: F-Score
Regression F-Score

VARIABLES	(1)	(2)	(3)	(4)	(5)
F-Indicator	0.0885*	0.0583	0.0600	0.0636	0.0056
	(1.8171)	(1.2234)	(0.0634)	(0.0607)	(0.0898)
Return on Assets			-0.1732		-0.3401
			(0.2084)		(0.3384)
Cash flow from Operations to Assets			-0.0311		-0.0021
			(0.1149)		(0.2613)
Cash and short-term Investments to Assets			-0.1337		-0.2147
			(0.1326)		(0.1911)
Leverage			-0.1187		-0.2236
			(0.1170)		(0.1470)
Ln(At)			0.0395**		0.0402**
			(0.0161)		(0.0184)
Tobin's Q			0.0397**		0.0326
			(0.0155)		(0.0251)
Takeover Purpose		0.1077**			0.0872
		(2.3818)			(0.0715)
Strategic Purpose		0.1764**			0.2157*
		(2.0002)			(0.1200)
Return on Assets Targets				0.1493	0.2380
				(0.1923)	(0.2053)
Cash flow from Operations to Assets Targets				-0.2191	-0.2409
				(0.2066)	(0.2256)
Cash and short-term Investments to Assets Targets				-0.0374	-0.1205
				(0.1727)	(0.2046)
Leverage Targets				-0.0642	0.0291
				(0.1429)	(0.1463)
Ln(At) Targets				0.0004	-0.0120
				(0.0237)	(0.0280)
Tobin's Q Targets				0.0021	-0.0190
				(0.0154)	(0.0215)
Constant	0.0376	-0.0888	-0.3225*	0.2873	-0.1172
	(0.2684)	(-0.6475)	(0.1908)	(0.1855)	(0.2203)
Observations	192	192	192	137	137
R-squared	0.3593	0.3975	0.4375	0.4875	0.5870

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Z-Score

Regression Z-Score asdjhaskjdhkajshdkjashdkjashdkjahsdkjhaskjdhkasjhdkjhas askjhdkasjhdkjashdd

VARIABLES	(1)	(2)	(3)	(4)	(5)
Z-Indicator	-0.0099	-0.0344	-0.0572	0.0013	-0.0930*
	(-0.2604)	(-0.9528)	(0.0447)	(0.0485)	(0.0558)
Return on Assets			-0.0933		-0.2435
			(0.1364)		(0.1991)
Cash flow from Operations to Assets			0.1154		0.2382
			(0.1098)		(0.1611)
Cash and short-term Investments to Assets			0.0849		0.1079
			(0.0841)		(0.0893)
Leverage			-0.0366		0.0021
			(0.0840)		(0.0913)
Ln(At)			0.0315***		0.0488***
			(0.0092)		(0.0109)
Tobin's Q			-0.0062		-0.0179
			(0.0122)		(0.0149)
Takeover Purpose		0.1595***			0.1546***
		(5.6436)			(0.0327)
Strategic Purpose		0.1278**			0.0938
		(2.4042)			(0.0659)
Return on Assets Targets				-0.0856	-0.1876
				(0.2183)	(0.2141)
Cash flow from Operations to Assets Targets				0.0144	0.1025
				(0.2089)	(0.2008)
Cash and short-term Investments to Assets Targets				0.0256	-0.0125
				(0.0953)	(0.0933)
Leverage Targets				0.0359	-0.0212
				(0.0765)	(0.0701)
Ln(At) Targets				-0.0162	-0.0372***
				(0.0122)	(0.0130)
Tobin's Q Targets				-0.0034	-0.0090
				(0.0109)	(0.0108)
Constant	-0.2050**	-0.3064***	-0.3668***	-0.0719	-0.2840
	(-2.0256)	(-3.1507)	(0.1167)	(0.1851)	(0.1861)
Observations	454	454	454	345	345
R-squared	0.1655	0.2200	0.2040	0.2028	0.3317

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Whited-Wu Indicator

Regression WW-Index

VARIABLES	(1)	(2)	(3)	(4)	(5)
WW-Indicator	0.0975**	0.0860**	-0.0516	0.1552***	0.0077
	(2.4224)	(2.1823)	(0.0764)	(0.0545)	(0.0858)
Return on Assets			-0.1487		-0.2366
			(0.1877)		(0.2158)
Cash flow from Operations to Assets			0.0811		0.1388
			(0.1384)		(0.1631)
Cash and short-term Investments to Assets			0.0932		0.1191
			(0.1148)		(0.1097)
Leverage			0.0106		0.0509
			(0.1150)		(0.1100)
Ln(At)			0.0393**		0.0391*
			(0.0183)		(0.0206)
Tobin's Q			-0.0116		-0.0268
			(0.0161)		(0.0187)
Takeover Purpose		0.1801***			0.1551***
		(4.7829)			(0.0404)
Strategic Purpose		0.1191*			0.1150
		(1.8678)			(0.0735)
Return on Assets Targets				-0.2153	-0.3091
				(0.3749)	(0.3747)
Cash flow from Operations to Assets Targets				0.1157	0.2155
				(0.3707)	(0.3570)
Cash and short-term Investments to Assets Targets				0.0669	0.0109
				(0.1051)	(0.1042)
Leverage Targets				0.1661	0.1034
				(0.1362)	(0.1362)
Ln(At) Targets				-0.0299*	-0.0311*
				(0.0157)	(0.0176)
Tobin's Q Targets				-0.0044	-0.0073
				(0.0119)	(0.0115)
Constant	-0.1420	-0.2625*	-0.2791*	-0.0110	-0.2054
	(-1.1435)	(-1.9005)	(0.1579)	(0.1569)	(0.2000)
Observations	329	329	329	257	257
R-squared	0.2182	0.2783	0.2374	0.2872	0.3563

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Rating Regression

Regression Ratings

VARIABLES	(1)	(2)	(3)	(4)	(5)
rating_indicator	0.0668**	0.0644**	-0.0071	0.0981**	-0.0047
	(2.2413)	(2.2096)	(0.0377)	(0.0392)	(0.0443)
Return on Assets			-0.1766		-0.3255*
			(0.1408)		(0.1934)
Cash flow from Operations to Assets			0.1044		0.1859
			(0.1110)		(0.1612)
Cash and short-term Investments to Assets			0.0299		0.0554
			(0.0884)		(0.0904)
Leverage			-0.0063		0.0449
			(0.0785)		(0.0863)
Ln(At)			0.0318***		0.0463***
			(0.0104)		(0.0124)
Tobin's Q			-0.0060		-0.0148
			(0.0119)		(0.0142)
Takeover Purpose		0.1621***			0.1523***
		(5.5861)			(0.0332)
Strategic Purpose		0.0948*			0.0771
		(1.9100)			(0.0624)
Return on Assets Targets				-0.0484	-0.1267
				(0.2108)	(0.2054)
Cash flow from Operations to Assets Targets				0.0100	0.0668
				(0.2007)	(0.1919)
Cash and short-term Investments to Assets Targets				0.0488	-0.0029
				(0.0946)	(0.0918)
Leverage Targets				0.0752	0.0636
				(0.1006)	(0.0961)
Ln(At) Targets				-0.0260**	-0.0393***
				(0.0120)	(0.0134)
Tobin's Q Targets				-0.0053	-0.0094
				(0.0107)	(0.0106)
Constant	-0.1740	-0.2361	-0.3333***	0.1071	-0.0795
	(-1.4256)	(-1.5782)	(0.1213)	(0.1230)	(0.1442)
Observations	494	494	494	376	376
R-squared	0.1621	0.2145	0.1857	0.2049	0.2955

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Size Regression

Regression Size

VARIABLES	(1)	(2)	(3)	(4)	(5)
size_indicator	0.0724**	0.0673**	-0.0561	0.1208***	-0.0383
	(2.4793)	(2.3634)	(0.0466)	(0.0368)	(0.0548)
Return on Assets			-0.1939		-0.3334*
			(0.1438)		(0.1948)
Cash flow from Operations to Assets			0.1044		0.1845
			(0.1119)		(0.1621)
Cash and short-term Investments to Assets			0.0263		0.0562
			(0.0871)		(0.0893)
Leverage			-0.0105		0.0421
			(0.0755)		(0.0867)
Ln(At)			0.0419***		0.0533***
			(0.0139)		(0.0166)
Tobin's Q			-0.0048		-0.0138
			(0.0121)		(0.0142)
Takeover Purpose		0.1607***			0.1512***
		(5.5508)			(0.0331)
Strategic Purpose		0.0941*			0.0743
		(1.8843)			(0.0616)
Return on Assets Targets				-0.0201	-0.1364
				(0.2099)	(0.2035)
Cash flow from Operations to Assets Targets				-0.0312	0.0786
				(0.1981)	(0.1892)
Cash and short-term Investments to Assets Targets				0.0248	-0.0037
				(0.0903)	(0.0920)
Leverage Targets				0.0950	0.0651
				(0.0999)	(0.0949)
Ln(At) Targets				-0.0316**	-0.0395***
				(0.0124)	(0.0133)
Tobin's Q Targets				-0.0055	-0.0096
				(0.0105)	(0.0106)
Constant	-0.1429	-0.2049	-0.4051***	0.1133	-0.1275
	(-1.3996)	(-1.6170)	(0.1409)	(0.1237)	(0.1622)
Observations	494	494	494	376	376
R-squared	0.1641	0.2156	0.1882	0.2145	0.2965

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1