The Importance of the Investing Corporation's Financial Condition in the Presence of Schedule 13(D) Filings

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1 Introduction

Macht das überhaupt Sinn was ich schreibe? Kann man das nachvollziehen?

Much attention has been recently given to the current Securities and Exchange Commission (SEC) reporting requirements for Schedule 13(D), governing the disclosure of beneficial ownership interests in excess of five percent of outstanding common stock of a U.S. public company (Giglia, 2018). Amongst other causes, it is due to significant gains for the subject's stock when a partial acquisition through a Schedule 13(D) filing is announced (Akhigbe et al., 2007).

However, it is still largely unanswered where this upward drift comes from (Greenwood and Schor, 2009). An approach to this issue is objective of this thesis. Namely, analyzing the link between the financial condition of corporate investors and the abnormal returns on the subject's stock and determining whether the financial condition has explanatory power for the latter. The following findings motivate this approach.

In recent studies of what happens to the target's stock after such a filing, Collin-Dufresne and Fos (2015) observe a positive significant market reaction to the subject's stock upon a more general sample of Schedule 13D filings [1]. Brav et al. (2008) have shown a favorable market reaction, 7% - 8% average abnormal returns in the (-20|20) event window, particularly to Schedule 13D's filed by hedge funds. Similar results have been shown by Klein and Zur (2009) who observe 10.2% average abnormal stock returns specifically for hedge fund targets. In addition, Brigida and Madura (2012) have shown an even higher runup if the acquirer is a private investor or a non-financial corporation. This is matching with Akhigbe et al. (2007) findings who observe greater gains for the target's stock if the partial position was initiated by a corporate bidder. Concluding, filings submitted by all investor types are followed by positive market reactions on the subject's stock but those submitted by corporations seem to have a stronger impact. This motivates the first hypothesis which assumes significant positive abnormal returns for Schedule 13(D)'s filed by corporations.

[1] The sample is only restricted on the subjects stock characteristics rather than on characteristics of the filers e.g. they exclude all filings which are not common stock (CRSP share code 10 or 11), whose prices are below $1 and above $1000 and which involve derivatives (Collin-Dufresne and Fos, 2015).

Since the investing corporation is allowed to behave in an activist manner by filing a Schedule 13(D) [2] (Brigida and Madura, 2012) they can use their stakes to actively monitor and influence the target which is similar to the definition of an entrepreneurial activist by [3] Klein and Zur (2009). These stakes tend to be either made for the purpose of investment or far more importantly, as strategic investments (Damodaran, 2005), possibly resulting in business agreements, alliances or joint ventures (Allen and Phillips, 2000).

In a more direct approach however, these strategic investments can also help as a stepping stone towards full control (Huang et al., 2017). This approach is supported by Goldman and Qian (2005) who find that mergers and takeovers are often preceded by the acquisition of a minority stake in the target. Whereas hedge funds use their stakes to change characteristics of the target (e.g. the board of directors or the strategic orientation) (Klein and Zur, 2009) corporate filers are mainly focused on synergies in the form of strategic alliances or takeovers between them and the target. Akhigbe et al. (2007) observe that partial acquisitions, if carried out by corporate investors, are more likely to result in a full acquisition when compared to all other activist investors. This means that within the mass of Schedule 13D filings, institutional investors are unlikely to pursue a complete takeover whereas corporations are potential full acquirers (Brigida and Madura, 2012). The possibility of a takeover could be one explanation for the strong impact corporate filings have on the market, because the abnormal returns could be a reflection of investors' expectations of the target firms stock being acquired at a premium to the current price (Goldman and Qian, 2005) especially with strong corporate bidders being likely to overpay in the event of a full takeover (Akhigbe et al., 2007). These findings motivate the second hypotheses which assumes the highest abnormal returns occur in the event of a purpose of transaction statement involving a merger or a takeover of the subject.

However, in order to be able to bring change – might it be in the form of a strategic alliance or eventually in a takeover – the filing corporation should be in a condition of sufficient financial health. A recent example on this matter is the public perception of the HNA Group. The financial condition of the HNA group, China's largest private conglomerate which over the past few years invested around $US40 billion in businesses around the world, has currently been

[2] In comparison the investor could file a Schedule 13(G) in which he would hold the shares passively hence with no intention to bring change.

[3] Klein and Zur (2009) define the entrepreneurial activist as an investor who buys a large stake in a publicly held corporation with the intention to bring change and thereby realize a profit on the investment.

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, which is just below the 10% threshold above which stake purchases must be approved by Germany's financial watchdog 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 HNA group is a private conglomerate, the financial condition of corporations seems to be of great importance to other market participants with that said, even in the context of minority acquisitions. Therefore, linking investors' financial condition to underlying market reactions could be an explanation for the latter. This motivates the third and most important hypotheses, namely that abnormal returns, triggered by activist minority acquisitions, can be explained by the financial condition of the investor.

Based on the previous findings of corporate activism, namely their strong impact on the subjects stock in the form of abnormal returns and future possibilities involving the target, the economic significance of corporations as filers of Schedule 13(D)'s seems to be apparent.

Yet in order to make these possible developments and expectations look credible – amongst other things strategic alliances and takeovers – the investing corporation somehow has to emit signs of sufficient financial strength. Therefore, the link between the financial condition of the investor and the subsequent abnormal returns on the target's stock is an interesting issue to examine. This in particular, is objective of the paper. What precisely are the effects of Schedule 13(D) filings by corporations on the subject's stock and can the financial condition of the corporation explain the market's reaction? Or in other words – how important is the financial condition of the corporation behaving in an activist manner?

The paper proceeds as follows. In the Section 2, the relevant literature is being reviewed. Section 3 describes the data and sample composition. In Section 4 the market's response to Schedule 13(D) filings are being examined. Section 5 represents the ..... by are being described. In the section 4, being described

2 Literature Review

2.1 Schedule 13(D) Filings

Section 13(d) of the Exchange Act of 1934 was passed in order to increase regulation of tender offers and accumulations of stock and the "growing use of cash tender offers as a means for achieving corporate takeovers." 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" (FAQ). 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 investors about individuals who could influence or change control of the issuing company (Giglia, 2018). Whereas filing a Schedule 13(D) allows the investor to behave in an active manner, a passive investor can file a Schedule 13(G) instead of a Schedule 13(D). 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, 2018). Within the Schedule 13(D) filings is information important to the following analysis. They specify (1) the security and the issuer, subject to the filing, (2) the identity and background of the filer, (3) the source and amount of funds or other conssiderations and most importantly, (4) the purpose of the transaction. Concluding, a Schedule 13(D) filing contains all information relevant in order to assess the underlying acquisition of at least 5% of outstanding stock. The filers can be broadly classified into institutional investors (e.g. hedge funds, mututal funds), other entrepreneurial activists (e.g. individuals) (Klein and Zur, 2009) and corporations.

2.2 Hedge Fund Activism

There have been many studies that examined the effect a Schedule 13(D) filing submitted by hedge funds has on the target firm's stock price. In the presence of short-hprizon event studies of stock returns they all find positive abnormal returns for the subjects stock around the filing date. Brav et al. (2008, p.1730) find positive average abnormal returns in the range of

"7% to 8% during the (-20,+20) announcement window for activist hedge funds. Klein and Zur (2009) have similar findings and observe 10.2% average abnormal stock returns for hedge fund targets. In contrast, Greenwood and Schor (2009) observe average 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. In a more recent study by Denes et al. (2017), they average the valuation effect to around 5% on the target's stock if submitted by hedge funds. It can be seen that all studies observe positive abnormal returns around the filing date but differ in their magnitude (Comparing the the returns can be misleading as the authors used different models for computing the abnormal returns) [4]. Although the filing of a Schedule 13(D) can be seen as the trigger for the market reaction, the reason of why the abnormal returns occur is still largely unknown. However, Brav et al. (2008) find that if hedge funds engage actively, they have a high succession rate in achieving their main objectives. In a more recent paper conducted by Brav (2009, p.12) they list these objectives based on the sample of filings. The vast majority of these objectives focuses on general characteristics of the target and possible increase in shareholder value. They can be separated into five, not mutually exclusive, categories. The first objective is the believe of the hedge fund that he can help the manager maximize the shareholder value because they believe that the company is undervalued. The second includes activism that is based on the targeting firm's payout policy and capital structure. for the third objective, the hedge funds target issues related to business strategy, such as operational efficiency, mergers and acquisitions or growth strategies. The fourth objective is aimed at the sale of the target company with the majority to force a sale of the target company to a third party. The last objective includes activism targeting corporate governance. These motives are congruent with the Klein and Zur (2009) definition of an entrepreneurial activist "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". A more cautious definition is presented by Greenwood and Schor (2009) who define an activist investor as someone who tries to change the status quo through voice, without a change in

[4]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.

control of the firm. While all of these studies involve a deepened investigation of hedge-funds, especially their impact and motivation, most of them leave the remaining investor types aside.

2.3 Minority Acquisitions

While the objectives of hedge funds in the light of Schedule 13(D) filings have been discussed in many studies, there is still much more debate on the motivation of corporations to engage in such minority acquisitions. Corporate investments in other firms' equities can be be split in two broad categories. They can either be classified as ordinary investments or far more importantly as strategic investments. For the latter they could serve as a first step to engage with the opposing company. This is assumption is verified by Allen and Phillips (2000), Ouimet (2013) and Huang et al. (2017) who find that corporations make minority acquisitions in other companies when they confront informational or integration barriers – in one way or another, they want to engage with the target.

The decreasing barriers give rise to business agreements, alliances, joint ventures or takeovers. In the sense of possibilities that might be reached, corporate ownership, in comparison to ownership by institutional investors, is unique [5] (Allen and Phillips, 2000). If a business agreement demands one party to invest in an asset and the value of the asset is determined by future trade between the parties, the investing party might be concerned with a holdup problem of the partner [6]. To encourage and hedge the investment and to further ensure collaboration, the investor can buy a minority stake [7] in the partner (Ouimet, 2013). The minority acquisition can help to mitigate incomplete contracts and thereby facilitate cooperation between the two partners (Allen and Phillips, 2000). Another form of cooperation induced by a minority acquisition is the direct financing of the target by the acquirer. As noted by Ouimet (2013), the investment helps to overcome asymmetric information helping to certify the target for other outside investors. In a more strategic approach, undertaking a minority acquisition is of help

[5] In Allen and Phillips (2000) sample, the mean fraction of equity acquired in the sample is 20% with blockholdings of at least 5% of voting shares. This is similar in size to the underlying sample of the paper.

[6] Ouimet (2013)Defines the holdup problem as a decrease in it's bargaining power in a renegotiation of the contract because the value of the initial investment is dependent on future trade with the partner.

[7] Ouimet (2013) defines acquisitions as minority acquisitions if less than 50% have been acquired, majority acquisitions otherwise.

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 to gather more information before launching a bid for a takeover (Huang et al., 2017) - minority acquisitions can help as a stepping stone towards full control (Huang et al., 2017).

Because there are two options two acquire a publicly traded firm in the United States, either through a merger or through a tender offer (Offenberg and Pirinsky, 2015), **Mitchell2011** 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". Whereas a merger agreement is the result of negotiations between the investor and the target's management, in a tender offer the acquirer makes a direct bid to target shareholders to purchase the target shares. By negotiating with the target's management a merger agreement might appear as the safer option. However, it does not lock up the target from potential competition because the director fiduciary duties require the target board to evaluate competing offers until the agreement is approved by the shareholders (**Mitchell2011**). In the case of a merger agreement, the beneficial ownership of a partial stake can thus help to speed up the shareholder approvement process, induce the acquirer to fully commit to the merger and therefore increases the probability of a successful takeover. To prohibit the acquirer of purchasing target shares in the market during negotiations, parties often sign a standstill agreement (**Mitchell2011**). In contrast, shareholders of the target might sign a voting agreement in favor of the acquirer in which they agree to vote the shares in a way expressed by the acquirer - corporations might have to sign a Schedule 13(D) although they did not buy the shares but have their voting power.

Another possibility is the purchase of ownership in the target prior to the start of the takeover bid - a toehold. Neither management nor target's shareholders know of the acquirers takeover intention. Following Eckbo (2009, p.158) acquiring a toehold, before initiating the takeover bid, is compelling. It reduces the number of shares that must be bought at the full takeover premium and it can be sold at a profit if a rival bidder winds the target but it can also create hostility with the target's management (Goldman and Qian, 2005). This is the reason why toeholds are much more common in hostile bids (**Mitchell2011**). On the other hand Povel and Sertsios (2014, p. 216) suggest that toeholds are not much different to the

general minority acquisitions. Because the toeholder might negotiate the right to nominate one or more directors in the target's board, they open the door to a more intensive cooperation. According to (**Mitchell2011**) bidders initiating a takeover bid in the U.S. over the period 1980-2005 offered all cash as payment in 26% of the cases, all stock in 37%, and a mix of both in 37%.

Concluding, corporations filing a Schedule 13(D) and confessing their intent to behave in an active manner have many motives to do so. However, overcoming informational and integration barriers seems to pervade in almost all cases. Nevertheless, a strong engaging investor is a representation of the investment's future stability and value creation and stands for further possible engagements with the target.

Considering the takeover process mentioned above, the necessity to file a Schedule 13(D) and thereby confirm the beneficial ownership of at least 5% of the outstanding stock, prior or while negotiating the takeover bid, is more difficult to comprehend. Nevertheless the success of a potential takeover seems to be especially dependent on the bidders condition to be faster and stronger than potential competitors, the initial bidder has to ensure assertiveness. In order to appear strong (the market perceives the acquirer as a winner) the acquiring company must have sufficient financial strength. In the first place to make the takeover process credible to outside investors and secondly to signal the ability to pay the takeover premium. In any case, the target's outstanding shares have to be acquired at a premium to the price prevailing at the filing date either trough cash, stock or a mix of both. Besides that, a strong acquirer could have more bargaining power in persuading the target's shareholders to approve the merger and successfully carry out the takeover.

3 Data

3.1 Constructing the Sample

The data used to conduct the following analysis is primarily composed of information gathered from Schedule 13(D) filings [8] within SEC's Edgar database and further from data provided by Wharton Research Data Services (WRDS). The sample of Schedule 13(D) filings is conctructed as follows. First, using an automatic 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, pension-funds or real estate investment trusts (REITs), 10-K reports were cross-referenced with the initial sample of all filings [9]. In order to be part of the sample, the filer had to have a 10-K report submitted 12 months prior to the filing which reduced the sample to 3'325 filings. Because the daily stock returns and prices for the underlying 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 its CUSIP and CRSP's unique PERMNO identifier. For the remaining 1'467 filings, there had to be sufficient data on CRSP in order to calculate the abnormal returns for the subjects which reduced the sample to 1'151 filings. The accounting fundamentals, needed to compute the filers financial condition, come from the COMPUSTAT database which means that the filer has to have a link between its 10K-CIK and COMPUSTAT's unique GVKEY indentifier. After crossreferencing with the remaining 1'151 filings, the sample was reduced to 1'014 filings. In the next step, according to Fama & French's industry classification code, all filers belonging to the trading industry (Code

[8] Schedule 13(D) filings are "the mandatory federal securitites law filings under Section 13(d) of the 1934 Exchange Act that investors must file with the SEC within 10 days of acquiring more than 5% of any class of securities of a publicly traded company if they have an interest in influencing the management of the company" (Brav et al., 2008, p. 1736)

[9] 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)

47) were dropped which left a sample size of 898 filings. In a last step, size and purpose of the transaction were manually extracted from the Schedule 13(D) filings, while in the process Schedule 13(D/A) filings (e.g. amendments to previous filings) that were mistakenly classified as original Schedule 13(D) filings and filings not submitted by corporations were excluded [10]. which reduced the sample to 748 filings.

3.2 Descriptive Data

Table 1 describes the composition of Schedule 13(D) filings. In column (1) the complete sample of firms is being described, whereas column (2) and (3) describe the filings submitted by strong and weak investors [11]. Panel A gives general characteristics of the sample's Schedule 13(D) filings. In total 498 filings submitted by firms are part of the sample with 110 submitted by strong and 85 by weak firms which is a difference of around 5% of the total sample size. The sample consists out of almost the same number of investing and target firms but has 64 more target firms. This means that occasionally some investing firms submitted more than one filing with the maximum being 6 filings from the same investor AT&T. In the ten-year span from 2002–2011, over 60% of the total number of filings were submitted, with the highest being in the 5-year span before the financial crisis. Interestingly, the number of filings during in the period involving the financial crisis, is still higher than in the following five years. In addition, 30% of the filings around the financial crisis were submitted by strong firms and only 12% by weak firms. Panel B lists the "Purpose of Transaction" which represents item 4 in the Schedule 13(D) filings. They have been grouped into the following six categories. (1) Engaging in a potential takeover and, vice versa (2) becoming a target, (3) actively and (4) strategically investing into the issuer, (5) being compensated and lastly (6) other purposes. The category takeover contains all filings implying the engagement of the reporting firm into a takeover process of the issuing firms. This involves merger agreements, tender offers and hostile bids with merger agreements being the most and hostile bids the least reported. Notably is the

[10] 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 as general investments in a fund.

[11] According to Mohr (2012) weak firms are characterized by F-scores between (0-3) and strong firms between (7-9)

fact that around 50% of the filings were filed with the intent of a takeover. This is especially interesting, as the the investor's financial condition should play an important role in the process of analyzing these filings. Correspondingly, more than double the amount of these filings were submitted by strong firms when compared to weak firms.

On the other hand, this relation is switched for filings with the purpose of investments due to being the target. Now, 37% of these filings were submitted by weak firms compared to only 6% by strong firms. This can be understood in the way that the investor was compensated with the shares to then compensate its shareholders with the targets stock at the event of the takeover. Consequently, this is one of the two transaction purposes for which weak firms have substantially more filings than strong firms. The second most reported category was that of investing in an active manner with 86 filings. This implies the purchase of the stock for investments purposes, while actively monitoring the issuing company. This is the second only category in which weak firms have more filings than strong firms. The third most important purpose of filings were those with the purpose of strategically investing into the issuer. This involves cases of alliance agreements, strategic investments with further potential collaborations, license agreements and joint ventures. They represent only around 10% of the filings. Panel C is a representation of the investing firms industries according to the (48) Fama & French industry classification code. 42 out of the 48 industries are represented in the sample. As mentioned above, the industry of trading was excluded from the sample. Only industries with at least 15 firms are listed in the table. The two highest industry representations with more than 50 firms are computer software and pharmaceutical products. Interestingly, they have switched representations of strong and weak firms with 16 (7) and 5 (15) firms. The top two industries for strong firms were computer software and petroleum and natural gas and for weak firms pharmaceutical products and electronic equipment.

Table 1: Table I – Descriptive Statistics

	Complete Sample	Strong Firm	Filing	Weak Firm	Filing
Panel A: Characteristics Schedule 13(D) Filings					
Filings	498	110	22%	85	17%
Filing Firms	394	100	25%	77	20%
Target Firms	458	107	23%	79	17%
Events per Year					
1996-2001	81	15	19%	14	17%
2002-2006	182	38	21%	31	17%
2007-2011	135	40	30%	16	12%
2012-2016	100	17	17%	24	24%
Panel B: Purpose of the Transaction					
Takeover	251	65	26%	29	12%
Become an Activist Investor	86	15	17%	21	24%
Strategic Investment	42	8	19%	6	14%
Compensation	38	8	21%	8	21%
Target=15	35	2	6%	13	37%
Alliance Agreement	13	5	38%	0	0%
% of Shares acquired	24.6%	25.1%		24.07%	
Panel C: Industry of Filing Firm					
Medical Equipment	19	4		5	
Pharmaceutical Products	51	5		15	
Machinery	15	1		3	
Patroleum and Natural Gas	47	12		7	
Communication	40	5		6	
Business Services	30	5		4	
Computer Hardware	24	5		5	
Computer Software	70	16		7	
Electronic Equipment	43	11		9	

3.3 Examples of Corporate Activism

In this subsection, two cases of corporate investments into other firms are being described. The first example is takeover the second is strategic investment.

3.3.1 Pfizer Inc. and Icagen Inc.

On June 24, 2011 Pfizer filed a Schedule 13(D) in which it declared an ownership of 14.2% in Icagen Inc.. Pfizer was initially engaging with Icagen in accordance to a "collaboration agreement" dated August 13, 2007. In the purpose statement of June 24, 2011 Pfizer wrote:

"Pfizer is evaluating the possibility of entering into a strategic transaction with Icagen, which could have the effect of influencing or changing the control of Icagen by means of stock or asset acquisition or merger"

Consequently, the filing can be considered as firms strategic investment and the purpose statement can be classified as indicating that Pfizer wants to further strategically invest in Icagen. The ownership of 14.2% in Icagen was acquired between 2007 and 2008. The collaboration agreement on August 13, 2007 involved the "discovery, development, manufacture & commercialization of pharmaceutical compounds and products that modulate three specific sodium ion channels as potential new treatments for pain and related disorders". The investment resulted in Pfizer appointing the treasurer and president of Icagen as their proxies. In order to extend the collaboration agreement, on September 17 2009 Pfizer and Icagen entered into the first amendment to the agreement. On September 21, 2010, one year later, they entered into a second amendment to the collaboration agreement which would extend it until December 31, 2011. In the course of a further collaboration between Pfizer and Icagen after the expiration of the collaboration agreement , Pfizer filed this Schedule as stated in the purpose statement above.

4 Identifying the Investors prior to their Schedule 13(D) Filing

After describing the characteristics of the sample and its underlying Schedule 13(D) filings in the prior section, the focus of this section lies now in identifying the investors. In the following, the general instruments used in identifying the investors are explained and in a second step their representation within the sample. The aim is to provide a general understanding of the tools used for testing the thirdd hypothesis which states that the financial condition of the investor plays an important role in understanding the abnormal market reaction around a Schedule 13(D) filing. In order to do that, the financial condition has to be broken down and quantified into several components. In general, the financial condition of a firm is assessed by analyzing characteristics such as profitability, liquidity, solvency and operational performance. In order to do so, Piotroskis F-Score is used as a measurement of general firm strength, the Whited-Wu- and KZ-Index relate to solvency and identify financially constraint firms and Altman's Z-Score represents a measurement on how distressed firms are. Beyond these rather universal measurements of a firms financial condition, further insight is given in the form of simple fundamental analysis. Table II presents a summary of these indicators. Column (1) and (2) show the figures of the firms from the sample and the control sample, respectively. In order to show how the sample firms compare to their respective control samples, their means (medians) are shown side-by-side. The control sample is based on industry and size and is established to put the sample of investors into perspective and further characterize them through a direct comparison. Column (3) presents the significance levels for tests for difference between sample and control firm's means and medians. For all tests, the t-statistics are for difference in means, assuming unequal variances between the samples. The Z-statistic is a Mann-Whitney rank-sum test of unmatched pairs.

Table II starts with Panel A presenting the main components to quantify the general expression of the investor's financial condition. [12]. Because the attribute of being financially strong can be hard to isolate and in a study of 2010 *BCG* notes many of that year's acquisitions

[12] All measurements 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).

would involve a financially strong acquirer, Piotroski's F-score proxies for this attribute. For the reason that it addresses the issue as it is a "... composite measure of firm strength" (Fama and French, 2006, p. 496). The score consists of nine binary signals which consider in what directions the fundamentals of a company are trending and whether general health conditions are met (Mohr, 2012). Although Piotroski (2000) established it to separate strong from weak value firms [13]. Mohr (2012) shows that its application on growth stocks yields similar results. [14]. With regards to the above, the F-Score is used as an indicator to divide the sample of filings into those submitted by strong investors and those by weak investors. Strong firms are characterized by a score between (7-9) and weak firms by a score between (0-3). This is somehow different to Piotroski's application but it yields a larger sub-sample which is more independent from rare outliers (Mohr, 2012, p.12), the boundaries are more expanded than in the original paper of Piotroski (2000) but yields a larger sub-sample and is independent from rare outliers. Table II shows a mean of 5.2 for the F-score across the sample. With a mean of 5 this suggests a trend towards more firms in the upper scores.

The second measurement is Altman's Z-score which is a fundamental indicator that shows statistically significant results in predicting the bankruptcy of a company (Campbell et al., 2008) and is still applied as a general practical tool for assessing the financial well-being of firms (Kleinert, 2014). This measure of bankruptcy/financial distress represents a state in which the firm cannot meet or has difficulty paying off its financial obligations to its creditors. The previously mentioned HNA Group could be listed exemplary, as they have problems in refinancing their debt burden. With a threshold of 2.675 to distinguish among the states of bankrupt and non-bankrupt firms, panel A shows a mean of 4.1 which is way above the threshold. Nevertheless, around 40% of the firms included in the sample are below it and therefore in a state of bankruptcy.

With the Whited-Wu- and KZ-Index two measurements to distinguish between financially constrained and unconstrained firms are represented. According to Farre-mensa and

[13] In order to legitimize the explanatory power of the F-score in separating strong from weak firms Piotroski formed portfolios consisting of value firms. In doing so, he showed that an investment strategy of shorting expected losers (weak firms) and buying expected winners (strong firms) would "generate a 23% average annual return" (Piotroski, 2000, p. 4). This is matching with Hyde (2014) results, who observe significant return premiums for stocks with a high F-score over stocks with a low F-score.

[14] This is in line with Piotroski (2000) and confirms earlier research conducted by him.

Ljungqvist (2013, p. 1) a firm is financially constrained if it faces an inelastic supply of external capital. On the other hand 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). The additional dimension in the form of financial constraints to the overall picture of the investor's financial condition is motivated by the following two arguments. Firstly, any motivation of the investing firm to acquire further partial bids in the target is in need of cash and the ability to raise even more cash. Secondly, with around 50% of the filings signaling a potential takeover that somehow has to be paid, a firm can be very dependent on its ability to raise external capital.

The KZ-Index is based on a logit model relating the degree of financial constraints to five accounting variables: cash flow, market value, debt, dividends and cash holdings, each scaled by assets (Farre-mensa and Ljungqvist, 2013, p.5). This means, not only the actual cash reserves and the firms ability to generate cash matter but also the investor's ability to raise external capital.

Although Khatami et al. (2014) notes that more recent literature has questioned the reliability of constraint measures, the Whited-Wu- and KZ-Index as defined in Farre-mensa and Ljungqvist (2013) are used as indicators for the latter. For both indices firms are sorted into terciles based on their index values. Firms in the top tercile are coded as constrained those in the bottom tercile are coded as unconstrained. This results in 166 constrained and 166 unconstrained firms.

Panel B presents two measurements of profitability. Return on assets is defined as the ratio of EBITDA to total assets and cash flow from operations is the ratio of CFO to assets [15] . This is equal to Klein and Zur (2009) who identify the financial condition of targets with regards to hedge fund activism. Both of these measures are positive.

Panel C lists the cash balances and debt ratios of the investor. According to the Debt is measured as short-term debt (due in one year), long-term debt and total debt.

[15]Compustat data are used for these and the other measures presented in Table II

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

In this section we will measure the effect of a Schedule 13(D) filing on the price of the stock which is subject to the filing. The aim is to test the first hypothesis, namely a significant market reaction in response to the filing. In order to identify the reaction, the abnormal share price reactions around the filing date are computed.

The time line of the event study consists successively of (1) the estimation window, in which parameter estimates are obtained, (2) the event window, which includes the event day and for which the abnormal returns are computed and (3) the post event window. For the following analysis the event date, as reported in the Schedule 13(D) filing, is defined as day 0. Because abnormal returns were computed for various intervals surrounding the filing date, an estimation window of 120 days prior to the largest event window (beginning 30 days prior to the filing) was set. With the aim to isolate the effect of the Schedule 13(D) filing from other general market movements, the abnormal return $AR_{i,t}$ for security i at day t is defined as the difference between the actual (observed) return $R_{i,t}$ and the expected return given the absence of the event $E(R_{i,t}|Xt)$:

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

In this thesis, the abnormal returns $AR_{i,t}$ are calculated by estimating the expected return $E(R_{i,t}|Xt)$ with the market model [16] , while using the value-weighted NYSE/Amex/Nasdaq index from CRSP as the market return $R_{M,t}$. This yields the abnormal return $AR_{i,t}$

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

In the next step, the abnormal returns $AR_{i,t}$ for the event window are aggregated over time and, secondly across securities. This is done to accommodate for a multiple period event window and to draw overall inferences of the Schedule 13(D) filings (MacKinlay, 1997). For robustness, two different aggregations are applied in this thesis. The cumulative abnormal return $CAR_{i,(\tau_1,\tau_2)}$ and the abnormal buy-and-hold return $BHAR_{i,(\tau_1,\tau_2)}$, whereas the latter is independent from the results of (2) and needs no estimation window.

[16] 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 $R_{m,t}$. The parameters are estimated by ordinary least squares regressions based on estimation-window observations of stock returns.

The cumulative abnormal return $CAR_{i,(\tau_1,\tau_2)}$ for security i in the event window (τ_1, τ_2) is the sum of the abnormal returns $AR_{i,t}$ obtained from (2). The cross sectional average cumulative abnormal return $CAAR_{(\tau_1,\tau_2)}$ is the equally weighted average of the samples cumulative abnormal returns $CAR_{i,(\tau_1,\tau_2)}$.
In contrast, 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. With respect to the former calculation of abnormal returns in (2) the value-weighted NYSE/Amex/Nasdaq index from CRSP will be used as the normal buy-and-hold returns

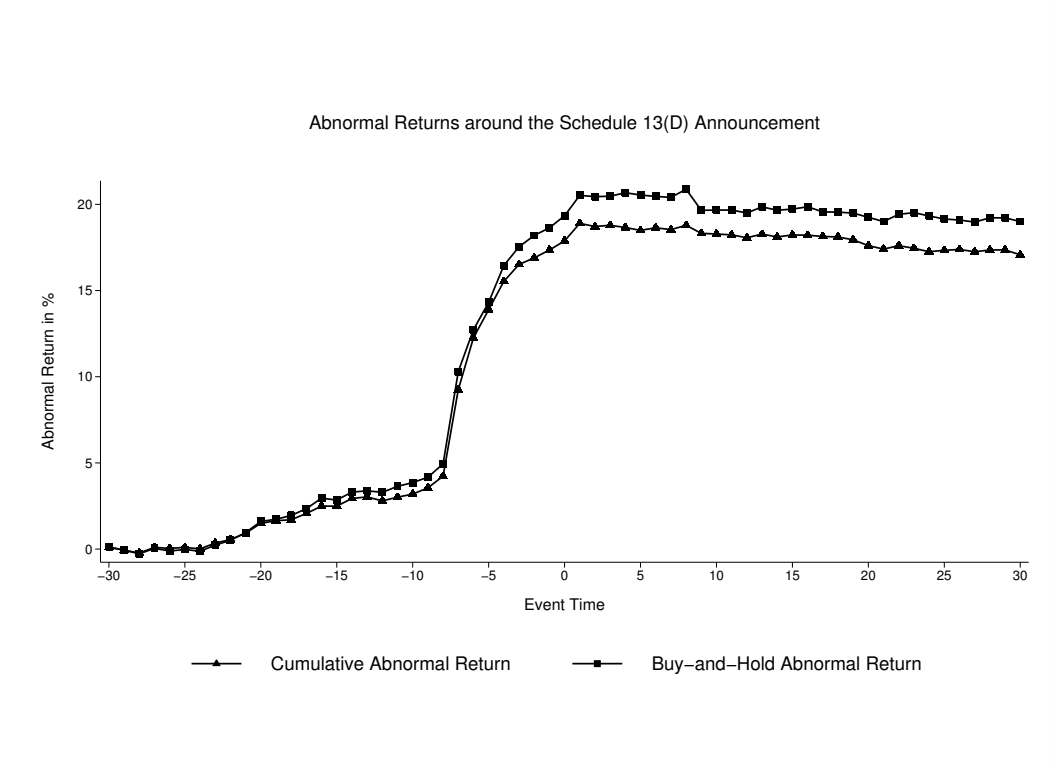
$$BHAR_{i,(\tau_1,\tau_2)} = \prod_{t=1}^{T}(1 + R_{i,t}) - \prod_{t=1}^{T}(E(R_{i,t}|X_t) \tag{3}$$

The cross sectional average abnormal buy-and-hold return $\overline{BHAR}_{(\tau_1,\tau_2)}$ is the equally-weighted average of the abnormal buy-and-hold returns $BHAR_{i,(\tau_1,\tau_2)}$.

Concluding, the cumulative abnormal return $CAR_{i,(\tau_1,\tau_2)}$ is the return in excess of the value-weighted NYSE/Amex/Nasdaq index, based on the market model. The target's abnormal buy-and-hold return is the difference between its buy-and-hold return over a selected time period and the buy-and-hold return on the value-weighted NYSE/Amex/Nasdaq index from CRSP.

5.1 All Schedule 13(D) Filings

Graph 1 shows the aggregated abnormal returns in the event window [-30,30] both in the form of cumulative and buy-and-hold abnormal returns. Both measures generate almost similar results. However, around 5 days prior to the filing date the buy-and-hold returns increase in magnitude and proceed above the cumulative abnormal returns. This is matching with Brigida and Madura (2012) fidings who find that most informed trading is during the event-window [-10,-6] and report the runup is the greatest during this period. Brigida and Madura (2012) therefore suggest an event-window at least 10 days prior to the filing. With respect to Brigida and Madura (2012), Klein and Zur (2009) and Brav et al. (2008) abnormal returns for four different event windows were computed. Table III shows these results and



presents the means [medians] for each event window and additionally separates between stocks subject to filings submitted by strong investors and those submitted by weak investors. For robustness both, cumulative and buy-and-hold returns are presented. For each event window, column (1) shows the abnormal returns for the complete sample. Columns (2) and (3) present the abnormal returns for stocks subject to filings by strong and weak firms, respectively. The separation of filings into those submitted by strong and weak firms is based on the investor's F-score presented in Table II. Column(4) shows the t-statistic and the Z-statistic tests for difference between the means and medians of these two samples of strong and weak firms. All returns presented in Table III are winsorized at the 1% and 99% level to equal out the effect of rare outliers.

Panel A of table III presents the abnormal returns for the longest event window of [-30,30] days around the filing date. The subject's stock of the filing experiences a CAR of 17.07% and a BHAR of 19.00%. Furthermore, mean abnormal returns are around 10% higher for stocks subject to filings submitted by strong investors. This means that based on the F-score as a measurement of firm strength, stocks acquired by strong investors experience abnormal

return of 18.67% (19.54%) in the [-30,30] event window compared to only 8.71% (8.80%) for those acquired by weak investors.

Panel B allows similar conclusions for the event window [-30,+5] with an even stronger market reaction. Now the CAR is at 18.49% (20.54%) for the complete sample and more than a 10% difference in the CAR for stock acquired by strong and weak investors. Panel C shows that only in the event window [-10-4] is the strength effect almost mitigated. Only the CAR of 14.21% for stronger firms is higher than the CAR of 13.37% for weak firms. In comparison, the BHAR return is higher for weak firms. In the event window [-10,10], the abnormal returns seem to be averaged across the previous event windows. Panel D shows a CAR of 15.27% (16.04%) for the complete sample. With regards to the above mentioned strength effect, the abnormal returns for strong and weak firms are significant at the 1% level with a difference of around 3% in the abnormal return between strong and weak firms.

Concluding, abnormal returns on stocks subject to Schedule 13(D)'s filed by corporations experience a significant positive market reaction. Apparent is the economic difference in abnormal returns for stock belonging to either filings submitted by strong or weak investors.

5.2 Abnormal Stock Returns Purpose of Initial 13(D) Filing

6 Indentifying the Financial Condition of the Investor

6.1 Piotroskis F-Score – A Measurement of Financial Strength

In a study of 2010, *BCG* noted many of that year's acquisitions would involve a financially strong acquirer. However, the attribute of being financially strong is not ambivalent. Piotroski's F-Score adresses this issue as it is a "... composite measure of firm strength" (Fama and French, 2006, p. 496). It consists of nine binary signals which consider in what directions the fundamentals of a company are trending and whether general health conditions are met (Mohr, 2012). Piotroski (2000) established it to seperate strong from weak value firms [17] . Although the F-score was established to distinguish among value firms, Mohr (2012) shows that its application on growth stocks yields similar results. [18]. With regards to the above, the F-Score is used to divide the complete sample of investors into strong and weak ones.

6.2 The Whited-Wu Index – A Measurement of Financial Constraints

A firm is financially constrained if it faces an inelastic supply of external capital (Farremensa and Ljungqvist, 2013) and those who are able to raise substential amounts of external capital without much of an increase in the cost of capital are unconstrained. Although Khatami et al. (2014) notes that more recent literature has questioned the reliability of constraint measures, the Whited-Wu Index as in Liao (2010) is used as an indicator.

[17] In order to legitimize the explanatory power of the F-score in separating strong from weak firms Piotroski formed portfolios consisting of value firms. In doing so, he showed that an investment strategy of shorting expected losers (weak firms) and buying expected winners (strong firms) would "generate a 23% average annual return" (Piotroski, 2000, p. 4). This is matching with Hyde (2014) results, who observe significant return premiums for stocks with a high F-score over stocks with a low F-score.

[18] This is in line with Piotroski (2000) and confirms earlier research conducted by him.

6.3 Altman's Z-Score – A Measurement of Financial Distress

Financial distress describes a state in which a company cannot meet or has difficulty paying off, its financial obligatiosn to its creditors. In this sense, HNA Group could be in a state of financial distress as they have problems refinancing the debt burden, and recently planned to sell their stake in Hilton Worldwide Holdings Inc. to pay down a large pile of debt. Altman's Z-score is a widely accepted measure of financial distress. The fundamental indicator shows statistically significant results in predicting the bankruptcy of a company (Campbell et al., 2008) and is still applied as a general practical tool for assessing the financial well-being of firms (Kleinert, 2014). [19] .

6.4 Other Measurements

6.5 Tobin's Q

Tobin's Q is included because it proxies for a firm's investment opportunity which assesses the [20] (Duchin, 2010). According to Khatami et al. (2014) constrained firms have higher tobin's Q compared to unconstrained firms, which may be due to their unexploted investment opportunities (Khatami et al., 2014).

[19]The model consists of five financial ratios that are coefficients by discriminate analysis method where the financial ratios are independent variables of it. The five financial ratios of the Z-score are (1) working capital to total assets, (2) retained earning to total assets, (3) earnings before interest and taxes to total assets, (4) market value of equity to book value total debt and (5) sales to total assets. This yields

$$Z = 1.2(X_1) + 1.4(X_2) + 3.3(X_3) + 0.6(X_4) + 0.999(X_5) \tag{4}$$

The cut-off point is at Z=2.675 where a lower score implies bankruptcy of a firm and a higher score non-bankruptcy.

[20]In accordance with Brigida and Madura (2012), Tobin's Q is defined as

$$Tobin's Q = \frac{MVE + PSE + Debt}{AT} \tag{5}$$

, where MVE is the market capitalization, PSE is the lquidating value of preferred stock, $Debt$..

6.6 Company Size

Company size

It was established by Altman in his 1968 paper

In conducting the analysis, the F-score will be used to separate the sample of 13D filings among strong and weak corporate investors. Since is is able to separate firms in portfolios into strong and weak performing ones, an application to this analysis seems reasonable. However, components of the f-score include changes in leverage and The score itself can be divided into the three dimensions profitability, balance sheet health and operating efficiency. In the context of this analysis As Mohr (2012) states: the f-score considers in what direction the fundamentals of a company are trending and whether financial health conditions are met. Because high F-scores imply higher returns hence stronger firms should have higher returns, investors must see a high F-score as a representation of financial strength. In the context of this paper those practices would have only been applied to the target and not the investor. An application of the F-score on the investor with the aim of distinguishing between strong and weak firms

Choi and Sias (2012) formulate it from a target perspective - "does financial strength predict subsequent institutional demand"?

On the other hand, Akhigbe et al. (2007) examine the characteristics of final acquisitions following partial bids. They find that involvements by corporate bidders are more likely to result in a full acquisition.

7 Appendix

7.1 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 $R_{M\tau}$.

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