When is bad news really good news?
The case of strategic vs. non-strategic bankruptcies

Luis Coelho

University of Edinburgh

Richard J. Taffler*

University of Edinburgh

Version 1.2: June 26 2008
(First Draft: June 4, 2008)

***Corresponding Author**
Richard J Taffler
Martin Currie Professor of Finance and Investment
Management School and Economics
University of Edinburgh
William Robertson Building,
50 George Square
Edinburgh EH8 9JY, U.K
Telephone: 44 (0) 131 651 1375
Fax: 44 (0) 131 650 8337,
E-mail: Richard.Taffler@ed.ac.uk

When is bad news really good news? The case of strategic vs. non-strategic bankruptcies

ABSTRACT

We investigate whether the stock market differentiates between firms that file bankruptcy petitions for strategic reasons, and those that file for financial distress-related, i.e., non-strategic reasons. We find that the market is unable to distinguish between strategic and non-strategic Chapter 11s in both the pre-event and event periods. However, we also document an asymmetric longer-term market reaction to bankruptcy announcements conditional on type of filing with the market *underreacting* in the case of non-strategic bankruptcies but *overreacting* in the strategic case as indicated by subsequent positive abnormal returns. For non-strategic bankruptcies, we find a significant post-event drift of around -29% over the subsequent 12-months. Conversely, in the case of strategic bankruptcies, we report a reversal in the stock return pattern with a significant risk-adjusted abnormal return of around +29% in the 6-month period following the Chapter 11 announcement date. We also demonstrate that our findings are robust to alternative explanations documented in prior literature like the momentum effect, industry, or financial distress. Complementary tests reveal that firm-specific information, trading costs and investor level of sophistication help explain our puzzling results; the market appears to be biased in its treatment of bankruptcy filings.

Keywords: market-pricing anomaly, bad news, good news, bankruptcy, diffusion of information, uncertainty.
JEL classification: G14, G33

When is bad news really good news?
The case of strategic vs. non-strategic bankruptcies

1. Introduction

There is increasing evidence that the market responds differently to bad and good news public events. Prices may underreact to the former taking time fully to assimilate their implications for firm value, whereas the latter are fully anticipated or impounded instantaneously without bias. For example, Womack (1996) finds that the price impact associated with new buy recommendations issued by sell-side analysts is small and short lived, whereas new sell recommendations are associated with a post-recommendation drift of -9% over a 6-month period. Dichev and Piotroski (2001) find no significant abnormal returns following Moody's bond upgrades but show negative abnormal returns of between -10% to -14% following downgrades in the first year alone, with a further decline of -3% to -7% in the second and third years. Chan (2003) reports that stocks associated with bad public news stories display a negative drift for up to 12 months but fails to document a post-event drift following good public news stories. Very recently, Kausar et al (2008) show that the market does not process the going-concern opinion (bad news) signal on a timely basis in the US leading to a significant market underreaction of -14% over the following 12-month period. Conversely, the authors find that the market correctly prices going-concern withdrawals (good news) in the following year.

Such findings suggest that the market has problems assimilating adverse public disclosures in an unbiased manner, whereas much weaker evidence for this, if at all, is found after good news releases. However, to date, no study has investigated the market's reaction to *apparently similar* bad news events with *completely distinct* underlying motivations. Pursuing this line of research is important for two main reasons. Firstly, it helps us understand whether the particular *context* surrounding the disclosure of firm-specific bad news matters and, as such, should shed more light on *how* the market deals with negative disclosures. Secondly, this line of research can also help test the robustness of the underreaction phenomenon to adverse public

events already documented in the literature. The key issue here is exploring whether the market underreacts similarly to *all* bad news events of a particular type or if, in contrast, pricing patterns are conditional on the actual nature of the negative disclosure.

We address this gap in the literature by looking at how the market deals with the filing of both *strategic* and *non-strategic* Chapter 11s. Solvent firms addressing the Bankruptcy Court not as a last resort but as a planned business strategy characterize the first type of bankruptcy; in contrast, companies on the verge of imminent financial collapse typify a non-strategic bankruptcy. Examples of strategic bankruptcies are where a firm which is not in financial difficulty nonetheless wishes to break what it views to be onerous labour contracts or pension responsibilities, shirk asbestos-related or other liabilities, or take action against a commercial rival, and files for Federal protection to do this.

Our research context is particularly interesting in that it allows us to explore directly for differential market reaction to apparently similar but distinct types of adverse public disclosures for two reasons: 1) filing for Chapter 11 bankruptcy is the most extreme bad news event in the corporate domain and therefore of interest to study in its own right (e.g., Coelho and Taffler, 2008), and 2) only a careful examination of the circumstances of a particular bankruptcy filing can clarify whether such an event is of a strategic or non-strategic nature (Sheppard, 1995). Hence, strategic and non-strategic Chapter 11s may be regarded as similar bad news events on this basis as they share the same legal framework although having at their very core very distinct motivations, which, *a priori*, should be recognised by the market and priced appropriately.

We find that firms filing for both strategic and non-strategic bankruptcies experience virtually *identical* negative risk-adjusted returns of over 50% during the 12-month pre-event period, and fall a further -25% around the bankruptcy announcement date. These results clearly suggest that the market is *unable* to differentiate between these two qualitatively different bad news events prior to and around the bankruptcy event date. However, in contrast,, we document an *asymmetric* longer-term market reaction to bankruptcy announcements conditional on type of event. In the case of non-strategic bankruptcies, we find a negative and

statistically significant post-event drift of -29% lasting for at least one full year after the Chapter 11 announcement date. Conversely, in the case of strategic bankruptcies, there is a *reversal* in the subsequent stock return pattern, with significantly different risk-adjusted abnormal returns following the Chapter 11 filing date of +29% over the following 6-month period.

Our original results indicate that, in contrast to the pre-bankruptcy period, the market values strategic and non-strategic bankruptcies differently post-event: a strategic Chapter 11 is viewed by the market as *good* news, whereas in the non-strategic case it is *bad* news. Further investigation indicates three fundamental factors help explain our puzzling results: 1) the amount of firm-specific information available, 2) trading costs, and 3) shareholder level of sophistication. In particular, firms filing a strategic Chapter 11 provide considerably more firm-specific information, have lower transaction costs, and a higher percentage of their shares are held by institutional investors.

Our findings are important for several reasons. Firstly, we present original evidence on what happens to stock prices in the longer term for firms filing for *both* strategic and non-strategic Chapter 11s. Accordingly, we complement previous research by Rose-Green and Dawkins (2002) who examine only the pre- and Chapter 11 period market reaction to bankruptcy announcements conditional on the motivation for the filing, and Coelho and Taffler (2008) who do study the longer-term market reaction to the same event but do not distinguish between strategic and non-strategic bankruptcies.

Secondly, we show that the market is *unable* to differentiate between apparently similar bad news events with distinct underlying motivations in the pre- and event period, a result consistent with the representativeness bias of Tversky and Kahneman (1974). As the authors explain (p. 33), a person who follows this heuristic evaluates the probability of an uncertain event, or a sample, by the degree to which it is: 1) similar in essential properties to its parent population, and 2) reflects the salient features by which it is generated. Accordingly, one way of looking at our results is to consider that both in the pre-event period, and at the event date, the market treats all bankruptcy cases as part of the same underlying population (i.e., those

firms that will eventually fail in the near future, or have just failed), which, in turn, leads to a similar stock return pattern for both strategic and non-strategic cases.

Thirdly, we demonstrate that the longer-term market reaction to bad news events *is* affected by the particular *context* surrounding firm-specific negative disclosures since filing for Court protection against creditors for non-strategic reasons is clearly increasingly perceived by the market as bad news over time, while filing a strategic bankruptcy becomes recognized over time as a positive news event. This is an interesting result since, in contrast to the pre-bankruptcy period and at the filing event date, the market is able, albeit with a lag, to distinguish between the differential motivations for entering into Chapter 11 protection despite the same legal framework applying. It is not fooled by the apparent similarities between the two types of bad news event on this basis.

Fourthly, we contribute to the literature by finding that, in our case, the market takes time to digest *both* negative *and* "positive" bad news events and their implications for firm value: there is a strong post-event drift lasting up to 12-months after the announcement of both strategic and non-strategic Chapter 11 filings but in *opposite* directions. On the one hand, we confirm the results of previous research demonstrating that the market *underreacts* to negative disclosures (e.g., Michaely et al, 1995; Womack, 1996; Dichev and Piotroski, 2001; Chan, 2003; Taffler et al, 2004; Kausar et al, 2008); on the other hand, we are the first to document that the market also *overreacts* to the announcement of Chapter 11 filing in the case of "positive" bad news events.

Finally our results also allow us to contribute to the recent literature relating information uncertainty with the pricing of publicly traded securities. Jiang et al (2005) and Zhang (2006) claim that behavioral biases are more likely to affect investors' decisions in high-information uncertainty settings which, in turn, should lead to mispricing being concentrated on firms with high degrees of information uncertainty. We provide direct evidence consistent with this argument. We find that the amount of firm-specific information available, the relative weight of noise traders vs. sophisticated market participants, and transaction costs are the *key* elements that allow the market to distinguish between strategic and non-strategic Chapter 11s.

The paper proceeds as follows. Section 2 explains why strategic and non-strategic Chapter 11s are, in fact, different events. Section 3 presents our sample and method. Section 4 details our main results. Section 5 summarizes our robustness tests. Section 6 concludes.

2. Strategic bankruptcies

Historically, bankruptcy has been associated with organizational demise and the destruction of shareholder value (e.g., Johnson et al, 1986; Sirower, 1991), with the affected firm having to face both direct and indirect bankruptcy costs (e.g., Altman, 1984; Opler and Titman, 1994; Maksimovic and Phillips, 1998; Pulvino, 1999; LoPucki and Doherty, 2004; Bris et al, 2006).

This traditional position, however, has been disputed in recent years, with an increasing number of scholars claiming that the introduction of the Bankruptcy Act of 1978 fuelled a major shift in the market's perception about bankruptcy (Sheppard, 1995; Tavakolian 1995; Delaney, 1998:3). The key issue here is that the Code *does not* require a company to be *insolvent* before filing for reorganization under Chapter 11 (e.g., Johnson et al, 1986; Sheppard, 1995; Tavakolian 1995; Altman and Hotchkiss, 2005:28). As a result, US bankruptcy law offers managers a mechanism that allows their organizations, almost at will, to fight nearly every undesirable financial obligation (e.g., Sheppard, 1995; Altman, 1993:89-90).

Not surprisingly, there have been many cases where firms use Chapter 11 in a non-traditional way (Johnson et al, 1986; Delaney, 1998). The term *strategic bankruptcy* is sometimes used in the literature to describe such situations, which are characterized by solvent companies addressing the bankruptcy Courts not as a last resort but as a planned business strategy (e.g., Sheppard, 1995; Delaney, 1998; Rose-Green and Dawkins, 2002).

Texaco is probably one of the best examples of this unconventional use of Chapter 11. On April 13, 1987, the company declared bankruptcy and went down in history as the largest corporate failure at the time. The most remarkable aspect, however, is that Texaco had a sound financial position when filing for Federal protection. In a letter addressed to its customers and suppliers released on its bankruptcy date, Texaco's managers wrote: "*Texaco Inc. is solvent*

and financially strong. The Chapter 11 petition will enable Texaco Inc. to conduct its business in the ordinary course as it continues to appeal this judgement. Again, we wish to emphasize that our Company is not affected and is honouring all its obligations in full. We are financially sound and our business will continue as normal." Clearly, by its own admission, Texaco is not the stereotypical bankruptcy case. Instead, the company used Chapter 11 as a weapon against one of its rivals, Pennzoil. The objective was simple: reduce a court-imposed damage award of 10.5 billion dollars to its competitor (Delaney, 1998:145). Over the years, other companies filed strategic bankruptcies to break labour contracts (e.g., Continental Airlines), resolve massive numbers of individual claims (e.g., Manville and A.H. Robins), avoid coping with pension funds' financial responsibilities (e.g., LTV), shirk paying unprofitable leases (e.g., HRT Industries) or even dealing with problems with the tax authorities (e.g., Whiting Pools). Another example, that of Federal-Mogul Corp., which filed for Court protection in October 2001 in an attempt to deal with asbestos-related claims, is provide in Appendix 1.

The above paragraphs clearly indicate that firms filing a strategic Chapter 11 are, in their very nature, nothing like the typical company seeking protection from the Federal Bankruptcy Court, such as the Manhatten Bagel Company, which filed for Chapter 11 in November 1997, which case is also described in Appendix 1. Hence, strategic and non-strategic bankruptcies are two *a priori* similar negative public events (i.e., they share a common legal format) with completely distinct underlying motivations. The rest of this paper tests the pricing implications of this difference, which, should help us understand to what extent the market is able to discriminate between apparently similar negative events.

3. Data and methods

3.1. Data

Our data consists of the 351 non-finance, non-utility industry firms which file for Chapter 11 between 10.01.1979 and 10.12.2005, and remain listed on the NYSE, AMEX or NASDAQ after their bankruptcy date, and have sufficient data available on both CRSP and

COMPUSTAT to conduct our analysis.[1] Table 1 summarizes our sample construction strategy. All phases are sequential. In the first step all firms filing for bankruptcy between 1979 and 2005 are identified. Seven sources of information are used for this purpose: 1) the Bankruptcydata.com database;[2] 2) the SEC's Electronic Data Gathering, Analysis, and Retrieval system (EDGAR);[3] 3) COMPUSTAT's industrial file; 4) Professor Lynn Lopucki's Bankruptcy Research database;[4] 5) the SDC database; 6) Altman and Hotchkiss (2005:15-20), and 7) a list of bankrupt firms provided by Professor Edward Altman. All firms are combined into a single list and duplicates removed, yielding a total of 3,437 non-overlapping cases.

Firms are next located on the *Center for Research in Security Prices* (CRSP) database leading to 1,411 firms being eliminated, the main reason being that firms could not be found in CRSP. However, a few other cases are also excluded because the firm's ordinary common stock (CRSP share code 10 or 11) is not traded on a major US stock exchange (CRSP exchange codes 1, 2 or 3) during this period, or the firm does not have at least 24-months of pre-event returns available on CRSP.

In the next step, the 1,556 firms delisted prior to or at their bankruptcy filing date are deleted.[5] From the 470 surviving cases, the 58 firms for which accounting data is not available on COMPUSTAT for a 2-year period before the bankruptcy announcement year are then removed, together with 11 firms incorporated outside the US (as defined by COMPUSTAT). Penultimately, following prior research, we also remove all 40 financial and utility firms from

---

[1] Only firms filing for bankruptcy between 10.01.1979 and 10.17.2005 are considered as between these two dates, bankruptcy was governed by the Bankruptcy Reform Act of 1978, which became generally effective on October 1, 1979. This Act was substantially revised by the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 with most provisions becoming effective on October 17, 2005. Accordingly, by focusing on this 26-year period we are able to work within a largely unchanged legal framework under which corporations were able to file for Federal protection.

[2] See http://www.bankruptcydata.com/ for more details.

[3] Companies filing for bankruptcy are required to report this to the SEC within 15 days using a Form 8-K. Accordingly, in order to find the bankruptcy cases reported on EDGAR, we search and manually analyze all 8-K forms available on EDGAR that mention the keywords "bankruptcy", "Chapter 11" or "reorganization". The initial search was conducted with the help of the 10kwizard software designed to facilitate keyword search on EDGAR. See http://www.10kwizard.com/main.php?spage for details.

[4] See http://lopucki.law.ucla.edu/ for details.

[5] To avoid measurement problems caused by survivorship bias, firms are only excluded here if their delisting predates their formal Chapter 11 date.

our final sample.[6] The 10 firms filing for Chapter 7 are then finally excluded in the last step of the screening process.[7]

Our 351 sample firms have 53 different 2-digit SIC codes (168 different 4-digit codes) indicating no significant degree of industry clustering. Sixty percent of our firms trade on NASDAQ (209), 31% (109) on the NYSE, and the remaining 9% (33) on AMEX.

Table 1 here

3.2. Defining strategic bankruptcy

We use a modified version of Sheppard's (1995) classification schedule to disentangle strategic from non-strategic Chapter 11s. As such, a strategic bankruptcy case complies cumulatively with the following list of characteristics:

1. The firm files for Chapter 11 against one identifiable stakeholder-group (e.g., competitors, employees, retirees);
2. Filing for Chapter 11 helps the firm achieve a specific goal that harms the interests of the stakeholders identified in the previous point (e.g., break labour contracts, avoid a lawsuit, reduce/eliminate pension responsibilities);
3. The filing must not be motivated by a clear short/medium-term financial problem.

At the heart of the classification framework presented above is the idea that Chapter 11 is a continuous tool available to firms' managers. Highly distressed companies are at one extreme of this continuum and managers of such firms use Chapter 11 to avoid facing liquidation,

[6] Utility firms are generally regulated enterprises leading to bankruptcy having a different meaning, and financials have dissimilar characteristics to industrial firms with Chapter 11 applying differently. Financial and utility firms are defined as in the 49 industry portfolios available at Professor Kenneth French's website. See http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_49_ind_port.html for details.

[7] According to the Bankruptcy Reform Act, a firm filing for Chapter 11 aims at reorganizing its business with the object of becoming profitable again. Conversely, under Chapter 7, the firm ceases all operations and exits its business. See Altman and Hotchkiss (2005) for further details.

thereby minimizing the likelihood of losing their jobs and all shareholder value. Financially sound firms can also file for Chapter 11. These companies are at the other extreme of the continuum and their managers use Chapter 11 as a weapon to maximize shareholders wealth at the expense of another group of stakeholders. Our classification framework allows us to focus on particular cases of the Chapter 11 continuum, namely those where firms file for bankruptcy even though their viability as a going-concern is not at stake in the near future.

We implement a 3-stage process to classify all our sample firms as either a strategic or a non-strategic bankruptcy case. We start by using Factiva's keyword-search tool to collect news articles for all our sample firms in the one-year period before their Chapter 11 date. We then use that information to recreate each bankruptcy story. In particular, we try to identify a specific stakeholder-group against which the firm's management files the Chapter 11 and how such action benefits the company. We then verify if there are any signs of financial distress in the short-term history of the firm. This is done by searching the news articles for keywords like "default on bond contract", "bond downgrade", "default on interest payment", "default on bank loan payment", "qualified audit opinion", "modified audit opinion", "trade credit problem", "technical default", "liquidity problem" and "renegotiation of credit line".[8]

In the second step, we complement our initial analysis by screening the information available on Bankruptcydata.com. In the typical case, this database only has news articles for a short window around the bankruptcy date, which makes it unsuitable for recreating the more longer-term history of the company. Nevertheless, in most cases, Bankruptcydata.com is very helpful in determining the particular reason that explains why any given firm files for bankruptcy. By comparing the data from Factiva and Bankruptcydata.com, we are able to classify all our sample firms as either a strategic or a non-strategic bankruptcy. These intermediate results are confirmed in the last phase of the process if the information available

[8] This choice of keywords is based on extant research showing that the likelihood of bankruptcy is directly related with the occurrence of other public events. For instance, Beneish and Press (1995) find that firms in technical default are more likely to go into bankruptcy. They also show that the probability of bankruptcy increases after a debt service default. On the other hand, Campbell and Mutchler (1988), Chen and Church (1996) and Holder-Webb and Wilkins (2000) find that bankruptcy is more likely to occur after the issuance of a going concern opinion.

on Hoover's database does not contradict our initial classification. Our classification schedule can be better understood with the help of appendix 1, where we present the typical information collected from our sources for both strategic and non-strategic Chapter 11s.

Table 2 summarizes the number of strategic and non-strategic bankruptcies in our sample using our classification framework.. In fact, we are only able to clearly identify 32 cases of strategic banruptcy in our sample (9%), although this total is generally consistent with other studies.[9] Nonetheless,,by employing very strict strategic bankruptcy classification criteria, we are able to maximize the qualitative difference between strategic bankruptcies and all other Chapter 11 filings. This should help provide a clearer picture on how the market deals with these two apparently similar bad news events.

Table 2 here

3.3 Method

3.3.1 Measuring abnormal returns

We use a buy-and-hold strategy to make inferences about our sample firms' stock return pattern before, during and after their Chapter 11 filing date. Barber and Lyon (1997) and Kothari and Warner (1997) show that the statistical problems with BHARs usually arise over the 3- to 5-year time horizon whereas we restrict our analysis to a one-year period. This is for two reasons. First, filing for bankruptcy often leads to firm delisting, and thus extending the period for computing abnormal returns is problematic due to the loss of many sample cases (e.g., Morse and Shaw, 1988). Second, firms usually start emerging from bankruptcy 15 months after their Chapter 11 filing date (Kalay et al, 2007), and thus ending the abnormal

[9] Only two other studies attempt to separate strategic from non-strategic Chapter 11s. In particular, Sheppard (1995) works with a total of 155 firms filing for Chapter 11 between October, 1979 and December, 1987, classifying 55 of these firms as a strategic bankruptcy (approximately 35 percent). The second study by Rose-Green and Dawkins (2002) identifies 245 companies filing for Chapter 11 between 1980 and 1997, of which 19 are classified by the authors as a strategic bankruptcy (around 8 percent). Importantly, in sharp contrast with our research, none of these papers require firms to continue trading after their Chapter 11 date.

return calculation period three months before minimizes the impact of this important event on our results.[10] Our buy-and-hold abnormal returns are computed as follows:

$$BHAR_i(\tau_1,\tau_2) = \prod_{t=\tau_1}^{\tau_2}\left(1+r_{i,t}\right) - \prod_{t=\tau_1}^{\tau_2}\left[1+E\left(r_{i,t}\right)\right] \quad (1)$$

where $BHAR_i(\tau_1,\tau_2)$ is the buy-and-hold abnormal return for firm i from time τ_1 to τ_2, $r_{i,t}$ is the raw return for firm i at time t and $E\left(r_{i,t}\right)$ is the expected return for firm i at time t. Individual BHARs are averaged cross-sectionaly as follows (e.g., Barber and Lyon, 1997; Campbell et al, 1997):

$$\overline{BHAR(\tau_1,\tau_2)}_j = \sum_{i=1}^{n} BHAR_i(\tau_1,\tau_2)_j \quad (2)$$

where $BHAR_i(\tau_1,\tau_2)$ is defined as above, and n is the number of firms with valid BHAR over time period τ_1 to τ_2. Subscript j indicates the type of bankruptcy for which we are computing the mean abnormal returns (i.e, strategic or a non-strategic Chapter 11s).

As suggested by equation (2), we use equally weighted rather than value-weighted returns since this is more appropriate in our context as giving the same weight to all firms in the investment portfolio allows maximum diversification of each firm's idiosyncratic risk, a critical aspect when dealing with failed firms (e.g., Gilson, 1995; Platt, 1999:110). Additionally, previous research shows that equal weighting captures the extent of underperformance better than value weighting does given the particular nature of our bankrupt firms (Brav et al, 2000; Kadiyala and Rau, 2004). Loughran and Ritter (2000) also argue that value-weighted portfolio returns reduce the power of the tests used to detect any potential behavioral bias.

Unless otherwise stated, daily returns collected from CRSP are employed in the calculation of abnormal returns.[11] As argued by Kothari and Warner (2007), the use of daily rather than monthly security returns data permits more precise measurement of abnormal returns, and more

[10] Our typical sample firm spends an average (median) of 24.4 (18.1) months in bankruptcy. This is consistent with previous research by Altman (1993) and Eberhart et al (1999).

[11] With the exception of COMPUSTAT, all data sources mentioned in section 3.1 provide the bankruptcy date for each firm they cover. Factiva is used to determine the bankruptcy date for COMPUSTAT cases.

informative studies of announcement effects. We define a year as twelve 21-trading day intervals, an approach consistent with previous research (e.g., Michaely et al, 1995; Loughran and Ritter, 1995; Ikenberry and Ramnath, 2002). Event day $t=+1$ is included in the bankruptcy announcement window together with days $t=-1$, and $t=0$, the bankruptcy announcement date, as firms are able to file their bankruptcy petition after the market closes (Dawkins et al, 2007).

Some of our sample firms are delisted in the 12-month period subsequent to their Chapter 11 filing date.[12] Drawing on Shumway (1997), and Shumway and Warther (1999), we include the delisting return in the calculation of abnormal returns, a procedure also used by Campbell et al (2007). Barber and Lyon (1997), and Lyon et al (1999) point out that the sample's mean long-run abnormal return calculated with truncation does not represent the average return an investor could earn from investing in an executable strategy, since his use of the proceeds from the investment in a delisted firm is left unresolved. Kausar et al (2008) emphasize that this is a crucial aspect when dealing with highly distressed firms and show that considering a zero abnormal return in the post-delisiting period is a reasonable way to deal with this issue. We draw directly on Kausar's et al (2008) results and assume that, in the post-delisting period, sample firms earn a zero abnormal return. [13, 14]

3.2.2 Benchmark procedure

Following Barber and Lyon (1997), and Ang and Zhang (2004), we use a single control firm approach to generate our results. We identify a control firm by matching each of our sample firms with the firm with most similar size and book-to-market ratio. This approach is consistent

[12] Performance issues explain 94% of these delisting cases (CRSP delisting codes 500 to 599).
[13] Kausar et al (2008) demonstrate how an inappropriate post-delisting reinvestment strategy in the case of financially distressed firms can lead to seriously misleading results, as with Ogneva and Subramanyam (2007).
[14] Re-investing the proceeds from the delisting payment in a portfolio of stocks comprising the same size decile of the delisted firm or in the CRSP value-weighted index for the remainder of the compounding period, however, does not alter our results in any meaningful way.

with a number of recent studies exploring the longer-term return pattern of highly financially distressed firms (e.g., Dichev and Piotroski, 2001; Taffler et al, 2004; Ogneva and Subramanyam, 2007; Kausar et al, 2008). First, for each sample firm, market capitalization is measured one month before the bankruptcy filing date.[15] CRSP is then searched for an initial pool of matching candidates with market capitalization at the end of the bankruptcy filing month of 70% to 130% of the sample firm's equity value. The control firm is then identified as that firm within this set with the closest book-to-market ratio. To ensure the numerator is available when market value is derived, we use the book value of equity taken from the last annual accounts reported before the bankruptcy year (Fama and French, 1992), and allow a 3-month lag to measure the market value of equity.[16] The match is confirmed if: 1) the control firm has at least 24 pre-event months of returns available on CRSP; 2) is not in bankruptcy; 3) is incorporated in the US; 4) is not a financial or utility firm, and 5) it has sufficient information on COMPUSTAT to conduct our analysis.

Importantly, if a control firm is delisted before the ending date for its corresponding bankrupt firm period, a second firm is spliced in after its delisting date, that with second closest size and book-to-market to that of the delisted firm in the original ranking. Finally, if a chosen control firm itself subsequently files for bankruptcy, we treat it as if it is delisted on its bankruptcy date. These procedures introduce no survivorship or look-ahead bias and minimize the number of transactions implicit in the calculations (e.g., Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995).

3.2.3 Abnormal return statistical significance

Following Barber and Lyon (1997), and Ang and Zhang (2004), we employ a t-test to infer the statistical significance of the different mean BHARs. Importantly, we use the cross-section

[15] This helps reduce the impact of the event on the leading matching variable. As a robustness check, we measure size for all sample firms 2, 3, 6 and 12 months before their bankruptcy date and re-run the analysis. Results remain qualitatively unchanged.

[16] The market value of every sample firm is measured before its bankruptcy announcement date. This result is confirmed by manually inspecting all cases.

of the buy-and-hold abnormal returns to form an estimator of their variance, which allows it to change after the event (Boehmer et al, 1991; MacKinlay, 1997). This is appropriate since previous research by Aharony et al (1980), and later confirmed by Johnson (1989), and McEnally and Todd (1993), shows that both the systematic and unsystematic risk of bankrupt firms varies as the bankruptcy date approaches.

Equation (1) is used for exploring the market's longer-term reaction to bankruptcy announcements. However, longer-horizon returns tend to exhibit positive skewness (e.g., Fama, 1998; Brav, 2000), which is usually more pronounced in the case of smaller firms (Ball et al, 1995). Drawing on Kraft et al (2006), we report mean BHARs that are winsorized at the 1 and 99 percent levels to reduce the impact of extreme outliers in our analysis, a procedure also implemented in previous research by Ikenberry and Ramnath (2002), and Kausar et al (2008).[17] Importantly, Kausar et al (2008) show that winsorizing abnormal returns is of crucial importance when dealing with small firms since this method helps in reducing the impact of low-price stocks on the skewness of ex-post returns. The same argument is also put forward by Kraft et al (2006, 2007), and is especially important in the context of our research since a relatively large number of our bankrupt companies trade at prices below $1 per share.

We also present median returns to check the validity of our parametric results. These returns are unaffected by extreme observations, and present some theoretical advantages over mean BHARs (Ang and Zhang, 2004). Additionally, Kausar et al (2008) demonstrate that it is very important to complement the usual parametric analysis of longer-term abnormal returns of highly distressed firms with the computation of their non-parametric equivalents. Consistent with previous research dealing with bankruptcy announcements, a Wilcoxon signed rank-test is employed to test the statistical significance of our median abnormal returns (Dawkins and Rose-Green, 1998; Rose-Green and Dawkins, 2002; Dawkins et al, 2007). Nonetheless, some caution is warranted here. As Ikenberry and Ramnath (2002) point out, median returns are problematic when considering questions of efficiency because of the inconsistency this statistic

[17] See also Cowan and Sergeant (2001) for a discussion on the impacts of winsorization in long-term abnormal returns.

poses for *ex ante* trading strategies. Accordingly, median returns are only used for robustness test purposes.

As mentioned in section 3.3.1, we compute abnormal returns for strategic and non-strategic bankruptcies separately. We use t-tests and a Wilcoxon-Mann-Whitney tests to investigate if there is a difference in performance between the two sub-samples.

4. Empirical results

4.1 Data descriptives

We start by analysing potential differences between strategic and non-strategic bankruptcies with the help of table 3. We find that the typical company filing a strategic Chapter 11 has a better financial position than that of the average firm filing for non-strategic bankruptcy protection. For instance, panel A indicates that, for the set of strategic bankruptcies, sales, total assets and return on assets are higher while leverage is lower, with the t-tests and the Wilcoxon-Mann-Whitney tests for these variables usually significant at normal levels. Panel A of table 3 also reveals that the mean (median) z-score for the strategic group is 2.30 (2.19) while its respective counterpart for the non-strategic set is 1.28 (1.25). Both the t-test and the Wilcoxon-Mann-Whitney test for this variable are significant at the 10% level. In his original work, Altman (1968) establishes a z-score cut-off point of 1.81 to separate between firms that clearly fall into the bankruptcy category from all other companies. Consequently, our results suggest that firms filing a strategic Chapter 11 (non-strategic Chapter 11) are not (are) in imminent danger of failure when Altman (1968) z-score proxies for bankruptcy risk.

Panel C of table 3 again shows that firms filing a strategic bankruptcy have a better financial position than that of the other bankrupt companies. Almost 40% (50%) of the former have positive earnings (are paying dividends), a figure that is considerable higher than the 24% (24%) obtained for the latter. Panel C additionally shows that only 31% of firms filing a strategic Chapter 11 are delisted in the 12-month period after their bankruptcy date. This figure

is much higher for the non-strategic set: 58%. This result again suggests a relative lower degree of financial distress for strategic Chapter 11 firms (Dichev, 1998).

Panel B of table 3 summarizes key market-based variables. We find that the average firm filing for a strategic bankruptcy is also much larger than its non-strategic counterpart in market-capitalization terms. The mean (median) size difference between the two groups is $375 millions ($53 millions), significant at the 1% level (1% level). This result also helps explain why the mean (median) stock price of the typical strategic bankruptcy is higher than for its non-strategic equivalent, a phenomenon that holds in both the pre- and post-event periods.

Nonetheless, both types of Chapter 11 firm share a number of characteristics. For instance, strategic and non-strategic bankrupt mean 12-month pre-event raw returns do not differ significantly. Furthermore, both sets of companies have a very similar book-to-market ratio and are similarly actively traded in both pre- and post-event periods.

Table 3 here

4.2 Main results

We now turn to the analysis of our main results. Panel A of table 4 shows that, for the 12-month pre-event window mean (median) BHARs for the non-strategic and strategic bankruptcy sub-samples are -52% (-44%), and -55% (-44%) respectively, and -44% (-42%), and -41% (-40%) for the 6-month pre-announcement event period. All mean and median BHARs are negative and statistically significant at the 1% level. The lack of any significant difference in means (medians) in the pre-event period demonstrates the market *does not* differentiate between strategic and non-strategic bankruptcies. Although Rose-Green and Dawkins (2002) report stronger negative abnormal returns for their set of non-strategic Chapter 11s, this is

explained by their use of market-adjusted returns, not a control firm benchmark approach,[18] and their use of the standardized database *New Generation Rearch Inc.* to classify their strategic bankruptcy cases rather whereas we hand collect our cases using a rigorous classification process.

Panel B of table 4 shows a strong and negative reaction to both strategic and non-strategic bankruptcies. For the (-1,+1) window, the mean (median) market reaction for the strategic set is -25%, significant at the 1% level (-28%, $p<0.01$). The respective counterpart values for the non-strategic portfolio are -25% ($p<0.01$) and -27% ($p<0.01$). Again, differences in portfolio means and medians are not significant at conventional levels, indicating that the market *does not* distinguish between strategic and non-strategic Chapter 11 bankruptcy announcements at the event date. Our short-term findings are consistent with those of Rose-Green and Dawkins (2002).

Panel C of table 4 shows what happens after the bankruptcy announcement date, a period not covered by Rose-Green and Dawkins (2002). There is clear evidence of an *asymmetric* market response to Chapter 11 filings conditional on the event's motivation. For the non-strategic portfolio, all post-event BHARs are negative and statistically significant, indicating the existence of a post-bankruptcy announcement drift. Conversely, for the strategic set, there is evidence of a stock price reversal since all medium-term post-event BHARs are positive, although only significant up to 6-months. Importantly, all differences in mean (median) returns reported are significant for all the longer-term post-event windows we consider.

Table 4 here

[18] For a (-251,-2) window, the mean BHAR for Rose-Green and Dawkins (2002) strategic set is -62.9%, significant at a 1% level and the mean BHAR for their non-strategic (financial) sample is -94.5%, significant at a 1% level. The authors also report that the difference in means (medians) for this period is statistically significant at a 5% level (a 5% level).

For illustrative purposes, figure 1 graphs the mean size and book-to-market risk-adjusted BHARs over a period of 25 months centered on the bankruptcy announcement month for both the strategic and non-strategic sub-samples.[19] In line with table 4, figure 1 shows an asymmetric market reaction to bankruptcy conditional on the motivation of the event. For the non-strategic set, the post-event drift follows a clear pre-event decline in stock returns. On the other hand, there is evidence that filing for strategic Chapter 11 protection prompts a post-event reversal in stock returns.

Figure 1 here

5. Additional tests

At face value, the idea of the market reacting differently to strategic and non-strategic bankruptcies may sound odd. One explanation for our findings relates to possible methodological problems since there is still much debate surrounding the appropriate measurement of longer-term abnormal returns (e.g., Brown and Warner, 1980, Kothari and Warner, 1997, Lyon et al, 1999). A casual examination of the contemporaneous literature on market pricing anomalies suggests that the best approach to check the soundness of a given result when dealing with longer-term event studies is testing its robustness using a combination of alternative methods (e.g., Boehme and Sorescu, 2002; Hertzel et al, 2002; Ikenberry and Ramnath, 2002; Byun and Rozeff, 2003). In this section, we test for a range of competing explanations for our anomalous results, namely the impact of the momentum effect, distress risk, and industry.

[19] Monthly returns are calculated following Kausar et al (2008). To be precise, returns for 25 months centred on the bankruptcy announcement month are collected from CRPS monthly stock return file for both sample (strategic and non-strategic Chapter 11 sets) and control firms. The bankruptcy month is termed as the event month and excluded from the analysis. Equations (1) and (2) are then used to compute the abnormal returns.

Panel A of table 3 clearly shows that, for both the strategic and non-strategic portfolios, stock prices fall steeply in the pre-bankruptcy period. As such, it could be possible that our findings are no more than a continuation of such negative returns as with Jegadeesh and Titman (1993; 2001). To test whether stock momentum is, in fact, driving our results we match each of our bankrupt firms with a new control firm as follows. First, we identify all non-bankrupt, non-finance, non-utility firms with a market capitalization between 70% and 130% of that of each our sample firm's market capitalization. Second, from this set, we choose the firm with prior 12-month raw returns closest to that of the sample firm.[20] We then compare post-event 12-month bankrupt and control firm returns.

We find that our main results are unaffected. For the non-strategic Chapter 11 portfolio, the mean 12-month (6-month) BHARs are -30% (-22%), and median 12-month (6-month) BHARs are -36% (-23%), all significant at better than the 1% (1%) level. For the strategic Chapter 11 portfolio, the mean 12-month (6-month) BHARs are 23% (p=0.36) (39%; p<0.05), and the median 12-month (6-month) BHARS are 27% (p=0.21) (35%; p<0.01). The 12-month (6-month) mean difference in performance between the two portfolios is significant at the 5% level (1% level), and the 12-month (6-month) median difference in performance between the two portfolios is significant at the 1% level (1% level). As such, we cannot explain our results in terms of prior return continuation.

Panel A of table 3 shows that mean (median) Altman (1968) z-score for our portfolio of non-strategic Chapter 11 companies is 1.28 (1.25) and that Altman's (1968) z-score for our portfolio of strategic Chapter 11s is 2.30 (2.19), where z-score < 1.81 indicates firms which "*clearly fall into the bankruptcy category*". On this basis, the majority of our firms filing a non-strategic Chapter 11 are financially distressed when entering into Federal protection. Dichev (1998) suggests that firms with higher distress risk significantly underperform in the following

[20] In particular, we compute momentum for both sample and control firms as:

$Mom_i = 1/12 \sum_{t=-12}^{-1} R_{i,t}$, where $R_{i,t}$ is the raw monthly return of firm i in month t, with $t = 0$ being the bankruptcy announcement month. All data for computing momentum are taken from CRSP's monthly stock return file.

year and, a similar finding is reported by Griffin and Lemmon (2002). As such, we need to distinguish between a financial distress explanation and a bankruptcy-based explanation for our anomalous results. To do this, we adopt the same approach as for the momentum robustness check and now match our bankrupt firms with control firms based on size and z-score.

Our main results are unaffected. For the non-strategic Chapter 11 portfolio, the mean 12-month (6-month) BHARs are now -39% (-21%), and median 12-month (6-month) BHARs are -40% (-23%), all significant at better than the 1% (1%) level. For the strategic Chapter 11 portfolio, the mean 12-month (6-month) BHARS are 23% (p=0.25) (39%; p<0.01), and the median 12-month (6-month) BHARS are 21% (p=0.37) (40%; p<0.01). The 12-month (6-month) mean difference in performance between the two portfolios is significant at the 1% level (1% level), and the 12-month (6-month) median difference in performance between the two portfolios is significant at the 1% level (1% level).

Industry clustering arises when events are concentrated in a few particular industries. This is problematic because it reduces the power of statistical tests used to verify the significance of abnormal returns (e.g., Dyckman et al, 1984; Mackinlay, 1997). This issue is important in the context of our research since there is a potential contagion/competitive industry effect when a firm files for bankruptcy (e.g., Lang and Stulz, 1992; Akhigbe et al, 2005). Accordingly, and even though our sample is not affected by a significant degree of industry clustering, we still test for the possibility that our results are driven by an industry clustering explanation.

To control for an industry-specific explanation we match each of our bankrupt firms with control firms on industry, size and book-to-market in that order. First, industry is matched using COMPUSTAT's 2-digit SIC code. The second step is to identify, for each bankrupt firm, all potential control firms that belong to the same industry class and that lie within the sample firm's size decile.[21] Finally, the firm with closest book-to-market ratio to that of the sample firm is chosen as the control firm.

[21] We use a size-decile approach here because the alternative criterion of choosing a benchmark firm with a market capitalization within 70% and 130% of that of the sample firm results in a significant number of event firms not having a suitable control firm.

After controlling for industry, we find for the non-strategic Chapter 11 portfolio, a mean 12-month (6-month) BHAR of -38% (-21%), and a median 12-month (6-month) BHAR of -36% (-22%), all significant at better than the 1% (1%) level. For the strategic Chapter 11 portfolio, mean 12-month (6-month) BHARs are 26% ($p=0.42$) (35%; $p<0.05$), and median 12-month (6-month) BHARs are 21% ($p=0.58$) (29%; $p<0.01$). The 12-month (6-month) mean difference in performance between the two sub-samples is again significant at the 1% level (1% level), and similarly for the 12-month (6-month) median difference in performance. These results indicate that our original findings are not an industry-specific phenomenon.

6. Market reaction to strategic and non-strategic bankruptcies: a closer look

In this section, we attempt to offer a formal explanation for why the market reacts differently to strategic and non-strategic bankruptcies. Our event study indicates that the market only distinguishes between these two types of failure in the post-event period, with a positive (negative) reaction being noted, on average, for the strategic (non-strategic) cases. This suggests that filing a strategic bankruptcy is typically regarded by the market as good news, which is manifestly counterintuitive. In effect, it is hard to imagine that, in any conceivable scenario, bankruptcy is anything short of an extreme bad news event. Yet, extant research presents theoretical support for this argument. In particular, Sirower (1991) posits that seeking Chapter 11 is a strategic tool that helps increase shareholder value in large, troubled companies by allowing firms to reverse what he calls the "value destruction strategy" that characterizes their operating performance. Although innovative, Sirower's (1991) approach is too general. In fact, if it was to hold in practice, the market should react positively to *most* (if not every) bankruptcy announcement made by large, distressed firms, a fact that does not seem to be confirmed by the data.

We argue that something else explains the distinct market reaction to a strategic Chapter 11 announcement. Recall that these special firms seek the protection of the Federal Bankruptcy

Court because they want to resolve a particular problem and not because their immediate viability as a going-concern is at stake. Therefore, these firms lie outside Sirower's (1991) conjecture. Nevertheless, the on-going problem that ends up triggering the strategic bankruptcy filing does damage the company's image and raises unwanted and perhaps unjustified doubts about its long-term future. Filing a strategic Chapter 11 provides management with an extreme yet effective way to solve these problems. Importantly, when choosing such a course of action, managers know two things: 1) that their firms can emerge from bankruptcy successfully, and 2) that, according to the Bankruptcy Code, the likelihood of losing their jobs is low. It is this combination of motivation and high *a priori* probability of emergence that explains why, in very exceptional circumstances, a bankruptcy announcement may be regarded by the market as good news.

There is, of course, a major caveat affecting our rationale. For it to work, one must accept that the aggregate market clearly recognizes the bankruptcy's motivation. We argue that this result is only achievable when certain conditions are met. In particular, we posit that the market will regard positively a strategic bankruptcy filing when: 1) information about the failed company is abundant, 2) trading costs are low and 3) equity is concentrated in sophisticated investors. To see why, consider firm A, which has just learnt that, as a result of a lawsuit, it has to pay a substantial amount of money to a direct competitor. Assume further that this company: 1) is financially sound and has the resources to pay the lawsuit without endangering its going-concern status; 2) has wide media coverage; 3) its investors face low trading costs and 4) shares are mostly owned by institutions. Firm A may opt to comply with the court's decision and pay its competitor, a choice that would result in an important and immediate loss of shareholder value. Another possibility is to file a strategic bankruptcy. The firm's ability to communicate quickly and clearly to the market why it is filing for Chapter 11 is the key to reduce the negative stigma and cost associated with such an extreme decision. In effect, current shareholders should realize that they have little reason (other than legal) to sell the firm's shares if its managers *successfully* communicate to the market that bankruptcy is simply a way

to minimize the amount of money the firm has to pay to a direct competitor as a result of the lawsuit. In our hypothetical scenario, this goal is achievable because firm A has extensive media coverage. Additionally, it is likely that other investors may be wiling to buy the stock of such a firm once they realize *why* it is filing for Federal protection. This happens because filing for Chapter 11 has the potential to avoid a massive loss of shareholder value, which should result in an improved market expectation about the firm's future. Given that, by assumption, trading costs are low, such a phenomenon should lead to an *increase* in the stock price as more and more investors buy the stock of the company filing the strategic Chapter 11.

Now consider firm B that files for bankruptcy for the same reason as company A. Assume that firm B is fundamentally equivalent to firm A but has low media coverage. In this case, it would be *harder* to communicate to the market the true motive for going into Chapter 11, a fact that *increases* the stigma and cost associated with such a choice. Now assume that media coverage is high but investors face high transaction costs when trading firm's B stock. In this situation, even though it is more likely that the market recognizes the reason for the filing, it still would be *difficult* for prices to reflect the potential increase in shareholder value entailed by the decision to file a strategic Chapter 11. Finally, assume that media coverage is high and trading costs are low but only individuals trade the company's stock. In this case, the bankruptcy's impact may be *misunderstood* by the market because sophisticated investors are absent. In effect, previous research suggests that individual investors are less capable of understanding fundamental value-relevant information and tend to make making irrational investment decisions (e.g., Shiller, 1984; Shefrin and Statman, 1985; De Long et al, 1990; Shleifer and Summers, 1990 and Lakonishok et al, 1994; Odean, 1999; Barber and Odean, 2002; Barber et al, 2006a, 2006b). Moreover, noise trader risk alone could explain why arbitrageurs may fail to correct the price if they decide to intervene in this particular context (Shleifer, 2000:14).

It follows that, in our setting, only an exceptional combination of factors explains why the market may react positively to a bankruptcy announcement. We use a logistic regression to formally test this proposition. In particular, we estimate the following model:

$$\hat{P}_i = \mathrm{E}\left(Strategic_i = 1 \middle| X_i\right) = \frac{e^z}{1+e^z} \tag{3}$$

where $\hat{P}_i$ is the estimated probability that firm i files a strategic bankruptcy and z is a vector of n predictors given by:

$$z_i = \alpha_0 + \sum_{n=1}^{9} \alpha_n x_{ni} \tag{4}$$

The nine predictors considered in our application are as follows:

1. Analysts following (*Anfol*): this variable is a proxy for the amount of firm-specific information available to investors (e.g., Hong et al, 2000; Frankel and Li, 2004) and we expect firms filing a strategic bankruptcy to have more analysts following than firms filing a non-strategic Chapter 11. We measure the intensity of analyst activity as follows. For each sample firm, we start by identifying from I/B/E/S Detail History file all analysts with an I/B/E/S valid code providing estimates about the company in the 3-month period before its bankruptcy date.[22] We then compute the number of analysts following as the count of the analysts' codes identified per firm within this period.

2. News coverage (*News*): this variable is also a proxy for the amount of firm-specific information available to investors (Frankel and Li, 2004) and we expect firms filing a strategic bankruptcy to have more news items reported in the media than firms filing a non-strategic Chapter 11. We measure this variable with the help of Factiva's search tool. In particular, for each sample firm, we examine a period of three months prior to

[22] Some of the I/B/E/S analysts' codes are missing or coded 00000. We exclude these records from our analysis.

the bankruptcy date and count the number of news items that include the name of the company in the headline or leading paragraph, excluding all republished news and recurring pricing and market data. Importantly, we focus our attention on the *quantity* rather than on the *quality* of the disclosures, i.e., we do not attempt to separate potential "good" from "bad" news. This is consistent with previous research by Frankel and Li (2004) and our own objectives since the goal is simply verifying to what extent a particular company receives more or less media attention.

3. Institutional ownership (*Inst*): drawing on Utama and Cready (1997), Walther (1997), El-Gazzar (1998), Bartov et al (2000) and Mendenhall (2004), we use this variable to proxy for the level of sophistication of the firm's shareholders and expect companies filing a strategic bankruptcy to have a higher percentage shares owned by institutions than firms filing a non-strategic Chapter 11. Following Nofsinger and Sias (1999), Chen et al (2000) and Ke and Ramalingegowda (2005), we compute institutional ownership as shares held by institutional investors/ total shares outstanding. For each sample firm, we compute this ratio using the last pre-bankruptcy data about institutional equity holdings and shares outstanding available on Thomson Financial Network CDA/Spectrum Institutional holdings file.

4. Trading volume (*Tvolume*): this variable is also a proxy for investors' level of sophistication. Drawing on Odean (1999), Barber and Odean (2000, 2001, 2002) and Statman et al (2006), we posit that trading volume should be higher when noise traders are more active and expect companies filing a strategic bankruptcy to have lower abnormal daily trading volume than firms filing a non-strategic Chapter 11. We compute each sample firm's abnormal trading volume as in Michaely et al (1995). For each sample firm, we start by calculating the daily turnover as shares traded/shares outstanding in trading days -252 to 0, where event day zero is the bankruptcy announcement date. For each sample firm, we then calculate the *normal average daily*

turnover as the average daily turnover for that firm in trading days -252 to -63 (roughly nine pre-event months). For each trading day and for every sample firm, the *abnormal daily trading volume* is given by the trading turnover on that trading day minus the normal average daily turnover, relative to the normal average daily turnover. Finally, for each sample firm, the abnormal daily trading volume of days -62 to -7 (roughly a 3-month pre-event period) is averaged and used in the estimation of equation (4).

5. Trading costs (*Tcost*): this variable reflects the costs of trading in the sample firms' stock and we expect firms filing a strategic bankruptcy to have lower trading costs than companies filing a non-strategic Chapter 11. We use the LDV measure proposed by Lesmond et al (1999) as a proxy for total trading costs:

$$R_{i,t} = \begin{cases} R^*_{i,t} - \alpha_{1,i} & if \quad R^*_{i,t} < \alpha_{1,i}, \quad \alpha_{1,i} < 0 \\ 0 & if \quad \alpha_{1,i} \le R^*_{i,t} \le \alpha_{2,i} \\ R^*_{i,t} - \alpha_{2,i} & if \quad R^*_{i,t} > \alpha_{2,i}, \quad \alpha_{2,i} > 0 \end{cases} \qquad (6)$$

where $R_{i,t}$ is the observed return of sample firm i, $R^*_{i,t} = \beta R_{i,t} + \varepsilon_{i,t}$ is the expected return of sample firm i based on the market model, $\alpha_{1,i} < 0$ is the trading cost on selling the stock, $\alpha_{2,i} > 0$ is the trading cost on buying the stock. The intuition behind the LDV model is that transaction costs discourage arbitrageurs from trading on any new information unless the expected returns are sufficient to cover the trading cost. Hence, daily returns of 0% occur if the expected return is not large enough to induce a sale or buy transaction. It follows that non-zero returns are only observed when they exceed the required trading cost. With the estimates of $\alpha_{1,i}$ and $\alpha_{2,i}$, the all-in (explicit and implicit) roundtrip cost for sample firm i is given by $\alpha_{2,i} - \alpha_{1,i}$. In our application

and for each sample firm, the model is estimated by maximum likelihood using daily returns from a 6-month pre-bankruptcy period, collected from CRSP's daily stock file.

6. Z-score (*Zscore*): we use Altman (1968) z-score to proxy for the pre-bankruptcy financial condition of firms going into Chapter 11 and expect companies filing a strategic bankruptcy to have a stronger pre-event financial condition than firms filing a non-strategic Chapter 11. Each firm-specific z-score is estimated using data from the last annual financial accounts reported before the bankruptcy year;

7. Book-to-market (B/M): this is a control variable that proxies for the market's pre-event expectation about the firm's future prospects. Section 3.3.2 details how to compute this variable;

8. Momentum (*Mom*): this is also a control variable and proxies for the past performance of the firm. For each sample firm, we compute momentum as the 12-month (-12, -1) pre-event average monthly raw returns.

9. Size (*Mcap*): size (price times shares outstanding) is measured at the bankruptcy filing date and is used here as a control variable.

Table 5 presents our results. In general, the evidence is consistent with our predictions.[23] For instance, the coefficient for analyst following is 0.5, significant at the 5% level, indicating that an increase of one unit of analyst following increases the odds of a firm filing for a strategic rather than non-strategic (financial) bankruptcy by 1.6, conditional on the remaining predictors.[24] In other words, it seems that, as posited, firms filing a strategic bankruptcy have

[23] *News* and *Z-score* are the only non-control variables that seem to be unimportant in our analysis (the associated p-values are not significant even at the 10% level).
[24] The parameters' estimates are best interpreted if they are converted into odds ratios by exponentiating them (Der and Everitt, 2002:150). In this case, the odds ratio is given by exp(0.4967).

more extended analyst coverage and thus more firm-specific information available. A similar conclusion applies for institutional investor's holdings: the estimated coefficient for this variable is again positive and significant at the 5% level. It follows that an increase in sophistication of the bankrupt firm's shareholders increases the odds of a strategic bankruptcy filing.

Our results are qualitatively different when both transaction costs and trading volume are considered. The estimated coefficients for these variables are *negative* and significant at the 5% level. In this case, our results indicate that an *increase* in transaction costs or trading volume *reduces* the probability of a strategic Chapter 11. Put differently, strategic-bankruptcy cases are, on average, associated with lower transaction costs and lower abnormal trading volume. These findings are consistent with our initial predictions and emphasize the idea that the market is likely to react more promptly to strategic bankruptcies when transaction costs are low and there is little noise trader activity.

A word is required here to discus the model's overall performance. Panel A of table 5 indicates that the likelihood ratio's p-value is lower than 1%, and thus one can safely conclude that the model is highly significant on a statistical basis.[25] Panel B of table 5 summarizes three goodness-of-fit statistics. The Nalgelkerke measure is a popular likelihood-based R^2 statistic that has approximately the same meaning as the traditional R^2 in multiple regression (Tabachnick and Fidell, 2001:545). In our case, the estimated value for such statistic is 0.67. The values of the alternative Sommer's D and c measures are consistent with this result. As Gujarati (2003:606) emphasizes, goodness-of-fit measures are of secondary importance in binary regressand models. According to the author, what really matters are the expected signs of the regression coefficients and their statistical and/or practical significance. We would argue that, in the case at hand, results are very consistent with the initial predictions, indicating that fundamental differences *do* justify why the market reacts differently to strategic and non-strategic bankruptcy announcements.

[25] This test is very similar to the traditional *F-test* in multiple regression. See Gujarati (2003:606) for details.

Table 5 here

7.. Discussion and conclusion

This paper explores how the market reacts to two apparently similar bad news events with completely distinct underlying motivations: filing a strategic and a non-strategic Chapter 11. Solvent firms addressing the Bankruptcy Court not as a last resort but as a planned business strategy characterize the first type of bankruptcy; in contrast, companies on the verge of imminent financial collapse typify a non-strategic bankruptcy.

We show that the market does not differentiate between strategic and non-strategic Chapter 11s before and at the event date, with a sharp decrease in the stock price being noted for both types of firms in these periods. One explanation for the return patterns we document resides on Tversky and Kahneman's (1974) representativeness bias. People suffering from this behavioural bias tend to assume that things sharing a number of qualities are quite alike (Nofsinger, 2005:64). Hence, it is quite possible that, in the pre-event period, investors have a common sentiment about firms that eventually file a strategic Chapter 11 and those that end up filing a non-strategic Chapter 11 because both types of firms possess parallel characteristics. In fact, our descriptive statistics demonstrate that these two sub-sets of firms share very similar pre-event momentum and book-to-market ratios, two attributes that previous research has shown to be important for determining securities' subsequent returns (Jegadeesh and Titman, 1993, 2001; Fama and French, 1992; Lakonishok et al, 1994). In this context it is also likely that, for the aggregate market, firms filing both types of bankruptcy fall within the same stereotype, i.e., that of a "loser" firm facing increasing problems that will eventually have to question its existence as a going-concern. This results in a similar stock price pattern in anticipation to the event for both strategic and non-strategic Chapter 11s.

On the other hand,, we find an asymmetric longer-term market reaction to bankruptcy conditional on the underlying motivation for the filing. In particular, for the set of non-strategic bankruptcies, we document a statistically significant downward post-event drift lasting at least

one full year after the Chapter 11 date. However, we find that filing a strategic Chapter 11 prompts a reversal in the stock return pattern, i.e., post-event abnormal returns are positive and significant, a phenomenon that lasts at least for the following six months. As such, our findings imply that the market values strategic and non-strategic bankruptcy announcements differently: the former is good news while the latter is bad news. Interestingly, although in the non-strategic case the market clearly *underreacts* to the bankruptcy announcement, for the strategic sub-sample it *overreacts*, as indicated by the subsequent reversal in mean returns. To the best of our knowledge, ours is the first paper documenting such a phenomenon, which is of particular interest since it indicates that the longer-term market's reaction to bad news events is affected by the particular context surrounding firm-specific negative disclosures.

Our tests also reveal that three key dimensions are associated with market differention between the two qualitatively distinct bad news events we investigate: 1) firm specific information; 2) trading costs and 3) level of investor sophistication. To be precise, we find that the probability of filing for a strategic bankruptcy increases with the amount of firm-specific information available, and level of institutional holding, and decreases with trading costs. This is also an important finding that allows us to add to the recent literature connecting information uncertainty with the pricing of publicly traded securities (e.g., Jiang et al, 2005; Zhang, 2006). In effect, our results emphasize the idea that the market is more likely to misprice firms with high degrees of information uncertainty relative to other, comparable firms that are not has affected by this particular problem.

References

Aharony, J., Jones, C., and Swary, I., 1980, *An analysis of risk and return characteristics of corporate bankruptcy using capital market data*, Journal of Finance, 35, 1001-1016.

Akhigbe, A., Martin, A., and Whyte, A., 2005, *Contagion effects of the world's largest bankruptcy: the case of WorldCom*, Quarterly Review of Economics and Finance, 45, 48-64.

Altman, E., 1968, *Financial ratios, discriminant analysis and the prediction of corporate bankruptcy*, Journal of Finance, 23, 589-609.

Altman, E., 1984, *A further empirical investigation of the bankruptcy cost question*, Journal of Finance, 39, 1067-1089.

Altman, E., 1993, *Corporate Financial Distress and Bankruptcy - A Complete Guide to Predicting and Avoiding Distress and Profiting from Bankruptcy*, John Willey and Sons, New York.

Altman, E. and Hotchkiss, E., 2005, *Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyse and Invest in Distressed Debt*, John Willey and Sons, New York.

Ang, S. and Zhang, S., 2004, *An evaluation of testing procedures for long horizon event studies*, Review of Quantitative Finance and Accounting, 23, 251-274.

Ball, R., Kothari, S., and Shanken, J., 1995, *Problems in measuring portfolio performance: an application to contrarian investment strategies*, Journal of Financial Economics, 38, 79-107.

Barber, B. and Lyon, J., 1997, *Detecting long-run abnormal stock returns: the empirical power and specification of test statistics*, Journal of Financial Economics, 43, 341-372.

Barber, B. and Odean, T., 2000, *Trading is hazardous to your wealth: the common stock investment performance of individual investors*, Journal of Finance, 55, 773-806.

Barber, B. and Odean, T., 2001, *Boys will be boys: gender, overconfidence, and common stock investment*, Quarterly Journal of Economics, 116, 261-292.

Barber, B. and Odean, T., 2002, *Online investors: do the slow die first?* Review of Financial Studies, 15, 455-487.

Barber, B., Odean, T., and Zhu, N., 2006a, *Do noise traders move markets?*, EFA 2006 Zurich Meetings Paper, available at SSRN: http://ssrn.com/abstract=869827.

Barber, B., Odean, T., and Zhu, N., 2006b, *Systematic noise*, AFA 2004 San Diego Meetings, available at SSRN: http://ssrn.com/abstract=474481.

Bartov, E., Radhakrishnan, S., and Krinsky, I., 2000, *Investor sophistication and patterns in stock returns after earnings announcements*, Accounting Review, 75, 43-63.

Beneish, M. and Press, E., 1995, *Interrelation among events of default*, Contemporary

Boehme, R. and Sorescu, S., 2002, *The long-run performance following dividend initiations and resumptions: underreaction or product of change?*, Journal of Finance, 57, 871-900.

Boehmer, E., Musumeci, J., and Poulsen, A., 1991, *Event-study methodology under conditions of event-induced variance*, Journal of Financial Economics, 30, 253-272.

Brav, A., 2000, *Inference in long-horizon event studies: a bayesian approach with applications to Initial Public Offerings*, Journal of Finance, 55, 1979-2016.

Brav, A., Geczy, G., and Gompers, P., 2000, *Is the abnormal return following equity issuances anomalous?*, Journal of Financial Economics, 56, 209-249.

Bris, A., Welch, I., and Zhu, N., 2006, *The costs of bankruptcy: Chapter 7 liquidation vs. Chapter 11 reorganization*, Journal of Finance, 61, 1253-1305.

Brown, S. and Warner, J., 1980, *Measuring security price performance*, Journal of Financial Economics, 8, 205-258.

Byun, J. and Rozeff, M., 2003, *Long-run performance after stock splits: 1927 to 1996*, Journal of Finance, 58, 1063-1085.

Campbell, J., Hilscher, J., and Szilayi, J., 2007, *In search of distress risk*, Harvard Institute of Economic Research Discussion Paper No. 2081, available at SSRN: http://ssrn.com/abstract=770805 , Working Paper.

Campbell, J. and Mutchler, J., 1988, *The "expectations gap" and the going-concern uncertainties*, Accounting Horizons, 1, 42-49.

Chan, W., 2003, *Stock price reaction to news and no-news: drift and reversal after headlines*, Journal of Financial Economics, 70, 223-260.

Chen, H., Jegadeesh, N., and Wermers, R., 2000, *The value of active mutual fund management: an examination of the stockholdings and trades of fund managers*, Journal of Financial and Quantitative Analysis, 35, 343-368.

Chen, K. and Church, B., 1996, *Going concern opinions and the market's reaction to bankruptcy filings*, Accounting Review, 71, 117-128.

Coelho, L. and Taffler, R., 2008, *The Chapter 11 bankruptcy anomaly*, Working paper, available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1102598.

Cowan. A. and Sergeant, A., 2001, *Interacting biases, non-normal return distributions and the performance of tests for long-horizon event studies*, Journal of Banking and Finance, 25, 741-765.

Dawkins, M., Bhattacharya, N., and Bamber, L., 2007, *Systematic share price fluctuations after bankruptcy filings and the investors who drive them*, Journal of Financial and Quantitative Analysis, 42, 399-420.

Dawkins, M. and Rose-Green, E., 1998, *Prior Wall Street Journal announcements of possible bankruptcy filings and price reactions to subsequent bankruptcy filing*, Journal of Business Finance & Accounting, 25, 813-827.

De Long, J., Shleifer, A., Summers, L., and Waldmann, R., 1990, *Noise trader risk in financial markets*, Journal of Political Economy, 98, 703-738.

Delaney, K., 1998, *How Corporations and Creditors Use Chapter 11 Bankruptcy to Their Advantage*, University of California Press, Berkeley.

Der, G. and Everitt, B., 2002, *A Handbook of Statistical Analysis using SAS*, Chapman and Hall/CRC, Florida.

Dichev, I., 1998, *Is the risk of bankruptcy a systematic risk?*, Journal of Finance, 53, 1131-1147.

Dichev, I. and Piotroski, J., 2001, *The long-run stock returns following bond rating changes*, Journal of Finance, 56, 173-203.

Dyckman, T., Philbrick, D., and Stephan, J., 1984, *A comparison of event study methodologies using daily stock returns: a simulation approach*, Journal of Accounting Research, 22 (Supplement), 1-30.

Eberhart, A., Altman, E., and Aggarwal, R., 1999, *The equity performance of firms emerging from bankruptcy*, Journal of Finance, 54, 1855-1868.

El-Gazzar, S., 1998, *Predisclosure information and institutional ownership: A cross-sectional examination of market revaluations during earnings announcement periods*, Accounting Review, 73, 119-129.

Fama, E., 1998, *Market efficiency, long-term returns, and behavioral finance*, Journal of Financial Economics, 49, 283-306.

Fama, E. and French, K., 1992, *The cross-section of expected stock returns*, Journal of Finance, 47, 427-465.

Frankel, R. and Li, X., 2004, *Characteristics of a firm's information environment and the information asymmetry between insiders and outsiders*, Journal of Accounting and Economics, 37, 229-259.

Gilson, S., 1995, *Investing in distressed situations: a market survey*, Financial Analysts Journal, 51, 8-27.

Griffin, J. and Lemmon, M., 2002, *Book-to-market equity, distress risk, and stock returns*, Journal of Finance, 57, 2317-2336.

Gujarati, D., 2003, *Basic Econometrics*, McGraw-Hill/Irwin, New York.

Hertzel, M., Lemmon, M., Linck, J., and Rees, L., 2002, *Long-run performance following private placements of equity*, Journal of Finance, 57, 2595-2617.

Holder-Webb, L. and Wilkins, M., 2000, *The incremental information content of SAS No. 59 going-concern opinions*, Journal of Accounting Research, 38, 209-219.

Hong, H., Lim, T., and Stein, J., 2000, *Bad news travel slowly: size, analyst coverage, and the profitability of momentum strategies*, Journal of Finance, 55, 265-295.

Ikenberry, D. and Ramnath, S., 2002, *Underreaction to self-selected news events: The case of stock splits*, Review of Financial Studies, 15, 489-526.

Jegadeesh, N. and Titman, S., 1993, *Returns to buying winners and selling losers: implications for stock market efficiency*, Journal of Finance, 48, 65-91.

Jegadeesh, N. and Titman, S., 2001, *Profitability of momentum strategies: an evaluation of alternative explanations*, Journal of Finance, 56, 699-720.

Jiang, G., Lee, C., and Zhang, Y., 2005, *Information uncertainty and expected returns*, Review of Accounting Studies, 10, 185-221.

Johnson, B., Baliga, B., and Blair, J., 1986, *Chapter 11: strategic advantage and social anathema?*, Journal of Business Ethics, 5, 51-61.

Johnson, D., 1989, *The risk behavior of equity of firms approaching bankruptcy*, Journal of Financial Research, 12, 33-50.

Kadiyala, P. and Rau, P., 2004, *Investor reaction to corporate event announcements: underreaction or overreaction?*, Journal of Business, 77, 357-386.

Kalay, A., Singhal, R., and Tashjian, E., 2007, *Is Chapter 11 costly?*, Journal of Financial Economics, 84, 772-796.

Kausar, A., Taffler, R., and Tan, C., 2008, *The going-concern market underreaction anomaly*, Working paper.

Ke, B. and Ramalingegowda, S., 2005, *Do institutional investors exploit the post-earnings announcement drift?*, Journal of Accounting and Economics, 39, 25-53.

Kothari, S. and Warner, J., 1997, *Measuring long-horizon security price performance*, Journal of Financial Economics, 43, 301-339.

Kothari, S., Warner, J. "Econometrics of Event Studies", Eckbo, B., *Handbook of Corporate Finance: Empirical Corporate Finance, Volume 1,* Holland, Elsevier, 2007, 3-32.

Kraft, A., Leone, A., and Wasley, C., 2006, *An analysis of the theories and explanations offered for the mispricing of accruals and accruals components*, Journal of Accounting Research, 44, 297-339.

Kraft, A., Leone, A., and Wasley, C., 2007, *Regression-based tests of the market pricing of accounting numbers: the mishkin test and ordinary least squares*, Journal of Accounting Research, 45, 1081-1114.

Lakonishok, J., Shleifer, A., and Vishny, R., 1994, *Contrarian investment, extrapolation and risk*, Journal of Finance, 49, 1541-1578.

Lang, L. and Stulz, R., 1992, *Contagion and competitive intra-industry effects of bankruptcy announcements: an empirical analysis*, Journal of Financial Economics, 32, 45-60.

Lesmond, D., Ogden, J., and Trzcinka, C., 1999, *A new estimate of transaction costs*, Review of Financial Studies, 12, 1113-1141.

LoPucki, L. and Doherty, J., 2004, *The determinants of professional fees in large bankruptcy reorganization cases*, Journal of Empirical Legal Studies, 1, 111-141.

Loughran, T. and Ritter, J., 1995, *The new issue puzzle*, Journal of Finance, 50, 23-51.

Loughran, T. and Ritter, J., 2000, *Uniformly least powerful tests of market efficiency*, Journal of Financial Economics, 55, 361-389.

Lyon, J., Barber, B., and Tsai, C., 1999, *Improved methods for tests of long-run abnormal stock*

returns, Journal of Finance, 54, 165-201.

MacKinlay, A., 1997, *Event studies in economics and finance*, Journal of Economic Literature, 35, 13-39.

Maksimovic, V. and Phillips, G., 1998, *Asset efficiency and reallocation decisions of bankrupt firms*, Journal of Finance, 53, 1495-1532.

McEnally, R. and Todd, R., 1993, *Systematic risk behavior of financially distressed firms*, Quarterly Journal of Business and Economics, 32, 3-19.

Mendenhall, R., 2004, *Arbitrage risk and post-earnings-announcement drift* , Journal of Business, 77, 875-894.

Michaely, R., Thaler, R., and Womack, K., 1995, *Price reactions to dividend initiations and omissions: overreaction or drift?*, Journal of Finance, 50, 573-608.

Morse, D. and Shaw, W., 1988, *Investing in bankrupt firms*, Journal of Finance, 43, 1193-1206.

Nofsinger, J., 2005, *The Psychology of Investing*, 2nd edition, Pearson Prentice Hall, New Jersey.

Nofsinger, J. and Sias, R., 1999, *Herding and feedback trading by institutional and individual investors*, Journal of Finance, 54, 2263-2295.

Odean, T., 1999, *Do investors trade too much?*, American Economic Review, 89, 1279-1298.

Ogneva, M. and Subramanyam, K., 2007, *Does the stock market underreact to going-concern opinions? Evidence from the US and Australia*, Journal of Accounting and Economics, 43, 439-452.

Opler, T. and Titman, S., 1994, *Financial distress and corporate performance*, Journal of Finance, 49, 1015-1040.

Platt, H., 1999, *Why Companies Fail - Strategies for Detecting, Avoiding and Profiting from Bankruptcy*, Beard Books, Washington, D.C.

Pulvino, T., 1999, *Effects of bankruptcy court protection on asset sales*, Journal of Financial Economics, 52, 151-186.

Rose-Green, E. and Dawkins, M., 2002, *Strategic bankruptcies and price reactions to bankruptcy filings*, Journal of Business Finance & Accounting, 29, 1319-1335.

Shefrin, H. and Statman, M., 1985, *The disposition to sell winners too early and ride losers too long: Theory and evidence* , Journal of Finance, 40, 777-792.

Sheppard, P., 1995, *Beautifully broken benches: a typology of strategic bankruptcies and the opportunities for positive shareholders returns*, Journal of Business Strategies, 12, 99-134.

Shiller, R., 1984, *Stock prices and social dynamics*, Brookings Papers on Economic Activity, 2, 457-498.

Shleifer, A., 2000, *Inefficient Markets: An Introduction to Behavioral Finance*, Oxford University, New York.

Shleifer, A. and Summers, L., 1990, *The noise trader approach to finance*, Journal of Economic Perspectives, 4, 19-33.

Shumway, T., 1997, *The delisting bias in CRSP data*, Journal of Finance, 53, 327-340.

Shumway, T. and Warther, V., 1999, *The delisting bias in CRSP's NASDAQ data and its implications for the size effect*, Journal of Finance, 54, 2361-2379.

Sirower, M., 1991, *Bankruptcy as a strategic tool*, Academy of Management Proceedings, 46-50.

Spiess, D. and Affleck-Graves, J., 1995, *Underperformance in long-run stock return following Seasoned Equity Offerings*, Journal of Financial Economics, 38, 243-267.

Statman, M., Thorley, S., and Vorkin, K., 2006, *Investor overconfidence and trading volume*, Review of Financial Studies, 19, 1531-1565.

Tabachnick, B. and Fidell, L., 2001, *Using Multivariate Statistics*, Allyn & Bacon, Needham Heights, US.

Taffler, R., Lu, J., and Kausar, A., 2004, *In denial? Stock market underreaction to going concern audit report disclosures*, Journal of Accounting and Economics, 38, 263-283.

Tavakolian, H., 1995, *Bankruptcy: an emerging corporate strategy*, S.A.M. Advanced Management Journal, 60, 18-22.

Tversky, A. and Kahneman, D., 1974, *Judgement under uncertainty: heuristics and biases*, Science, 185, 1124-1131.

Utama, S. and Cready, W., 1997, *Institutional ownership, differential predisclosure precision and trading volume at announcements dates*, Journal of Accounting and Economics, 24, 129-150.

Walther, B., 1997, *Investor sophistication and market earnings expectations*, Journal of Accounting Research, 35, 157-192.

Womack, K., 1996, *Do brokerage analyst's recommendations have investment value?*, Journal of Finance, 51, 137-167.

Zhang, X., 2006, *Information uncertainty and stock returns*, Journal of Finance, 61, 105-136.

Table 1

Defining the sample

This table summarizes the steps undertaken to identify this study's sample. The first stage is combining seven different data sources to identify an initial set of non-overlapping firms that filed for bankruptcy in the US between 01.10.1979 and 17.10.2005. In order to be included in the final sample a given company must comply with the following criteria: 1) have enough data on CRSP and COMPUSTAT to conduct the analysis, 2) be listed and remain listed after the bankruptcy announcement date, trading common stock and 3) be a domestic company, filing for Chapter 11. Additionally, firms that are financial or utility companies are not considered in the final sample.

	Nº
Non-overlapping firm-year observations identified from the different data sources	3,437
Firm-year observations not found or with insuficient data on CRSP	1,411
Firm-year observations delisted before or at the bankruptcy filing month	1,556
Firm-year observations with insuficient data on COMPUSTAT	58
Firm-year observations classified as foreign	11
Utilities and financial firms	40
Firms filing Chapter 7	10
Final sample size	351

Table 2

Strategic vs. non-strategic bankruptcy cases

This table presents the number of strategic and non-strategic bankruptcy cases identified in our population of 351 non-finance, non-utility industry firms, fully listed on the NYSE, AMEX or NASDAQ that filed for Chapter 11 between 01.10.1979 and 17.10.2005 and remained listed on a major US stock exchange after their bankruptcy date. Firms are allocated to the strategic set if: 1) their managers use Chapter 11 against one identifiable stakeholder-group; 2) filing for Chapter 11 helps managers achieve a specific goal that harms the interests of the stakeholders identified in the previous point; 3) the filing is not motivated by a clear short/medium-term financial problem. All remaining firms are allocated to the non-strategic set.

	N	% of total
Total number of firm-year observations	351	-
Strategic Chapter 11	32	9.1%
Financial Chapter 11	319	90.9%

Table 3

Summary statistics – strategic vs. non-strategic bankruptcies

This table presents summary statistics relating to our population of 351 non-finance, non-utility industry firms, fully listed on the NYSE, AMEX or NASDAQ that filed for Chapter 11 between 01.10.1979 and 17.10.2005 and that remained listed on a major US stock exchange after their bankruptcy date. Firms are allocated to the strategic portfolio if filing a strategic bankruptcy (n=32). Firms included in this portfolio respect the following conditions: 1) their managers use Chapter 11 against one identifiable stakeholder-group; 2) filing for Chapter 11 helps managers achieve a specific goal that harms the interests of the stakeholders identified in the previous point; 3) the filing is not motivated by a clear short/medium-term financial problem. All remaining firms are allocated to the non-strategic portfolio (n=319). Panel A reports fundamental accounting information. Panel B summarizes market related variables. Panel C presents other relevant firm characteristics. The p-value column of panels A and B shows the significance of a two-tailed t-test (Wilcoxon-Mann-Whitney test) for difference in means (medians).

Panel A: Accounting variables

	Non-strategic (A)		Strategic (B)		Difference (A-B)			
	Mean	Median	Mean	Median	Mean	p-value	Median	p-value
Sales	423.1	92.4	2,324.1	356.2	-1,901.0	0.0682	-263.8	<0.0001
TA	454.4	79.6	2,562.9	190.5	-2,108.5	0.0710	-110.8	<0.0001
ROA	-20%	-7%	-6%	4%	-14%	0.0229	-10%	0.0286
Z-Score	1.28	1.25	2.30	2.19	-1.02	0.0581	-0.94	0.0575
CUR	154%	109%	310%	320%	-156%	0.0383	-211%	0.0286
LEV	45%	40%	39%	38%	7%	0.1151	2%	0.5321

Sales: sales in million of dollars. TA: total assets in millions of dollars. ROA: return on assets (net income/total assets). Z-Score: bankruptcy-risk proxy (Altman, 1968). CUR: current ratio (current assets/current liabilities). LEV: leverage proxy (total debt/total assets). All variables are computed with data taken from the last annual accounts reported before the bankruptcy year.

Table 3 (cont.): Summary statistics - strategic vs. non-strategic bankruptcies

Panel B: Market related variables

	Non-strategic (A)		Strategic (B)		Difference (A-B)			
	Mean	Median	Mean	Median	Mean	p-value	Median	p-value
Size	125.8	31.0	501.1	84.0	-375.3	<0.0001	-53.0	0.0061
Book/Market	4.1	2.4	5.0	1.8	-0.9	0.5662	0.6	0.5514
Momentum	-0.06	-0.07	-0.05	-0.05	-0.01	0.4174	-0.02	0.3945
Pre price	4.59	2.82	8.69	6.38	-4.10	0.0064	-3.56	0.0020
Event Price	1.85	0.92	4.40	2.11	-2.55	0.0349	-1.19	0.0018
Pos Price	2.53	0.61	7.54	2.76	-5.01	0.0358	-2.15	<0.0001
Pre Volume	0.49%	0.33%	0.63%	0.39%	-0.14%	0.3136	-0.06%	0.2531
Event Volume	1.11%	0.56%	1.58%	1.12%	-0.47%	0.1433	-0.56%	0.0114
Pos Volume	0.55%	0.30%	0.65%	0.41%	-0.10%	0.8055	-0.11%	0.0742
Pre Tdays	251	252	242	251	9	0.0579	1	0.9070
Pos Tdays	228	244	251	252	-23	0.0074	-8	0.0176

Size: market capitalization (price times shares outstanding), in millions of dollars. Book/Market: book-to-market ratio. Momentum: 12-month pre-event average monthly raw returns. Pre Price: daily average stock price measured for the 12-month period preceding the bankruptcy filing month (in dollars). Event price: same as Pre Price, but for the 30-calendar day period centred on the bankruptcy announcement date. Pos Price: some as Pre Price, but for the 12-month period after the bankruptcy announcement month. Pre Volume: average daily trading volume (volume/shares outstanding) measured for the 12-month period preceding the bankruptcy announcement month. Event Volume: same as Pre Volume but for the 30-calendar day period centred on the bankruptcy announcement date. Pos Volume: same as Pre Volume but for the 12-month period after the bankruptcy announcement month. Pre Tdays: number of days on which trading takes place in the calendar year preceding the bankruptcy announcement month. Pos Tdays: same as Pre Tdays but for the calendar year following the bankruptcy announcement month.

Panel C: Other Characteristics

	Non-strategic (A)		Strategic (B)	
	Positive cases	% of Total	Positive cases	% of Total
EPS	76	23.8	12	37.5
Divid	75	23.5	16	50.0
Big8	257	80.6	30	93.8
Delist	185	58.0	10	31.3

Equity: book value of equity dummy (1 if positive, 0 otherwise). EPS: earnings per share dummy (1 if positive, 0 otherwise). Divid: dividend paid dummy (1 if dividend paid, 0 otherwise). Big8: auditor quality proxy dummy (1 if Big eight, 0 otherwise). Delist: delist dummy (1 if company is delisted within one-calendar year of the bankruptcy date, 0 otherwise). All accounting variables (as well as Big8) are taken from the last annual accounts reported before the bankruptcy year.

Table 4

Market Reaction to Chapter 11 – strategic vs. non-strategic bankruptcies

This table presents buy-and-hold abnormal returns for our population of 351 non-finance, non-utility industry firms, fully listed on the NYSE, AMEX or NASDAQ that filed for Chapter 11 between 01.10.1979 and 17.10.2005 and that remained listed on a major US stock exchange after their bankruptcy date. Firms are allocated to the strategic portfolio if filing a strategic bankruptcy (n=32). Firms included in this portfolio respect the following conditions: 1) their managers use Chapter 11 against one identifiable stakeholder-group; 2) filing for Chapter 11 helps managers achieve a specific goal that harms the interests of the stakeholders identified in the previous point; 3) the filing is not motivated by a clear short/medium-term financial problem. All remaining firms are allocated to the non-strategic portfolio (n=319). All compounding periods are defined in trading days, where day zero is the Chapter 11 date. A control firm approach based on size and book-to-market is used to estimate the abnormal returns. Specifically, for each sample company (filing a strategic or a non-strategic Chapter 11), we identify all CRPS firms with a market capitalization between 70 and 130% of its equity market value. The respective control firm is then selected as that firm with book-to-market closest to that of the sample firm. For the Non-strategic and Strategic columns, the two-tailed significance level from t-statistics (Wilcoxon signed rank-test) is reported below the mean (median). In the last two columns, the two-tailed significance level from t-statistics or a Wilcoxon-Mann-Whitney test are reported below the corresponding mean or median difference.

Panel A: Pre-event returns

	Non-Strategic (A)		Strategic (B)		Difference (A - B)	
	Mean	Median	Mean	Median	Mean	Median
(-252,-2)	-0.52	-0.44	-0.55	-0.44	0.03	0.00
	<0.0001	<0.0001	0.0020	<0.0001	0.2993	0.5246
(-126,-2)	-0.44	-0.42	-0.41	-0.40	0.03	0.02
	<0.0001	<0.0001	<0.0001	<0.0001	0.6332	0.4341

Panel B: Short-term market reaction

	Non-Strategic (A)		Strategic (B)		Difference (A - B)	
	Mean	Median	Mean	Median	Mean	Median
(-1,+1)	-0.25	-0.27	-0.25	-0.28	0.00	0.01
	<0.0001	<0.0001	<0.0001	<0.0001	0.9581	0.8331

Table 4 (cont.): Market reaction to Chapter 11 – strategic vs. non-strategic bankruptcies

Panel C: Medium-term market reaction

	Non-Strategic (A)		Strategic (B)		Difference (A - B)	
	Mean	Median	Mean	Median	Mean	Median
(+2,+84)	-0.17	-0.20	0.25	0.27	-0.42	-0.47
	0.0023	<0.0001	0.0142	0.0076	0.0139	<0.0001
(+2,+126)	-0.21	-0.23	0.29	0.35	-0.50	-0.58
	0.0007	<0.0001	0.0102	0.0007	0.0053	<0.0001
(+2,+252)	-0.29	-0.31	0.26	0.30	-0.55	-0.61
	0.0003	<0.0001	0.1925	0.0853	0.0126	0.0008

Table 5

Strategic vs. non-strategic bankruptcies revisited

This table presents the results of a logistic regression comparing the characteristics of the 32 strategic bankruptcies and the 319 non-strategic bankruptcies present in our population of 351 non-finance, non-utility industry firms, fully listed on the NYSE, AMEX or NASDAQ that filed for Chapter 11 between 01.10.1979 and 17.10.2005 and that remained listed on a major US stock exchange after their bankruptcy date. Firms included in the strategic portfolio respect the following conditions: 1) their managers use Chapter 11 against one identifiable stakeholder-group; 2) filing for Chapter 11 helps managers achieve a specific goal that harms the interests of the stakeholders identified in the previous point; 3) the filing is not motivated by a clear short/medium-term financial problem. Panel A shows the predictor's estimated coefficients and the associated p-value from a Wald test. Panel B summarizes goodness-of-fit measures and associated p-values for the overall model.

Panel A – estimated coefficients

Predictor*	Predicted sign	Coefficient	p-value
Intercept	-	-1.1780	0.5663
Anfol	+	0.4967	0.0479
News	+	0.1888	0.9804
Inst	+	2.6398	0.0370
Tvolume	-	-0.6894	0.0251
Tcost	-	-9.8601	0.0216
Zscore	+	-0.0337	0.8648
B/M	+	0.0528	0.1034
Mom	+	3.9470	0.2380
Mcap	-	-0.0471	0.8116

* Note: *Anfol* is the number of analyst following in the 3-month period before the bankruptcy date. *News* is the number of news items disclosed by the media in the 3-month period before the bankruptcy date. *Inst* is the ratio of shares own by institutions to total shares outstanding, measured using the last pre-bankruptcy data on institutional equity holdings available. *Tvolume* is the abnormal trading volume measure in the last three pre-event months (Michaely et al, 1995). *Tcost* is the firm-specific trading cost, estimated using Lesmond et al (1999) LDV model over a 6-month pre-event period. *Zscore* is the pre-bankruptcy distress-risk (Altman, 1968), computed using data from the last annual financial accounts reported before the bankruptcy year. *B / M* is the book-to-market ratio, computed using data from the last annual financial accounts reported before the bankruptcy year. *Mom* is the average 12-month pre-bankruptcy monthly raw returns. *Mcap* is the firm's market capitalization (price times shares outstanding), measured at the bankruptcy date.

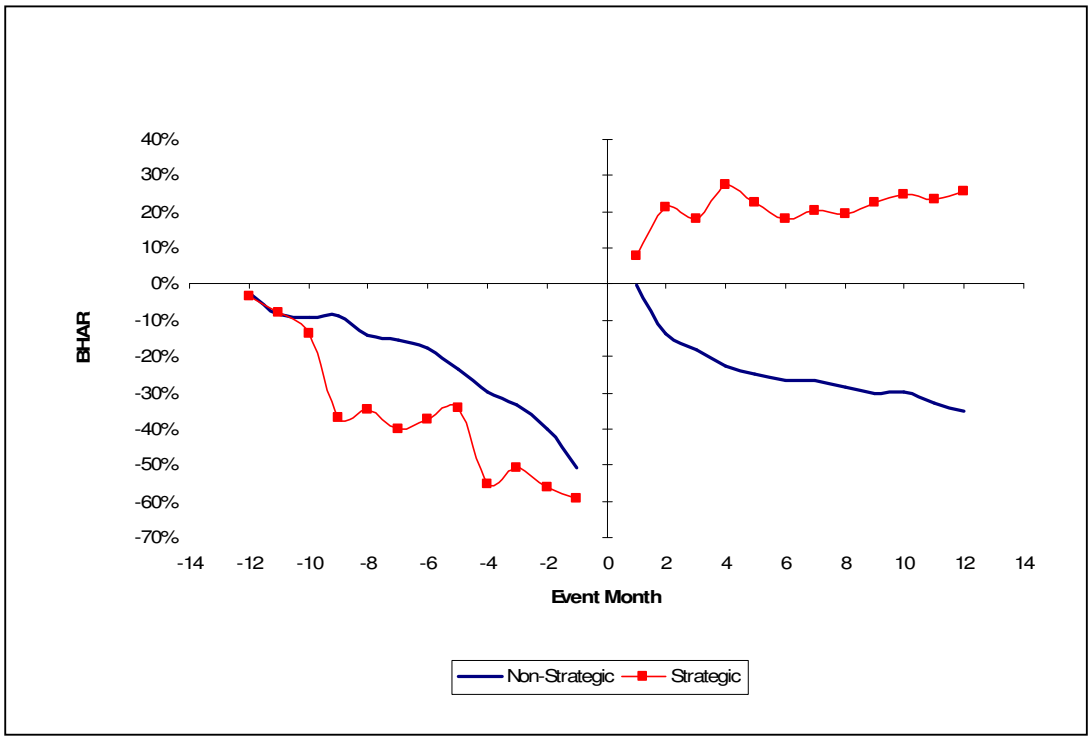
Panel B - Goodness-of-fit measures

Test	P-Value
Likelihood ratio	<0.0001
Score	<0.0001
Wald	0.0003

Figure 1

Pre- and post-abnormal returns for strategic and non-strategic bankruptcies

This figure graphs the mean buy-and-hold abnormal returns for the 24-month period centred on the bankruptcy announcement month for our population of 351 non-finance, non-utility industry firms, fully listed on the NYSE, AMEX or NASDAQ that filed for Chapter 11 between 01.10.1979 and 17.10.2005 and that remained listed on a major US stock exchange after their bankruptcy date. Firms are allocated to the strategic portfolio if filing a strategic bankruptcy (n=32). Firms included in this portfolio respect the following conditions: 1) their managers use Chapter 11 against one identifiable stakeholder-group; 2) filing for Chapter 11 helps managers achieve a specific goal that harms the interests of the stakeholders identified in the previous point; 3) the filing is not motivated by a clear short/medium-term financial problem. All remaining firms are allocated to the non-strategic portfolio (n=319). A control firm approach based on size and book-to-market is used to estimate the abnormal returns. Specifically, for each sample company (filing a strategic or a non-strategic Chapter 11), we identify all CRPS firms with a market capitalization between 70 and 130% of its equity market value. The respective control firm is then selected as that firm with book-to-market closest to that of the sample firm.



Appendix 1

Strategic and non-strategic bankruptcy cases – an example

A. Federal- Mogul Corp. – a strategic bankruptcy case

Founded in 1899 and incorporated in Michigan in 1924, this automotive parts manufacturer provides innovative solutions and systems to global customers in the automotive, small engine, heavy-duty and industrial markets (SIC code 3714). The company started trading on the NYSE on July 1940 (ticker: FMO) and filed for Chapter 11 protection on October 1, 2001 in the United States Bankruptcy Court in the District of Delaware (Wilmington). At the time of the filing the company had 50,000 employees and assets in place worth $12 bn. This firm's Chapter 11 was motivated for strategic reasons. In effect:

1. The firm files a Chapter 11 against an undisclosed number of claimants suing the firm for asbestos-related issues. A reported working for Reuters writes at the bankruptcy filing date: *"Federal-Mogul Corp. on Monday said that it and its U.S. subsidiaries have voluntarily filed for financial restructuring under Chapter 11 of the U.S. Bankruptcy Code, in an effort to separate its asbestos liabilities from its true operating potential."*

2. Filing for Chapter 11 helped the firm manage the individual lawsuits more effectively. In fact, Mr. Frank Macher, Federal-Mogul Corp. CEO, stated at the time of the bankruptcy: *"We have determined that the Chapter 11 and Administration processes are the only way we can effectively structure payments for claimants without financially crippling the operations of Federal-Mogul."*

3. The filing was not motivated by a clear short/medium-term financial problem. In effect, Mr. Frank Macher, Federal-Mogul Corp. CEO, stated at the time of the bankruptcy: *"The operations of Federal-Mogul are fundamentally sound. The firm will continue to operate without interruption and that it sees no job losses or facility closures directly resulting from the filings."*

The company emerged from bankruptcy successfully on December 2007. From April 2008 onwards, its shares are traded on the NASDAQ-GM (ticker: FDML).

B. Manhattan Bagel Company – a non-strategic bankruptcy case

The Manhattan Bagel Company was founded in 1987, and 10 years latter had 290 franchised and company owned stores in 18 US states and Canada. The firm manufactures bagel dough and blends a wide variety of cheese spreads that are distributed to its outlets (SIC code 5812). The bagels are first boiled and then baked in the traditional "New York" style. The Manhattan Bagel Company started trading on the NASDAQ on June 1994 (ticker: BGLS). At the time of its Chapter 11 filing the company had 572 employees and assets in place worth $50 m.

After serious financial difficulties, the Manhattan Bagel Company was forced to file for bankruptcy on November 1997. In effect, at the time of the Chapter 11 filing a reporter working for the Dow Jones Online News writes: "*Manhattan Bagel Co., reeling from a string of quarterly losses, Wednesday filed for Chapter 11 bankruptcy protection and announced a management shakeup that will diminish the role of Chairman and Chief Executive Jack Grumet. The bagel-shop operator said its primary lender, First Union National Bank, put it into default. (The company) also reiterated its plans to close or sell to franchisees its company-owned stores, which it has called a "major component" of its operating losses. These stores represent 9% of all Manhattan Bagel outlets. The company also reaffirmed its plan to cut its corporate staff", while its management stated:* "*Chapter 11 bankruptcy protection was created to provide companies facing financial difficulties with an opportunity to correct their problems and move forward while restructuring their debt".*

The firm successfully emerged from bankruptcy after spending two years in Chapter 11 reorganization. However, to date, its shares do not trade publicly.