Does the market know better? The case of strategic vs. non-strategic bankruptcies

Or

(Trading on bad news is not always hazardous to your wealth: the case of strategic

bankruptcies)

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ABSTRACT

This paper explores the market response to two apparently similar but in fact very different firm-specific bad-news events: 1) filing a strategic Chapter 11, and 2) filing a financially-motivated Chapter 11. We find that the market is unable to distinguish between the two in both the pre-event, and bankruptcy filing event, periods. In particular, in both cases, prices drop by around a half in risk-adjusted terms in the one-year pre-event window, falling a further 25% around the event date. On the other hand, we find that the subsequent market reaction to the announcement of strategic and non-strategic Chapter 11s is quite different. For non-strategic bankruptcies, there is a post-event drift of around -29% over the subsequent 12-months. Conversely, in the case of strategic bankruptcies, we uncover a reversal in the stock return pattern: risk-adjusted abnormal returns are now of +29% in the 6-month period following the event date. As such, filing for Court protection against creditors for non-strategic reasons seems to be increasingly perceived by the market as bad news over time, while filing a strategic bankruptcy becomes recognized over time as a positive news event. Complementary analysis reveals that a mix of information uncertainty issues, different trading environments and investors' help explaining our puzzling results. Nonetheless, trading in the stock of strategic bankruptcies appears to be a profitable strategy.

Keywords: Chapter 11, information uncertainty, underreaction, overreaction

JEL classification: G14, G33

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1. Introduction

There is increasing evidence that the market responds differently to bad and good news firm-specific public events (e.g., Womack, 1996; Dichev and Piotroski, 2001; Chan, 2003 and Kausar, Taffler and Tan, 2009). However, to our knowledge, no study has yet fully addressed the related but more subtle question: to what extent is the market able to distinguish between apparently similar firm-specific bad news public domain events that have quite distinct underlying motivations? We address this question by re-examining how the market reacts to the announcement of Chapter 11 bankruptcy, the most extreme case of a firm-specific bad news event. In particular, we start by recognizing that firms may file for bankruptcy for both strategic and non-strategic reasons. Solvent firms addressing the bankruptcy court not as a last resort but as a planned business strategy typify a strategic bankruptcy. A strategic Chapter 11 typically involves a firm that is not in financial distress but uses the leverage granted by bankruptcy law to break what it views to be onerous labor contracts (e.g., Continental Airlines) or pension responsibilities (e.g., LTV), shirk asbestos-related or other liabilities (e.g., Manville), or seeks to undermine a legal action instigated by commercial rival (e.g., Texaco). In sharp contrast, the more traditional non-strategic bankruptcy is filed by firms in financial collapse. Considering these two types of bankruptcy separately provides a unique context within which to explore our research question. In fact, superficially, strategic and non-strategic Chapter 11s are seemingly alike since they share exactly the same legal setting. However, their underlying motivations are very different, something that according to the traditional paradigm in finance should be recognized by the market and priced appropriately.

Our results can be summarized around two main ideas. First, we find that the market appears unable to differentiate between strategic and non-strategic Chapter 11s prior to, and at the bankruptcy announcement date. In particular, firms filing both strategic and non-strategic

bankruptcies experience virtually identical negative risk-adjusted returns of over 50% during the 12-month pre-event period, and a further similar risk-adjusted drop in prices of around -25% over the three-day period centered on the bankruptcy announcement date.

Second, the different motivations for filing for Chapter 11 prompt an asymmetric longer-term market reaction to this event. In the case of non-strategic Chapter 11s, we find a negative and statistically significant post-event drift of -29% lasting for at least one full year after the announcement date. Conversely, in the case of strategic bankruptcies, the subsequent stock return pattern reverses. The post-Chapter 11 risk-adjusted abnormal returns are around +29%, and statistically significant at conventional levels, over the following 6-month period.

We make two main contributions to the literature. First, 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-Chapter 11, and Chapter 11 filing period market reaction conditional on the motivation for the filing.

Second, we add 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 after the announcement of strategic and non-strategic Chapter 11 filings but in opposite directions. As such, we complement the previous research demonstrating that the market underreacts to negative disclosures (e.g., Michaely, Thaler and Womack, 1995; Womack, 1996; Dichev and Piotroski, 2001; Chan, 2003; Taffler, Lu and Kausar, 2004; Kausar et al, 2009). More importantly, we are the first to show that the market can actually *overreact* to "positive" bad news events.

At a more general level, our findings also allow us to contribute to the literature relating information uncertainty with the pricing of publicly traded securities. Hirshleifer (2001), Jiang, Lee and Zhang (2005), and Zhang (2006), among others, 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 in firms with high degrees of information uncertainty. We provide empirical evidence that is consistent with such argument.

The paper proceeds as follows. Section 2 explains why filing strategic and non-strategic Chapter 11s are, in fact, different events. Section 3 presents our sample, and explains the method we implement to distinguish between strategic and non-strategic bankruptcies. Section 4 examines the key differences between these two types of bankruptcy. Section 5 explores to what extent the market distinguishes between strategic and non-strategic bankruptcies. Section 6 discusses our results, and section 7 concludes.

2. Two different types of bankruptcy

Historically, bankruptcy has been associated with organizational demise and the destruction of shareholder value (e.g., Johnson, Baliga and Blair, 1986; Sirower, 1991), with the affected firm having to face both direct and indirect bankruptcy costs (e.g., Altman, 1984; Bris, Welch and Zhu, 2006). Appendix 1 summarizes the case of the Manhattan Bagel Company, a publicly traded firm forced to file for Chapter 11 in November 1997. This illustrates what occurs during conventional Chapter 11 proceedings.

The traditional position, however, has been disputed in recent years, with an increasing number of scholars claiming that the Bankruptcy Act of 1978 fueled 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).[1] As a result, U.S. bankruptcy law offered managers a mechanism that allows their organizations, almost at will, to fight nearly every undesirable financial obligation (Sheppard, 1995). 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

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[1] A new Bankruptcy Code was introduced in the U.S. on October 2005. According to Altman and Hotchkiss (2005), the new Code is more "creditor-friendly" than its predecessor and thus filing a strategic bankruptcy might be harder nowadays. However, we only consider the Oct/1979 - Oct/2005 period, so our results are not affected by the potential impact of this regulatory change.

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-known 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 announcement 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 judgment. Again, we wish to emphasize that our Company is not affected and is honoring 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 typical bankruptcy case. The firm simply decided to use the leverage granted by Bankruptcy Law as a weapon against Pennzoil with a clear objective in mind: reduce a court-imposed damage award of $10.5 billion to its competitor (Delaney, 1998:145). Over the years, other firms have filed strategic bankruptcies to break labor 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), and 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 provided in appendix 2.

Overall, the above paragraphs indicate that firms filing a strategic Chapter 11 are, at their core, very distinct from the typical company seeking protection from the Federal Bankruptcy Court. Hence, strategic and non-strategic bankruptcies are two *a priori* similar negative public events in the sense that they share a common legal format. However, it is clear that strategic and non-strategic bankruptcies have completely distinct underlying motivations. The rest of

this paper tests to what extent the market is able to discriminate between these apparently similar, but actually quite distinct, negative firm-specific bad-news events.

3. Sample selection

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 10/16/2005, and remain listed on the NYSE, AMEX or NASDAQ after their bankruptcy date, and have sufficient data available conduct our analysis.[2] Table 1 summarizes our sample construction strategy, with all phases being 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;[3] 2) the SEC's Electronic Data Gathering, Analysis, and Retrieval system (EDGAR);[4] 3) COMPUSTAT's industrial file; 4) Professor Lynn Lopucki's Bankruptcy Research database;[5] 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.

<div style="text-align:center; border:1px solid; display:inline-block; padding:10px;">Table 1 here</div>

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[2] Only firms filing for bankruptcy between 10/01/1979 and 10/16/2005 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.

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

[4] 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.

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

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 U.S. 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. 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 U.S. (as defined by COMPUSTAT). Penultimately, following prior research, we also remove all 40 financial and utility firms from our final sample.[6] The 10 firms filing for Chapter 7 are then finally excluded in the last step of the screening process.[7] In the end, we identify 351 bankruptcy cases that are suitable to conduct our analysis.

3.2. Separating strategic from non-strategic bankruptcies

Next, we use a modified version of Sheppard's (1995) classification schedule to disentangle strategic from non-strategic Chapter 11s. In particular, 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);

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[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.

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 labor contracts, avoid a lawsuit, reduce/eliminate pension responsibilities);

3. The filing must not be motivated by a clear short-term financial problem.

The key assumption underlying our classification schedule is that firms may file for Chapter 11 bankruptcy for two broadly separate reasons. Managers of severely distressed firms can use Chapter 11 to avoid facing something worse: liquidation. For these managers, reorganization under the protection of bankruptcy law is a way to minimize the likelihood of losing their jobs and, potentially, all shareholder value. Yet, firms that are not in any immediate financial distress may also seek the protection of the Bankruptcy Court. In this case, managers can also use Chapter 11 as a weapon to maximize shareholder wealth at the expense of another group of stakeholders.

We implement a 3-stage process to classify all our sample firms as either strategic or non-strategic bankruptcy cases. 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 and use that information to recreate each bankruptcy story. In particular, we try to identify a specific stakeholder-group against which management files the Chapter 11 and how such action benefits the firm. We then look for signs indicating that the firm is in financial distress. 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", "private debt workout" and "renegotiation of credit line". Our choice of keywords is based on the extant research showing that the likelihood of bankruptcy is directly related with the occurrence of other (negative) public events. For instance, Beneish and Press (1995) find that firms in technical default are more likely to go bankrupt. They also show that the probability of bankruptcy increases after a debt service default. 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.

In the second step, we complement our initial analysis by screening the information available on Bankruptcydata.com. Typically, this database only files news articles published around the bankruptcy date, and thus it is unsuitable for recreating the full bankruptcy story for many of our sample firms. Nevertheless, in most cases, Bankruptcydata.com does record the particular reason that leads to the Chapter 11 filing. By comparing the data available on Factiva and Bankruptcydata.com, we are able to classify each of 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 on Hoover's database does not contradict our initial classification. Appendices 1 and 2 can help illustrate our procedure as they show the typical information we use in our strategic and non-strategic Chapter 11 classification process.

Table 2 presents the distribution of strategic and non-strategic bankruptcies by exchange listing and year. The same table also summarizes the main reasons for filing a strategic Chapter 11. As shown in panel A, we are able to identify 32 strategic bankruptcies in our sample (9% of the total cases), a figure that is consistent with previous studies.[8] Panel A also shows that 17 (53.1%) of these firms trade on the NYSE, 3 (9.4%) trade on the AMEX, and 12 (37.5%) trade on the NASDAQ. Panel A also shows, in contrast, that 92 (28.8%) firms filing a non-strategic Chapter 11 trade on the NYSE, 30 (9.4%) trade on the AMEX, and 197 (61.8%) trade on the NASDAQ.

Table 2 here

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[8] 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 strategic bankruptcies (approximately 35% of his total sample). The second study, by Rose-Green and Dawkins (2002), identifies 245 firms filing for Chapter 11 between 1980 and 1997. A total of 19 firms are classified by the authors as strategic bankruptcy cases (around 8% of the total sample). Importantly, in sharp contrast to our research, neither of these papers requires firms to continue trading after their Chapter 11 filing date.

As can be seen in panel B of table 2, "Resolving large number of lawsuits" is the most frequent reason for a strategic Chapter 11 filing, accounting for 31.3% of cases.[9] Other common reasons for taking this course of action are to "Fight a court imposed award to a competitor" and "Break labor contracts", which combined account for a further 25% of the strategic cases.

Panel C of table 2 shows the distribution of strategic and non-strategic bankruptcies by year. The maximum number of non-strategic (strategic) bankruptcies occurring in any given year is 41 (3), around 12.9% (9.3%) of the total number of cases. In untabulated results, we check for potential problems relating to industry clustering. We do not find any particular cause for concern as our 351 sample firms have 53 different 2-digit SIC codes, which correspond to 168 different 4-digit SIC codes.

4. Strategic and non-strategic bankruptcies: are there any differences?

We start analyzing potential differences between strategic and non-strategic bankruptcies with the help of table 3. Panel A summarizes key accounting variables. As can be seen, the typical firm filing a strategic Chapter 11 is larger than its non-strategic counterpart. Mean (median) total assets for the strategic cases are $2,570m ($191m), whereas for the non-strategic set, mean (median) total assets are $454m ($80m). The t-test (Wilcoxon-Mann-Whitney test) for difference in means (medians) is statistically significant at the 10% level (1% level). Panel A of table 3 also shows that firms filing a strategic bankruptcy are in a better financial position than firms filing a non-strategic bankruptcy: mean and median turnover, and return on assets are higher, and mean and median leverage are lower. In addition, mean (median) z-score for the strategic group is 2.30 (2.19), while its equivalent for the non-strategic set is 1.28 (1.25). The t-test (Wilcoxon-Mann-Whitney test) for difference in mean (median) z-score is significant at the 5% level (5% level). 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 firms. Consequently,

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[9] Asbestos-related cases account for a large majority of these strategic Chapter 11s.

our results suggest that firms filing a strategic Chapter 11 (non-strategic Chapter 11) are not (are) in imminent danger of failure on this basis.

Table 3 here

Panel B of table 3 summarizes some key market-related variables. We find that, in the pre-event period, the typical firm filing for a strategic bankruptcy trades around 243 days (out of 252), increasing to 251 days in the post-announcement period (median number of trading days remains stable around 251 days in these two periods). Accordingly, it seems that the stock of these firms is of interest to a certain clientele, both before and after the bankruptcy announcement date. Results are not very different for the non-strategic cases. Here, the typical firm is traded on an average of 251 days in the pre-event period, and 228 in the post-event period (respective median values are 228, and 244), again suggesting the existence of a specific investor clientele. Table 3, panel B also shows that the mean (median) stock price of the typical strategic bankruptcy is higher than its non-strategic equivalent, a phenomenon that holds in both the pre- and post-event period. Despite these differences, both types of bankruptcy share some characteristics. For instance, the mean 11-month pre-event raw returns do not differ significantly. Furthermore, both sets of firms have a similar book-to-market ratio.

Panel C of table 3 summarizes other relevant information about these two sets of bankrupt firms. The data again suggests that firms filing a strategic bankruptcy are in a better financial position than the other bankrupt firms. For example, almost 40% (50%) of the former have positive earnings (are paying dividends) before the Chapter 11 filing, a figure considerably higher than the 24% (24%) obtained for the latter. Moreover, only 31% of firms filing a strategic Chapter 11 are delisted in the 12-month period after their bankruptcy date, compared with 58% for the non-strategic set.

Table 3, panel D provides descriptive statistics on a number of information uncertainty-related variables. Considering such measures is very important in our context. Jiang et al

(2005), Zhang (2006), and Kumar (2009) establish an important empirical link between the degree of information uncertainty affecting a particular security, and its relative mispricing. As such, we need to explore to what extent information about firms filing both strategic and non-strategic bankruptcies flows equally to the market; marked differences in the information environment surrounding these firms may well explain different market reactions to the two bad news events under analysis.

As can be seen, in the pre-event period, we are unable to find a clear difference in the information environment surrounding our two types of firms. For instance, firms filing a strategic Chapter 11 are larger than their non-strategic counterparts with mean (median) market capitalization one month before the bankruptcy filing date of $501m ($86m) compared with $126m ($31m). In principle, this would mean that firms filing the former type of bankruptcy are less exposed to information uncertainty problems since the level of firm-specific information tends to increase, *ceteris paribus*, with firm size (e.g., Jiang et al, 2005; Zhang, 2006, Kumar, 2009). However, earnings volatility is significantly greater for firms filing a strategic bankruptcy; as such, these firms should, everything else being equal, be exposed to more information uncertainty (Kumar, 2009). On the other hand, firm age does not differ, nor does trading volume at the 5% level. Also, we are not able to find any statistically significant differences in subgroup means for cash flow volatility, idiosyncratic share price volatility, and media coverage, although medians do differ at conventional levels demonstrating the skewed distribution of these variables. Nonetheless, our data does unambiguously show that in the pre-event period, firms filing a strategic bankruptcy have significantly higher analyst coverage, and institutional ownership, and significantly lower trading costs.

Results for the post-event period are much clearer. Analysts, and median media coverage are significantly higher for the strategic set, while idiosyncratic volatility is significantly lower. Also, again, we find that transaction costs are smaller for firms filing a strategic Chapter 11. Moreover, in untabulated results, we find that 189 firms (59.2% of the total) filing a non-strategic Chapter 11 are not covered by a single analyst post-event. The corresponding number for firms filing a strategic bankruptcy is significantly lower: 11 (34.3% of total). We also find

that, after filing for bankruptcy, 105 of firms (33.3% of total) filing a non-strategic Chapter 11 stop reporting their quarterly accounts with the SEC. Only one firm filing a strategic Chapter 11 similarly does so. In short, our analysis clearly indicates that, in the post-bankruptcy period, the level of information uncertainty is appreciably higher for firms filing a conventional Chapter 11.

5. Can the market tell the difference between strategic and non-strategic Chapter 11s?

The previous section suggests the existence of some marked differences between firms filing a strategic and a non-strategic Chapter 11. In this section we adopt an event-study approach to investigate to what extent such differences are priced appropriately by the stock market.

5.1 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 (Morse and Shaw, 1988). Second, firms usually start emerging from bankruptcy 15 months after their Chapter 11 filing date (Kalay, Singhal and Tashjian, 2007), and thus ending the abnormal return calculation period three months before minimizes the impact of this important event on our results.[10] Buy-and-hold abnormal returns are computed as follows:

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

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

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 $E(r_{i,t})$ is the expected return for firm i at time t. Individual BHARs are averaged cross-sectionaly as follows (Barber and Lyon, 1997):

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

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; 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, Geczy and Gompers, 2000; Kadiyala and Rau, 2004).

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 informative studies of announcement effects. We define a year as twelve 21-trading day intervals, an approach consistent with previous research (Michaely, Thaler and Womack, 1995). 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, Bhattacharya and Bamber, 2007).

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[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.

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. Barber and Lyon (1997), and Lyon, Barber and Tsai (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 (2009) emphasize that this is a crucial issue when dealing with highly distressed firms, and show that considering a zero abnormal return in the post-delisting period is a reasonable way to deal with it. We draw directly on their empirical findings and assume that, in the post-delisting period, sample firms earn a zero abnormal return.[13]

5.2 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 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; Kausar et al, 2009). First, for each sample firm, market capitalization is measured one month before the bankruptcy filing date.[14] 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

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[12] Performance issues explain 94% of these delisting cases (CRSP delisting codes 500 to 599).

[13] 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.

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

year (Fama and French, 1992), and allow a 3-month lag to measure the market value of equity.[15] 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).

5.3 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 of the buy-and-hold abnormal returns to form an estimator of their variance, which allows it to change after the event (Boehmer, Musumeci and Poulsen, 1991). This is appropriate since previous research by Aharony, Jones and Swary (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), which is usually more pronounced in the case of smaller firms (Ball, Kothari and Shanken, 1995). Drawing on Kraft, Leone and Wasley, (2006), we report mean BHARs that are winsorized at the 1 and 99 percent levels to reduce the impact of extreme outliers in our

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

analysis. Importantly, Kausar et al (2009) 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), and is especially important in the context of our research since a relatively large number of our bankrupt firms 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 (2009) 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 poses for *ex ante* trading strategies. Accordingly, median returns are only used for robustness test purposes.

As mentioned in section 5.1, we compute abnormal returns for strategic and non-strategic bankruptcies separately. We use t-tests (Wilcoxon-Mann-Whitney tests) to investigate if there is a difference in mean (median) performance of the two sub-samples.

5.4 Main results

Table 4 summarizes our main results. Panel A shows that in the pre-event period, and for both sub-samples, mean and median BHARs are negative, and statistically significant at better than the 1% level. In particular, for the 12-month pre-event window mean (median) BHARs for the non-strategic Chapter 11s, and strategic Chapter 11s are -52% (-44%), and -55% (-44%) respectively, and -44% (-42%), and -41% (-40%) for the 6-month pre-announcement period.

Moreover, panel A of table 4 shows that both the t-test and the Wilcoxon-Mann-Withney test for differences in the mean and median performance of the sets of firms under analysis are not significant even at the 10% level. This suggests that, in the pre-event period, the market does not differentiate between strategic and non-strategic bankruptcies, revising down its expectation about the future prospects of both types of firm equally. These findings are not consistent with those of Rose-Green and Dawkins (2002), who report statistically stronger negative abnormal returns for their set of non-strategic Chapter 11s over the one year pre-event period.[16] This difference in results may be accounted for considering that: 1) Rose-Green and Dawkins (2002) compute cumulative abnormal returns (CARs) instead of BHARs, a method that is no longer standard when conducting longer-term event studies (e.g., Barber and Lyon, 1997; Kothari and Warner, 2007); 2) this earlier study uses market-adjusted returns, an approach that is highly problematic when dealing with longer-term event studies (e.g., Barber and Lyon, 1997), and 3) Rose-Green and Dawkins (2002) use *New Generation Research Inc.*, a standardized database, to identify their strategic bankruptcy cases, whereas we use a rigorous manual inspection process to achieve the same objective.

Panel B of table 4 shows a strong and negative reaction to both strategic and non-strategic Chapter 11 announcements. In particular, for the strategic set, the mean (median) market reaction in the (-1,+1) window 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). Differences in portfolio mean and median abnormal performance are not significant at conventional levels, a result consistent with that reported by Rose-Green and Dawkins (2002). Hence, announcing a strategically or non-strategically motivated Chapter 11 appears to be perceived equally by the market as an extreme firm-specific bad news event.

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

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[16] For a (-251,-2) window, the mean CAR for Rose-Green and Dawkins's (2002) strategic set is -62.9%, significant at a 1% level, and the mean CAR for their non-strategic (financial) sample is -94.5%, significant at a 1% level. Difference in means (medians) is statistically significant at the 5% (5%) level.

market response to Chapter 11 filings conditional on the event's core 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, the differences in mean (median) returns for the two sub-samples are all significant, irrespective of the post-event windows we consider.

Table 4 here

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-sample.[17] In line with table 4, figure 1 shows an asymmetric market reaction to bankruptcy conditional on the underlying 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

5.5 Robustness tests

As emphasized in the recent survey paper by Kothari and Warner (2007), there is still much debate surrounding the appropriate measurement of longer-term abnormal returns. A casual examination of the extant literature employing longer-term event studies suggests that the best

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[17] Monthly returns are calculated following Kausar et al (2009). 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.

approach to check the soundness of a given result is testing its robustness using a combination of alternative methods (e.g., 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.[18]

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). 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.[19] We then compare post-event 12-month bankrupt and control firm returns.

We find that our main results are unaffected. For non-strategic Chapter 11 firms, mean post-event 12-month (6-month) BHARs are -30% (-22%), and median 12-month (6-month) BHARs -36% (-23%), all significant at better than the 1% (1%) level. For the strategic Chapter 11 cases, equivalent mean 12-month (6-month) BHARs are 23% (p=0.36) (39%; p<0.05), and 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 sets of firms is significant at the 5% (1%) level, and the 12-month (6-month) median difference at the 1% (1%) level. As such, we cannot explain our results in terms of prior return continuation.

Panel A of table 3 shows that mean (median) z-score for our non-strategic Chapter 11 firms is 1.28 (1.25), and for our strategic Chapter 11s 2.30 (2.19), where z< 1.81 indicates firms

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[18] We do not attempt to run a calendar time approach as suggested by Fama (1998) because we have only 32 firms filing a strategic bankruptcy. As such, results would not be statistically meaningful.

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

$$Mom_i = \frac{1}{12} \sum_{t=-12}^{-1} R_{i,t}$$, 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.

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 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 non-strategic Chapter 11 firms, mean post-event 12-month (6-month) BHARs are now -39% (-21%), with median 12-month (6-month) BHARs -40% (-23%), all significant at better than the 1% (1%) level. In the case of strategic Chapter 11 firms, equivalent mean 12-month (6-month) BHARS are 23% (p=0.25) (39%; p<0.01), with median 12-month (6-month) BHARS 21% (p=0.37) (40%; p<0.01). All the 12-month, and 6-month, mean and median differences in performance between the two sets of firms remain significant at the 1% level suggesting our results are not driven by different levels of *ex ante* bankruptcy risk.

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., 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). 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.[20] Finally, the firm with closest book-to-market ratio to that of the sample firm is chosen as the 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). As all differences remain significant at the 1% level, our original results are not an industry-specific phenomenon.

6. Discussion of results

This paper explores how the stock market reacts to two apparently similar bad news events with markedly distinct underlying motivations: filing a strategic and a non-strategic Chapter 11. Our tests show that the market does not differentiate between the two before the event date. One explanation for our findings resides on Tversky and Kahneman's (1974) representativeness bias. People suffering from this behavioral bias tend to judge the probability of an event by finding a 'comparable known' event and assuming that the probabilities will be similar. In our context, this would mean that, in the pre-bankruptcy period, the market recognizes strategic and non-strategic Chapter11s as different parts of the same stereotype, i.e., that of future "loser firm" whose existence as viable going-concerns is at stake. Recall that firms filing a non-strategic Chapter 11 are facing complete financial collapse, a situation that usually develops over several months/years. Hence, the mounting uncertainty about such firms' future prospects explains why investors may treat them as "loser firms" even before the actual filing. In contrast, firms filing a strategic bankruptcy are financially and economically viable, at least in the short-run. However, even these firms have to deal with increased uncertainty, which, in their case, is driven by the unknown impact on shareholder value of the onerous

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[20] 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.

liability that is ultimately resolved by filing the strategic Chapter 11. This helps clarify why firms entering into a strategic bankruptcy may also be perceived by the market as a "loser firm" in the pre-event period.

The more interesting findings, however, arise when we examine what happens after the formal announcement of bankruptcy. We document a continuous drop (rise) in the risk-adjusted stock price of firms filing a non-strategic (strategic) Chapter 11, which lasts at least for a full year (six-month period) after the event date. Such asymmetric post-event stock return pattern has two main implications. First, it indicates that the market values *differently* the two types of bankruptcy we consider: strategic bankruptcies are perceived as good news while non-strategic Chapter 11s are viewed as bad news. Second, it shows that the market *underreacts* in the case of "negative" bad news events (i.e., prices do not decline as much at the event-date as it would be required by the efficient market hypothesis) and that it actually *overreacts* in the case of "positive" bad news events (i.e., prices plummet too much in the event-period as compared to what the EMH would predict).

Our analysis offers some clues in how to understand our novel and puzzling post-bankruptcy results. In fact, there is evidence that the information and trading environment is of critical importance in this context. Section 4 shows that information becomes very scarce for companies filing a non-strategic Chapter 11: many of them are delisted from the main exchanges, analysts and popular newspapers cease covering such firms and many of them stop filing their financial statements with the SEC. In addition, panel D of table 3 shows that institutional investors hold, at best, a very marginal percentage of these firms' stock. Hence, post-event, retail investors are likely to be the key stockholders and traders of firms filing a non-strategic Chapter 11. Such market participants are allegedly more prone to behavioral biases and less capable to make rational investment decisions. In addition, the sharp increase in the costs that investors have to face when trading the stock of firms filing a non-strategic Chapter 11 suggests that sophisticated arbitrageurs are likely to be absent from this market. By combining all of these factors, we can explain why the market price of firms filing a non-strategic bankruptcy does not converge to its fundamental value even in the longer-run.

In sharp contrast, firms filing a strategic Chapter 11 enjoy a relatively more favorable information and trading environment: analysts and media actively report on these firms, and stock exchanges seem to allow them to remain listed. In addition, institutional investors continue to hold these firms' stock while the trading costs do not increase dramatic after the bankruptcy announcement. Consequently, information about firms filing a strategic Chapter 11 is likely to be more abundant and flow more promptly across market participants. In addition, at least some of these firms' investors are sophisticated, which puts them in a position to correctly estimate the impact of the bankruptcy filing on firm value. Moreover, smart investors are probably more active in the case of these firms for two main reasons: 1) trading cost are relatively lower than for firms filing a non-strategic bankruptcy, 2) an arbitrage strategy is much easier to implement in the case of firms filing a strategic bankruptcy as it simply entails buying the cheap stock of such firms and wait for the price to increase. Taken together, all these characteristics help explain why, post-event, we observe a reversal in the stock return pattern of firms filing a strategic Chapter 11.

7. Conclusion

We explore how the market reacts to two apparently similar bad news events with completely distinct underlying motivations: filing strategic and non-strategic Chapter 11s. Solvent firms addressing the Bankruptcy Court as a planned business strategy characterize the first type of bankruptcy; companies on the verge of imminent financial collapse typify a non-strategic bankruptcy. We show that the market does not differentiate between these two types of Chapter 11 before, and at, the event date. In particular, prices drop by around half in risk-adjusted terms during the one-year pre-event window, and by a further 25% around the event-date for both sets of firms. On the other hand, we find that the market's reaction to these two bad news events is contingent on the nature of the filing. 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. Conversely, we find that filing a strategic Chapter 11

prompts a reversal in the stock return pattern – post-event abnormal returns are positive and significant, a phenomenon that lasts at least for the following six months

Our findings thus suggest that the market *underreacts* to the announcement of non-strategic bankruptcies, while it *overreacts* to the announcement of strategic bankruptcies. This is clearly inconsistent with the EMH as traditionally expressed, but seems to be explained by a combination of behavioral biases, information uncertainty and trading environment arguments.

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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

Distribution of strategic and non-strategic bankruptcies by exchange listing, year and

reason for filing for a strategic bankruptcy

This table presents the distribution of strategic and non-strategic bankruptcies by exchange listing and year. It also summarizes the key reasons for filing a strategic bankruptcy. In the panels below, 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-term financial problem. All remaining firms are allocated to the non-strategic set.

Panel A: Exchange listings for strategic and non-strategic bankruptcies

Type of bankruptcy	NYSE	AMEX	NASDAQ	% of Total
Non-strategic	92	30	197	90.9%
Strategic	17	3	12	9.1%
Total	109	33	209	-

Panel B: Reasons for filing a strategic bankruptcy

Reason for filing	Number	% of total
Break contract with a key supplier	1	3.1%
Break labour contract	4	12.5%
Enforce contract with a key costumer	2	6.3%
Fight a court imposed award to a competitor	4	12.5%
Resolve massive number of lawsuits	10	31.3%
Resolve merger problem	3	9.4%
Shirk paying unprofitable leases	2	6.3%
Solve a lawsuit forced by a key shareholder	1	3.1%
Solve mortage contract	1	3.1%
Solve Pension fund problems	3	9.4%
Stop the cancelation of a contract	1	3.1%

Panel C: Type of bankruptcy by year

Year	Non-strategic	Strategic	Total
1979	0	0	0
1980	2	0	2
1981	4	0	4
1982	7	2	9
1983	3	2	5
1984	6	0	6
1985	14	2	16
1986	12	3	15
1987	10	1	11
1988	14	0	14
1989	24	3	27
1990	41	3	44
1991	38	2	40
1992	20	1	21
1993	17	1	18
1994	19	0	19
1995	17	1	18
1996	18	2	20
1997	15	0	15
1998	11	1	12
1999	3	0	3
2000	2	2	4
2001	6	3	9
2002	8	1	9
2003	4	1	5
2004	1	1	2
2005	3	0	3
% Total Sample	90.9%	9.1%	100.0%

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. In the panels below, 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-term financial problem. All remaining firms are allocated to the non-strategic portfolio (n=319). Panel A reports fundamental accounting information, and Panel B market related variables. Panel C presents other relevant firm characteristics. Panel D summarizes information-uncertainty related variables.. The p-value column of panels A, B, and D indicate 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
TA	454.4	79.6	2,562.9	190.5	-2,108.5	0.0710	-110.8	<0.0001
CUR	154%	109%	310%	320%	-156%	0.0383	-211%	0.0286
LEV	45%	40%	39%	38%	7%	0.1151	2%	0.5321
SALES	423.1	92.4	2,324.1	356.2	-1,901.0	0.0682	-263.8	<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	0.0381	-0.94	0.0475

Variable definition:

TA   - total assets in millions of dollars
CUR   - current ratio (current assets/current liabilities)
LEV   - leverage (total debt/total assets)
SALES - turnover in millions of dollars
ROA   - return on assets (net income/total assets)
Z-Score - bankruptcy-risk proxy (Altman, 1968)

Note: 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
PRE TDAYS	251	252	242	251	9	0.0579	1	0.9070
POS TDAYS	228	244	251	252	-23	0.0074	-8	0.0176
PRE PRICE	4.59	2.82	8.69	6.38	-4.10	0.0064	-3.56	0.0020
POS PRICE	2.53	0.61	7.54	2.76	-5.01	0.0358	-2.15	<0.0001
B/M	4.1	2.4	5.0	1.8	-0.9	0.5662	0.6	0.5514
MOM	-0.06	-0.07	-0.05	-0.05	-0.01	0.4174	-0.02	0.3945

Variable definition:

Pre Tdays - number of days on which trading takes place in the calendar year preceding the bankruptcy announcement month

Pos Tdays - number of days on which trading takes place in the calendar year following the bankruptcy announcement month

Pre Price - daily average stock price measured for the 12-month pre-bankruptcy period (in dollars)

Pos Price - daily average stock price measured in the 12-month post-bankruptcy period (in dollars)

B/M - book-to-market ratio

Mom - 12-month (-12,-1) pre-event average monthly raw returns

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

Variable definition:

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)

Note: Where applicable, 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 D: Information-uncertainty related variables

	Non-strategic (A)		Strategic (B)		Difference (A-B)			
	Mean	Median	Mean	Median	Mean	p-value	Median	p-value
AGE	8.8	7.0	10.0	8.5	-1.3	0.3101	-1.5	0.3169
SIZE	125.8	31.0	501.1	84.0	-375.3	<0.0001	-53.0	0.0061
EARVOL	0.90	0.43	1.93	0.96	-1.03	0.0310	-0.53	0.0012
CFVOL	268.3	1.00	157.2	2.5	111.05	0.6512	-1.49	0.0571
PRE IDVOL	74.9%	69.2%	81.2%	46.6%	-6.3%	0.8004	22.6%	0.0058
POS ID VOL	133.1%	102.9%	65.6%	54.1%	67.5%	<0.0001	48.8%	<0.0001
PRE VOL	10.7%	9.8%	13.2%	13.2%	-2.5%	0.0766	-3.4%	0.1282
POS VOL	8.3%	7.2%	9.4%	8.8%	-1.1%	0.5307	-1.6%	0.6966
PRE TC	11.6%	9.6%	7.7%	6.1%	3.9%	0.0026	3.5%	0.0019
POS TC	14.9%	17.4%	10.3%	9.4%	4.6%	0.0003	8.0%	<0.0001
PRE ANAL	2.9	1.0	8.8	5.0	-5.9	0.0081	-4.0	0.0006
POS ANAL	1.5	0.0	5.8	3.0	-4.3	0.0230	-3.0	0.0001
PRE NEWS	177.9	46.00	195.9	112.0	-18.0	0.8225	-66.0	0.0044
POS NEWS	88.8	25.00	166.0	90.0	-77.2	0.2010	-65.0	0.0005
PRE INST	14.3%	9.0%	27.2%	22.6%	-12.9%	0.0032	-13.6%	0.0024
POS INST	7.5%	4.0%	15.2%	10.3%	-7.8%	0.0044	-6.3%	0.0007

Variable definition:

Age - Number of years since the stock first appeared in the CRSP database

Size - market capitalization (price times shares outstanding) one month before the bankruptcy filing date in millions of dollars

Earvol - Earnings volatility, measured as the standard deviation of the realized earnings over the previous 20 pre-bankruptcy quarters

Cfvol - Cash-flow volatility, measured as the standard deviation of cash-flow from operations over the previous 20 pre-bankruptcy quarters,

PreIdvol - pre-event idiosyncratic return volatility, measured as the variance of the residual obtained by fitting a four-factor model to the stock returns time-series. The idiosyncratic volatility for each stock is estimated using data for the one-year pre-bankruptcy period

PosIdvol - pos-event idiosyncratic return volatility, measured as the variance of the residual obtained by fitting a four-factor model to the stock returns time-series. The idiosyncratic volatility for each stock is estimated using data for the one-year post-bankruptcy period

Pre Vol - average monthly trading volume measured over the 6-month pre-bankruptcy period preceding

Pos Vol - average monthly trading volume measured over the 6-month post-bankruptcy period

Pre Tc - trading cost estimate, measured using the Lesmond, Ogden and Trzcinka (1999) LDV for the 12-month pre-event period

Pos Tc   - trading cost estimate, measured using the Lesmond et al (1999) LDV for the 12-month post-event period

Pre Anal   - analyst coverage, defined as the average number of analysts each month covering the stock during the last 12 pre-bankruptcy months

Pos Anal   - analyst coverage, defined as the average number of analysts each month covering the stock during the first 12 post-bankruptcy months

Pre News   - media coverage proxy, defined as the average number of news items per month reported on Factiva for the last 12 pre-bankruptcy months

Pos News   - media coverage proxy, defined as the average number of news items per month reported on Factiva for the first 12 post-bankruptcy months

Pre Inst   - institutional ownership proxy measured as average monthly institutional stockholding on the Thomson Institutional 13f file for the most recent 12 pre-bankruptcy months,

Pos Inst   - institutional ownership proxy measured as average monthly institutional stockholding on the Thomson Institutional 13f file for the first 12 post-bankruptcy months

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. In the panels below, 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-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 announcement date. A control firm approach based on size and book-to-market is used to estimate the abnormal returns. Specifically, for each sample firm (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

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 25-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-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.
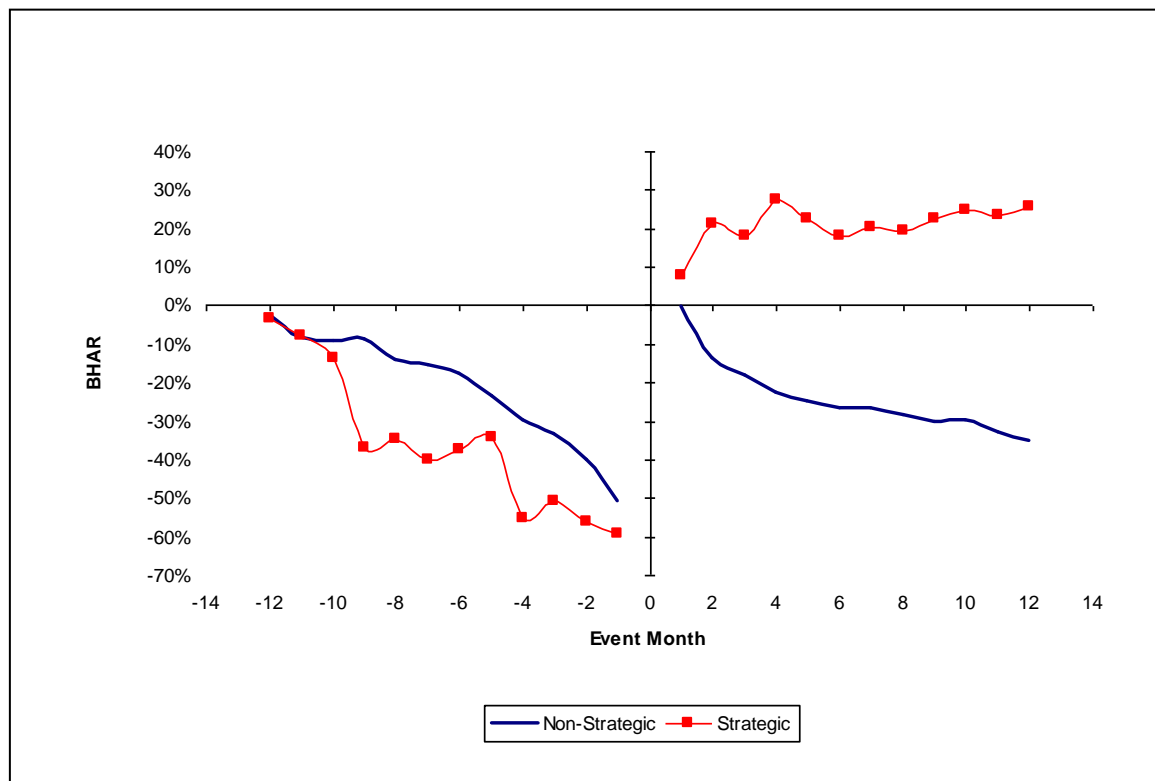
Appendix 1

Manhattan Bagel Company: an example of 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 effects of the Chapter 11 proceedings were devastating for Manhattan Bagel Company's shareholders:

- One year before the event date, the company's market value was $50m

- At the end of the Chapter 11 filing day, its market value was $7m

- One year later, its market value was to $1m

- The company's shareholders lost 98% of their value in the two-year period centred on the bankruptcy announcement date

At the time of the bankruptcy filing, Manhattan Bagel Company management wrote a letter to their franchisees stating: *"We are convinced Manhattan Bagel Co. has a viable core*

business. 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".

In effect, the firm was able to successfully emerge from bankruptcy after spending two years in Chapter 11 reorganization. However, to date, its shares do not trade publicly.

Appendix 2

Federal-Mogul Corp.: an example of strategic bankruptcy case

Founded in 1899 and incorporated in Michigan in 1924, Federal-Mogul Corp. provided 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).