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VALUE RELEVANCE OF TROUBLED DEBT RESTRUCTURINGS AND POLICY IMPLICATIONS

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This paper investigates the beneficial economic consequences and market and accounting based valuation effects of troubled debt restructurings (TDRs) in financially distressed debtor firms. Relying on the implications of prior research and extant valuation theories, some empirical evidence on the beneficial outcomes and informativeness of TDR is first provided: significantly positive restructuring interval excess returns and higher excess returns to subsequently consummated restructurings and subsequent survivors. The market reaction to "full-settlement" and "modification of terms" types of TDR are also measured to evaluate the consistency of the FASB's binary classification and recognition criteria with the market participants' assessments. Finally, a valuation model conditional on book values and earnings is used to test the value relevance of the reported financial statement bottom lines and TDR related disclosure. The findings suggest that modifications are at least as beneficial and informative as full settlements. Hence, the recognition of the reduction in the liability and the related gain in the financial statements of firms that undertake modifications would be more congruent with the valuation effects assessed by market participants.

Keywords: Private workouts; financial distress; debt restructuring; valuation; capital markets; SFAS No. 15.

1. Introduction

The Asian and the Russian economic crises followed by indications of a global slump as evidenced by the Enron, Tyco, Swissair, Sabena insolvencies on each side of the Atlantic have led to a debate on how to handle such failures: whether to bail them out by restructuring their debt or let them fail, as a lesson to over-zealous investors.[1] Such troubled debt restructurings (TDRs) have been acknowledged as viable, less costly alternatives to legal Chapter 11 reorganizations (see, e.g., Brown *et al.*, 1993; Di Napoli *et al.*, 1991; Franks and Torous, 1994; Gilson *et al.*, 1990; Hamer, 1985). Furthermore, firms that announce their TDR intentions have different financial profiles than similar non-TDR firms (Aksu, 1994) and firms that have successfully consummated their restructurings exhibit different financial characteristics than bankrupt firms and unsuccessful TDR firms (Gilson *et al.*, 1990; Hamer, 1985). Finally, prior market-based research has found that they exhibit different return patterns around the announcement of their TDR attempts (see, e.g. Aksu, 2001; Gilson *et al.*, 1990). These findings imply that different stages and remedies for financial distress might have different valuation effects.

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[1]See "Handle with care," *The Economist*, 3–9 October 1998 and "Fixing failed firms should be based on economics, not revenge," *The Economist*, 15 December 2001.

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In this setting, this paper examines whether: (1) a TDR is economically beneficial to debtor firms from the point of view of several valuation theories; (2) TDR related information releases and outcomes have information content; and (3) the Financial Accounting Standards Board's (FASB) assessment of the value relevance of a TDR is congruent with that of the market participants. Hence, this is an interdisciplinary study which first presents some theoretical and empirical evidence on the informativeness and beneficial economic consequences of TDR and then attempts to link these financial economics results to accounting policy issues related to the reporting of a debt restructuring transaction in the debtor's financial statements (F/S).

SFAS No. 15, *Accounting by Debtors and Creditors for Troubled Debt Restructurings* (FASB, 1977), defines TDR as a concession given by creditors to financially distressed debtors in the form of a (1) "modification" of the terms of the loan such as a reduction in accrued interest, principal, nominal interest rate, or an extension of the maturity date, all of which reduce the present value (PV) of the outstanding debt; (2) "full settlement" of the loan through an exchange of assets or equity interest with a lower fair market value than the carrying value of the outstanding debt; (3) a combination of (1) and (2). It encompasses the restructuring of both private and public debt. In all three types of TDR, PV of cash outflows are improved, debt that has reached suboptimal levels is reduced, and an economic gain is involved, all of which should improve the riskiness and financial flexibility of the borrower, and hence reduce its probability of bankruptcy [see Hamer (1985) and Beneish and Press (1995) for some preliminary evidence]. While these beneficial outcomes are recognized in the F/S in full settlements, they are not recognized in most modification-type TDRs in accordance with SFAS No. 15 (1977).

The economics of the TDR transaction, the conceptual framework of the FASB, time value of money and opportunity cost concepts, subsequent FASB promulgations that require the use of present value (PV) methods and fair values, and the PV-based measurements project added to the Board's agenda on October 1998, suggest that the debt should be written down to its post-restructuring PV and the related gain recognized in the books in all types of TDR. Although the promulgation of the SFAS No. 114 has changed the lenders' accounting for "modifications" in 1993 in accordance with the new PV rules for impaired loans, debtors' accounting is still covered by the long criticized SFAS No. 15. This inconsistency and theoretical flaw in the SFAS No.15, the research on recognition versus disclosure issues (see, e.g. Bernard and Schipper, 1994; Imhoff *et al.*, 1995; Johnson, 1992), the recent preoccupation of researchers, the SEC, and the FASB with "quality" accounting standards (Levitt, 1998), and the user focus to standard setting (Gregory and Young, 1998) motivate the policy issues discussed here.

In this study, several firm valuation theories are first invoked to form testable predictions about the beneficial consequences of the announcement and consummation of a TDR. Second, the market reaction results of the few prior studies on TDR (sub)samples are reviewed to assess the information content and net benefits of private workouts. I also provide new evidence on excess returns over the extensive restructuring interval to uncover a possible underreaction due to the uncertainty inherent in TDR announcements. The market response conditional upon subsequent consummation and survival is also measured to further examine the net benefits of a TDR and test the ability of the market to predict the success of a TDR attempt. Third, the market reaction to announcements of recognized "full-settlements" and "modifications" that mostly go unrecognized is compared, for the first time in the literature, to evaluate the consistency of the FASB's binary classification and recognition criteria with the market participants' assessments. Finally, an accounting valuation model based on Ohlson (1995) is used, for the first time on a sample of TDR firms, to test the value relevance of net income (NI) versus book value of equity

(BE) and their "recognized restructuring gain" and "disclosed amount of restructured debt" components.

The theoretical and empirical evidence presented suggests that private workouts have beneficial consequences for debtors. The valuation theories considered predict an increase in shareholder wealth as a result of the announcement and/or consummation of a TDR. The findings of this and prior studies confirm that, on average, positive announcement and post-announcement excess returns accrue to the shareholders, especially if the restructuring is consummated and the firm survives in the long run. I further find that the positive abnormal returns to modification type restructurings are at least as strong as those of full settlements. Finally, although the value relevance of reported bottom lines improve over the restructuring interval, book values are consistently capitalized more than reported NI — a result consistent with prior research on value relevance of accounting bottom lines in loss firms (see, e.g. Barth *et al.*, 1998; Collins *et al.*, 1997, 1999; Hayn, 1995). Moreover, the coefficient estimate for the recognized restructuring gain is insignificant while that of the disclosed $ amount of restructured debt seems to be capitalized. Overall, the results indicate that the market participants' and the FASB's assessment of the value relevance of the two types of TDR are not congruent.

The next section discusses the predictions of extant valuation models, presents a critique of the SFAS No. 15, and motivates the study. In Section 3, the data requirements and the sample characteristics are described. Section 4 reviews prior market based evidence and presents new evidence that positive excess returns continue after the announcement, and higher excess returns accrue to consummated restructurings and to subsequent survivors. Finally, market reaction tests reveal evidence on the informativeness of both modifications and full settlements. In Section 5, an EBO model is employed to test the association of the reported income and book values with market values of the TDR firms. The last section summarizes the study and discusses its policy implications.

2. Theoretical Underpinnings and the Motivation

2.1. *Valuation theories and the hypotheses*

Extant valuation theories may be invoked to predict the valuation effects of a TDR. Prior research has only used the option-pricing model to predict the effect of a TDR on the value of equity (Aksu, 2001). Using a comparative statics analysis, the paper notes that common types of restructurings, such as exchange of debt with equity, debt forgiveness, extension of maturity dates, and reduction in coupon rate will increase the value of equity at the expense of lenders. This is consistent with the observed deviations from absolute priority rule in favor of equity, observed in both informal and legal restructurings (see, e.g. Eraslan, 2002; Franks and Torous, 1994). In this paper, the effect of a TDR on the variables of financial valuation models based on cash flows, earnings, and leverage are discussed since the consummation of a TDR is expected to have a direct effect on these fundamental variables.

The optimal financial leverage model posits that the unique optimal level of leverage is reached when the marginal decrease in firm value due to increased risk of bankruptcy just offsets the tax advantage of deductibility of interest. Accordingly, if a TDR firm's leverage is above (below) the optimum level, TDR will increase (decrease) firm value. Since TDR firms are heavily in debt, their probability of bankruptcy must already be quite high. At such high levels of debt, the probability of a firm's survival also decreases, making the realization of tax savings uncertain. Since a TDR reduces the PV of debt, it is expected to improve the liquidity/solvency ratios, reduce the probability of and enhance firm value.

Another uncontested theory of finance explains equity value in terms of the PV of future dividends, often proxied by expected future cash flows or earnings. If an event has implications for future cash flows to the firm, the investors will revise their expectations upon its announcement, leading to a change in security prices. In debt restructurings, *ceteris paribus*, there is a

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reduction in the PV of the future cash payments necessary to retire the debt and a concomitant gain, which are expected to favorably affect the investors' assessments of the amount, timing, and uncertainty of the returns to them. The capital market's expectation as to the content and timing of the announcement also affects prices. The larger the extent of uncertainty, the greater is the revision in prices. Indeed, one would expect TDR to be an unexpected event and it must be hard for the market participants to predict the probability of its initiation and success. First, there are no successful TDR prediction models as there are for bankruptcies, mergers, or earnings. Second, apart from voluntary news releases by the debtor or creditor, there are no disclosure requirements until the transaction is consummated. Furthermore, insider information/trading is less likely, since the consent of creditors is also essential for the initiation and consummation of the TDR, its type, and amount. Accordingly, a positive market response to a TDR announcement is *hypothesized* here due to: (1) the perceived cash-flow revaluation implications of its benefits in excess of its costs; and (2) the surprise nature of the announcement causing an unpredicted favorable change in expectations after the prolonged period of financial distress.

In an efficient market, these expected future benefits should be fully and unbiasedly impounded in prices upon the initial TDR announcement. Hence, it is expected that there will not be any post-announcement drift and the announcement excess returns would be higher for restructuring attempts that are consummated and successful in saving the firm. However, due to the aforementioned inherent uncertainty involved in estimating the timing and content of the announcement and the probability of consummation and survival, I expect an under- or overreaction in prices. Furthermore, the negotiations involve an extensive period of time during which the market may respond to new announcements and events engendered by the restructuring process, such as increased monitoring, value increasing spin-offs or lay-offs, or other revitalizing effects of financial distress. Hence, excess returns are *hypothesized* in the

post-announcement window as well, especially for subsequently consummated and successful restructurings.

Assuming the clean surplus relation, Ohlson (1991, 1995) and Ohlson and Feltham (1995) replace the future dividends in the basic valuation model and model firm value as a function of current book value, PV of expected excess earnings over and above what the firm would normally earn on its current book value, and other orthogonal value-relevant nonaccounting information. In this formulation, one may consider TDR as a value-relevant financial event that is to impact the F/S and hence price through future abnormal earnings. In an empirical application, Ohlson and Penman (1992) use disaggregated income statement and balance sheet data as explanatory variables to explain returns. As expected, they consistently find that the regressor expenses, liabilities, and preferred stock have significant negative while assets and gains, including other and extraordinary gains, have positive coefficient estimates. Accordingly, I *hypothesize* that the recognized restructuring gain and the reduction in the liability should have a positive effect on firm value. Furthermore, to the extent these effects are not fully and unbiasedly recognized in a timely fashion in the F/S, a reduction in the value relevance of the F/S bottom-lines is *hypothesized*.

2.2.   *A critique of SFAS No. 15 and link to the value-relevance hypotheses*

SFAS No. 15 was promulgated immediately after the recession of 1974–1975. The Board's 1976 Discussion Memorandum led to considerable lobbying activity, and panic in the banking industry. It was feared that the suggested use of PV or fair values to value the restructured debt could distort the earnings of banks and the way they extend credit. Finally, in 1977, as a result of lobbying by financial institutions, the Board issued a much softer statement and this standard became one of the classic examples of the political nature of accounting standard setting in the United States SFAS No. 15, which governed both

the debtors' and creditors' accounting for TDR, was flawed in terms of the recognition and measurement of the debtors' (creditors') gain (loss) in modification type TDR. Since SFAS No. 114 corrected the creditors' accounting in 1993, we consider only the debtors' side in this paper. According to SFAS No. 15, in full-settlements of the troubled debt at less than the carrying amount, the difference between the fair value of assets transferred or equity granted to the creditor and the pre-restructuring carrying value of the payable is appropriately recorded as a gain on restructuring and the debt is reduced to its post-restructuring PV or fair value. However, when the terms of a loan are modified, the debtor recognizes a restructuring gain and reduces the payable only if its current carrying value is higher than the total, *undiscounted* cash payments under the new terms. Due to this benchmark that ignores time value of money and opportunity cost concepts, most debtors do not recognize a restructuring gain (Beresford and Neary, 1977).

In a 1998 commentary, Arthur Levitt of the SEC emphasized the importance of "high quality" accounting standards in building investor confidence and lowering the cost of capital. All comments to his plea, by preparers, academicians, practitioners, and standard setters mention (1) consistency with the FASB's Conceptual Framework, other standards, and academic research findings; (2) ability to depict the economic substance of a transaction; (3) application of concept based standards; (4) greater user relevance; and (5) furthering international harmonization, as the most important attributes of high quality accounting standards. SFAS No. 15 violates most of these desirable attributes. First of all, SFAS No. 15 is inconsistent with prior statements such as APB Opinion No. 21 (1971) on *interest imputation on non-interest bearing notes*, APB Opinion No. 26 (1972) and SFAS No. 4 (1975), on *early extinguishment of debt*, all of which advocate reporting and extinguishing long-term liabilities at their PVs or fair values. The statement is also inconsistent with subsequent pronouncements such as SFAS No. 76 (1983) on *in-substance defeasance of debt*, and,

more significantly, SFAS No. 114 (1993), which corrected the creditors' accounting for *impairment of loans* following the collapse of the savings and loans industry. The creditors now appropriately use the market value of the loan or discounting of the expected future cash flows under the new terms in the calculation of the creditor's loss. Given the similar economic substance of the two types of TDRs and the fact that the debtor is the beneficiary in this zero-sum game, a more consistent and theoretically correct accounting for modifications would have been to reduce the carrying value of the payable to the PV of the now smaller or deferred cash outflows under the new terms, using an effective interest rate.

On the other hand, given semi-strong-form market efficiency, there should be no difference in the informativeness of recognized versus disclosed information. Regulators and academicians believe that market participants value substance over form, and where the information is presented should not matter. Nevertheless, there is some empirical evidence that presentation in F/S does matter, depending on who the users are and how naively they interpret footnote disclosure (Amir and Ziv, 1997; Imhoff *et al.*, 1993, 1995). For example, Bernard and Schipper (1994) find that while managers react to recognition of the fair value of stock options as an expense, they do not object to its disclosure in the footnotes. They argue that some stakeholders may view footnote disclosure as being less reliable and assign more importance to recognized F/S numbers, and this will manifest itself in greater value relevance. Johnson (1992) notes that academic research could aid in identifying how users process disclosures and whether they are appropriate substitutes for recognition. Hence, further research on the economic consequences of a restructuring transaction, how it affects the valuation multiples of earnings and book values, and the value relevance of disclosed versus recognized amounts under the current GAAP is useful, to perhaps motivate the FASB to consider the debtors' side as well or to rationalize their long silence on the issue.

3. Data, Sample Selection, and Sample Description

This study uses the same final sample of 86 specifically isolated TDR firms as Aksu (2001). The initial sample of 249 firms, which have announced their first-time serious intent to restructure their troubled debt within the 1973–1988 sample period, are identified from the subject volumes of the Wall Street Journal Index (WSJI) and on-line Text-Search Services of the Dow Jones News/Retrieval (DJNR), searched for the years 1973–1988 and 1979–1988, respectively. This sample period of 15 years is chosen to include the two prominent recessionary periods of the 1970s and 1980s but to also mitigate structural changes in excess returns and in the nature of financial crises, likely to be encountered when a longer period is used. Furthermore, this is approximately the same period used in prior studies and thus provides a more meaningful comparison with their market reaction results since none of them found an overall positive market response to a TDR announcement, largely stemming from their different objectives and the resultant different designs and (sub)samples. Finally, the effect of the promulgation and the mandated accounting method is most likely to be observed in this period that encompasses the promulgation of the SFAS No. 15. The final sample is obtained using the following criteria:

(i) The TDR firms must not have filed for bankruptcy either before or within 6 months after the TDR announcement since bankruptcy could confound their unique profiles or the special effect of debt restructuring.

(ii) Sample firms must have had their TDR announced in the WSJ or other DJNR news media. A WSJI search was carried out to make sure the sample firms were in financial distress and that there were no confounding events within 1 week of the announcement.

(iii) Sample firms must be included in S&P's COMPUSTAT tapes and in the CRSP tape of the University of Chicago.[2]

(iv) Firms with missing return data on the event day t, day $t-1$, and day $t+1$ are eliminated.

(v) Firms with no descriptive information on their TDR attempts, obtained from WSJI, the WSJ articles, the public debt covenants provided in Moody's manuals, and debt related footnotes in the F/S, are also eliminated.

Table 1, Panel A contains the breakdown of the sample by the year of the initial TDR announcement. Not surprisingly, the commencement of most restructurings (48.8%) is clustered in the years 1974–1976 and 1983–1985 that follow the recessionary periods of the 1970s and 1980s. Panel B contains the breakdown according to the outcome of financial distress. For 26 firms that filed under Chapter 11 or that were liquidated within 5 years, the attempted TDR is considered to have failed in saving the firm; 21 firms were either acquired, went through a merger, a name change and/or reorganization within 5 years. The rest of the firms (45%) continued their existence up to 5 years after their TDR announcements. For the latter two categories, the restructuring is considered to have been successful. Panel C depicts that 63 sample firms had a specific announcement as to the consummation of their TDR attempts.

Table 2, Panel A depicts the types of restructurings undertaken by sample firms. Since a firm may engage in more than one type of TDR for different categories of debt, the categories are not mutually exclusive. Prior research has examined return differences associated with the success of the restructuring attempt (Gilson *et al.*, 1990), public versus private debt and the change in the priority of claims offered (Brown *et al.*, 1993), and whether cash, debt, or equity is exchanged with the debt (Chatterjee *et al.*, 1995). Here, we are interested in the taxonomy used by the FASB. The board distinguished full settlements,

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[2]Six firms had almost no data and 18 firms had very little data in the Compustat tapes. For these 24 firms, Moody's manuals were searched for the selected missing F/S variables, both to achieve respectable sample sizes and to attenuate the survivorship bias in the Compustat database (Kothari *et al.*, 1992).

Table 1.   The breakdown of 86 debt restructurings by years and outcomes.

Years	No. of firms	Years	No. of firms
Panel A: Breakdown of the initial TDR attempt by years			
1973	3	1981	7
1974	4	1982	4
1975	7	1983	5
1976	10	1984	7
1977	0	1985	9
1978	5	1986	4
1979	3	1987	7
1980	7	1988	4
Total			86

Outcome	No. of TDR firms	%
Panel B: Breakdown by outcome of financial distress		
Liquidated within 2 years	3[a]	4
Files Chapter 11 (6 months to 1 year of TDR)	13[a]	13
Files Chapter 11 (1–2 years of TDR)	3[a]	4
Files Chapter 11 (2–5 years of TDR)	7[a]	8
Merger/acquisition within 5 years	15	19
Name change/reorganization within 5 years	6	7
Continues to exist after 5 years	39	45
Total	86	100

Outcome	No. of TDR firms	%
Panel C: Breakdown by outcome of the restructuring attempt		
Consummation announcement	63	73
Announcement of failure of TDR attempt	15[b]	17.5
No information on consummation	8	9.5
Total	86	100

The sample is composed of financially distressed firms that have announced their first-time serious intent to restructure their debt during the 1973–1988 period. The sample firms and the outcome of their financial distress and TDR attempts are identified from the subject volumes of the WSJI and on-line Text-Search Services of DJNR.
[a]These 26 firms (30.23%) have subsequently filed for bankruptcy and their TDR attempt is considered to have failed in helping them recover from financial distress.
[b]For these 15 firms that announced a bankruptcy filing (11 firms) or suspension of talks (two firms), or negotiations still continuing after day +330 (two firms), TDR is considered unconsummated.

modification of the loan terms, and a combination of these types and mandated different accounting treatments for them. To evaluate the congruence between the market's and the FASB's assessment, I test the null *hypothesis* that the market reaction to the announcement of full-settlements and modifications are indeed different. The percentage of firm-announcements that fall into these three categories are 30%, 49%, and 21%, respectively, as depicted in Panel B. Panel C shows that the total (mean) dollar amount of debt restructured by the 86 sample firms is \$21.138 billion (\$258.99 million). The mean ratio of "debt restructured/total liabilities" is 0.47 and the mean \$ amount of the debt restructured is 102% of the mean stockholders equity as of year $t - 1$, reflecting the materiality of the transaction. Unlike most other financial events, the restructuring interval is a long period of time over which negotiations take place. The mean number of days from the initial announcement, to either the WSJ announcement of the

Table 2.   The types, amount, and duration of debt restructurings ($N = 86$).

General types[a]	% Of firms that restructure any debt according to given type
Panel A	
1. Maturity of principal/interest extended	68%
2. Interest rate reduced	16%
3. Debt/interest[b] exchanged with equity[c]	55%
4. Debt/interest[b] exchanged with new debt	41%
5. Debt canceled through transfer of assets	38%
Panel B: The FASB's classification of types of TDR	
1. Full-settlements	30%
2. Modification of terms	49%
3. Both	21%

Amount and duration of TDR	n	Mean	Median	Minimum	Maximum
Panel C					
1. Amount ($) of debt restructured (in millions)	82	258.99	73.4	1	4100
2. Debt restructured/Total debt$_{t-1}$	82	0.47	0.48	0.007	1.23
3. Restructuring interval^d (in calendar days)	65	201	151	26	640

The sample is composed of financially distressed firms that have announced their first-time serious intent to restructure their debt during the 1973–1988 period. The sample firms and the length of the restructuring interval are identified from the subject volumes of the WSJI and on-line Text-Search Services of DJNR. The TDR types and the $ amount are obtained from the DJNR and WSJ articles themselves, the public debt covenants provided in Moody's manuals, and debt related footnotes in the F/S of sample firms.

[a]Debt forgiveness is included in types 3, 4, and 5 in this classification since in a TDR, the fair value of the equity or the assets exchanged must be less than the carrying value of the debt canceled and the new debt has more favorable terms (including reduced principal, future, or accrued interest) than the replaced one.

[b]Interest includes both accrued and future payments of interest.

[c]Includes distributions of C/S, P/S, warrants, and convertible debt, and the option to make future payments of interest and principal either in cash or in equity securities of the TDR firm.

[d]Time from initial TDR announcement until either the consummation of TDR or the last WSJ reference to the previously announced TDR.

consummation or the last WSJ reference to a previously announced TDR is 201 days.

4. Prior Market-Based Evidence, New Empirical Tests, and Policy Implications

In this section, I address the question of whether the economic benefits predicted by the valuation theories are fully and instantaneously impounded in prices upon the initial announcement of a TDR attempt by first reviewing prior market based research and then conducting new market reaction tests to determine whether the market participants (1) underreact at the time of the announcement; (2) can

distinguish subsequent survivors and consummated restructurings, and (3) react differently to full-settlements and modifications.

4.1. *Prior market based research*

Prior research has found that the usual negative reaction to financial distress announcements is smaller for covenant violations (Beneish and Press, 1995), defaults, and successful private workouts (Gilson *et al.*, 1990) than the reaction to unsuccessful restructurings that end in a Chapter 11 (Gilson *et al.*, 1990) and to bankruptcies (Clark and Weinstein, 1983). Gilson *et al.* (1990) report still negative but insignificant CAR(-1.0) of -1.6% to -3% to successful

TDR announcements, significantly higher than those of defaults and restructurings that end in bankruptcy within a year of the announcement. Brown *et al.* (1993) and Chatterjee *et al.* (1995) find positive announcement excess returns in about half of their subsamples of restructuring firms — the former, when public bondholders are offered senior claims and banks are offered junior claims, and the latter, in only tender offers of public debt. Finally, Aintablian and Roberts (1999) find a significant CAR(−1.0) of 3.45 % for a small sample of 18 bank loan restructurings in an overall sample of 137 bank loan announcements. Since the objectives and thus designs and sample selection criteria in these studies were different, they have used nonhomogeneous information releases and either too broad (sub)samples composed of firms in various stages of financial distress or too narrow or small TDR samples, all

of which resulted in findings that are difficult to interpret in terms of the overall market reaction to a TDR announcement.[3] As a result, none of them find a positive average market reaction to a TDR announcement. Aksu (2001), for the first time, finds a significant positive overall market reaction to a specifically isolated, first-time TDR attempt, significantly different than the market response to a matched sample.

As shown in Panel A of Table 3, adapted from Aksu (2001), which examines the effect of size, book-to-market ratio, and prior distress information on excess returns to TDR firms, shareholders have lost approximately 87% value compared to holding an investment in the market portfolio over a 300-day preannouncement period. This is consistent with Gilson *et al.*'s (1990) −134.% CMAR over the 3 years prior to successful TDR announcements. Panel B of

Table 3.   Cumulative abnormal returns (CAR) for selected windows ($N = 86$).[a]

Days relative to event (Day 0)	CAR	*t*-Value	*p*-Value
A. Pre-announcement period			
−340 to −41	−0.866	−9.419[b]	0.00
−40 to −2	−0.020	−0.618	0.54
B. Event window			
−1 to +1	0.023	2.492	0.01
−3 to 0	0.033	3.194	0.00
−1 to 0	0.027	3.630	0.00
Day 0	0.022	4.169	0.00
C. Postannouncement event window			
+1 to +40	0.061	1.831	0.07
D. Restructuring interval			
−1 to 330	0.66	6.814	0.00

Firm-specific daily excess return (AR) is calculated as the difference between the actual daily return and the market- and risk-adjusted expected return obtained from the one-factor market model, estimated over a 300-day estimation period ending on day −40. The return on the market portfolio is measured as the CRSP equally weighted index. The significance of the average cumulative excess returns (CAR), calculated by summing the daily (AR), is measured using the Brown and Warner (1985) portfolio test statistic. All tests are two-sided.
[a]Panels A, B, and C of the table are adapted from Aksu (2001), Table 4.
[b]The significance of the market adjusted excess returns for the 300 trading days prior to the start (day −41) of the event window is measured by the test statistic employed in Dennis and McConnell (1986).

[3]For example, Gilson *et al.* (1990) and Gilson (1990) examine the poorest performing stocks in CRSP, which have announced a debt service default, out-of-court restructuring, or bankruptcy within a year of the restructuring attempt. This heterogeneity makes it difficult to assess whether the results are driven by the firms' TDR, prior default, subsequent bankruptcy, or the fact that they have poor earnings prospects.

Table 3 shows that the $CAR(-1, 0)$ and day-0 average excess returns are 2.7% and 2.2%, respectively, both significant at $\alpha = 0.00$ indicating that the announcement has information content and a private workout is a value increasing alternative in relieving financial distress.[4] The $CAR(1, 40)$ of 6.1% reported in Panel C is also significant at $\alpha = 0.07$, indicating that excess returns continue after the announcement.

4.2.   *Method of analysis and restructuring interval excess returns*

Since subsequent bankruptcy or consummation and the concurrent F/S recognition of a consummated TDR may affect the revaluation process, the post-announcement restructuring interval CAR is also of interest in this study. Standard event study methodologies (Brown and Warner, 1985) are used to measure and evaluate the excess returns in relevant event windows and partitions of the sample. Daily excess returns (AR) are calculated using the one-factor market model whose parameters are estimated over a 300-trading day estimation period, days $(-340, -41)$. The return on the market portfolio is measured as the CRSP equally weighted index. The cumulative average market and risk-adjusted excess returns (CAR), calculated by summing daily average excess returns (AR), are evaluated over various event windows around the announcement day (day 0). Cumulative market-adjusted returns (CMAR) are used to calculate the pre-announcement

excess returns. The significance of the CAR is tested using the standard portfolio (T1) and the standardized (T2) test statistic in Brown and Warner (1985) with qualitatively the same results.

The long-window restructuring interval until the consummation date or the date of the last WSJ reference to a previously announced TDR presented in Panel D of Table 4 is 66%, significantly different from 0 at $\alpha = 0.00$. Both the long and shorter window postannouncement results are not consistent with an instantaneous and full adjustment of prices to publicly available information and support the underreaction hypothesis. Gilson *et al.* (1990), the only other study that has examined the restructuring-interval returns, have also found excess returns of 41% for their subsample of successful restructurings. Unless the well-known methodological problems in the calculation of long-term excess returns have led to misspecification errors (see, e.g. Kothari and Warner, 1997), it is unlikely that the results are sample-specific. Overall, the market reaction results support the informativeness and the perceived economic benefits of a TDR. They further suggest that a more consistent recognition of TDR that better reflects the economic substance of the transaction could have captured the positive change in the market's expectations better.[5] Alternatively, the results indicate that market participants rationally assess the benefits as predicted by valuation models, in spite of the incomplete and lagging information in F/S. Hence, the disclosure versus recognition debate may be irrelevant.

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[4]In comparison, consider the $CAR(-1, 1)$ of -47% upon a bankruptcy announcement (Clark and Weinstein, 1983), the unadjusted return of -3.8% for the $(-1, 0)$ window around financial distress news items announced in the WSJI (Thompson *et al.*, 1987), and the $CAR(-1, 0)$ of -6.3% for initial and subsequent announcements of defaults and restructurings that end up in bankruptcy (Gilson *et al.*, 1990).

[5]However, there is the caveat that the market reaction reflects not only the reduction in the PV of future payments, but also the improved viability of the company and the surprise nature of this signal. While the former can be incorporated into the accounting system, the latter cannot be. I am indebted to the two anonymous reviewers who brought this constraint to my attention. This lack of a one-to-one correspondence between the announcement period excess returns and the recognizable reduction in the PV of debt, both in terms of timing and content, is likely to overstate the role of the debt reduction/delay on the excess returns. All the same, the improved prospects will be reflected in the excess returns, the left-hand side of the valuation equation. To the extent the reduction in the PV of debt and the related gain are not reflected in the accounting bottom lines on the right-hand side, a lower explanatory power and value relevance is predicted for accounting numbers.

Table 4.   Cross-sectional return differences related to TDR outcomes.

Test window	Consummation[b]			Bankruptcy[c]		
	Unconsummated $N=15$	Consummated $N=63$	Difference	Bankrupt $N=25$	Nonbankrupt $N=61$	Difference
-40 to -2	-0.097 (0.12)	-0.021 (0.54)	-8.06 (0.00)	-0.039 (0.22)	-0.011 (0.76)	-0.608 (0.55)
$-1, 0$	0.061 (0.00)	0.025 (0.01)	16.23 (0.00)	0.035 (0.01)	0.023 (0.00)	2.498 (0.01)
0	0.034 (0.00)	0.021 (0.00)	8.15 (0.00)	0.025 (0.01)	0.021 (0.00)	1.013 (0.32)
$+1$ to $+40$	-0.092 (0.15)	0.087 (0.03)	-15.99 (0.00)	0.079 (0.20)	0.053 (0.16)	2.868 (0.01)
$+1$ to Consum.[d]	-0.287 (0.03)	0.218 (0.01)	-22.75 (0.00)	0.209 (0.08)	0.327 (0.00)	-4.535 (0.00)

Firm-specific daily excess return (AR) is calculated as the difference between the actual daily return and the market- and risk-adjusted expected return obtained from the one-factor market model, estimated over a 300-day estimation period ending on day -40. The return on the market portfolio is measured as the CRSP equally weighted index. The significance of the average cumulative excess returns (CAR), calculated by summing the daily (AR), is measured using the Brown and Warner (1985) portfolio test statistics. All tests are two-sided. The CARs and the corresponding (*p*-values) are presented in the table. The "Difference" columns contain the *t*-values (*p*-values) for the significance of the difference in mean excess returns between each of the two subsamples of TDR firms.[a]

[a]The *t*-tests for the equality of means of two populations are conducted assuming independent samples and small sample sizes.
[b]A firm is included in the *consummated* subsample if there is a definite WSJ announcement as to a final agreement or consummation or completion of TDR. Eight firms are left out of both subsamples because it was impossible to determine the consummation status from the data sources.
[c]A firm is included in the *bankrupt* subsample if it has filed under Chapter 11 within 5 years of the TDR announcement date. Hence, bankrupt subsample may include firms whose TDRs were previously consummated.
[d]The latest consummation date by which at least three not yet consummated TDR firms remain in the smaller size subsample. The return observations of firms with earlier consummation dates are considered as missing observations. The last day of the long test window is $+166$ days for the *unconsummated* and *consummated* subsamples, and $+196$ days for the *bankrupt* and *nonbankrupt* subsamples.

4.3.   *Return differences related to the outcome of the TDR attempt*

In this section, the abnormal returns to consummated versus unconsummated restructurings, as well as to firms that subsequently survive versus those that go bankrupt within 6 months of their TDR announcements are evaluated. While 63 sample firms have unambiguous announcements as to the consummation, or completion of their TDR, for 15 companies TDR is considered unconsummated as shown in Table 1, Panel B. Similarly, 61 firms for which there are no bankruptcy announcements within 5 years are considered nonbankrupt.

As depicted in Table 4, the significantly positive day $[-1,0]$ reaction in both the consummated and unconsummated (and bankrupt and nonbankrupt) subsamples is consistent with the perceived net benefits of TDR and the signaling/announcement effects. This finding also indicates that, *ex-ante*, the market is not able to differentiate between a TDR that will be consummated (go bankrupt) and one that will not be. However, the persistently negative (positive) post-announcement CAR in the unconsummated (consummated) subsample indicates that the market participants do differentiate between these two outcomes, as the uncertainty in the probability of consummation is resolved. For the consummated subsample, a strong positive drift is observed and the CAR(1, 40) and CAR(1, 166) are 8.7% and 21.8% and both are significantly higher than the postannouncement CAR for the

unconsummated subsample.[6] Similar but weaker results obtain in the comparison of nonbankrupt versus bankrupt TDR firms even though the positive CAR in the 196-day postannouncement period is again significantly higher in the non-bankrupt sample.[7]

4.4. *Return differences related to the FASB's classification of TDR*

Since SFAS No. 15 requires different accounting treatments for full-settlements and most modification type restructurings, we investigate if a similar distinction is made in the eyes of market participants. In other words, do investors value the unrecognized reduction in the PV of a restructured debt and the related gain in modifications as they would the recognized debt reduction and gain in full-settlements? If formal recognition in F/S makes the transaction more informative and beneficial to the debtor, one would expect a positive reaction to full-settlements and no reaction or at least a smaller reaction to modifications. Table 5 reports the average return behavior of 22 firms that have reported an extraordinary debt restructuring gain as a line item in their F/S upon consummation of their restructuring negotiations versus the remaining 64 firms, which have gone through modifications and did not have to report a related extraordinary gain. Surprisingly, CAR$(-1, 0)$ for the "modification" subsample is 3.3% and significantly higher than the "recognized gain" subsample. However, both groups exhibit significantly positive postannouncement period CAR that is not significantly different.

The results indicate that modifications for which no gain is recognized lead to more significant positive announcement and as significant postannouncement price revisions

as full-settlements. Thus, market participants' assessment of the importance and benefits of the two types of TDR does not support the FASB's different reporting requirements. A consistent standard would have required recognition of both, and in doing so better serve the interpretative, predictive, and confirmatory roles of F/S. On the other hand, the results also suggest that market participants do not respond to only the current period results (the *myopic hypothesis*) or to only the reported bottom lines of F/S (the *mechanistic hypothesis*). They rationally consider the economic effects of future cash flows in their assessments. This may indicate the unimportance of F/S information in an efficient market where participants respond to more timely information sources.

5. Value Relevance of Financial Statement Bottom Lines

The accounting valuation tests employed here are based on the theoretical EBO model that explains firm value as a function of current book value plus the PV of future residual incomes in excess of a normal return on book value. The theoretical model and its empirical applications suggest that both reported income and book value are priced (Collins *et al.*, 1997; Ohlson, 1995; Ohlson and Penman, 1992; Penman, 1997). A second reason for our focus on both earnings and book value is that the restructuring transaction affects both NI (the restructuring gain) and BE (the reduction in the PV of the debt). Third, Collins *et al.* (1999) find that the anomalous negative relation between earnings and price in loss firms is due to the misspecification of the valuation model when only the earnings variable is included. Finally, prior research has provided evidence that

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[6]Excess returns over a longer window of 330 days can be accumulated for this larger sample. The CAR$(1, 330)$ is measured as 69.4%, significant at $\alpha = 0.00$ (not reported in the table). Since consummation unravels the uncertainty related to the resolution of the firm's financial distress, its announcement may have incremental information content which, due to the uncertainty of the final creditor consent, might not have been fully impounded in prices when the TDR was first announced. The CAR might then be significantly positive over this long window since the few days of large, positive excess returns around the consummation day vary from stock to stock.

[7]The reason for the weaker results might be that only 10 of the 25 TDR firms in the bankrupt subsample file under Chapter 11 within the 196-day postannouncement window. Also, the bankrupt sample includes some firms whose restructurings were previously consummated and thus may have had positive abnormal returns.

Table 5.   Cross-sectional return differences related to FASB's classification of TDR.

Test window	Type of TDR		
	Extraordinary gain $N = 22$	Modification $N = 64$	Difference
-40 to -2	0.017 (0.82)	-0.032 (0.36)	8.372 (0.00)
$-1, 0$	0.009 (0.62)	0.033 (0.00)	-15.623 (0.00)
0	0.028 (0.02)	0.020 (0.00)	1.352 (0.18)
$+1$ to $+40$	0.193 (0.01)	0.024 (0.25)	4.762 (0.00)
$+1$ to Consummation[a]	0.499 (0.01)	0.433 (0.00)	1.094 (0.28)

Firm-specific daily excess return (AR) is calculated as the difference between the actual daily return and the market- and risk-adjusted expected return obtained from the one-factor market model, estimated over a 300-day estimation period ending on day -40. The return on the market portfolio is measured as the CRSP equally-weighted index. The significance of the average cumulative excess returns (CAR), calculated by summing the daily (AR), is measured using the Brown and Warner (1985) portfolio tests. All tests are two-sided. The CARs and the corresponding (p-values) are presented in the table. The "Difference" column contains the t-values (p-values) for the significance of the difference in mean excess returns between the subsample with a recognized restructuring gain and the subsample that engaged in modification of the terms of the loan.[b]

[a]The latest consummation date by which at least three not yet consummated TDR firms remain in the smaller size subsample. The return observations of firms with earlier consummation dates are considered as missing observations. This last day of the long test window is $+274$ days for the *extraordinary gain* and *modification* subsamples.

[b]The t-tests for the equality of means of two populations are conducted assuming independent samples and small sample sizes.

the valuation role of net income versus book value in financially distressed firms, firms with losses, and when earnings/book value is low (see, e.g. Barth *et al.*, 1998; Burgstahler and Dichev, 1997; Franzen, 2002; Penman, 1997). The TDR sample is an inherently suitable out-of-sample testing ground for this prior research finding.

The empirical and theoretical evidence presented so far suggests that TDR is economically beneficial to the shareholders of debtors and has information content. We thus expect and find that prices (the left-hand side of the valuation equation) reflect this anticipated cash-flow (earnings) potential. However, the current GAAP does not allow the recognition of a properly calculated restructuring gain and the reduction in the liability in most modification type restructurings. To the extent that current reported book

values and earnings (the right-hand side) are not informative of such anticipated earnings, we expect the valuation coefficients of NI and BE to be lower and even insignificant. Furthermore, we hypothesize that a TDR firm's BE is more value relevant than its NI in line with prior research on loss firms.

Several model specifications are used and all variables are deflated by the number of shares outstanding at fiscal year end to control for size differences. First, market value per share, P, is regressed on F/S bottom lines, book-equity per share (BEPS) and earnings per share (EPS). EPS is then partitioned to include an EPS dummy for negative earnings and BEPS is partitioned into assets (TA) and liabilities (TL) components, as the latter is directly affected by the TDR transaction. The model specifications estimated for the 3 years surrounding the announcement year (t),

are the following:

$$P_{it} = \beta_{0t} + \beta_{1t}\,\text{BEPS}_{it} + \beta_{2t}\,\text{EPS}_{it} + \varepsilon_{it} \quad (1)$$

$$P_{it} = \beta_{0t} + \beta_{1t}\text{TA}_{it} + \beta_{2t}\text{TL}_{it} + \beta_{3t}\,\text{EPS}_{it}$$
$$+ \beta_{4t}\,\text{EPSdummy}_{it} + \varepsilon_{it} \quad (2)$$

where, i and t are the firm and year subscripts, respectively. In all specifications, a random walk process is assumed for residual income, as in many other empirical adaptations of the model, and hence current year income is used as a proxy for the PV of future residual incomes.[8]

As observed in Table 6, whether it is used alone or with EPS, BEPS always has a significant coefficient estimate and results in a better-specified model when it is included in the model. However, the coefficient estimate for EPS is positive and significant only in year (t). The coefficient estimate of the EPSdummy is always significant and has the expected negative sign. The disaggregated components of book value, TA and TL, are significant and have the correct signs. These results consistently hold in all 3 years. While the explanatory power of the model with EPS as the only regressor deteriorates over the

3 years, it improves for the models that include BEPS, or TA and TL per share. It is concluded that book value and its components are more value relevant than income in TDR firms. EPS has very low or no value relevance either due to the nonrecognition and/or incorrect measurement of the restructuring gain and/or due to its general lack of value relevance in financially distressed firms.

Next, TL and EPS are partitioned to directly test the incremental value relevance of the \$ amount of debt restructured (our proxy for the reduction in the PV of the pre-restructuring debt), disclosed in the footnotes, and the restructuring gain, recognized in the financial statements. I estimate the following two equations:

$$P_{it} = \beta_{0t} + \beta_{1t}\,\text{TA}_{it} + \beta_{2t}(\text{TL} - \text{AR})_{it}$$
$$+ \beta_{3t}\,\text{AR}_{it} + \beta_{4t}\,\text{EPS}_{it}$$
$$+ \beta_{5t}\,\text{EPSdummy}_{it} + \varepsilon_{it} \quad (3)$$
$$P_{it} = \beta_{0t} + \beta_{1t}\,\text{BEPS}_{it} + \beta_{2t}\,\text{EPSBRG}_{it}$$
$$+ \beta_{3t}\,\text{RG}_{it} + \beta_{4t}\,\text{RG}_{it}$$
$$\times \text{EPSBRGdummy}_{it} + \varepsilon_{it} \quad (4)$$

Table 6.   Value relevance of reported net income (NI) and book value of equity (BE) during the restructuring interval.

Regressors	Year = $(t-1)$ Coefficient estimates				Year = $(t)^{a}$ Coefficient estimates				Year = $(t+1)$ Coefficient estimates			
	(p-Value)			R^2	(p-Value)			R^2	(p-Value)			R^2
BE	0.37 (0.00)			0.34	0.44 (0.00)			0.45	0.70 (0.00)			0.53
NI NIdummy[b]	0.02 (0.93)	−11.67 (0.00)		0.26	0.35 (0.00)	−3.36 (0.15)		0.23	0.13 (0.45)	−7.15 (0.03)		0.13
BE NI Nidummy	0.29 (0.00)	−0.06 (0.74)	−6.55 (0.01)	0.42	0.38 (0.00)	0.14 (0.17)	−1.82 (0.36)	0.49	0.68 (0.00)	−0.02 (0.92)	−1.76 (0.49)	0.54
TA TL NI Nidummy	0.26 (0.00) −0.24 (0.03)	0.05 (0.84)	−8.06 (0.01)	0.39	0.27 (0.00) −0.25 (0.01)	0.23 (0.04)	−1.38 (0.50)	0.44	0.59 (0.00) −0.54 (0.00)	0.19 (0.30)	−2.54 (0.31)	0.53

The full model is $\text{MVE}_{it} = \beta_{Bt} + \beta_{1t}\,\text{TA}_{it} + \beta_{2t}\text{TL}_{it} + \beta_{3t}\,\text{NI}_{it} + \beta_{4t}\,\text{NIdummy}_{it} + \varepsilon_{it}$. where, i and t are the firm and year subscripts, respectively; MVE = Market value of equity; TA = Total assets; TL = Total liabilities; NI = Net income. All variables are deflated by the number of common stock shares outstanding at each fiscal year end so that the values are all per share figures.

[a]Year t is the initial announcement year.

[b]NIdummy is for negative earnings.

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[8]This is an important limitation of the study since the sample is composed of financially distressed firms. On the one hand, the sustainability of the level of earnings in these firms is suspect. On the other hand, the market's expectations about their prospects are high, as evidenced by the positive excess returns. To the extent that these effects cancel each other, we do not expect the proxy for unexpected NI to be much biased.

where, AR is the $ amount of debt restructured per share disclosed in year (t) footnotes of 77 sample firms; (TL-AR) stand for the remaining liabilities of the firm, RG is the extraordinary restructuring gain reported in the income statement of 26 sample firms, either in period (t) or ($t + 1$), EPSBRG is the earnings before the restructuring gain, RG $\times$ EPSBRGdummy is the interaction term, and all other variables are as defined earlier.

Panel A, Table 7 indicates that model (3) is well specified, with significant coefficient estimates that have the correct signs for all variables with the exception of EPS and has the highest R^2 (63%) among all the specifications tested. Under the caveat that R^2 is not a safe metric to make inferences on value relevance, the difference between the R^2 of regressions estimated in (2) and (3) can be attributed to the incremental explanatory power of the disclosed amount of debt restructured ($63\% - 44\% = 19\%$).

Estimated coefficients and their significance for model (4) are reported in Panel B where all variables are measured in year (t) or ($t + 1$) depending on when the restructuring gain is recognized. The interaction term is used to determine if the restructuring gain would be more value relevant for firms reporting a loss before their RG. While one would normally expect significant and positive coefficient estimates for both of the income partitions, some prior studies suggest that permanent and transitory components of earnings may have different information contents. For example, Burgstahler *et al.* (1999) find that prices do not fully reflect the time-series implications of negative special items in earnings. Similarly, the investors may perceive the recognized RG to be transitory and that it garbles the permanent component of earnings. Our results are consistent with this body of literature. Contrary to initial expectations, all coefficient estimates, except that of BE, turn out to

Table 7. Value relevance of the recognized restructuring gain (RG) and the disclosed amount of debt restructured (AR).

Regressor	TA	TL − AR	AR	NI	NIdummy
Panel A: Partitioned total liabilities					
Estimated Regression[a,b]:					
$\mathrm{MVE}_{it} = \beta_{\mathrm{B}t} + \beta_{1t}\,\mathrm{TA}_{it} + \beta_{2t}\,(\mathrm{TL}-\mathrm{AR})_{it} + \beta_{3t}\,\mathrm{AR}_{it} + \beta_{4t}\,\mathrm{NI}_{it} + \beta_{5t}\,\mathrm{NIdummy}_{it} + \varepsilon_{it}$					
Coef. estimate	0.020	−0.024	−0.023	−0.006	−0.162
p-Value	(0.00)	(0.00)	(0.00)	(0.071)	(0.019)
R^2: 0.63					

Regressor	BE	NIBRG	RG	RG × NIBRGdummy
Panel B: Partitioned net income				
Estimated Regression[a,b]:				
$\mathrm{MVE}_{it} = \beta_{\mathrm{B}t} + \beta_{1t}\,\mathrm{BE}_{it} + \beta_{2t}\,\mathrm{NIBRG}_{it} + \beta_{3t}\,\mathrm{RG}_{it} + \beta_{4t}\,\mathrm{RG}_{it} \times \mathrm{NIBRGdummy}_{it} + \varepsilon_{it}$				
Coefficient estimate	0.438	−0.064	−1.655	1.231
p-value	(0.004)	(0.716)	(0.743)	(0.807)
R^2: 0.38				

The basic model estimated is $\mathrm{MVE}_{it} = \beta_{\mathrm{B}t} + \beta_{1t}\,\mathrm{TA}_{it} + \beta_{2t}\,\mathrm{TL}_{it} + \beta_{3t}\,\mathrm{NI}_{it} + \beta_{4t}\,\mathrm{NIdummy}_{it} + \varepsilon_{it}$. where, i and t are the firm and year subscripts, respectively, MVE = Market value of equity; TA = Total assets; TL = Total liabilities; NI = Net income. In this specification, TL is further partitioned to test the value relevance of the $ amount of debt restructured (AR) and NI is further partitioned to test the value relevance of the recognized restructuring gain (RG). NIBRG dummy is used for the years in which the firms reported a loss RG. All variables are deflated by the number of common stock shares outstanding at each fiscal year end and hence, they are all measured as per share figures.

[a] t = the announcement year.

[b] t = the announcement year or the year subsequent to that depending on the year in which the restructuring gain is recognized in the financial statements of the firm.

be insignificant. While the (insignificant) coefficient estimate of RG and income before RG have the wrong negative sign, the (insignificant) coefficient estimate of RG for firms that report a loss before their RG is large and has the correct sign, for the first time. There may be several explanations for this unexpected result: (1) the finding supports the previous research which finds that NI and its components are not as value relevant in financially distressed firms; (2) the market views the extraordinary gain as a one-time, transitory gain; (3) due to adverse economic conditions faced by these firms, investors use a higher rate to discount their expected future cash flows, leading to lower or insignificant earnings coefficients; (4) the measurement error in the recognized gain and other components of earnings and the unrecognized gain in modifications depress the earnings component of the equation, which then does not reflect the true economic consequences of a TDR already reflected in prices; (5) the small sample size for recognized gains

($n = 26$) has reduced the power of the tests employed. Only the explanations number (4) and (5) are consistent with our original expectations. The disclosed information on the amount of debt restructured seems to be more value relevant than the RG.

Finally, the change in value relevance as a function of the promulgation of No. 15, the number of restructurings attempted, and recognition of a restructuring gain are examined, with results reported in Table 8. Interestingly, the overall explanatory power of the regressions has declined (R^2 decreases from 0.81 to 0.58) after the promulgation of the SFAS No. 15, suggesting that the market participants find the bottom lines measured according to the new standard less informative of prices. Next, value relevance in the 54 TDR firms that has gone through a single restructuring attempt is compared with that of 27 firms with several attempts. Multiple attempts seem to increase the value relevance of EPS, at the expense of TA and TL components

Table 8.   Value relevance of bottom lines in various other partitions of the sample.

	Coefficient estimates (p-Values)				
	TA	TL	NI	NIdummy	R^2
Before 1978[a] ($n = 21$)	0.014 (0.000)	−0.016 (0.000)	0.004 (0.602)	0.041 (0.711)	0.809
After 1978	0.035 (0.000)	−0.045 (0.000)	−0.017 (0.004)	−0.266 (0.021)	0.580
With RG[b] ($n = 26$)	0.374 (0.033)	−0.324 (0.148)	0.150 (0.569)	2.863 (0.522)	0.393
Without RG	0.257 (0.000)	−0.229 (0.002)	0.258 (0.017)	−2.540 (0.139)	0.391
Multiple TDR[c] ($n = 27$)	0.188 (0.076)	−0.146 (0.276)	0.401 (0.006)	5.733 (0.165)	0.603
Single TDR	0.324 (0.000)	−0.287 (0.030)	0.154 (0.590)	−4.116 (0.126)	0.424

The full model is $\mathrm{MVE}_{it} = \beta_{\mathrm{B}t} + \beta_{1t}\,\mathrm{TA}_{it} + \beta_{2t}\,\mathrm{TL}_{it} + \beta_{3t}\,\mathrm{NI}_{it} + \beta_{4t}\,\mathrm{NIdummy}_{it} + \varepsilon_{it}$. where, i and t are the firm and year subscripts, respectively, MVE = market value of equity; TA = total assets; TL = total liabilities; NI = net income. All variables are deflated by the number of common stock shares outstanding at each fiscal year end and hence, they are all measured as per share figures.
[a]The regression results are for 21 (59) TDR firms that had a TDR attempt before (subsequent to) the effective date of SFAS No. 15 in 1978.
[b]The regression results are for the 26 firm-years (in years t or $t+1$) in which a TDR firm had an extraordinary recognized restructuring gain and for 125 firm-years with no recognized restructuring gain.
[c]The regression results are for year t (announcement year) values of the explanatory variables for 27 (54) TDR firms that went through multiple (single) restructurings.

of BPS. This might indicate that the transaction is not perceived as a one-time, transitory item for such firms.[9] The last test indicates that for the 125 firm-years with no recognized restructuring gain, the coefficients for both BE and NI partitions are more significant compared to those for the 26 firm-years with a reported extraordinary gain. In summary, the promulgation of SFAS No. 15 and the mandated method of accounting for recognized debt restructurings have further mitigated the role of NI.

6.   Summary and Conclusion

This study first utilizes extant firm valuation theories — dividend/earnings/cash flow and optimal capital structure models, as well as an EBO model of accounting valuation — to predict an increase in shareholder value as a result of the announcement and consummation of TDR. Second, it performs market reaction analysis and finds significant positive postannouncement excess returns during the extensive restructuring interval and higher excess returns to subsequently consummated restructurings and to firms that survive. The evidence supports the beneficial economic consequences of a TDR, but indicates that the market underreacts to the announcement and cannot *exante* predict the success of a TDR attempt.

Based on these favorable economic consequences, the paper then probes into an accounting policy issue: the asymmetric accounting treatment of SFAS No. 15 for the debtor and creditor and for modification versus full-settlement types of TDR. The paper first argues that the statement is theoretically flawed and does not live up to the recent importance attached to "quality" in accounting standards. Of course, the Board's deliberations were long before these discussions and at the time, they may have wanted to avoid the subjective PV calculations. Furthermore, the asymmetric reporting for the debtors and creditors is a

manifestation of the conservatism bias of faster recognition of losses versus gains.[10] Nevertheless, further market reaction tests reveal that the response to a modification of the loan terms that mostly go unrecognized in the F/S is at least as significant as that of a recognized full-settlement of the debt. Apparently, the FASB's and the market participants' perceptions of the information content and value relevance of debt restructurings do not converge. Finally, an accounting valuation model is used to provide a link between firm value and reported F/S numbers, measured in line with SFAS No. 15. The findings indicate that BE and its component "dollar amount of debt restructured" disclosed only in the footnotes are value relevant while NI and its partition "extraordinary restructuring gain" recognized in the income statement are not. This raises the question of whether a more economically revealing measure of the restructuring gain would have been more value relevant.

A theoretical and empirical understanding of the informativeness and value relevance of TDR should be helpful in the decision-making processes of all users of market and F/S based information. The investors' and creditors' demand for information, and F/S preparers' and policy makers' supply of information may be altered as a result of understanding the economic consequences of a TDR. Given the recent preoccupation of the academicians and rule making bodies with recognition versus disclosure issues, use of PV methods in reporting, and "quality" of accounting standards, this research attempts to provide input to the accounting standard setting bodies' deliberations on recognition, timing, and measurement issues, especially as related to TDR. The findings suggest that, a reconsideration of the debtor's side may be justified as well. Future research should attempt to associate a more economically revealing measure of the reduction in the PV of the outstanding debt and the related restructuring gain with prices to see if they lead to a higher value relevance.

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[9]This interpretation is contrary to Elliott and Hanna's (1996) results where repeated, discretionary asset write-offs further reduce the value relevance of earnings.

[10]I am thankful to the anonymous reviewer who, in rightful defense of the Board, brought this point to my attention.

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