The Association between Firms' Values and Accounting Numbers after Adoption of Fresh Start Reporting

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This study examines the association between firms' values and accounting numbers for 72 firms that adopted fresh start reporting (FSR) upon their emergence from Chapter 11 bankruptcy. It focuses on the effects of a misstatement in the reporting choice of the initial fresh start value of equity on the association between firms' values and accounting numbers reported subsequently. Using a security valuation model, I derive an explicit relation between firms' values and a measure of the misstatement in the fresh start equity. This model provides a theoretical value for a coefficient associating the misstatement with firms' values under the null hypothesis that investors accurately undo the effects of the misstatement on subsequently reported numbers. I estimate this model for eight quarters after the adoption of FSR. The results of the regressions suggest that even two years after the emergence from Chapter 11 and the adoption of FSR, investors unravel the effects of the initial misstatement on book values and earnings reported subsequent to the adoption of FSR. The results also suggest that while investors appear to adjust for these effects, the magnitude of the adjustment is constant over time (in contrast to the predicted pattern of this adjustment).

1. Introduction

Statement of Position (SOP) No. 90-7, *Financial Reporting by Entities in Reorganization under the Bankruptcy Code*, governs the financial reporting by firms during and subsequent to Chapter 11 reorganization. According to this statement, entities that were insolvent immediately before emerging from Chapter 11 and, as a part of their reorganization, experienced a significant (greater than 50%) ownership change, must adopt fresh start reporting (FSR) upon emergence from Chapter

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11. In general, FSR involves an estimation of the entity's reorganization value,[1] a revaluation of assets to their fair values, an adjustment of liabilities and equity pursuant to the plan of reorganization, and an elimination of the retained deficit.

While SOP No. 90-7 standardizes and promotes uniformity in the accounting practices of entities in bankruptcy reorganization, concerns have been voiced about the accuracy and the reliability of the fresh start amounts. First, SOP No. 90-7 offers flexibility in determining fresh start amounts because these amounts are based on forecasts and projections, rather than on arm's-length transactions. This increases the potential for errors in the fresh start estimates. Second, the fresh start amounts may be misstated because management can manipulate these amounts to affect the negotiations on the amounts and the form of the distributions to the various creditors' classes (Jensen-Conklin [1992]; Frideman [1992]).[2] Motivated by these concerns, Lehavy (1998) finds that the equity value recorded upon the adoption of FSR is, on average, understated (relative to the market value of equity immediately after emergence from bankruptcy), and that the cross-sectional variation in the misstatement in the fresh start equity is related to management's incentive to promote the acceptance of the reorganization plan and to advance the emergence of the firm from Chapter 11.[3] Thus, concerns about management's use of reporting discretion when determining the fresh start amounts seem to be valid.

Given these concerns regarding the accuracy of the fresh start amounts and the evidence documented in Lehavy (1998) on the misstatements in the fresh start equity, another interesting question is whether such misstatements have valuation implications *subsequent* to the adoption date of FSR. This paper addresses this issue. Specifically, I examine the following question: Do investors continue to unravel the financial statement effects of the initial misstatement in the fresh start equity when setting prices, or do they disregard the effects of the initial misstatement on these numbers? To answer this question, I examine the effects of the initial misstatement (or bias) in the fresh start equity on the association between firms' values and accounting numbers reported after adoption of FSR. In general, if the

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1. SOP No. 90-7 defines reorganization value as "[t]he value attributed to the reconstituted entity . . . this value is viewed as the fair value of the entity before considering liabilities and approximates the amount a willing buyer would pay for the assets of the entity immediately after the restructuring." The specific rules of SOP 90-7 are described in Section 3 of this paper.

2. The fresh start amounts affect the bankruptcy negotiations because they are determined while the firm is in Chapter 11 and before the confirmation of the reorganization plan. Furthermore, they are also reported in the pro forma financial projections submitted to the bankruptcy court. These same amounts are recorded postemergence as the opening balances of the respective book values (see Lehavy [1998]).

3. Lehavy (1998) examines the reliability of the fair value estimate of equity for a sample of 72 firms that adopted fresh start reporting upon their emergence from Chapter 11 bankruptcy. He tests whether managers intentionally misstated this value, and investigates the cross-sectional determinants of such misstatements. Lehavy (1998) finds that the fresh start equity value is, on average, understated (compared to the market value immediately after emergence from Chapter 11), and that the cross-sectional variation in the misstatement is related to the complexity of the bankruptcy negotiations, the percentage ownership of former creditors in the reorganized entity, the probability of future financial distress, and replacement of a prepetition CEO.

initial fresh start book value of equity is misstated, *both* future reported earnings *and* future reported book values are misstated because of differences in the valuation of depreciable and amortizable assets.[4] Future earnings include the amortization and depreciation charges of the initial bias, and future book values include the unamortized portion of the initial bias. Accordingly, I examine empirically the effects of the amortization process of the initial bias on the association between firms' values and accounting numbers reported after adoption of FSR.

I use an equity valuation model that is based on Ohlson's (1995) model to investigate the effects of the misstatement in the fresh start equity on subsequently reported numbers. Ohlson's (1995) model links stock prices with accounting numbers and thereby provides an empirical framework in which to examine the relation between accounting data and firms' values. Using this model, I derive an explicit relation between stock prices or returns and the misstatement in the fresh start equity value. The model provides a theoretical value for a coefficient associating the misstatement measure with prices or returns under the null hypothesis that investors consistently undo the effects of the misstatement on reported numbers. Under the alternative hypothesis that investors disregard the effects of a misstatement on reported numbers, the coefficient estimate on the misstatement measure is expected to be zero.

I estimate this model for eight quarters after the adoption of FSR and test the competing hypotheses by examining the relation between the estimated value and the theoretical value of the misstatement coefficient. The results of the regressions suggest that even two years after the emergence from Chapter 11 and the adoption of FSR, investors unravel the effects of the initial misstatement on book values and earnings reported subsequent to the adoption of FSR. The results also suggest that while investors appear to adjust for these effects of the initial misstatement on reported numbers, the magnitude of the adjustment is constant over time (in contrast to the predicted pattern of this adjustment).

This paper contributes primarily to the literature that examines the question of whether investors account for the effects of alternative (discretionary) accounting choices on firms' financial reports. Similarly, I examine the question of whether investors consistently unravel the financial statement effects of the bias in the fresh start value of equity, or whether they appear to disregard the effects of the initial bias when setting prices. By analyzing the previously unstudied association between firms' values and the choice of the fresh start equity value, I contribute new evidence on investors' abilities to unravel the effects of discretionary accounting choices on reported numbers. In addition, I make explicit predictions about the value of the coefficient relating firms' values to the discretionary choice. As I discuss further in the next section, such predictions differ from many other studies

4. This is based on the assumption that the bias in the fresh start equity is also reflected in the fresh start value of depreciable assets and therefore is depreciated over a series of future years (see further discussion in Section 4).

in this area, which instead base their conclusions on the significance of the deviation of such coefficients from zero.

The remainder of this paper is as follows. Section 2 discusses related research. The accounting principles for fresh start reporting are described in Section 3. Section 4 develops the model used in the empirical analysis. Section 5 discusses the sample selection and provides descriptive statistics of the variables used in the empirical analysis. The results of the regression analyses are provided in Section 6. The summary and conclusions are outlined in Section 7.

2. Related Literature

This paper is related primarily to research on the valuation implications of discretionary accounting choices. This research typically examines capital market reactions to discretionary accounting choices and attempts to discern whether such reactions are consistent with the view that investors are fixated on reported numbers or with the view that investors appropriately infer the information communicated via the discretionary accounting choice. Probably the most widely studied area in this literature is the valuation implications of discretionary accruals. Studies such as Warfield, Wild, and Wild (1995) and Wang, Swift, and Lobo (1993) find a negative association between the extent of accruals management and the information content of earnings (consistent with the opportunistic accrual management hypothesis). Other studies find that discretionary accruals have positive valuation implications (consistent with the signaling role of the accrual management hypothesis). For example, Hunt, Moyer, and Shevlin (1996) and Subramanyam (1996) show that smoothing of earnings via discretionary accruals is associated with higher earnings multiples. Guay, Kothari, and Watts (1996) and Subramanyam (1996) document a positive and significant relation between discretionary accruals and annual stock return.[5]

In a similar vein, this paper examines the question of whether investors consistently undo the financial statement effects of the misstatement in the fresh start value of equity, or whether they appear to disregard the effects of the initial misstatement when setting prices. A feature distinguishing this study from existing studies in this literature is that to discriminate between the competing hypotheses, I derive an explicit relation between stock prices or returns and the misstatement in the fresh start equity estimate. This relation provides a theoretical value for the coefficient associating the misstatement measure with prices or returns under the null hypothesis that investors undo the effects of the misstatement on reported numbers. This derivation of an explicit relation is not found in most other studies, which instead base their conclusions on the significance of the deviation of such

5. Other areas in this literature examine the valuation implications of discretionary write-offs (e.g., Elliot and Shaw [1988]; Francis, Hanna, and Vincent [1996]; Elliot and Hanna [1996]), the valuation implication of goodwill (Vincent [1994]), and the valuation implications of gains from debt-for-equity swaps (Hand [1990]).

coefficients from zero. (Exceptions include Hand [1990] and Guay, Kothari, and Watts [1996], who derive predicted values for their coefficients.) Absent predictions of the theoretical value of this coefficient, these studies cannot meaningfully distinguish between competing hypotheses. As shown later in this paper, simply assuming that if investors unravel the effects of the misstatement (the null hypothesis), the bias coefficient should be zero would have suggested *incorrectly* that the null hypothesis should be rejected. In fact, the results of this paper show that the null hypothesis is not rejected when I test the estimated coefficient against its theoretically derived value.

3. Financial Reporting for Entities Emerging from Chapter 11

The financial reporting for firms in Chapter 11 reorganization is set forth in the AICPA's (1990) Statement of Position No. 90-7, *Financial Reporting by Entities in Reorganization under the Bankruptcy Code*. This statement provides financial reporting guidance for entities that (1) have filed petitions with the bankruptcy court and expect to reorganize as going concerns under Chapter 11 and (2) have emerged from Chapter 11 under court-approved plans for reorganization. It applies to entities that filed petitions under the Bankruptcy Code in fiscal years beginning after December 15, 1990, or whose plans of reorganization were confirmed after December 31, 1991. Before the issuance of this statement in November 1990, there was no prescribed accounting for reorganization under Chapter 11.[6]

Pursuant to SOP No. 90-7, entities emerging from Chapter 11 should adopt fresh start reporting as of the effective date of the reorganization plan if *both* of the following conditions are met:

1. The reorganization value of the emerging entity is less than the total amount of all postpetition liabilities plus all allowed prepetition liabilities, and
2. The prepetition voting shareholders receive less than 50 percent of the voting shares in the new entity.

The purpose of the first condition, which requires the firm to be insolvent immediately before emerging from Chapter 11, is to prevent the use of FSR by firms that have filed for Chapter 11 for strategic reasons (as opposed to financial reasons). Since any negative equity is eliminated in FSR, this condition also ensures that the negotiations lead to writedowns of debt. The second condition ensures that a change of ownership occurs and that there is a new set of shareholders. When these con-

6. Entities emerging from a bankruptcy could have chosen the procedure described in Chapter 7A of ARB No. 43, Quasi-Reorganization or Corporate Readjustment. According to ARB No. 43, in certain circumstances, contributed or paid-in capital may be used to restructure a corporation, including the elimination of a deficit in retained earnings (deficit reclassification). Further, entities may elect to perform an accounting quasi-reorganization that includes an elimination of the deficit, and a restatement of the carrying values of assets and liabilities to reflect current values. See Davis and Largay (1995) for a criticism of this practice.

ditions are met, the entity emerging from reorganization is deemed to be sufficiently distinct from the old entity to conclude that a fresh start basis of accounting is appropriate for the entity's assets and liabilities.

Under FSR, the reorganization value of the emerging entity is allocated to specific assets using the techniques provided for applying the purchase method as discussed in APB No. 16, *Business Combinations* (APB [1970a]). An intangible asset—"*reorganization value in excess of amounts allocable to identifiable assets*"—is recognized, and is amortized in conformity with the guidance in APB No. 17, *Intangible Assets* (APB [1970b]). Liabilities existing at the plan confirmation date should be stated at present values of amounts to be paid. Finally, the emerging firm should adopt changes in accounting principles that will be required within the following 12 months. Entities emerging from Chapter 11 bankruptcy and *not* meeting the criteria for FSR should report the liabilities compromised by the confirmed plan at the present value of amounts to be paid, and any forgiveness of debt should be reported as an extraordinary item. The Appendix to this paper provides an illustration of the adoption of FSR.

4. Development of the Empirical Analysis

The objective of the empirical analysis is to determine the effect of the misstatement in estimates of fresh start book value of equity on the association between stock prices or returns and accounting numbers reported subsequent to the adoption of FSR. To perform this analysis, I use an equity valuation model based on the theoretical foundation provided in Ohlson (1995). While this model relies on some restrictive assumptions, it provides an empirical framework in which to examine the relation between financial statement data and firms' values.[7] Under this model, the value of a firm at time t can be approximated by a linear combination of reported book value and earnings. To operationalize the empirical analysis in this paper, I assume that the model holds for the unbiased values of book values and earnings (denoted as BVE_{it}^{*} and E_{it}^{*}, respectively), and also augment the model with an intercept to reduce the possible impact of specification error on the coefficient estimates. The resulting equation for the stock price of firm i at time t (P_{it}) is

$$P_{it} = \beta_0 + \beta_1 \cdot BVE_{it}^{*} + \beta_2 \cdot E_{it}^{*} + \varepsilon_{it}. \quad (1)$$

The unbiased values of book value and earnings (BVE_{it}^{*} and E_{it}^{*}, respectively) and the reported ones (BVE_{it} and E_{it}) are linked by the initial misstatement in the estimate of fresh start equity value. By incorporating the initial misstatement into the econometric specification of eq. (1), I will be able to test two competing hypotheses. The first is that investors fully unravel the effects of the initial misstate-

7. This framework has been used by many recent studies in the accounting literature to analyze the relation between stock prices and various accounting information (e.g., Easton, Eddey, and Harris [1993]; Easton, Harris, and Ohlson [1992]; Amir [1993]; and Lev and Sougiannis [1996]).

ment on subsequently reported accounting numbers; the alternative hypothesis is that investors ignore the financial statement effects of the initial bias.

Let $BIAS_{i0}$ denote the initial bias (or misstatement) in management's estimate of the fresh start book value of equity of firm i at the adoption time of FSR (time 0). Further, assume that the bias in the fresh start equity is also reflected in the fresh start value of depreciable and/or amortizable assets and therefore is depreciated over a series of future years.[8] Accordingly, the unbiased book value of equity at the adoption time of FSR equals

$$BVE^{*}_{i0} = BVE_{i0} - BIAS_{i0} = (DA_{i0} - BIAS_{i0}) + NDA_{i0} - TL_{i0}, \qquad (2)$$

where

DA_{i0} = The reported value of depreciable/amortizable assets recorded at the adoption of FSR (time 0),
NDA_{i0} = The value of nondepreciable assets recorded at the adoption of FSR (time 0),
TL_{i0} = The value of total liabilities recorded at the adoption of FSR (time 0).

Thus, if depreciable assets recorded upon the adoption of FSR are understated, earnings reported after the adoption of FSR will be overstated because of a lower periodic depreciation or amortization charge. Book value of equity (and depreciable assets) reported after the adoption of FSR will be understated by the unamortized portion of the initial bias. If assets are depreciated on a straight-line basis over N years, reported earnings at time t will be overstated by $BIAS_{i0}/N$ (the periodic depreciation of the bias), and reported book value at time t will be understated by $(1 - t/N)\ BIAS_{i0}$ (the unamortized portion of $BIAS_{i0}$). Consequently, at any date after the adoption of FSR, *reported* earnings and book values will be related to the *unbiased* earnings and book values in the following way:

$$E^{*}_{it} = E_{it} + \frac{1}{N} \cdot BIAS_{i0} \qquad t = 1, \ldots, N, \qquad (3)$$

$$BVE^{*}_{it} = BVE_{it} - \left(1 - \frac{t}{N}\right) \cdot BIAS_{i0} \qquad t = 1, \ldots, N. \qquad (4)$$

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8. The accounting identity implies that the initial bias in the fresh start equity ($BIAS_{i0}$) must also be reflected in the fresh start value of liabilities and/or assets. $BIAS_{i0}$ is unlikely to be reflected in the fresh start values of liabilities or current assets. Liabilities, as of the fresh start adoption date, are recorded at the amounts that were approved by the bankruptcy court and agreed on by the creditors. Fresh start values of current assets are usually readily available and therefore are unlikely to reflect any error or bias. Accordingly, I expect $BIAS_{i0}$ to be mostly reflected in the fresh start value of depreciable noncurrent assets. In particular, $BIAS_{i0}$ is likely to be reflected in the fresh start value of PP&E, and in the newly recorded asset *reorganization value in excess of amounts allocable to identifiable assets* (the "reorganization goodwill"). As shown later in Table 4, PP&E decreased from 32 to 30 percent of total assets, and the reorganization goodwill accounted for 11 percent of total assets after adoption of FSR.

Substituting eqs. (3) and (4) into eq. (1) yields

$$P_{it} = \beta_0 + \beta_1\left[\mathrm{BVE}_{it} - \left(1 - \frac{t}{N}\right)\mathrm{BIAS}_{i0}\right] + \beta_2\left[\mathrm{E}_{it} + \frac{1}{N}\mathrm{BIAS}_{i0}\right] + \varepsilon_{it} \qquad t = 1, \ldots, N. \tag{5}$$

Rearranging terms,

$$P_{it} = \beta_0 + \beta_1 \cdot \mathrm{BVE}_{it} + \beta_2 \cdot \mathrm{E}_{it} + \delta_t^* \mathrm{BIAS}_{i0} + \varepsilon_{it} \qquad t = 1, \ldots, N, \tag{6}$$

where $\delta_t^* = (1/N)\,\beta_2 - (1 - t/N)\,\beta_1$ for $t \leq N$, and zero otherwise.

Equation (6) shows that the bias coefficient δ_t^* will have a particular relation to β_1 and β_2. This relation enables me to test empirically whether investors perfectly unravel the effect of the misstatement on book values and earnings reported subsequent to the adoption of FSR or whether they ignore the subsequent effects of this bias. Specifically, if investors consistently undo the effects of the misstatement in the fresh start equity value on subsequently reported book values and earnings, δ_t^* equals the value it has in eq. (6). Under the alternative hypothesis that investors forget or disregard the effects of the misstatement on reported numbers, prices will be a function of reported book values and earnings, in which case $\delta_t^* = 0$. Thus, I test the two *extreme* hypotheses that investors completely unravel the effect of the misstatement on accounting numbers reported after the adoption of FSR ($\delta_t^* = [1/N]\,\beta_2 - [1 - t/N]\,\beta_1$) and that they forget or disregard the misstatement effect and do not unravel it at all ($\delta_t^* = 0$).

To operationalize eq. (6), I assume that the unbiased book value of equity at the adoption time of FSR equals the market value of equity immediately after the emergence from Chapter 11 and the adoption of FSR (i.e., $\mathrm{BVE}_{i0}^* = \mathrm{MVE}_{i0}$). This assumption enables me to substitute BIAS_{i0} in eq. (6) with $\mathrm{BVE}_{i0} - \mathrm{MVE}_{i0}$ (where BVE_{i0} is the book value of equity *recorded* at the adoption of FSR).[9] Using MVE_{i0} as a benchmark for BVE_{i0}^* assumes that, as of the emergence date, MVE_{i0} represents an unbiased measure of the market's perception of the firm's true equity value. In the absence of intentional misstatements, I expect BVE_{i0}^* and MVE_{i0} to coincide. This occurs because, as of the emergence date (and only on that date), the emerging entity's assets are recorded at their fair values and liabilities existing at the fresh start adoption date are recorded at the present values of amounts to be paid. Therefore, the fresh start book value of equity will be recorded as the difference between the fair value of assets and the fair value of liabilities. In the absence of manipulation, this book value of equity must equal the market value of equity on the adoption date of fresh start reporting. Recall, however, that the evidence reported in Lehavy (1998) (that the fresh start equity is understated on average) suggests that this value has been manipulated by management. Finally, to estimate

9. Using the market value of equity immediately after the emergence to measure the unbiased book value of equity implies that I can test only whether investors forget to correct subsequently reported numbers and not whether investors are fixated on reported numbers.

eq. (6), I assume that $BIAS_{i0}$ is amortized over a period of 20 years (accordingly, N in eq. [6] equals 20 years). This assumption implies that estimating eq. (6) is essentially a joint test of this assumption and the coefficient of interest.[10]

Equation (6) tests the effects of both the amortization of the misstatement (eq. [3]) and the unamortized portion of the misstatement (eq. [4]) on the price of the firm at a specific point in time. To examine whether the period-to-period change in the initial misstatement (i.e., the periodic amortization of the bias) affects changes in firms' values, I derive the return specification. The return specification enables me to test whether investors unravel the effect of the periodic amortization of the misstatement on changes in book values when assessing firms' stock returns.[11] Assuming that the variables' coefficients in eq. (6) are temporally constant, the return specification can be derived by taking first differences of eq. (6) and deflating by beginning-of-period prices:

$$R_{it} = \beta_1 \frac{BVE_{it} - BVE_{it-1}}{P_{it-1}} + \beta_2 \frac{E_{it} - E_{it-1}}{P_{it-1}} + (\delta_t^* - \delta_{t-1}^*) \frac{BIAS_{i0}}{P_{it-1}} + v_{it}$$

or

$$R_{it} = \beta_1 \frac{\Delta BVE_{it}}{P_{it-1}} + \beta_2 \frac{\Delta E_{it}}{P_{it-1}} + \left\{ \left[\frac{1}{N}\beta_2 - \left(1 - \frac{t}{N}\right)\beta_1 \right] - \left[\frac{1}{N}\beta_2 - \left(1 - \frac{t-1}{N}\right)\beta_1 \right] \right\} \frac{BIAS_{i0}}{P_{it-1}} + v_{it}.$$

Rearranging terms,

$$R_{it} = \beta_1 \frac{\Delta BVE_{it}}{P_{it-1}} + \beta_2 \frac{\Delta E_{it}}{P_{it-1}} + \phi^* \frac{BIAS_{i0}}{P_{it-1}} + v_{it}, \tag{7}$$

where $\phi^* = (1/N)\ \beta_1$.

While the derivation of eq. (7) results in a model without an intercept, I estimate eq. (7) with an intercept based on Kvalseth (1985), who cautions that no-intercept models should be used only when both empirical data analysis and theoretical justification suggest that they are appropriate. The empirical results show that the estimated intercept is significant for only one quarter, indicating that, in general, the model is not misspecified.

Equation (7) indicates that the effect of the initial bias in the return specification is on changes in book values (and not on changes in earnings). Because

10. To examine the reasonableness of this assumption, I calculated an estimate of N as the ratio between the amount of depreciable assets (cost) and annual depreciation (using amounts reported after adoption of FSR). The mean of this ratio was 17 years. Also, about 80 percent of the firms surveyed in the *Accounting Trends and Techniques* (1997) use the straight-line depreciation method. Finally, to test the sensitivity of the results to the assumption on N, I repeat the tests using 40 years and get results that are qualitatively the same.

11. Using both return and price models is also recommended by Kothari and Zimmerman (1995), who evaluate the adequacy of these models for accounting research and conclude that the "use of both return and price models has the potential to yield more convincing evidence."

each earnings report is misstated by the same amount ($BIAS_{i0}/N$), changes in earnings are unaffected by the bias.[12] Changes in book values are affected by the periodic amortization of the misstatement, which is captured by the term $\phi_t^* BIAS_{i0}$ in eq. (7). If investors unravel the effect of the bias amortization on *changes* in book values, the coefficient estimate of ϕ_t^* will equal its theoretical value (β_1/N). Under the alternative assumption that investors ignore the subsequent effect of the misstatement amortization on changes in book values, the coefficient estimate of ϕ_t^* will be zero. Also note that since ϕ_t^* equals the *change* in the misstatement coefficient in the *price* regression (i.e., $\delta_t^* - \delta_{t-1}^*$ in eq. [6]), testing the equality between ϕ_t^* and 0 is equivalent to testing $\delta_t^* - \delta_{t-1}^* = 0$.

To summarize, eqs. (6) and (7) enable me to test two competing hypotheses. If, for each financial report issued after the adoption of FSR, investors completely undo the effects of a misstatement on reported book values and earnings, the *estimated* coefficients on $BIAS_{i0}$ should equal their respective theoretical values in eqs. (6) and (7). Under the alternative extreme hypothesis that investors disregard or forget the effects of the misstatement on reported numbers, the coefficient estimates on $BIAS_{i0}$ will be zero. To test these hypotheses, I estimate eq. (6) for eight quarters after the emergence from bankruptcy and the adoption of FSR, and test the alternative restrictions that the coefficient estimate on $BIAS_{i0}$ is $(1/N)\beta_2 - (1 - t/N)\beta_1$ and that it is zero.[13] I use the return specification in eq. (7) to test the competing hypotheses that the coefficient on $BIAS_{i0}$ is β_1/N and that it is zero. In addition to the quarter-by-quarter tests, I estimate eqs. (6) and (7) in pooled regression models and test *jointly* the statistical significance of the alternative restrictions on the coefficients on $BIAS_{i0}$.

5. Sample Selection and Descriptive Statistics

I obtained an initial listing of 295 firms that emerged from Chapter 11 between 1991 and 1994.[14] This listing represented all firms that emerged from Chapter 11 either as public companies or private companies, or were liquidated or merged/acquired upon emergence.

From this initial listing, 133 firms were excluded because no financial data were available postbankruptcy. These 133 firms most likely emerged as private

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12. This occurs because of my assumption that $BIAS_{i0}$ is depreciated using the straight-line method.

13. Because I use cross-sectional regression analysis to estimate eq. (6) (thereby constraining the coefficients to be cross-sectionally constant), I need to assume that $BIAS_{i0}$ does not vary in the cross-section with the coefficients on BVE_{it} and E_{it}.

14. This listing was obtained from (1) *The Bankruptcy Yearbook & Almanac* (1993 and 1995 editions), which contains a list of all public companies (at the time of filing) that emerged from Chapter 11, (2) the Securities and Exchange Commission's (SEC) *Annual Report to the Congress* (contains a listing of all presentations the SEC made to bankruptcy courts), (3) the AICPA's National Automated Accounting Research System (NAARS), (4) SEC filings, (5) *Bankruptcy DataSource*, (6) *Compact Disclosure*, and (7) the *Wall Street Journal Index*. Keywords included combinations of fresh, start, reporting, accounting, bankruptcy, and SOP 90-7.

TABLE 1

Sample Selection of 72 Firms That Emerged from Chapter 11 and Adopted Fresh Start Reporting

Firms emerging from Chapter 11 between 1991 and 1994	295
Less:	
No available data on computerized databases	133
Did not adopt FSR upon emergence from Chapter 11	31
Adopted FSR but no data available on fresh start amounts	29
Postbankruptcy stock price not available	27
Second filing for Chapter 11	3
Final sample	72

entities, were liquidated, or were acquired/merged immediately upon emergence.[15] Firms that were liquidated or merged into other reporting entities were not subject to the requirements of FSR because they ceased to exist as independent reporting entities. Therefore, their exclusion has no effect on the size of the sample of fresh start adopters. Firms excluded from the initial listing because they emerged as private entities might have been subject to FSR. For those firms, however, financial information is unobtainable.

An additional 31 firms were excluded because they did not adopt FSR upon their emergence from Chapter 11. Another 29 firms adopted FSR, but the data needed to determine the fresh start amounts for them are not available; postbankruptcy stock price information was not available for 27 firms; finally, three firms were dropped because of a second filing for Chapter 11 within the period. These search criteria yielded a final sample of 72 firms that emerged from Chapter 11 reorganization and applied fresh start reporting in accordance with SOP No. 90-7. Table 1 summarizes the results of this search.

The two-digit SIC industry classification of the sample is described in Table 2. The industry classification appears to be diverse, with most industries represented by one to four firms. The largest industry concentration is General Merchandise Stores (SIC 53), with seven firms (9.7%); the second largest is Industrial Machinery and Equipment (SIC 35), with five firms (7%).

Tables 3 and 4 report balance sheet items immediately before and immediately after recording the effect of the plan of reorganization and the adoption of FSR. Table 3 provides the statistics in millions of dollars, whereas Table 4 provides the common size statistics. The results in Table 3 indicate that total assets were not significantly altered as a result of the plan of reorganization and the adoption of

15. This rate (133 of 295, or 45%) is similar to the rate reported in other bankruptcy studies. For instance, Hotchkiss (1995) finds that of a group of 516 firms filing for Chapter 11 between 1979 and 1988, only 197 (38%) continued to file financial statements with the SEC, whereas the rest either emerged private, merged, or liquidated.

TABLE 2

Two-Digit SIC Industry Classifications of 72 Firms That Emerged from Chapter 11 and Adopted Fresh Start Reporting

SIC Code	Industry	Firms
13	Oil & Gas Extraction	2
15	General Building Contractors	2
17	Special Trade Contractors	1
20	Food and Kindred Products	1
23	Apparel & Other Textile Products	2
25	Furniture & Fixtures	1
27	Printing & Publishing	1
28	Chemicals & Allied Products	1
30	Rubber & Miscellaneous Plastic Products	2
32	Stone, Clay, & Glass Products	3
35	Industrial Machinery & Equipment	5
36	Electronic & Other Electronic Equipment	4
37	Transportation Equipment	3
41	Local & Interurban Passenger Transportation	1
42	Trucking & Warehousing	1
45	Transportation by Air	3
48	Communications	3
50	Wholesale Trade-Durable Goods	1
52	Building Materials & Garden Supplements	1
53	General Merchandise Stores	7
54	Food Stores	2
56	Apparel & Accessory Stores	1
59	Miscellaneous Retail	4
61	Nondepository Institutions	1
65	Real Estate	2
67	Holding & Other Investment Officers	2
70	Hotels and Other Lodging Places	3
73	Business Services	4
80	Health Services	3
83	Social Services	1

FSR. As expected in Chapter 11, the significant change occurred in total liabilities and stockholders' equity, in the form of a decrease in total liabilities and an increase in total stockholders' equity. Specifically, mean total assets decreased by $15.2 million, which was not statistically significant. In contrast, total liabilities decreased by $558 million, or 46 percent, and stockholders' equity increased by $543 million, or 133 percent. Within total assets, mean current assets and property plant and equipment decreased by a statistically significant amount (13% and 8%, respectively). As a result of the adoption of FSR, a reorganization goodwill was recorded with a mean (median) of $92.7 ($4.6) million.

Similar findings are reported in Table 4. Total assets decreased, but by an

TABLE 3

Descriptive Balance Sheet Statistics of Sample Firms

Balance sheet statistics (mean, median, and standard deviation) immediately before (Predecessor Company) and immediately after (Successor Company) recording the effect of the plan of reorganization and the adoption of fresh start reporting. In millions of dollars ($N = 72$).

	Predecessor Company	*Successor Company*	*t Stats Difference (p-Value)*
Current assets	$362.510	$316.766	−2.478
	157.092	114.877	(0.016)
	612.009	542.086	
Property plant and equipment	281.742	259.503	−1.979
	118.001	88.856	(0.052)
	523.290	515.040	
Other assets	161.565	121.646	−1.040
	54.729	33.270	(0.302)
	320.745	276.981	
Reorganization value in excess of amounts allocable to identifiable assets	—	92.738	—
	—	4.649	—
	—	182.117	
Total assets	805.817	790.654	−0.346
	445.144	439.512	(0.790)
	1318.89	1261.67	
Current liabilities	209.377	216.888	0.550
	85.972	99.235	(0.584)
	370.712	361.907	
Prepetition liabilities subject to compromise	789.534	—	—
	373.474	—	—
	1256.81	—	
Long-term liabilities	96.154	287.295	4.321
	5.838	116.512	(0.000)
	196.563	470.173	
Other liabilities	120.000	152.459	1.294
	27.605	21.083	(0.199)
	356.259	514.965	
Total liabilities	1215.07	656.642	−5.288
	550.735	332.707	(0.000)
	1942.79	1100.36	
Stockholders' equity	−409.248	134.024	5.173
	−129.460	70.000	(0.000)
	770.22	202.907	

TABLE 4

Descriptive Common Size Balance Sheet Statistics of Sample Firms

Common size balance sheet statistics (mean, median, standard deviation) immediately before (Predecessor Company) and immediately after (Successor Company) recording the effect of the plan of reorganization and the adoption of fresh start reporting (N = 72).

	Predecessor Company	*Successor Company*	*t Stats Difference (p-Value)*
Current assets	0.45	0.44	−0.574
	0.41	0.39	(0.568)
	0.22	0.25	
Property plant & equipment	0.32	0.30	−1.369
	0.23	0.28	(0.175)
	0.30	0.24	
Other assets	0.22	0.15	−3.676
	0.21	0.08	(0.001)
	0.14	0.17	
Reorganization value in excess of	—	0.11	—
amounts allocable to identifiable assets	—	0.03	—
	—	0.15	
Current liabilities	0.29	0.31	0.726
	0.28	0.26	(0.469)
	0.21	0.19	
Prepetition liabilities subject	1.10	—	—
to compromise	0.88	—	—
	0.69	—	
Long-term liabilities	0.13	0.35	7.362
	0.04	0.35	(0.000)
	0.19	0.22	
Other liabilities	0.10	0.11	0.563
	0.08	0.07	(0.575)
	0.10	0.13	
Total liabilities	1.61	0.76	−9.454
	1.42	0.80	(0.000)
	0.71	0.15	
Stockholders' equity	−0.61	0.24	9.469
	−0.42	0.20	(0.000)
	0.71	0.16	

insignificant amount, whereas total liabilities and shareholders' equity decreased significantly. Of the 72 firms, 42 (58%) recorded positive reorganization goodwill and 3 (4%) recorded negative reorganization goodwill (not reported). This newly recorded asset amounts to a mean (median) of 11 percent (3%) of total assets. Liabilities subject to compromise had a mean of 110 percent of total assets immediately before the adoption of FSR (these liabilities are eliminated following the settlement and the compromised amount is recorded in other liability categories). Finally, as noted by those who criticize Chapter 11's allowing firms to emerge with excessive amounts of debt, the median debt-to-assets ratio after the emergence from Chapter 11 is still high, at 0.8.[16]

Table 5 presents descriptive statistics of the variables for eight quarters immediately after the emergence from Chapter 11 and the adoption of FSR. These statistics indicate that during the eight quarters immediately following the adoption of FSR and the emergence from Chapter 11, firms experienced an increase in their stock prices and, in general, positive quarterly returns.[17] Median book-to-market was less than 1 for the entire period and declined from 0.84 in the first quarter to 0.64 (a decrease of 24%) in the eighth quarter. The FSR firms in the sample produced positive (median) earnings per share for most quarters. However, mean earnings per share was negative for most quarters.

Overall, the statistics in Table 5 indicate that the FSR firms in the sample had favorable performance after their emergence from bankruptcy. Their stock price increased over the period, and stock returns and reported (median) earnings per share were positive for most quarters.

6. Regression Results

Panel A of Table 6 presents the quarter-by-quarter results of estimating the price-level regression (eq. [6]).[18] The results indicate that the coefficient estimates on $BIAS_{i0}$ (δ_t) are negative and significantly different from zero in all quarters. Also reported in panel A of Table 6 are the theoretical values of δ_t^*, as well as t statistics for testing the restriction that $\delta_t^* = (1/N)\,\beta_2 - (1 - t/N)\,\beta_1$ (in the third-to-last column). The theoretical values of δ_t^* and the t statistics (e.g., -0.703 and 0.112 for the first quarter, respectively) are computed by estimating the *restricted* regression in eq. (6) and testing for the significance of the restriction on δ_t^*.[19] The t statistics reported in this column indicate that the restriction on the coefficient

16. By comparison, the median debt-to-assets ratio of the S&P 500 firms for 1994 is 0.65.

17. These statistics are consistent with Hotchkiss (1995), who reports positive trends in stock prices and returns for the first two years after bankruptcy.

18. Outliers identified with Cook's D statistic greater than 2.0 and/or the absolute value of studentized residuals greater than 3.0 were deleted from all regressions performed in this section. Results using White's (1980) consistent estimates of the variance are qualitatively the same as the results with the OLS estimates of the variance.

19. Specifically, I estimated eq. (6) subject to a linear restriction on the parameter δ_t^*. The values of δ_t^* reported in this column are computed according to the restriction using the estimated values for β_1 and β_2. The reported t statistics test the significance of this restriction.

TABLE 5

Descriptive Statistics of the Variables for Eight Quarters Following the Adoption of Fresh Start Accounting (Mean, Median, Standard Deviation)

	Quarter							
	One	Two	Three	Four	Five	Six	Seven	Eight
P_{it}	7.814	8.488	9.185	9.113	9.183	10.377	10.002	10.225
	7.125	7.500	7.630	7.190	6.875	8.130	8.750	9.000
	5.541	6.731	8.146	7.454	7.481	6.704	7.168	7.366
BVE_{it}	7.127	7.281	6.991	6.719	7.047	7.162	6.704	5.818
	5.492	5.300	5.771	5.878	6.320	6.435	6.225	5.953
	6.339	7.504	6.962	6.785	6.635	6.579	5.696	4.698
E_{it}	−0.623	−0.094	−0.109	−0.184	0.005	0.079	−0.495	−0.679
	0.022	0.004	−0.024	0.018	0.043	0.037	0.068	0.059
	7.095	1.017	0.842	0.989	0.993	0.718	2.969	3.588
$BIAS_{i0}$	−1.463	−1.044	−1.080	−1.126	−1.278	−1.022	−1.021	−0.926
	−0.681	−0.428	−0.526	−0.526	−0.676	−0.428	−0.443	−0.427
	4.356	4.277	3.893	3.963	3.977	4.072	4.000	4.087
N	52	57	62	60	61	61	59	53
R_{it}	—	0.121	0.027	0.033	−0.016	0.144	0.009	0.028
	—	0.070	0.000	0.190	−0.035	0.095	−0.001	−0.005
	—	0.423	0.306	0.256	0.305	0.288	0.302	0.245
ΔBVE_{it}	—	−0.041	−0.058	−0.029	−0.061	−0.045	−0.062	−0.048
	—	−0.001	−0.013	−0.002	0.008	0.000	0.005	0.005
	—	0.414	0.228	0.161	0.592	0.182	0.308	0.180
ΔE_{it}	—	0.171	0.011	0.000	−0.030	0.004	−0.049	−0.002
	—	0.005	−0.001	0.004	0.002	0.001	0.002	0.001
	—	1.620	0.208	0.138	0.602	0.181	0.251	0.074
N	—	50	56	56	58	59	58	50

P_{it} = Stock price of firm i at the end of the quarter t subsequent to the adoption of FSR.

BVE_{it} = Book value of equity per share of firm i at end of quarter t subsequent to the adoption of FSR.

E_{it} = Earnings per share (before extraordinary items) of firm i for the period ending quarter t subsequent to the adoption of FSR.

R_{it} = Quarterly stock return of firm i subsequent to the adoption of FSR.

ΔBVE_{it} = Change in book value of equity per share of firm i at end of quarter t subsequent to the adoption of FSR.

ΔE_{it} = Change in earnings per share (before extraordinary items) of firm i for the period ending quarter t subsequent to the adoption of FSR.

$BIAS_{i0}$ = Fresh start book value of equity minus market value of equity as of the FSR adoption date per share.

TABLE 6

Regressions of Stock Price on Book Value of Equity, Earnings, and Bias for Eight Quarters Following the Adoption of Fresh Start Accounting

Panel A: Quarter-by-quarter regressions

$$P_{it} = \beta_{0t} + \beta_{1t} \cdot \mathrm{BVE}_{it} + \beta_{2t} \cdot E_{it} + \delta_t \cdot \mathrm{BIAS}_{i0} + \varepsilon_{it}$$

Quarter	β_{0t} t Stats	β_{1t} t Stats	β_{2t} t Stats	δ_t t Stats	$\delta_t^{*(1)}$ t Stats for the Restriction that $\delta_t^* = \beta_{2t}/N - (1 - t/N)\beta_{1t}$	Obs.	Adj. R^2
One	1.713	0.715	0.014	−0.695	−0.703		
	2.986*	12.51*	0.277	−8.084*	0.112	52	79%
Two	2.074	0.732	−0.652	−0.979	−0.761		
	2.419**	9.052*	−1.146	−7.282*	−1.957***	57	65%
Three	2.244	0.731	−0.267	−0.754	−0.714		
	3.044*	10.20*	−0.451	−6.019*	−0.385	60	68%
Four	2.482	0.731	−0.465	−0.830	−0.717		
	2.871*	8.821*	−0.759	−5.312*	−0.839	58	62%
Five	2.526	0.724	−1.117	−0.908	−0.730		
	2.863*	8.133*	−3.169*	−6.223*	−1.463	61	58%
Six	3.378	0.764	−1.094	−0.752	−0.731		
	3.424*	6.780*	−1.043	−4.987*	−0.180	60	54%
Seven	3.754	0.763	−0.062	−0.705	−0.700		
	3.666*	6.767*	−0.280	−4.250*	−0.042	59	51%
Eight	3.817	0.941	−0.078	−0.537	−0.748		
	2.870*	5.536*	−0.349	−2.595**	1.317	52	38%

Panel B: Testing the alternative hypotheses on the bias coefficient in a pooled price-level regression with quarter-specific intercepts and slope coefficients ($N = 459$)[2]

$$P_{it} = \sum_{t=1}^{8} [Q_t(\beta_{0t} + \beta_{1t} \cdot \mathrm{BVE}_{it} + \beta_{2t} \cdot E_{it} + \delta_t^* \cdot \mathrm{BIAS}_{i0})] + \varepsilon_{it},$$

where $Q_t = 1$ if quarter $= t$ and 0 otherwise and $\delta_t^* = \frac{1}{N}\beta_{2t} - \left(1 - \frac{t}{N}\right)\beta_{1t}$

F statistic for a joint test of 8 restrictions $\{\delta_1 = \delta_1^*, \delta_2 = \delta_2^* \ldots \delta_8 = \delta_8^*\} = 1.176$ (p-value = 0.31)

F statistic for a joint test of 8 restrictions $\{\delta_1 = \delta_2 = \cdots = \delta_8 = 0\} = 27.87$ (p-value = 0.0001)

P_{it} = Stock price of firm i at the end of the quarter t subsequent to the adoption of FSR.

BVE_{it} = Book value of equity per share of firm i at end of quarter t subsequent to the adoption of FSR.

E_{it} = Earnings per share (before extraordinary items) of firm i for the period ending quarter t subsequent to the adoption of FSR.

BIAS_{i0} = Fresh start book value of equity minus market value of equity as of the FSR adoption date.

*Significant at the 0.01 level.

**Significant at the 0.05 level.

***Significant at the 0.1 level.

[1]δ_t^* is the theoretical value of the coefficient on $BIAS_{i0}$ from estimating eq. (6) subject to the restriction that $\delta_t^* = (1/N)\beta_{2t} - (1-t/N)\beta_{1t}$ with N equal to 20 years.

[2]I do not report the coefficient estimates of β_{0t}, β_{1t}, and β_{2t} in the pooled regression because (by definition) they are identical to their values in the quarter-by-quarter regression.

estimate of $BIAS_{i0}$ is rejected only in the second quarter (at a 10% level). In all other quarters, the equality between the misstatement coefficient and the value expected if investors correct for the effects of the misstatement on reported book values and earnings cannot be rejected.[20]

The fact that I reject the hypothesis that $\delta_t = 0$ but not the hypothesis that $\delta_t = (1/N)\beta_2 - (1 - t/N)\beta_1$ suggests that investors consistently unravel the effects of the initial misstatement in the estimate of fresh start equity on subsequently reported book values and earnings. To test the overall significance of the quarterly results in panel A of Table 6, I estimate a pooled price-level regression of eq. (6). This pooled regression is specified as

$$P_{it} = \sum_{t=1}^{8}[Q_t(\beta_{0t} + \beta_{1t} \cdot BVE_{it} + \beta_{2t} \cdot E_{it} + \delta_t^* \cdot BIAS_{i0})] + \varepsilon_{it}, \qquad (8)$$

where $Q_t = 1$ if quarter $= t$ and 0 otherwise, $t = 1, \ldots, 8$, and ε_{it} is a random error term.

This specification does not constrain the coefficients on the variables to be temporally constant, since it allows for quarter-specific intercepts and slope coefficients. Therefore, the estimated coefficients in the pooled regression will be identical to their values in the quarterly regressions (as reported in panel A). The advantage of this specification is that it allows me to test the *joint* restrictions associated with the competing hypotheses that $\{\delta_1 = \delta_1^*, \delta_2 = \delta_2^*, \ldots, \delta_8 = \delta_8^*\}$ and that $\{\delta_1 = \delta_2 = \ldots = \delta_8 = 0\}$.

The results of estimating the pooled price-level regression are presented in panel B of Table 6. Similar to the results in the quarterly regressions, the joint restriction that $\{\delta_1 = \delta_1^*, \delta_2 = \delta_2^* \cdots \delta_8 = \delta_8^*\}$ cannot be rejected at a statistically significant level (F statistic of 1.176 with a p-value of 0.31). The joint restriction that $\{\delta_1 = \delta_2 = \ldots = \delta_8 = 0\}$ is rejected at a statistically significant level (F

20. Notice two interesting observations from Table 6. First, R^2 declines monotonically as quarters increase after adoption of FSR (suggesting a decline in financial statements' informativeness). This trend is probably due to the fact that FSR involves a *one-time* adjustment of the historical numbers to their fair values, and firms return to use the historical accounting system after the adoption of FSR. Second, the coefficient on earnings is negative in most quarters (albeit not significant). This finding is probably due to the fact that earnings, on average, are negative for most quarters (see Table 5). This evidence is also consistent with other studies that have looked at firms with negative earnings (e.g., Burgstahler and Dichev [1997]).

statistic of 27.87 with a p value of 0.0001), again suggesting that investors do unravel the reported bias. Overall, the results in Table 6 suggest that even two years after the emergence from Chapter 11 and the adoption of FSR, investors correctly account for the effect of the initial misstatement in the fresh start equity on subsequently reported book values and earnings.[21]

Table 7 reports the results of estimating the effect of the misstatement in the fresh start equity value on the association between stock returns and accounting data reported subsequent to the adoption of FSR (eq. [7]). Panel A, which presents the quarter-by-quarter results, reports that the t statistics associated with testing the equality between the coefficient estimate on BIAS_{i0} and zero are insignificant for most quarters. The third-to-last column in panel A of Table 7 provides the theoretical value of the coefficient on BIAS_{i0} as well as t statistics for testing the restriction that this coefficient equals its theoretical value.[22] As shown in this column, the restriction that the empirical estimate of the misstatement coefficient equals its theoretical value is rejected only in the sixth quarter (which is also the only quarter that rejects the equality of the misstatement coefficient and zero).

To examine the overall significance of the results in panel A of Table 7, I reestimate the return specification in eq. (7) by pooling together all quarterly observations. The pooled return regression is specified as

$$R_{it} = \sum_{t=2}^{8}\left[Q_t\left(\beta_{1t}\frac{\Delta \text{BVE}_{it}}{P_{it-1}} + \beta_{2t}\frac{\Delta E_{it}}{P_{it-1}} + \phi_t^{*}\frac{\text{BIAS}_{i0}}{P_{it-1}} \right) \right] + v_{it}, \qquad (9)$$

where $Q_t = 1$ if quarter $= t$ and 0 otherwise. Similar to the pooled regression employed in the price specification, the pooled return specification allows the coefficients on the variables to vary across quarters, implying that the estimated coefficients in the pooled regression will be identical to their values in the quarterly regressions. This specification is used to test the alternative hypotheses that the coefficients on BIAS_{i0} equal their theoretical values and that these coefficients equal zero.

The results of estimating the pooled return model are presented in panel B of Table 7. In contrast to the nonrejections of the equality of the misstatement coefficient and its theoretical value in the quarterly regressions, the joint restriction is rejected at a statistically significant level (F statistic of 2.727 with a p-value of 0.009). The restriction that the coefficient estimates on BIAS_{i0} are jointly zero is not rejected (F statistic of 1.258 with a p-value of 0.270). To examine further

21. To test whether the results in Table 6 are unique to the FSR sample, I estimated the price regression for a matched sample of firms. A matched firm is one with the same three-digit SIC code and the closest size (as of the emergence quarter) to the FSR firm. Results of estimating the price regressions for the matched sample indicate that the coefficient estimates on BIAS_{it} are significantly different from *both* zero (the value expected if investors ignore the effects of BIAS_{it}) and the theoretical value (the value expected if investors account for the effects of BIAS_{i0}). The fact that I reject both extremes (zero and theoretical) suggests that the relation between BIAS_{i0} and price in a sample of firms that did not adopt FSR is different than the relation hypothesized for the FSR firms.

22. The theoretical value of the misstatement coefficient and the t statistics associated with testing the restriction on this coefficient are computed by estimating the restricted regression in eq. (7) and assuming N equals 20 years. Results using 40 years are qualitatively the same.

TABLE 7

Regressions of Stock Returns on Deflated Book Value Changes, Deflated Earnings Changes, and Deflated Bias for Eight Quarters Following the Adoption of Fresh Start Accounting

Panel A: Quarter-by-quarter regressions

$$R_{it} = \frac{\alpha_{0t}}{P_{it-1}} + \beta_{1t}\frac{\Delta BVE_{it}}{P_{it-1}} + \beta_{2t}\frac{\Delta E_{it}}{P_{it-1}} + \phi_t\frac{BIAS_{i0}}{P_{it-1}} + v_{it}$$

Quarter	α_{0t} t Stats	β_{1t} t Stats	β_{2t} t Stats	ϕ_t t Stats	$\phi_t^{*(1)}$ t Stats for the Restriction $\phi_t^* = \beta_{1t}/N$	Obs.	Adj. R^2
Two	0.336	0.513	0.010	−0.117	0.006		
	3.122*	4.362*	0.332	−1.490	−1.541	49	41%
Three	0.096	0.544	0.124	−0.083	0.007		
	0.881	2.801*	0.642	−1.203	−1.303	56	19%
Four	0.088	0.147	0.035	0.019	0.002		
	1.108	1.047	0.225	0.316	0.288	58	6%
Five	0.033	0.545	−0.355	0.051	0.007		
	0.394	3.373*	−2.239**	0.864	0.750	58	20%
Six	0.025	0.072	−0.254	0.168	0.005		
	0.339	0.346	−1.159	3.623*	3.199*	58	23%
Seven	−0.074	0.092	0.316	−0.030	0.001		
	−1.537	2.034**	2.571**	−0.563	−0.589	58	32%
Eight	0.022	0.285	0.011	0.051	0.003		
	0.465	1.317	0.021	0.979	0.930	50	0%

Panel B: Testing the alternative hypotheses on the bias coefficient in a pooled return regression with quarter-specific intercepts and slope coefficients (N = 387)[2]

$$R_{it} = \sum_{t=2}^{8}\left[Q_t\left(\frac{\alpha_{0t}}{P_{it-1}} + \beta_{1t}\frac{\Delta BVE_{it}}{P_{it-1}} + \beta_{2t}\frac{\Delta E_{it}}{P_{it-1}} + \phi_t^*\frac{BIAS_{i0}}{P_{it-1}}\right)\right] + v_{it},$$

where Q_t = 1 if quarter = t and 0 otherwise and $\phi_t^* = (1/N)\,\beta_{1t}$

F statistic for a joint test of seven restrictions $\{\phi_2 = \phi_2^*, \phi_3 = \phi_3^*, \ldots, \phi_8 = \phi_8^*\}$ = 2.727 (p-value = 0.009)

F statistic for a joint test of seven restrictions $\{\phi_2 = \phi_3 = \cdots = \phi_8 = 0\}$ = 1.258 (p-value = 0.270)

R_{it} = Quarterly stock return of firm i subsequent to the adoption of FSR.

ΔBVE_{it} = Change in book value of equity per share of firm i at end of quarter t subsequent to the adoption of FSR.

ΔE_{it} = Change in earnings per share (before extraordinary items) of firm i for the period ending quarter t subsequent to the adoption of FSR.

$BIAS_{i0}$ = Fresh start book value of equity minus market value of equity as of the FSR adoption date per share.

*Significant at the 0.01 level.

**Significant at the 0.05 level.

[1]ϕ_t^* is the theoretical value of the coefficient on $BIAS_{it0}$ from estimating eq. (7) subject to the restriction that this coefficient equals β_{1t}/N with N equal to 20 years.

[2]I do not report the coefficient estimates of α_{0t}, β_{1t}, and β_{2t} in the pooled regression because (by definition) they are identical to their values in the quarter-by-quarter regression.

whether the results in Table 7 are due to model misspecification, I perform some additional tests as described in the next section.

6.1 Specification Test of the Return Regression

The return specification (eq. [7]) is derived by taking first differences of the price specification (eq. [6]) and deflating by beginning-of-period prices. This derivation of the return specification assumes that the coefficients in eq. (6) (β_0, β_1, and β_2) are constant over time (i.e., $\beta_{jt} = \beta_{jt-1}$). To examine the effect of relaxing this assumption on the results reported in Table 7, I rederive a return specification from eq. (6) that does not restrict $\beta_{jt} = \beta_{jt-1}$:

$$R_{it} = \frac{\omega_{0t}}{P_{it-1}} + \beta_{1t}\frac{BVE_{it}}{P_{it-1}} - \beta_{1t-1}\frac{BVE_{it-1}}{P_{it-1}} + \beta_{2t}\frac{E_{it}}{P_{it-1}} - \beta_{2t-1}\frac{E_{it-1}}{P_{it-1}} + \theta_t^*\frac{BIAS_{it0}}{P_{it-1}} + \eta_{it}, \tag{10}$$

where $\omega_{0t} = \beta_{0t} - \beta_{0t-1}$ and $\theta_t^* = (1/N)(\beta_{2t} - \beta_{2t-1} + \beta_{1t-1}) + (1 - t/N)(\beta_{1t-1} - \beta_{1t})$.

Equation (10) is used to test the effect of relaxing the assumption on the intertemporal stability of the coefficients in eq. (6) on the results reported in the return regressions in Table 7. The quarter-by-quarter results of estimating eq. (10) (not reported) indicate that the equality of the coefficient on $BIAS_{it0}$ and zero is never rejected, and that the restriction that $\theta_t^* = (1/N)(\beta_{2t} - \beta_{2t-1} + \beta_{1t-1}) + (1 - t/N)(\beta_{1t-1} - \beta_{1t})$ is rejected in only two quarters (first and fourth). In addition to the quarter-by-quarter regressions, I estimated the pooled version of eq. (10):

$$R_{it} = \sum_{t=2}^{8}\left[Q_t\left(\frac{\omega_{0t}}{P_{it-1}} + \beta_{1t}\frac{BVE_{it}}{P_{it-1}} - \beta_{1t-1}\frac{BVE_{it-1}}{P_{it-1}} + \beta_{2t}\frac{E_{it}}{P_{it-1}} - \beta_{2t-1}\frac{E_{it-1}}{P_{it-1}} + \theta_t\frac{BIAS_{it0}}{P_{it-1}}\right)\right] + \eta_{it}, \tag{11}$$

where $Q_t = 1$ if quarter $= t$ and 0 otherwise. The results of estimating eq. (11) are similar to those reported in panel B of Table 7. In particular, the joint restriction on the bias coefficients that $\{\theta_2 = \theta_2^*, \theta_3 = \theta_3^*, \ldots, \theta_8 = \theta_8^*\}$ is rejected at a statistically significant level (p-value of 0.0089), and the joint restriction that $\{\theta_2 = \theta_3 = \ldots = \theta_8 = 0\}$ is not rejected (F statistic of 1.159 with a p-value of 0.326).

To summarize the results of the return regressions, the *quarterly* regression results indicate that neither extreme value of the bias coefficient is rejected. Both the equality of ϕ_t and its theoretical value (conjectured if investors unravel effects of the bias amortization) and the equality of ϕ_t and zero (conjectured if investors ignore effects of the bias amortization) are not rejected.[23] The fact that in the quarterly return regressions neither extreme can be rejected suggests that these regressions are lacking in power.

In contrast to the quarterly regressions, the *pooled* return regression rejects the equality of the estimated value and the theoretical value of the misstatement coefficient (i.e., $\phi_t = \beta_1/N$) and does not reject the equality of this coefficient and zero. To interpret this result, recall that ϕ_t in eq. (7) equals the quarter-to-quarter change of the bias coefficient in the price regression (i.e., $\delta_t - \delta_{t-1}$ in eq. [6]). Therefore, the fact that in the pooled return regression I reject the hypothesis that $\phi_t = \beta_1/N$ but not that $\phi_t = 0$ essentially indicates that the bias coefficient in the price specification is stable over time (i.e., $\delta_t - \delta_{t-1} = 0$). Finally, the results of the specification tests of the return regression indicate that my inferences are not sensitive to the assumption of temporal stability of the coefficients in eq. (6). As I will discuss in the next section, combining the evidence from the pooled return regression with the one from the price-level regressions suggests that while investors appear to adjust for the effect of the initial misstatement on book values and earnings reported subsequent to the adoption of FSR, the *magnitude* of the adjustment is constant over time.

7. Summary

This paper examines the effects of a misstatement in the initial estimate of fresh start value of equity on the association between prices or returns and accounting numbers reported after the adoption of fresh start reporting. This issue is analyzed for a sample of firms that emerged from Chapter 11 bankruptcy protection and adopted fresh start reporting upon their emergence. Using a security valuation model that links stock price with accounting variables, I derive an explicit relation between stock prices or returns and a measure of the misstatement in the fresh start value of equity. The model provides a theoretical value for the coefficient associating the misstatement measure with prices or returns under alternative hypotheses that investors (1) consistently undo the effects of the misstatement on subsequently reported numbers and (2) ignore the effects of the misstatement in setting prices. I estimate this model for eight quarters after the adoption of FSR and test the alternative hypotheses by examining the relation between the estimated coefficient on the misstatement measure and its theoretical value.

Price-level regression results do not reject the equality of the estimated value

23. Formally, the quarterly regressions reject the equality of the estimated ϕ_t and its theoretical value in only one quarter. This same quarter is also the only one in which the equality of the estimated value and zero is rejected.

and the theoretical value of the coefficient on the misstatement term and reject the equality of this coefficient and zero. Thus, the price-level results suggest that in setting prices, investors consistently undo the effects of the misstatement on book values and earnings reported subsequent to the adoption of FSR.

The quarterly stock return regressions reject the equality of the estimated value and the theoretical value of the misstatement coefficient in only one quarter. This quarter is also the only one in which the equality of the estimated value and zero can be rejected. The fact that in the quarterly return regressions neither extreme (zero or the theoretical value) can be rejected suggests that the quarter-by-quarter return tests are lacking in power. Finally, the pooled return regression rejects the *joint* equality of the estimated value and the theoretical value of the misstatement coefficient and does not reject the equality of this coefficient and zero. Because the misstatement coefficient in the return regression equals the quarter-to-quarter *change* in the coefficient on the misstatement term in the price regression, the pooled return regression results indicate that the coefficient on the misstatement term in the price specification is stable over time.

Overall, the results of this paper suggest that while investors appear to adjust for the effect of the initial misstatement on book values and earnings reported subsequent to the adoption of FSR, the *magnitude* of the adjustment is constant over time. In other words, it appears that in setting prices, investors compute the financial statement effects of the misstatement as of the adoption date of FSR, and use this same figure to adjust all subsequently reported book values and earnings.

This paper provides several new insights to the literature that examines the valuation implications of discretionary accounting choices. First, by focusing on the previously unstudied association between firms' values and the choice of the fresh start equity value, I provide new evidence on investors' abilities to unravel the effects of discretionary accounting choices on reported numbers. An additional contribution of this paper arises from the fact that I make explicit predictions about the value of the coefficient relating firms' values to the discretionary choice. Such predictions are not usually made in other studies in this area, which instead base their conclusions on the deviation of such coefficients from zero. Taken together, the evidence that investors appear to unravel the effects of the misstatement in the fresh start equity on reported numbers suggests that reporting fair value measures with errors does not necessarily imply that investors cannot discern and undo the effects of such measurement errors on reported numbers. To the extent that the association between accounting data and firms' values captures the relevance of such data, my findings counter the claim made by opponents of fair value accounting that if fair values lack reliability (because of errors or intentional manipulations), they will not be relevant to financial statement users. I provide evidence suggesting that investors successfully unravel the bias in the fresh start value of equity. This result could be used by accounting standard-setters when considering the relation between the reliability and the relevance of a prospective fair value accounting rule.

APPENDIX

This example illustrates the adoption of fresh start reporting (adopted from SOP No. 90-7).

The Bankruptcy Court confirmed XYZ's plan of reorganization as of June 30, 19X2. It was determined that XYZ's reorganization value computed immediately before June 30, 19X2, the date of plan confirmation, was $1,300,000, which consisted of the following:

Cash in excess of normal operating requirements generated by operations	$150,000
Net realizable value of asset dispositions	75,000
Present value of discounted cash flows of the emerging entity	1,075,000
Reorganization value	$1,300,000

The following entries record the provisions of the plan and the adoption of fresh start reporting:

Entries to record debt discharge:

Liabilities subject to compromise		1,100,000		
Senior debt—current			50,000	
Senior debt—long term			225,000	
IRS note			50,000	
Cash			150,000	
Subordinated debt			175,000	
Common stock (new)			86,000	
Additional paid-in capital			215,000	
Gain on debt discharge			149,000	

Entries to record exchange of stock for stock:

Preferred stock	325,000			
Common stock (old)	75,000			
Common stock (new)			14,000	
Additional paid-in capital			386,000	

Entries to record the adoption of fresh-start reporting and to eliminate the deficit:

Inventory		50,000		
Property, plant, and equipment		175,000		
Reorganization value in excess of amounts allocable to identifiable assets		175,000		
Gain on debt discharge		149,000		
Additional paid-in capital		351,000		
Goodwill				200,000
Deficit				700,000

The effect of the plan of reorganization on XYZ Company's balance sheet, as of June 30, 19X2, is as follows:

	Precon-firmation	Adjustments to Record Confirmation of Plan: Debt Discharge	Adjustments to Record Confirmation of Plan: Exchange of Stock	Fresh Start	Company's Reorganized Balance Sheet
Assets					
Current Assets					
Cash	$200,000	$(150,000)			$ 50,000
Receivables	250,000				250,000
Inventory	175,000			$ 50,000	225,000
Assets to be disposed of valued at market, which is lower than cost	25,000				25,000
Other current assets	25,000				25,000
	675,000	(150,000)		50,000	575,000
Property, plant, and equipment	175,000			175,000	350,000
Assets to be disposed of valued at market, which is lower than cost	50,000				50,000
Goodwill	200,000			(200,000)	
Reorganization value in excess of amounts allocable to identifiable assets				175,000	175,000
	425,000	0		150,000	575,000
	$1,100,000	($150,000)		$200,000	$1,150,000
Liabilities and shareholders' deficit					
Liabilities not subject to compromise					
Current liabilities					
Short-term borrowings	$25,000				25,000
Current maturities of senior debt		$ 50,000			50,000
Accounts payable trade	175,000				175,000
Other liabilities	100,000				100,000
	300,000	50,000			350,000
Liabilities subject to compromise					
Prepetition liabilities	1,100,000	(1,100,000)			
IRS note		50,000			50,000
Senior debt, less current maturities		225,000			225,000
Subordinated debt		175,000			175,000
Shareholders' deficit					
Preferred stock	325,000		$(325,000)		
Additional paid-in capital		215,000	386,000	(351,000)	250,000
Common stock—old	75,000		(75,000)		
Common stock—new		86,000	14,000		100,000
Retained earnings (deficit)	(700,000)	149,000		700,000 (149,000)	
	(300,000)	450,000	0	200,000	350,000
	$1,100,000	($150,000)	$0	$200,000	$1,150,000

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Discussion: "The Association between Firms' Values and Accounting Numbers after Adoption of Fresh Start Reporting"

RAY BALL*

This paper has several nice features. First, the topic—fresh start reporting (FSR) of firms emerging from bankruptcy reorganization under Chapter 11—is inherently very interesting. The palates of researchers and teachers, accustomed to a diet of information on surviving firms, might well be stimulated by the institutional appetizers Reuven Lehavy serves up. For example, I was unaware of the FSR arrangements under SOP No. 90-7 and discovered that it provides a rare case in which U.S. accounting rules provide for revaluation of nonmarketable assets. While it is not exploited in this study, I was intrigued by the financial recontracting that occurs in the reorganization when debt in the failed firm is swapped for equity in the emerging firm.

Second, the paper is a clever extension of the author's previous work that is focused on the FSR-based financial statements issued immediately upon emergence from reorganization. In this paper, the analysis is extended to financial statements in subsequent years. Here, the focus is on the accounting implications of balance sheet revaluation at the time of emergence for earnings reported in subsequent periods. For example, ceteris paribus a higher valuation of depreciable assets at emergence increases stockholders' equity at that time, but it also increases subsequent depreciation expense and thus decreases subsequent reported earnings. In this paper, Lehavy attempts to document such effects over time and to determine whether investors figure them out correctly.

Third, the research is executed with considerable care. Significance tests for estimated coefficients are conducted relative to the magnitudes of coefficients that are predicted by various theories, not relative to the less interesting null of zero. Constraints are placed on coefficients in different regressions (for example, time-series versus cross sections versus pooled regressions). Care is taken to specify whether theory predicts the suppression of the intercept term.

Fourth, Lehavy assiduously avoids using the term "value relevance," even though the topic seemingly involves an accounting restatement of assets to fair value, together with the relation between the restated numbers and the firms' market values. Nevertheless (here I reveal my bias), I argue below that the research would have been enriched enormously by jettisoning the "value relevance" way of thinking—as distinct from speaking—for three reasons. The major economic event in

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the reorganization is not asset revaluation, but financial recontracting in the form of a substantial swap of debt for equity. This is an interesting and large event for these firms, but it is not exploited in the study. In addition, there in fact is no significant revaluation of total assets on average in the sample. The principal asset-related transaction on average is a reclassification of assets, the main effect of which is on debt contracts. Finally, I argue that one requires some type of "costly contracting" theory of accounting to predict the coefficients in the Ohlson (1995) model that is the basis of this research.

1. "Value Relevance" versus "Contracting" Perspectives on the Topic

SOP No. 90-7 requires firms experiencing substantial ownership changes in reorganization to restate assets at their fair values, defined as "the amount a willing buyer would pay for the assets of the entity immediately after the restructuring." As Lehavy notes, "these amounts are based on forecasts and projections, rather than on arm's-length transactions" and thus are exposed to both innocent error and management manipulation. Lehavy's tests therefore address the implications of errors and manipulation of fair value estimates, initially in respect to the relation between book and market values and then, in this paper, between earnings, book values and market values.

The basic notion tested in this paper is that "if the initial fresh start book value of equity is misstated, *both* future reported earnings *and* future reported book values are misstated because of differences in the valuation of depreciable and amortizable assets." The book value of equity and earnings reported in the absence of errors or manipulation are denoted by BVE^* and E^* respectively, and the model tested assumes that a standard Ohlson (1995) model (1) then applies:

$$P_{it} = \beta_0 + \beta_1 \cdot \mathrm{BVE}^*_{it} + \beta_2 \cdot E^*_{it} + \varepsilon_{it}. \quad (1)$$

The dependent variable here is market value of equity (since book value and earnings are expressed on a per-share basis, the dependent variable is stock price, P). The study falls in the class of "value relevance" studies, testing the relation under these special circumstances between market values of equity and reported "fair values" of assets (controlling for liabilities) and reported earnings, using a standard model for that class.

A "contracting" perspective would alert the researcher to the institutional fact that asset revaluation is not necessarily the major economic event recorded in the accounts of the reorganized firms. It would focus more on the financial recontracting that occurs in the reorganization, with debt in the failed firm being systematically swapped for equity of the emerging firm. It would note the problems of controlling for liabilities in the research design, because they are endogenously determined.

Table 1 summarizes the financial recontracting that occurs in Chapter 11 for the sample firms studied, and is extracted from Lehavy's Table 3. The mean asset

TABLE 1

Primary Financial Recontracting in Chapter 11

	Mean ($ millions) Before Chapter 11	Mean ($ millions) Recontracted	*t* statistic for Difference
Total liabilities	1,215	657	−5.29
Stockholders' equity	−409	134	+5.17
Total assets	806	791	−0.35

revaluation is only −$15 millions, only 2 percent approximately of prior book value. In sharp contrast, a mean amount of $558 millions of debt is surrendered for equity, a change that is substantially larger in both dollar and percentage terms. The primary economic event thus appears to be the change in ownership, with creditors becoming stockholders, not the adoption of "fair value" accounting.

A secondary economic event is the *reclassification* (as distinct from revaluation) of firms' assets. An effect of this reclassification is to further restrict future debt issue. The reclassification is summarized in Table 2, also extracted from Lehavy's Table 3. The tightened restrictions on future debt issuance occur because tangible assets are reduced, and loan agreements thus can further restrict debt in two ways. First, if there are any minimum total leverage covenants that restrict debt to a proportion of tangible assets (i.e., do not loan against intangibles), then the reclassification of assets restricts total future borrowing more tightly. Second, if there are any minimum working capital covenants, then they become more restrictive due to the reclassification from current assets to reorganization goodwill.

In my view, the most interesting accounting event in these firms' reorganizations is the recognition in the accounts of a substantial financial restructuring and of on-going restrictions of further debt financing. On average, there is little or no change in the total book values of the firms' assets.

2. Specification of "Value Relevance" Hypotheses and Tests

Here I have a range of related comments, many of them generic to "value relevance" hypotheses and tests.

2.1 Lack of Theory of Accounting's Economic Role in Reorganization

Derivation of the Ohlson (1995) model (1) requires an absence of transactions costs. It is not a model of the costly economic activity of accounting. Under its assumptions, there is no explanation of why accountants would not simply report

TABLE 2

Secondary Financial Recontracting in Chapter 11

	Mean ($ Millions) Before Chapter 11	Mean ($ Millions) Recontracted	*t*-statistic for Difference
Current assets	363	317	−2.48
Property, plant, and equipment	282	260	−1.98
Other assets	162	122	−1.04
Goodwill on reorganization	0	93	+4.32
Total assets	806	791	−0.35

the market value of equity or, for that matter, of why they would be paid positive sums to report anything at all.

Different hypothetical accounting regimes could lead to BVE_{it} incorporating the economic information in market prices according to the following functions:

1. P_{it}	MVE without error
2. $P_{it} + \varepsilon_{it}$	MVE with error
3. $\gamma P_{it} + \varepsilon_{it}$	Conservative MVE with error
4. $\alpha_0 \Delta P_{it} + \alpha_1 \Delta P_{it-1} + \alpha_2 \Delta P_{it-2} \ldots + \varepsilon_{it}$	Lagged incorporation of MVE information

The regimes would have different implications for coefficients in model (1). In all except the first hypothetical regime above, book value incorporates the information in price with some error structure. Crucial determinants of the Ohlson (1995) regression coefficients thus would include the relative magnitudes of the error variance and the price variance, and the correlation between the errors in BVE and E. To take a simple example, in a univariate regression of P on BVE, under the first hypothetical regime the true coefficient is 1, but there seems to be no economic role of such an accounting regime. What is the economic function of duplicating costlessly-known prices on the balance sheet?

Under the second hypothetical regime, the true coefficient is $1/[1 + \sigma^2(\varepsilon)/\sigma^2(P)]$, the classic errors-model result. In the fourth and in my view more realistic regime, model (1) is an incorrect specification. Without specifying the accounting regime, interpretation of "value relevance" studies is difficult, perhaps impossible.

Under what circumstances would we expect to see a particular accounting regime in practice? For example, if the primary demand is for an accounting regime that does not revise book values until (or near) the time that cash flows are realized, as in the revenue realization rule, then the fourth model above would be the best

fit. Accounting earnings then incorporate cash flow realizations, but prices incorporate present values of future cash flows and changes in prices incorporate revisions of expectations of future realizations. Controlling for dividends and capital contributions, changes in prices are simply a per-share version of "economic income," so accounting earnings under the revenue realization rule are a lagged function of economic income, as in the fourth regime. In general, unless one specifies the accounting regime, it is unclear what coefficients to expect in the standard Ohlson (1995) regression.

This is where "costly contracting" theory can enter the picture.[1] This body of thought views the accounting regime that is supplied by accountants as depending among other things on its economic role (the demands for accounting information) and its cost (the supply function for accounting information). It should be clear from Tables 1 and 2 here that a primary economic role of the accounting reports of firms emerging from Chapter 11 is to reflect revisions in financial contracting and to create further restrictions on debt contracting in these firms. The "value relevance" view is that optimum accounting information closely or perfectly duplicates market prices. It is difficult to envisage an economic demand for such information; in addition, we have known since Ball and Brown (1968) that accounting information systematically lags market prices.

From a "costly contracting" theory perspective, the Ohlson (1995) regression function (1) reverses the correct direction of economic causality between reported accounting numbers and market prices. That is, the accounting numbers are the dependent variables, as in Beaver, Lambert, and Morse (1980). For example, if the demanded accounting regime revises book values as in the revenue realization rule, then the appropriate model for accounting earnings specifies it as a lagged function of past economic income. Accounting earnings then incorporate cash flow realizations, but prices incorporate present values of future cash flows and changes in prices incorporate revisions of expectations of future realizations. This suggests a model along the lines of

$$E_{it} = \alpha_0 \Delta P_{it} + \alpha_1 \Delta P_{it-1} + \alpha_2 \Delta P_{it-2} + \cdots + \varepsilon_{it}. \quad (2)$$

Here, ΔP (adjusting for dividends and capital transactions) is economic income. Introducing contracting-based demands for conservatism leads to a nonlinear version of eq. (2), as in Basu (1997), with E specified as a function of the sign of ΔP.

2.2 Effect of Financial Recontracting on BVE and Future Earnings

The central contribution of this paper is the analysis of earnings reported after the firms emerge from Chapter 11. The motivation is that the reported values of depreciable and amortizable assets at the time of emergence affect the subsequent

1. The origins of "costly contracting" accounting research are described in Watts and Zimmerman (1986).

reported earnings, due to their effects on depreciation and amortization. But the reported amounts for depreciable and amortizable assets in total do not change substantially.

More important, in my view, is that the average firm reduces its debt by approximately 50 percent, and likely reduces its future interest expense by a similar magnitude. The reduction in debt is approximately from 150 to 80 percent of total assets. Even if much of the debt incurs no interest, either explicit or implicit (e.g., in prices paid for credit purchases), the amount of the change in debt is so large relative to the income-earning assets that the interest effect on future reported earnings needs to be taken into account.

2.3 Taxes and Role of BVE Prior to Chapter 11

A further problem in the specification of eq. (1) is that the tax bases of assets revalued in Chapter 11 are not revised. Price P is a function of cash flows to investors after corporate taxes. Future earnings E is stated after taxes. Hence, the book value of assets prior to reorganization will be a correlated omitted variable in eq. (1).

2.4 Skew

As in most interesting accounting studies, the cross-sectional distribution of the variables is substantially skewed. Recognizing the potential problems, Lehavy employs several outlier-deletion techniques (see footnote 18 in the main paper). To be confident in the results, I would have preferred to see an analysis of a control sample, matched on variables such as size, leverage, and stock return variance (recall that these are extremely highly levered firms) that did not enter Chapter 11.

2.5 Possible Sample Selection Bias

Finally, I am concerned that 45 percent of the firms (133/295) that emerged from Chapter 11 over the sample period did not make it to stock market listing, and thus were eliminated from the study. Those that did achieve listing status seem more likely to have ex post MVE in excess of book values at emergence. While the lag between emergence and the determination of listing status is unclear in the paper, substantial information likely is conveyed either in the interim period, by the listing outcome itself, and by not being quickly delisted (these firms are 80% levered postbankruptcy, and presumably have high price volatility). A selection bias in favor of positive post bankruptcy news is consistent with the high 12.1 percent mean stock return in the first quarter after emergence, reported in Table 5.

3. Conclusion

This paper studies fresh start reporting of firms emerging from bankruptcy reorganization under Chapter 11. The topic is very interesting. It is a rare case, under unusual circumstances, in which U.S. accounting rules provide for revaluation of nonmarketable assets. The paper is a clever extension of the author's previous work on the financial statements issued immediately after emergence from reorganization. It studies the effect of revaluation of depreciable assets at the time of emergence on subsequent reported earnings. Lehavy documents such effects and tests whether investors act as if aware of them. The research is executed carefully.

Predictably, my major suggestion is that the study would have been much enriched by some "costly contracting" theory. First, such an approach might exploit the intriguing financial recontracting that occurs in the reorganization, with approximately half the massive debt of the failed firm being swapped for equity in the emerging firm. Second, "costly contracting" theory implies that coefficients from fitting an Ohlson (1995) model to the data are difficult or impossible to interpret, in the absence of a theory of the demand and supply of accounting information, and does suggest that alternative models are more appropriate.

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