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Negative Special Items and Future Earnings: Expense Transfer or Real Improvements?

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ABSTRACT: Burgstahler et al. (2002) investigate the implications of special items for future earnings and report that firms use negative special items to accelerate the recognition of future expenses into the current period. That is, negative special items serve as an "inter-period transfer" device. We extend their analysis and find that earnings increase in post-special item quarters beyond the four quarters considered in Burgstahler et al. (2002). In particular, we find that future earnings increase over the subsequent 16 quarters by more than 130 percent of the reported negative special item. The earnings increases are greater for restructuring charges than for asset write-downs or goodwill impairment charges. Such patterns suggest that negative special items also signal real future performance improvements (i.e., performance improvement hypothesis) in addition to inter-period expense transfer (i.e., inter-period transfer hypothesis). Moreover, the real improvement effect appears to be driven by restructuring charges, the most prevalent type of special item.

Keywords: *negative special items; earnings management; restructuring*.

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I. INTRODUCTION

Burgstahler et al. (2002; hereafter, BJS) document that negative special items (NSIs) are followed by "earnings of the *opposite sign* in subsequent quarters" (BJS 2002, 587; emphasis in the original).[1] They conjecture that NSIs, on average, represent an "inter-period transfer" of future expenses into current period income. Moreover, their empirical evidence suggests that this inter-period transfer aspect of NSIs is quite substantial, equaling over 8 percent of the original NSI for each of the first three quarters and over 27 percent of the original NSI in the fourth quarter following special item recognition. Cumulatively, their analysis suggests that over 50 percent of an NSI is realized as increased earnings in the four quarters subsequent to recognition.[2] By documenting the future earnings increases associated with NSIs, BJS present compelling evidence that earnings management in the form of inter-period expense transfer is the primary motivating factor for managers in recognizing NSIs.

We address three aspects of the BJS findings to further our understanding of inter-period expense transfer as a basis for interpreting the future earnings implications of NSIs. First, we assess the BJS inter-period transfer hypothesis by considering its implications for changes in earnings for quarters beyond the first four quarters subsequent to the recognition of the NSI. Second, we consider the implication of NSIs for changes in operating cash flows that are not a part of the BJS analyses. The cash flow aspect of our investigation is motivated by Doyle et al. (2003) who report mixed evidence regarding the relation between special items and future cash flows.[3] Third, we disaggregate NSIs into sub-types that have predictable and varying implications for future earnings and cash flows. In particular, we examine the implications for changes in future earnings and operating cash flows for the current recognition of restructuring charges, asset write-downs, and goodwill impairment charges.[4]

While expense transfer certainly constitutes one possible source of the near-term future earnings increases documented in BJS, such increases are also consistent with the notion that the underlying events and actions prompting the recognition of a special item lead to real future performance improvements by the firm. For example, take the case of a firm that undertakes a restructuring of operations (a subclass of NSIs). If the restructuring includes a workforce reduction and plant closing, then the firm may realize future efficiency gains from reduced payroll expenses and operating expenses associated with running the plant. As long as the reduced expenses exceed the decline in revenue from the lost productive capacity, the firm will realize efficiency gains. However, unlike expense transfer driven gains, such real improvement effects need not decline and may well even strengthen in quarters beyond t+4 relative to the special item event quarter. By

[1] BJS extend prior research (e.g., Bernard and Thomas 1990; Ball and Bartov 1996) by documenting that security prices fail to fully reflect predictable elements of the relationship between current and future earnings. The primary focus of this aspect of their study concerns whether the market fully impounds the future income properties of special items. They report that prices better reflect the future implications of special items than the other components of earnings. This finding is consistent with the notion that the implications of transitory special items for future earnings are relatively clear compared to other components of earnings.

[2] The acceleration of future expense as part of a current NSI is simply a timing issue in that future expenses taken now will not be incurred in the future periods resulting in an increase to future net income. For example, an asset write-down recognized as an NSI in the current period represents the acceleration of future depreciation expense. Thus, earnings will be higher in future periods by the amount of the NSI (i.e., the accelerated depreciation).

[3] They report an insignificant relation between special items and operating cash flows, but a significantly positive relation with free cash flow (see Doyle et al. 2003, 160–161, Tables 3 and 4). Their analysis, however, does not partition special items into negative and positive amounts, whereas our entire focus is on the distinct impact of NSIs documented in BJS.

[4] We predict that restructurings will lead to efficiency improvements, asset write-downs are associated with expense transfer, and goodwill impairment charges will not be associated with efficiency gains or expense transfer. We discuss this in more detail later in the text.

evaluating the implications of NSIs for future earnings and operating cash flows, our analysis allows us to gain insight into the particular roles of expense transfer and real improvements for the future performance consequence of NSIs. Further, by separately examining the implications of restructuring charges, asset write-downs, and goodwill impairment charges, we are able to focus on NSI sub-types that are most likely to be associated with efficiency improvements, expense transfer, and no future effect, respectively.

An accrual-based income-transfer to *increase* current income borrows against future earnings by either deferring the recognition of expenses or accelerating the recognition of revenue. In contrast, NSI-based expense transfer *decreases* current income, thus transferring earnings to the future by accelerating the recognition of future expense. The result is lower current period earnings and higher future period earnings (BJS). This effect is naturally bounded by the amount of the special item, is inherently non-sustainable in perpetuity, and must at some point dissipate.[5] As time passes and the transfer effect declines, there is a necessary reversal in income *changes* since within each earnings difference, the expense transfer effect in the form of an increase in earnings is greater in the earlier earnings number than in the subsequent earnings number.[6] In this respect, the empirical implications of the expense-transfer hypothesis resemble the well-known future income reversal properties of accruals.[7] Hence, as is true for accrual-based earnings increases, NSI expense transfer will lead to expected income change declines in future periods as the aggregate amount of the transfer is consumed.

Our initial tests of the expense-transfer hypothesis center on determining whether any evidence of these predicted declines in the transfer effect exists in quarters $t+5$ through $t+16$ relative to the NSI event in quarter t. We find no evidence of these expected declines and, in fact, we find considerable evidence supportive of the proposition that NSIs in quarter t imply increases in income in quarters $t+5$ through $t+16$. Similar to the Francis et al. (1996) suggestion that positive price responses to restructuring charge announcements (one type of special item) signal improvements in future performance, we interpret this persistent income effect as evidence that NSIs in part reflect structural improvements in operations/strategy that favorably impact long-term profitability.[8]

Our interpretation of these patterns of post-NSI income increases is conditioned on the assumption that expense transfer effects must decline over time, which is necessarily true given a sufficiently long time horizon. However, it is possible that our horizon of 16 quarters is not sufficiently long enough to capture this necessary decline. Thus, an alternative explanation for our results is that the amount of the expense transfer is increasing over our 16 quarter time horizon rather than declining. For example, a firm that recognizes a \$1,000 NSI in quarter t may be

[5] BJS report that more than 50 percent of the initial special item is transferred in the form of increased year +1 income; therefore, it follows that either this effect must decline in magnitude or it will naturally be exhausted in year +2.

[6] Figure 2, which we discuss in greater detail later in the text, demonstrates the effect of expense transfer on future earnings under the various expense transfer assumptions (i.e., declining, constant, and increasing) using a simple earnings expectation model.

[7] That is, when a period t accrual manipulation is used to increase period t income, a decline is predicted for income in period $t+1$ relative to period t (Kang and Sivaramakrishnan 1995; Sloan 1996). This decline occurs, in part, because future period income has been borrowed and must eventually be paid back. However, it also occurs because any accrual-driven manipulation of income in period t is inherently transitory. Hence, even if the borrowed earnings are replaced by borrowing again in period $t+1$, the expected income change remains negative unless one assumes that the borrowing can increase indefinitely over time, a notion inconsistent with Barton and Simko (2002).

[8] McVay (2006) documents that earnings are unusually low in special items quarters. Thus, an alternative explanation is that our results simply reflect the mean reversion in earnings over time. However, we do not believe that mean reversion explains these results. As discussed in the "Sensitivity Analyses" section, we specifically address this issue by controlling for prior firm performance. Our conclusions are robust to the inclusion of this additional control.

transferring future expense of $100 from year +1, $200 from year +2, $300 from year +3 and $400 from year +1. To address this possibility, we also investigate the relation between quarter *t* NSIs and future changes in operating cash flows. Since cash flows are less susceptible to manipulation (Doyle et al. 2003), NSI-induced increases in operating cash flows are more consistent with efficiency gains than expense transfer.

Overall, we find that NSI-induced earnings increases over the subsequent 16 quarters represent over 130 percent of the original charge.[9] Pure expense transfer naturally cannot exceed 100 percent of the amount of the NSI, so any cumulative effect over 100 percent cannot be the result of expense transfer alone. On average, it seems probable that most NSIs reflect current activity and are of a non-transferable nature (i.e., real costs related to current special item activity or classification shifting).[10] Thus, it is unlikely that inter-period expense transfer can plausibly account for the majority of the NSI-induced future earnings increases we document. For example, if a current NSI of $1.00 consists of $0.50 expense transfer, $0.25 classification shifting, and $0.25 true NSI current costs, then expense transfer is actually bounded at 50 percent of the NSI charge. Consistent with this conjecture, further empirical evidence suggests that NSIs result in substantial future efficiency gains. Examining the relation between NSIs and future operating cash flows, we find that almost a third of the special items-induced earnings increases are realized in the form of increases in operating cash flow.

We next examine three NSI sub-types, restructuring charges, asset write-downs, and goodwill impairment charges, which we predict as having differing implications for future earnings and operating cash flows. To the extent that NSIs are associated with future efficiency gains, we expect that restructuring charges will most likely lead to real improvements. On the other hand, we expect asset write-downs to be most closely associated with the type of charge that represents an acceleration of future expense (i.e., expense transfer) as an asset write-down is usually the acceleration of depreciation expense. We do not expect goodwill impairment charges to be associated with future earnings or operating cash flows.

Our results are generally consistent with these expectations. We find that restructuring charge-induced earnings (operating cash flow) increases accumulated over the subsequent 16 quarters represent over 500 (150) percent of the original NSI. In contrast, goodwill impairment charges have little empirical relation to future earnings or operating cash flows. With respect to asset write-downs, we find that future earnings (operating cash flow) increases following the asset write-down are less than one-third (half) of the corresponding amount that we find for restructuring charges. Taken together, our evidence suggests that expense transfer provides only a partial explanation for the BJS results. Real improvements in future profitability, especially those related to restructuring charges, appear to be at least as important as the expense transfer effects in explaining the BJS results.

Section II presents the base models for the BJS replication analysis and addresses the predictable future earnings implications of the expense-transfer hypothesis and the real improvements hypothesis. Section III details the sample selection and descriptive statistics. Section IV presents the BJS replication results and the results from further tests of the inter-period expense-transfer hypothesis and the real improvements hypothesis. Section V briefly summarizes and concludes.

[9] The cumulative effect is subject to measurement error but follows directly from the BJS analysis. We attempt to avoid overstating the effect by measuring pre-tax earnings and special items as well as controlling for serial reporting of special items in sensitivity analyses discussed later.

[10] True current NSI activities can include such items as termination benefits for terminated employees or plant closing costs. Classification shifting occurs when firms report a recurring operating cost as part of an NSI (McVay 2006; Fan et al. 2010).

II. INTER-PERIOD EXPENSE TRANSFER VERSUS REAL IMPROVEMENTS

The BJS analysis focuses on the following equation for $k = 1,\ldots,4$:[11]

$$(E_{i,t+k} - E_{i,t+k-4}) = b_{0k} + b_{1k}NSI_{i,t} + b_{2k}(E_{i,t} - NSI_{i,t} - E_{i,t-4}) + e_{i,t}, \quad (1)$$

where:

$E_{i,t+k}$ = income before extraordinary items (Compustat data item IBQ) for firm i in quarter t+k (where $k = 1,\ldots,4$) divided by the market value of equity (MKVALTQ) in quarter t–4; and
$NSI_{i,t}$ = negative special items (SPIQ) for firm i in quarter t multiplied by 1 minus the top federal statutory tax rate divided by the market value of equity (MKVALTQ) in quarter t–4.

Equation (1) is based directly on the BJS analysis. The dependent measure in Equation (1) ($E_{i,t+k} - E_{i,t+k-4}$), the seasonal change in earnings for quarters t+1, t+2, t+3, and t+4 is incorporated in this model because it provides a way to test the effect of current NSIs and earnings before NSIs ($E_{i,t} - NSI_{i,t} - E_{i,t-4}$) on future earnings. That is, if there is a relationship between future earnings and NSIs, then the dependent measure in Equation (1) should capture that effect. This general notion also holds true for each of the dependent measures incorporated in all of the regression models in this study. BJS report that the coefficients on NSIs are significantly negative at lags 1, 2, and 3, and the coefficient at lag 4 is significantly less than −1. Taken together, BJS report evidence that suggests over 50 percent of the original NSI is recovered through increased earnings in the four subsequent quarters. BJS (2002, 598) conclude that their evidence is consistent with NSIs representing the "current recognition of expenses that would otherwise have been recognized in subsequent quarters, thereby decreasing income in quarter t and increasing income in subsequent quarters." An alternative explanation is that NSIs represent some combination of inter-period expense transfer and operational changes that result in real improvements to future performance.

Future Period Implications of the Expense-Transfer Hypothesis

The initial portion of our analysis addresses the empirical implications of the expense-transfer hypothesis for earnings changes beyond quarter t+4. In a simple two-year setting where quarters t+1 to t+4 correspond to the first four post-special item quarters (i.e., year +1) and quarters t+5 to t+8 correspond to the fifth through eighth post-special item quarters (i.e., year +2), expense transfer over this two-year period must take on one of three distinct forms: (1) *declining*—the earnings increase from expense transfer in year +2 is less than year +1; (2) *constant*— the earnings increase from expense transfer in year +2 is equal to year +1; or (3) *increasing*— the earnings increase from expense transfer in year +2 is greater than year +1. The specific implications for the NSI coefficient in Equation (1) of these transfer effects depends on two factors: (1) whether the lag between the independent and dependent earnings change is four quarters or fewer than four quarters (i.e., an interim quarter lag such as when the change in quarter t earnings is explained by the change in quarter t–1 earnings); and (2) whether the independent earnings change measure "straddles"[12] the *NSI* event quarter t (e.g., $E_{t+3} - E_{t-1}$) or reflects changes entirely based on post-special-items-event earnings (e.g., $E_{t+5} - E_{t+1}$).

[11] This equation is a modified version of that in BJS. BJS focus on both positive and negative special items. We report descriptive statistics for all observations, but our main analyses focus solely on NSIs as positive special items are mainly transitory and do not exhibit the reversal properties of interest in this study or that of BJS. Results of all tests with positive special items are available on request.

[12] That is, the later earnings number in the change is for a post-special-item quarter while the earlier earnings number is for a pre-special-items quarter. Earnings for quarter t+2 less earnings for quarter t–2, where quarter t is the special item event quarter is an example of a straddle.

If the expense transfer is declining, then the transfer effect increases both components of post-special-items event dependent earnings changes (i.e., E_{t+k} and E_{t+k-4}). However, the transfer amount is greater in the earlier (E_{t+k-4}) earnings number than the later (E_{t+k}) earnings number. Earnings differences that do not straddle the special item quarter will be negative since the later earnings number has less transfer than the earlier earnings number (i.e., we expect that $E_{t+k} < E_{t+k-4}$). Thus, the declining transfer assumption predicts positive coefficients on *NSI* in Equation (1) beyond the straddle period. If the expense transfer is increasing, then earnings differences will be positive since the transfer amount is greater in the later (E_{t+k}) earnings number than the earlier (E_{t+k-4}) earnings number. Thus, the increasing transfer assumption predicts negative coefficients on *NSI* in Equation (1) for all periods. Beyond the straddle period, the constant transfer assumption predicts zero coefficients on *NSI* as the early and late transfer effects are equal in amount.[13]

Figure 1 summarizes the *NSI* coefficient predictions under the declining, constant, or increasing transfer patterns and Figure 2 illustrates the effect of each transfer pattern assumption for a simple earnings expectations model. Figure 2 shows that unless the transfer amounts are very small, the transfer will become exhausted very rapidly as it is necessarily bounded by the amount of the charge.[14]

Implications of the Real Improvements Hypothesis

While evidence of NSI-induced earnings increases beyond quarter $t+4$ is consistent with *increasing* special items expense transfer, it is also consistent with a very different perspective of the post-NSI income increases reported in BJS. Specifically, such increases potentially reflect the realization of future efficiency, operating, or strategic improvements that are either consequences of, or signaled by, NSIs. Moreover, it is possible for the income effects of such improvements to increase over time. Thus, while a pattern of steadily increasing income could be explained as an increasing expense transfer pattern, real improvements appear to provide a more plausible explanation. Conversely, a pattern of decreasing future income would appear to be better explained by declining expense transfer than by real changes in performance.

Additional Tests of Expense Transfer versus Real Improvements

Because future income patterns cannot completely resolve the question of whether and to what extent NSIs represent expense transfer versus real improvements, we conduct three additional empirical analyses to examine this issue further. We examine (1) the total earnings increases over the subsequent 16 quarters related to NSIs; (2) the extent to which NSIs influence future changes in operating cash flows; and (3) the total earnings and operating cash flow increases over the subsequent 16 quarters related to restructuring charges, asset write-downs, and goodwill impairment charges.

Given that NSI-induced expense transfer is bounded by the amount of the NSI, evidence that the total earnings increase related to NSIs exceeds 100 percent of the original NSI would suggest that NSIs lead to some level of real improvements. Hence, we estimate the cumulative transfer effect as reflected in earnings changes over the four years following the special item and compare this total to the 100 percent baseline. While the cumulative effect evaluation appears to address a

[13] Prior drafts of this manuscript include an appendix containing a rigorous evaluation of all possible coefficient predictions under each of the transfer assumptions. This appendix, omitted for space constraints, is available from the authors upon request.

[14] For example, if a depreciable asset is written down and the asset has a remaining useful life of 15 years, the future depreciation transferred into the current NSI (i.e., the amount of the write-down) will not be completely exhausted until the asset is fully depreciated (i.e., 15 years from the current period).

FIGURE 1
Summary Predictions for Sign of Negative Special Items Coefficients in Future Earnings Regressions beyond Quarter t+4

	Inter-Period Expense-Transfer Hypothesis					
	Straddle Explanatory Earnings Changes[a]			Post-Special-Item Period Explanatory Earnings Change[b]		
Earnings Lag	Declining[c]	Constant[d]	Increasing[e]	Declining[c]	Constant[d]	Increasing[e]
Lag 4	?	–	–	+	0	–
Lag 1,2, & 3	+	+	–	+	0	–

All predictions in Figure 1 are with respect to the coefficient b_1 in the following equation:

$$(PTI_{i,t+k} - PTI_{i,t+k-4}) = b_{0(t+k,l)} + b_{1(t+k,l)}RNSI_{i,t} + b_{2(t+k,l)}(PTI_{t+k-l} - PTI_{t+k-l-4}) + e_{i,(t+k,l)},\ t + k > t + 4.$$

$PTI_{i,t+k}$ is pre-tax income for firm i in quarter t+k divided by the market value of equity in quarter t–4; l is an index variable that equals 1, 2, 3, or 4 and reflects the lag in quarters between the dependent and independent earnings changes.

$RNSI_t$ is reported negative special items recognized in quarter t divided by market value of equity in quarter t–4.

[a] A "straddle" earnings change quarter occurs when the later earnings number in the earnings change is for a post-special-item quarter while the earlier earnings number is for a pre-special-items quarter.

[b] A post-special-items change quarter occurs when both earnings measures are values that occur after the NSI quarter.

[c] For a "declining" special items transfer, the amount of future income recognized as a negative special item in quarter t declines, on average, in (seasonal) amount over the time horizon examined. That is, the special item transfer benefits earlier future period income more than later future period income.

[d] A "constant" special items transfer is constant in (seasonal) amount in each quarter over the time horizon examined.

[e] An "increasing" special items transfer increases in (seasonal) amount over the time horizon examined.

sufficient condition for the presence of at least some level of real improvement in the post-special-item earnings changes, there are two issues with respect to this analysis. First, this analysis provides only a floor for measuring the extent of NSI-induced real improvements (i.e., the degree to which earnings increases exceed 100 percent of the NSI). Second, our measure of NSI-induced earnings increases is subject to measurement error. To address both of these potential design limitations, we investigate an additional measure that is more amenable to such inferences: changes in future operating cash flows. Operating cash flows are less susceptible to manipulation by management and, thus, NSI-induced increases in operating cash flows are more likely a result of efficiency gains than expense transfer.

Finally, special items are quite heterogeneous and various sub-types of special items have differing implications for future earnings and operating cash flows. Operational restructurings are generally undertaken to create future efficiency gains (Brickley and Van Drunen 1990; Atiase et al. 2004; Clement et al. 2007). However, prior research and anecdotal evidence also suggests that restructuring charges and related reversals may be associated with earnings management activity

FIGURE 2
Effects of Declining, Constant, and Increasing Transfer Assumptions assuming a $1.00 Negative Special Item in Quarter *t*[a]

	Realized Earnings					Expected Earnings											
	t-4	*t*-3	*t*-2	*t*-1	*t*	*t*+1	*t*+2	*t*+3	*t*+4	*t*+5	*t*+6	*t*+7	*t*+8	*t*+9	*t*+10	*t*+11	*t*+12
Quarterly Earnings	10.00	10.00	10.00	10.00													
Quarter *t* expected earnings before innovation					10.00												
Quarter *t* innovation (NSI_t)[b]					(1.00)												
Quarter *t* total earnings including innovation					9.00												
a) Earnings Expectations without quarter *t* innovation						10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
b) **Declining Transfer Assumption**—transfer 0.15 first 4 quarters and 0.10 next 4 quarters for a total transfer of $1.00.						0.15	0.15	0.15	0.15	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00
Expected total earnings (a) + (b)						10.15	10.15	10.15	10.15	10.10	10.10	10.10	10.10	10.00	10.00	10.00	10.00
Expected Seasonally Differenced Earnings ($E_{t+k} - E_{t+k-4}$)[c]						0.15	0.15	0.15	1.15	(0.05)	(0.05)	(0.05)	(0.05)	(0.10)	(0.10)	(0.10)	(0.10)
c) **Constant Transfer Assumption**—transfer 0.20 for first 5 quarters for a total transfer of $1.00.						0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Expected total earnings (a) + (c)						10.20	10.20	10.20	10.20	10.20	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Expected Seasonally Differenced Earnings ($E_{t+k} - E_{t+k-4}$)						0.20	0.20	0.20	1.20	0.00	(0.20)	(0.20)	(0.20)	(0.20)	0.00	0.00	0.00
d) **Increasing Transfer Assumption—**transfer 0.10 for first 4 quarters and 0.15 next 4 quarters for a total transfer of $1.00.						0.10	0.10	0.10	0.10	0.15	0.15	0.15	0.15	0.00	0.00	0.00	0.00
Expected total earnings (a) + (c)						10.10	10.10	10.10	10.10	10.15	10.15	10.15	10.15	10.00	10.00	10.00	10.00
Expected Seasonally Differenced Earnings ($E_{t+k} - E_{t+k-4}$)						0.10	0.10	0.10	1.10	0.05	0.05	0.05	0.05	(0.15)	(0.15)	(0.15)	(0.15)

[a] The "declining transfer assumption" is consistent with a depreciable asset write-down where the asset is depreciated under the accelerated method of depreciation. The "constant transfer assumption" is consistent with a depreciable asset write-down where the asset is depreciated under the straight-line method of depreciation. We have no clear example of an NSI that fits the "increasing transfer assumption." That said, the "increasing transfer assumption" implies more expense is transferred from later in time quarters than quarters immediately adjacent to the NSI quarter.

[b] The quarter *t* innovation is the reported NSI.

[c] For example, under the declining transfer assumption the expected seasonally differenced earnings for quarter *t*+4 of $1.15 is the $10.15 earnings for quarter *t*+4 less the $9.00 earnings for quarter *t*.

(e.g., Smith and Lipin 1996; Levitt 1998; Moehrle 2002; Bens and Johnson 2009). Thus, changes in earnings induced by restructuring charges may potentially reflect real improvements or expense transfer. On the other hand, future changes in cash flows that result from restructuring activity will more likely be associated with real improvements since cash flows are less susceptible to inter-temporal transfer.

Statement of Financial Accounting Standards 121 (SFAS 121), *Accounting for the Impairment of Long-Lived Assets*, indicates that an asset impairment exists if the asset's recoverable cost is lower than the book value of the asset. In this case, a firm must write the asset down to its fair market value. When a long-lived asset is written down to fair market value, the accounting effect of this event is to transfer future depreciation expense into to the current period as a special item. Unless an asset write-down is taken in conjunction with some other charge or event, the only effect a write-down can have is to transfer depreciation expense from the future into the current period. Consistent with other concurrent events being recognized with asset write-downs, Rees et al. (1996) report that firms with asset write-downs also record significant unexpected accruals in the year of the write-down. However, they also find that these unexpected accruals do not reverse in subsequent periods. Thus, our expectation is that when the NSI is an asset write-down, the most likely result will be pure NSI expense transfer.

The Financial Accounting Standards Board adoption of Statement of Financial Accounting Standards 142 (SFAS 142), *Goodwill and Other Intangible Assets*, in June of 2001 fundamentally changed the accounting for goodwill. Prior to the adoption of SFAS 142, goodwill was recognized as an asset and amortized over a period of not more than 40 years. However, SFAS 142 eliminated goodwill amortization. Under current rules, goodwill impairment is merely the write-off of the value of goodwill when its fair value is determined to be less than fair market value.

Since goodwill is not amortized, an impairment of goodwill does not accelerate future expense recognition. However, goodwill impairment implies lower future cash flows that necessitate recognition of the goodwill impairment charge. Thus, our expectation is that goodwill impairment charges will have little relation to future earnings, but may be associated with lower future cash flows. However, if goodwill impairment signals a change in the firm's future operational or strategic direction that will affect the value of goodwill, the charge may be associated with future performance improvements. Taken together, the expectation is that there will be no future earnings and lower cash flow effects from the impairment of goodwill. By investigating the relationship of the cumulative restructuring charge, asset write-down, and goodwill impairment effects on future earnings and operating cash flows, we can assess the extent of expense transfer versus real improvements via these special item sub-types that we predict will have real improvement, expense transfer, and zero transfer implications, respectively.

III. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Our sample consists of quarterly earnings data from 2002–2009 drawn from Compustat quarterly data files. We eliminate observations using the same criteria as that applied by BJS (2002, 594).[15] We begin with a sample of 260,874 quarterly observations with non-missing earnings before extraordinary items (IBQ) and non-missing special items (SPIQ). We eliminate quarterly observations missing market value of equity (MKVALTQ) at quarter t–4. In addition, we eliminate observations (1) that do not have a minimum of nine contiguous quarters of earnings surrounding quarter t; and (2) where the absolute value of earnings for quarters t–4 to t+4 exceeds the market value of equity at t–4.[16] Our data requirements and sample selection criteria, summarized in Panel A of Table 1, result in a test sample of 163,628 firm-quarter observations (9,234 firms).

Panel B of Table 1 reports the frequencies of special items observations by quarter for the final sample of 163,628 observations. The data in this table show, consistent with BJS, a larger proportion of negative to positive special items (36,609 versus 13,252). We also find that the reporting of special items is relatively stable across the interim quarters (1–3); however, in the fourth quarter, the percentage of non-zero special items increases significantly relative to the interim quarters. In the fourth quarter, 30.9 and 10.2 percent of all observations report negative and positive special items, respectively. In the interim quarters, the average percentages are 19.8 and 7.5 percent, respectively. Panel B of Table 1 also reports the mean pre-tax special item scaled by the quarter t–4 market value of equity. Positive special items remain relatively stable across all quarters, but NSIs appear to be larger in the fourth quarter relative to interim quarters. In the fourth quarter, the mean scaled *NSI* is −0.036, while it ranges from −0.015 to −0.022 for the three interim quarters. Overall, these sample descriptive statistics are very similar to those reported by BJS.

Panel C of Table 1 reports mean market value of equity, pre-tax special items, pre-tax income, and operating cash flows. We report pre-tax income and operating cash flows for the year prior to the special item recognition as well as the four years subsequent to the special item recognition. Our evidence suggests that special item firms are larger than firms that do not recognize special items.

[15] We incorporate the same sample selection criteria as BJS except their elimination of immaterial (less than 1 percent of market value) NSIs. For robustness, we rerun all of our tests excluding immaterial NSIs. All results are quantitatively and qualitatively unchanged.

[16] We apply these criteria to both income before extraordinary items and pre-tax income. BJS include only income before extraordinary items in their study.

TABLE 1
Sample Selection Criteria and Descriptive Statistics

Panel A: Sample Selection Criteria

	Total	*SI* Non-Zero[a]	Percent $SI < 0$[b]	Percent $SI > 0$[c]
Quarterly observations of E_t and SI_t for sample period 2002–2009	260,874	80,965	73.84	26.16
1. Market value unavailable for $t-4$	43,090			
	217,784	70,645	73.52	26.48
2. One or more contiguous E_{t-4} to E_{t+4} missing	44,094			
	173,690	53,757	72.95	27.05
3. One or more contiguous PTI_{t-4} to PTI_{t+4} missing	1,176			
	172,514	53,319	72.97	27.03
4. Less: Scaled absolute value of E_{t-4} to E_{t+4} and PTI_{t-4} to PTI_{t+4} greater than 1	8,886			
Final Sample	163,628	49,861	73.42	26.58

[a] The number of quarterly special items reported by Compustat that are non-zero.
[b] The number of quarterly special items reported by Compustat that are less than zero divided by the total number of non-zero special items.
[c] The number of quarterly special items reported by Compustat that are greater than zero divided by the total number of non-zero special items.

Panel B: Final Sample Observations and Mean Positive and Negative Special Items by Fiscal Quarter

	Total		$SI = 0$		$SI > 0$			$SI < 0$		
Quarter	n	Percent of All Qtrs.	n	Percent of Row	n	Percent of Row	Mean Pre-Tax *SI*[a]	n	Percent of Row	Mean Pre-Tax *SI*[a]
1	44,441	27.16	33,481	75.34	3,183	7.16	0.022	7,777	17.50	−0.015
2	40,475	24.70	29,096	71.89	3,116	7.70	0.020	8,263	20.42	−0.020
3	39,263	23.98	27,931	71.14	2,950	7.51	0.021	8,382	21.35	−0.022
4	39,449	24.39	23,259	58.96	4,003	10.15	0.021	12,187	30.89	−0.036
Total	163,628	100.0%	113,767	69.53	13,252	8.10	0.021	36,609	22.37	−0.025

(continued on next page)

TABLE 1 (continued)

Panel C: Mean Annual Future Earnings, Cash Flows, Market Value of Equity, and Special Items[b]

			$\Sigma 4QPTI_{i,y}$					$\Sigma 4QCFO_{i,y}$				
	$MVAL_{i,t-4}$	Pre-Tax $SI_{i,t}$[a]	$y = -1$	$y = 1$	$y = 2$	$y = 3$	$y = 4$	$y = -1$	$y = 1$	$y = 2$	$y = 3$	$y = 4$
All Observations	2,997.25	—	−0.013	0.002	0.022	0.036	0.045	0.057	0.069	0.086	0.107	0.132
n	156,448		156,448	156,448	123,567	96,115	72,448	147,256	147,256	119,823	94,170	70,914
$SI = 0$[c]	2,045.37	—	−0.004	0.008	0.025	0.037	0.045	0.063	0.065	0.082	0.103	0.128
n	108,185		108,185	108,185	86,657	67,861	51,468	100,861	100,861	83,079	66,294	50,239
$SI < 0$[c]	5,378.50	−0.023	−0.036	−0.014	0.014	0.034	0.049	0.054	0.078	0.096	0.118	0.144
n	35,553	35,553	35,553	35,553	29,991	20,522	15,269	34,430	34,430	26,503	20,252	15,043
$SI > 0$[c]	4,438.48	0.019	0.035	−0.002	0.020	0.029	0.039	0.060	0.075	0.092	0.111	0.132
n	12,710	12,710	12,710	12,710	9,919	7,732	5,711	12,235	12,235	9,701	7,624	5,132

[a] The mean pre-tax *SI* reported here is calculated as the reported special item in quarter *t* scaled by the market value of equity in quarter *t*–4.
[b] The observations for this table are further reduced from Panel B by absolute values of PTI_{t+k} and CFO_{t+k}, where $k = 1$ through 16, greater than 1.
[c] Reported special items in quarter *t* are equal to, less than, or greater than zero, respectively.

Variable Definitions:
$MVAL_{i,t-4}$ = market value of equity (Compustat data item MVALTQ) for firm *i* in quarter *t*–4;
$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm *i* in quarter *t*+*k* (where $k = 1,\ldots,16$) divided by the market value of equity (MKVALTQ) in quarter *t*–4;
$CFO_{i,t+k}$ = cash flow from operating activities (OANCFQ) for firm *i* in quarter *t*+*k* (where $k = 1,\ldots,16$) divided by the market value of equity (MKVALTQ) in quarter *t*–4;
$\Sigma 4QPTI_{i,y} = (PTI_{i,t+k} - PTI_{i,t+k-4})$ summed for the four quarters where *k* equals 1,...,4 for $y = 1$; 5,...,8 for $y = 2$; 9,...,12 for $y = 3$; and 13,...,16 for $y = 4$; and
$\Sigma 4QCFO_{i,y} = (CFO_{i,t+k} - CFO_{i,t+k-4})$ summed for the four quarters where *k* equals 1,...,4 for $y = 1$; 5,...,8 for $y = 2$; 9,...,12 for $y = 3$; and 13,...,16 for $y = 4$.

We find that the mean market value of equity for negative and positive special item firms is \$5.4 and \$4.4 billion, respectively. Both are much larger than the mean market value of equity for zero-special item firms of \$2.0 billion.

On average, sample firms report increasing pre-tax income and operating cash flows as indicated by the generally positive values on $\Sigma 4QPTI_{i,y}$ and $\Sigma 4QCFO_{i,y}$. $\Sigma 4QPTI_{i,y}$ and $\Sigma 4QCFO_{i,y}$ are year-by-year, four-quarter summations of the seasonal differences in earnings and operating cash flows, respectively. However, it appears that the increases in $\Sigma 4QPTI_{i,y}$ and $\Sigma 4QCFO_{i,y}$ are most pronounced for NSI firms. In particular, we find that $\Sigma 4QPTI_{i,y}$ ($\Sigma 4QCFO_{i,y}$) increases for NSI firms from –0.036 (0.054) in the year prior to recognition to 0.049 (0.144) in the fourth year subsequent to the special item quarter. For zero special items firms, we find that $\Sigma 4QPTI_{i,y}$ ($\Sigma 4QCFO_{i,y}$) increases from –0.004 (0.063) in the year prior to the current quarter to 0.045 (0.128) in the fourth year subsequent to the current quarter. Overall, we find that the change in $\Sigma 4QPTI_{i,y}$ ($\Sigma 4QCFO_{i,y}$) for negative, positive, and zero special item firms from year -1 to year +4 is 0.085 (0.090), 0.004 (0.072), and 0.049 (0.065), respectively. Thus, our descriptive evidence suggests that NSI firms, on average, show improvements in performance substantially greater than positive or zero special item firms in the four years subsequent to recognition.

IV. EMPIRICAL RESULTS

Replication of BJS

We begin our analysis with a replication of the BJS earnings persistence regressions, estimating the coefficient relating seasonally differenced earnings to subsequent values of seasonally differenced earnings. Since the time period of our analysis differs, we replicate the BJS analysis to investigate whether the main results from their study still hold. Consistent with BJS, we estimate Equation (1) separately for quarters with positive, negative, and zero special items. However, since the focus of our investigation is NSIs, for brevity we only report the estimations for NSIs.[17]

The results from the estimation of Equation (1) are reported in Table 2. We report our results for the estimation of Equation (1) (Current Sample) as well as those reported by BJS (2002, 596, Table 2, Panel B). We find that the coefficients at all lags are negative and significant (two-tailed $p < 0.01$).[18] Moreover, the crucial fourth lag coefficient is -1.342 and significantly less than -1 (two-tailed $p < 0.01$). Overall, the results from the estimation of Equation (1) closely parallel those reported by BJS both quantitatively and qualitatively. Moreover, our Equation (1) results suggest an expense transfer of approximately 63 percent, which is consistent with the 56 percent transfer effect reported by BJS.[19]

BJS Replication with Pre-Tax Special Items

BJS adjust special items for taxes in order to enhance comparability to the after tax income numbers that serve as the foundation of Equation (1). The tax rate used to adjust special items in

[17] Our results with respect to positive and zero special item firms are quantitatively and qualitatively similar to those tabulated in BJS. These untabulated results are available from the authors on request.

[18] In all regression tests, the t-statistics we rely on are based on robust-standard errors using two-way clustering by firm and year to control for both time-series and cross-sectional dependence (Gow et al. 2010). We thank Ian Gow for providing us with the SAS code to perform the two-way clustering procedure.

[19] To arrive at the 63 percent expense transfer the b_{1k} coefficients are summed for $k = 1, 2, 3,$ and 4 then 1 is added to this sum. Thus, we add $(-0.074) + (-0.102) + (-0.111) + (-1.342) + 1$ for a total of -0.629. Since *NSI* is a negative value in Equation (1), the summed negative coefficients imply an increase to earnings. The 56 percent for the BJS estimates is arrived at similarly.

TABLE 2

Relation between NSIs and Seasonally Adjusted Future Earnings (BJS Replication) Estimated b_{1k} and b_{2k} from Equation (1):

$$(E_{i,t+k} - E_{i,t+k-4}) = b_{0k} + b_{1k}NSI_{i,t} + b_{2k}(E_{i,t} - NSI_{i,t} - E_{t-4}) + e_{i,t}$$

	$k = 1$	$k = 2$	$k = 3$	$k = 4$	n
Estimates of b_{1k}					
Reported in BJS[a]	−0.087**	−0.116**	−0.084**	−1.277**++	4,885
Current Sample	−0.074**	−0.102**	−0.111**	−1.342**++	36,609
Estimates of b_{2k}					
Reported in BJS[a]	0.178**	0.108**	0.032*	−0.316**	4,885
Current Sample	0.211**	0.122**	0.053**	−0.213**	36,609

*, ** Significantly different from zero at the 0.05 and 0.01 levels, respectively, in a two-tailed test.
++ Significantly different from −1 at the 0.01 level in a two-tailed test (applies only for estimates of b_1 at $k = 4$).
[a] The significance of the BJS estimates are taken from BJS (2002, Table 2, p. 596).

Variable Definitions:
$E_{i,t+k}$ = income before extraordinary items (IBQ) for firm i in quarter $t+k$ (where $k = 1, 2, 3$, or 4) divided by the market value of equity (MKVALTQ) in quarter $t–4$; and
$NSI_{i,t}$ = negative special items (SPIQ) for firm i in quarter t multiplied by 1 minus the statutory tax rate (35 percent) divided by the market value of equity (MKTVALTQ) in quarter $t–4$.

their Table 2 (p. 596) analyses is the top federal statutory rate applicable for each year of their sample. However, Beaver et al. (2006) report evidence that suggests that average effective tax rates for NSI observations are substantially less than the top statutory rate.[20] Consistent with Beaver et al. (2006), in additional testing (not tabulated), we estimate that effective tax rates for NSIs range between 3 and 14 percent. Since firm- and quarter-specific values of the true special items tax rates are unobservable, we eliminate the assumed tax rate effect on parameter estimates by performing all subsequent analyses on pre-tax income and special items.

In this section, we evaluate how using pre-tax income and NSIs affects the BJS inferences about the association between NSIs and future income changes by estimating a pre-tax version of the BJS model. In particular, we modify Equation (1) by replacing earnings before extraordinary items (E) with pre-tax income (PTI) and tax-adjusted negative special items (NSI) with reported (unadjusted) negative special items ($RNSI$). Specifically, we estimate the following equation for $k = 1,\ldots,4$:

$$(PTI_{i,t+k} - PTI_{i,t+k-4}) = b_{0k} + b_{1k}RNSI_{i,t} + b_{2k}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}, \tag{2}$$

where:

$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm i in quarter $t+k$ (where $k = 1,\ldots,$or 4) divided by the market value of equity (MKVALTQ) in quarter $t–4$; and

[20] The lower tax rate for NSI firms documented by Beaver et al. (2006) reflects the fact that these firms are frequently loss firms as well. Beaver et al. (2006) report that in their sample, loss observations have average ETRs of 7 percent, while profit observations have average ETRs of 33.2 percent. They further report that 37 (20) percent of loss (profit) firms report an NSI.

$RNSI_{i,t}$ = pre-tax negative special items (SPIQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4.

We report the results of estimating Equation (2) in Table 3. For comparative purposes, we report the results from estimating Equation (1), the after-tax BJS model replication, in Table 3 as well. Based on the b_{1k} *RNSI* coefficient estimates reported in Table 3, the aggregate future period pre-tax income effect for the first four quarters following the recognition of the NSI is approximately 7.8 percent of the reported pre-tax negative special item (*RNSI*). This aggregate effect is markedly less than the 62.9 percent aggregate effect per our Table 2 estimates and the 56.4 percent effect obtained by aggregating the values reported in BJS (2002, 596, Table 2).

Particularly striking is the increase in the crucial $k = 4$ lag from -1.342 to -0.997. This increase is consistent with a true special items tax rate that is less than the top statutory tax rate used to adjust special items in Equation (1). Since the tax rate impact on coefficient estimates is of a scalar nature (Cready et al. 2011), the degree of coefficient shift increases directly with the magnitude of the underlying coefficient that is being scaled. Thus, it is not surprising that the coefficient shift is greatest for the fourth lag since the fourth quarter lag coefficient is greater in absolute value relative to the interim lags.[21] Overall, the evidence reported in Table 3 strongly supports the notion that the use of the top statutory tax rates to adjust special items introduces substantial bias into *NSI* coefficient estimates from Equation (1), consistent with the conclusions of Cready et al. (2011).[22]

Negative Special Items and Future Period Earnings Changes

Table 4 reports tests of our predictions about the relation between NSIs and future period earnings changes beyond quarter t+4. Specifically, we report the results of estimating the following regression:

$$(PTI_{i,t+k} - PTI_{i,t+k-4}) = b_{0k} + b_{1k}RNSI_{i,t} + b_{2k}(PTI_{i,t+k-l} - PTI_{i,t+k-l-4}) + e_{i,t}. \quad (3)$$

All variables are as previously defined. Table 4, Panel A reports *RNSI* coefficient estimates for those settings where the explanatory earnings change "straddles" the special item quarter. A straddle occurs when the later earnings number in the earnings change is for a post-special-item quarter, while the earlier earnings number is for a pre-special-items quarter. Earnings for quarter t+2 less earnings for quarter t–2, where quarter t is the special item event quarter, is an example of a straddle. We report these *RNSI* straddle coefficient estimates separately since, as reported in Figure 1, predictions for such straddle quarters differ somewhat from the predictions for post-special-item period explanatory earnings changes. We find negative and significant (two-tailed $p < 0.01$) *RNSI* coefficients for all ten of the straddle estimates we report in Panel A. The coefficients range in magnitude from -0.051 to -0.110. The negative coefficients for the fourth lag estimates are consistent with either increasing or constant expense transfer. On the other hand, the interim lag coefficient estimates are only consistent with increasing expense transfer.

Panel B of Table 4 reports *RNSI* coefficient estimates for those settings where the independent explanatory earnings changes are based exclusively on post-special items earnings (e.g., $PTI_{i,t+6}$ –

[21] For a detailed evaluation of the empirical impact of misstated tax rates on the interim and fourth lag coefficient estimates, see Cready et al. (2011).

[22] In addition to using pre-tax special items to estimate our models, we also re-estimate each of our models using special items adjusted for the top statutory rate and the firm-specific marginal tax rate. We adjust at the firm-specific marginal rate by adjusting special items for firm-specific annual marginal tax rates provided by Graham (1996a, 1996b). The results of these untabulated additional tests are quantitatively and qualitatively similar to our tabulated results using pre-tax special items. We thank John Graham for making the firm-specific marginal tax rate data available to us.

TABLE 3

Relation between Pre-Tax NSIs and Seasonally Adjusted Pre-Tax Future Earnings Estimated b_{1k} and b_{2k} from Equation (2):

$$(PTI_{i,t+k} - PTI_{i,t+k-4}) = b_{0k} + b_{1k}RNSI_{i,t} + b_{2k}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

	$k = 1$	$k = 2$	$k = 3$	$k = 4$	n
Estimates of b_{1k}					
Reported in Table 2	−0.074**	−0.102**	−0.111**	−1.342**++	36,609
Current Estimation	0.013	−0.036**	−0.058**	−0.997**	36,609
Estimates of b_{2k}					
Reported in Table 2	0.211**	0.122**	0.053**	−0.213**	36,609
Current Estimation	0.247**	0.149**	0.062**	−0.188**	36,609

*, ** Significantly different from zero at the 0.05 and 0.01 levels, respectively, in a two-tailed test.
++ Significantly different from −1 at the 0.01 level in a two-tailed test (applies only for estimates of b_1 at $k = 4$).

Variable Definitions:
$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm *i* in quarter *t*+*k* (where $k = 1,\ldots,$or 4) divided by the market value of equity (MKVALTQ) in quarter *t*–4; and
$RNSI_{i,t}$ = pre-tax negative special items (SPIQ) for firm *i* in quarter *t* divided by the market value of equity (MKVALTQ) in quarter *t*–4.

$PTI_{i,t+2}$). The expense transfer predictions on the *RNSI* coefficients are consistent for interim and fourth lag coefficients within each form of expense transfer. That is, the declining, constant, and increasing forms of expense transfer predict positive, zero, and negative *RNSI* coefficients for both interim and fourth lag estimates, respectively. Panel B reports 38 *RNSI* coefficient estimates for quarters *t*+6 through *t*+16. Of the 38 coefficients estimates, 36 are negative and 29 of these are significant (two-tailed $p < 0.05$). Our coefficient predictions summarized in Figure 1 suggest that negative coefficients in post-special-item period explanatory quarters are indicative of an NSI in quarter *t* being associated with an increasing pattern of expense transfer beyond quarter *t*+4.

Taken together, the evidence in Table 4 is consistent only with the increasing form of expense transfer. We find no evidence of zero or positive coefficients after quarter *t*+4 that would suggest a constant or declining form of expense transfer. However, it is conceivable that NSIs contain larger transfers of year +2 (i.e., quarters *t*+5 to *t*+8) expenses relative to year +1 (i.e., quarters *t*+1 to *t*+4) expenses. Such an increasing pattern of expense transfer could potentially explain the significantly negative *RNSI* coefficients in quarters *t*+5 through *t*+8. At the same time, if the increases to earnings truly reflect expense transfer, evidence of necessary reversals should be present by year +3 or +4 (i.e., quarters *t*+9 through *t*+12 and *t*+13 through *t*+16). Our results do not reflect such reversals in quarters *t*+9 through *t*+16, which would imply positive coefficient estimates. Of the 32 *RNSI* coefficient estimates we report in bold in Panel B of Table 4 for the quarters *t*+9 through *t*+16, all but one are negative and 23 of these are significantly less than zero (two-tailed $p < 0.05$).

The evidence in Table 4 is inconsistent with the declining or constant assumptions of the expense-transfer hypothesis. However, these results can be interpreted as providing support for the expense-transfer hypothesis under the increasing transfer assumption. This interpretation requires the seemingly unlikely assumption that the typical or average NSI consists of expense transfers that are monotonically declining from year +4 back through year +1. That is, expenses further in the future are transferred into current NSIs to a greater extent than near-term expenses. Once again, it

TABLE 4

Relationship between Negative Special Items and Seasonally Adjusted Extended Future Earnings for Quarters t+5 through t+16
Pre-Tax Estimate of b_{1k} estimated from Equation (3):

$$(PTI_{i,t+k} - PTI_{i,t+k-4}) = b_{0k} + b_{1k}RNSI_{i,t} + b_{2k}(PTI_{i,t+k-l} - PTI_{i,t+k-l-4}) + e_{i,t}$$

Panel A: Estimated Coefficients for Straddle Explanatory Quarters[a]

	Dependent Earnings Change Quarter			
Independent Earnings Change	One Quarter Ahead	Two Quarters Ahead	Three Quarters Ahead	Four Quarters Ahead
$PTI_{i,t+1} - PTI_{i,t-3}$	—	—	—	−0.106**
$PTI_{i,t+2} - PTI_{i,t-2}$	—	—	−0.105**	−0.088**
$PTI_{i,t+3} - PTI_{i,t-1}$	—	−0.095**	−0.051**	−0.110**
$PTI_{i,t+4} - PTI_{i,t}$	−0.109**	−0.058**	−0.052**	−0.053**

Panel B: Estimated Coefficients for Post-*RNSI* Explanatory Quarters[b]

	Dependent Earnings Change Quarter[c]			
Independent Earnings Change	One Quarter Ahead	Two Quarters Ahead	Three Quarters Ahead	Four Quarters Ahead
$PTI_{i,t+5} - PTI_{i,t+1}$	0.035**	−0.040**	−0.059**	**−0.079****
$PTI_{i,t+6} - PTI_{i,t+2}$	−0.043**	−0.060**	**−0.024**	**−0.045****
$PTI_{i,t+7} - PTI_{i,t+3}$	−0.053**	**−0.026**	**−0.008**	**−0.071****
$PTI_{i,t+8} - PTI_{i,t+4}$	**−0.015**	**−0.008**	**−0.046****	**−0.112****
$PTI_{i,t+9} - PTI_{i,t+5}$	**−0.002**	**−0.039****	**−0.088****	**−0.073****
$PTI_{i,t+10} - PTI_{i,t+6}$	**−0.041***	**−0.087****	**−0.051****	**−0.096****
$PTI_{i,t+11} - PTI_{i,t+7}$	**−0.075****	**−0.040***	**−0.082****	**−0.053***
$PTI_{i,t+12} - PTI_{i,t+8}$	**−0.036***	**−0.070****	**−0.011**	**−0.100****
$PTI_{i,t+13} - PTI_{i,t+9}$	**−0.083****	**−0.002**	**−0.059****	—
$PTI_{i,t+14} - PTI_{i,t+10}$	**0.009**	**−0.044****	—	—
$PTI_{i,t+15} - PTI_{i,t+11}$	**−0.058***	—	—	—

*, ** Significantly different from zero at the 0.05 and 0.01 levels, respectively, in a two-tailed test.

[a] A "straddle" earnings change is defined as those instances where $t+k-l \geq t$ and $t+k-l-4 \leq t$. That is, the later earnings value is for a quarter after the NSI quarter and the earlier earnings value is from a quarter prior to the NSI quarter.

[b] A post-special-items change is defined as those instances where $t+k-l-4 > t$. That is, both earnings measures in the seasonally differenced earnings are values that occur after the NSI quarter.

[c] Numbers in bold refer to quarters t+9 through t+16.

Variable Definitions:

$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm i in quarter $t+k$ (where $k = 1,\ldots,$or 16) divided by the market value of equity (MKVALTQ) in quarter t–4; and

$RNSI_{i,t}$ = pre-tax negative special items (SPIQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4.

appears more plausible that the earnings increases are the result of efficiency improvements after the NSI recognition, such as an effective restructuring, or a combination of efficiency gains and expense transfer. We further explore whether NSIs lead to expense transfer or real improvements in the following sections.

Expense Transfer or Real Improvements?

The evidence from Tables 3 and 4 does not preclude the possibility that NSI-induced expense transfer exists. To more fully explore the extent to which NSIs are associated with expense transfer versus efficiency gains, we estimate the following two regression equations:

$$\Sigma 4QPTI_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}, \tag{4}$$

and:

$$\Sigma 4QCFO_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}, \tag{5}$$

where:

$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm i in quarter $t+k$ (where $k = 1,\ldots,16$) divided by the market value of equity (MKVALTQ) in quarter $t-4$;

$CFO_{i,t+k}$ = cash flow from operating activities (OANCFQ) for firm i in quarter $t+k$ (where $k = 1,\ldots,16$) divided by the market value of equity (MKVALTQ) in quarter $t-4$;

$\Sigma 4QPTI_{i,y} = (PTI_{i,t+k} - PTI_{i,t+k-4})$ summed for the four quarters where k equals $1,\ldots,4$ for $y = 1$; $5,\ldots,8$ for $y = 2$; $9,\ldots,12$ for $y = 3$; and $13,\ldots,16$ for $y = 4$; and

$\Sigma 4QCFO_{i,y} = (CFO_{i,t+k} - CFO_{i,t+k-4})$ summed for the four quarters where k equals $1,\ldots,4$ for $y = 1$; $5,\ldots,8$ for $y = 2$; $9,\ldots,12$ for $y = 3$; and $13,\ldots,16$ for $y = 4$.

All other variables are as previously defined. $\Sigma 4QPTI_{i,y}$ and $\Sigma 4QCFO_{i,y}$ are year-by-year, four-quarter summations of the seasonal differences in earnings and operating cash flows, respectively. We estimate Equations (4) and (5) for the four years subsequent to quarter t (i.e., quarters $t+1$ through $t+16$). Equation (4) allows us to measure the annually cumulated future earnings increases that result from the quarter t NSI. Equation (5) allows us to measure the extent to which the NSI in quarter t results in annually cumulated future increases in operating cash flows.

This portion of our analysis has similarities to, and distinctions from, prior work by Doyle et al. (2003) on the relation between future cash flows and items excluded from pro forma income numbers. They find that such excluded items, many of which are special items, have directionally consistent implications for future cash flows. That is, excluded expenses predict lower future cash flows, while excluded income items predict higher future cash flows. However, when Doyle et al. (2003) partition excluded items into special items and other excluded items, they report mixed evidence regarding the relation between special items and future cash flows. In particular, they report an insignificant relation between special items and operating cash flows, but a significantly positive relation with free cash flow (Doyle et al. 2003, 160–161, Tables 3 and 4).

Several important distinctions between Doyle et al. (2003) and this study should be noted. First, Doyle et al. (2003) do not partition special items into negative and positive amounts, whereas our entire focus is on the particular impact of NSIs documented in BJS. Second, their specification includes an accrual explanatory variable. This means that for accrued special items, the estimated coefficient reflects the marginal association of the item with future cash flows above and beyond its accrual effect, which has an opposite directional effect in their analysis. Third, their analysis is done using after-tax special item measures based on the top statutory tax rate. The earlier results in this study as well as the results in Beaver et al. (2006) suggest that such tax adjustments are problematic for NSIs.

Table 5 reports the coefficients from the estimation of Equations (4) and (5) as well as the annual change percentage implied by the coefficients and the cumulative change percentage from summed annual percentages. Estimation of Equation (5) requires additional data not incorporated in earlier tests. We follow the same screening procedures as discussed previously. Our data requirements and sample selection criteria result in a test sample of 36,609 (33,901) NSI observations with complete data to estimate Equation (4) (Equation (5)) for the first four years subsequent to quarter *t*.

The Equation (4) results are consistent with our prior tabulated evidence. In particular, we find that NSIs are associated with significant increases in earnings in each of the four years subsequent to the event quarter. The year +1 coefficient suggests that income increases in the first four quarters subsequent to the NSI by 8.6 percent of the quarter *t* NSI, while over the next four quarters (year +2) the estimated increase in income approximately doubles to generate a cumulative increase of 26.4 percent at the end year +2.[23] In years +3 and +4 we find income increases by another 40.6 and 56.2 percent of the NSI, respectively. Taken together, our evidence suggests that over the first 16 quarters subsequent to the charge, NSI-induced earnings increases equal more than 130 percent of the charge. As a practical matter, special-items-induced expense transfer is bounded by the amount of the NSI and must necessarily be less than 100 percent of the charge if the NSI contains *any* contemporaneous costs (classification shifting or true special item costs). Thus, our evidence suggests that realized efficiency gains over the subsequent 16 quarters equal *at least* 31.8 percent of the NSI.

We next examine the results from the estimation of Equation (5), which relates the NSI to future seasonally adjusted changes in operating cash flows. Because operating cash flows are less susceptible to manipulation by management, any NSI-induced increases in operating cash flows are more likely a result of efficiency gains than expense transfer. Our evidence suggests that NSIs are associated with substantial future increases in operating cash flows. Specifically, we find that over the first four years subsequent to the charge, NSI-induced increases in operating cash flows equal more than 40 percent of the charge. Our evidence suggests that a substantial portion of the future earnings increase related to the NSI is very likely the result of efficiency improvements rather than expense transfer.

Finally, the evidence from both Equations (4) and (5) suggests that the future earnings and cash flow effects of a current NSI are increasing over time. In particular, our evidence suggests that earnings increase by 8.6, 26.4, 40.6, and 56.2 percent of the quarter *t* NSI in years +1, +2, +3, and +4, respectively. Similarly, our evidence suggests that cash flows increase (decrease) by (0.6), 1.8, 12.8, and 26.2 percent of the quarter *t* NSI in years +1, +2, +3, and +4, respectively. This evidence is broadly consistent with NSIs being associated with real improvements since cash flow increases and expense transferred from four years in the future seems very unlikely to explain the earnings increases of the magnitude noted.

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[23] Since the dependent variables in Equations (4) and (5) are annually cumulated measures of seasonally differenced earnings or cash flows (e.g., $\Sigma 4QPTI_{i,y}$ for year +2 is the summed $(PTI_{i,t+k} - PTI_{i,t+k-4})$ for quarters t+6 to t+9), to determine the income and cash flow effect of the NSI in years beyond $y = 1$, the *RNSI* coefficients must be evaluated with respect to the coefficients for the prior year. For example, in year 1 the coefficient on *RNSI* in Equation (4) is −1.086 suggesting that pre-tax income (*PTI*) increases (NSIs enter as negative amounts) in year +1 relative to the year prior to quarter *t* by 8.6 percent of the NSI. In year +2 the coefficient on *RNSI* is −0.178 suggesting that special items-induced PTI increased in year +2 relative to year +1 by 17.8 percent of the NSI. Since earnings in year +1 are higher by 8.6 percent of the NSI, the total effect is that *PTI* increased in year +2 by 26.4 percent of the quarter *t* NSI relative to pre-special items earnings. The 26.4 percent is the amount we report in Panel A of Table 5 as the annual increase in year +2 *PTI*. This same procedure holds for calculating the cash flow increase induced by the NSI since this is also a seasonally adjusted measure.

TABLE 5

Relationship between Pre-Tax Negative Special Items and Seasonally Adjusted Pre-Tax Future Earnings and Operating Cash Flows for Years +1 through +4
Estimated b_{1y} from Equations (4) and (5):

$$\Sigma 4QPTI_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

$$\Sigma 4QCFO_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

	$y = 1$	$y = 2$	$y = 3$	$y = 4$
Equation (4) $\Sigma 4QPTI_{i,y}$				
n	36,609	26,997	20,331	15,106
b_{1y}	−1.086**++	−0.178**	−0.142**	−0.156**
Annual Change %[a]	8.6	26.4	40.6	56.2
Cumulative Change %[b]	8.6	35.0	75.6	131.8%
Equation (5) $\Sigma 4QCFO_{i,y}$				
n	33,901	26,094	19,987	14,913
b_{1y}	0.006	−0.024	−0.110**	−0.134**
Annual Change %[a]	(0.6)	1.8	12.8	26.2
Cumulative Change %[b]	(0.6)	1.2	14.0	40.2%

*, ** Significantly different from zero at the 0.05 and 0.01 levels, respectively, in a two-tailed test.
+, ++ Significantly different from −1 at the 0.05 and 0.01 levels, respectively, in a two-tailed test (applies only for estimates of b_1 at $y = 1$).
[a] This is the percentage of the quarter *t* negative special item reflected in earnings and cash flows for years 1 through 4. For example, in Panel A for $\Sigma 4QPTI$ for $y = 2$ the 26.4 suggests the pre-tax income for quarters $t+5$ through $t+8$ (i.e., $y = 2$) increased by 26.4 percent of the *RNSI* relative to year 0.
[b] This represents the cumulative percentage impact of the quarter *t* negative special item on earnings and operating cash flows for quarters years +1 through +4.

Variable Definitions:
$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm *i* in quarter $t+k$ (where $k = 1,\ldots,$or 16) divided by the market value of equity (MKVALTQ) in quarter t–4;
$RNSI_{i,t}$ = pre-tax negative special items (SPIQ) for firm *i* in quarter *t* divided by the market value of equity (MKVALTQ) in quarter t–4;
$CFO_{i,t+k}$ = cash flow from operating activities (OANCFQ) for firm *i* in quarter $t+k$ (where $k = 1,\ldots,$or 16) divided by the market value of equity (MKVALTQ) in quarter t–4;
$\Sigma 4QPTI_{i,y} = (PTI_{i,t+k} - PTI_{i,t+k\text{-}4})$ summed for the four quarters where *k* equals 1,. . .,4 for $y = 1$; 5,. . ., 8 for $y = 2$; 9,. . .,12 for $y = 3$; and 13,. . ., 16 for $y = 4$; and
$\Sigma 4QCFO_{i,y} = (CFO_{i,t+k} - CFO_{i,t+k-4})$ summed for the four quarters where *k* equals 1,. . .,4 for $y = 1$; 5,. . .,8 for $y = 2$; 9,. . ., 12 for $y = 3$; and 13,. . .,16 for $y = 4$.

Taken together, the results from estimating Equations (4) and (5) suggest that efficiency gains account for at least 30 percent of the earnings increases we document in Table 5. This estimate appears to be the lower bound on efficiency improvements because all increases in the accrual component of earnings are certainly not the result of expense transfer. Overall, our empirical evidence is not supportive of the expense-transfer hypothesis as the sole explanation for the results we observe. The pattern of *NSI* coefficients we observe is broadly consistent with NSIs representing a substantive repositioning or strategy shift by the entity where the primary benefit is received over a number of periods in the future. While we cannot fully disentangle the effects of these hypotheses for all special items, the differing implications of sub-types of special items may shed light on these inferences.

Restructuring Charges, Asset Write-Downs, and Goodwill Impairment

Our Table 5 results suggest that NSIs lead to substantial increases in earnings and operating cash flows that we attribute to both real improvements and expense transfer. In this section, we focus on the special item sub-types that we expect will have differing implications for future earnings and cash flows. In particular, we separately examine the future earnings and cash flow implications of restructuring charges, asset write-downs, and goodwill impairment charges. In so doing, we focus on NSI sub-types that are most likely to be associated with efficiency improvements, expense transfer, or those that should be purely transitory, respectively.

To the extent that NSIs are associated with future efficiency gains, we expect that restructuring charges will most likely lead to these gains (Brickley and Van Drunen 1990; Atiase et al. 2004; Clement et al. 2007). On the other hand, we expect asset write-downs to be most closely associated with the type of charge that represents an acceleration of future expense or expense transfer since future depreciation expense is brought forward into the quarter of recognition. Goodwill impairment charges do not promote efficiency gains nor are they an acceleration of future expenses since goodwill is not amortized in our sample period.

To more fully explore the extent to which these NSI sub-types are associated with future earnings and operating cash flows, we estimate the following two regression equations:

$$\begin{aligned}\Sigma 4QPTI_{i,y} = {} & b_{0y} + b_{1y}RC_{i,t} + b_{2y}WD_{i,t} + b_{3y}GW_{i,t} + b_{4y}OTHER\_NSI_{i,t} \\ & + b_{5y}(PTI_{i,t} - RNSI_{i,t} - PTI_{t-4}) + e_{i,t},\end{aligned} \tag{6}$$

and:

$$\begin{aligned}\Sigma 4QCFO_{i,y} = {} & b_{0y} + b_{1y}RC_{i,t} + b_{2y}WD_{i,t} + b_{3y}GW_{i,t} + b_{4y}OTHER\_NSI_{i,t} \\ & + b_{5y}(PTI_{i,t} - RNSI_{i,t} - PTI_{t-4}) + e_{i,t},\end{aligned} \tag{7}$$

where:

$RC_{i,t}$ = pre-tax restructuring charges (RCPQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4;

$WD_{i,t}$ = pre-tax asset write-downs (WDPQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4;

$GW_{i,t}$ = pre-tax goodwill write-offs (GDWLIPQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4; and

$OTHER\_NSI_{i,t} = RNSI_{i,t} - RC_{i,t} - WD_{i,t} - GW_{i,t}$.

All other variables are as previously defined. We estimate Equations (6) and (7) for the four years subsequent to quarter t, quarters t+1 through t+16 (years +1 through +4).

Table 6 reports the coefficients from the estimation of Equations (6) and (7) as well as the cumulative change percentage implication of each special item sub-type for future earnings and cash flows. Consistent with our expectation, the Equation (6) results suggest that the future earnings implications of restructuring charges (*RC*s) are greater than those of asset write-downs (*WD*s) and goodwill impairment charges (*GW*s). Specifically, our evidence suggests that earnings increase over the subsequent four years by 573 percent of *RC*s, 152 percent of *WD*s, and 38 percent of *GW*s. The future cash flow results from the estimation of Equation (7) are consistent with the Equation (6) results. In particular, we find that operating cash flows increase over the subsequent four years by 156 percent of *RC*s, 66 percent of *WD*s, and G*W*s actually lead to a decrease in future cash flows

TABLE 6

Relation between Pre-Tax Restructuring Charges, Asset Write-downs, Goodwill Write-Offs, and Other Special Items and Seasonally Adjusted Future Earnings and Cash Flows Estimates of b_{1y}, b_{2y}, b_{3y}, and b_{4y} for years $y = 1$ through $y = 4$ from Equations (6) and (7):

$$\Sigma 4QPTI_{i,y} = b_{0y} + b_{1y}RC_{i,t} + b_{2y}WD_{i,t} + b_{3y}GW_{i,t} + b_{4y}OTHER\_NSI_{i,t} + b_{5y}(PTI_{i,t} - RNSI_{i,t} - PTI_{t-4}) + e_{i,t}$$

$$\Sigma 4QCFO_{i,y} = b_{0y} + b_{1y}RC_{i,t} + b_{2y}WD_{i,t} + b_{3y}GW_{i,t} + b_{4y}OTHER\_NSI_{i,t} + b_{5y}(PTI_{i,t} - RNSI_{i,t} - PTI_{t-4}) + e_{i,t}$$

	$y = 1$	$y = 2$	$y = 3$	$y = 4$
Equation (6) $\Sigma 4QPTI_{i,y}$				
n	36,609	26,997	20,331	15,106
RC	−2.109**++	−0.210**	−0.212**	−0.240**
Cumulative Change %[a]	110.9	242.8	395.9	573.0%
WD	−1.261**++	−0.226**	−0.075	0.354**
Cumulative Change %[a]	26.1	74.8	131.0	151.8%
GW	−0.871**++	−0.139**	−0.158**	−0.164**
Cumulative Change %[a]	(12.9)	(11.9)	4.9	38.1%
OTHER_NSI	−1.133**++	−0.176**	−0.151**	0.038
Cumulative Change %[a]	13.3	44.2	90.2	132.4%
Equation (7) $\Sigma 4QCFO_{i,y}$				
n	33,901	26,094	19,987	14,913
RC	−0.157**	−0.039	−0.267**	−0.278**
Cumulative Change %[a]	15.7	35.3	81.6	155.7%
WD	−0.007	−0.089	−0.070	−0.227**
Cumulative Change %[a]	0.7	10.3	26.9	66.2%
GW	0.050**	0.018	−0.021	−0.094
Cumulative Change %[a]	(5.0)	(11.8)	(16.5)	(11.8)
OTHER_NSI	−0.044	−0.019	−0.177**	−0.051
Cumulative Change %[a]	4.4	10.7	34.7	63.8%

*, ** Significantly different from zero at the 0.05 and 0.01 levels, respectively, in a two-tailed test.
++ Significantly different from −1 at the 0.01 level in a two-tailed test (applies only for estimates of b_1 at $y = 1$).
[a] This represents the cumulative percentage impact of the quarter *t* negative special item on earnings and operating cash flows for quarters years +1 through +4.

Variable Definitions:
$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm *i* in quarter *t+k* (where $k = 1,\ldots,$or 16) divided by the market value of equity (MKVALTQ) in quarter *t*–4;
$RNSI_{i,t}$ = pre-tax negative special items (SPIQ) for firm *i* in quarter *t* divided by the market value of equity (MKVALTQ) in quarter *t*–4;
$CFO_{i,t+k}$ = cash flow from operating activities (OANCFQ) for firm *i* in quarter *t+k* (where $k = 1,\ldots,$or 16) divided by the market value of equity (MKVALTQ) in quarter *t*–4;
$\Sigma 4QPTI_{i,y} = (PTI_{i,t+k} - PTI_{i,t+k-4})$ summed for the four quarters where *k* equals 1,…,4 for $y = 1$; 5,…,8 for $y = 2$; 9,…,12 for $y = 3$; and 13,…,16 for $y = 4$.
$\Sigma 4QCFO_{i,y} = (CFO_{i,t+k} - CFO_{i,t+k-4})$ summed for the four quarters where *k* equals 1,…,4 for $y = 1$; 5,…,8 for $y = 2$; 9,…,12 for $y = 3$; and 13,…,16 for $y = 4$.

(continued on next page)

TABLE 6 (continued)

$RC_{i,t}$ = pre-tax restructuring charges (RCPQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4;
$WD_{i,t}$ = pre-tax asset write-downs (WDPQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4;
$GW_{i,t}$ = pre-tax goodwill write-offs (GDWLIPQ) for firm i in quarter t divided by the market value of equity (MKVALTQ) in quarter t–4; and
$OTHER\_NSI_{i,t} = RNSI_{i,t} - RC_{i,t} - WD_{i,t} - GW_{i,t}$.

equal to 12 percent of the charge. Thus, we find increases in earnings and cash flows where we expect to find them with *RC*s and no impact where we expect there to be none with *GW*s.

Our results with respect to *WD*s are not entirely consistent with our expectation. We expected to see future earnings increases associated with the *WD* that fit the expense transfer scenario. That is, expected future earnings increases should not exceed 100 percent of the *WD* and evidence of declining earnings should exist in post-NSI change years (i.e., years +2 and beyond). However, the estimated cumulative increases in future earnings exceed 100 percent of the *WD* and the significantly positive coefficient on *WD* in year +4 provides only limited evidence of any sort of earnings decline. Overall, our Table 6 evidence with respect to *WD*s is inconsistent with these charges solely representing expense transfer. On the contrary, our evidence is more consistent with *WD*s having strategic implications. That is, strategy shifts lead to existing assets being used differently, triggering both the current *WD* and future improvements to earnings and operating cash flows. Consistent with this notion, we find that when a firm recognizes a *WD*, the firm also recognizes an *RC* 30 percent of the time.

To better address the impact of individual types of charges, we estimate Equations (6) and (7) for observations in which each of the individual special item sub-types are reported in isolation.[24] For example, for this set of tests we only include restructuring observations when all other NSI sub-types are zero. The results of these additional untabulated tests are consistent with our tabulated results in Table 6. For restructuring charges, we find *RC*-induced increases in earnings and cash flows over the four years subsequent to recognition of approximately 435 and 117 percent of the *RC*, respectively. Similarly, for *WD*s, we find *WD*-induced increases in earnings and cash flows over the four years subsequent to recognition of approximately 127 and 73 percent of the *WD*, respectively. With respect to *GW*s, we find earnings and cash flow increases of 10 and 17 percent, respectively. Thus, even when we require that these special item sub-types be reported in isolation, we still find increases in earnings and cash flows where we expect to find them with *RC*s and no impact where we expect there to be none with *GW*s.

Sensitivity Analyses

We believe our evidence supports the conclusion that, on average, real improvements are at least as important as expense transfer in determining the NSI-induced increases in earnings and cash flows for three reasons. First, we estimate NSI-induced earnings increases that exceed 130 percent of the NSI and 40 percent of this increase comes from increases to operating cash flows. Second, most of this increase is realized in years +3 and +4, which seems more likely to be the result of real performance improvements than a long-term expense transfer effect. Third, the increasing pattern of NSI-induced earnings we observe over the four years subsequent to recognition is broadly consistent with real improvements but not with expense transfer as the primary explanation.

[24] We thank an anonymous referee for this suggestion.

That said, our results so far do not preclude a significant expense transfer effect in the data. To address this limitation, we offer additional tests, based on Riedl (2004), designed to shed some light on which of the two effects is more prevalent. Riedl (2004) concludes that asset impairments exhibit weaker association with the economic predictors of asset impairments in the post- versus pre-SFAS 121 period.[25] In addition, Riedl (2004) reports a higher association between asset impairments and "big bath" behavior after the enactment of SFAS 121. He concludes that big bath behavior reflects opportunistic reporting by managers rather than providing private information about the underlying performance of the firm, a notion consistent with big bath behavior being associated with expense transfer as opposed to real improvements.

If Riedl's (2004) findings extend to our setting, then we should find evidence more consistent with the declining expense transfer assumption for (1) post- versus pre-SFAS 121 and (2) big bath versus non-big bath behavior. For the post- versus pre-SFAS 121 tests (post-1996 versus pre-1995), we use all data to estimate Equation (4) for the years 1981 through 2009. The untabulated results of this test suggest no post- versus pre-SFAS 121 difference in the total NSI-induced earnings over the subsequent four years (127.6 and 119.6 percent of the NSI, respectively). In addition, the pattern of increases between the two subsamples is nearly identical.

Riedl (2004) identifies big bath observations as those firms with a negative change in pre-write-off earnings that is less than the median for all firms with a negative change in pre-write-off earnings.[26] Using the same sample from Table 5, untabulated results indicate that the total NSI-induced increases over the subsequent four years are greater for the non-big bath sample than the big bath sample (117 to 71 percent). In addition, we find that most of the increases for the big bath sample are in the first two years (increases of 8, 31, 24, and 8 percent for years 1, 2, 3, and 4, respectively), while the increases for the non-big bath sample are more concentrated in the last two years (increases of 5, 21, 34, and 58 percent for the same years, respectively). Thus, for the big bath sample, our results suggest evidence of reversal in years +3 and +4 (i.e., declining increases), while for the non-big bath sample our evidence suggests further increases in those same years.[27] Taken together, our evidence is consistent with expense transfer for those firms identified as most likely to be engaged in big bath behavior. However, the overwhelming majority of the sample firms do not engage in big bath behavior and the evidence with respect to these firms is more consistent with real improvements.

Prior Performance

Prior research provides compelling evidence that NSI firms underperform in the periods leading up to the recognition of the NSI (e.g., Dechow and Ge 2006; Fairfield et al. 2009). Since our analysis involves future changes in performance, our evidence of improved earnings and cash flows may be related to underperformance prior to recognition of the NSI. That is, underperforming firms have more room for improvement than highly performing firms. Accordingly, we investigate this by incorporating a matched-firm design to specifically control for pre-special item performance.[28] In

[25] Statement of Financial Accounting Standards (SFAS) No. 121, *Accounting for the Impairment of Long-Lived Assets*, was enacted in 1995.

[26] Riedl (2004, 833) addresses the measure of big bath (*BATH*) in his manuscript. Where he uses annual data and yearly changes, we substitute seasonal changes in pre-NSI earnings.

[27] We also perform this test on a sample of restructuring observations because these events are equally susceptible to both expense transfer and real improvement. Untabulated tests show that the total RC-induced earnings increases are greater for the non-big bath sample than the big bath sample (433 to 62 percent). In addition, the big bath sample actually shows a decrease in year +4 (i.e., evidence of reversal), while the non-big bath sample continues to show increases over all four years subsequent to recognition.

[28] Firms reporting an NSI in quarter t are matched by four-digit SIC to all non-NSI counterpart firms in the same industry, year, and quarter leaving zero or positive special item firms as a potential matched control firm. The NSI firm is then matched to the non-NSI firm with the smallest difference in four-quarter, pre-SI earnings growth over the four quarters prior to quarter t, defined as $[(E_{i,t} - SI_{i,t})/(E_{i,t-4} - SI_{i,t-4})] - 1$.

particular, we estimate the following three regression equations:

$$M\_\Delta PTI_{i,t+k} = b_{0k} + b_{1k}RNSI_{i,t} + b_{2k}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}, \tag{8}$$

$$M\_\Sigma 4QPTI_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}, \tag{9}$$

$$M\_\Sigma 4QCFO_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}, \tag{10}$$

where:

$M\_PTI_{i,t+k}$ = pre-tax income (PIQ) for non-NSI control firm i in quarter $t+k$ (where $k = 1,\ldots,4$) divided by the market value of equity (MKVALTQ) in quarter t–4;
$M\_CFO_{i,t+k}$ = cash flow from operating activities (OANCFQ) for non-NSI control firm i in quarter $t+k$ (where $k = 1,\ldots,16$) divided by the market value of equity (MKVALTQ) in quarter t–4;
$M\_\Delta PTI_{i,t+k} = [(PTI_{i,t+k} - PTI_{i,t+k-4}) - (M\_PTI_{i,t+k} - M\_PTI_{i,t+k-4})]$;
$M\_\Delta CFO_{i,t+k} = [(CFO_{i,t+k} - CFO_{i,t+k-4}) - (M\_CFO_{i,t+k} - M\_CFO_{i,t+k-4})]$;
$M\_\Sigma 4QPTI_{i,y} = M\_\Delta PTI_{i,t+k}$ summed for the four quarters where k equals $1,\ldots,4$ for $y = 1$; $5,\ldots,8$ for $y = 2$; $9,\ldots,12$ for $y = 3$; and $13,\ldots,16$ for $y = 4$; and
$M\_\Sigma 4QCFO_{i,y} = M\_\Delta CFO_{i,t+k}$ summed for the four quarters where k equals $1,\ldots,4$ for $y = 1$; $5,\ldots,8$ for $y = 2$; $9,\ldots,12$ for $y = 3$; and $13,\ldots,16$ for $y = 4$.

All other variables are as previously defined. This design subtracts the values of the independent variables for the control firm from the NSI firm to assess the effect, if any, of performance prior to the recognition of an NSI. We estimate Equation (8) for the four quarters subsequent to quarter t and Equations (9) and (10) for the four years subsequent to quarter t. Equation (8) allows us to assess the impact of controlling for prior performance on our Equation (2) results reported in Table 3. Equations (9) and (10) allow us to assess the impact of controlling for prior performance on our Equation (4) and (5) results reported in Table 5. We report the results of Equations (8), (9), and (10) in Table 7, Panels A, B, and C, respectively. In addition and for direct comparison, we re-estimate the corresponding Equations (2), (4), and (5) on the reduced subsample used for these tests.

In Panel A of Table 7, the matched control firm adjusted future earnings ($M\_\Delta PTI_{i,t+k}$) for quarters t+1 through t+4 suggests special item-induced earnings increases over the subsequent four quarters of approximately 6.7 percent of the NSI. This is almost exactly the same amount estimated in Equation (2), also reported in Panel A, where we find the increase is approximately 5.9 percent. We find similar evidence with respect to earnings and cash flow changes over the subsequent four years. In Panel B, our evidence suggests the matched control firm adjusted future earnings increase 106.9 percent of the NSI. And in Panel C, we find that the matched control firm adjusted future cash flows increase 65.9 percent of the NSI. Taken together, the evidence in Table 7 suggests that reversal of prior performance does not explain our results.[29]

Special Item Reporting Frequency

Cready et al. (2010) report that the market prices NSIs differently depending on prior reporting frequency. In particular, they report that as the prior reporting frequency increases, the pricing multiple on NSIs increases, consistent with the market treating recurring NSIs more like operating expenses than transitory items. In addition, Cready et al. (2010) and Johnson et al. (2011) report evidence that past reporting frequency predicts future reporting of NSIs. That is, the future

[29] We also match NSI firms to non-NSI firms using cumulative four quarter earnings (scaled) for quarters t–4 to t–1 as a proxy for prior performance. Our results are robust to this alternative method.

TABLE 7

Relationship between Pre-Tax Negative Special Items and Matched Control-Firm Adjusted Seasonally Differenced Pre-Tax Future Earnings and Operating Cash Flows

Panel A: Estimated b_{1k} and b_{2k} from Equations (2) and (8) for Quarters t+1 to t+4

$$(PTI_{i,t+k} - PTI_{i,t+k-4}) = b_{0k} + b_{1k}RNSI_{i,t} + b_{2k}(PTI_{i,t} - RNSI_{i,t} - PTI_{t-4}) + e_{i,t}$$

$$M\_\Delta PTI_{i,t+k} = b_{0k} + b_{1k}RNSI_{i,t} + b_{2k}(PTI_{i,t} - RNSI_{i,t} - PTI_{t-4}) + e_{i,t}$$

	k = 1	**k = 2**	**k = 3**	**k = 4**	**n**
Equation (2) $(PTI_{i,t+k} - PTI_{i,t+k-4})$					
b_{1k}	0.007	−0.024**	−0.048**	−0.994**	27,688
b_{2k}	0.251**	0.137**	0.056**	−0.172**	27,688
Quarterly Change %	(0.7)	2.4	4.8	(0.6)	
Cumulative Change %[b]	(0.7)	1.7	6.5	5.9	
Equation (8) $M\_\Delta PTI_{i,t+k}$					
b_{1k}	0.004	−0.037**	−0.051**	−0.983**	27,688
b_{2k}	0.180**	0.085**	0.037**	−0.164**	27,688
Quarterly Change %	(0.4)	3.7	5.1	(1.7)	
Cumulative Change %[b]	(0.4)	3.3	8.4	6.7	

Panel B: Estimated b_{1y} from Equations (4) and (9) for Years $y = 1$ through $y = 4$

$$\Sigma 4QPTI_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

$$M\_\Sigma 4QPTI_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

	y = 1	**y = 2**	**y = 3**	**y = 4**
Equation (4) $\Sigma 4QPTI_{i,y}$				
n	25,827	19,772	14,818	10,946
b_{1y}	−1.063**++	−0.188**	−0.210**	−0.076*
Annual Change %	6.3	25.1	46.1	53.7
Cumulative Change %[b]	6.3	31.4	77.5	131.2%
Equation (9) $M\_\Sigma 4QPTI_{i,y}$				
n	25,827	19,772	14,818	10,946
b_{1y}	−1.067**++	−0.154**	−0.233**	0.127*
Annual Change %	6.7	22.1	45.4	32.7
Cumulative Change %[b]	6.7	28.8	74.2	106.9%

(continued on next page)

TABLE 7 (continued)

Panel C: Estimated b_{1y} from Equations (5) and (10) for Years $y = 1$ through $y = 4$

$$\Sigma 4QCFO_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

$$M\_\Sigma 4QCFO_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

	$y = 1$	$y = 2$	$y = 3$	$y = 4$
Equation (5) $\Sigma 4QCFO_{i,y}$				
n	24,878	19,203	14,646	10,871
b_{1y}	0.003	−0.008	−0.125**	−0.114**
Annual Change %	(0.3)	0.8	13.0	24.9
Cumulative Change %[b]	(0.3)	0.5	13.5	38.4%
Equation (10) $M\_\Sigma 4QCFO_{i,y}$				
n	24,878	19,203	14,646	10,871
b_{1y}	−0.015	−0.038*	−0.102**	−0.183**
Annual Change %	1.5	5.3	17.0	42.1
Cumulative Change %[b]	1.5	6.8	23.8	65.9%

*, ** Significantly different from zero at the 0.05 and 0.01 levels, respectively, in a two-tailed test.
++ Significantly different from −1 at the 0.01 level in a two-tailed test (applies only for estimates of b_1 at $k = 4$ and $y = 1$).

Variable Definitions:
$PTI_{i,t+k}$ = pre-tax income (PIQ) for firm i in quarter t+k (where $k = 1,\ldots,$or 4) divided by the market value of equity ($MKVALTQ$) in quarter t–4;
$RNSI_{i,t}$ = pre-tax negative pre-tax special items ($SPIQ$) for firm i in quarter t divided by the market value of equity ($MKVALTQ$) in quarter t–4;
$CFO_{i,t+k}$ = cash flow from operating activities ($OANCFQ$) for firm i in quarter t+k (where $k = 1,\ldots,$or 16) divided by the market value of equity ($MKVALTQ$) in quarter t–4;
$\Sigma 4QPTI_{i,y} = (PTI_{i,t+k} - PTI_{i,t+k-4})$ summed for the four quarters where k equals 1,…,4 for $y = 1$; 5,…,8 for $y = 2$; 9,…,12 for $y = 3$; and 13,…,16 for $y = 4$;
$\Sigma 4QCFO_{i,y} = (CFO_{i,t+k} - CFO_{i,t+k-4})$ summed for the four quarters where k equals 1,…,4 for $y = 1$; 5,…,8 for $y = 2$; 9,…,12 for $y = 3$; and 13,…,16 for $y = 4$;
$M\_PTI_{i,t+k}$ = pre-tax income (PIQ) for non-NSI control firm i in quarter t+k (where $k = 1,\ldots,$or 16) divided by the market value of equity ($MKVALTQ$) in quarter t–4;
$M\_CFO_{i,t+k}$ = cash flow from operating activities ($OANCFQ$) for non-NSI control firm i in quarter t+k (where k = 1,…,16) divided by the market value of equity ($MKVALTQ$) in quarter t–4;
$M\_\Delta PTI_{i,t+k} = [(PTI_{i,t+k} - PTI_{i,t+k-4}) - (M\_PTI_{i,t+k} - M\_PTI_{i,t+k-4})]$;
$M\_\Sigma 4QPTI_{i,y} = [(PTI_{i,t+k} - PTI_{i,t+k-4}) - (M\_PTI_{i,t+k} - M\_PTI_{i,t+k-4})]$ summed for the four quarters where k equals 1,…,4 for $y = 1$; 5,…,8 for $y = 2$; 9,…,12 for $y = 3$; and 13,…,16 for $y = 4$; and
$M\_\Sigma 4QCFO_{i,y} = [(CFO_{i,t+k} - CFO_{i,t+k-4}) - (M\_CFO_{i,t+k} - M\_CFO_{i,t+k-4})]$ summed for the four quarters where k equals 1,…,4 for $y = 1$; 5,…,8 for $y = 2$; 9,…,12 for $y = 3$; and 13,…,16 for $y = 4$.

persistence of the NSI is linked to past reporting. Thus, the evidence we report with respect to future earnings increases may be influenced by prior reporting frequency.

To address this issue, we re-estimate Equations (2), (4), and (5) conditioned on NSI reporting frequency over the prior four years. The cumulative change percentage we find over the subsequent four quarters is (0.6), 11.5, 20.3, 13.2, and 12.3 percent of the NSI for observations with zero, one, two, three, and four prior NSIs, respectively. With respect to the re-estimation of Equation (4), we find subsequent NSI-induced cumulative earnings increases over the subsequent four years of 135 (128) percent for NSI observations preceded by one (four) prior NSI(s). Similarly with respect to the re-estimation of Equation (5), we find cumulative NSI-induced increases to cash flows over the subsequent four years of 70 (61) percent for NSI observations preceded by one (four) prior NSI(s).

Thus, the untabulated evidence from these tests is generally consistent with the conclusion that reporting frequency is largely unrelated to future earnings changes over the subsequent four quarters and four years, respectively.

Survivorship Bias

Our conclusion that NSIs lead to performance improvements is potentially explained by "survivors" that naturally perform better than firms that fail to survive subsequent to recognition of an NSI. To more fully examine this notion, we create two samples ("survivors" and "non-survivors") to ascertain the effect of survivorship bias on our results. We use these two samples to re-estimate Equations (4) and (5). A "survivor" is defined as an observation that has complete data to estimate Equation (4) or (5) for each of the four years subsequent to NSI recognition. On the other hand, a "non-survivor" is defined as an observation that has complete data to estimate Equation (4) or (5) for year +1 but does not have complete data for the years +2, +3 and +4. The results from the estimation of Equations (4) and (5) for the survivor and non-survivor samples are reported in Table 8 Panels A and B, respectively. We limit this examination to the three years subsequent to the NSI recognition because our data restricts us in creating a non-survivor sample to these particular years.

The Equation (4) results for the "survivor" sample are consistent with our prior tabulated evidence in Table 5. In particular, in Table 8, Panel A we find that NSIs are associated with significant increases in earnings in each of the three years subsequent to the event quarter. Taken together, our evidence suggests that over the first 12 quarters subsequent to the charge, NSI-induced earnings increases equal more than 123 percent of the charge. We next examine the results from the estimation of Equation (5) that relates the NSI to future seasonally adjusted changes in operating cash flows. Our evidence suggests that NSIs are associated with substantial future increases in operating cash flows. Specifically, we find that over the first 12 quarters subsequent to the charge, NSI-induced increases in operating cash flows equal more than 19 percent of the charge. Thus, our evidence suggests substantial NSI-induced increases in earnings and cash flows for the "survivor" sample that we would expect to perform the best subsequent to the NSI recognition.

However, our evidence in Table 8, Panel B suggests that survivorship bias is not driving our primary conclusions. Consistent with this notion, we find NSI-induced earnings increases for our non-survivor sample over the subsequent three years of 93.2 percent of the NSI. While not as great as the increases found for our sample of survivors in Panel A (123.1 percent), it is greater than the increases documented for the full sample in Table 5 (75.6 percent). Our evidence with respect to operating cash flows (estimation of Equation (5)) is similar to the earnings results. We find NSI-induced operating cash flow increases over the subsequent three years of 38.7, which is greater than the survivor sample in Panel A and the full sample results we report in Table 5 of 19.2 and 14.0 percent, respectively. While we cannot fully rule out a survivor effect, our evidence does not support the conclusion that survivorship bias drives our overall results.

Subsequent Special Item Reporting

Finally, we test the impact of subsequent NSI reporting on our results. If a firm engages in a pattern of consistently reporting NSIs, expense transfer may appear to be real improvements. Fairfield et al. (2009) discuss this notion in their study and suggest this as a potential explanation for their result that "some firms maintain high core profitability by becoming serial chargers." To address this possibility as a potential explanation for our results, we re-estimate Equation (4) conditioned on the number of years a firm recognizes an NSI over the subsequent four years. Our evidence suggests no relation between NSI-induced earnings increases and subsequent reporting frequency. In particular, untabulated results reveal NSI-induced earnings increases of 213, 175,

TABLE 8

Relationship between Pre-Tax Negative Special Items and Seasonally Adjusted Pre-Tax Future Earnings and Operating Cash Flows for Years +1 through +3 for "Survivor" and "Non-Survivor" Subsamples[c]
Estimated b_{1y} from Equations (4) and (5):

$$\Sigma 4QPTI_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

$$\Sigma 4QCFO_{i,y} = b_{0y} + b_{1y}RNSI_{i,t} + b_{2y}(PTI_{i,t} - RNSI_{i,t} - PTI_{i,t-4}) + e_{i,t}$$

Panel A: Survivor Sample

	y =1	y = 2	y = 3
Equation (4) $\Sigma 4QPTI_{i,y}$			
n	14,974	14,974	14,974
b_{1y}	−1.236**++	−0.211**	−0.101**
Annual Change %[a]	23.6	44.7	54.8
Cumulative Change %[b]	23.6	68.3	123.1
Equation (5) $\Sigma 4QCFO_{i,y}$			
n	14,219	14,219	14,219
b_{1y}	0.009	−0.045**	−0.129**
Annual Change %[a]	(0.9)	3.6	16.5
Cumulative Change %[b]	(0.9)	2.7	19.2

Panel B: Non-Survivor Sample

	y = 1	y = 2	y = 3
Equation (4) $\Sigma 4QPTI_{i,y}$			
n	8,376	6,630	5,357
b_{1y}	−1.042**+	−0.273**	−0.260**
Annual Change %[a]	4.2	31.5	57.5
Cumulative Change %[b]	4.2	35.7	93.2%
Equation (5) $\Sigma 4QCFO_{i,y}$			
n	8,036	6,437	5,271
b_{1y}	−0.014	−0.083*	−0.179**
Annual Change %[a]	1.4	9.7	27.6
Cumulative Change %[b]	1.4	11.1	38.7%

*, ** Significantly different from zero at the 0.05 and 0.01 levels, respectively, in a two-tailed test.
+, ++ Significantly different from −1 at the 0.05 and 0.01 levels, respectively, in a two-tailed test (applies only for estimates of b_1 at $y = 1$).
[a] This is the percentage of the quarter t negative special item reflected in earnings and cash flows for years 1 through 4. For example, for $\Sigma 4QPTI$ for $y = 2$ the 31.5 suggests the pre-tax income for quarters $t+5$ through $t+8$ (i.e., $y = 2$) increased by 35.7 percent of the *RNSI* relative to year 0.
[b] This represents the cumulative percentage impact of the quarter t negative special item on earnings and operating cash flows for years +1 through +4.

(continued on next page)

TABLE 8 (continued)

[c] The "Survivor Sample" requires that each observation have complete data to estimate Equations (4) or (5) for all four years subsequent to the quarter in which the *RNSI* is reported. The "Non-Survivor Sample" requires that the observation have complete data to estimate Equation (4) or (5) in a particular year, but not in any of the subsequent years. For example, the 8,376 observations for the estimation of Equation (4) in $y = 1$ have complete data for the year after the *RNSI* is reported (i.e., year +1), but not for the years subsequent to $y = 1$ (i.e., years +2, +3 and +4).

Variable Definitions:
$PTI_{i,t+k}$ = pre-tax income (*PIQ*) for firm i in quarter $t+k$ (where $k = 1,\ldots,$or 16) divided by the market value of equity (*MKVALTQ*) in quarter $t-4$;
$RNSI_{i,t}$ = pre-tax negative special items (*SPIQ*) for firm i in quarter t divided by the market value of equity (*MKVALTQ*) in quarter $t-4$;
$CFO_{i,t+k}$ = cash flow from operating activities (*OANCFQ*) for firm i in quarter $t+k$ (where $k = 1,\ldots,$or 16) divided by the market value of equity (*MKVALTQ*) in quarter $t-4$;
$\Sigma 4QPTI_{i,y} = (PTI_{i,t+k} - PTI_{i,t+k-4})$ summed for the four quarters where k equals $1,\ldots,4$ for $y = 1$; $5,\ldots,8$ for $y = 2$; $9,\ldots,12$ for $y = 3$; and $13,\ldots,16$ for $y = 4$; and
$\Sigma 4QCFO_{i,y} = (CFO_{i,t+k} - CFO_{i,t+k-4})$ summed for the four quarters where k equals $1,\ldots,4$ for $y = 1$; $5,\ldots,8$ for $y = 2$; $9,\ldots,12$ for $y = 3$; and $13,\ldots,16$ for $y = 4$.

202, 64, and 219 percent of the NSI for firms with zero, one, two, three, and four subsequent annual NSIs, respectively.

V. CONCLUSION

In a path-breaking study of the time-series earnings implications of special items, Burgstahler et al. (2002; hereafter, BJS) provide evidence that suggests that the market fails to fully impound the predictable future earnings implications of special items. They also report that NSIs signal sizable increases in earnings over the subsequent four quarters. In fact, their evidence suggests that firms realize over 56 percent of the NSI in earnings over the subsequent four quarters. They conjecture that inter-period transfer of expense is the likely explanation for this observed relation between NSIs and future earnings. That is, firms accelerate the recognition of future period expenses in the form of a current NSI and thereby artificially boost future income.

The BJS conclusion that NSIs represent the current recognition of future period expenses is of particular interest for several reasons. First, these items are relatively transparent because unusual or infrequent items are separately identified on the income statement, disclosed in the footnotes, or both.[30] Second, the timing, classification, and magnitude of NSI recognition in certain circumstances represents a voluntary choice by management. Hence, the use of NSIs to opportunistically shift expenses from one period to another or from a normal operating category to an unusual or infrequent category supports the notion that voluntary disclosure environments are associated with adverse information quality. Third, identification and recognition of expenses in appropriate time periods is a bedrock principle of financial accounting (FASB Statement of Financial Accounting Concepts No. 5). If special items serve, as BJS suggest, primarily as a device for circumventing the recognition of expenses in appropriate reporting periods, then rules governing the recognition of special items may need improvement. Finally, the market's positive valuation of subsequent earnings increases documented in BJS raises the possibility that the market is fooled not only by the initial recognition of NSIs, which are over-discounted, but also by the subsequent

[30] NSI charges are often described on the income statement as "special," "unusual," "nonrecurring," "restructuring," or other similar descriptive labels.

predictable increases to earnings, which are over-valued.[31] That is, the inter-period transfer hypothesis suggests that future earnings induced by the recognition of NSIs may result in an unusually potent market misvaluation effect.[32]

Our analysis tests the BJS expense transfer conjecture with respect to its implications for earnings behavior in quarters beyond those immediately following the special items quarter. Under the expense-transfer hypothesis, the earnings increases observed in the first four quarters following NSI recognition must reverse in subsequent quarters. That is, if the observed earnings increases are the result of accelerating future expenses via an NSI, then these earnings increases cannot continue in perpetuity since the cumulative transfer effect is bounded by the amount of the initial charge. We find no evidence of such reversals over the four-year time period following the special item event quarter. Indeed, our evidence suggests that second, third, and fourth year income continues to build on the increases realized in the first year after the special item.

Our evidence can, in part, be explained as reflecting special items consisting of larger amounts of distant-period expenses relative to nearer expenses. However, a more straightforward explanation is that the increasing earnings pattern reflects real improvement in post-NSI firm performance that is either signaled by, or a consequence of, the NSI event. Consistent with this perspective, we find that NSIs are associated with substantial future increases in cash flows from operations. In particular, we find that over 40 percent of the NSI-induced earnings increases we document are realized through increases in operating cash flow. Since operating cash flows are less susceptible to temporal manipulation, our evidence suggests that the earnings increases we document are more likely to be the result of real improvements.

We interpret our evidence as demonstrating that NSIs lead to nontransitory future performance improvements that result from underlying shifts in firm strategies or operations that are costly in the short-run but improve profits in the long-run. Moreover, these long-run effects are an important factor in explaining the pattern of persistent earnings increases that we and BJS observe in post-special-items quarters, especially those beyond the fourth subsequent quarter. At the same time, it is also likely that some firms are engaging in accelerating the recognition of future ongoing expenses via the special item charge. We interpret our evidence as suggesting that such expense transfer effects do not account for the bulk of the predictable earnings behavior occurring in post-special items periods.

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[31] Elliott and Hanna (1996) and Cready et al. (2010) report that negative special items (write-offs) are typically valued at a much lower rate than other earnings components, suggesting that they are discounted substantially by the market.

[32] BJS evaluate the potential market mispricing of special items and find that the market does not properly impound the predictable increases in future earnings from NSIs. We have also run these tests and our untabulated results indicate that this mispricing phenomenon is still occurring.

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